Study Text

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# Introduction to Information Technology

The Institute of Chartered Accountants of Pakistan

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# Syllabus objective and learning outcomes

## ASSESSMENT OF FUNDAMENTAL COMPETENCIES

## INTRODUCTION TO INFORMATION TECHNOLOGY

| Objective |
|---|
| To enable candidates to equip themselves with the fundamental skills and proficiency required to cope with today's highly challenging IT oriented business environment. |

| Learning Outcome | |
|---|---|
| The candidates will be able to: | |
| LO1 | describe and classify different elements of a computer system |
| LO2 | describe the basic operations in commonly used operating systems |
| LO3 | demonstrate performance level knowledge in Microsoft Excel |
| LO4 | demonstrate performance level knowledge in Microsoft Word |
| LO5 | demonstrate performance level knowledge in Microsoft PowerPoint |

| Grid | | Weighting |
|---|---|---|
| A. | Computer hardware and types of operating system | 10 |
| B. | Microsoft Excel | 40 |
| C. | Microsoft Word | 30 |
| D. | Microsoft PowerPoint | 20 |
| | **Total** | **100** |

| Syllabus Ref | | Contents | Level | Learning Outcome |
|---|---|---|---|---|
| **A** | | **Computer hardware and operating systems** | | |
| | 1 | Central processing units (CPUs) – processor, hard disk, random access memory, read-only memory | 1 | LO1.1.1<br>Explain the role and importance of basic components of a CPU |
| | 2 | Input devices – Key board, mouse, touch pads, Scanner | 1 | LO1.2.1<br>State the uses and limitations of common input devices |
| | 3 | Output devices – monitor, printer | 1 | LO1.3.1<br>State the differences between CRT and LCD/LED monitors<br>LO1.3.2<br>Classify different types of printers and state their relative advantages and limitations |
| | 4 | Operating systems – DOS, Windows, Linux | 1 | LO2.1.1<br>State key operating system commands used for efficient searches, formatting disks, viewing IP configurations, testing network connections and exploring the network |
| | 5 | Core Windows tasks – customize desktop and start menus, work with files and folders, log-on and log-off, search for information, lock the computer, use a screen-saver password, reset a password | 1 | LO2.2.1<br>State methods for customizing desktop presentation and the start menu<br>LO2.2.2<br>Define techniques to work efficiently with files and folders<br>LO2.2.3<br>State efficient ways to search for required information from active and archive files<br>LO2.2.4<br>State the important information that could be recorded whilst a user is logged-in<br>LO2.2.5<br>Define basic controls and practices that should be adopted by users for safeguarding of data stored in computers |

| Syllabus Ref | | Contents | Level | Learning Outcome |
|---|---|---|---|---|
| **B** | | **Microsoft Excel** | | |
| | 1 | Application of basic built-in functions and formulae like Sumif, Count, IF, Vlookup, Average, Sub-total | 2 | LO3.1.1<br>Demonstrate adequate command of and perform Sumif, Count, Vlookup, Average and Subtotal functions<br>LO3.1.2<br>Demonstrate effective use of functions such as IF, AND, OR |
| | 2 | Creating and modifying customized data formats | 2 | LO3.2.1<br>Use appropriate Excel features to create customized data formats for storing currency and phone numbers<br>LO3.2.2<br>Modify existing data formats to enhance readability |
| | 3 | Using conditional formatting | 2 | LO3.3.1<br>Use the conditional formatting feature to highlight exceptions |
| | 4 | Protecting cells, worksheets and workbook | 2 | LO3.4.1<br>Perform the steps to protect certain cells, individual worksheets and an entire workbook |
| | 5 | Merging workbooks | 2 | LO3.5.1<br>Perform the steps to share a workbook<br>LO3.5.2<br>Perform the steps to merge multiple copies of a shared workbook |
| | 6 | Importing and exporting data to and from Excel | 2 | LO3.6.1<br>Export data from Excel to other applications and in other formats<br>LO3.6.2<br>Import data to Excel from other applications and in other formats |
| | 7 | Creating and editing templates | 2 | LO3.7.1<br>Demonstrate adequate knowledge in creating and editing Excel templates |

| Syllabus Ref | | Contents | Level | Learning Outcome |
|---|---|---|---|---|
| **C** | | **Microsoft Word** | | |
| | 1 | Creating custom style for text, tables and lists | 2 | LO4.1.1<br>Use various Word features to present letters, reports and other documents in a presentable custom style<br>LO4.1.2<br>Select an appropriate pre-defined table style for improved presentation |
| | 2 | Sorting contents in lists and tables | 2 | LO4.2.1<br>Use Word's built-in features to sort contents saved in tables |
| | 3 | Modifying table formats | 2 | LO4.3.1<br>Use formatting tools to improve readability of data in tables |
| | 4 | Creating and modifying a table of contents | 2 | LO4.4.1<br>Identify the basic formatting requirements to insert a table of contents<br>LO4.4.2<br>Demonstrate performance level knowledge to insert and modify a table of contents |
| | 5 | Inserting and modifying endnotes, footnotes, captions & cross references | 2 | LO4.5.1<br>Demonstrate performance level knowledge to insert and modify endnotes, footnotes, captions & cross references |
| **D** | | **Microsoft PowerPoint** | | |
| | 1 | Creating new presentations from templates | 2 | LO5.1.1<br>Select a template from PowerPoint's sample templates to construct simple presentations |
| | 2 | Inserting and editing text-based content | 2 | LO5.2.1<br>Perform inserting and editing of text based content |
| | 3 | Inserting, and editing tables, charts, diagrams, pictures, shapes, graphs and objects | 2 | LO5.3.1<br>Demonstrate performance-level knowledge of inserting and editing tables, charts and other objects in the presentation<br>LO5.3.2<br>Use appropriate PowerPoint features to insert pictures, videos, graphs and other objects in the presentation |

| Syllabus Ref | | Contents | Level | Learning Outcome |
|---|---|---|---|---|
| | 4 | Applying slide transitions | 2 | LO5.4.1<br>Demonstrate performance-level knowledge whilst applying meaningful slide transitions |

CHAPTER 1

# Computer hardware, software and operating systems

## Contents

# INTRODUCTION

## Learning outcomes

LO 1.1.1 Explain the role and importance of basic components of a CPU

LO 1.2.1 State the uses and limitations of common input devices

LO 1.3.1 State the differences between CRT and LCD/LED monitors

LO 1.3.2 Classify different types of printers and state their relative advantages and limitations

LO 2.1.1 State key operating system commands used for efficient searches, formatting disks, viewing IP configurations, testing network connections and exploring the network

## Exam context

The syllabus is split broadly into two categories:

- Section A provides a general introduction to computer systems including both hardware (the central processing unit (CPU), input, output and storage devices) and software.

  Section A can be thought of as relating to the computer environment and utilities that supports the work performed in other applications such as Word, Excel, PowerPoint and email.

- Sections B to D (representing the core of the syllabus) relate to three of those 'other applications' and introduces the user to Microsoft Word, Excel and PowerPoint.

Prior experience of the subject matter is neither assumed nor required.

By the end of this chapter students will be able to:

- Explain the role and importance of the basic components of computer systems including the CPU, input, output and storage devices.
- Understand the different types of computer software including in particular operating systems such as DOS, Linux and Windows
- State a number of key operating system commands used for tasks such as searching, disk formatting and viewing IP configurations

# 1 INTRODUCTION TO COMPUTER SYSTEMS

**Section overview**

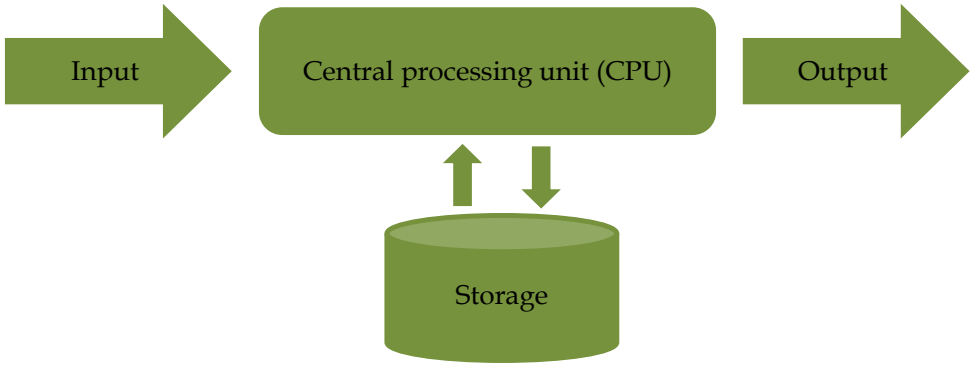
- Introduction to computer systems
- The central processing unit (CPU)
- Input devices
- Output devices
- Storage devices

## 1.1 Introduction to computer systems

### Computer systems

**Definition: Computer systems**

**A computer system comprises four key components:**




**Input devices** facilitate the introduction of data and information into the system. Examples might include a keyboard, scanner, mouse or barcode reader.

**Output devices** facilitate the extraction of processed information from the system. Examples would include a printer, speaker or screen (visual display unit).

The **central processing unit** is the 'brain' of the computer that takes the inputs, processes them and then outputs the results.

Finally, some type of **storage** facility is useful to enable data to be saved for future use.

### Computer hardware

Computer hardware consists of the computers themselves plus all the peripheral equipment connected to a computer for input, output and storage of data (such as printers and stand-alone disc drives).

The computers used in IT systems range from the very large supercomputers to the very small hand-held computers. In many organizations, different computers are connected to each other to form a network.

The different types of computer that you might encounter as an accountant would typically include:

| Computer type | Description |
|---|---|
| Supercomputers | Used only in the very largest systems – e.g. national defence and aerospace |
| Mainframe | The most powerful computers typically found in multi-nationals and other large businesses – e.g. an airline or oil company. Not as powerful as a supercomputer, but still incredibly powerful |
| Mini-computers | Less powerful than mainframe computers although not portable like smaller models below |
| Desk-top personal computers (PCs) | A computer placed at the user's desk with its own processing capabilities and usually a keyboard, mouse and screen: PCs can operate as stand-alone computers, or they may be linked as terminals to a network where the PC functions as an input/output device but the processing is executed by another device on the network. |
| Portable laptops and notebooks computers | Similar concept to PCs but much smaller and portable. |
| Handheld computers | Given the speed of technological advancement in today's fast-moving world there is an increasing number of ever evolving variations on the above forms. For example, hand-held computers (or PDAs: personal data assistants) and even many smart-phones (mobile phones with large touch-sensitive input screens) have much of the functionality found on PCs. |

The globalisation of the business environment has resulted in much more widespread use of portable laptop computers. Portable laptops can typically be connected to the organisation's computer network or to the Internet from remote locations via a data connection such as WiFi or a phone line. This means, for example, that a manager can access his e-mails or the organisation's Intranet system (a system that looks and feels like the internet but is only available to employees) from anywhere in the world.

### System architectures

**Definition: System architecture**

**The term system architecture refers to the way in which the components of a computer system such as printers, PCs and storage devices are linked together and how they interact.**

**A centralised architecture involves all processing being performed on a single central computer.**

**Decentralised** architectures spread the processing power throughout the organisation at several different locations. This is typical of the modern workplace given the significant processing power of modern PCs.

Typical **network configurations** include star networks, ring networks, bus networks and tree networks.

**Definition: Client-server computing**

Client-server computing describes one level of interaction found between computers in systems architecture.

A **server** is a machine that is dedicated to providing a particular function or service requested by a **client** within a network system.

Servers can range in power from 'top-end' super servers, capable of driving thousands of network users, to 'low-end' servers which are typically a powerful personal computer (PC). Different types of servers might include file servers, network servers, print servers, e-mail servers and fax servers.

**File servers** are used to manage the data files that are accessible to users of the network. All the shared data files for the system are held on a file server, or are accessible through a file server.

**Network servers** are used to route messages from terminals and other equipment in the network to other parts of the network. In other words, network servers manage and control the routing of messages within computer networks.

## 1.2 The Central Processing Unit (CPU)

### The central processing unit (CPU)

The brain of a computer is the central processing unit (CPU) – sometimes referred to as a microprocessor. This part contains all the electronic circuitry that the computer needs to manipulate data and execute instructions. The CPU is where most calculations take place.

Despite the incredibly vast amount of electronic circuitry contained within a CPU it is actually physically incredibly small. Consider just how powerful your smartphone is (essentially a small computer) yet it fits in your pocket!

The CPU comprises five basic components:

- Random access memory (RAM)
- Registers
- Buses
- Arithmetic logic unit (ALU)
- Control unit

Modern CPUs are so fast that a typical PC is capable of executing many instructions every second. It is possible for computers now to contain more than one CPU. This is called **multi-processing**. Furthermore, some microprocessors can contain multiple CPUs on a single chip. This is called a **multi-core processor**.

### Random access memory (RAM)

Random access memory (RAM) is memory that is directly available to the processing unit (CPU). RAM holds the data and programs in current use. RAM in microcomputers is volatile which means that the contents of RAM are erased when the computer's power is switched off.

Be careful not to confuse RAM with ROM, which stands for Read-only memory. ROM is a memory chip into which fixed programs are written permanently at the time of the computer's manufacture. When you switch on a PC you may see a reference to BIOS (basic input/output system) which is part of the ROM chip containing all the programs needed to control hardware, for example, the keyboard, screen and disk drives.

### Registers

Registers are special memory locations that can be accessed extremely fast. These are used to store the data that is to be executed next by the control unit.

### Buses

Buses are the information highway of the CPU. Buses are bundles of tiny wires that carry electronic signals between all parts of computer.

### Arithmetic/logic unit (ALU)

The arithmetic/logic unit (ALU) performs all the mathematical and logical calculations. The ALU is comprised of complex electronic circuitry that can add, subtract, multiply, divide and perform many other calculations.

Note that despite the seemingly limitless uses that have been found for computers nowadays they are all built with CPUs that can essentially only perform simple arithmetic operations, comparisons of calculation results and other values and the selection of the next instruction for processing.

### Control unit

The control unit is responsible for directing the flow of instructions and data. The control unit extracts instructions from memory (via the bus), decodes them then executes them based on the data provided.

The control unit also controls the input and output devices and all the passing of data to the ALU for computation.

## 1.3 Input devices

As we saw in section 1.1 above computer systems have four key components – input, CPU, storage and output. In this section we take a brief look at some of the many input devices commonly used in computer systems.

### Keyboards

Keyboards are the most common input device and are part of virtually all computer systems. Keyboards can be stand-alone and connected to the computer with a cable or through a wireless connection, or they might be integrated into the computer itself, such as with a laptop or notebook.

The basic layout of a keyboard is consistent within a particular geographical location (based on the local language character set). Variations commonly exist

to reflect things like space saving, video-game enhancements or ergonomic designs.

### Touch-sensitive screens and touch pads

A recent trend has been towards integrating the keyboard into touch-sensitive screens and touch pads. Both these devices involve the user touching an area of a screen, for example a picture of a keyboard, to simulate the pressing of a physical key such as on a regular keyboard.

Touch pads are connected to the computer via a cable or wireless connection whereas a touch screen would be built-in to the display unit.

Examples of touch-sensitive screens inlcude automated payment booths used to buy train or bus tickets and bank ATM machines.

### Magnetic ink character recognition (MICR)

Magnetic ink character recognition (MICR) requires the input media to be formed of specially formatted characters printed in magnetic ink. These characters are then read automatically using a specialised reading device called MICR reader.

The most common example of MICR is in the banking industry with the use of cheques and deposit slips.

### Optical mark reading (OMR)

Optical mark reading (OMR) is similar to MICR in that it is an automated input method. OMR involves marking a pre-printed form with a pen or typed line (or cross) in an appropriate box. The card is then read by an OMR device which senses the mark in each box.

Uses can include national lottery entry forms and ballot voting slips.

### Scanners and optical character recognition (OCR)

Scanners read text or illustrations printed on paper and translate the information into a format the computer can use. The resolution (number of pixels recorded for each image – pixels are minute areas of illumination on a display screen which taken together form the image) can normally be adjusted to reflect how sharp the users need their image on the computer. The greater the resolution the larger the file size of the scanned image.

Some scanners incorporate optical character recognition (OCR) software which translates the image into text. For this to work accurately the input document must be high quality print.

### Mice, trackballs and similar devices

Mice and trackball devices are hand-operated devices with internal sensors pick up the motion and convert it into electronic signals which instruct the cursor (pointer) on screen to move.

The ball mouse is now largely replaced by the optical mouse which incorporates a small light-emitting diode that bounces light off the surface when the mouse moves across. Optical mice are more comfortable to use and typically more responsive to movement.

Mice typically have two or three buttons which can be pressed (clicked) to send messages to the computer. They also frequently have a wheel which can be used to scroll within images or documents that cover multiple screens.

Trackballs are similar to mice in that they control the cursor on the screen. However, whilst mice move the cursor through movement across a surface, trackballs move the cursor by rotating the ball rather than moving the device across a surface.

Touch sensitive pads and joysticks that similarly control the cursor are also now commonly found in the center of the keyboard. Most current laptops and notebooks incorporate a pad or joystick.

### Voice date entry (VTE)

Many computers can now accept voice input via a microphone and voice data entry (VTE) software.

One particularly useful application is found in language translation programs that support simultaneous translation. Another example might be in a smartphone where you can enter commands aurally rather than by typing, for example with an instruction such as “Call Office”.

### Barcodes and QR (quick response) codes, EPOS

Barcodes are the groups of black and white marks with variable spacing and thickness found on product labels such as those at the supermarket. Each code is unique and can be read automatically by an electronic barcode reader. This keeps inventory movement up to date and also converts into a customer invoice instantly.

QR codes are matrix, or two-dimensional, barcodes. Originally popular in the automotive industry they have seen a recent rise in popularity elsewhere given their fast readability and greater storage capacity than standard barcodes.

EPOS stands for *electronic point of sale* which is normally integrated with barcode readers. EPOS allows credit and debit cards to be read for instant payment for goods.

A recent development of EPOS has seen the growth of technology that supports mobile phones being used in a similar way to credit and debit cards. A phone signal rather than the magnetic strip on a credit card is used to identify the purchaser.

### Digital cameras

Digital cameras can be found in the form of stand-alone units or they may be integrated into other technology such as smartphones and tablet computers. Digital cameras capture images and videos in digital form and allow easy transfer to a computer where they can be manipulated by software.

Digital cameras are used in many situations whether it is for the development of marketing material, recording of crime scenes by the police, or by an auditor on a year-end inventory count.

### Benefits and limitations

The following table presents some of the benefits and limitations of each of the input methods described above.

| Input method | Benefits | Limitations |
|---|---|---|
| **Keyboards** | Common, simple and cheap | Labour-intensive and slow. Prone to error. |
| **Touch-sensitive screens and touch pads** | Saves space. Integrated graphicual user interfaces are very user-friendly and intuitive. | Can be difficult to grasp the techniques for accurate data entry. Labour intensive and slow. Expensive. |
| **Magnetic ink character recognition (MICR)** | Speed and accuracy | MICR documents are expensive to produce |
| **Optical mark reading (OMR)** | Speed and accuracy | OMR documents can be expensive to produce. Also a risk of 'spoilt' documents (marks made outside the allotted boxes). |
| **Scanners and optical character recognition (OCR)** | Excellent for inputting graphics and text quickly | Can be slow to scan multiple images. File sizes might be large for very high quality scans. OCR can be somewhat inaccurate if input image is low quality. |
| **Mice and trackball devices** | Easy to use and very common. Cheap and simple. | Slow and can be prone to error. |
| **Voice data entry (VTE)** | Convenient and simple. | Can be inaccurate and affected by external interference (noise) |
| **Barcodes and EPOS** | Very common. Accurate. Quick. | Damaged barcodes are impossible to read. Incompatibility issues if different types of barcodes are received by the organization. |
| **Digital cameras** | Versatile, quick, accurate. Widevariety of high quality image editing software now available. | Higher quality means larger file size which can become expensive and difficult to manage. |

## 1.4 Output devices

### Output devices

An output device is the part of a computer system that receives the processed data from the computer and presents it in some way.

Output devices are distinct from input devices which are the parts of the computer that provide data and instructions. However, technology has advanced to the stage where some devices are a combination of both input and output such as a touch-sensitive screen.

Output devices come in a number of forms:

| Output device | Description |
|---|---|
| Monitor (display) | A monitor is a bit like a television screen – it provides visual output from the computer for text and graphics. Note though that monitors only offer temporary output as the image is lost when power removed.<br><br>Monitors can be external, such as those found attached to PCs, or can be integrated into the computer such as with laptops and notebooks. An external monitor can be upgraded or changed whereas a built-in monitor offers much less flexibility.<br><br>The old-fashioned large and bulky cathode-ray tube monitors (CRT) have been largely replaced by much less bulky flat-screen technology including LCD and LED displays. *See below for a comparison*.<br><br>The screen's resolution is the number of pixels (dots) used to build a picture. Fewer pixels provide lower resolution or image quality. More pixels and higher resolution and image quality. |
| Printers | A printer is a device that prints output to a page (on paper). Printing can be in colour or 'black and white' depending on the printer type.<br><br>A number of different types of printers exist – see below for comparison. |
| Speakers and headsets | Speakers are attached to computers for the output of sound. The sound output is produced by a sound card. Speakers range from simple, single-speaker output devices offering low-quality audio to surround-sound multi-channel units sending different output to multiple speakers in different locations.<br><br>Headsets are a combination of speakers and microphones and are commonly used by gamers. They are also growing in popularity as an increasingly cost-effective method of communicating with friends and family over the internet using software such as Skype. |

| Output device | Description |
|---|---|
| Storage devices | Output may be made to some kind of storage device such as a DVD or CD-ROM, flash memory (USB flash disk or key), blu-ray drive or external hard disk drive. |
| Projector | A projector can be thought of as a variation of monitor in that it translates the digital output into a visual display projected onto a screen. Think of some of the lectures you attended and how common it is for a computer to be connected to a projector to output the presentation slides. |

### CRT vs. flat-screen monitors

Until recently the most common display unit was the cathode ray tube monitor. This has largely been replaced by flat-screen models which use either liquid crystal displays (LCDs) or light emitting diodes (LEDs) with LCD monitors being the most common.

The illustrations below show the difference between the two types of monitor:

CRT monitor

Flat-screen monitor

We can compare the two styles as follows:

| Comparison | CRT monitor | Flat-screen monitor |
|---|---|---|
| Weight | Heavy | Light |
| Dimensions | Bulky / large | Very thin so can place the monitor further back which reduces eye-strain |
| Display quality | Good | Excellent |
| Viewing angle | Excellent | Limited |
| Image contrast | High contrast ratio and excellent colour. | Not as good as CRTs |

| Comparison | CRT monitor | Flat-screen monitor |
|---|---|---|
| Power consumption | Inefficient | Low – typically 10-25% of the power of a CRT with same viewing area |
| Heat | Can be high | Very low |
| Can use light guns/pens? | Yes | No |
| Geometric distortion | Possible | None |
| Image flicker | Potentially some | Almost none |
| Radiation emission | Higher than flat-screens | Very low |

### Printers

Printers are devices that print output (text and graphics) on paper in black and white, greyscale or colour.

Printers can be categorized between impact printers and non-impact printers. Impact printers produce text and images by striking an ink ribbon (e.g. dot matrix printers) or burning dots onto coated paper (thermal printers). Non-impact printers produce images without actually striking the paper.

The main types of printer currently used are:

- Inkjet printer (non-impact)
- Laser printer (non-impact)
- Dot matrix printer (impact)
- Thermal printer (impact)

For marketing purposes suppliers may also categorize printers by their function rather than composition. For example:

- Photo printer – inkjet printer used for printing photos
- Portable printer – an inkjet printer distinguishable by its lightweight design and small footprint for use away from the office
- All-in-one (multifunction) device – a device that incorporates the functionality of multiple devices typically including one or more of the following: printer (inkjet or laser), scanner, photocopier, fax, e-mail

The table below illustrates the advantages and limitations of each of the main types of printer.

| Printer type | Advantages | Disadvantages |
|---|---|---|
| Inkjet | • Low purchasing cost<br>• High quality of output, capable of printing fine and smooth details<br>• Capable of printing in vivid colour, good for printing pictures<br>• Easy to use<br>• Reasonably fast<br>• Quieter than dot matrix printer<br>• No warm up time | • Print head is less durable, prone to clogging and damage<br>• Expensive replacement ink cartridges<br>• Poor performance for high volume printing<br>• Printing speed is not as fast as laser printers<br>• Ink bleeding, ink carried sideways causing blurred effects on some papers<br>• Ink is sensitive to water, even a small drop of water can cause blurring<br>• Highlighter markers on inkjet printouts are prone to smudging |
| Laser | • High resolution<br>• High print speed<br>• No smearing<br>• Low cost per page (compared to inkjet printers)<br>• Printout is not sensitive to water<br>• Good for high volume printing | • More expensive than inkjet printers<br>• Except for high end machines, laser printers are less capable of printing vivid colours and high quality images such as photos.<br>• The cost of toner replacement and drum replacement is high<br>• Bulkier than inkjet printers<br>• Warm up time needed |
| Dot-matrix | • Can print on multi-part forms or carbon copies<br>• Low printing cost per page<br>• Can be used on continuous form paper, useful for data logging<br>• Reliable, durable | • Noisy<br>• Limited print quality<br>• Low printing speed<br>• Limited colour printing |
| Thermal | • Low running costs (inkless – therefore no need to replace cartridges)<br>• High speed<br>• High quality output – no ink to smudge<br>• Low noise | • Wax-based paper is difficult to write on<br>• Can produce a chemical odour<br>• Can darken if exposed to heat after printing<br>• Printed output deteriorates relatively quickly |

## 1.5 Storage devices

### Storage devices

We have already seen how the CPU is the brain of the computer taking inputs from various devices such as keyboards, mice and scanners then outputting to devices such as speakers, printers and monitors. However, computers need somewhere to store all the data such as music, videos, pictures, documents, spreadsheets, presentations, emails and so on.

The different types of storage devices found within a computer system include the following:

| Storage type | Description |
|---|---|
| Primary storage (internal memory) | Internal temporary store directly accessible by the CPU that allows it to process data.<br><br>Volatile by nature as it is erased when power is turned off.<br><br>Much smaller than secondary or tertiary storage but much quicker to access (as it has no mechanical parts).<br><br>Examples include RAM and ROM (see 1.2) plus the CPU's cache memory (temporary store of instructions repeatedly required to run programs – typically up to 2MB (megabytes) in size). |
| Secondary storage (external memory) | Secondary storage differs from primary storage in that it is not directly accessible by the CPU.<br><br>Secondary storage is used for data not currently being processed but which may need to be accessed at a later stage, for example the operating system, documents, music files and emails.<br><br>Non-volatile as data remains intact even when powered off.<br><br>Located further from the CPU than primary storage (and not directly accessible by the CPU). Therefore takes longer to access. However, is much larger than primary storage.<br><br>A computer's largest secondary storage location is typically its hard disk drive (also called hard drive), the capacity of which would typically fall between 40GB (gigabytes) to 2 TB (terabytes). Other examples include:<br><br>• Flash memory (USB flash drives or keys)<br>• Floppy disks<br>• CD<br>• DVD |

| Storage type | Description |
|---|---|
| | • Blu-ray drive<br>• Magnetic tape<br>• Could drive |
| Tertiary storage | Tertiary storage is not as commonly recognisable as primary or secondary storage by most computer consumers as they may never encounter it.<br><br>Tertiary storage typically involves a robotic mechanism that mounts (inserts) and dismounts removable mass storage media into a storage device.<br><br>Often used for archiving rarely accessed information as it is much slower than secondary storage.<br><br>Primarily useful for extremely large data stores accessed without human operators. |
| Off-line storage | Off-line storage describes any type of data storage that is not under the control of a processing unit. The medium is typically recorded on a secondary or tertiary storage device which is physically removed or disconnected. Off-line storage therefore needs human intervention to re-connect for subsequent access.<br><br>With off-line storage being physically separate from the computer it can be used to increase general information security. For example keeping a copy of all your important files off-line in a separate building. |

# 2 SOFTWARE AND OPERATING SYSTEMS

**Section overview**

- Introduction to computer software
- Key operating system commands

## 2.1 Introduction to computer software

**Definition: Computer software**

**Computer software comprises a set of machine-readable instructions that directs a computer's processor to perform specific operations. Computer software can be divided into the following types:**

- ☐ **system software**
- ☐ **programming tools and language translators**
- ☐ **application software**

### 2.1.1 SYSTEM SOFTWARE

There are three categories of system software:

- ❑ operating system software
- ❑ utility software
- ❑ communications software

#### Operating system software

**Definition: Operating system software**

**An operating system (OS) is the software that controls the operation of the computer. Examples of operating systems include DOS (short for disk operating system), Windows and Linux.**

Key features of OS include:

- ❑ The OS controls all operations within the computer itself
- ❑ The OS controls the operation of all other software, such as the application software
- ❑ The OS controls the operation of all the other hardware connected to the computer
- ❑ The OS provides systems security. For example, it enables work to be saved and provides password protection
- ❑ The OS also provides the graphical user interface (GUI) between the user and the computer

DOS dominated the IBM PC compatible market between 1981 and 2000 but is now all but invisible to most PC users due to the development of Microsoft Windows (often simply called 'Windows') into its own stand-alone operating system.

Earlier versions of Windows needed to run on machines whose operating system was DOS. However, now Windows no longer requiring DOS (ever since the launch of Windows 95 in 1995) the majority of users have stopped using DOS directly.

Linux is a computer operating system assembled under the model of free and open source software development and distribution. Open-source software (OSS) is computer software with its source code made available and licensed with an open-source license in which the copyright holder provides the rights to study, change and distribute the software for free to anyone and for any purpose.

Originally developed as a free operating system for PCs Linux now appears in many more computer hardware platforms such as:

- mainframe and supercomputers – an estimated 90% of today's 500 fastest supercomputers run some variant of Linux
- mobile phones and tablet computers including the Android and EOS systems
- network routers
- televisions and video game consoles

### Utility software

**Definition: Utility software**

**Utility software performs a variety of functions on the computer, such as copying files, sorting data on files and checking for viruses.**

Utilities are either:

- provided with the operating system by its developer (e.g. a file copying utility); or
- purchased in the form of utility packages (e.g. Norton Utilities anti-virus software)

Utility programs provide many of the background operations essential for the efficient operation of any computer system such as continuous protection against viruses.

### Communications software

**Definition: Communications software**

**Communications software controls the transmission of data within a computer network making it possible to send and receive data over media such as telephone lines and fibre optic cables**

## 2.1.2 PROGRAMMING TOOLS AND LANGUAGE TRANSLATORS

Programming tools are software that assists programmers with writing programs.

Software is written in a programming language, such as 'Java', which is used in the development of Internet applications. Programs written in a particular programming language have to be 'translated' into a binary coded form that the

computer can understand. The translation of coded programs is done by translation software.

### 2.1.3 APPLICATION SOFTWARE

Application software enables computer users to do their jobs. Application software can be classified into two broad types:

- **Off-the-shelf** software or software packages. This is software that can be purchased (or may in some cases be free such as Google docs) from a supplier and installed on the computer. Examples include accounting software packages, word processing packages (e.g. Microsoft Word), spreadsheet packages (e.g. Microsoft Excel), presentation packages (e.g. Microsoft PowerPoint) and database packages (e.g. Microsoft Access)
- **Bespoke** software or **tailored** software. These are programs that are written for a specific purpose, to meet the user's specific processing requirements. Bespoke software is commonly used by larger organisations to fulfil their special purpose needs which cannot be completed by off-the-shelf software.

## 2.2 Key operating system commands

The table below explains just a few key operating system commands that the IT engineers will use, and in exceptional circumstances, accountants may encounter first hand too.

| Objective | Key operating system commands |
|---|---|
| Efficient searches | • **FIND** – Searches for a text string in a file or files - DOS<br>• **FINDSTR** – Windows equivalent of FIND<br>• **PATH** – Displays or sets a search path for executable files - DOS |
| Formatting disks | • **FORMAT** – Formats a disk for use with DOS<br>• To format a disk in **Windows** (for example a USB stick, compact flash card or external hard-drive where you may need to wipe old confidential information) right-click on the disk in Windows Explorer then select Format |
| Viewing IP configurations | • **IPCONFIG** (internet protocol configuration) - a console application that displays all current TCP/IP network configuration values and can modify Dynamic Host Configuration Protocol DHCP and Domain Name System DNS settings. In most cases, the ipconfig command is used with the command-line switch /all which results in more detailed information than ipconfig alone. |
| Testing network connections and exploring the network | • **PING** – a network administration utility used to test the reachability of a host on an Internet Protocol (IP) network and to measure the round-trip time for messages sent from the originating host to a destination computer. |

| Objective | Key operating system commands |
|---|---|
| | • **NSLOOKUP** - a network administration command-line tool available for many computer operating systems for querying the Domain Name System (DNS) to obtain domain name or IP address mapping or for any other specific DNS record.<br><br>• **HOSTNAME** - a label that is assigned to a device connected to a computer network and that is used to identify the device in various forms of electronic communication such as the World Wide Web, e-mail or Usenet. |

## 3 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Explain the role and importance of the basic components of computer systems including the CPU, input, output and storage devices.
- Understand the different types of computer software including in particular operating systems such as DOS, Linux and Windows
- State a number of key operating system commands used for tasks such as searching, disk formatting and viewing IP configurations

CHAPTER 2

# Core Windows tasks

## Contents

# INTRODUCTION

## Learning outcomes

LO 2.2.1 State methods for customizing desktop presentation and the start menu

LO 2.2.2 Define techniques to work efficiently with files and folders

LO 2.2.3 State efficient ways to search for required information from active and archive files

## Exam context

By the end of this chapter students will be able to:

- ❑ Perform core Windows tasks such as customize the desktop
- ❑ Work efficiently with files and folders

# 1 CORE WINDOWS TASKS

**Section overview**

- Customizing the desktop
- Customizing the Start menu

## 1.1 Customizing the desktop

**Definition: Desktop**

**The desktop is the work area on a computer screen that acts as your virtual desk. The desktop contains the following:**

- **all the *icons* (shortcuts to files, folders, programs and other documents such as reports, presentations and pictures) that you can arrange as if they were real objects on a desk**
- **the *taskbar* (the bar displayed at the edge of the screen that is used to launch and monitor running applications - includes the *Start Menu*)**
- ***gadgets* (single-purpose applications such as a clock, calendar or temperature gauge that sit on the user's computer desktop)**


As with any real desk it is possible to personalize (customize) your computer desktop in a number of ways. These include:

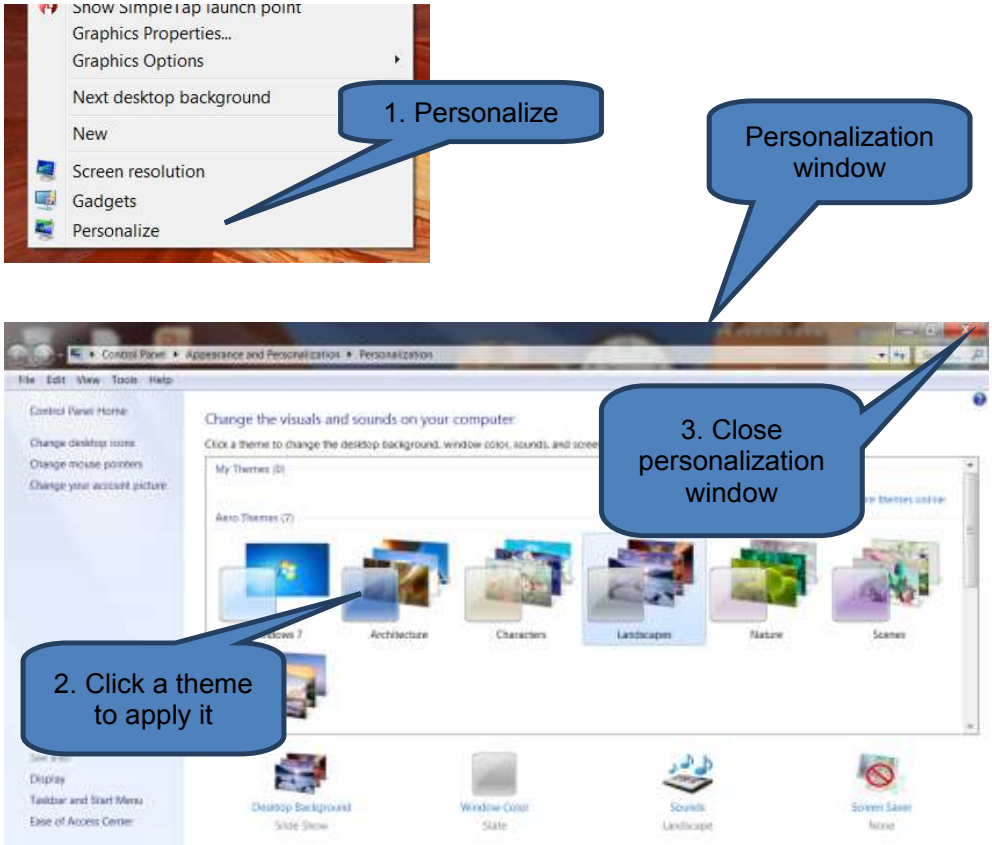
- Themes
- Background (wallpaper)
- Start menu – *see 3.2*
- Taskbar
- Gadgets

### Customizing the theme

The theme is the combination of colours, sounds and pictures on a computer incorporating the desktop background, screen saver, window border colour and sound scheme. Think of this a bit like choosing the options when buying a car or when designing a new kitchen.

To customize the theme:

- ❑ Open the ***Personalization*** window by right-clicking on the background and select ***Personalize*** from the menu
- ❑ Click on a theme to apply it. The various theme groups include:
  - My Themes – where you can create your own for example using a personal photo
  - Aero Themes – Windows 7 colourful and interesting built-in themes
  - Windows 7 Basic – an option that minimises processor usage if your computer has a slow processor.
  - High Contrast themes – use these to make items on your screen easier to see
- ❑ Close the Personalization window by clicking the red cross (top right)




### Customizing the background (wallpaper)

You can set up a number of different backgrounds including:

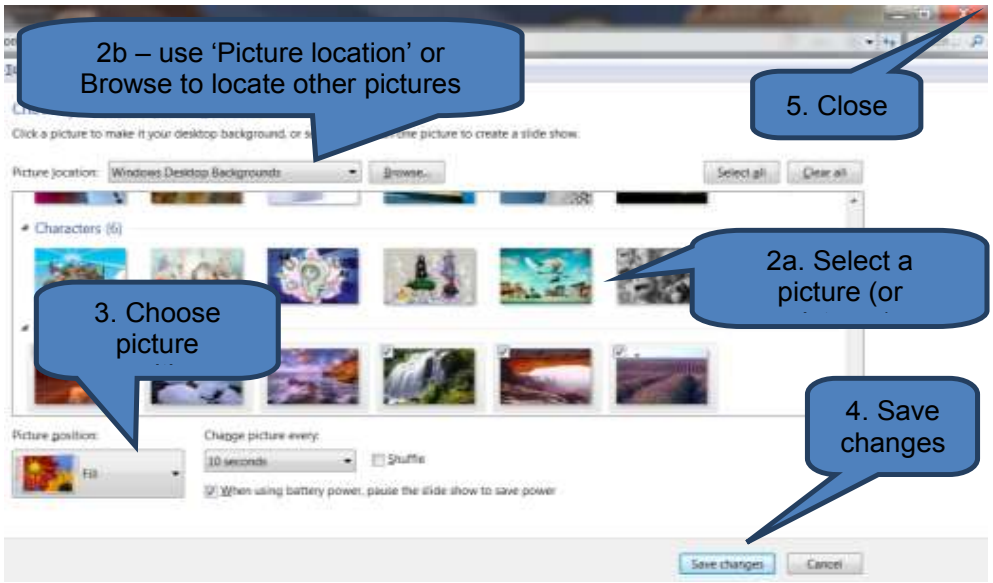
- ❑ A digital picture from your personal collection

- A picture supplied by Windows
- A solid colour
- A picture framed with a colour

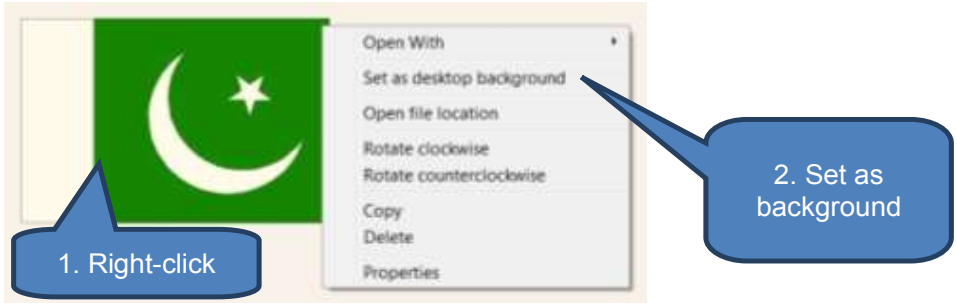
You can choose a single image as your background or set the contents of a folder to display as a slide show.

To change the desktop background:

- Open the ***personalisation window*** as above
- Click the ***Desktop Background*** icon to open the ***Desktop Background*** window
- Click the picture or colour that you want as the background. You can search for more pictures using the ***Picture location*** drop-down or ***Browse*** button.
- Decide where you want to position the picture (fill, fit, stretch, tile, center) then click ***Save changes***.
- Close the Desktop Background and Personalization windows using the ***red cross***

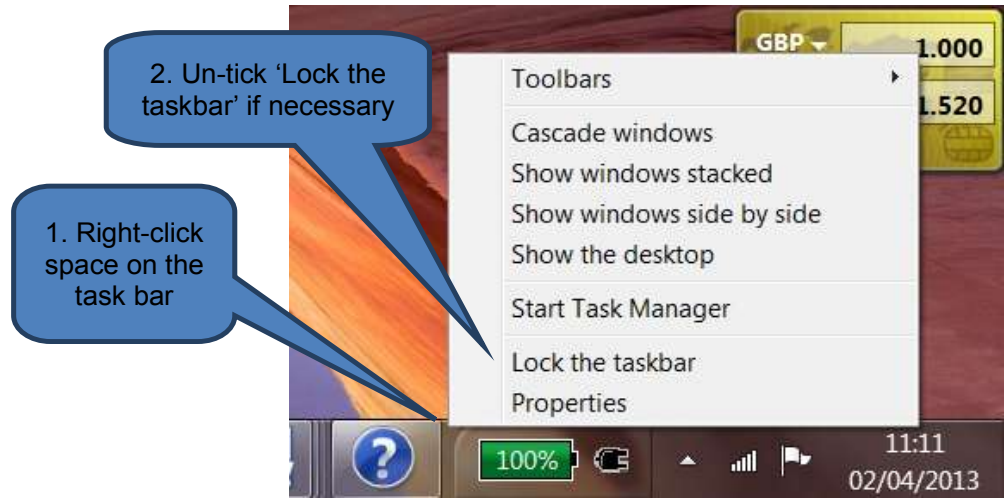

To use any picture stored on the computer (or a picture you are currently viewing) as the background, right-click the picture then click ***Set as Desktop Background***.




### Customizing the taskbar

To resize the taskbar:

- Right-click an empty space in the taskbar. If '***Lock the Taskbar'*** is ticked then un-tick it.
- Hover the cursor over the edge of the taskbar until it changes to a double-headed arrow. ↕
- Drag the border to make the taskbar the size you want

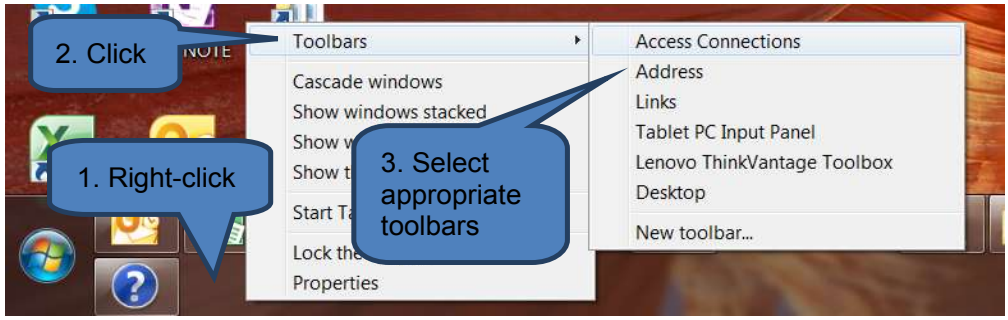




To add a toolbar to the taskbar:

- Right-click in space on the taskbar
- Click ***Toolbars***

- Click any of the toolbars to add them



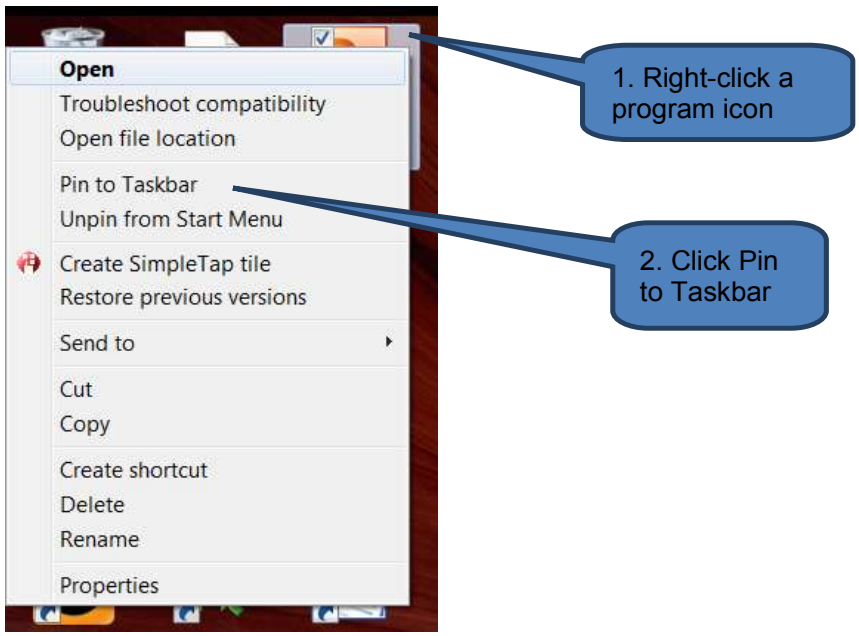

To add a program icon to the taskbar:

If the program is already running:

- Right-click the program's icon on the taskbar (or drag the icon toward the desktop to open the program's 'jump list')
- Click '***Pin this program to taskbar'***

If the program is not already running:

- Right-click a program icon either on the ***desktop*** or in the ***Start menu***
- Click ***Pin to Taskbar***




You can also pin a program by dragging the program's shortcut from the desktop or Start menu to the taskbar. Additionally, if you drag the shortcut of a file, folder, or website to the taskbar (and the program isn't already pinned to taskbar), then the program is pinned to the taskbar and the item is pinned to the program's Jump List.

To remove a program icon from the taskbar:

- Right-click a program icon on the ***Taskbar***
- Click ***Unpin this program from Taskbar***


Other customization features can be found in the same menu (right-click space on the taskbar) including:

- How multiple windows are displayed – cascade, stacked, side by side
- Launching the Taskbar properties dialog box where you can change settings such as Auto-hide the taskbar and icon size

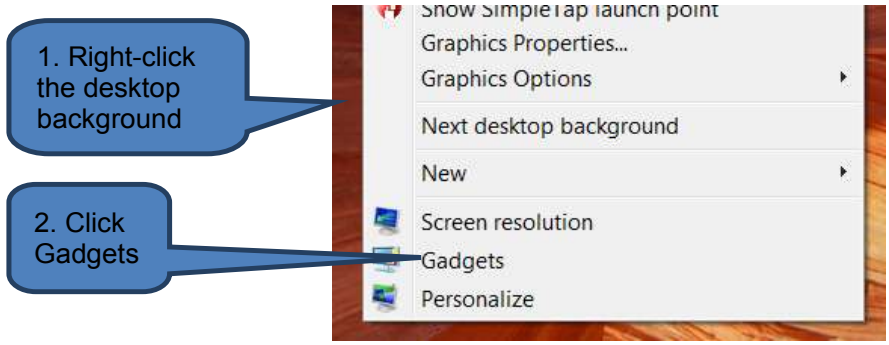
### Customizing gadgets

Desktop gadgets are a suite of handy icon-sized programs that can be placed on the desktop such as a clock, temperature gauge or calendar.

To add a gadget to the desktop:

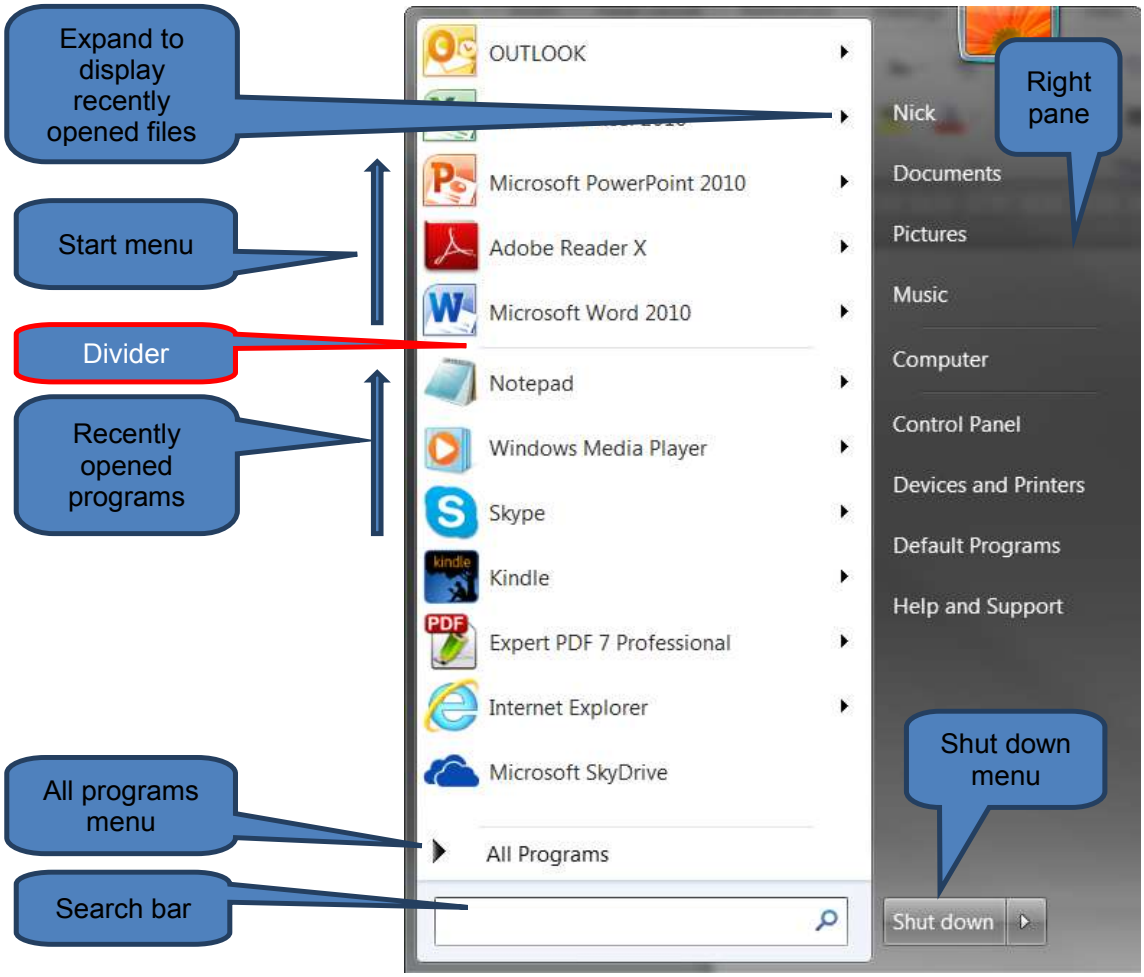
- Open the gadget window by right-clicking on the desktop background and selecting ***Gadgets*** from the pop-up menu
- Double-click a gadget to add it

There may be user-customization options for some gadgets e.g. currency. To set options, hover the icon over a gadget then press the spanner icon. Note that pressing the white cross that appears will remove the gadget from the desktop.




## 1.2 Customizing the Start menu

Customizing the Start menu will make life easier for you to find your favourite programs and folders quickly and efficiently. Let's start by identifying the different components of the start menu before moving on to methods of customizing it.




### Pin a program icon to the start menu

Shortcuts to regularly used programs can be permanently attached (pinned) to the start menu as follows:

- Right-click either an icon on the desktop or a program in the start menu (under ***All Programs***)
- Select ***Pin to Start Menu***

To subsequently unpin an icon from the start menu:

- Right-click the program in the start menu
- Select ***Unpin from Start Menu***

### Move the taskbar

The start button is located on the taskbar and cannot be removed. However, the taskbar itself can be re-located to any of the four edges of the desktop by clicking an empty space on the taskbar and dragging it to another edge.

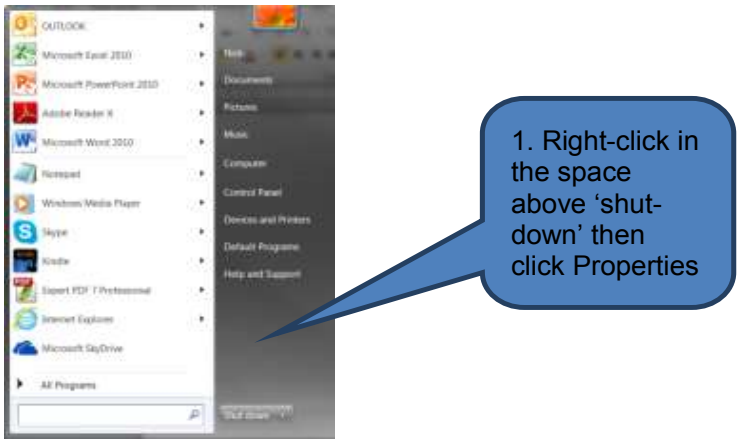
The taskbar can be locked to prevent dragging by right-clicking in space on the taskbar and unchecking ***Lock the taskbar***.

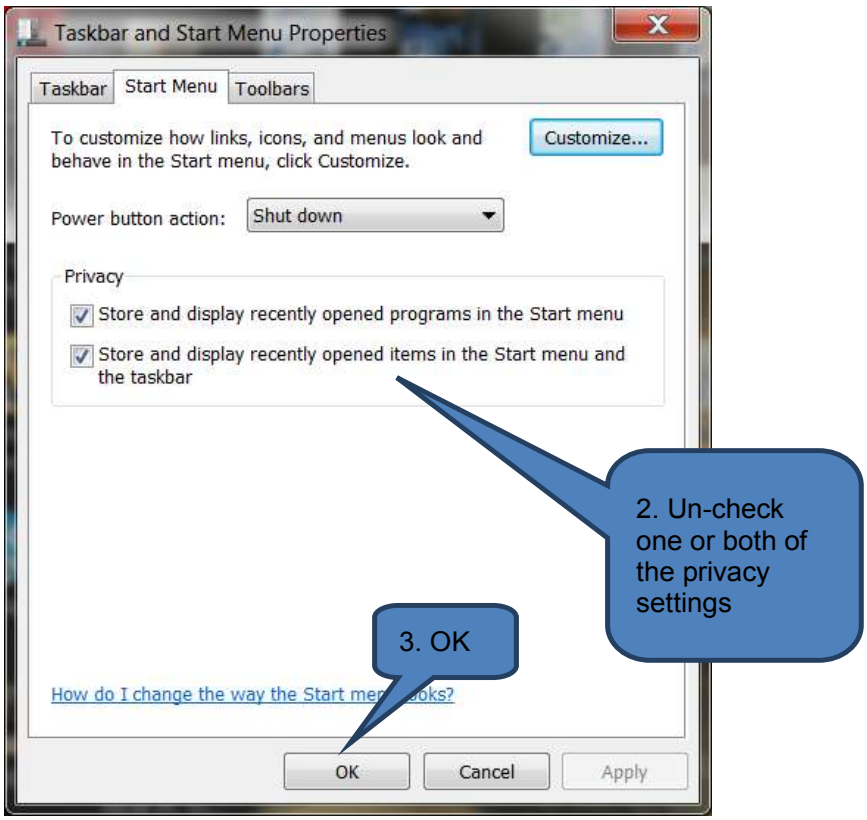
### Clear recently opened files or programs from the Start menu

You can remove recently opened files or programs to increase your privacy from the start menu as follows:

- Open the ***Start Menu Properties*** dialog box by right-clicking in the space just above the ***Shut down*** button and click ***Properties***
- Clear one or both of the ***privacy*** check-boxes and click ***OK***

The privacy check-boxes must be re-ticked if you want to subsequently display recently opened files or programs again.



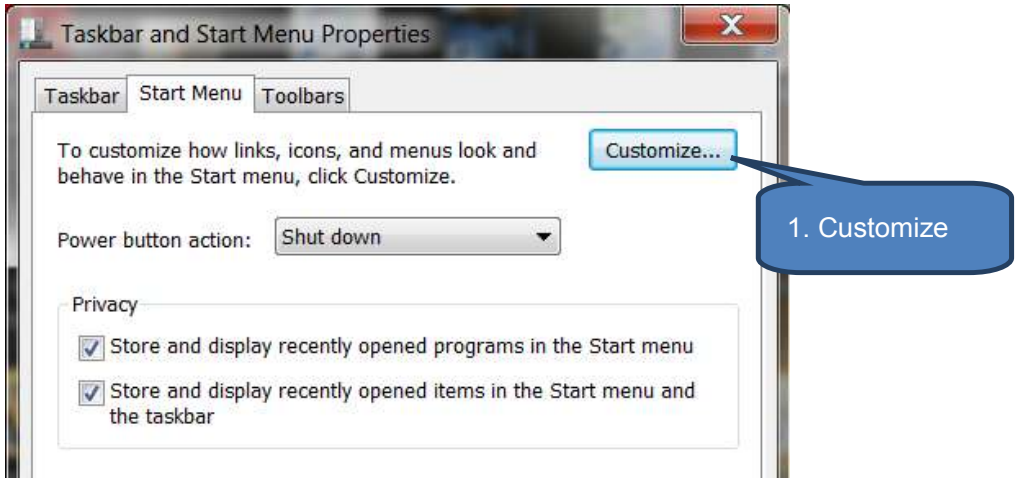



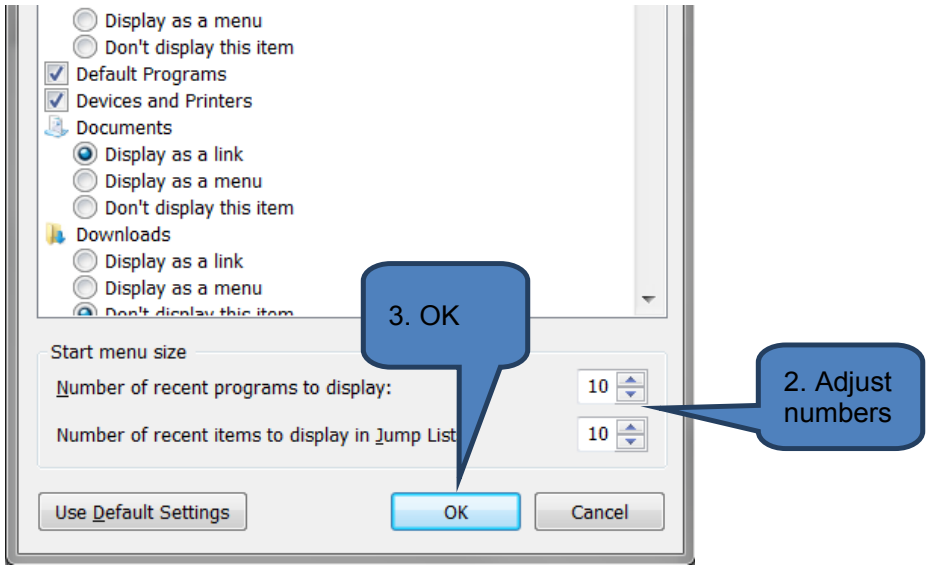

## Adjust the number of shortcuts for frequently used programs

You can adjust the maximum number of programs that can be pinned to the start menu as follows:

- Open the Start Menu Properties dialog box as above
- Click ***Customize*** to open the ***Customize Start Menu*** dialog box

- Change the number under ***Number of recent programs to display***
- Click ***OK***



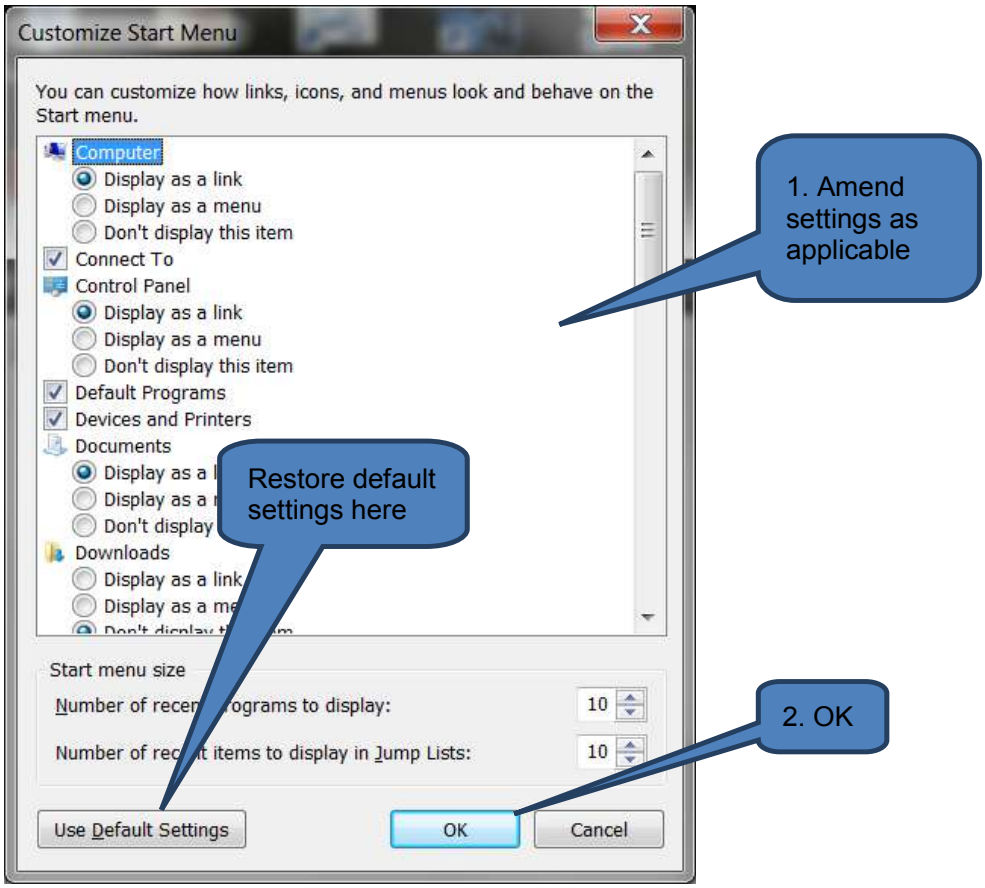



### Customize the right pane of the Start menu

The Start menu right pane contains items such as Computer, Control Panel and Pictures. You can add or remove items and also change whether they appear as links or menus as follows:

- Open the ***Customize Start Menu*** dialog box as above
- Amend settings as necessary then click ***OK***

You can restore defaults with the ***Use Default Settings*** button at any time.

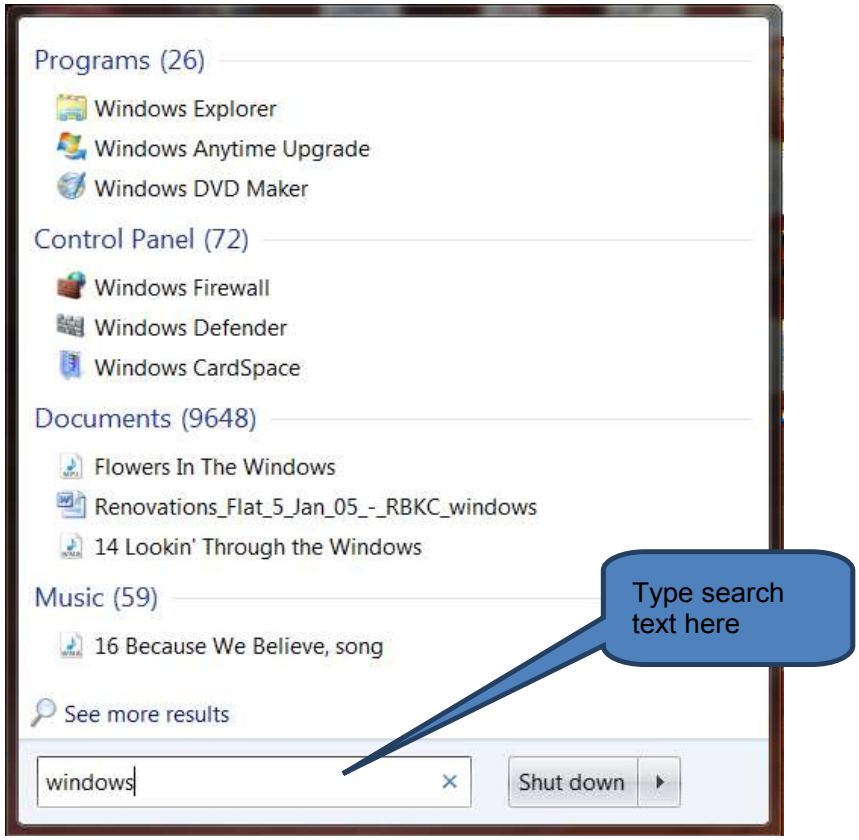


### Search for programs from the Start menu

To search for programs from the Start menu:

- Click the start button
- Type a word or phrase in the search box

Note that the search will also return other items such as documents or music files as well as programs that satisfy the search criteria.




### Add the Run command to the Start menu

The Run command is an alternative method for opening a program, folder, document or Internet resource in Windows.

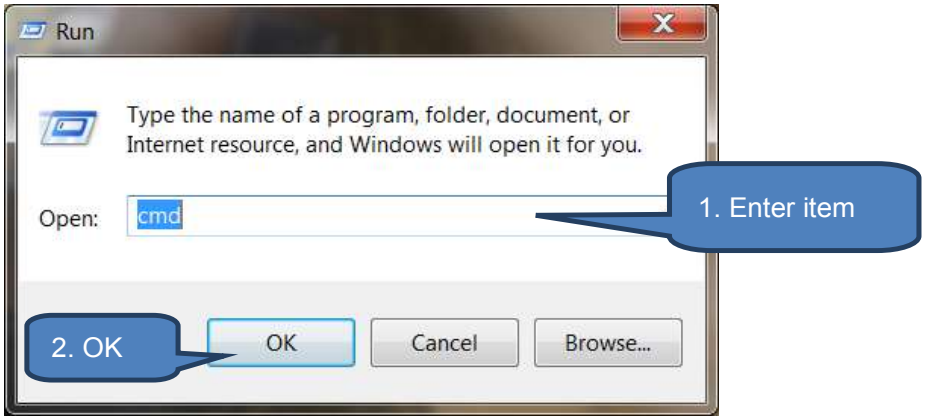
To add the Run command to the Start menu:

- Open the ***Customize Start Menu*** dialog box
- Click ***Customize***
- Tick the ***Run Command*** check box
- Click ***OK***

To use the Run command

- Click ***Run*** from the start menu
- Type the name of a program, folder, document or internet resource in the dialogue box

- Click ***OK***


Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
cmd
1. Enter item
2. OK
OK
Cancel
Browse...

# 2 WORKING EFFICIENTLY WITH FILES AND FOLDERS

**Section overview**

- Working efficiently with files and folders

## 2.1 Working efficiently with files and folders

### Introduction to files and folders

**Definition: Files, folders and subfolders**

**Files** are the stored contents, for example images, text or music. Three specific types of files we encounter in this syllabus are Microsoft Word documents, Excel Worksheets and PowerPoint presentations. In Microsoft Windows files are represented by icons or name lists.

If an office had thousands of paper files lying around it would be virtually impossible to find anything. This is why filing cabinets are used for paper files.

Similarly, **folders** are computer versions of filing cabinets that are used for storing computer files. In fact folders can contain other folders which themselves contain other folders and so on. These are called **subfolders**. You may think of a folder as a cabinet and a subfolder as one of its compartments.

**Definition: Libraries**

A library is a virtual folder to which you can link other folders or files. This allows you to group all similar file types in one searchable location.

Note though that this does not actually move the underlying folders or files into the library - Windows creates a collection of virtual links to form the library.

Windows 7 provides four default libraries to assist users in managing their files and getting organized:

- Documents – e.g. Word, Excel and PowerPoint documents
- Pictures – e.g. digital pictures from a phone camera or scanner
- Music – e.g. songs from an audio CD or downloaded from the internet
- Videos – e.g. clips from a digital camera or camcorder

### Working efficiently with files and folders

In any modern office, organisation and smart working practices contribute to an economic, efficient and effective working environment. These concepts are the same when using your computer where careful organisation and smart working practices can help you navigate the system with ease and efficiency.

The below notes give guidance on a number of simple techniques which when taken together help to equip a computer user to work more efficiently with files and folders.

These techniques include:

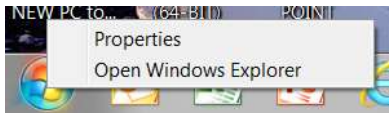
- Folder views

- Opening files using Explorer
- Deleting files and folders using Explorer
- Using the search facility
- Archived files
- Using tags
- The recycle bin
- Finding downloaded files

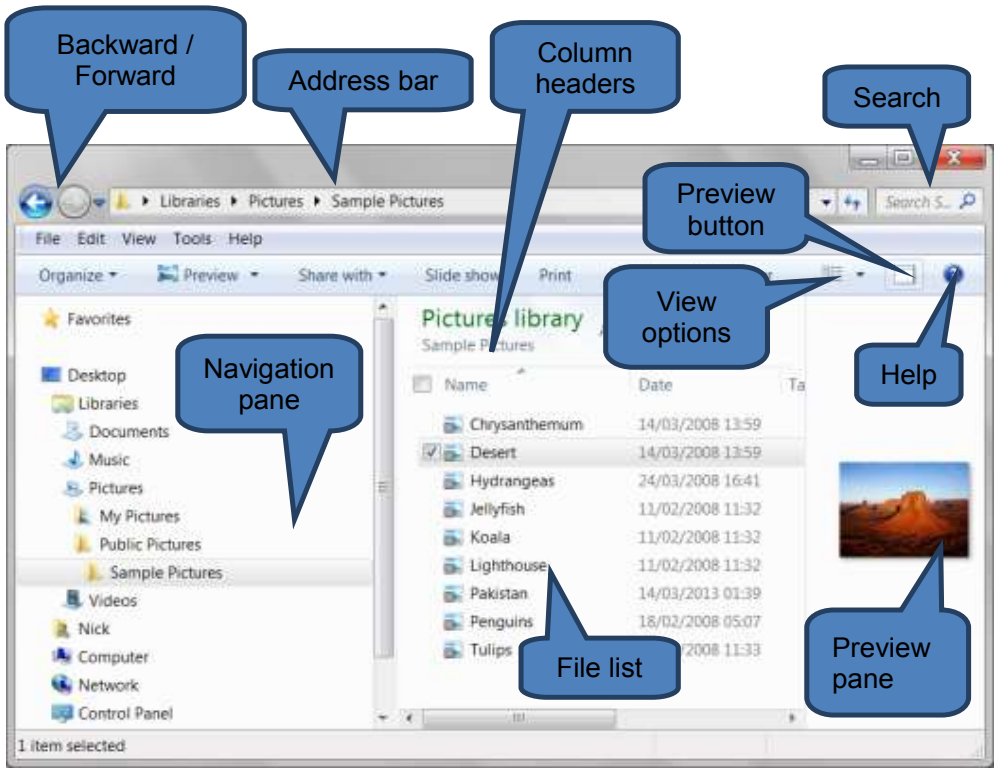
### Folder views

Windows Explorer is the standard interface for opening, saving, renaming, deleting and moving files. There are a number of ways of opening Windows Explorer:

- Within programs such as Microsoft Word, Excel or PowerPoint
  - When you first save a new document
  - When you click ***Save As***
  - When you click ***Open***
- Right click on the ***Windows Start*** button on the ***Windows Taskbar*** then select ***Open Windows Explorer***




The below example and subsequent table give some tips and hints as to how to work efficiently with Windows Explorer.




| Explorer part | Description |
|---|---|
| Backward / forward buttons | Use the back button to navigate to the previous folder viewed. Use the forward button to return to the later page.<br>Think of your navigation of folders like climbing a ladder - each folder you view represents a rung on the ladder with backward and forward simply moving you up or down the ladder. |
| Address bar | Use the Address bar if you know the address of the folder you wish to navigate to.<br>Once in a folder you can single-click in the address bar to display the full address. This can be copied and pasted as text if needed elsewhere. |
| Navigation pane | Double-click a folder to show contents. |
| Column headers and file list | Clicking on a column header re-orders the list of files. The order toggles between ascending and descending.<br>For example you could click on the date column in order to display the earliest or latest file modified at the top of the window. |

| Explorer part | Description |
|---|---|
| | To add and remove columns from the file list, right-click on any column header then tick or un-tick column names.<br>You can re-size the width of columns by hovering over a column boundary. Once the mouse arrow changes into a double-ended horizontal arrow ↔ hold the left mouse button and drag the mouse right or left to resize |
| Search | *See **Using the search facility** on next page.* |
| Preview button and preview pane | The preview pane is one of the most useful features of Windows Explorer as it allows you to quickly preview the contents of (most) files such as email messages, text files and pictures.<br>The preview pane can be opened and closed by clicking the preview button. |
| View Options | Click **View Options** to change how the information is displayed in the file list. Choose between options such as 'Details' (shown in the illustration above), tiles, small/medium/large icons. |

### Opening files using Explorer

To open files using Explorer either:

- Double-click the file in the file list to open using the default program associated with the selected file type. For example, Survey.docx would open in Microsoft Word; or
- Right-click on a file in the file list then select a program under the ***Open With*** option

### Deleting files and folders using Explorer

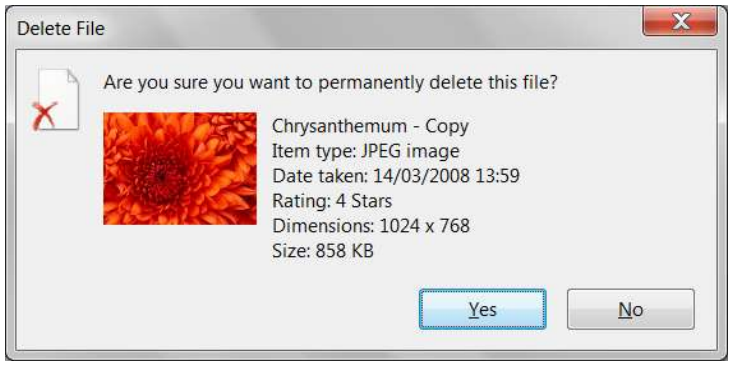
To delete the selected file or folder and move it to the recycle bin:

- Highlight the folder or file to be deleted in either the navigation pane or file list. Then press the DELETE key
- Alternatively, right-click on the highlighted file/folder then select "Delete".

Note that anything placed in the recycle bin consumes disk space. Therefore if you are absolutely sure you don't need a file or folder (i.e. there's no going back if you subsequently change your mind) you can perform what is called a 'hard delete'.

To execute a hard delete:

- Highlight the folder or file to be hard deleted in either the navigation pane or file list.
- Press SHIFT+DELETE
- Click yes when prompted if you want to permanently delete the file (or folder)

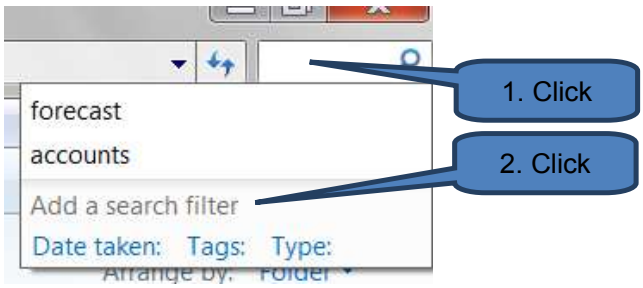



### Using the search facility

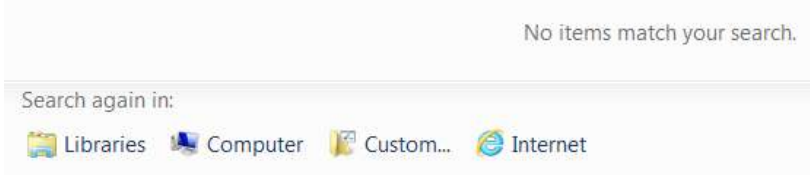
There are a range of options you can use to search for items in Microsoft Windows:

- Search for programs and files from the Start Menu – refer to section 1.2 under the heading "Search for programs from the Start menu"
- Use the search box in Windows Explorer. Type a search string into the search box at the top right of Windows Explorer (see the illustration above) exactly as you would if searching from the Start Menu.
- Use a search filter
  - Click in the search box in Windows Explorer
  - Click one of the options under ***Add a search filter***. This will prompt Windows to prepare a filtered list which you can then select from to execute the search. For example clicking on Artists in the music library will produce a list of artists that you can select a specific artist from.

  Note: the options will vary depending on the type of library or folder you are viewing e.g. Date taken, Tags, Type apply for the photo album, Albums, Artists and Genre are applicable to the music library and Date Modified and Size are applicable to general folder lists.




- Expand the search beyond a specific library or folder:
  - Type a word in the search box.
  - Scroll to the bottom of the list of search results. Under ***Search again in*** select one of the locations:




- Click ***Libraries*** to search across every library
- Click ***Computer*** to search across your entire computer. Use this method to search for files that aren't indexed such as system or program files. Note that the search will be slower as the scope is so much wider
- Click ***Custom*** to search specific locations
- Click ***Internet*** to search online, using your default web browser and your default search provider

### Archived files

As part of efficient file management your firm may have a policy of archiving files that have not been accessed for a long period. This involves moving files from expensive quick-access storage facilities to cheaper but less-quickly accessed archive storage.

Think of it a like having a paper file on your desk where space is a premium yet the file is on hand versus storing the file downstairs in the basement archive where there's more space but it involves a trip to the basement to access the file.

Some computer systems automatically archive files whereas others may require manual archive management.

Depending on the type of archiving system you may need to contact the IT department to restore archived files or it may be a simple case of using Windows Explorer search facility on the network (or archive) drive.

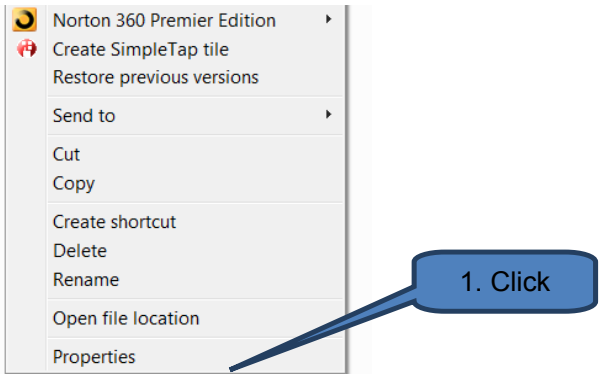
### Using tags

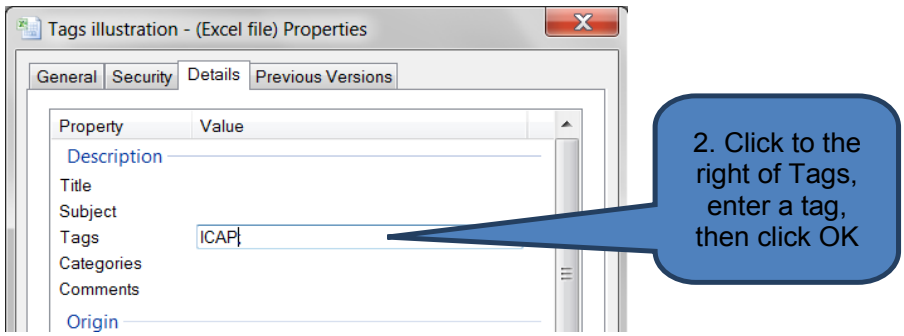
**Definition: Tags**

**File properties are details about a file such as date last saved or author name. Another popular property is the Tag. Tags are essentially personalised properties that can make your files much easier to find.**

To add a tag:

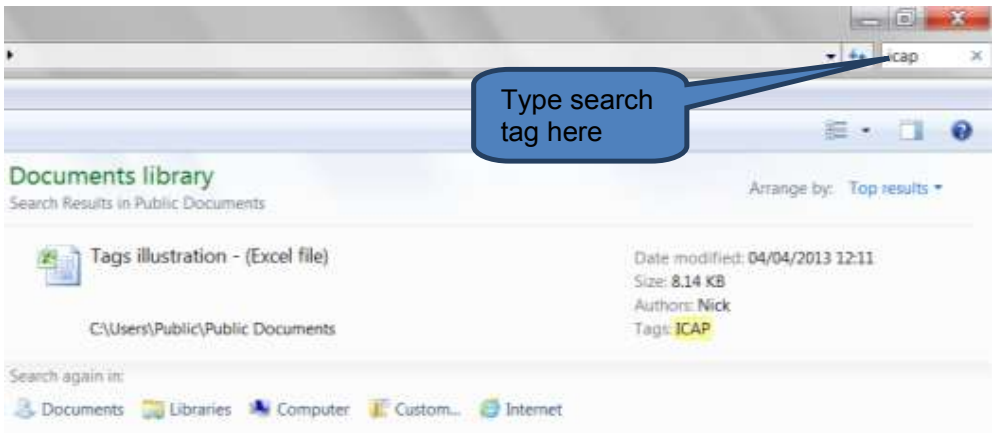
- Right-click the file name in the file list then select ***Properties***
- On the ***Details*** tab click to the right of ***Tags*** and type the tag
- Click ***OK***




To search for files with a particular tag simply type the tag into the Windows Explorer search bar.

For example:




### The Recycle Bin

The recycle bin is a hidden folder on the C-drive that temporarily warehouses deleted files. As mentioned above, there is a big difference between delete and hard-delete:

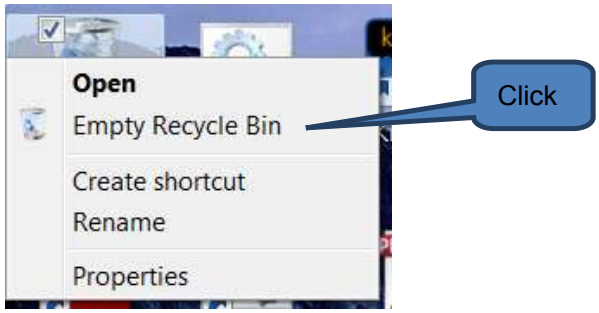
- Delete moves files (or folders) to the recycle bin but does not frees-up disk space

- Hard-delete actually erases a file or folder and frees-up disk space

In order to maximise available storage space you should periodically review the contents of the recycle bin and either hard-delete the contents (empty the bin) or recover files from the bin.

To empty the bin:

- Right-click the bin icon on the desktop then select ***Empty Recycle Bin***

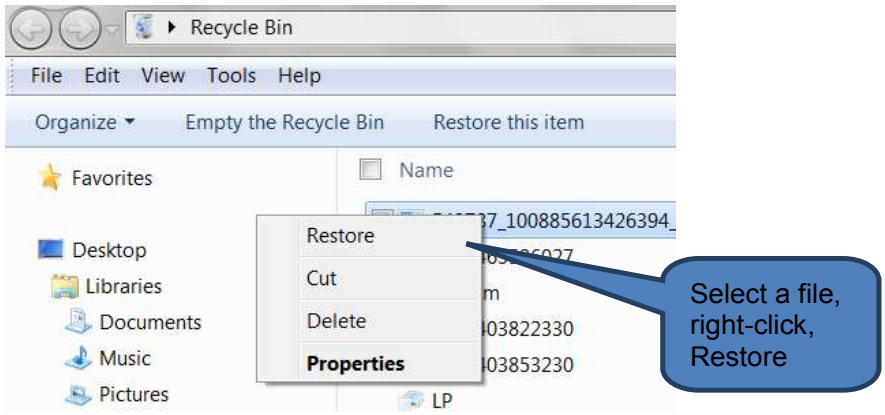



- Alternatively you can open the Recycle Bin folder in Windows Explorer and click ***Empty Recycle Bin*** on the toolbar

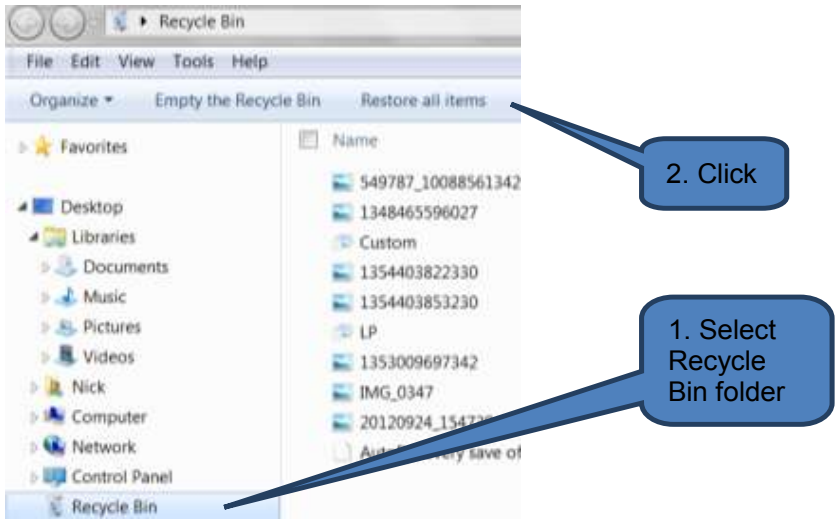
To recover items from the bin:

- Open the ***Recycle Bin*** folder in ***Windows Explorer*** by clicking the "Recycle Bin icon" on the desktop


- To restore an individual file right-click the required file then click ***Restore***




- To restore the whole contents of the recycle bin select the folder in the folder list then click ***Restore All Items*** on the toolbar



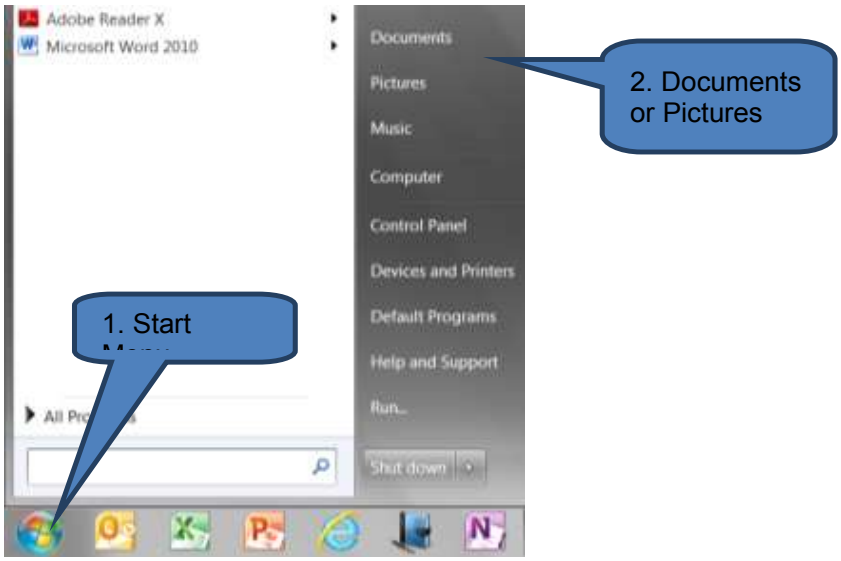

### Finding downloaded files

When you use Windows Internet Explorer to download a file from the Internet (e.g. a pdf format file of some company accounts that have been posted to the web) you are prompted as to where you would like to store the file.

If you don't specify where you want the file to be stored the following default locations will be used:

- Programs, documents, and webpages are saved in the Documents folder
- Pictures are saved in the Pictures folder

To find the file you downloaded click the ***Start button*** on the desktop taskbar then select either ***Documents*** or ***Pictures***



# 3 CHAPTER REVIEW

## Chapter review

Before moving on to the next chapter check that you now know how to:

- Perform core Windows tasks such as customize the desktop
- Work efficiently with files and folders

CHAPTER 3

# Security and safeguarding your work

## Contents

# INTRODUCTION

## Learning outcomes

LO 2.2.4 State the important information that could be recorded whilst a user is logged-in

LO 2.2.5 Define basic controls and practices that should be adopted by users for safeguarding of data stored in computers

## Exam context

By the end of this chapter students will be able to:

- Explain the basics of computer security with respect to the Internet, safeguarding data, using email and logging user data
- Use core Windows security features such as screen-savers, computer locking, passwords and log-on/off

# 1 INTRODUCTION TO COMPUTER SECURITY

**Section overview**

- Introduction to computer security

## 1.1 Introduction to computer security

### Computer security

Computer security incorporates the protection of computer systems and the data that they store or access. Given the widespread use of computers, their security is a critical priority in the modern world. Businesses must take computer security seriously in order to enhance the confidence of stakeholders in order to support critical business processes and protect business information.

Computer security involves a blend of technical and user inputs. For example locking a computer screen whilst a user is away from the desk is a useful security measure but relies on the user remembering to lock the screen when leaving their desk.

### The Internet

The Internet is a particularly risky area resulting in firms employing highly sophisticated security measures such as firewalls, encryption and virus protection.

For example, a hacked computer (a computer that has been accessed without authorisation) could give rise to:

- Recorded keystrokes and stolen passwords
- Spam (unwanted) and phishing (attempts to illicit confidential information) emails
- Harvesting and selling email addresses and passwords
- Accessing restricted, personal or client information
- Illegally distributing music, movies and software
- Infection of other systems
- Hiding programs that launch attacks on other computers
- Generating large volumes of data transfers, slowing down the entire system

The business impact of the above security violations could be severe and include any (or all) of the following:

- Risk to security and integrity of personal or confidential information e.g. identity theft, data corruption or destruction, unavailability of critical information in an emergency
- Loss of valuable business information
- Loss of employee and public trust, embarrassment, adverse publicity, media coverage and news reports
- Costly reporting requirements in the case of a compromise of certain types of personal, financial and health information

- Internal disciplinary action(s) up to and including termination of employment, as well as possible penalties, prosecution and the potential for sanctions / lawsuits

Many businesses will have an internet usage policy including contents such as the following:

- Limiting internet use to business purposes
- Notification of the ability to track internet usage
- Prohibiting access to sites that are offensive to gender, sexuality, religion, nationality or politics
- Ensuring that downloads only occur from a safe and reputable website
- Prohibiting downloading executable (program) files as well as pirated music, movies or software
- Prohibiting providing the users' business email address to limit the likelihood of SPAM and PHISHING
- Consequences of violation

### Safeguarding data – controls and best practice

Common safeguards include:

- Use strong, cryptic passwords that can't be easily guessed - keep them secret and change frequently
- Make sure the computer's operating system and applications are protected with all necessary security patches and updates
- Make sure the computer is protected with up-to-date antivirus and anti-spyware software
- Users should avoid clicking on unknown or unsolicited links or attachments, and downloading unknown files or programs onto their computer
- Avoid sending information via standard, unencrypted WiFi (which is especially easy for hackers to intercept). Encrypted WiFi scrambles the signal making it useless to hackers unless they have the codes to decrypt it.
- Using "https" in the URL before entering any sensitive information or a password. (The "s" stands for "secure".)
- Avoid standard, unencrypted e-mail and unencrypted Instant Messaging (IM)
- Backup data frequently. Keep one backup copy off-site (i.e. at a separate physical location)
- Perform frequent systems maintenance to ensure performance does not erode
- Update hardware to keep pace with the speed of change of the software it supports
- Take out adequate insurance cover for systems and software
- Invest in an uninterruptable power supply
- Document systems and keep the documentation up-to-date for system amendments

### Email usage policy

Many businesses adopt an email usage policy which is driven by both commercial and security reasons. Typical policy content might include:

- Prohibiting the use of personal email accounts for business matters
- Check email regularly
- Organize emails efficiently
- Use of professional standards and courtesy in messages
- Prohibit email use for unlawful purposes (copyright infringement, obscenity, slander, fraud, computer tampering, etc.)
- Prohibiting email use outside your firm's policies
- Prohibiting sending large attachments
- Prohibiting opening email attachments from unknown sources (as they may contain malicious software)
- Prohibiting accessing email accounts of other individuals
- Prohibiting sharing email account passwords
- Prohibiting excessive personal use of your firm's email
- Notification that the firm will monitor email
- Reporting of misuse
- Disciplinary action for any breach of policy

### Logging of user-data

Many firms and systems have the ability to log information about users. On the one hand whilst this can help firms monitor their staff's work and adherence to internet and email policies it can sometimes be argued that it causes resentment, suspicion and a general lack of trust.

However, in today's increasingly litigious society firms are increasingly duty bound to ensure they do everything possible to monitor and control their staff through maintaining a tight audit trail (a record of past activity). This could be referred to in a legal defence (e.g. disputing the terms of a client order) or might be useful in diagnostics (e.g. a flight recorder).

Logs are typically either event-oriented or keystroke recorders. Examples of important information that could be recorded in a typical office environment whilst a user is logged-in include:

- Internet sites visited
- Log-in and log-out times (to calculate hours worked)
- Emails sent and received
- Idle time
- Which files and programs have been accessed
- Key strokes
- Conversations made using VoIP
- Number of log-in attempts and entries of an incorrect password
- Details of documents faxed and sent to a printer

Windows Administrator accounts have the ability to maintain the following logs:

- Application (program) events
- Security-related events
- Setup events
- System events
- Forwarded events (events forwarded from other computers)

### Safeguarding stored data

In addition to adopting the above security procedures the following techniques are also often used by firms to assist in further safeguarding of stored data:

- Maintain version-control of files so that you are always working on the latest version of a document. This is particularly important with documents that require editorial input from multiple users.
- Employ a DBMS (database management system) to control access to shared files to avoid editing conflicts
- Routinely checking the accuracy of standing data
- Avoid data duplication with stored data as this can lead to inconsistency in master files and loss of integrity of client, customer or employee data.

# 2 USING CORE WINDOWS SECURITY FEATURES

**Section overview**

- Logging on and off
- Locking the computer in Microsoft Windows
- Using the Windows screen-saver
- Changing your Windows password

## 2.1 Logging-on and -off

When a user logs-off from Windows all the programs they were using are closed but the computer is not turned off. This makes the computer available for another user to log-in to without needing to re-start the computer.

If another user subsequently switches off the computer the first user's information (files, emails etc.) will already have been automatically saved by Windows during log-off.

To log-off:

- Click the ***Start button*** on the desktop taskbar
- Select ***Log off*** from the ***Shut down*** menu

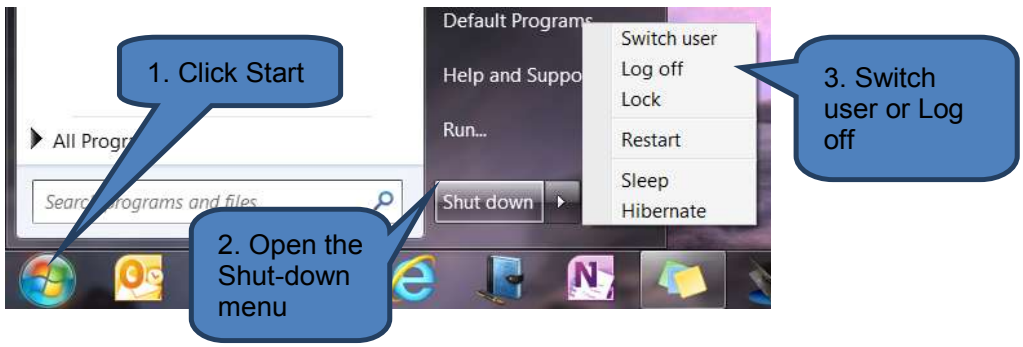
Alternatively you can use '***Fast user switching***'. This is similar to a full log-off in that it makes the computer available for another user to log-in to. However, with fast user switching Windows does not automatically save files that are open before logging the first user off. Therefore you should save any open files before switching users as any unsaved data will be lost if a subsequent user switched off the computer.

To use fast user switching:

- Click the ***Start button*** on the desktop taskbar
- Select ***Switch User*** from the ***Shut down*** menu

Alternatively:

- Press ***CTRL+ALT+DELETE*** and then click the user that you want to switch to




## 2.2 Locking the computer in Microsoft Windows

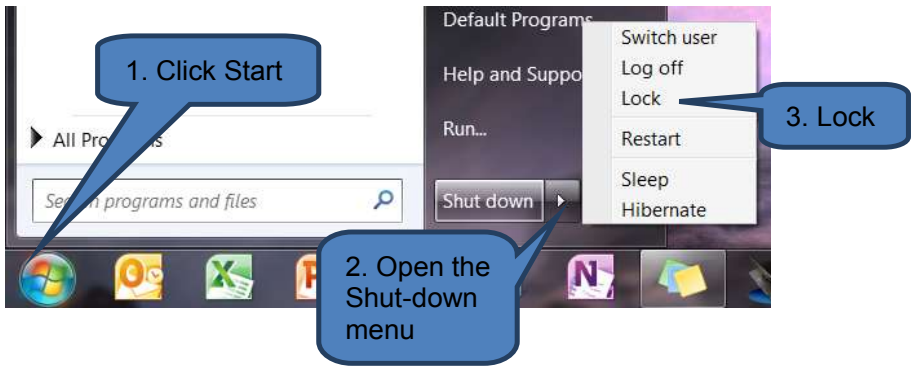
A locked computer prevents unauthorised access to the desktop without using a correct password.

To lock the computer either:

- Press CTRL + ALT + Delete
- Select ***Lock this computer***

Or:

- Click the ***Start button*** on the desktop taskbar
- Select ***Lock*** from the ***Shut down*** menu



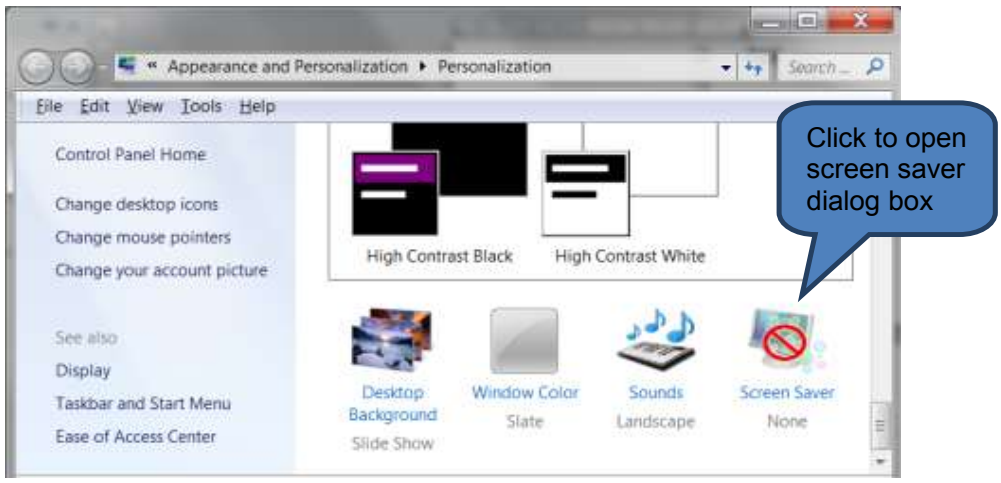

To unlock the computer simply type in the password and hit the ***ENTER*** key. Note that Windows passwords are case-sensitive so check Caps Lock is not activated when entering your password.

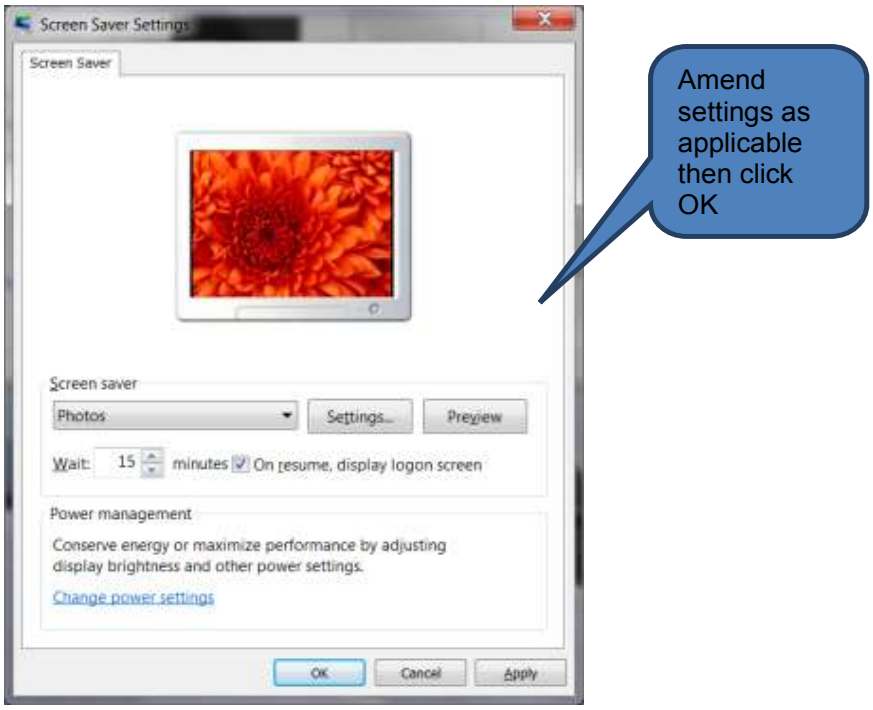
## 2.3 Using the Windows screen-saver

Screen savers were originally used to save older, monochromatic monitors from damage, but now they're mainly a way to personalize your computer or enhance its security by offering password protection.

To set-up the screen-saver:

- Right-click on the desktop and select ***Personalize***
- Click ***Screen-saver*** to open the screen-saver dialog box
- Amend settings including any or all of the following:
  - Select screen saver type from the drop-down menu. Note some screen savers have customizable settings you can amend from the ***Settings*** button
  - Change the period of inactivity required to start the screen saver
  - Require the user to re-log-in to resume their desktop session by ticking "***On resume, display logon screen***"
- Click ***OK***




## 2.4 Changing your Windows password

You can help keep your computer secure by changing your Windows password regularly and using a strong password (mixture of alpha-numeric including both upper and lower-case).

The two common methods for changing your password are:

Method 1

- ❑ Press ***CTRL+ALT+DELETE***
- ❑ Select ***Change a password***
- ❑ In the prompts provided:
  - Type the old password
  - Type the new password

- Confirm the new password
- Press ***Enter***

Method 2

- Press ***Start*** on the taskbar and select ***Control Panel***
- Click ***User Accounts and Family Safety***
- Select ***Change your Windows password*** under ***User Accounts***
- Click ***Change your password***
- Enter your current password, new password, confirm your new password, then click ***Change password***

If you forget your password it can be reset by one of the following methods:

- Log-in under an administrator account and re-set the password for the relevant user account
- Use a password reset disk for the account (or the password reset information stored on a USB flash drive). A password reset disk should be created when you first set-up your computer – see the manufacturer's instructions for your machine.

Note that data such as unsaved files may be lost if the administrator account has to be used to reset the password.

# 3 CHAPTER REVIEW

## Chapter review

Before moving on to the next chapter check that you now know how to:

- Explain the basics of computer security with respect to the Internet, safeguarding data, using email and logging user data
- Use core Windows security features such as screen-savers, computer locking, passwords and log-on/off

CHAPTER 4

# Introduction to Microsoft Excel

## Contents

# INTRODUCTION

## Learning outcomes

LO 3.7.1 Demonstrate adequate knowledge in creating and editing Excel templates

## Exam context

Many students will have some kind of prior experience of Microsoft Excel from their former studies, job or even home life. However, this exam assumes no prior knowledge. Therefore do not be alarmed if you have not used Microsoft Excel previously.

As with all the Microsoft Office based chapters in this Study Text you will benefit significantly from having access to Microsoft Excel in order to practice the techniques described. Active learning through practical experience will not only help you remember new techniques but also ensure you have understood exactly what has been described.

By the end of this chapter students will be able to:

- Open a new, blank workbook
- Base a new workbook on an existing workbook
- Base a new workbook on a template
- Create and edit your own templates
- Recognise and use some components of the Office Backstage view
- Print from Microsoft Excel

# 1 INTRODUCTION TO MICROSOFT EXCEL

**Section overview**

- Introduction to Microsoft Excel 2010
- Practical uses for Excel

## 1.1 Introduction to Microsoft Excel 2010

**Definition: Microsoft Excel 2010**

**Microsoft Excel is a component of the Microsoft Office productivity suite for Microsoft Windows and is the successor to Microsoft Excel 2007**

Microsoft Excel 2010 is the official 'number cruncher' of the Microsoft Office 2010 suite. Microsoft Office 2010 marked the debut of free online versions of Word, Excel, PowerPoint and OneNote which work in the web browsers like Internet Explorer, Firefox, Chrome and Safari.

Microsoft Office 2013 was launched in early 2013 but the new functions in Microsoft Excel 2013 suite are outside this syllabus (e.g. FlashFill, PowerView and Timeline Slicer in Excel). Therefore this Study Text will refer to the Microsoft Office 2010 suite throughout.

## 1.2 Practical uses for Microsoft Excel

Microsoft Excel's substantial power and flexibility make it a useful tool for both personal and business use. It can be used to analyse, track and tabulate numbers and alpha-numeric data.

Some examples of how it is used include:

| Use | Comment |
|---|---|
| Manage personal finances | Track income and expenses by day, month or year. Use Excel's built-in mathematical functions to automatically calculate routine or complex equations. |
| Manage business finances | Track sales orders and purchase orders, monitor bank balances, create forecasts and budgets |
| Create a calendar | Makes the entry of dates in an Excel worksheet quicker, easier and more intuitive. Uses might include using the calendar to track the progress of a project, record important client events or track staff movements. |
| Plan and manage a project or event | Whether you are planning a large work project, a wedding or holiday, you could use Excel to keep track of multiple tasks and deadlines, and as a central database of all information and files you need to execute the project or event |
| Create lists | Excel's convenient tabular layout makes it easy to format many different types of lists. |

| Use | Comment |
|---|---|
| Maintain an address book | Create an address book to manage your mailing labels. Functions such as 'filter', 'sort' and 'search' make it easy to create and manage a large contact list. |
| Display data in charts | From using a pie-chart to show the share of votes in an election to a bar chart showing average monthly rainfall and temperatures, charts and graphs are an effective visual-aid available in Excel. |
| Log time in timesheets | Many employees use an excel workbook to maintain timesheets. They will log data such as time worked on each client, tasks performed and expenses incurred. |

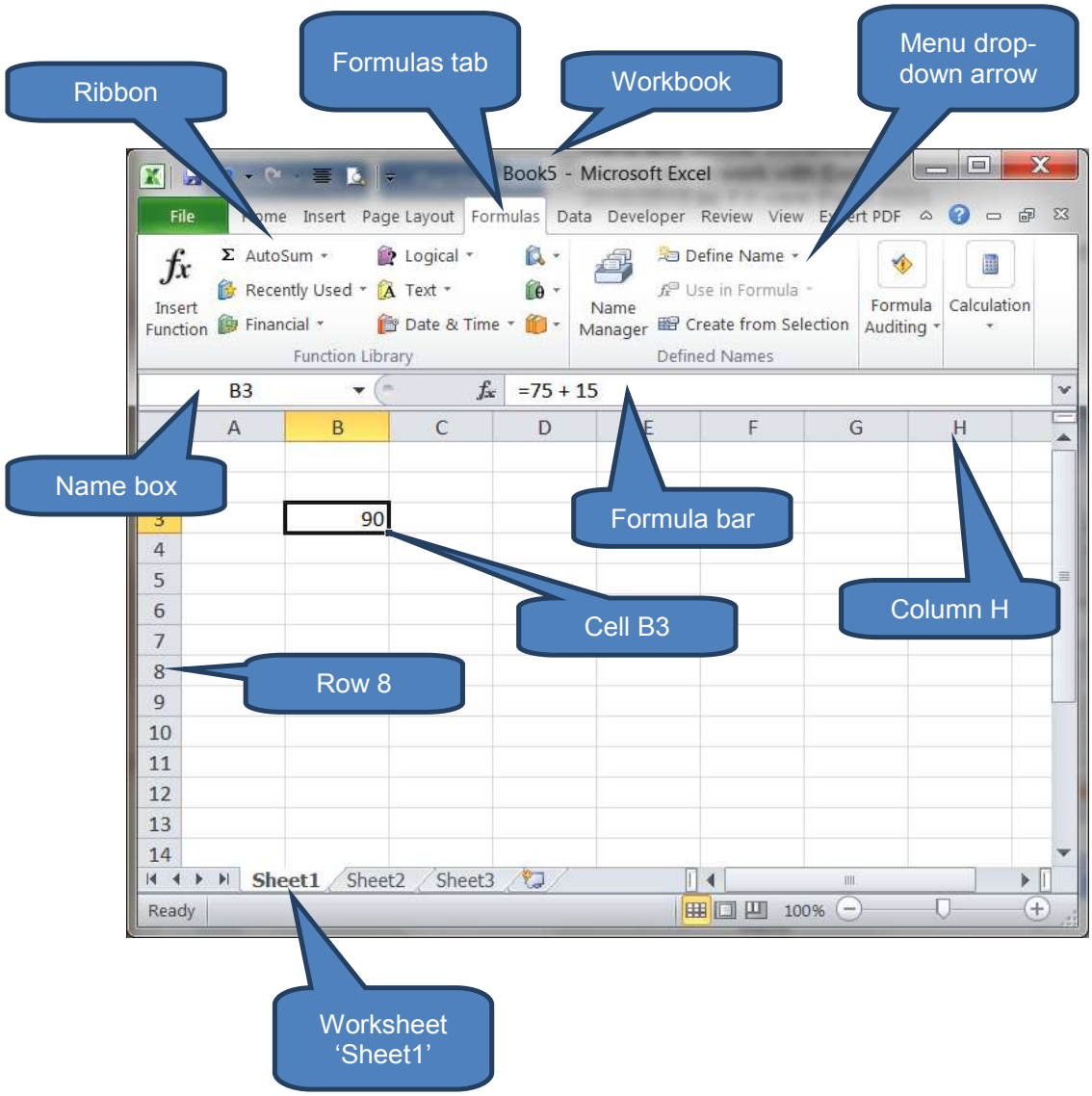
## 1.3 Basic components of an Excel workbook

**Definition: Workbook**

**A workbook is a file that contains one or more worksheets (also called spreadsheets) that can be used to organize various kinds of related information.**

The basic components of an Excel workbook include the following:

| Component | Comments |
|---|---|
| Workbook | The overall file that contains one or more worksheets |
| Worksheet | Individual spreadsheets that belong to a workbook |
| Row | An Excel 2010 worksheet has 1,048,576 rows numbered from 1 to 1,048, 576 |
| Column | An Excel 2010 worksheet has 16,384 columns ranging from column A to XFD |
| Cell | An Excel 2010 worksheet has 17,179,869,184 cells which are identified by their column and row position. For example cells A1 and CF38. Cells are where the user enters data. |
| Name box | This is used to identify either individual cells or groups of cells. |
| Formula bar | The formula bar shows the value or formula entered into the upper-left most selected cell. |
| Ribbon and tabs | The logical groupings (tabs) of commands that can be accessed from the top of the Excel screen. Each tab relates to a type of activity – e.g. laying out a page (Page layout), or writing (Home) |
| Menus | A menu is a list of options that become available when you click on a 'drop-down' arrow |


Ribbon
Formulas tab
Workbook
Menu drop-down arrow
Book5 - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Developer
Review
View
Insert Function
AutoSum
Recently Used
Financial
Logical
Text
Date & Time
Function Library
Name Manager
Define Name
Use in Formula
Create from Selection
Defined Names
Formula Auditing
Calculation
B3
=75 + 15
Name box
Formula bar
Cell B3
Column H
Row 8
90
Sheet1
Sheet2
Sheet3
Ready
100%
Worksheet 'Sheet1'

# 2 CREATING A NEW WORKBOOK

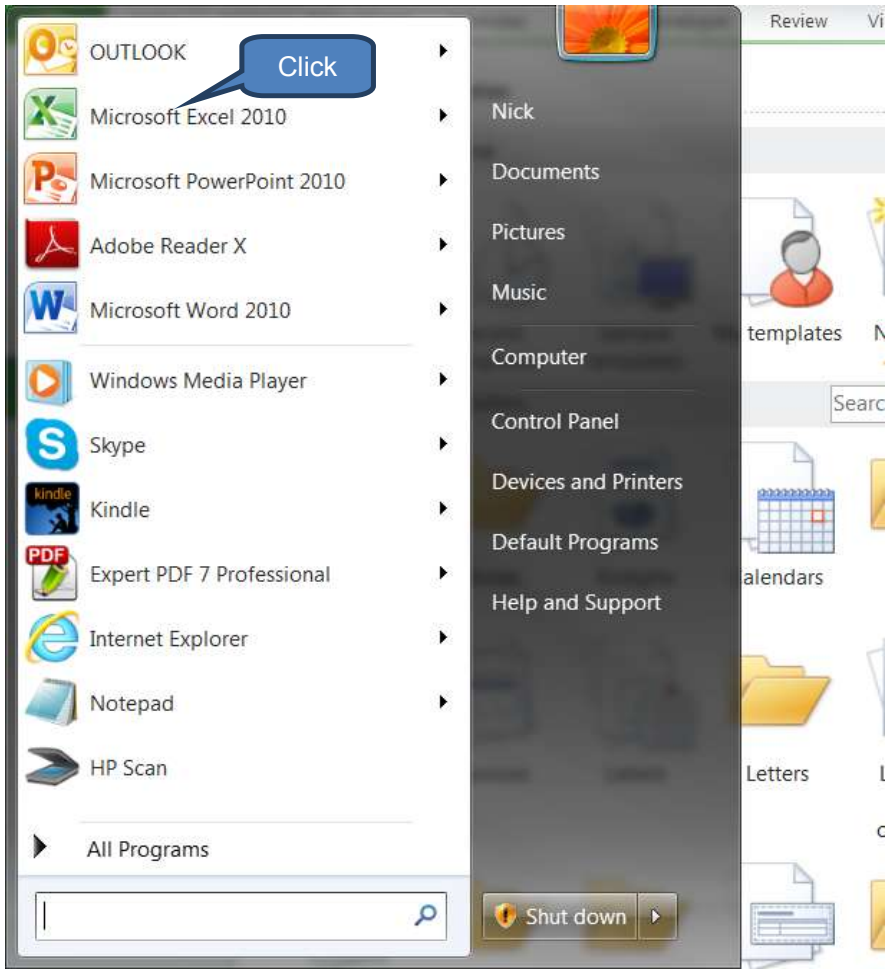
## Section overview

- Open a new, blank workbook
- Base a new workbook on an existing workbook
- Base a new workbook on a template
- Create and edit your own templates

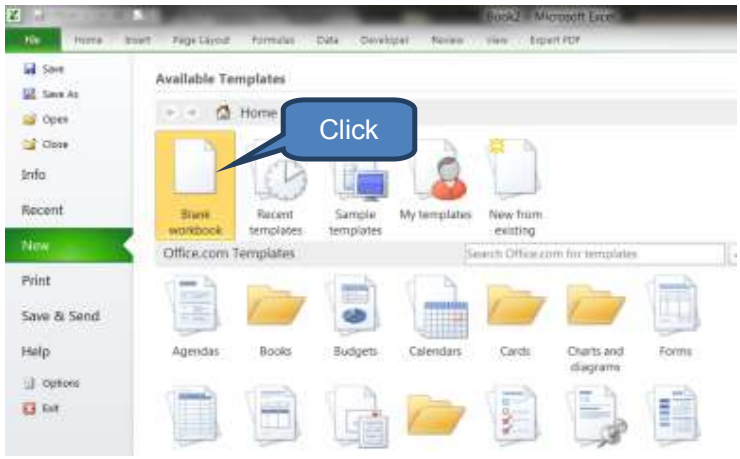
## 2.1 Open a new, blank workbook

There are a number of ways to open a new, blank workbook.

- Click ***Microsoft Excel 2010*** from the start menu. This launches a new session of Excel and a new blank workbook will open automatically.




- If Excel is already open click ***New*** + ***Blank workbook*** on the ***File tab***. This will open a new workbook in addition to the already open workbook.

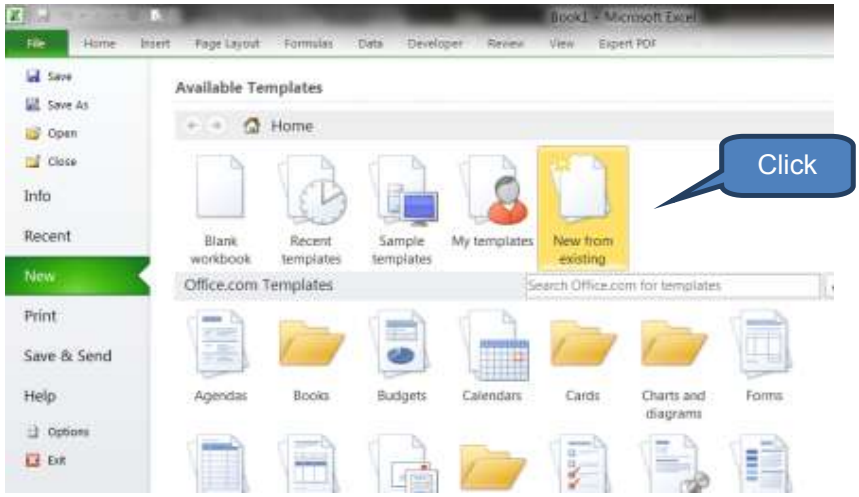



- You can also press ***CTRL +N*** whilst in an existing workbook to quickly create a new, blank workbook.

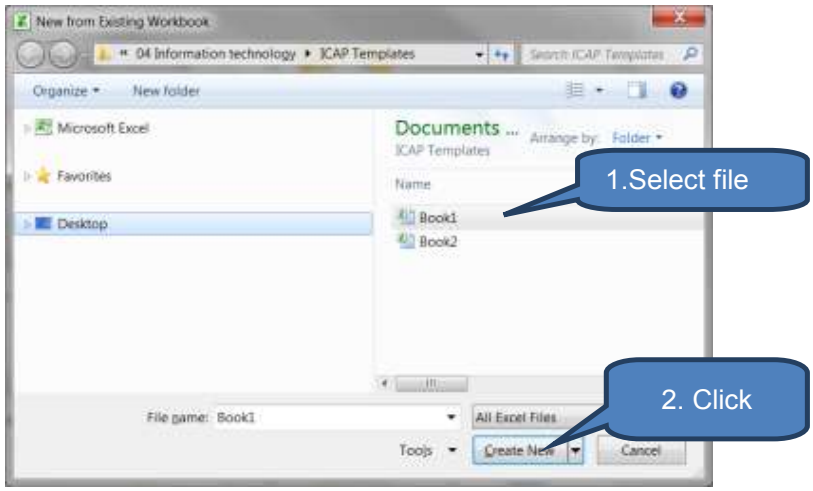
## 2.2 Base a new workbook on an existing workbook

You may be able to save time and effort by recycling previous work and basing a new workbook on an existing workbook. There are two ways to do this:

- If Excel is already open click ***New*** + ***New from existing*** on the ***File tab***.




- Navigate to the existing workbook you wish to recycle through the dialog box. Then click ***Create New.***




## 2.3 Base a new workbook on a template

**Definition: Template**

**A template is a preformatted workbook designed for a specific purpose such as tracking sales or budgeting.**

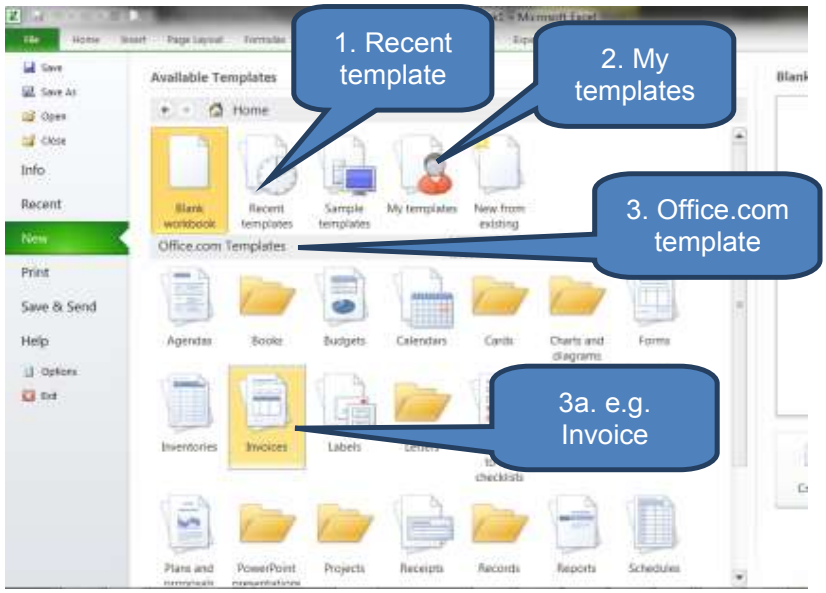
Using templates can remove much of the set-up and design effort where a template already exists that suits your needs. Furthermore it will help achieve consistency in the 'look and feel' of your workbooks. This may or may not be of benefit to you depending on how bespoke or standard your situation is.

Templates exist for a wide range of uses such as budgets, agendas, inventories, invoices, reports, receipts and schedules. To base a new workbook on a template do the following:

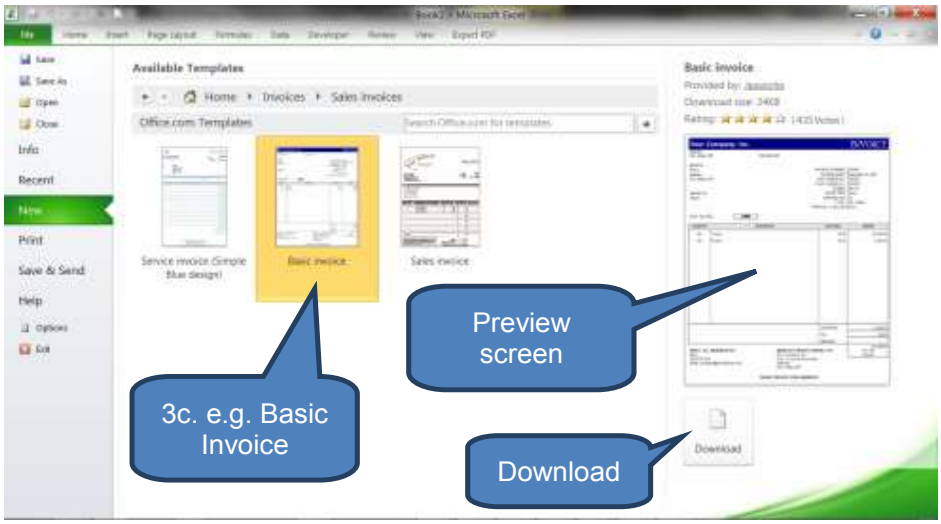
- ❑ Open Excel
- ❑ Click ***New*** on the ***File tab***
- ❑ Now you have a range of options including the following:
  1. Open a recently used template from ***Recent templates;***
  2. Open a template you recently saved in ***My templates***; and
  3. Open an Office.com standard templates.

     Note – you may be offered further sub-options within a category. For example ***Invoices*** opens a second suite of options from which you might select ***Sales invoices*** and then finally the ***Basic invoice*** (see 3a, 3b and 3c below).

     To open the selected template either ***double click*** the template or click ***download*** when offered.


1. Recent template
2. My templates
3. Office.com template
3a. e.g. Invoice
Available Templates
Office.com Templates


3b. e.g. Sales Invoice
Available Templates
Home
Invoices
Office.com Templates

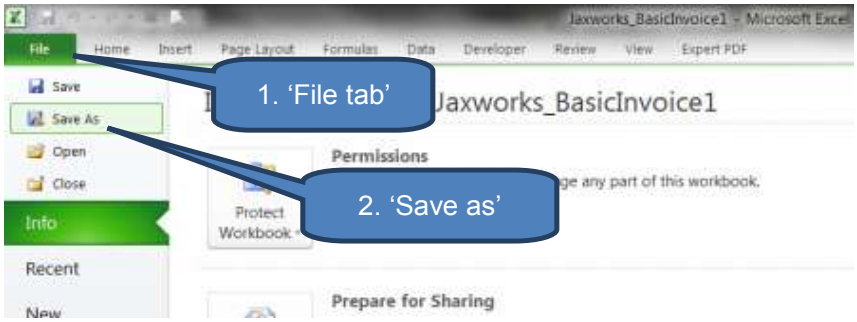

3c. e.g. Basic Invoice
Preview screen
Download
Available Templates
Basic invoice

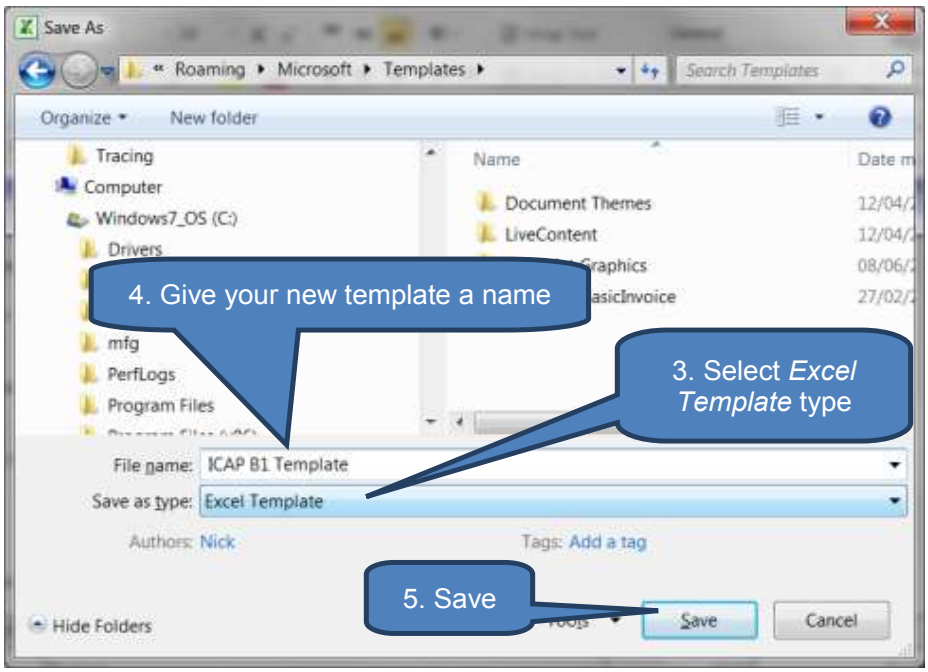
## 2.4 Create and edit your own templates

### Create your own template

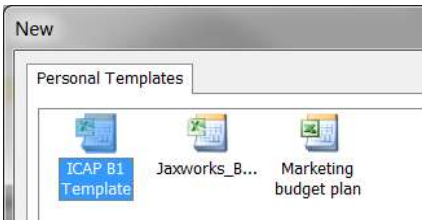
To create your own template:

- ❑ Create and design a workbook that you wish to use as a future template
- ❑ Click the ***File tab***
- ❑ Click ***Save As***
- ❑ In the '***Save as type***' drop-down select ***Excel Template***, give your new template a name, then click ***Save***



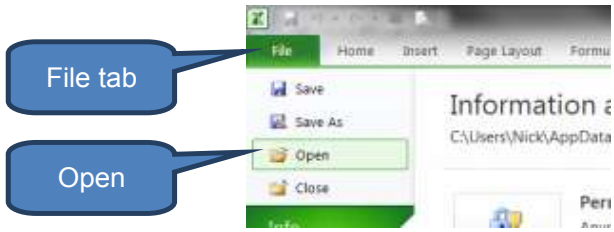

Your new template will appear now appear as an option in ***My templates*** when you next open a new file from the ***File tab***



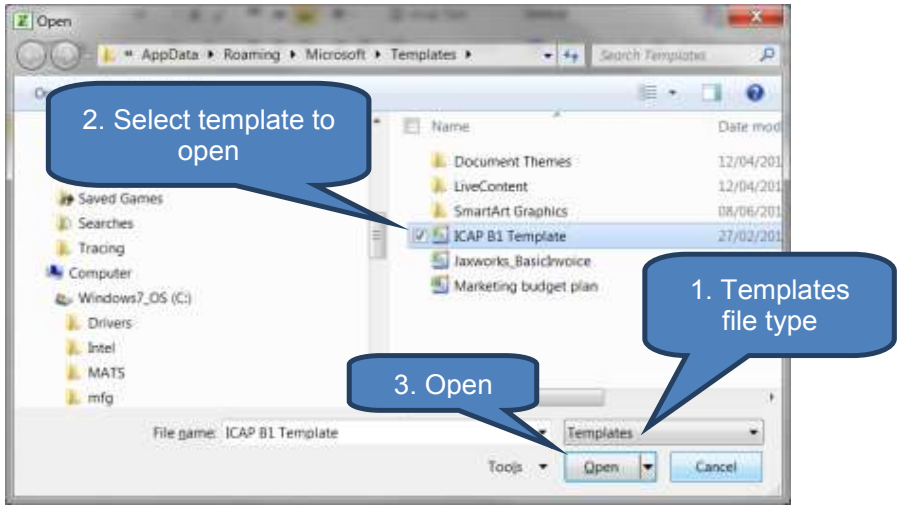
### Edit your own template

To edit a previously saved template:

- Click on the ***File tab***
- Click ***Open***




- Select '***Templates'*** file type
- Choose the saved template you wish to re-open to edit
- Click ***Open***




You can now edit your previously saved template such as adding or deleting rows, columns, and worksheets, changing the contents of cells and adjusting formatting. Once finished editing, simply re-save the file by either:

- Click ***File tab*** then ***Save***; or
- CRTL + S

# 3 THE OFFICE BACKSTAGE VIEW

## Section overview

- What is the Office Backstage view?
- What can you do with the Office Backstage view?

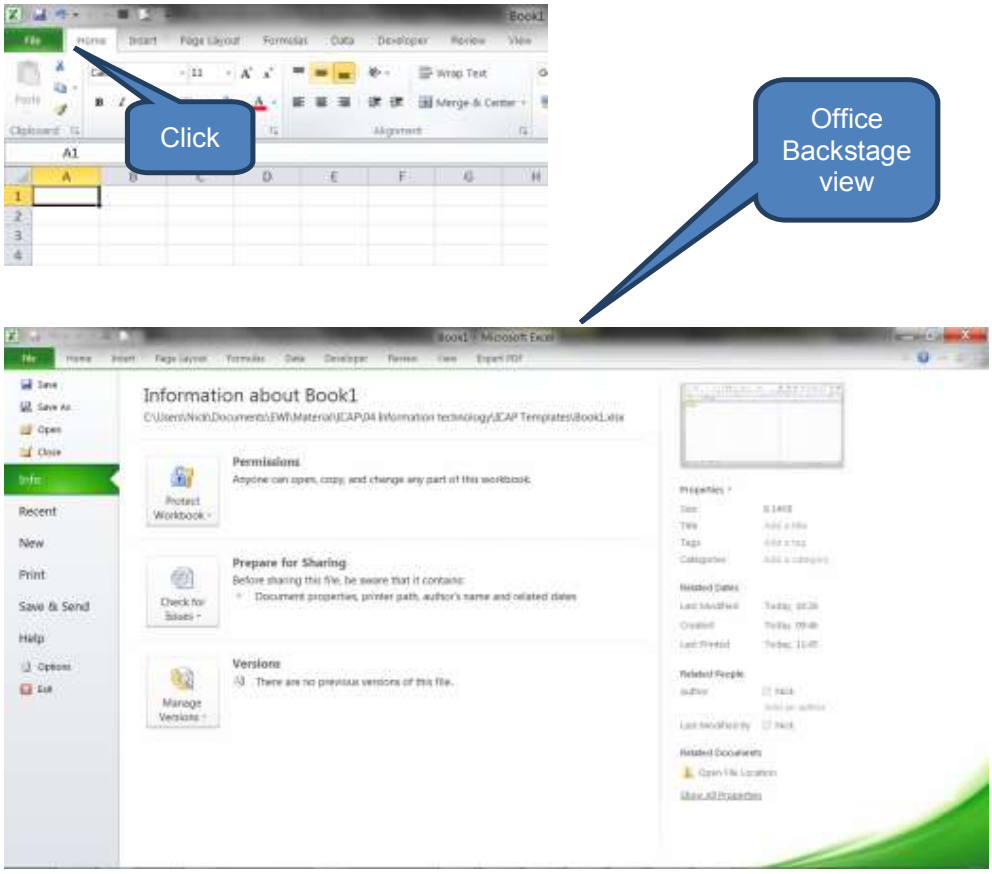
## 3.1 What is the Office Backstage view

**Definition: Office Backstage view**

**The Office Backstage view is where you manage your Office files. For example creating, saving and setting options.**

In summary, the Office Backstage view is everything that you do TO a file that you don't do IN the file.

You get to the Microsoft Office Backstage view when you click on the ***File tab*** within a Microsoft Office document. Note the consistent layout of Office Backstage whether you're using Microsoft Excel, Microsoft Word or Microsoft PowerPoint.



## 3.2 What can you do with the backstage view?

We've already seen in section 2 above how new Workbooks can be created via the Office Backstage view. The full list of options includes:

| Option | Comment |
|---|---|
| Save | Save the changes made in open Workbook |
| Save As | Save the open Workbook (with the changes, if any) as a new file by giving another filename |
| Open | Open a Workbook from an existing file |
| Close | Close the exiting Workbook. Note that if you try to close a Workbook that hasn't been saved since making modifications you will be asked whether you'd like to save or discard changes before closing |
| Info | A logistical interface allowing you to protect Workbooks (see later section), check for issues before sharing workbooks (see later section), and manage different versions of the workbook |
| Recent | Re-open a recently used existing file |
| New | Open a new Workbook – see section 2 above |
| Print | Print a part or entire Workbook – see below |
| Save & Send | Save and distribute the file either via E-mail, saving to the Web (the Cloud – see below) or to SharePoint (a network location that enables file sharing). |
| Help | Access Microsoft Office help, contact Microsoft or check for updates |
| Options | Set options applicable to the whole Workbook such as default font for new workbooks, default number of Worksheets appearing in a new Workbook and editing language |

**Definition: Cloud computing**

**Cloud computing is the use of computing resources (both software and hardware) that are delivered as a service over a network – typically the internet.**

**A recent trend has been for users to store files off-site rather than within their own computer and access their files via the internet. This has the benefit of users being able to access their files from any location (subject to an internet connection).**

# 4 PRINTING

## Section overview

- Previewing worksheets before printing
- Printing worksheets and workbooks

## 4.1 Previewing worksheets before printing

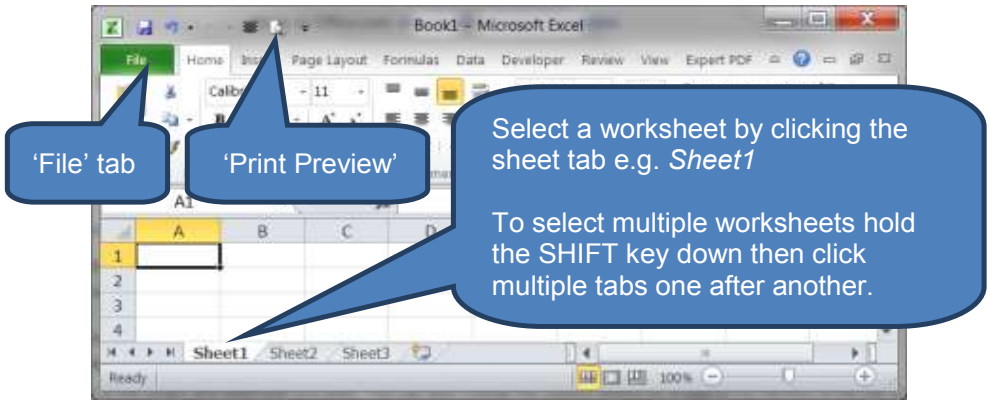
**Definition: Print preview**

***Print preview*** **allows you to see on screen exactly how the worksheet will look when you proceed with printing it to paper (or as an output file). This saves both time and money by avoiding wasteful print-runs when further amendments may still be required.**

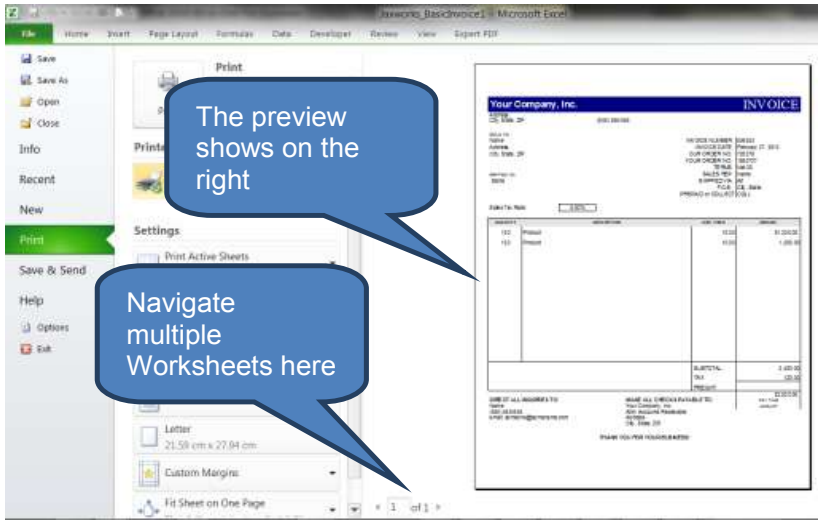
To preview a worksheet or worksheets:

- Select the worksheet or worksheets that you want to preview

  Either click on ***File tab,*** click the Print Preview icon or press CTRL + F2

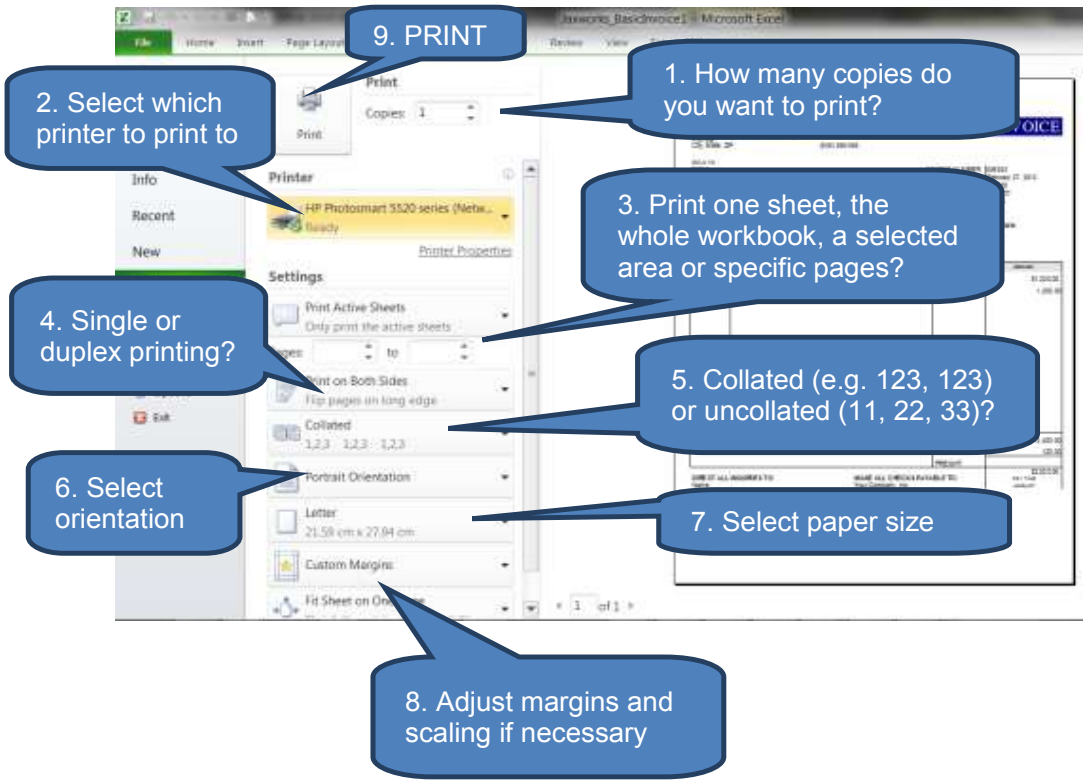



- Illustrative print preview screen



## 4.2 Printing worksheets and workbooks

Continuing the above example once you're in the print preview screen select appropriate print options, double check the preview on the right hand side, then click ***Print***.



## 5 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Open a new, blank workbook
- Base a new workbook on an existing workbook
- Base a new workbook on a template
- Create and edit your own templates
- Recognise and use some components of the Office Backstage view
- Print from Microsoft Excel

CHAPTER 5

# Formatting data and contents

## Contents

# INTRODUCTION

## Learning outcomes

LO 3.2.1 Use appropriate Excel features to create customized data formats for storing currency and phone numbers

LO 3.2.2 Modify existing data formats to enhance readability

LO 3.3.1 Use the conditional formatting feature to highlight exceptions

## Exam context

The usefulness of information can be both enhanced and eroded based on how it is presented. This chapter equips the student with the skills to be able to use a range of standard and customized formatting options in order to more effectively present information. These include, for example, currency and phone number formats.

As ever, the best way to learn is through practical experience. Therefore you will benefit from having access to Microsoft Excel in order to practice the techniques described in the study text for yourself.

By the end of this chapter students will be able to:

- Enter, format and edit data
- View, copy and move data
- Format numbers
- Apply conditional formatting
- Add comments
- Manage worksheets
- Understand how to select items and navigate around a workbook

# 1 ENTERING, FORMATTING AND EDITING DATA

**Section overview**

- Entering data
- Formatting data
- Editing data
- Viewing data
- Copying and moving data
- Formatting numbers

## 1.1 Entering data

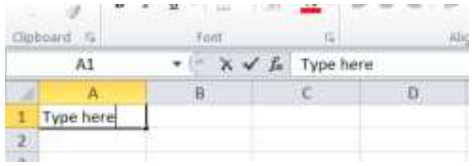
### Entering data manually in worksheet cells

There are numerous options for manually entering data into worksheet cells. Data can be entered one cell at a time, in several cells at the same time, and even in more than one worksheet at the same time.

You can enter data as numbers, dates, text or times. The data can then be formatted in a variety of ways.

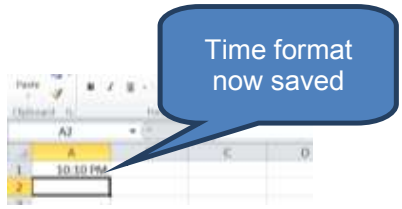
**To enter text or a number in a cell:**

- ❑ Click a cell in your worksheet
- ❑ Type the text or numbers that you want to enter, then press ***ENTER*** or ***TAB***




**To enter a date or a time in a cell:**

- ❑ Click a cell in your worksheet
- ❑ Type a time or date as follows:
  - Time: To enter a time based on the 12-hour clock enter the time (using a colon separator) followed by a space then type **a** or **p**. Without the **a** or **p** Excel defaults to ***AM***.
  - Then press ***ENTER*** or ***TAB***

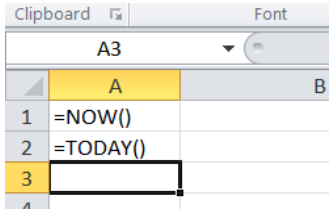



  - Date: Use a forward slash or hyphen to separate the parts of a date e.g. 1/6/2013 or 1-Jun-2013

- Then press ***ENTER*** or ***TAB***


❑ Then press ***ENTER*** or ***TAB***

To enter a time or date that stays current when you reopen a worksheet use the NOW or TODAY functions

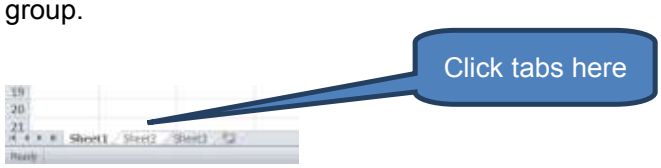



### Enter the same data on several worksheets at the same time

By making multiple worksheets active at the same time you can enter new data or change existing data on one of the worksheets and the changes will filter through and be applied to the same cells on all selected worksheets.

❑ Click the tab of the first worksheet that contains the data that you want to edit.

❑ Hold down ***CTRL*** while you click the tabs of other worksheets in which you want to replicate the data. In this way all selected worksheets will become a group.




❑ Select the cell or range in which you want to edit exiting data (or enter new data) on the active worksheet

❑ Type the new data or edit the existing data in the active cell.

❑ Press ***ENTER*** or ***TAB*** to move the selection to the next cell.

The changes are applied to all the worksheets that you selected.

TIP: Click any unselected worksheet to cancel a selection of multiple worksheets. Alternatively, right-click the tab of a selected worksheet and then click ***Ungroup Sheets***

### CTRL-D and CTRL-R short-cuts

Two highly useful short-cuts are CTRL-D and CTRL-R. These are used to copy a cell either downwards or to the right across a highlighted range.

CTRL-D

❑ Click the cell you wish to copy

- Highlight the cells directly below that you want to copy to either using ***SHIFT-DOWN arrow*** or dragging the mouse downwards.
- Then press ***CTRL-D***

CTRL-R

- Click the cell you wish to copy
- Highlight the cells directly to the right that you want to copy to either using ***SHIFT-RIGHT arrow*** or dragging the mouse downwards.
- Then press ***CTRL-R***

### Wrap text in a cell

You can display multiple lines of text inside a cell by wrapping text:

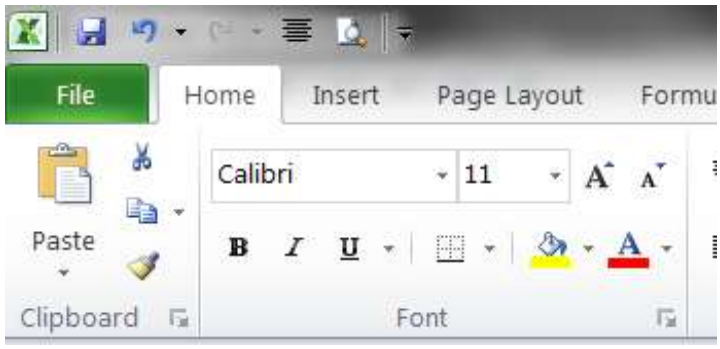
- Click the cell where you wish to wrap the text
- Click '***Wrap Text***' on the ***Home*** tab within the ***Alignment*** group

Note: this only impacts the cells that are selected.


### Change the font

- Select the cells containing the data you wish to format.

- On the ***Home*** tab select the format settings from the ***Font*** group




### Enter a series of data, such as days, months or progressive numbers

- Type the starting value in a cell, and then in the next cell type a value to establish a pattern. E.g. if you want the series 1,3,5,7,9 etc. type 1 and 3 in the first two cells.
- Select the cells that contain the starting values, and then drag the fill handle across the range you want to fill.
- Note: to fill in increasing order, drag down or right. To fill in decreasing order drag up or to the left.


### Insert a line break in a cell

You need to use a keyboard shortcut to add spacing between lines or paragraphs of text in a cell.

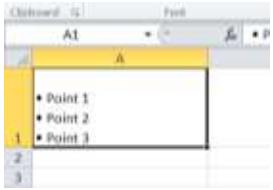
- Double-click the cell in which you want to insert one or more line breaks
- Click the exact location where you want to break the line
- Press ***ALT+ENTER*** to insert a line break


### Insert a bullet symbol into a cell

If you have a numeric keypad on your keyboard:

- Click in the cell where you want to add your bullet symbol
- Press ***ALT+7*** using the numeric keypad on your keyboard

If you don't have a numeric keypad (typical of laptops) you must enable ***Num Lock*** before entering a bullet symbol (typically using ***Fn+Num*** Lock or ***SHIFT+Num Lock)*** then disable ***Num Lock*** to continue typing. You'll also need to use ***ALT+ENTER*** as we learnt above to insert the line breaks in the cell.




### Insert cells, rows and columns

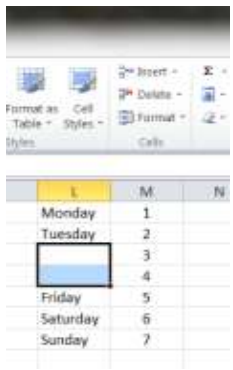
Blank cells can be inserted to the left of or above the active cell on a worksheet. When this happens, Excel shifts other cells in the same row to the right or in the same column down to accommodate the new cell(s).

There's a similar affect with inserting rows above or columns to the left of the selected column or row.

To insert blank cells:

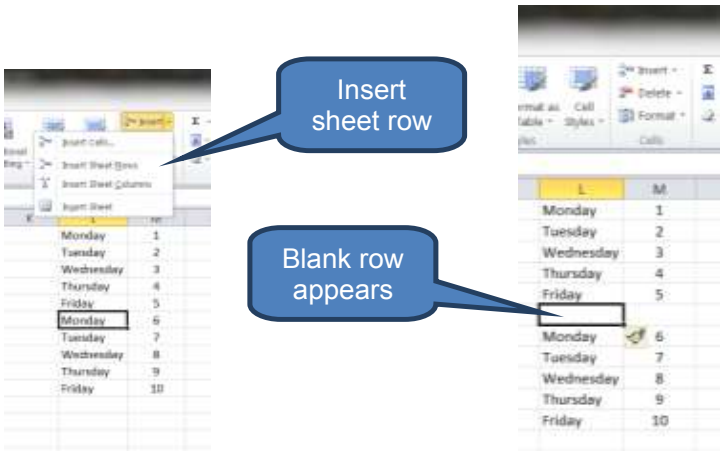
- Select the cell (or range of cells) where you want to insert new blank cells. Note – you must select the same number of cells as you want to insert.
- On the ***Home*** tab, click ***Insert Cells*** on the ***Insert*** drop-down. Alternatively right-click the selected cells and then click ***Insert***
- Click the direction in which you want to shift surrounding cells in the ***Insert*** dialog box





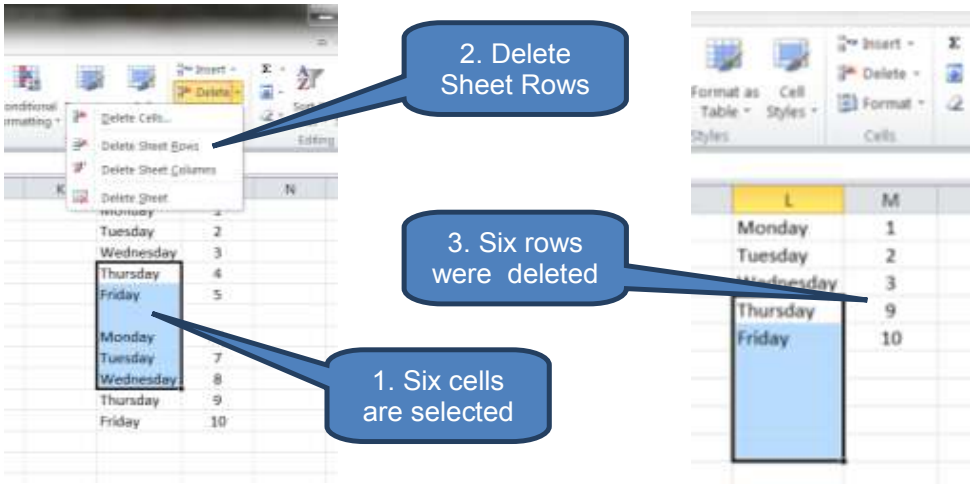

To insert blank rows or columns:

- Follow a similar procedure as when adding cells, except from the Insert drop-down select ***Insert Sheet Rows*** or ***Insert Sheet Columns*** instead.




### Deleting cells, rows and columns

The ***DELETE*** key on the keyboard only deletes the contents of the selected cells rather than the cells themselves. To delete the actual cells, rows or columns use the ***Delete*** option in the ***Cells*** group on the ***Home*** tab. Select ***Delete Cells***, ***Delete Sheet Rows*** or ***Delete Sheet Columns*** as applicable.

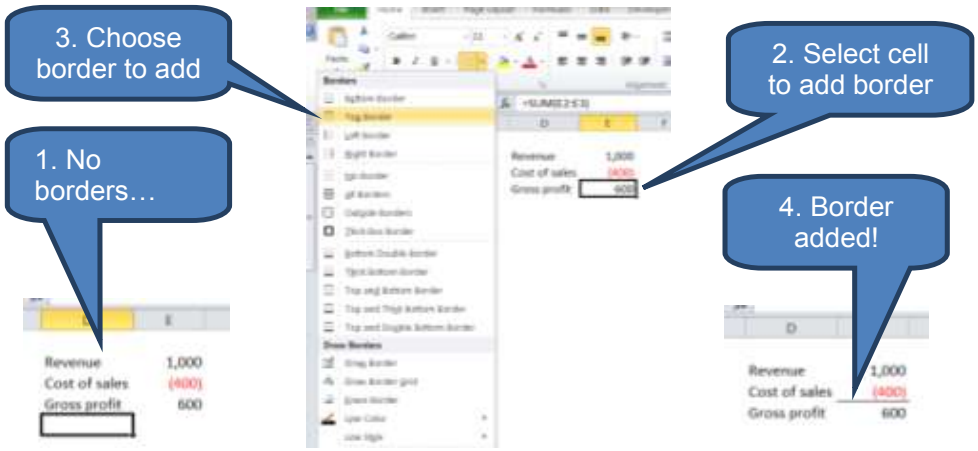



## 1.2 Formatting data

Formatting data assists in improving the readability of a worksheet. The following notes provide an introduction to the most common formatting techniques.

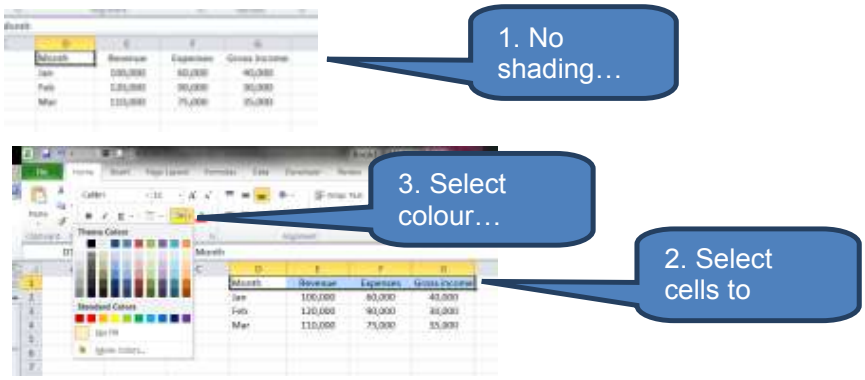
### Cell borders

- ❑ Select the range of cells to which you wish to add a border
- ❑ Click the arrow next to Borders in the Font group on the Home tab
- ❑ Click the border style that you want




## Cell colouring

- Select the cell or range of cells that you wish to colour
- Select the colour you want (theme or standard) from the ***Fill Colour*** within the ***Font*** group on the ***Home*** tab

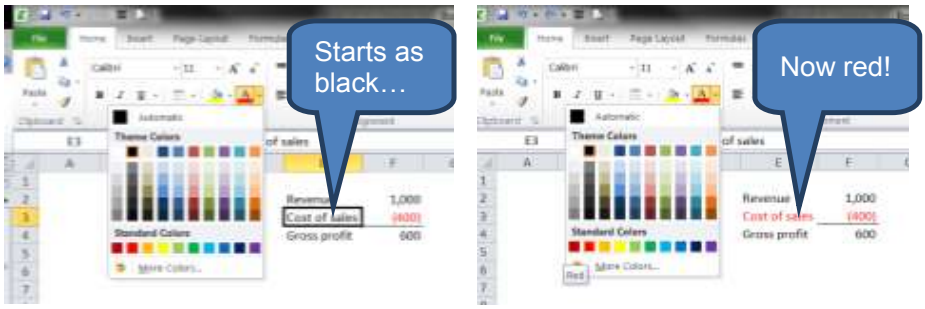




## Text colouring

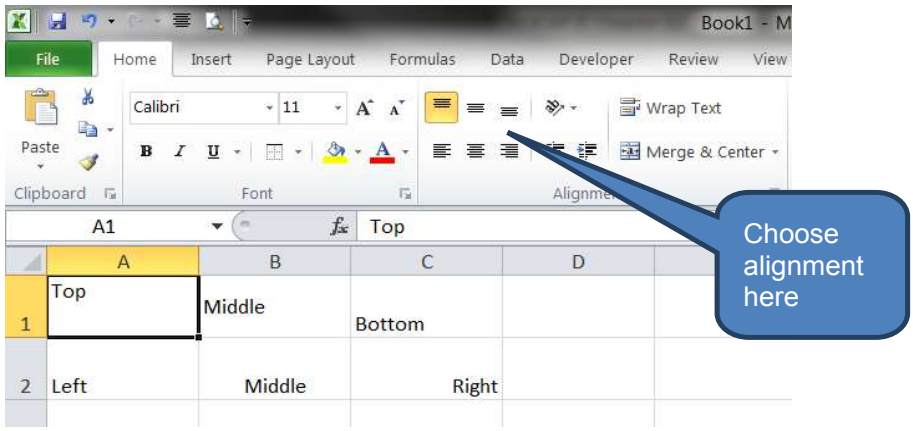
- Select the cell or range of cells containing the text you wish to format.
- Click the colour (either theme or standard) in the ***Font Colour*** drop-down in the ***Font*** group on the ***Home*** tab.

Note: you can also select one or more parts of the text within a cell to apply different text colours.




### Text alignment

- ❑ Select the cell or range of cells containing the text you wish to align.
- ❑ Click the alignment option that you want in the ***Alignment*** group on the ***Home*** tab (see illustration below for types of alignment)



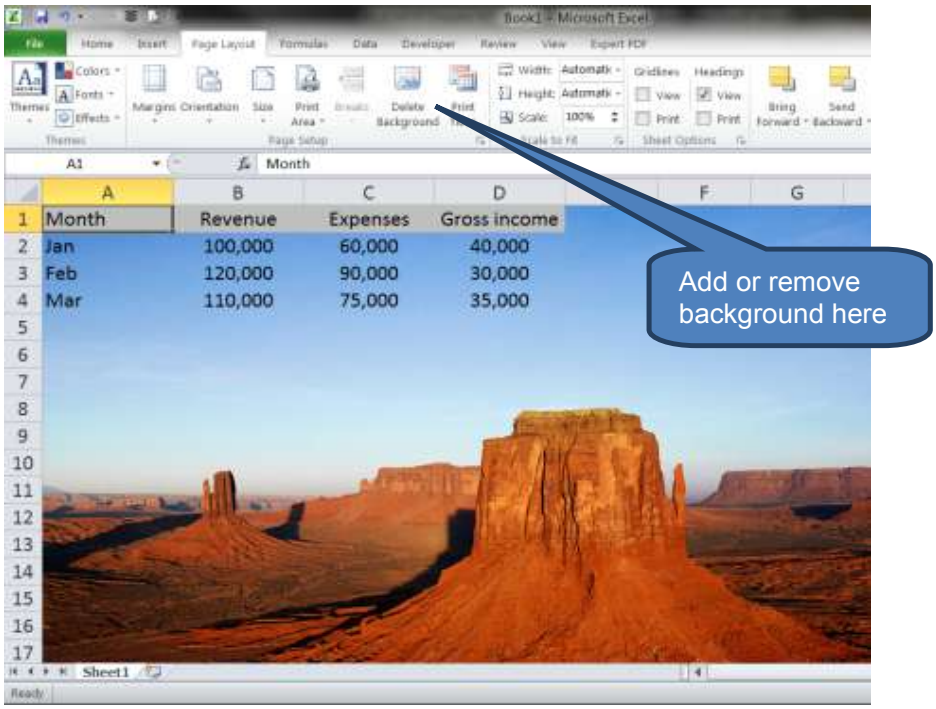

### Add or remove a sheet background

A sheet background is used for display purposes only and is not printed.

To add a sheet background:

- ❑ Click the worksheet you want to add a background to
- ❑ Click ***Background*** within the ***Page Setup*** group on the ***Page Layout*** tab
- ❑ Select your desired picture, then click ***Insert***.

To remove a sheet background click ***Delete Background*** in the ***Page Setup*** group on the ***Page Layout*** tab.

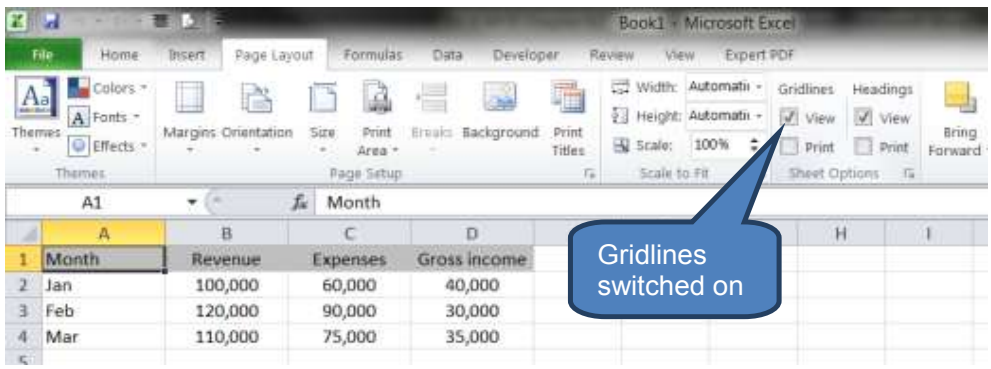


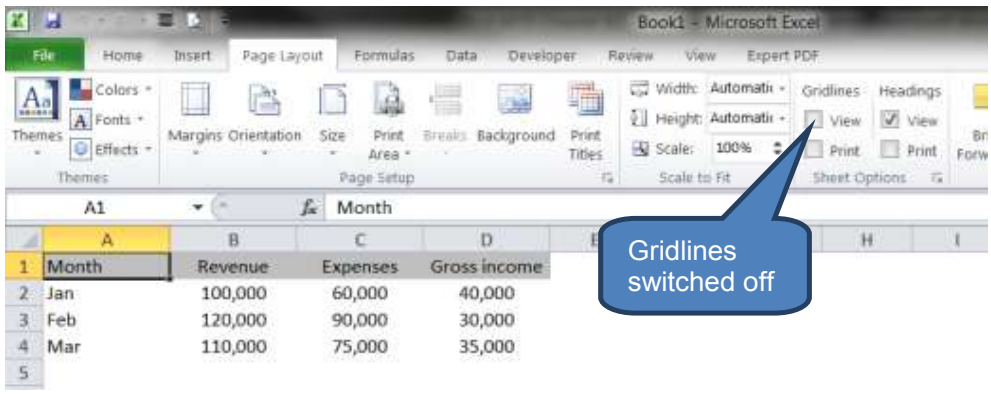

## Gridlines

Gridlines are the faint lines that appear around cells in your worksheet to help you manage your work by distinguishing cells.

Gridlines can be removed or reinstated by ticking or un-ticking the ***View*** option under ***Gridlines*** in the ***Sheet Options*** group on the ***Page Layout*** tab.

Note that by default gridlines do NOT appear when printing. To show (or subsequently remove) gridlines on printed output tick or un-tick the ***Print*** option under ***Gridlines*** on the ***Page Layout*** tab.






### Underlining

The quickest method is to use a keyboard shortcut. Highlight either the relevant text within a cell, a cell or selection of cells, then press CTRL+U. To remove the underlining, press CTRL+U again.

### Bold text

The quickest method is to use a keyboard shortcut. Highlight either the relevant text within a cell, a cell or selection of cells, then press CTRL+B. To remove the bold effect, press CTRL+B again.

### Indentation and orientation

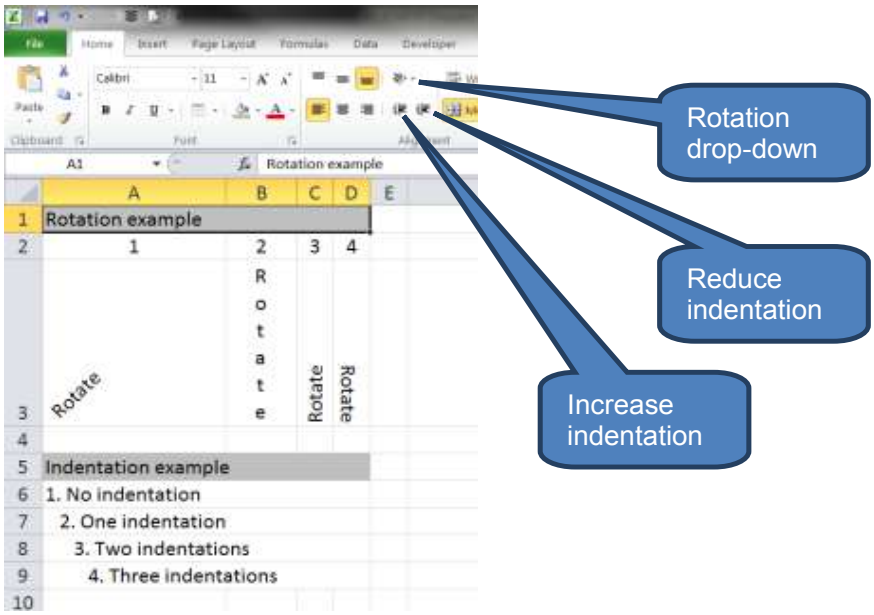
We've already seen how text can be left/center/right and top/middle/bottom aligned. We've also seen how text can be wrapped within a cell.

Other alignment options include indentation and orientation.

- Increase or decrease indentation using the ***indentation buttons*** within the ***Alignment*** group on the ***Home*** tab.
- Change rotation by selecting an option from the ***Orientation*** drop-down in the ***Alignment*** group on the ***Home*** tab.

The below example incorporates the following rotations:

- 1. Angle Counterclockwise
- 2. Vertical text
- 3. Rotate text up
- 4. Rotate text down



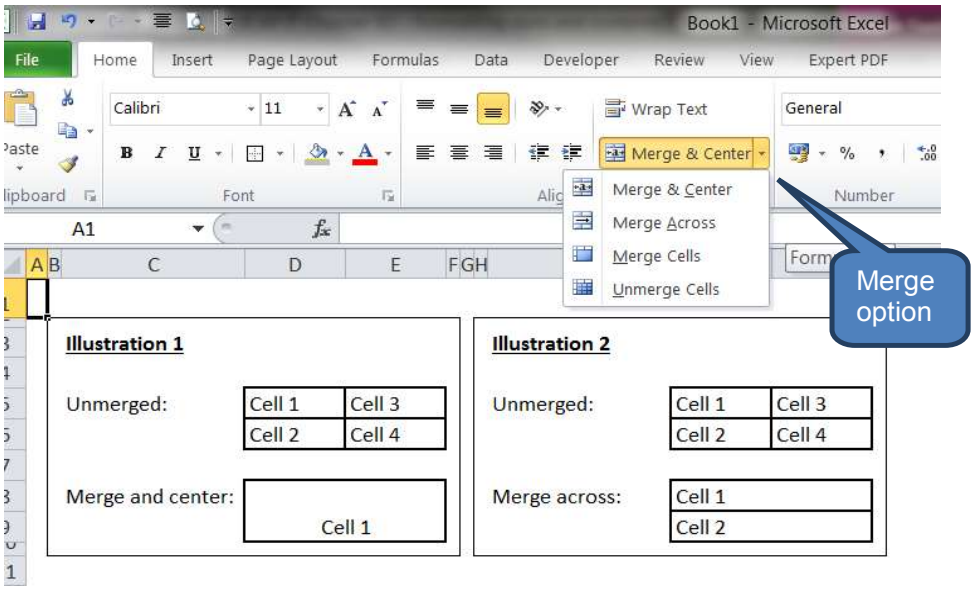

## 1.3 Editing data

### Merge cells

A highly useful feature used by accountants is the merge facility which enables two or more neighbouring cells to be merged into a single larger cell. There are a number of options, the two most common being:

- Merge and center (illustration 1 below) – Merges all selected cells into a single cell retaining only the contents of the upper-left most cell. The result is center/bottom aligned.

Merge across (illustration 2 below) – Merges selected cells on a line by line basis, again retaining only the contents of the left-most cells. The result is left aligned.



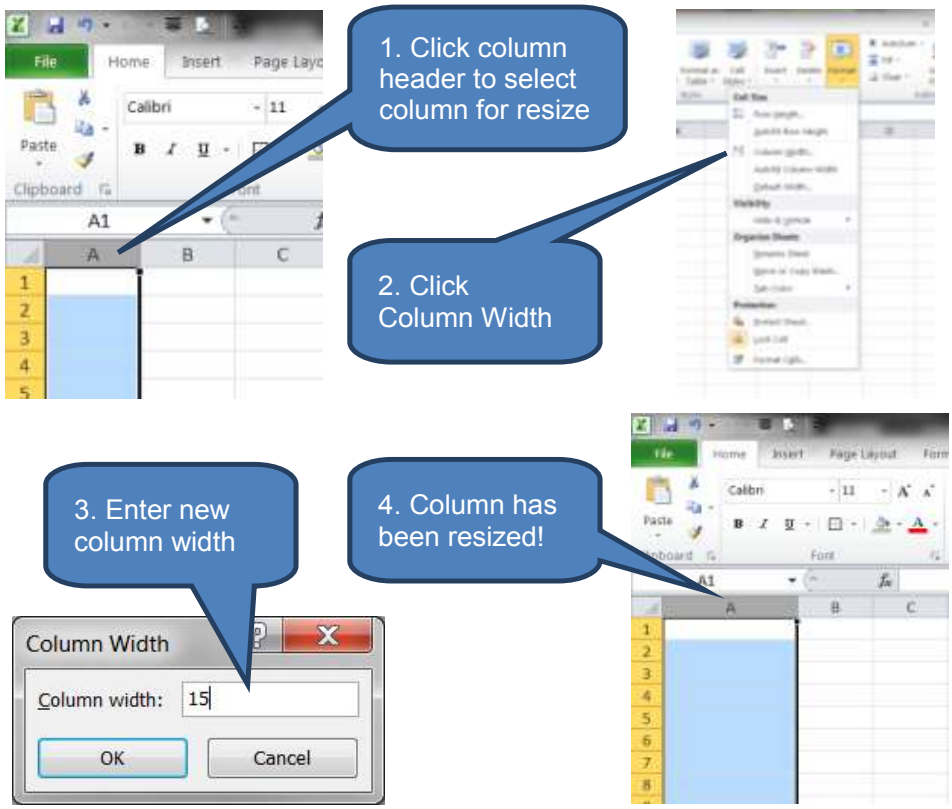
### Change the width of a column

When a cell contains a number or a date and the width of its column cannot display all the characters that its format requires you will see #### displayed. You must increase the width of the column to see all the characters.

Column width can be specified between 0 and 255 (which represents how many 'standard font' characters that can be displayed – the default is 8.43 characters). Column width of zero will hide the column.

To set a column (or columns) to a specific width:

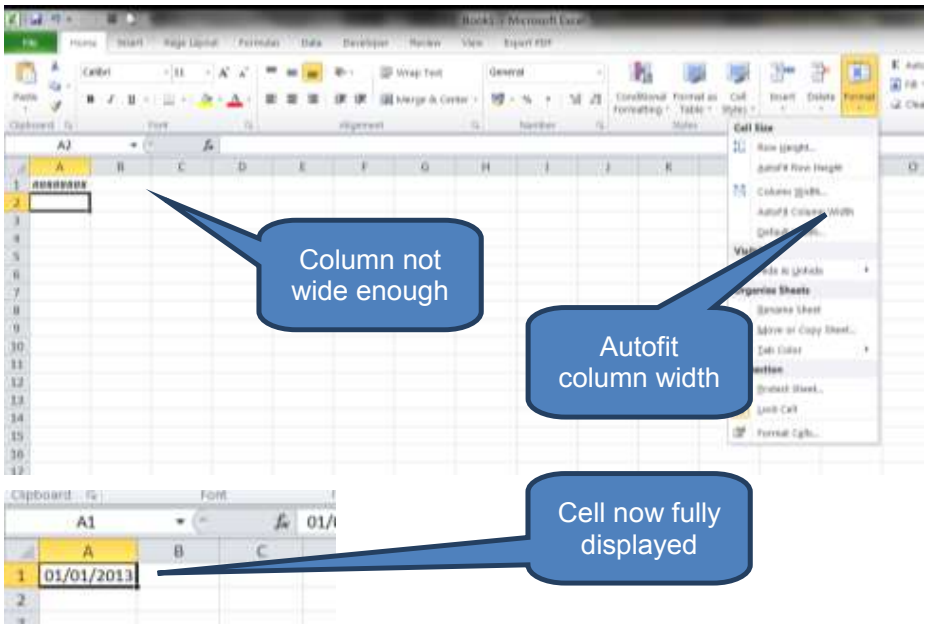
- Click the column(s) to be re-sized
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab
- Click ***Column Width*** under ***Cell Size***
- Type the value you want in ***Colum Width***
- ***Click OK***



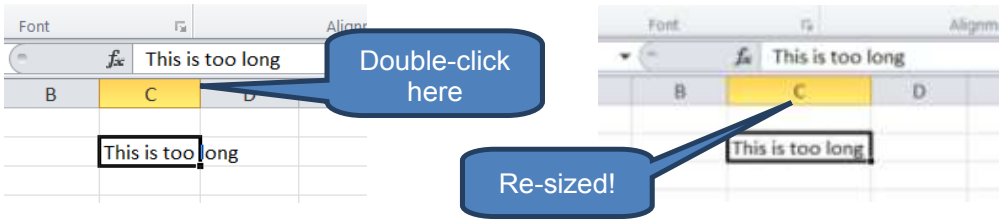

An alternate technique is to use the Autofit facility as follows.

- Click the cell that is not displaying fully

  Select ***Autofit Column Width*** from the ***Format*** drop-down on the ***Home*** tab




Tip: A really useful short-cut for auto-fitting a column is to double click the right-hand boundary in the header row of the column that needs auto-fitting.



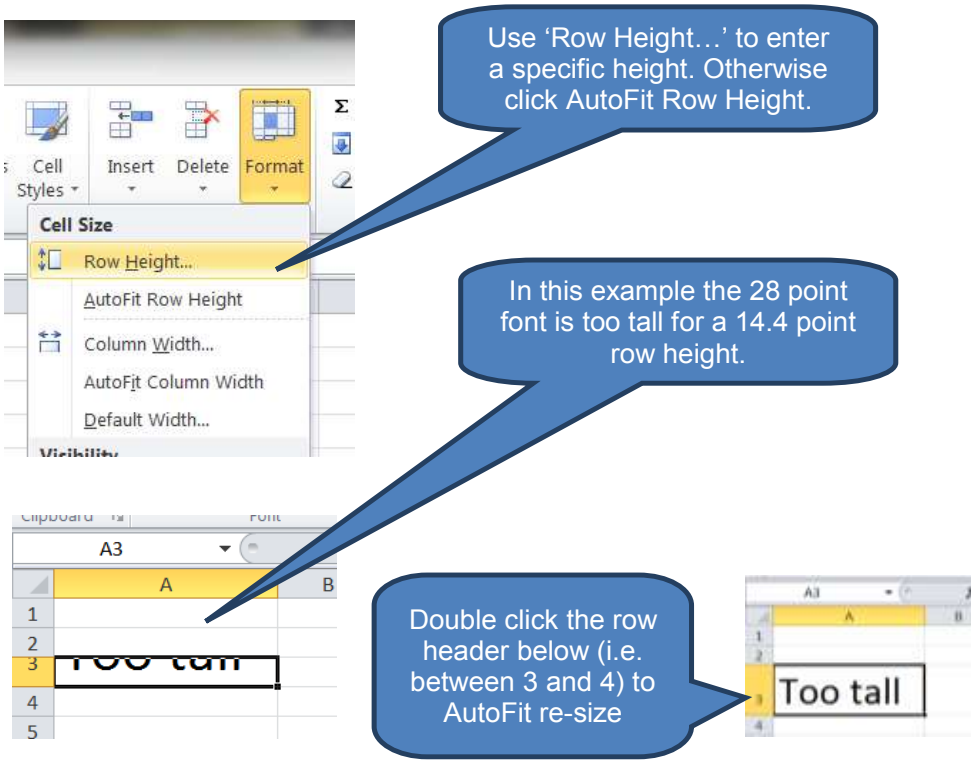

### Change the height of a row

Row height can be set between 0 and 409 (representing height measurement in points – default is 12.75 points). A row height of zero will hide the row.

The process for adjusting row heights is almost identical to the process for adjusting column widths. The same two methods are available – set a specific row height, or auto-fit.

To set a row (or rows) to a specific height:

- Click the row(s) to be re-sized
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab
- Click ***Row Height*** under ***Cell Size***
- Type the value you want in ***Row Height***
- ***Click OK***




## Insert a symbol

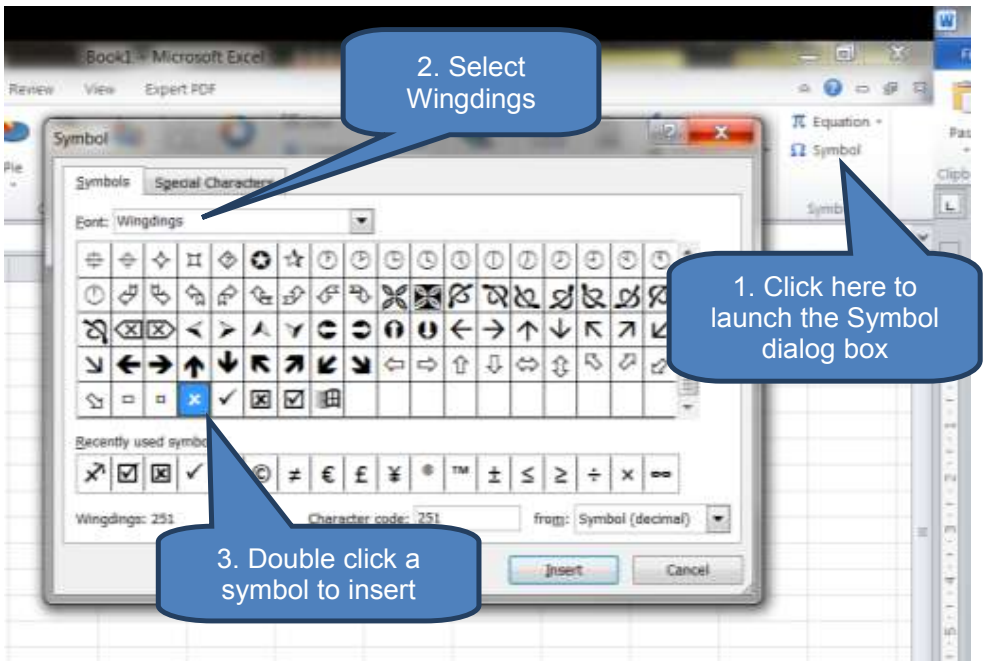
**Definition: Check mark symbol**

**Symbols are useful graphics that can be inserted into a Workbook. Examples include:**

✖ ✓ ☒ ☑

To enter a symbol:

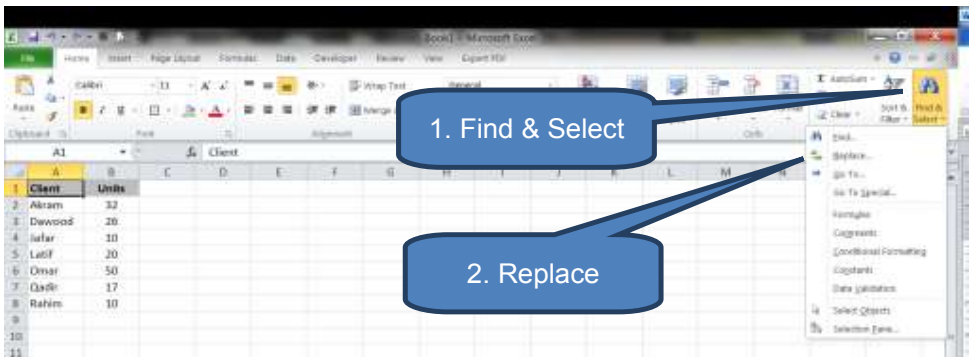
- Click ***Symbol*** in the ***Symbols*** group on the ***Insert*** tab
- Click ***Wingdings*** in the Font box on the ***Symbols*** tab of the ***Symbol*** dialog box
- Scroll the list to find the required symbol
- ***Double-click*** the symbol that you want to inserted

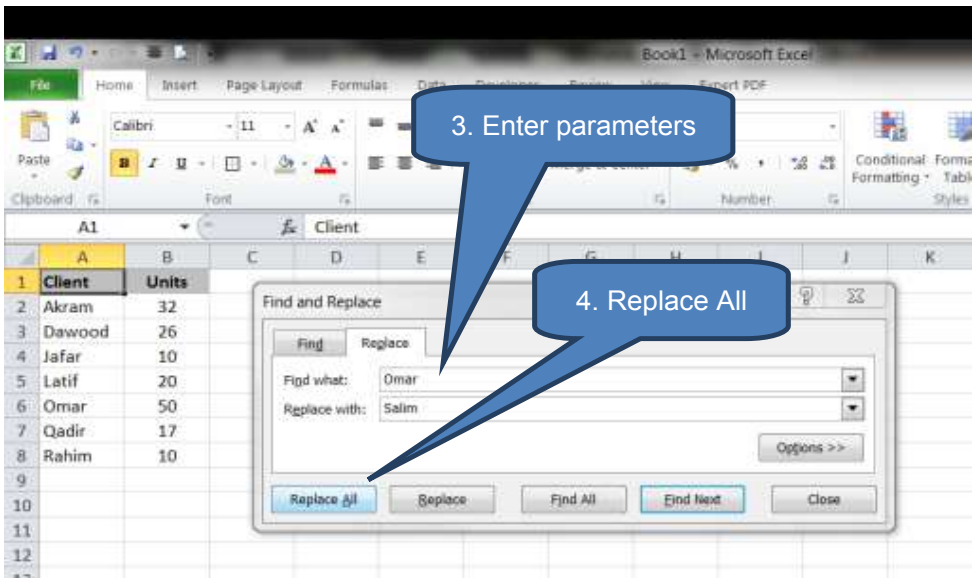


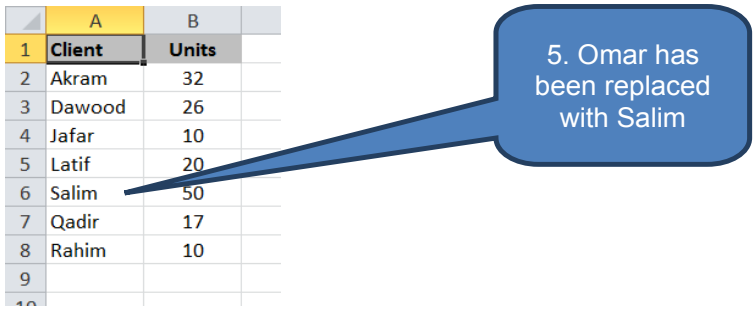

### Find or replace text and numbers on a worksheet

Find and replace is useful for searching for (and replacing) particular numbers or text strings in a workbook.

- Click any cell in the worksheet you wish to search
- Click ***Find & Select*** in the ***Editing*** group on the ***Home*** tab
- To simply find text or numbers, click ***Find***. If you wish to find and replace text or numbers, click ***Replace***
- Enter the search parameters in the ***Dialog box*** then click one of the command buttons such as ***Replace all***.






| | A | B |
|---|---|---|
| 1 | Client | Units |
| 2 | Akram | 32 |
| 3 | Dawood | 26 |
| 4 | Jafar | 10 |
| 5 | Latif | 20 |
| 6 | Salim | 50 |
| 7 | Qadir | 17 |
| 8 | Rahim | 10 |
| 9 | | |

## 1.4 Viewing data

### Show or hide columns and rows

A row or column can be hidden either by changing its height or width to zero or by using the Hide command.

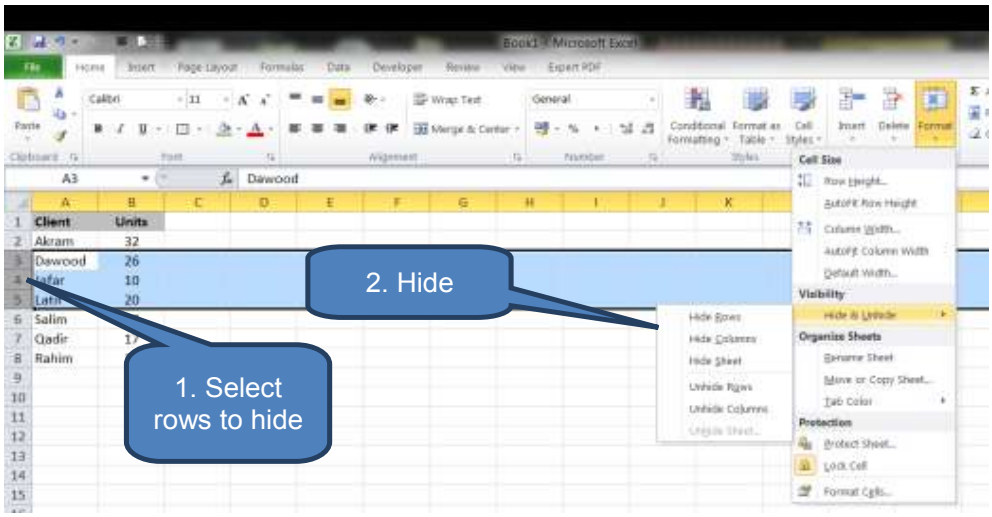
To hide a row or column:

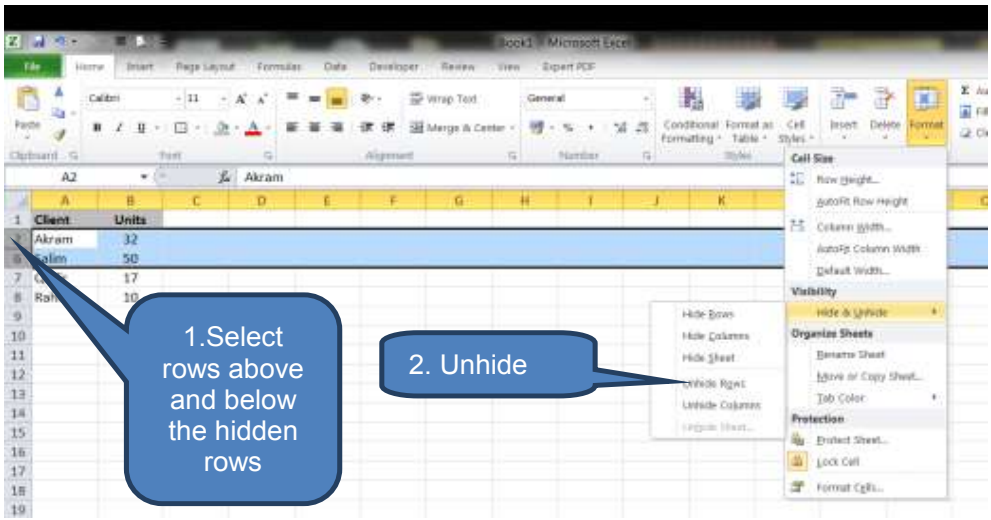
- Select the rows or columns that you would like to hide
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab
- Click ***Hide Rows*** or ***Hide Columns*** under ***Hide & Unhide*** within ***Visibility***
- (Alternatively change ***Row Height*** or ***Column Width*** to zero under ***Cell Size***)

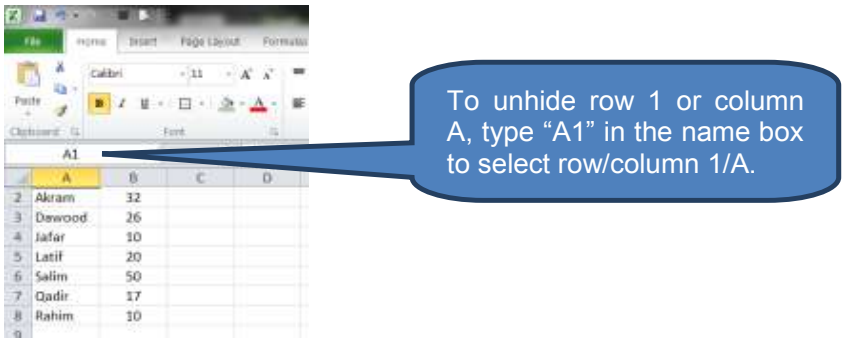
To unhide a row or column:

- To unhide a hidden row(s), select the rows above and below the hidden row(s). Similarly, to unhide a hidden column(s), select the column(s) to the left and right of the hidden column(s).
- Note: If you need to unhide column A or Row 1 you need to type “A1” in the Name Box next to the formula bar to select column A/Row 1
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab

- Click ***Unhide Rows*** or ***Unhide Columns*** under ***Hide & Unhide*** within ***Visibility***
- (Alternatively change ***Row Height*** or ***Column Width*** to a number greater than zero under ***Cell Size***)



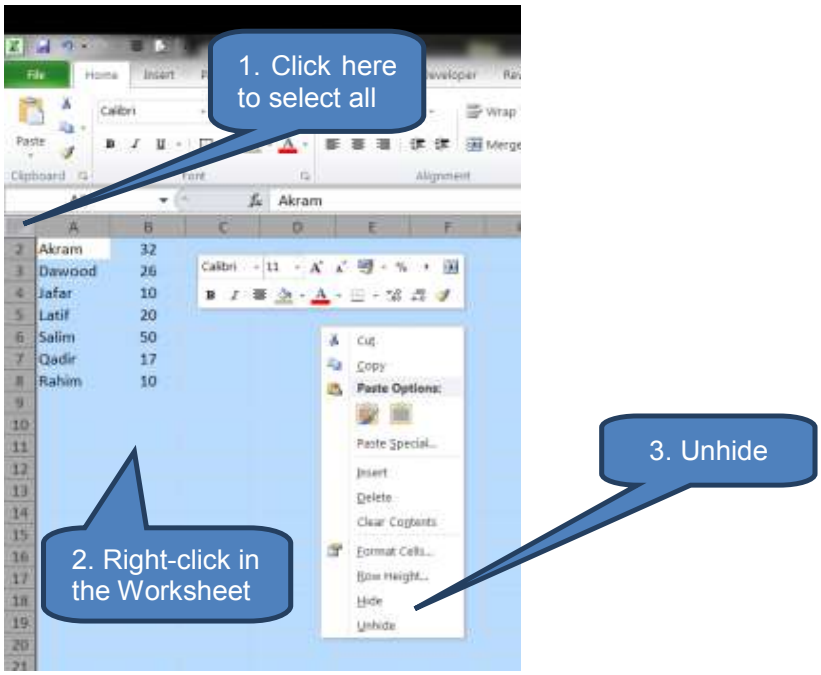



A quicker way to hide/unhide is to right-click when columns either side of the hidden column (or rows either side of the hidden row) are highlighted. The right-click offers the option to hide/unhide as applicable.

To display all hidden rows and columns at the same time use the ***Select All*** button:

- Click ***Select All***
- ***Right-click*** in the Worksheet
- Click ***Unhide***



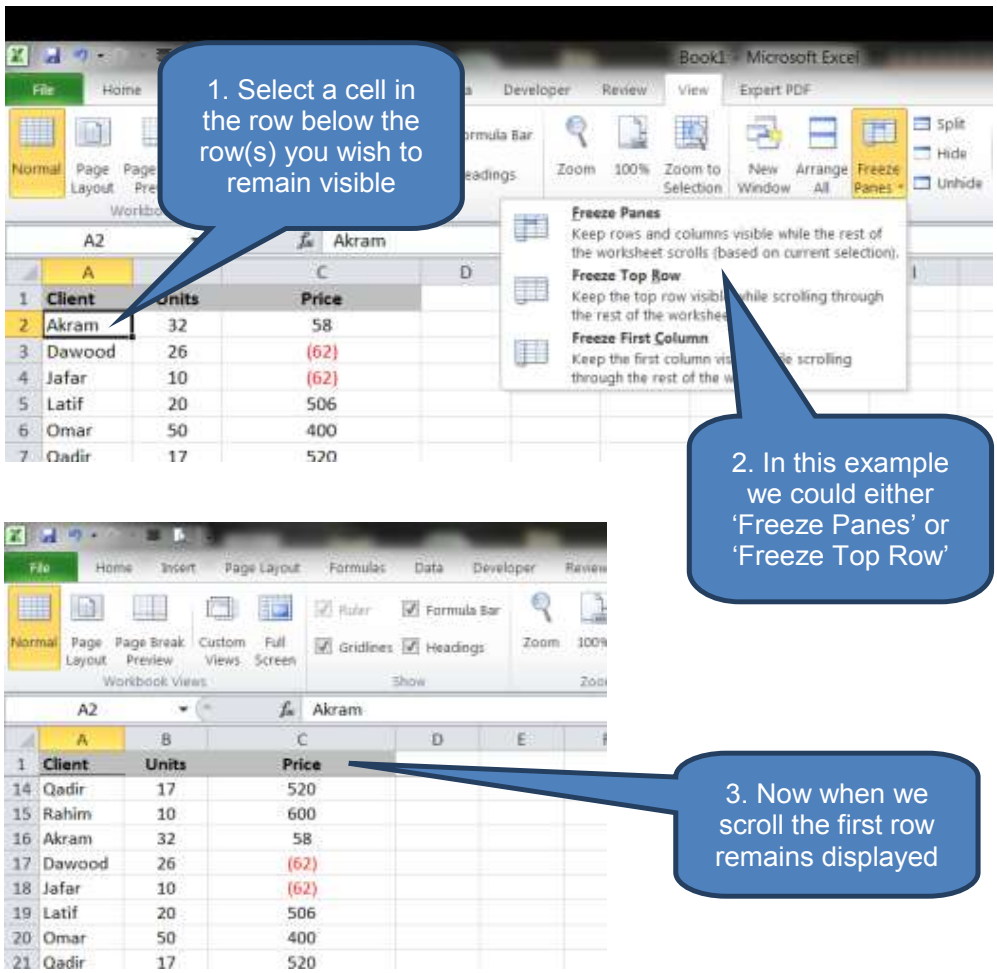

### Freeze panes (lock rows / columns)

Freezing panes or splitting panes enables you to keep an area of a worksheet visible whilst you scroll to another area of the worksheet. The difference between freezing and splitting is that with freezing you continue to view just one view of the worksheet, whereas with splitting panes the screen effectively becomes either two or four views of the underlying worksheet.

Note that when freezing panes you can only freeze the upper most rows and left most columns starting from row 1 and column A respectively. It is not possible for example to freeze say column K or Row 7 only.

To freeze panes:

- To lock rows, select the row below the row you wish to remain visible. To lock columns select the column to the right of the column you wish to remain visible. To lock rows and columns simultaneously, click the cell below and to the right of the rows and columns you wish to remain visible.
- Click ***Freeze Panes*** within the ***Window*** group on the ***View*** tab
- Select an appropriate action. E.g. ***Freeze First Column***, ***Freeze Top Row*** or ***Freeze Panes***.




To un-freeze panes:

- Click ***Freeze Panes*** within the ***Window*** group on the ***View*** tab
- Select ***Unfreeze Panes***

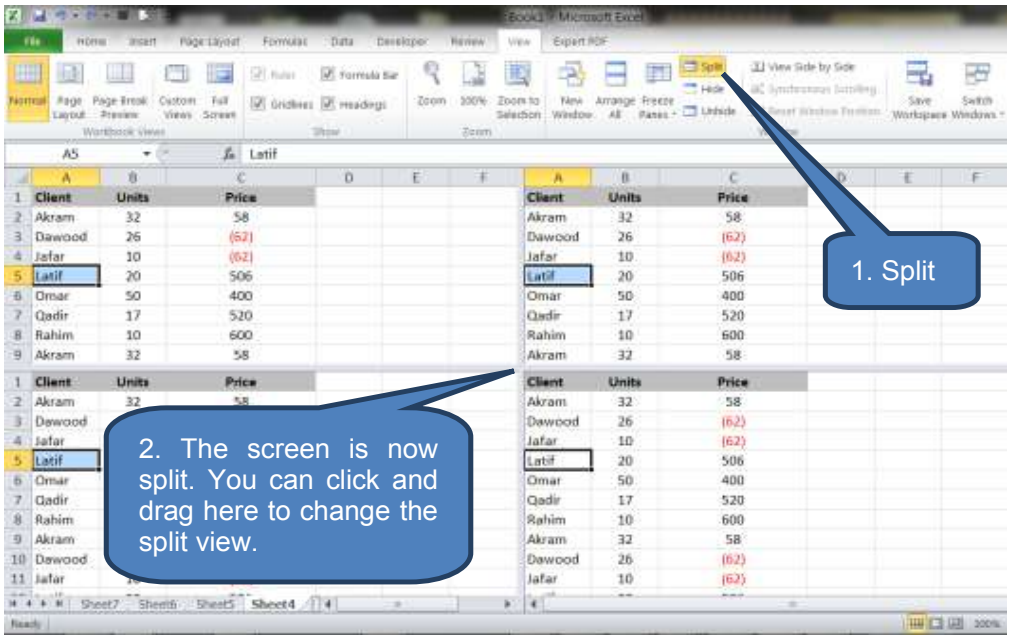
### Splitting panes

To split panes:

- Click ***Split*** in the ***Window*** group on the ***View*** tab
- The split windows will appear differently depending on which was the active (selected) cell at the time of splitting:

| Active cell | Comment |
|---|---|
| Somewhere in column A | Split into two horizontal panes |
| Somewhere in row 1 | Split into two vertical panes |
| Neither in column A nor row 1 | Split into four panes |

- Once split you can change where the split occurs by clicking on the split line with your mouse then dragging it in any direction.




To remove a split:

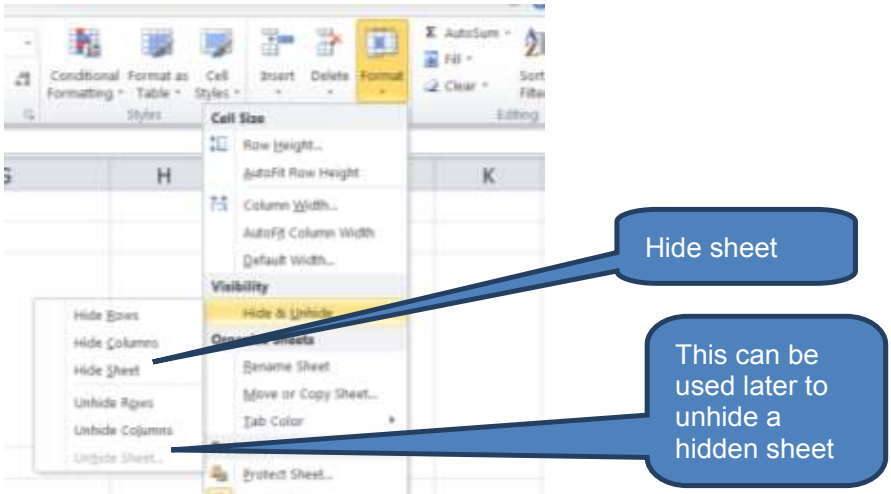
- Re-click ***Split*** in the ***Window*** group on the ***View*** tab

### Hide worksheets

You may wish to hide worksheets for example to maintain confidentiality in the workplace, or to help manage large workbooks. Note that the hide feature never closes or erases a worksheet, it just disappears from the monitor screen but remains active in memory.

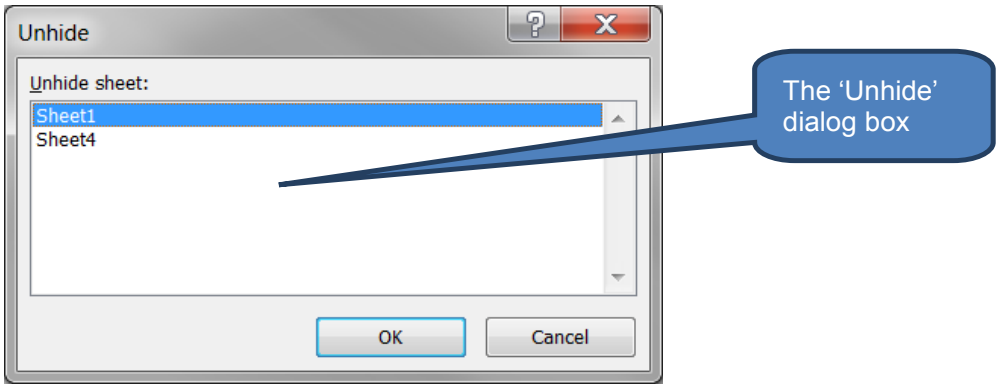
To hide a worksheet:

- Select the worksheet(s) you wish to hide
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab
- Click ***Hide Sheet*** under ***Hide & Unhide*** within ***Visibility***



To unhide a hidden worksheet:

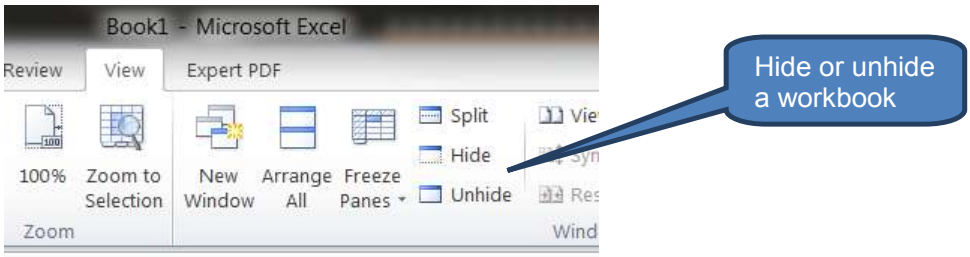
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab
- Click ***Unhide Sheet*** under ***Hide & Unhide*** within ***Visibility***
- Double click the hidden sheet you wish to display in the ***Unhide*** dialog box (note: you can only unhide one sheet at a time)

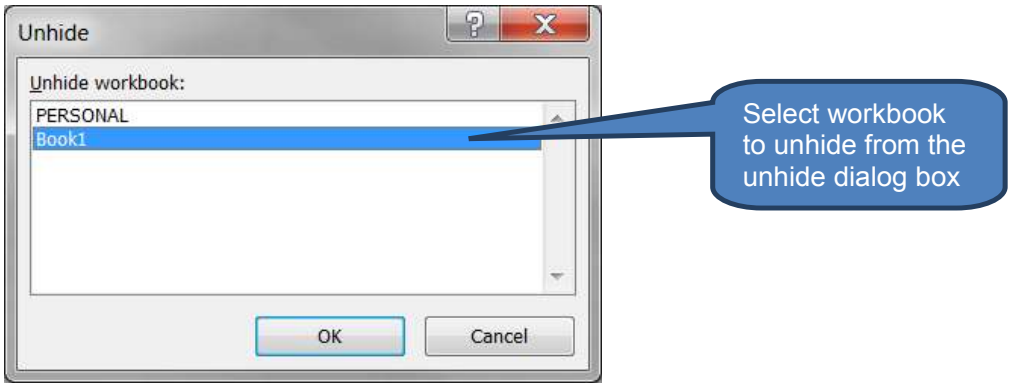



### Hide workbooks

When working with multiple workbooks simultaneously (e.g. with linked data) you may not need them all visible. To better manage your workspace you can hide an entire workbook.

- Click ***Hide*** in the ***Window*** group on the ***View*** tab. This will hide the current workbook without actually closing it.
- To subsequently unhide a hidden workbook click ***Unhide*** in the ***Window*** group on the ***View*** tab then select the workbook to unhide from the unhide dialog box.





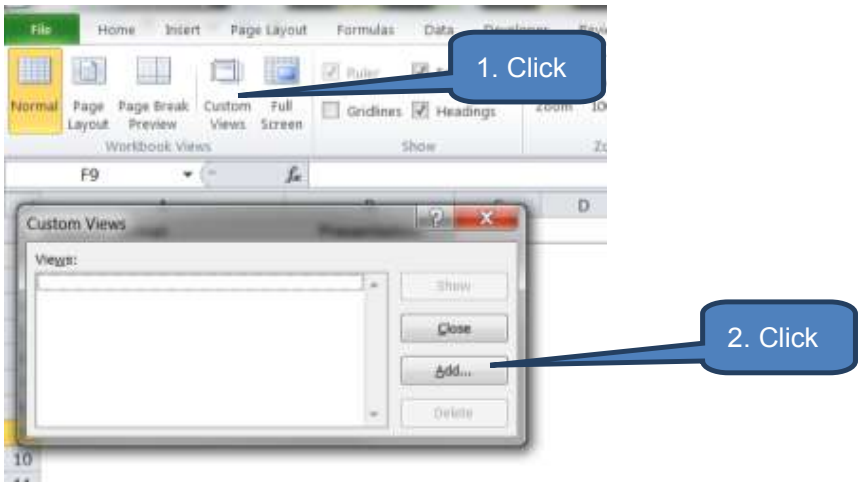

### Custom views

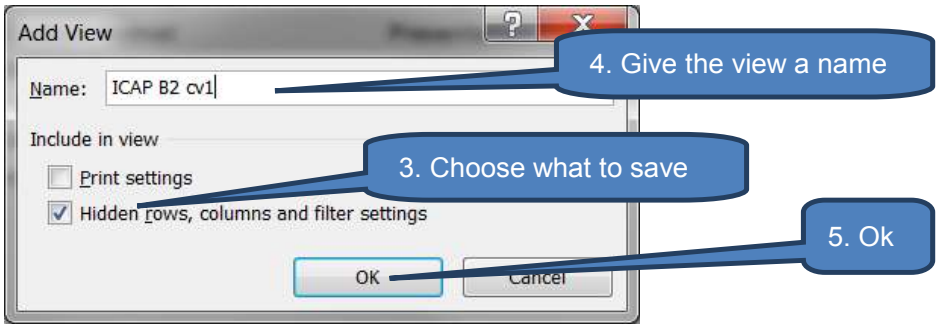
You can save specific display settings such as hidden columns, filter settings and row heights in a custom view. These can be later re-applied to quickly re-instate the same settings to that worksheet. You can also create a library of multiple custom views but note that you can only apply custom views to the same worksheets they were created in. Old custom views can be deleted.

To create a custom view:

- Arrange display and print settings as you wish them to be saved on a particular workbook
- Click ***Custom Views*** in the ***Workbook Views*** group on the ***View*** tab
- Click ***Add***
- Select the check boxes of the settings you want to include.
- Type a name for the view in the ***Name*** box then click ***OK***

Note that Custom Views isn't available for workbooks that contain an Excel table anywhere in the workbook (even if in a different worksheet!).

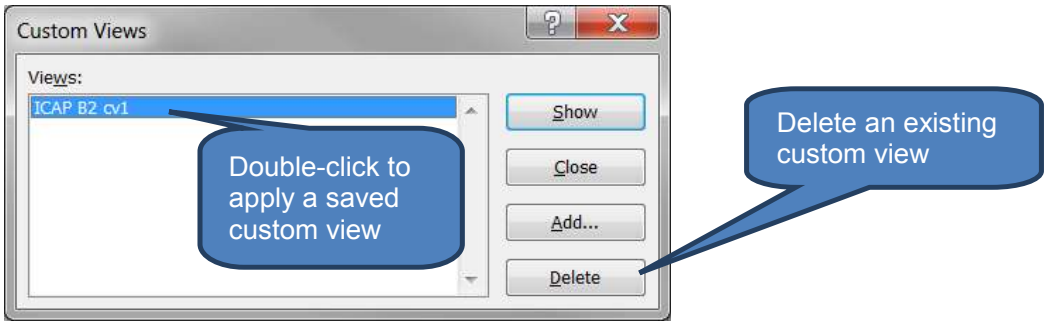





To apply a custom view:

- Click ***Custom Views*** in the ***Workbook Views*** group on the ***View*** tab
- Double-click the saved view you wish to apply

To delete a custom view click ***Delete*** from the ***Custom Views*** dialog box.




## 1.5 Copying and moving data

### Copy and move cells

The commands for moving and copying cells and their contents are ***Cut***, ***Copy*** and ***Paste***. A number of options are available for copying and moving including copying/moving entire cells and their contents or just certain contents or attributes.

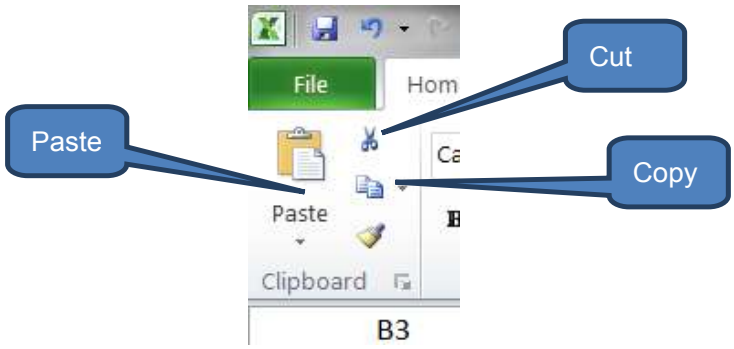
To move or copy the entire cell including formulas and results, comment and cell formats:

- Select the cell(s) you want to copy/move
- From the ***Clipboard*** group in the ***Home*** tab:
  - Click ***Cut*** to move cells (keyboard shortcut = CTRL+X)
  - Click ***Copy*** to copy cells (keyboard shortcut = CTRL+C)
- Select the upper-left cell of the destination paste area
- Click ***Paste*** in the ***Clipboard*** group on the ***Home*** tab

You can also insert the moved or copied cells between existing cells. Cut or copy as above, then:

- Right-click the upper-left cell of the destination paste area

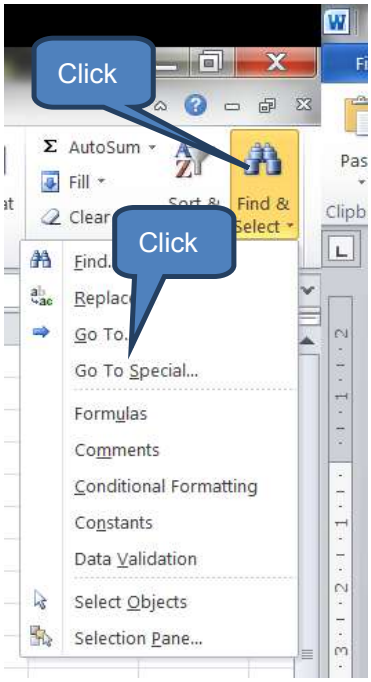
- Click ***Insert Cut Cells*** or ***Insert Copied Cells*** from the shortcut menu

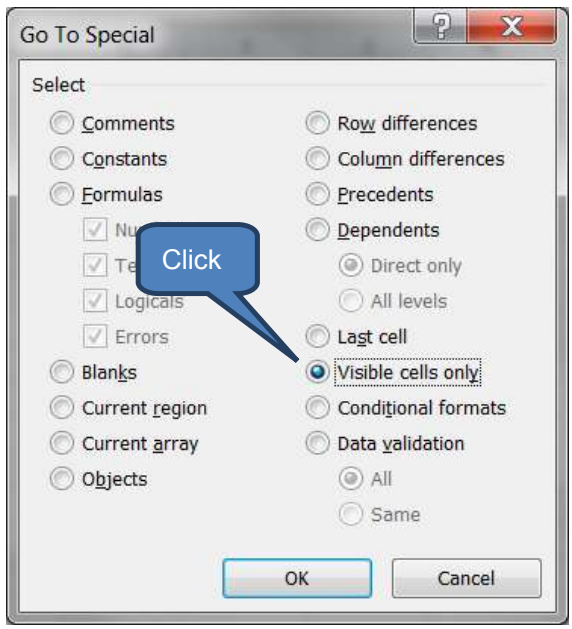



When filters are applied or some columns or rows are hidden you have the choice of copying all cells (as described above) or just the visible cells.

To copy just the visible cells:

- Select the visible cells you want to copy
- Click ***Go To Special*** within ***Find & Select*** in the ***Editing*** group on the ***Home*** tab
- Click ***Visible cells only*** within ***Select***. Then ***OK***
- Continue as if this was a normal copy/paste. i.e.
  - Click ***Copy*** in the ***Clipboard*** group on the ***Home*** tab (or use CTRL+C)
  - Select upper-left cell of the destination paste area
  - Click ***Paste*** in the ***Clipboard*** group on the ***Home*** tab

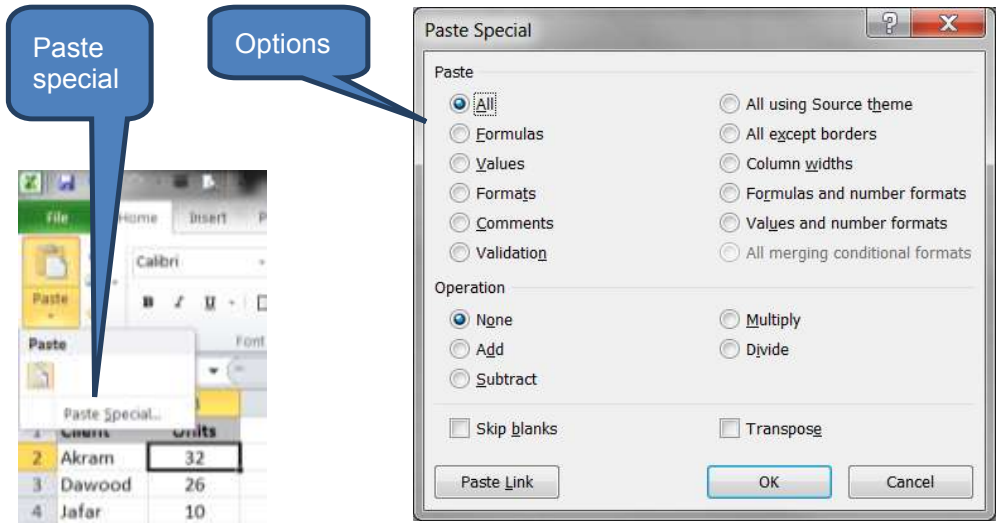


You can also move or copy part of the contents of a cell rather than the whole cell. Instead of single-clicking a cell you now need to:

- Double-click the cell that contains the data you wish to move or copy
- Use the mouse to select the characters you want to move or copy within the cell
- Continue as described earlier using the cut/copy/paste icons

Another variation rather than pasting the full contents and all other settings of a copied cell(s) is to paste certain attributes (referred to as '***Paste Special***') – values, formatting or formulas for example. Note that when pasting formulas that contain relative cell references, Excel will adjust the references in the copied formula.




The most common Paste Special settings typically used by accountants include Formulas, Values and formats.

Another useful setting is 'Transpose'.

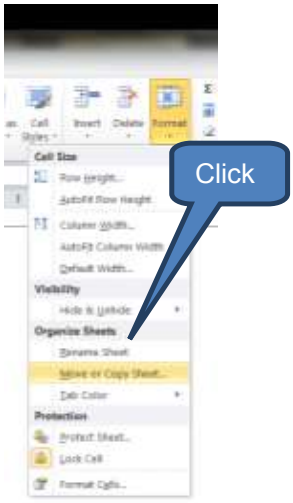
**Illustration: Paste special - Transpose**

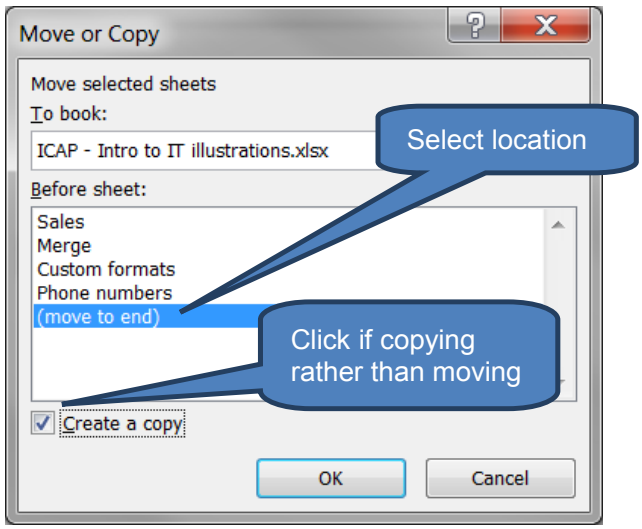
- **If you copy cells A1:A4 and paste special with the Transpose setting to destination cell C1, the paste will populate cells C1:F1 i.e. Excel has transposed four vertical cells into four horizontal cells. Without Transpose, the paste would have populated cells C1:C4.**
- **The opposite occurs when you paste-special-transpose from horizontal cells. The pasted cells will populate vertically. E.g. Copy cells C1:F1 to cell C3 with transpose will populate C3:C6 (as opposed to C3-F3 without transpose selected).**

### Move or copy a worksheet

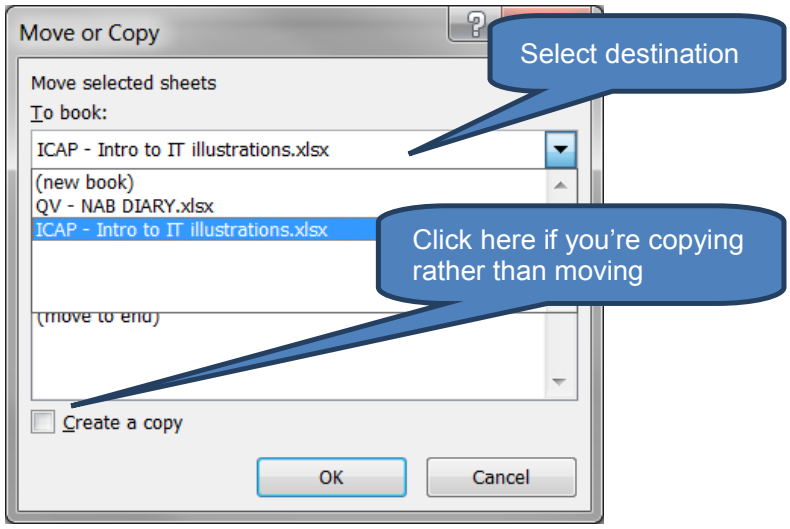
To move or copy a worksheet to another location in the same workbook:

- Select the source worksheet(s)
- Click ***Format*** in the ***Cells*** group on the ***Home*** tab
- Click ***Move or Copy Sheet*** under ***Organize Sheets***
- In the ***Before sheet*** list of the ***Move or Copy*** dialog box
  - Click the sheet before which you want to insert the moved/copied sheet
  - Click move to end
- Note to copy rather than move the sheet(s), select the ***Create a copy*** check box in the ***Move or Copy*** dialog box


If you want to move or copy the worksheet to another workbook (either an open workbook or a completely new workbook), select as appropriate from the 'To book' drop-down. i.e.




You can also use the above techniques to copy/move data to another worksheet or workbook (using the cut/copy/paste buttons on the home tab). Another technique is to drag data between open workbook windows in the same session of Excel.

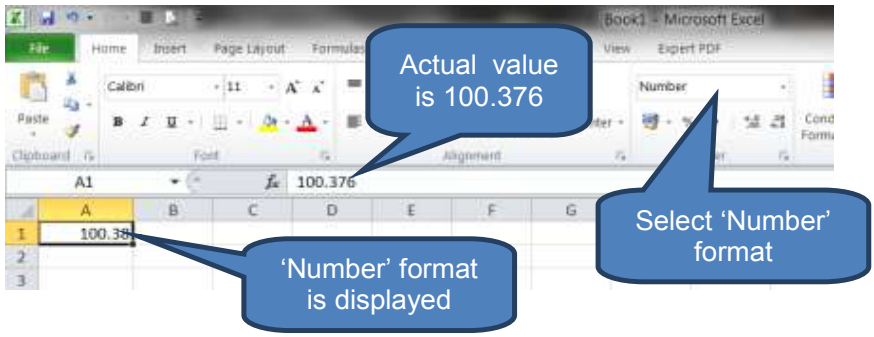
## 1.6 Formatting numbers

### Change the format of a number

After typing numbers in a cell you can change the format in which they are displayed.

- ❑ Click the cell containing the number whose format you wish to change
- ❑ On the ***Home tab*** in the ***number group*** click on ***Number Format*** then select the format that you want

  For example, 100.376 would appear as 100.38 when '***Number***' format is selected



The various in-built formats would display 100.376 as follows:

| Format | Display | Comments |
|---|---|---|
| General | 100.376 | |
| Number | 100.38 | Defaults to 2 decimal places |
| Currency | PKR100.38 | |
| Accounting | PKR 100.38 | |
| Short date | 09/04/1900 | Dates in Excel are simply an integer shown in date format. The number 1 represents 1 January 1900 subsequent to which each day is a +1 increment. For example 1 January 2013 is 41275, 2 January 2013 is 41276 etc. So 9/4/1900 is 100 days after 1/1/1900. |
| Long date | 09 April 1900 | See above |
| Time | 09:01:26 | |
| Percentage | 10037.60% | |
| Fraction | 100 3/8 | |
| Scientific | 1.00E+02 | |
| Text | 100.376 | Left aligned – see note below |
| Special | n/a | Useful for tracking list and database values |
| Custom | See below | See below |

Note: 'text' format - this is useful for numbers that should not be calculated in Excel but rather appear as text, such as phone numbers.

Note though that if you wish to convert a text-number from text format back to number format you must first change the cell format from text to number then re-calculate the cell. To re-calculate the cell press ***F2*** followed by ***ENTER***.

### Custom number formats

**Definition: Custom number format**

***Custom format*** **allows you to customize a built-in number format to create your own. A number format can have up to four code sections separated by semicolons:**

<POSITIVE>;<NEGATIVE>;<ZERO>;<TEXT>

If one of the many built-in formats does not meet your needs you can customize a built-in number format to create your own. The best way to approach this is to select the closest built-in format then change any one of the embedded code sections to create your own custom number format.

Note the following rules:

- You do not have to include all code sections in your custom number format
- If you specify two code sections, the first will be used for positive numbers and zeros, the second for negative numbers

- If you specify only one code section it is used for all sections
- If you want to skip a code section and include a code section that follows it, you need to include the ending semicolon for the section that you skip.

To display both text and numbers enclose the text characters in double quotation marks (“ “) or precede a single character with a backslash.

To create a custom format:

- Open the workbook in which you wish to create (and store) a custom number format
- Click the ***Dialog Box Launcher*** next to ***Number*** on the ***Home*** tab
- Select ***Custom***
- Select the number format that you want to customize in the ***Type*** list
- In the ***Type*** box make the necessary changes.

Note: A custom number format is stored in the workbook in which it was created. Therefore it will not be available in other workbooks. One thing you could do is save the current workbook as an Excel template that can be used as the basis for a new workbook.

**Illustration: Custom number format – PKR currency**

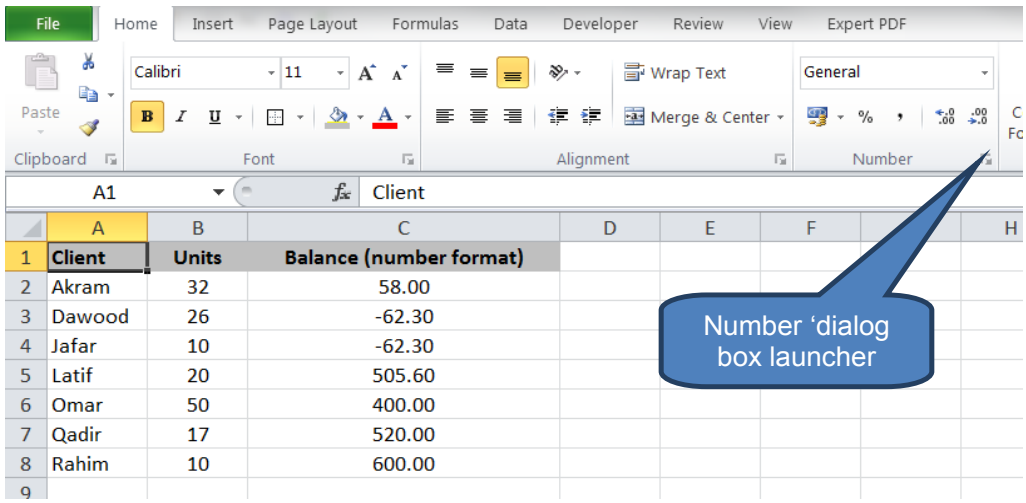
Custom format: "PKR "0.00" Receivable";"PKR "(0.00)" Payable"

This would display positive 58 as:

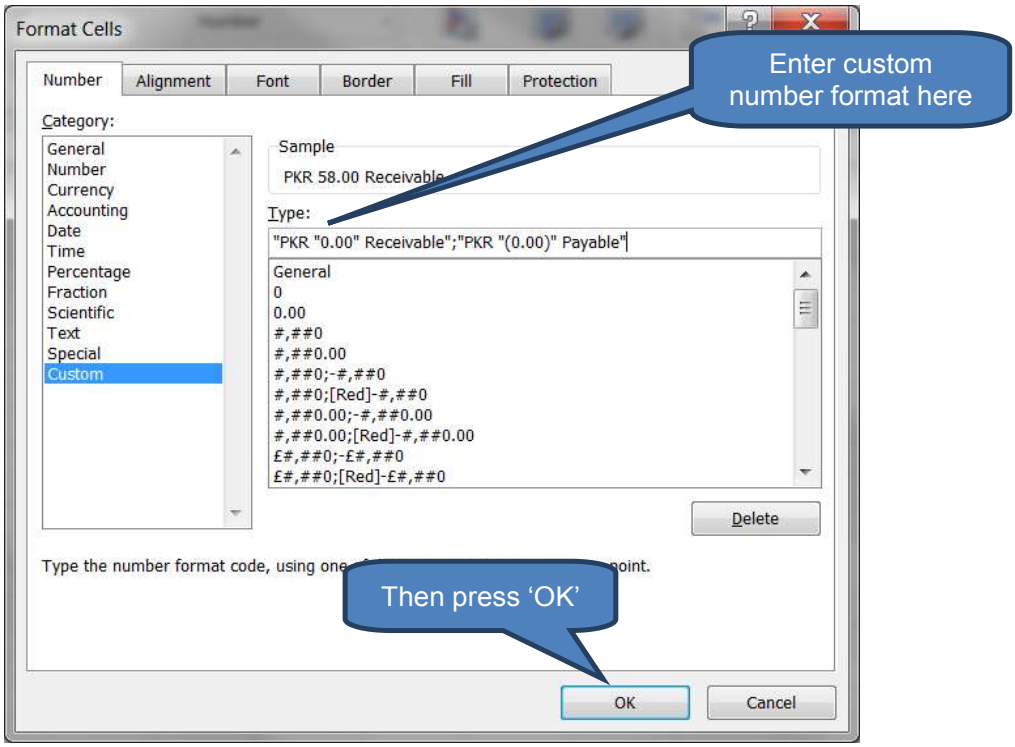
PKR 58.00 Receivable

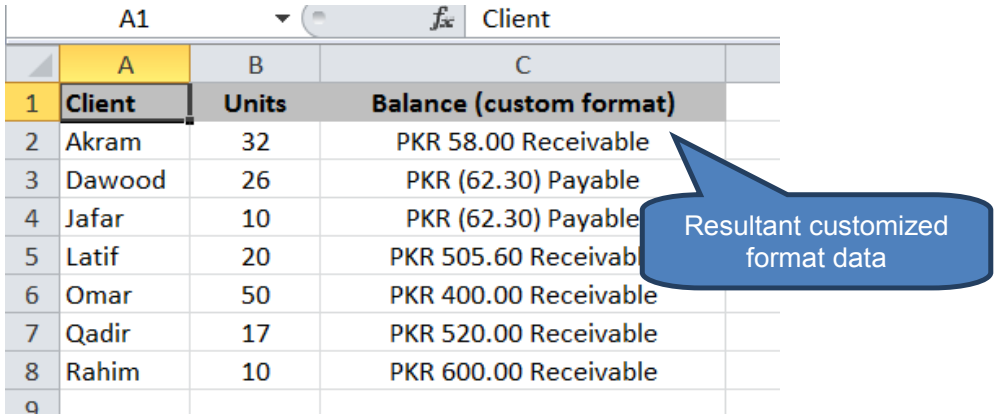
and negative 62 .3 as

PKR (62.30) Payable




| | A | B | C |
|---|---|---|---|
| 1 | Client | Units | Balance (number format) |
| 2 | Akram | 32 | 58.00 |
| 3 | Dawood | 26 | -62.30 |
| 4 | Jafar | 10 | -62.30 |
| 5 | Latif | 20 | 505.60 |
| 6 | Omar | 50 | 400.00 |
| 7 | Qadir | 17 | 520.00 |
| 8 | Rahim | 10 | 600.00 |

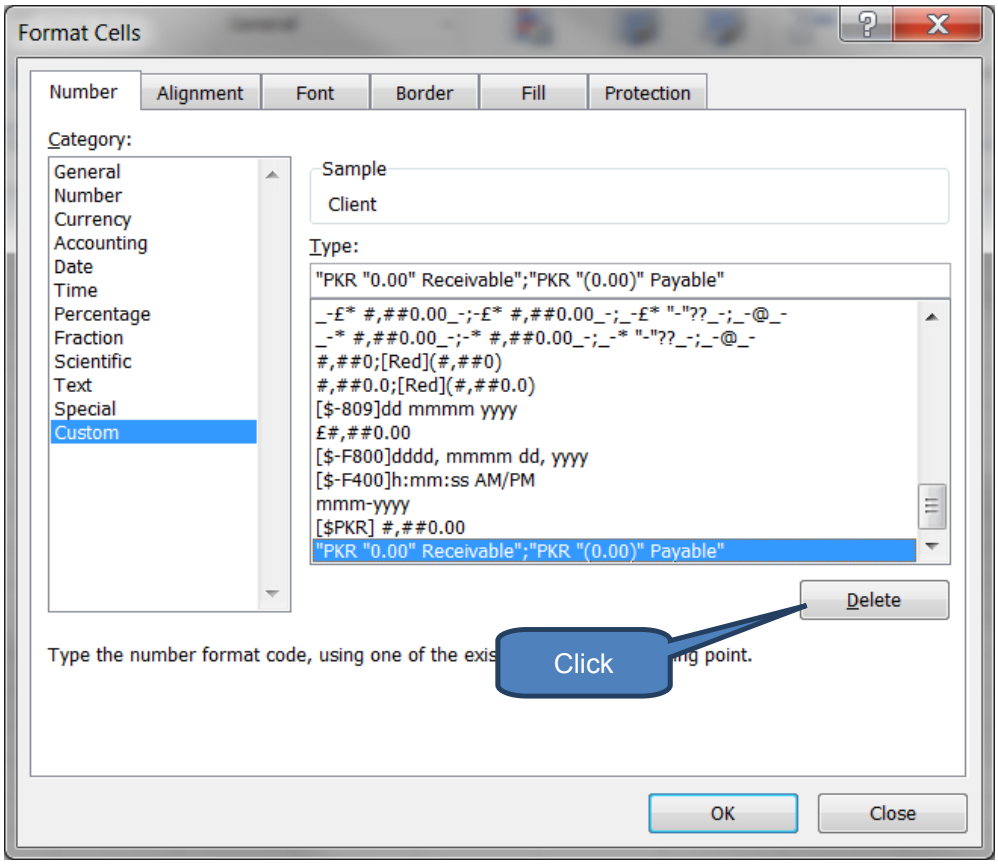





| | A | B | C |
|---|---|---|---|
| 1 | **Client** | **Units** | **Balance (custom format)** |
| 2 | Akram | 32 | PKR 58.00 Receivable |
| 3 | Dawood | 26 | PKR (62.30) Payable |
| 4 | Jafar | 10 | PKR (62.30) Payable |
| 5 | Latif | 20 | PKR 505.60 Receivabl |
| 6 | Omar | 50 | PKR 400.00 Receivable |
| 7 | Qadir | 17 | PKR 520.00 Receivable |
| 8 | Rahim | 10 | PKR 600.00 Receivable |

To delete a custom format:

- Open the Number format dialog box from the Home tab (as before)
- Select the custom format you wish to delete
- Click ***Delete***




Whilst the range of options for programming custom formats is broad the below table provides a good overview of the most common custom format components.

| Category | Comment |
|---|---|
| Specify colours | [Green], [Black], [Red], [White], [Blue], [Magenta], [Cyan], [Yellow] |
| Some characters are displayed without using quotation marks | E.g. $ + - ( ) : ^ ‘ = / ! ~ > < |
| 0 (zero) | Displays insignificant zeros if a number has fewer digits than there are zeros in the format.<br>E.g. To display 5.4 as 5.40 use #.00 |
| # | Follows similar rule as 0 (zero). However, extra zeros are not added if the number has fewer digits than there are # symbols in the format.<br>E.g. with a #.## format, 5.4 will still show as 5.4 |
| ? | Follows same rules as 0 (zero) except that Excel adds a space for insignificant zeros on either side of the decimal point so decimal points are aligned in the column. E.g. 5.4 and 3.28 would be aligned as 5.40 and 3.28 with a 0.0? format. |
| Thousands separator | , (comma) displays the thousands separator in a number.<br>Note that a comma that follows a digit placeholder scales the number by 1,000.<br>E.g.<br>• To display 15000 as 15,000 use #,###<br>• To display 15000 as 15 use #,<br>• To display 15500000 as 15.5 use 0.0,, |
| Other examples | • To display 3456.78 as 3456.8 use ####.#<br>• To display 4.9 as 4.900 use #.000<br>• To display .324 as 0.3 us 0.# |
| Dates | See below |

The below table summarises all the available date format components. You should practice in Excel to determine exactly how each one displays.

| Category | D |
|---|---|
| Day | d, dd, ddd, dddd |
| Month | m, mm, mmm, mmmm, mmmmm |
| Year | yy, yyyy |

**Illustration: Custom format - dates**

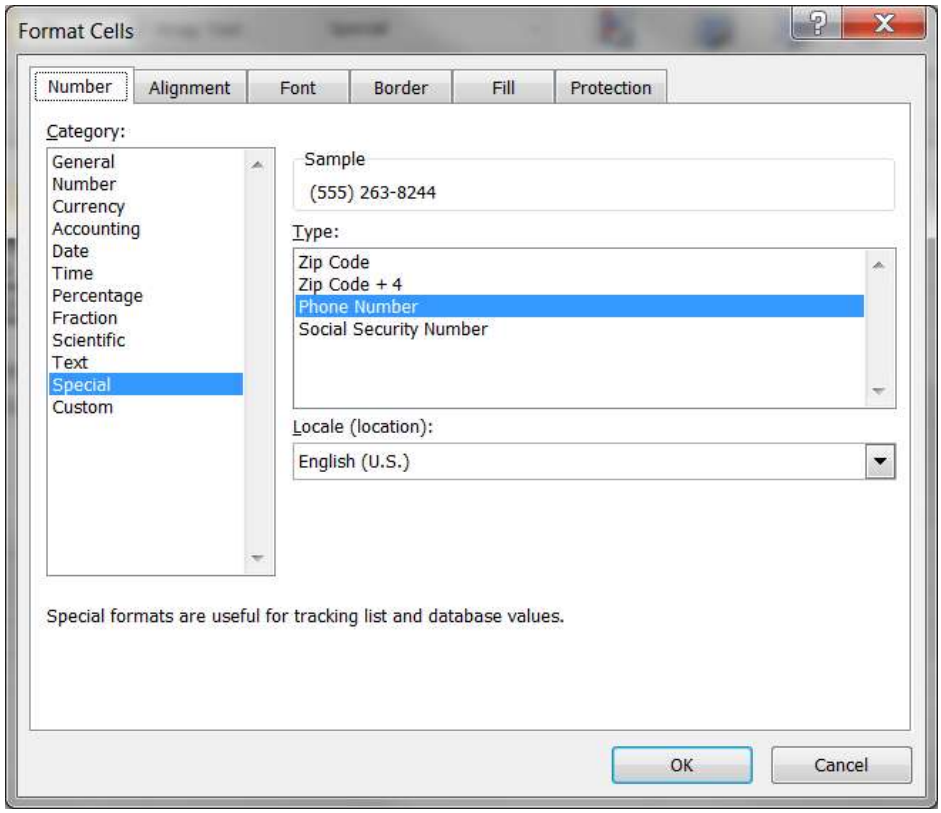
| Custom format | Presentation |
|---|---|
| dd/mm/yyyy | 13/07/2013 |
| ddd/mmm/yy | Sat/Jul/13 |
| dddd mmm yyyy | Saturday Jul 2013 |
| yyyy-m-d | 2013-7-13 |

## Phone number formats

Microsoft Excel provides a special number format that allows a number to be entered as a phone number. This is available as a 'special' number format accessible as follows:

- Open the Dialog Box Launcher in the ***Number group*** on the ***Home tab***

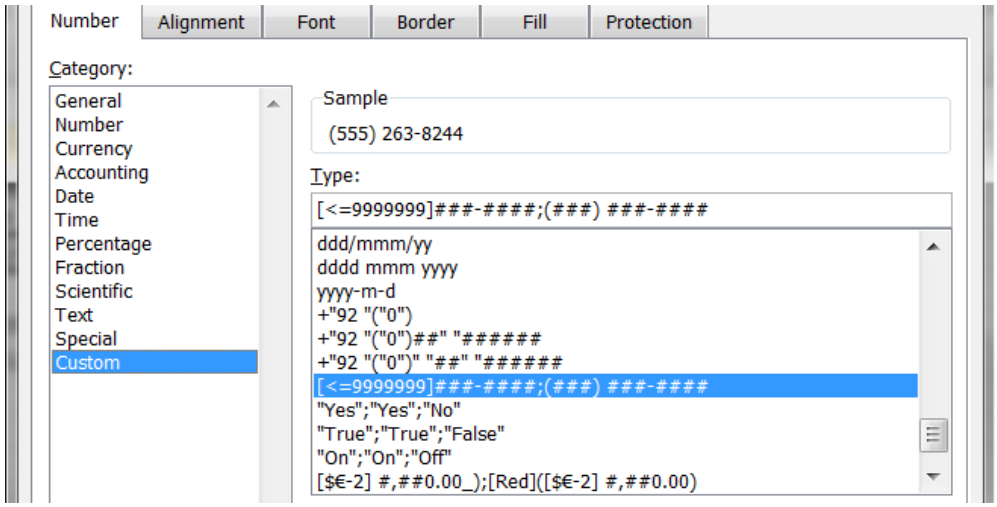

- Click ***Special*** in the Category box
- Select an appropriate locale – e.g. ***English (U.S.)***
- Click ***Phone Number*** in the Type list
- Click ***OK***



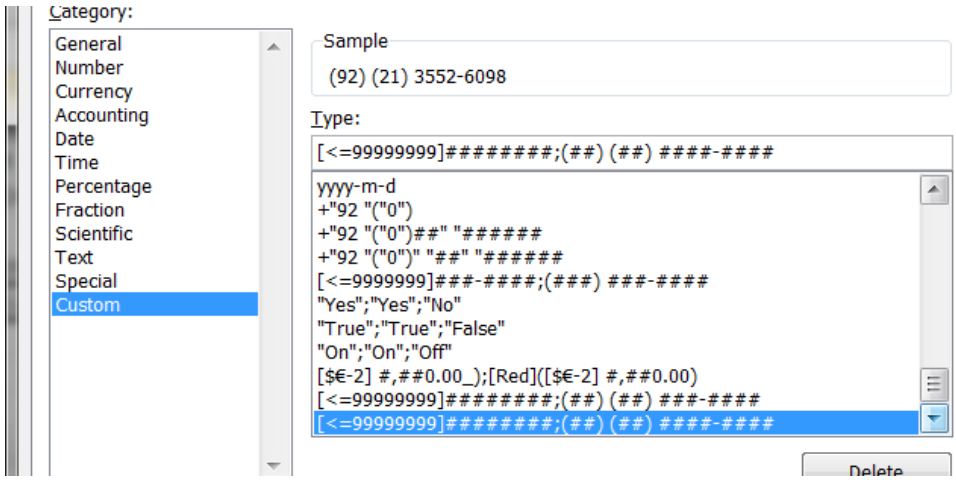
Note that Excel does not include special number formats for all locations (e.g. there are no UK or Pakistan phone number formats).

To get around this problem:

- Follow the above steps to customise a cell's format into ***US Phone Number*** format
- Re-open the ***Dialog Box*** Launcher in the ***Number*** group on the Home tab
- This time, click ***Custom*** in the Category box
- The custom equivalent of the US Phone Number is displayed. You can now edit this Custom format into a format to match your requirements




The below illustration shows how this might look for a typical Pakistan phone number.




The following table also illustrates the link between custom formats and the resultant presentation for formulating an appropriate custom format phone numbers.

| Format | Presentation | Custom format equivalent |
|---|---|---|
| General | 5552638244 | 0 |
| Special: English (US) Phone Number | (555) 263-8244 | [<=9999999]###-####;(###) ###-#### |
| Custom | 922135526098 | 0 |
| Custom | (92) (21) 3552-6098 | [<=99999999]####-####;(##) (##) ####-#### |

# 2 CONDITIONAL FORMATTING

**Section overview**

- Introduction
- Using conditional formatting

## 2.1 Introduction

Conditional formatting is an excellent feature of Microsoft Excel allowing Accountants to visually and quickly identify trends and exceptions. Conditional formatting helps bring the workbook to life and assist in interpreting data.

Some of the many uses an accountant may find for conditional formatting might include:

- Identifying overdue customer accounts for the credit controller to chase payment
- Identifying variances where test results fall outside pre-determined parameters
- Monitoring inventory levels and warning when too low
- Managing cash balances within operating boundaries
- Ensuring bank covenants are not breached
- Which sales clerks achieved PKR 300,000 sales this month?
- Which products exceeded 8% year-on-year growth

## 2.2 Using conditional formatting

### Applying a built-in conditional format

One approach to using conditional formatting is to apply one of the built-in styles and then edit the rules behind it for your particular circumstances.

To use one of the built-in styles do the following:

- Select the data where you want to apply conditional formatting
- Click ***Conditional Formatting*** in the ***Styles*** group on the ***Home*** tab
- Select one of the many conditional formatting options and hover your mouse over the scheme icons to see a preview of the data with conditional formatting applied.
- Once you've identified a suitable option, click to apply.

  The illustrations below show an aged trade receivables ledger for 15 accounts. The ageing ranges from 6 days to 46 days.

  The conditional formats applied in the three illustrations are:

  - Illustration 1: Data bars / gradient fill / light blue
  - Illustration 2: Colour scales / red-white-blue
  - Illustration 3: Icon sets / ratings / 5-quarters

Illustration 1:

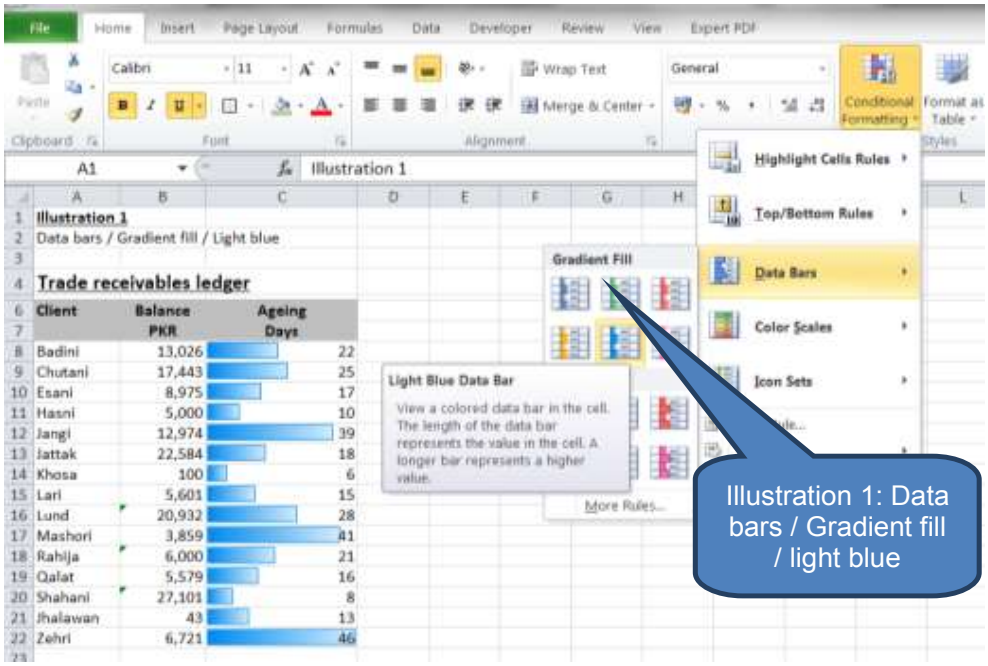



Illustration 2:

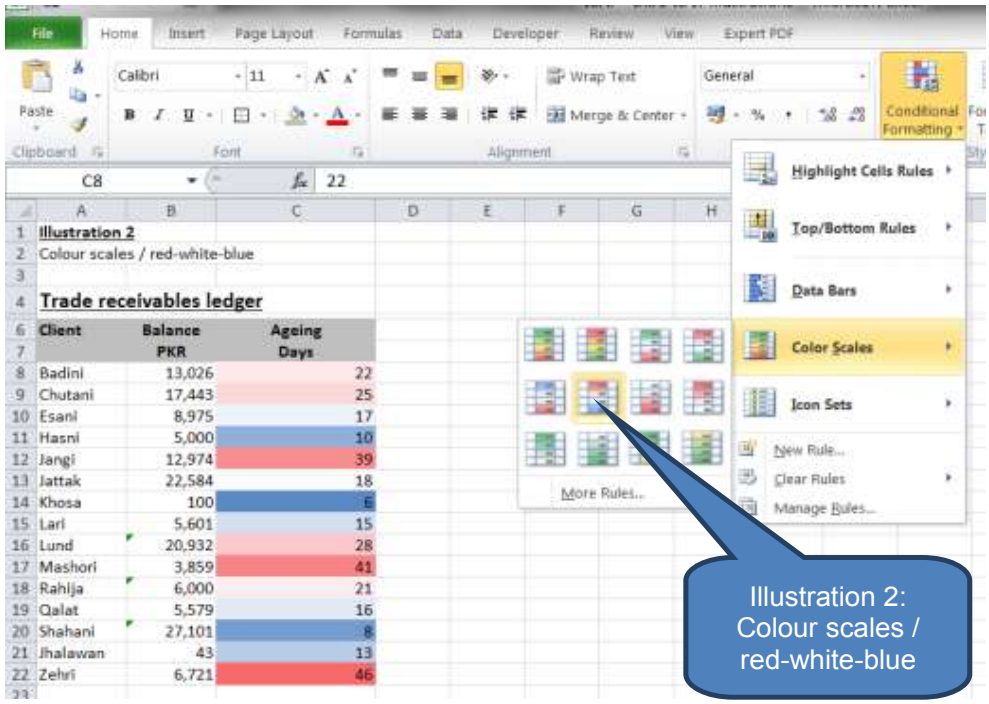
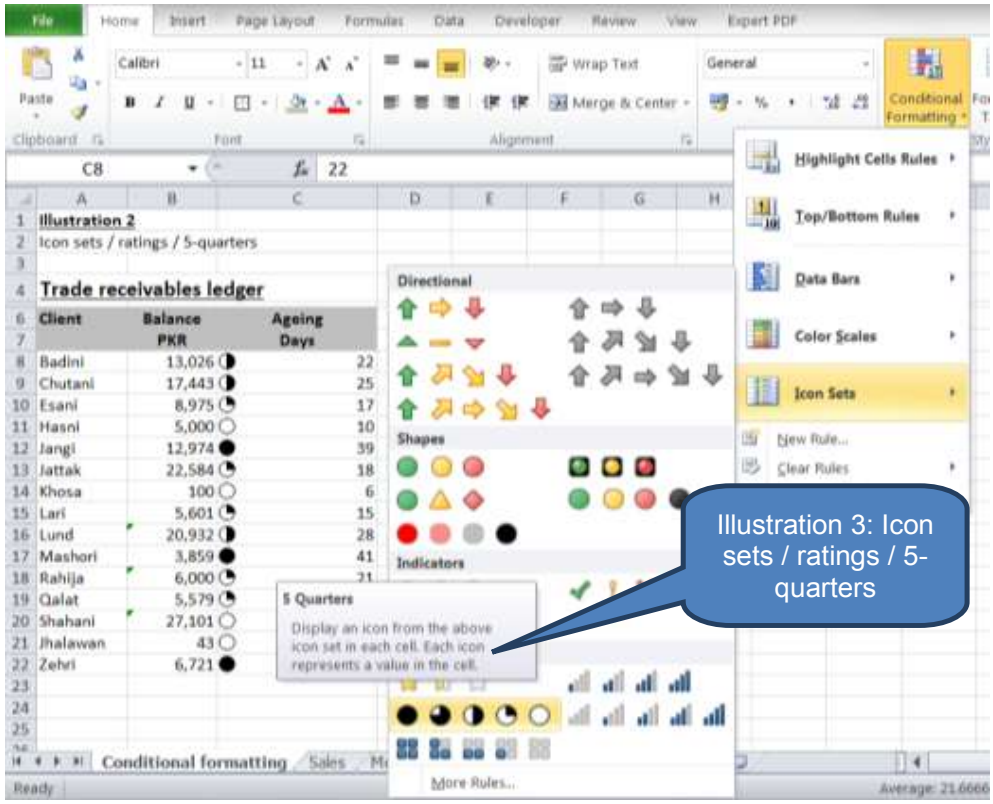


Illustration 3:




### Customized conditional formatting: text, number or date/time values

You may want to find specific cells within a range, for example inventory items with fewer than 20 units in stock. Another example may involve analysing group results to identify which of the 200 retail stores achieved net profit greater than 10% or sales volumes less than 1m PKR.

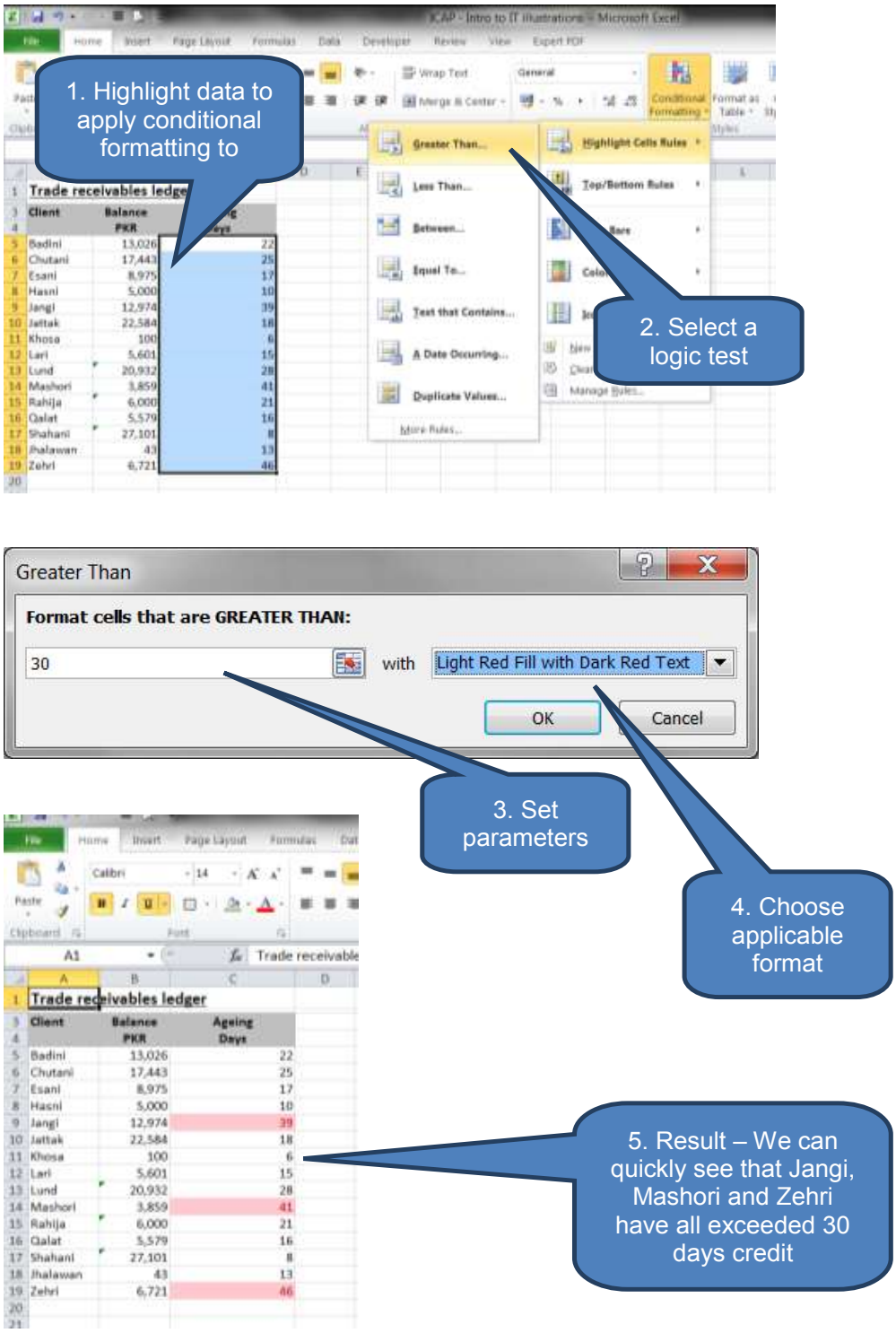
To do this do the following:

- Select the cells to be analysed
- Click ***Conditional Formatting*** in the ***Style*** group on the ***Home*** tab
- Select ***Highlight Cells Rules***
- Choose an appropriate command such as ***Equal to Text that Contains***, ***Between*** or ***A Date Occurring*** (Note *)
- Enter appropriate values then select a format.

* Note - If the exact logic command you require is not available you can select "More rules…". This is demonstrated in illustration 2 below.

**Illustration: Conditional formatting 1**

**Continuing with our earlier aged trade receivables ledger example let's highlight all accounts that have exceeded the standard 30-day credit period.**




### Customized conditional formatting: Top or bottom ranked values

We can use customized conditional formatting to identify highest and lowest values in a range of cells. By specifying cutoff we have great flexibility whether it's for identifying the top 3 selling products in a national report, the bottom 10% destinations per a customer survey or the top 20 bonuses in a department personnel analysis.

The process is as follows:

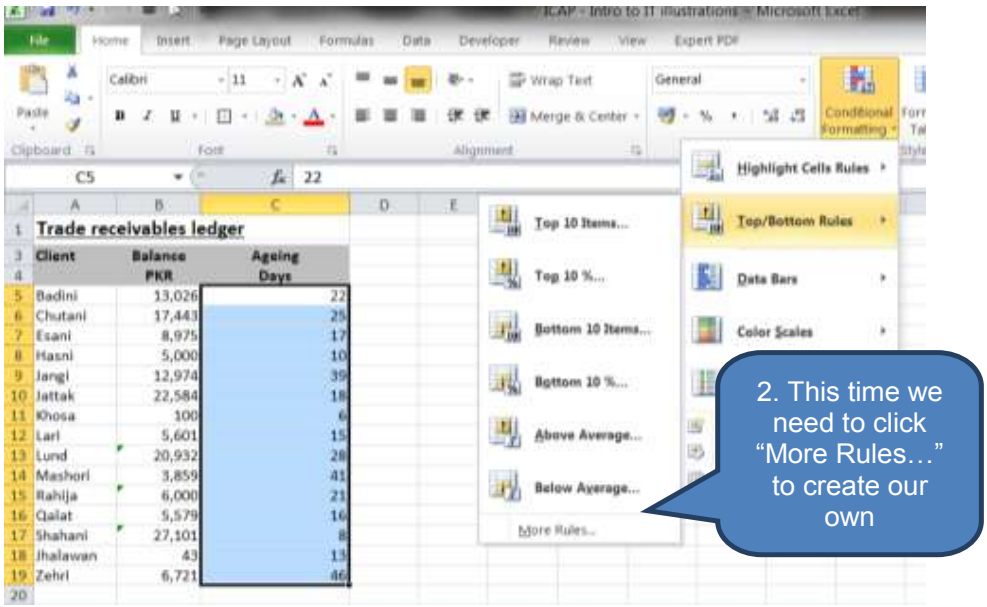
- Select the cells to be analysed
- Click ***Conditional Formatting*** in the ***Style*** group on the ***Home*** tab
- Select ***Top/Bottom Rules***
- Choose an appropriate command such as ***Top 1- items*** or ***Bottom 10%***
- Enter appropriate values then select a format.

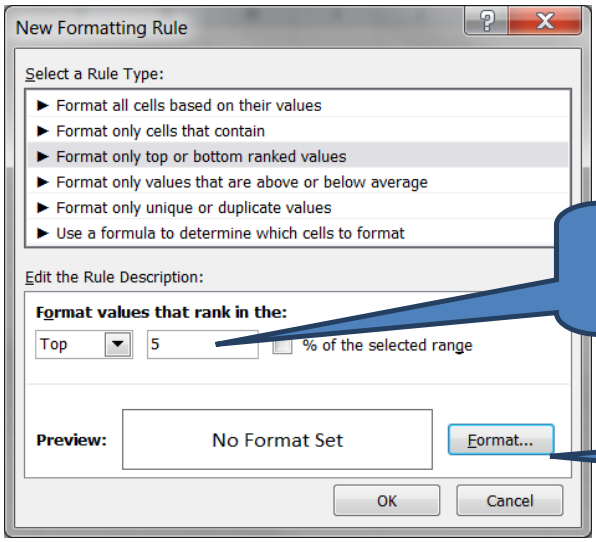
**Illustration: Conditional formatting 2**

**Continuing with our earlier aged trade receivables ledger example let's highlight the five accounts with the highest trade receivables days.**

**Note that 'top 5' isn't a built-in option so we will have to build our own condition.**

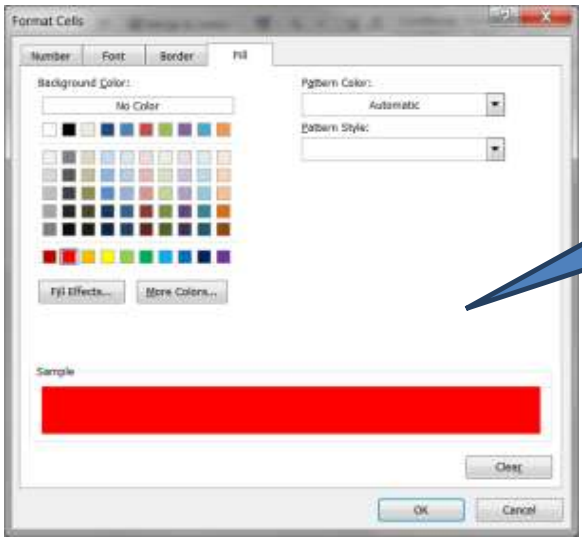
**Also note that Excel remembers the conditional format conditions for the applicable range. Therefore as the cell values change Excel will adjust highlighting automatically so the top 5 are always highlighted.**






3. Let's select the top 5 accounts

4. Click 'Format' to set an exception format




5. Set the exception format in the Format Cells dialog box. Then OK / OK

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Trade receivables ledger | | | |
| 3 | Client | Balance PKR | Ageing Days | |
| 5 | Badini | 13,026 | 22 | |
| 6 | Chutani | 17,443 | 25 | |
| 7 | Esani | 8,975 | 17 | |
| 8 | Hasni | 5,000 | 10 | |
| 9 | Jangi | 12,974 | 33 | |
| 10 | Jattak | 22,584 | 18 | |
| 11 | Khosa | 100 | 6 | |
| 12 | Lari | 5,601 | 15 | |
| 13 | Lund | 20,932 | 28 | |
| 14 | Mashori | 3,859 | 41 | |
| 15 | Rahija | 6,000 | 21 | |
| 16 | Qalat | 5,579 | 16 | |
| 17 | Shahani | 27,101 | 8 | |
| 18 | Jhalawan | 43 | 13 | |
| 19 | Zehri | 6,721 | 44 | |
| 20 | | | | |
| 21 | | | | |

6. Result is that the highest five values have been highlighted.

### Customized conditional formatting: Values above or below average

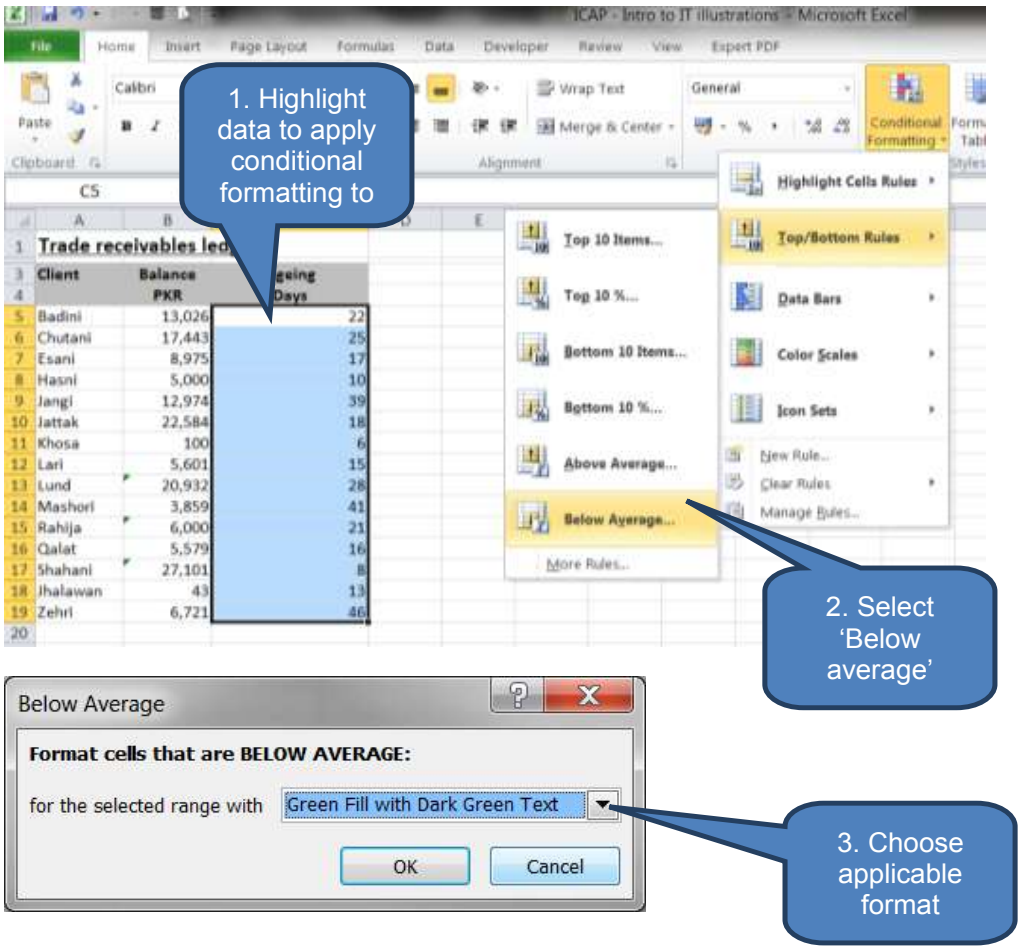
The 'average-based' conditional formats allow us to focus for example on above average performing client accounts, or perhaps as part of quality control identify manufactured components that fail below two standard deviations in their quality ratings.

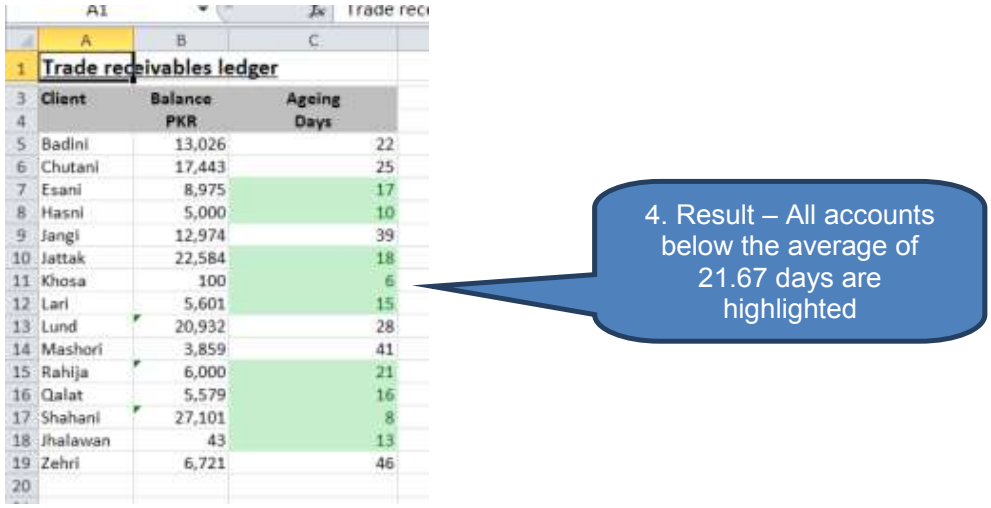
The process is as follows:

- Select the cells to be analysed
- Click ***Conditional Formatting*** in the ***Style*** group on the ***Home*** tab
- Select ***Top/Bottom Rules***
- Choose an appropriate command such as ***Above Average*** or ***Below average***
- Choose a format.

**Illustration: Conditional formatting 3**

**Continuing with our earlier aged trade receivables ledger example let's highlight all accounts that have 'below-average' receivables days.**






### Customized conditional formatting: Unique or duplicate values

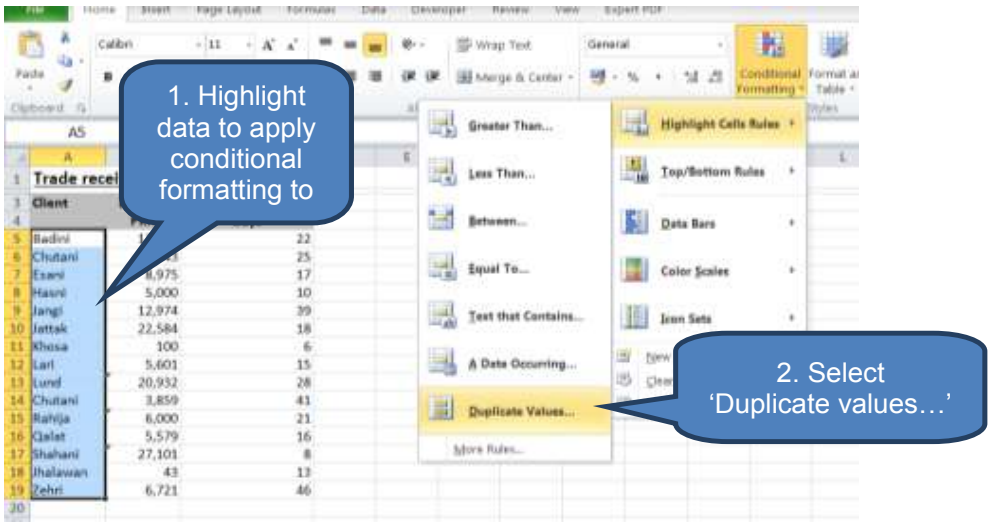
One approach to using conditional formatting is to apply one of the built-in styles

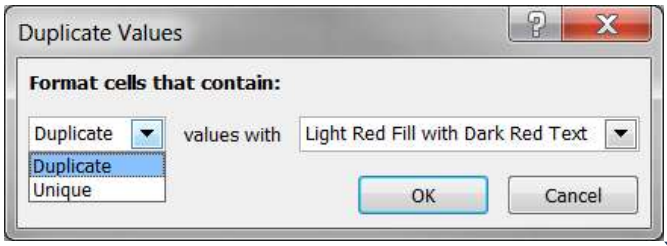
The process is as follows:

- Select the cells to be analysed
- Click ***Conditional Formatting*** in the ***Style*** group on the ***Home*** tab
- Select ***Top/Bottom Rules***
- Choose an appropriate command such as ***Above Average*** or ***Below average***
- Choose a format.

**Illustration: Conditional formatting 4**

**Continuing with our earlier aged trade receivables ledger example let's highlight all accounts that have exceeded the standard 30-day credit period.**






3. Select parameters:
- Duplicate/Unique
- Format
Then click OK

| | A | B | C |
|---|---|---|---|
| 1 | **Trade receivables ledger** | | |
| 3 | **Client** | **Balance PKR** | **Ageing Days** |
| 5 | Badini | 13,026 | 22 |
| 6 | Chutani | 17,443 | 25 |
| 7 | Esani | 8,975 | 17 |
| 8 | Hasni | 5,000 | 10 |
| 9 | Jangi | 12,974 | 39 |
| 10 | Jattak | 22,584 | 18 |
| 11 | Khosa | 100 | 6 |
| 12 | Lari | 5,601 | 15 |
| 13 | Lund | 20,932 | 28 |
| 14 | Chutani | 3,859 | 41 |
| 15 | Rahija | 6,000 | 21 |
| 16 | Qalat | 5,579 | 16 |
| 17 | Shahani | 27,101 | 8 |
| 18 | Jhalawan | 43 | 13 |
| 19 | Zehri | 6,721 | 46 |
| 20 | | | |

4. Result – Chutani has been identified as a duplicate account (which presumably now needs investigating)

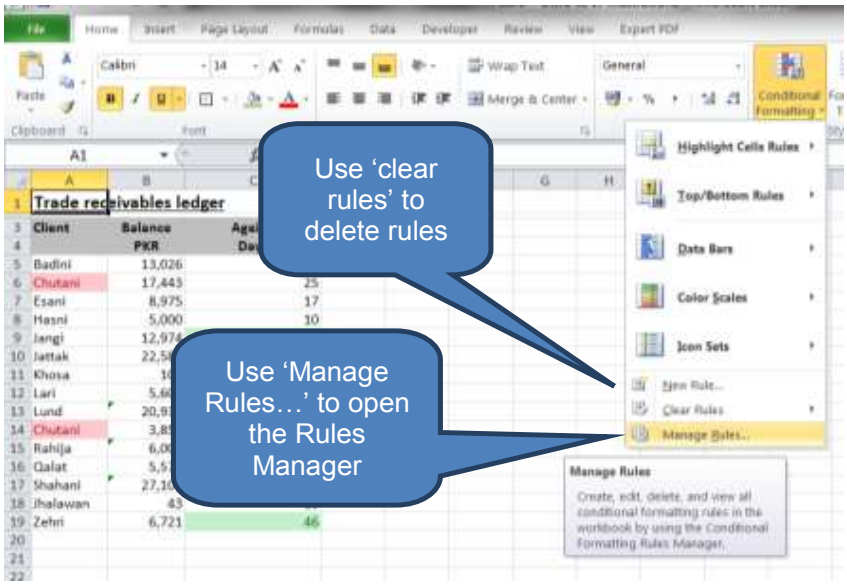
### Customized conditional formatting: Using formula

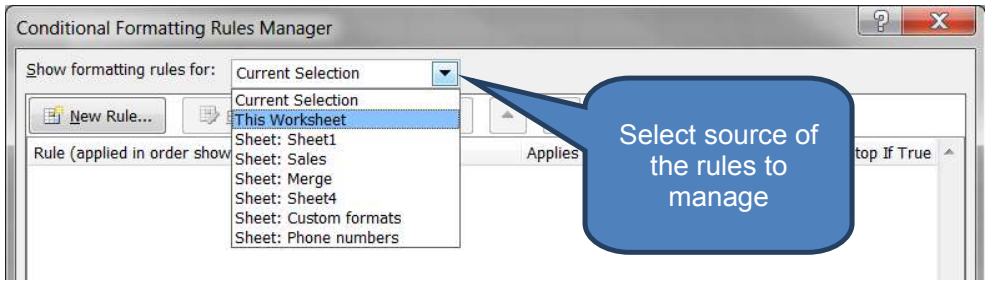
We have already had a taste of the mechanics behind conditional formatting in Illustration 2 above. Taking this one stage further we can use the ***Conditional Formatting Rules Manager*** for creating new rules or for editing existing rules.

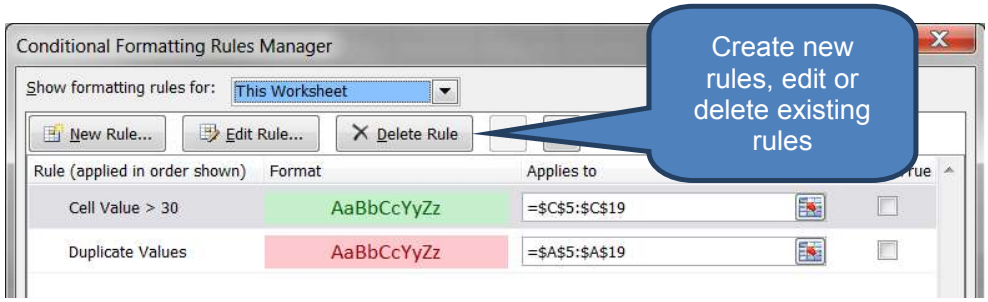
Open the ***Conditional Formatting Rules Manager*** as follows:

- Click ***Conditional Formatting*** in the ***Style*** group on the ***Home*** tab
- Select ***Manage Rules***
- Use the drop-down to select the source of the rules to analyse e.g. ***This Worksheet***
- Use the ***Rules Manager*** to edit or delete rules as necessary.

Note that 'Clear Rules' can be used to delete some or all of the rules in a workbook.


Use 'clear rules' to delete rules
Use 'Manage Rules…' to open the Rules Manager
Trade receivables ledger
Client
Balance PKR
Highlight Cells Rules
Top/Bottom Rules
Data Bars
Color Scales
Icon Sets
New Rule...
Clear Rules
Manage Rules...
Manage Rules
Create, edit, delete, and view all conditional formatting rules in the workbook by using the Conditional Formatting Rules Manager.


Conditional Formatting Rules Manager
Show formatting rules for:
Current Selection
Current Selection
This Worksheet
Sheet: Sheet1
Sheet: Sales
Sheet: Merge
Sheet: Sheet4
Sheet: Custom formats
Sheet: Phone numbers
New Rule...
Rule (applied in order show
Applies
Select source of the rules to manage


Conditional Formatting Rules Manager
Show formatting rules for:
This Worksheet
New Rule...
Edit Rule...
Delete Rule
Create new rules, edit or delete existing rules
Rule (applied in order shown)
Format
Applies to
Cell Value > 30
AaBbCcYyZz
=$C$5:$C$19
Duplicate Values
AaBbCcYyZz
=$A$5:$A$19

# 3 SELECTING, NAVIGATION AND MANAGING WORKSHEETS

**Section overview**

- Selecting and navigating worksheets
- Managing Worksheets
- Adding comments

## 3.1 Selecting and navigating Worksheets

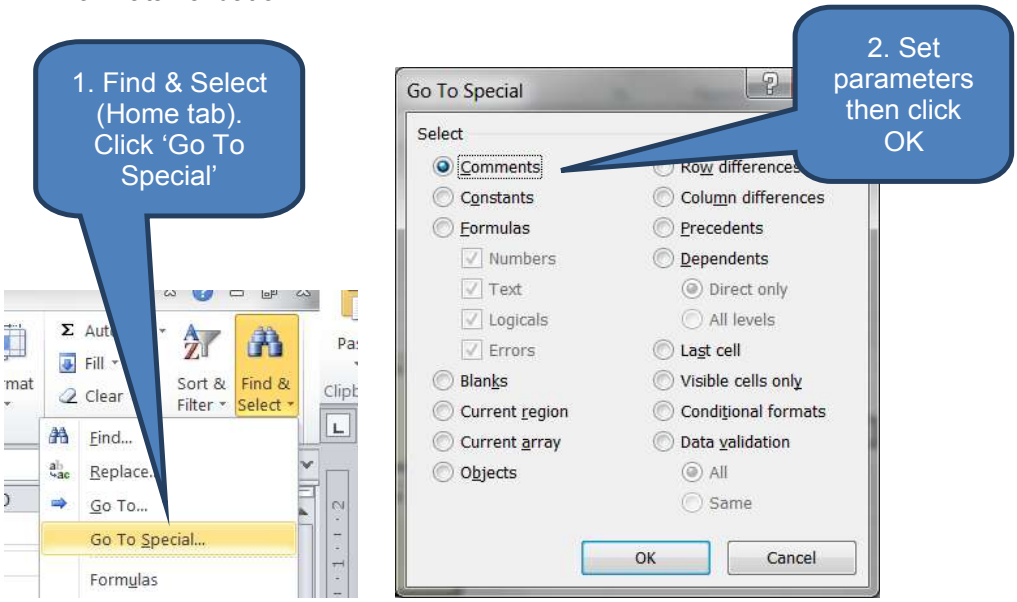
Similar to the average human's use of a limited amount of words actually available in a language, many accountants' experience of Excel is limited to a sub-set of its true potential.

Whilst likely familiar with a number of techniques described in section 3 students must ensure they are comfortable across the syllabus.

### Find and select cells meeting specific conditions

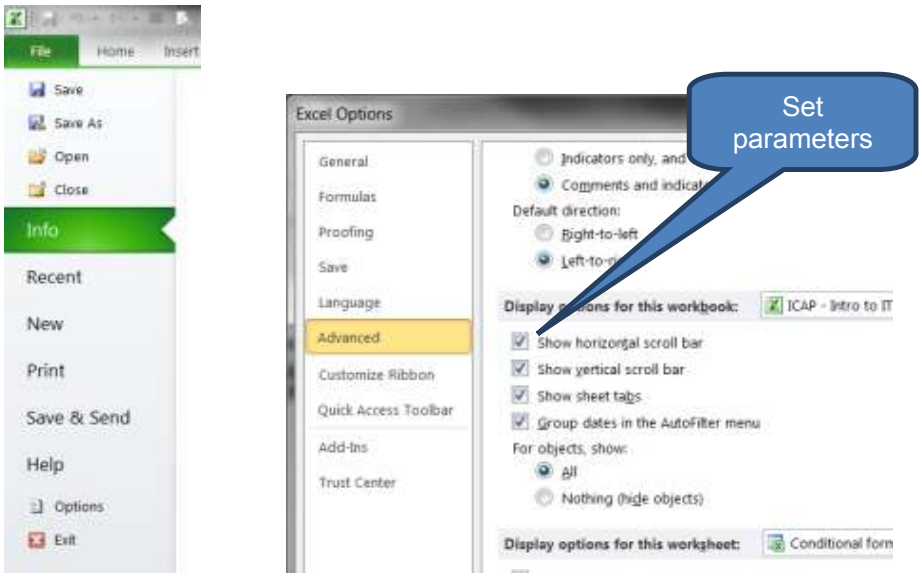
We can use the Go To command to identify all cells containing specific types of data (e.g. comments) or cells that meet specific criteria.

- ❑ Identify the search area
  - To search the entire worksheet click any cell
  - To search a defined area highlight that area e.g. a selection of rows or columns
- ❑ Click ***Go To Special*** within Find & Select in the ***Editing*** group on the ***Home*** tab (or CTRL+G)
- ❑ Select appropriate options to define the search parameters. E.g. Comments or Data validation



### Hide or display scroll bars

- Select ***Options*** on the ***File*** tab
- Click ***Advanced***
- Set parameters under ***Display options for this workbook***

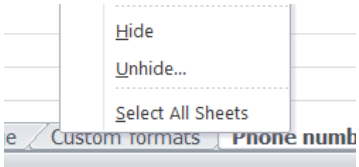



### Select one or multiple worksheets

You can quickly select a different sheet by clicking the tabs of worksheets at the bottom of a worksheet.

Select multiple sheets to make a group so that you can edit several worksheets simultaneously. To select multiple sheets:

- For adjacent sheets: Click the tab of the first sheet then hold down SHIFT as you click the tab of the last sheet you wish to select
- For non-adjacent sheets: Click the tab of the first sheet you wish to select. Then hold down CTRL whilst you click the other tabs individually you wish to group-select.
- To select all sheets: Right-click a sheet tab then ***Select All Sheets***

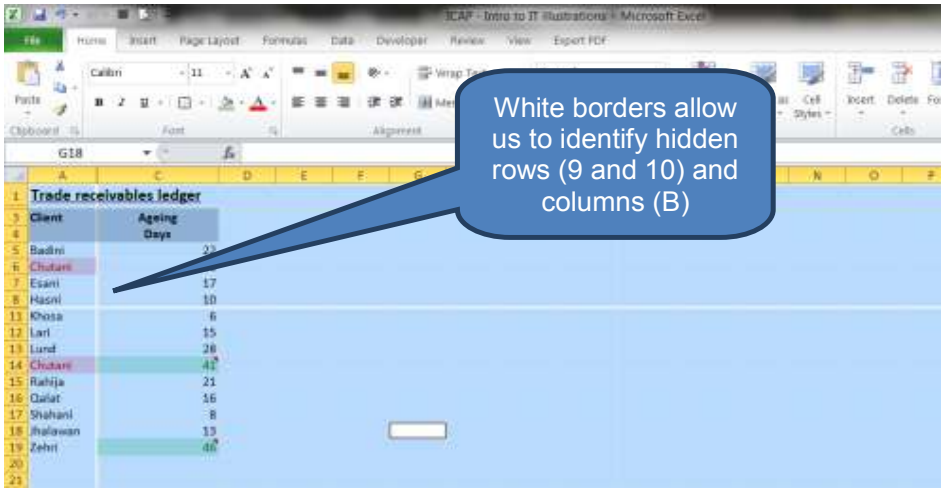



### Locating hidden cells on a worksheet

Sometimes it may be difficult to locate hidden columns or rows. To locate them you can use the ***Visible cells only*** command.

- Click anywhere on the worksheet containing hidden cells
- Click ***Find & Select*** in the ***Editing*** group on the ***Home*** tab
- Click ***Go To Special***
- Click ***Visible cells only*** within ***Select***
- Click ***Ok***

You can identify hidden rows and columns as they are marked with a white border.



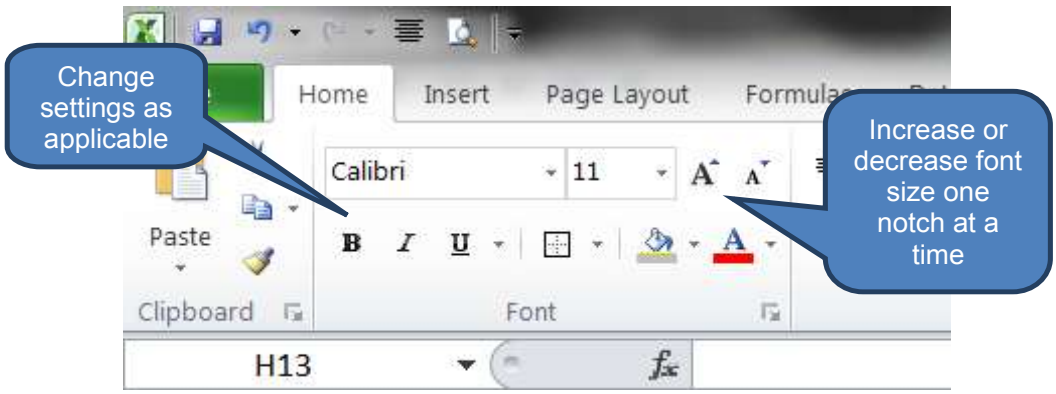

## 3.2 Managing worksheets

### Change font or font size

Changing fonts and font sizes helps emphasise and present work in a clearer fashion.

To change the font or font size:

- Select what you want to re-format – text, characters, a cell or range of cells
- Use the Font group on the ***Home*** tab to adjust font settings.



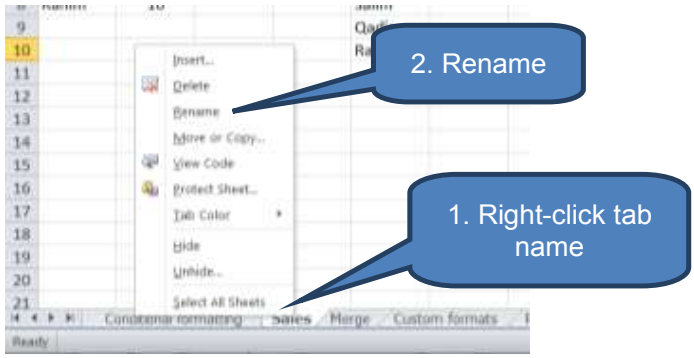

### Create a new workbook

To open a new, blank workbook press ***CTRL+N***.

### Rename a worksheet

To rename a worksheet either:

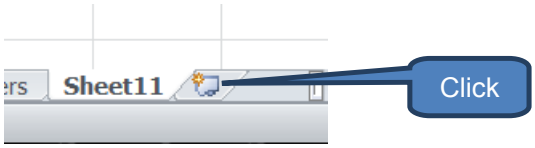
- Right-click the sheet tab you wish to rename and select ***Rename Sheet***; or
- Double-click the existing name on the sheet tab that you wish to rename. Then edit the name directly.



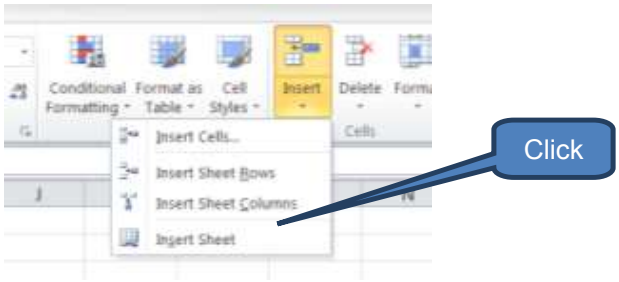

### Insert or delete a worksheet

There are a number of options for inserting worksheets.

- To insert a new worksheet after all the existing worksheets click the ***Insert Worksheet tab*** at the bottom of the screen.




- To insert a worksheet in front of the existing worksheet, click ***Insert*** in the ***Cells*** group on the ***Home*** tab. Then click ***Insert Sheet***.



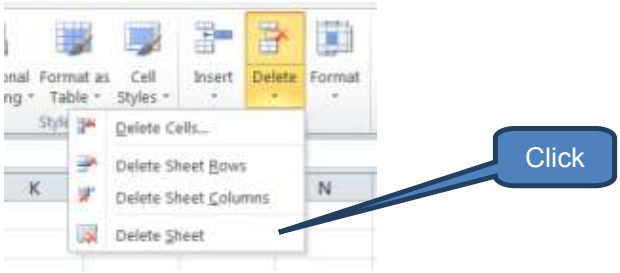

- To insert multiple worksheets at the same time hold down the ***SHIFT*** key, select the same number of existing sheet tabs as you want new worksheets then follow the same procedure as described above.

To change the order of worksheets in a workbook:

- Click and hold the mouse button on the worksheet tab at the bottom of the screen then drag it to its new location.

To delete a worksheet:

- Click ***Delete Sheet*** from the ***Delete*** options in the ***Cells*** group on the ***Home tab.***
- Alternatively, right-click on the tab name at the bottom of the screen and select ***Delete***

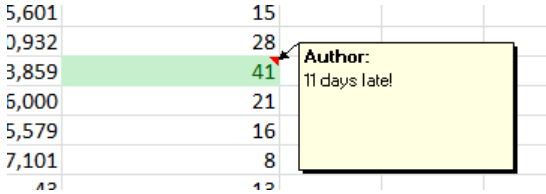



## 3.3 Adding comments

### Introduction

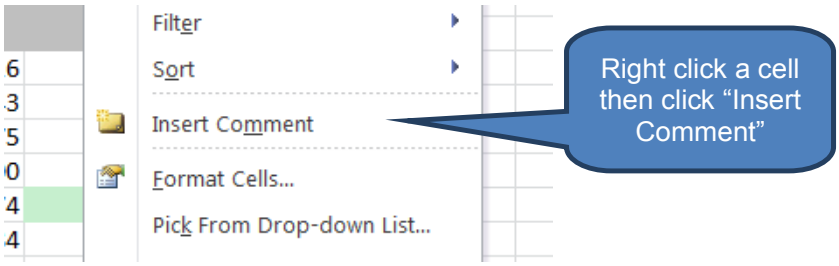
We are all familiar with leaving ourselves post-it notes on the fridge door or at our workstation to remind ourselves of something. We can also add comments to our workbooks to annotate cells, make them easier to understand and also share information with colleagues in shared workbooks.

Cells with comments are identified with a red indicator in the upper right corner. The comment appears when you rest the mouse pointer on the cell.



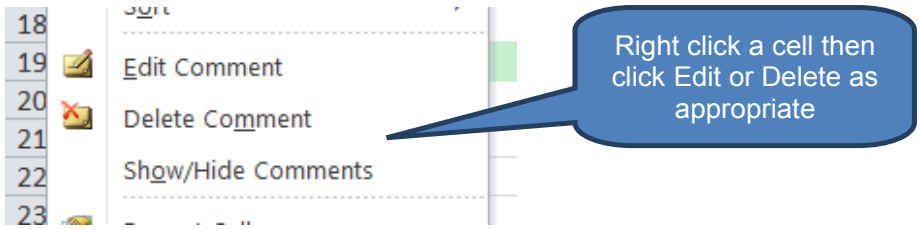

### Add a comment

- ❑ Right-click the cell you wish to add a comment to
- ❑ Select 'Insert Comment'
- ❑ Enter your comment in the body of the comment
- ❑ Click outside the comment box to save your comment



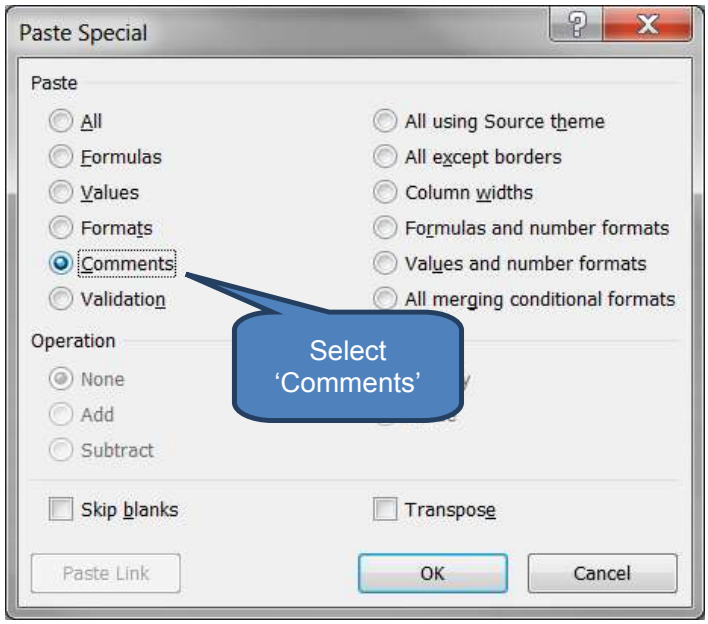

### Edit or delete a comment

- ❑ Right-click the cell containing the comment you wish to edit
- ❑ Select Edit or Delete comment as appropriate




### Copy comments to other cells

- Select the cell containing the comment you wish to copy
- Click ***Copy*** in the ***Clipboard*** group on the ***Home*** tab (or use ***CTRL+C***)
- Select ***Paste Special*** (within the arrow below Paste) in the ***Clipboard*** group on the ***Home*** tab (or use ***CTRL+ALT+V***)
- Select ***Comments*** in the Paste Special dialog box then click ***OK***.



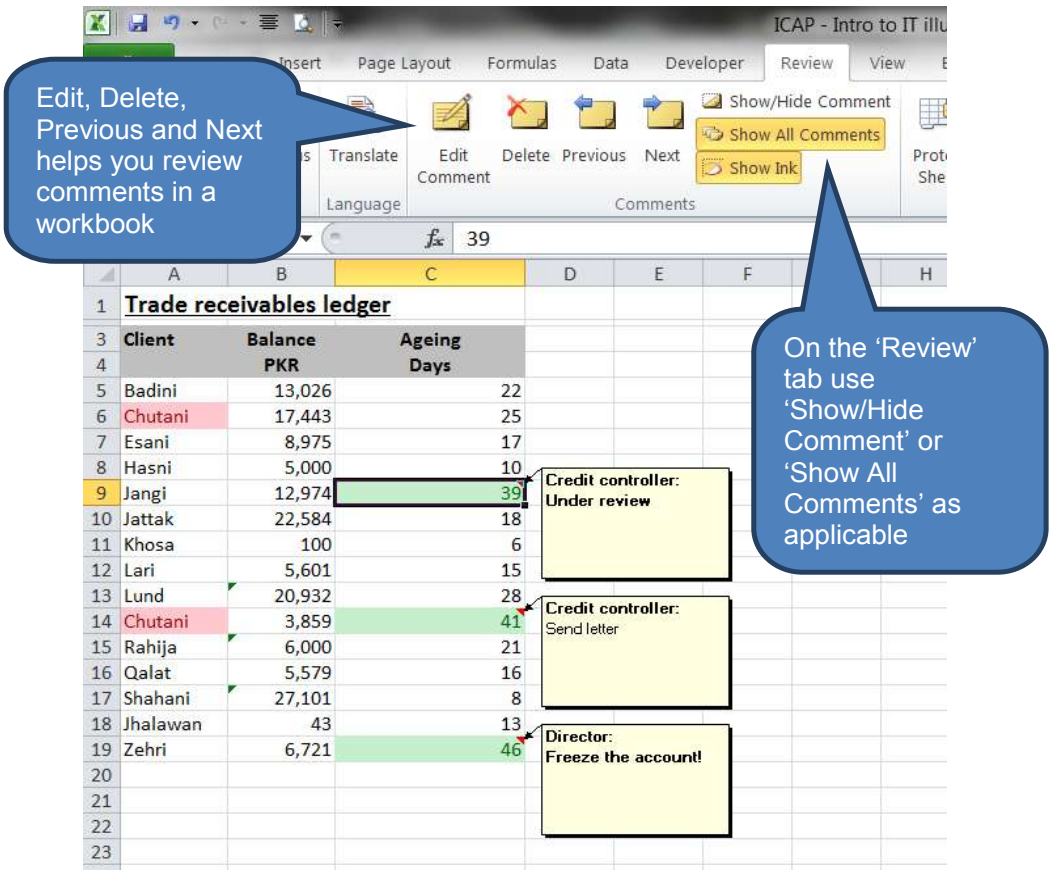

### Display or hide comments and review comments on the worksheet

To display or hide comments:

- Click the cell containing the comment you wish to be permanently displayed
- Click ***Show/Hide Comment*** in the ***Comments*** group on the ***Review*** tab

Note: Alternatively you can show all comments on the worksheet by selecting ***Show All Comments***

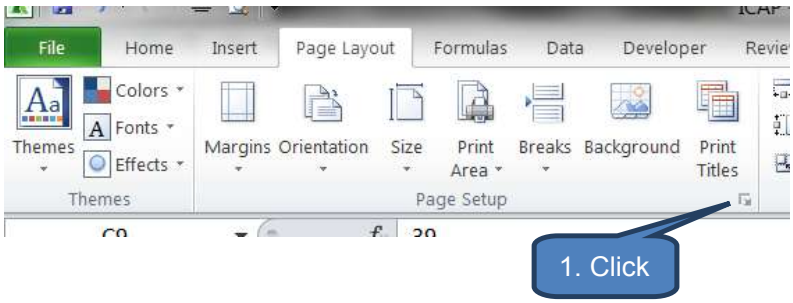
To review comments use the ***Next*** and ***Previous*** buttons in the ***Comments*** group on the ***Review*** tab.

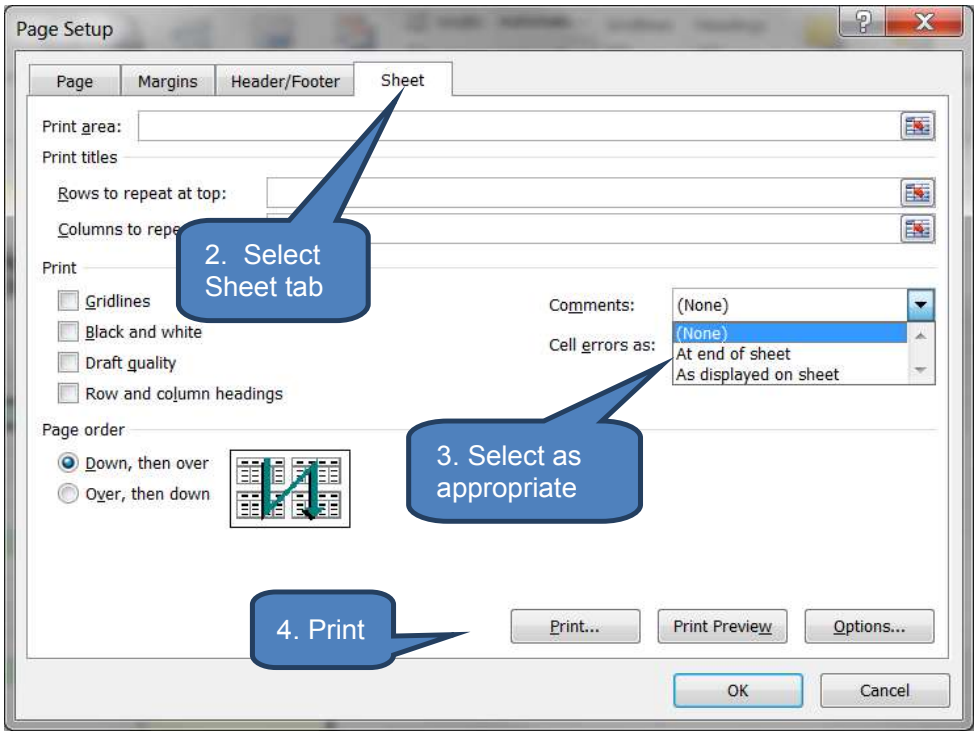



## Print comments

There are two options for printing comments – either as they appear on the sheet, or at the end of the sheet.

- Select the worksheet containing the comments you wish to print
- Next you need to display on the worksheet any comments you wish to print. Use the techniques described above.
- Launch the ***Page Setup*** dialog box in the ***Page Setup*** group on the ***Page Layout*** tab and select the ***Sheet*** tab.
- Select either '***As displayed on sheet***' or '***At end of sheet***' in the ***Comments*** box.
- ***Print***.




Page Setup
Page
Margins
Header/Footer
Sheet
Print area:
Print titles
Rows to repeat at top:
Columns to repe
Print
Gridlines
Black and white
Draft quality
Row and column headings
Comments:
(None)
Cell errors as:
(None)
At end of sheet
As displayed on sheet
Page order
Down, then over
Over, then down
2. Select Sheet tab
3. Select as appropriate
4. Print
Print...
Print Preview
Options...
OK
Cancel

## 4 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Enter, format and edit data
- View, copy and move data
- Format numbers
- Apply conditional formatting
- Add comments
- Manage worksheets
- Understand how to select items and navigate around a workbook

CHAPTER 6

# Organizing and analysing data

## Contents

# INTRODUCTION

## Learning outcomes

LO 3.1.1 Demonstrate adequate command of and perform Sumif, Count, Vlookup, Average and Subtotal functions

LO 3.1.2 Demonstrate effective use of functions such as IF, AND, OR

## Exam context

Formulas lie at the heart of Excel's capability. Formulas are incredibly diverse and enable you to convert seemingly meaningless data into highly meaningful information and statistics.

By the end of this chapter students will be able to:

- Understand and construct basic formulas
- Work with date formulas
- Use functions commonly used by accountants

# 1 INTRODUCTION TO FORMULAS

**Section overview**

- Introduction to formulas
- Create your first formula
- Using functions to create a formula
- Nested functions
- Relative and absolute references
- Avoiding common formula errors
- Deleting a formula

## 1.1 Introduction to formulas

**Definition: Formula**

**A formula is a statement written by the user to be calculated. Formulas range from very simple to highly complex. They can contain values, references to cells, defined names and functions.**

**All formulas must start with the equals sign, e.g. "=2+6"**

**Definition: Function**

**A function is a small program designed to calculate specific values. Many standard functions are built into Excel such as a function to sum values or calculate the current time. Additional functions can be defined using the Visual Basic programming language (which is outside the syllabus).**

**Functions are typed alongside parenthesizes within which the arguments are listed. E.g.**

**=NOW() returns the current time**

**=SUM(3+5+7)*3 will multiply the sum of 3, 5 and 7 by 3.**

***Formulas*** are constructed using ***Functions***, ***Cell references***, ***Constants*** and ***Operators***. For example:

**Illustration: Formulas**

**= 2 * PI () * A1**

**This formula is constructed of the following:**

- **A function - PI (). This function returns the value of pi (3.14159). Some functions require 'arguments' to be entered in an exact syntax between the brackets. For example the SUM() function requires at least one argument to sum e.g. SUM(A1, B2, C5). Others such as PI do not require arguments.**
- **A cell reference – A1.**
- **A constant – 2.**

- **An operator - * (multiply). Operators are the symbols used to create a calculation such as * multiply, + add, - subtract, / divide, ^ raise to the power of.**

**So the cell will show the result of multiplying 2 times pi times the value of cell A1. For example if A1's current value was 10, then the formula would return**

**= 2 * 3.14159 * 10**

**= 62.8319**

As we have demonstrated in the illustration above, formulas enable us to transform an Excel Workbook from columns and rows of data to a dynamic tool that can be customized to suit your needs. For example we might solve an engineering problem, calculate 'what-if' scenarios to model financial data, calculate interest rates and sum columns or rows of numbers. The list is literally endless!

Here are some other examples of formulas to help get us started.

**Illustration: Formulas**

**= TODAY () – Returns the current date**

**= UPPER("convert") – Converts the text "convert" to "CONVERT"**

**=IF(C1<100) – tests cell C1 to see if it contains a value less than 100. The result will show as TRUE or FALSE**

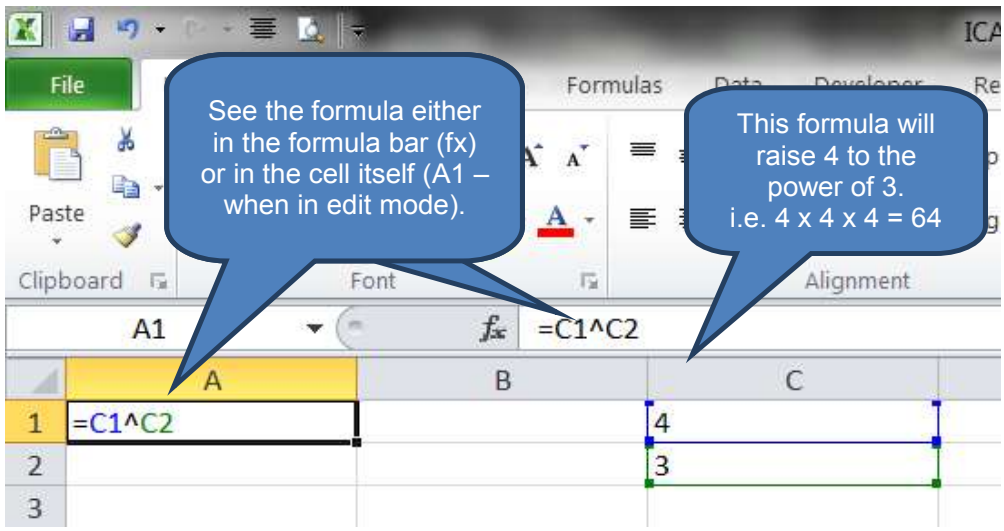
**=SQRT(E3) – Uses the SQRT function to return the square root of the value in cell E3**

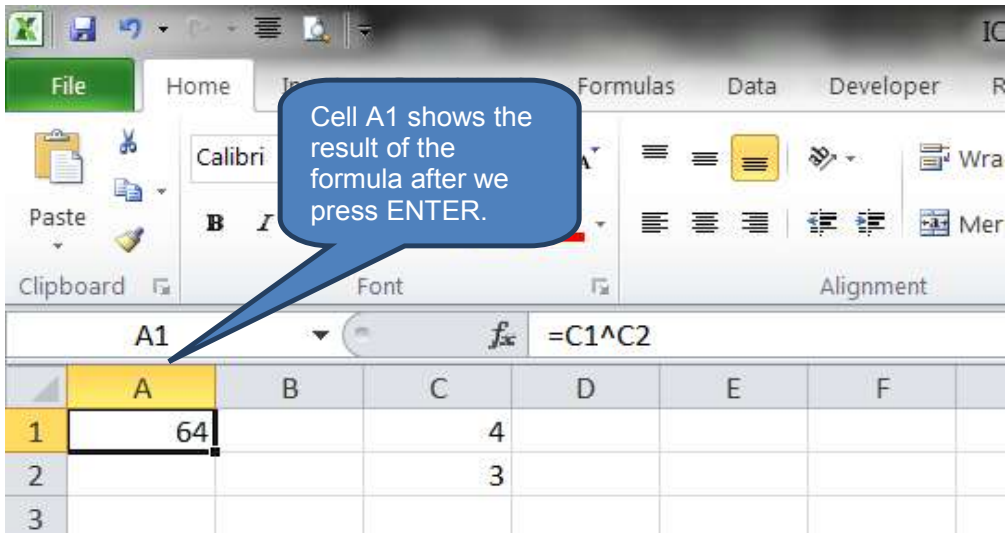
**= (D4+(E4*F4)-G4)/3 – Adds D4 to the product of E4 and F4, then subtracts G4 before dividing the whole result by 3**

## 1.2 Create your first formula

A simple formula can be constructed as follows:

- ❑ Click the cell where you want to enter the formula
- ❑ Type the equals sign "="
- ❑ Enter the formula by doing one of the following:
  - Type the constants and operators
    - E.g. = 7 + 11
    - E.g. = 14 ^ 8
  - Click cells rather than typing a constant
    - E.g. = A1 + 11
    - E.g. = C1 ^ C2
- ❑ Press ***ENTER***
- ❑ Note that there are almost limitless numbers of constants and operators that can be used in a formula (subject to a maximum 8192 characters).



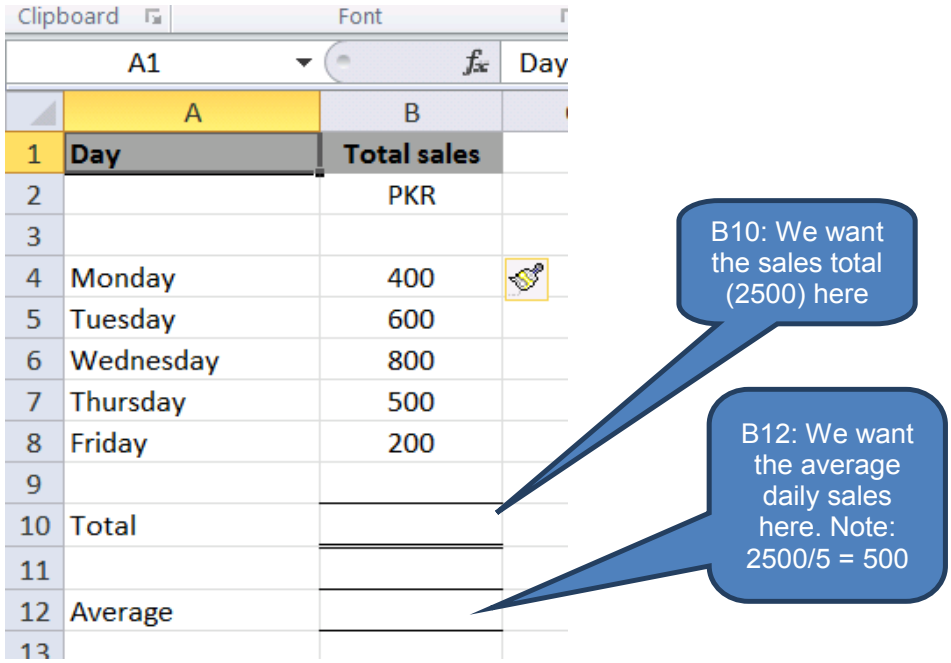




## 1.3 Using functions to create a formula

There are two main ways of entering functions as formula:

- Using ***Insert Function*** (fx) on the formula bar
- Use the drop-down menus from the ***Formulas tab***

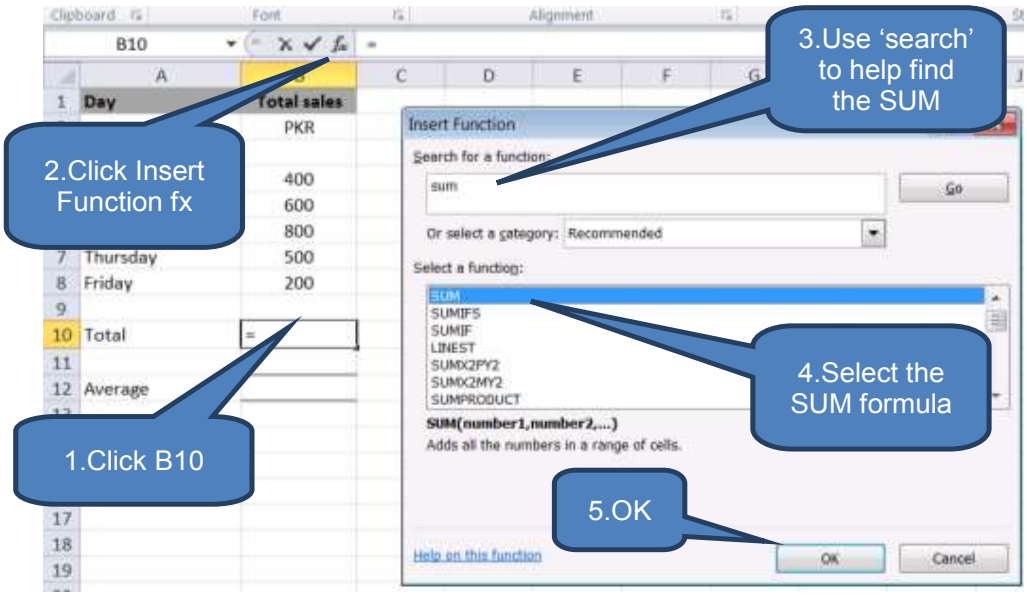
Let us illustrate both techniques with a simple weekly sales report. The two formulas we will build are the sales total for five days sales in cell B10 and the average daily sales across those five days in cell B12.



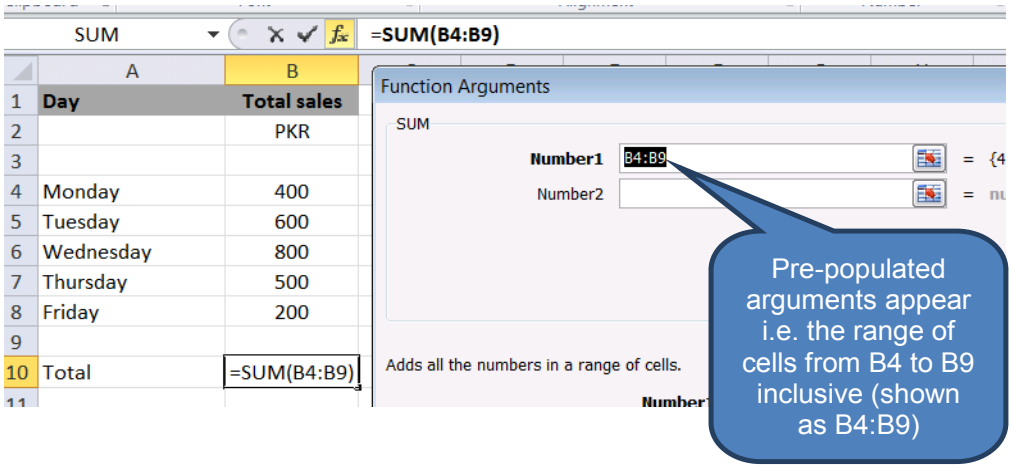

### Insert Function

Use ***Insert Function*** to show the total of 5 day's sales in cell B10:

- Click B10
- Click ***Insert Function*** (***fx***) on the formula bar (note that Excel inserts the equals sign automatically)
- Select the formula from the Dialog box then press ENTER. Note – if the function you need is not showing you can use the search box (e.g. by typing the word "SUM" in the search box) to generate suggestions.

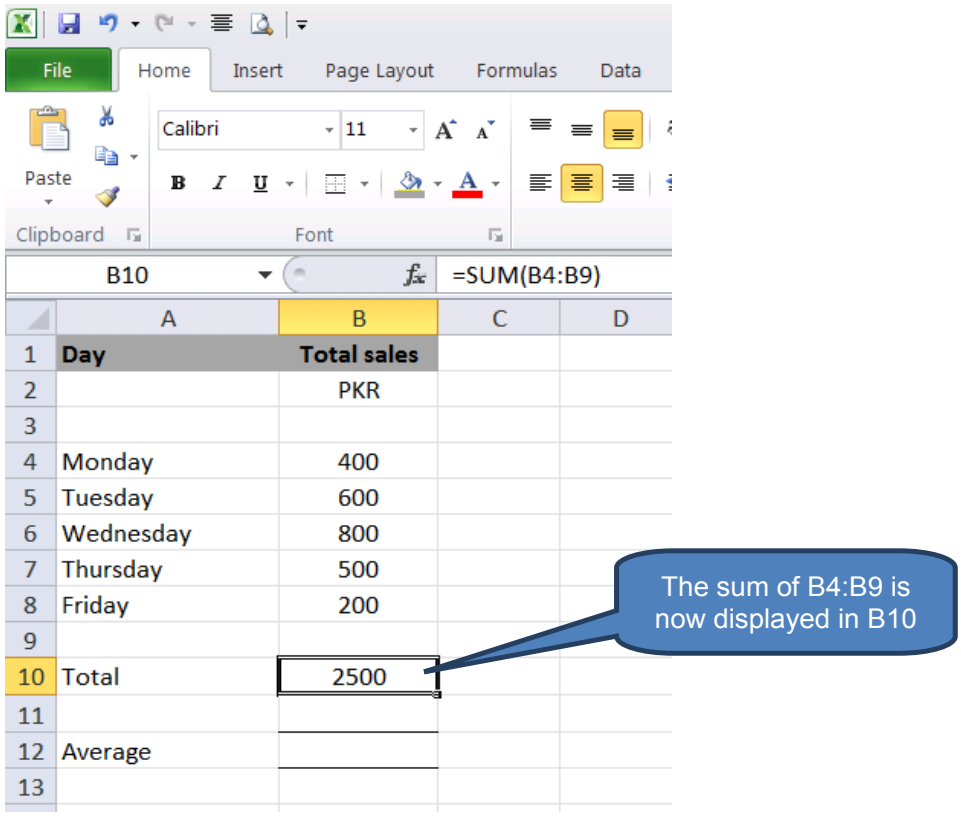


- When you press ENTER after selecting the appropriate formula the Function Arguments dialog box is displayed. This is where you enter the arguments. Note that with many functions, Excel makes an attempt to enter the arguments for you. These may or may not require amendment.




| | A | B |
|---|---|---|
| 1 | Day | Total sales |
| 2 | | PKR |
| 3 | | |
| 4 | Monday | 400 |
| 5 | Tuesday | 600 |
| 6 | Wednesday | 800 |
| 7 | Thursday | 500 |
| 8 | Friday | 200 |
| 9 | | |
| 10 | Total | =SUM(B4:B9) |

- Click ***OK*** to confirm the arguments. Note that in this example we could either use the arguments: B4 + B5 + B6 + B7 + B8 + B9 or a single ARRAY argument B4:B9
- The sum of 2500 is now displayed in B10.

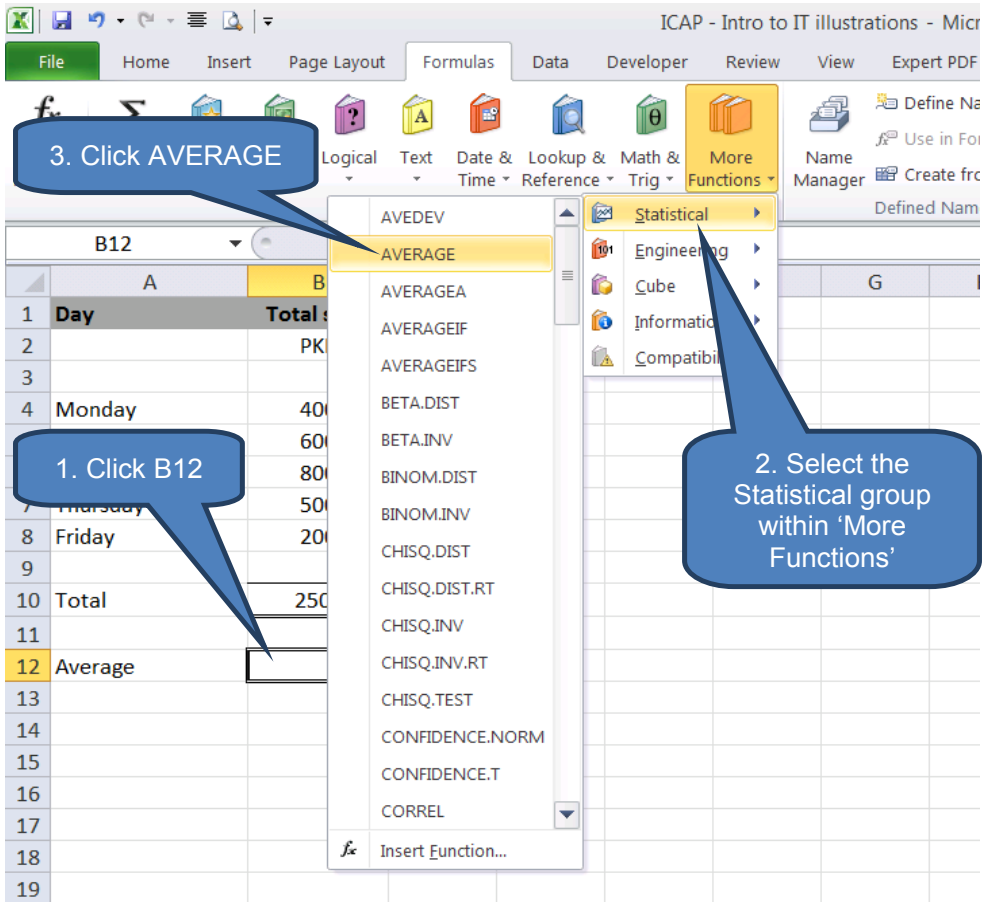



| | A | B | C | D |
|---|---|---|---|---|
| 1 | Day | Total sales | | |
| 2 | | PKR | | |
| 3 | | | | |
| 4 | Monday | 400 | | |
| 5 | Tuesday | 600 | | |
| 6 | Wednesday | 800 | | |
| 7 | Thursday | 500 | | |
| 8 | Friday | 200 | | |
| 9 | | | | |
| 10 | Total | 2500 | | |
| 11 | | | | |
| 12 | Average | | | |
| 13 | | | | |

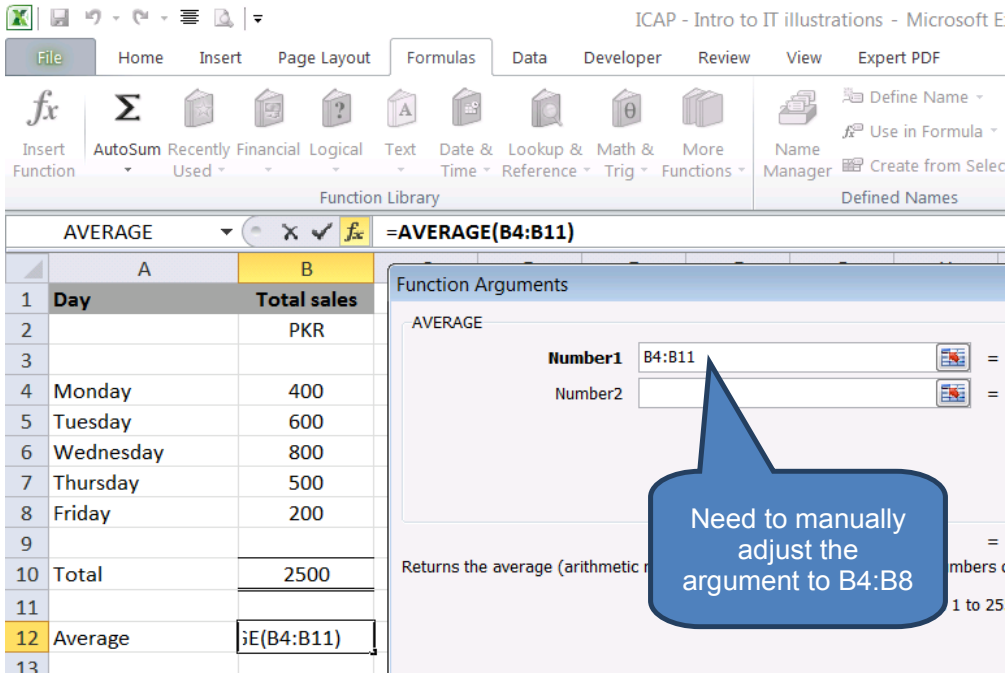
### Drop-down menu on the formula tab

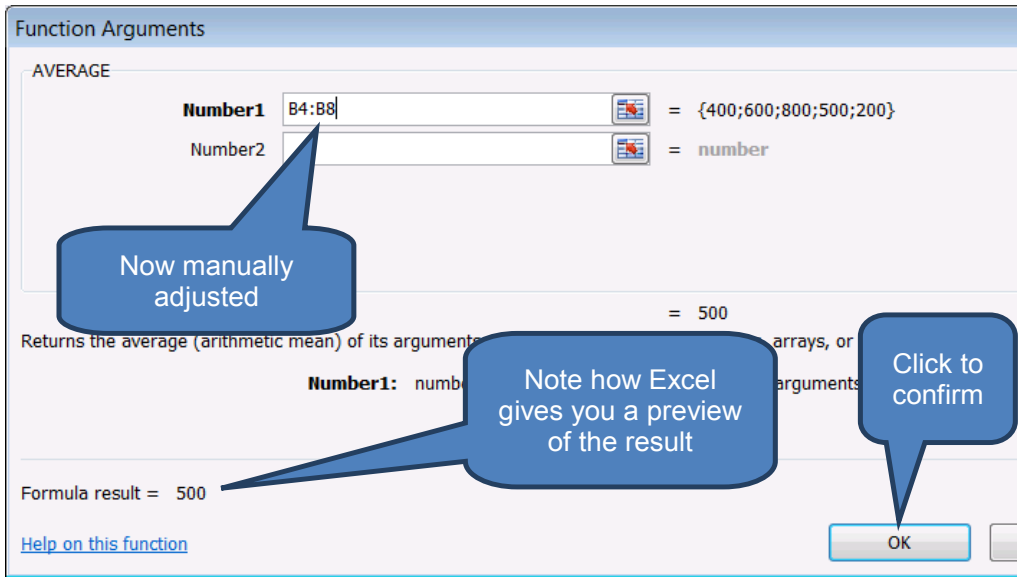
Let's use the drop-down menu on the ***Formulas*** tab to calculate the average daily sales in cell B12:

- ❑ Click cell B12
- ❑ On the ***Formulas*** tab select the drop-down category that includes the function you wish to use. In this case the ***AVERAGE*** function is part of the ***Statistical*** group.

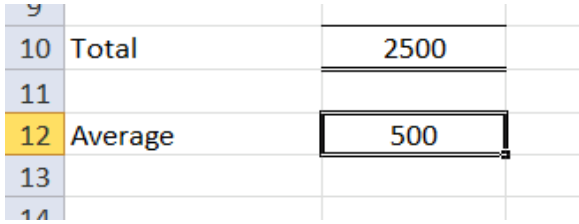



- ❑ Once again when we select our function (AVERAGE) by clicking on it in the drop-down list we're presented with the arguments dialog box.
- ❑ Note this time though that the auto-generated Excel-populated arguments list is wrong as it shows B4:B11. You need to manually edit the correct range of B4:B8.
- ❑ Click OK to confirm the newly edited arguments.




- The average daily sales of 500 now show in B12.



## 1.4 Nested formulas

Excel formulas are not restricted to using only one function at a time. They are much more powerful and flexible and we can include formulas within other formulas as their arguments. Such a formula is called a nested formula.

Let's introduce a new function – IF – in order to demonstrate the point.

**Illustration: The IF function**

**Syntax: = IF (Logical_test, [value_if_true], [value_if_false])**

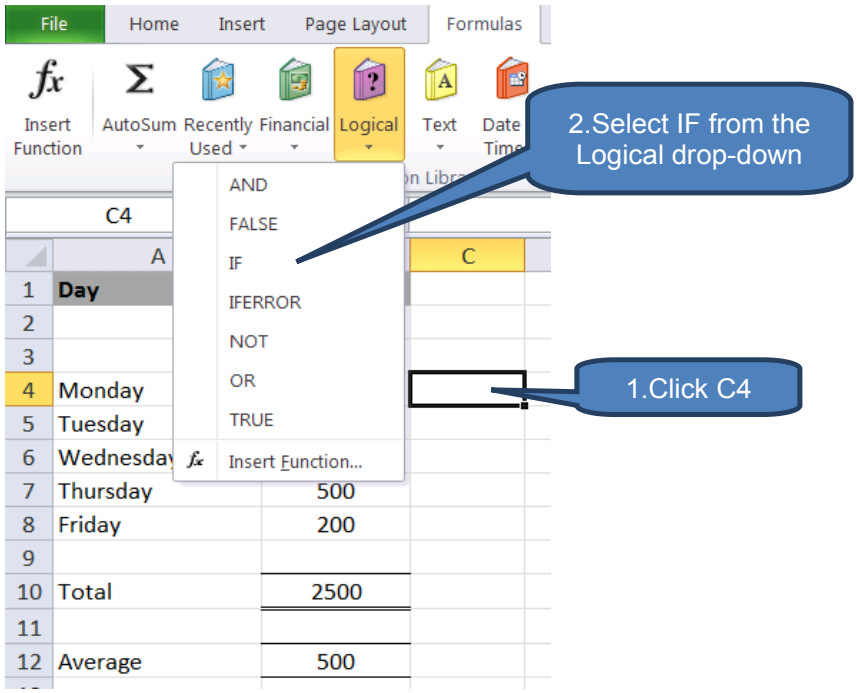
**For example,**

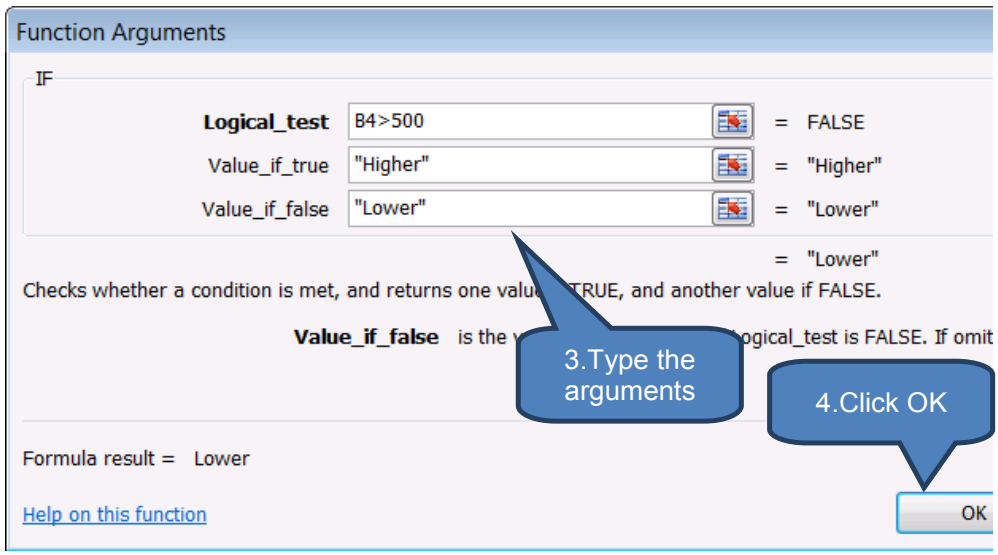
**= IF (A10>100,"Higher", "Lower")**

- **Logical_test: The logical test is whether the value of cell A10 is greater than 100.**
- **Value_if_true: If the value of cell A10 is greater than 100, the function will return the text string "Higher".**
- **Value_if_false: If the value of cell A10 is NOT greater than 100, the function will return the text string "Lower"**

Continuing our earlier example we could use column C to show whether each day's sales are higher or lower than the average for the week (which we calculated as 500).

- ❑ Click cell C4
- ❑ Select the ***IF*** function from the Logical drop-down on the ***Formulas*** tab
- ❑ Type in the arguments in the Function Arguments dialog box
- ❑ Click OK






The function that we have just created reads as:

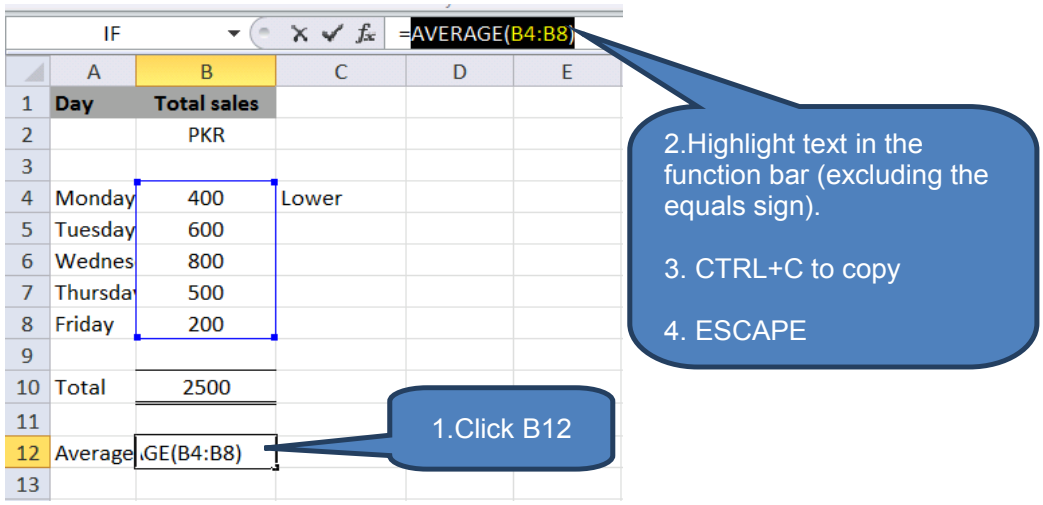
=IF(B4>500,"Higher","Lower")

However, so far we entered the average of 500 as the number 500. We can change this to use the AVERAGE function instead so that the overall formula is dynamic and does not need manually updating every week.

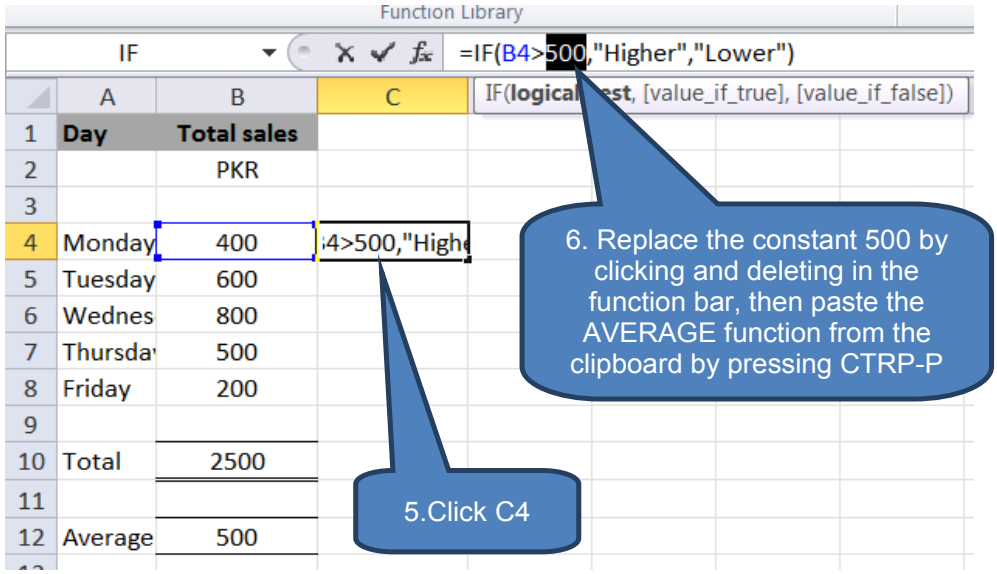
TIP – the least risky method of constructing an embedded formula is to build each formula separately using the Insert Function process as described above, then cut+paste one formula into the other to replace one of the arguments.

So in our example we have built the AVERAGE function in cell B12 and constructed a non-embedded IF function in C4. We can simply copy the text of the function in cell B12 and replace the constant 500 within the IF function arguments as follows:

- ❑ Click B12
- ❑ In the function bar highlight the function EXCLUDING THE EQUALS SIGN



- Press CTRL+C (copy) to copy the contents of B12 (excluding the equals sign) onto the clipboard
- Press ESCAPE
- Click cell C4
- Click with the mouse in the function bar and delete the constant 500 replacing it with the AVERAGE function text from B12 by pressing CTRL+V (paste).
- Press ENTER




| | A | B | C |
|---|---|---|---|
| 1 | **Day** | **Total sales** | |
| 2 | | PKR | |
| 3 | | | |
| 4 | Monday | 400 | ;4>500,"High |
| 5 | Tuesday | 600 | |
| 6 | Wednes | 800 | |
| 7 | Thursda | 500 | |
| 8 | Friday | 200 | |
| 9 | | | |
| 10 | Total | 2500 | |
| 11 | | | |
| 12 | Average | 500 | |

The new formula in cell C4 will now show:

=IF(B4>AVERAGE(B4:B8),"Higher","Lower")

We have NESTED (embedded) the Average function within the IF function. If we replicate this for all days our Worksheet would then appear as follows:

| | A | B | C |
|---|---|---|---|
| 1 | **Day** | **Total sales** | |
| 2 | | PKR | |
| 3 | | | |
| 4 | Monday | 400 | =IF(B4>AVERAGE(B4:B8),"Higher","Lower") |
| 5 | Tuesday | 600 | =IF(B5>AVERAGE(B4:B8),"Higher","Lower") |
| 6 | Wednesday | 800 | =IF(B6>AVERAGE(B4:B8),"Higher","Lower") |
| 7 | Thursday | 500 | =IF(B7>AVERAGE(B4:B8),"Higher","Lower") |
| 8 | Friday | 200 | =IF(B8>AVERAGE(B4:B8),"Higher","Lower") |
| 9 | | | |
| 10 | Total | =SUM(B4:B9) | |
| 11 | | | |
| 12 | Average | =AVERAGE(B4:B8) | |
| 13 | | | |

The values in the cells being:

| | A | B | C |
|---|---|---|---|
| 1 | **Day** | **Total sales** | |
| 2 | | PKR | |
| 3 | | | |
| 4 | Monday | 400 | Lower |
| 5 | Tuesday | 600 | Higher |
| 6 | Wednes | 800 | Higher |
| 7 | Thursda | 500 | Lower |
| 8 | Friday | 200 | Lower |
| 9 | | | |
| 10 | Total | 2500 | |
| 11 | | | |
| 12 | Average | 500 | |

## 1.5 Relative and absolute references

When you copy and paste a formula from one cell to another the ***relative positioning*** of the function arguments is retained.

For example, if the formula in cell A3 is

=A1 * A2

what it is really saying is multiply

- the contents of a cell two rows above (A1) by
- the contents of a cell one row above (A2).

So if we were to copy the formula (CTRL + C) and paste (CTRL+V) into say cell D3 the formula would paste as

= D1 * D2

i.e. the relativity of multiplying a cell two rows above (D1) by a second cell one row above (D2) has been retained.

The alternative to relative cell references is absolute reference. An absolute cell reference does not change when you copy and paste the formula to another cell and is identified by the dollar $ prefix.

**Illustration: Relative vs. Absolute cell references**

***1. Relative cell references***

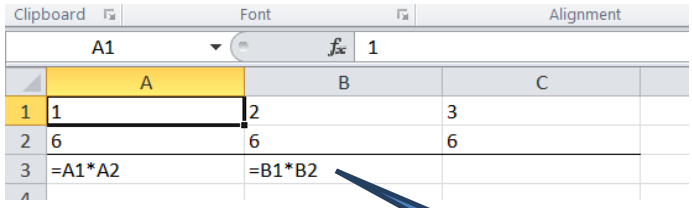
**1.1 Enter the following formula into cell A3**

**= A1 * A2**

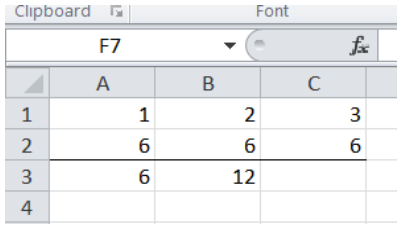
**1.2 Copy cell A3 (CTRL+C) and paste into cell B3 (CTRL+V).**

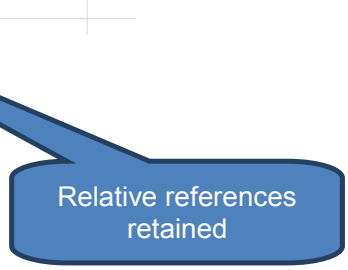
**Cell B3 appears as follows:**

**= B1 * B2**




**The values are:**




*2. Absolute cell references*

**2.1 Click on cell A3 then click into the formula bar highlighting all the arguments**

**2.2 Press function key F4**

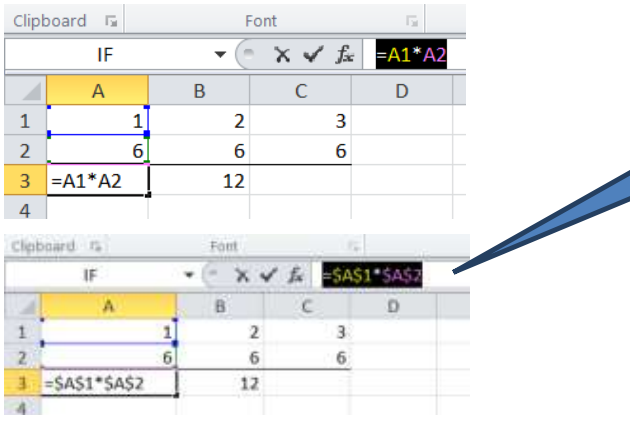
**The formula in cell A3 changes to:**

**= $A$1 * $A$2**

**2.3 Copy the formula from cell A3 (CTRL+C) and paste into C3 (CTRL + V).**

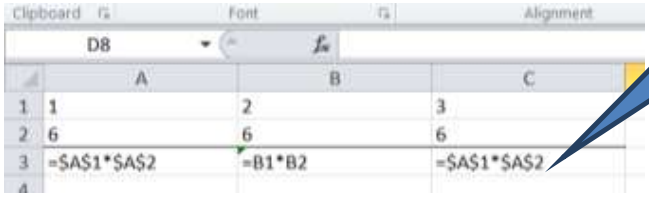
**This time rather than C3's new formula being '= C1 * C2' as in the previous example, cell C3 has retained absolute references to cells A1 and A2 and also shows:**

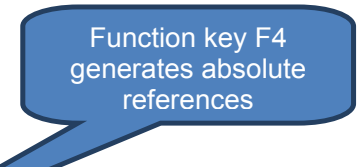
**= $A$1 * $A$2**

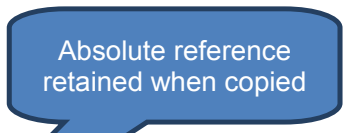








## 1.6 Avoiding common formula errors

The following table summarises common errors that users encounter when building formulas

| Point often over-looked | Comments |
|---|---|
| Enter numbers without formatting | e.g. PKR 50,000 should be entered as 50000 (no comma for thousands or currency notation) |
| Include the path to external workbooks | All external links should include a path to the source workbook. |
| References to other worksheet names should be made in single quotation marks | Note this is only necessary when the other worksheet name includes a non-alphabetical character such as a hyphen – or a plus sign + |
| You must enter exactly the required number of arguments | For functions that have a specified number of arguments you must enter exactly the required number. |
| Use a colon to indicate a range | Some users accidentally use the hyphen but remember this is the subtraction operator in Excel. A range should be for example A1:A4 |
| Match all open and close parentheses | Be careful when nesting functions. Ever open parenthesis must be matched by a close parenthesis. This is why it can be a useful technique to build nested functions function by function as it can be difficult to identify missing parentheses in multi-level embedded functions. |

## 1.7 Deleting a formula

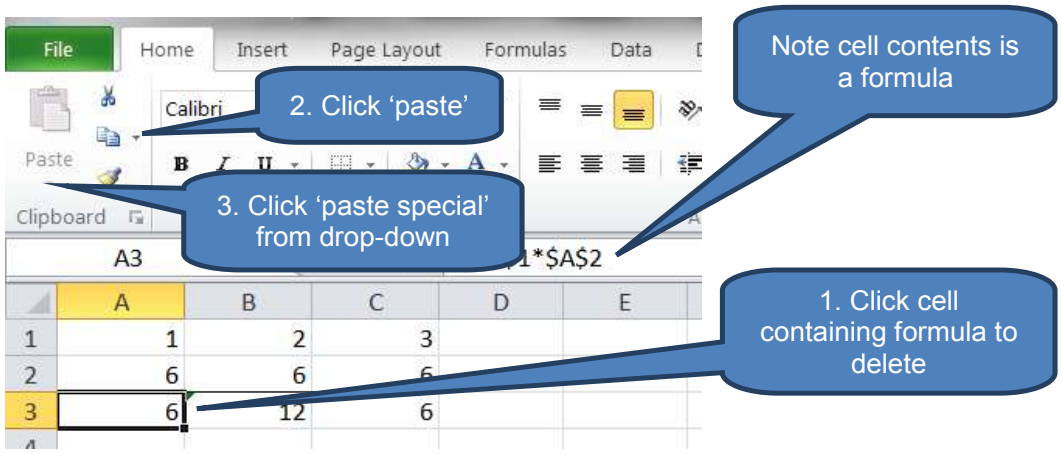
There are two methods for deleting a formula

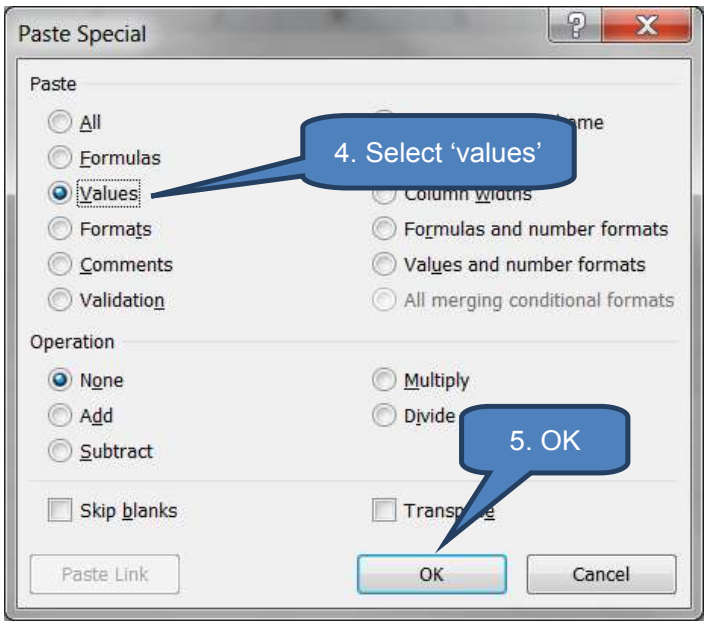
### Delete key

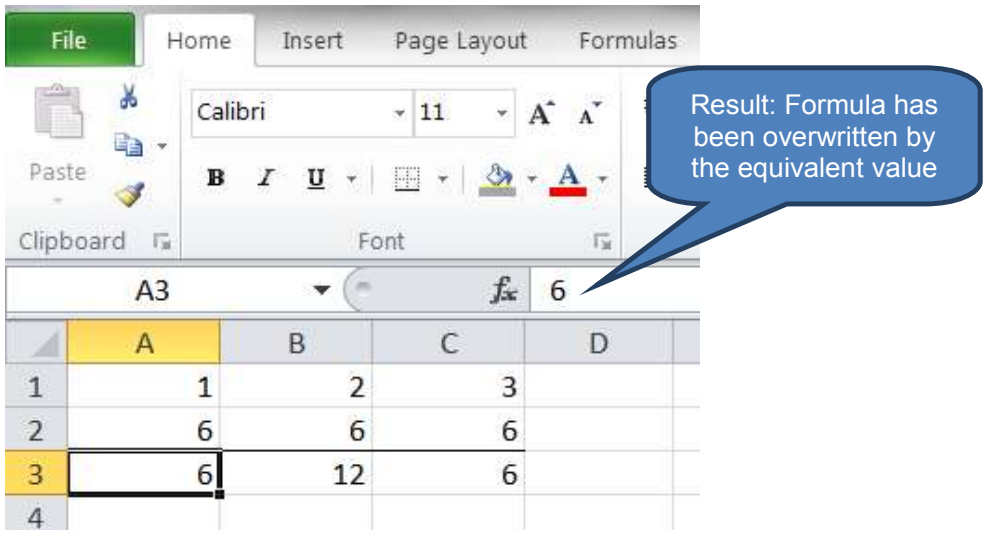
- Click the cell containing the formula to delete
- Press the ***DELETE*** key
- Note that using the delete key empties the cell of all its contents, including the result of the former formula.

### Paste-special values

- Click the cell containing the formula to delete
- Click ***Copy*** in the ***Clipboard*** group on the ***Home*** tab (or press CTRL+C)
- Click ***Paste Special*** under the ***Paste*** drop-down and select ***Values***.
- Click ***OK***


File
Home
Insert
Page Layout
Formulas
Data
Calibri
Paste
Clipboard
2. Click 'paste'
3. Click 'paste special' from drop-down
Note cell contents is a formula
A3
1*$A$2
1. Click cell containing formula to delete
A
B
C
D
E
1
1
2
3
2
6
6
6
3
6
12
6


Paste Special
Paste
All
Formulas
Values
Formats
Comments
Validation
Column widths
Formulas and number formats
Values and number formats
All merging conditional formats
4. Select 'values'
Operation
None
Add
Subtract
Multiply
Divide
5. OK
Skip blanks
Paste Link
OK
Cancel


File
Home
Insert
Page Layout
Formulas
Calibri
11
Paste
Clipboard
Font
Result: Formula has been overwritten by the equivalent value
A3
6
A
B
C
D
1
1
2
3
2
6
6
6
3
6
12
6
4

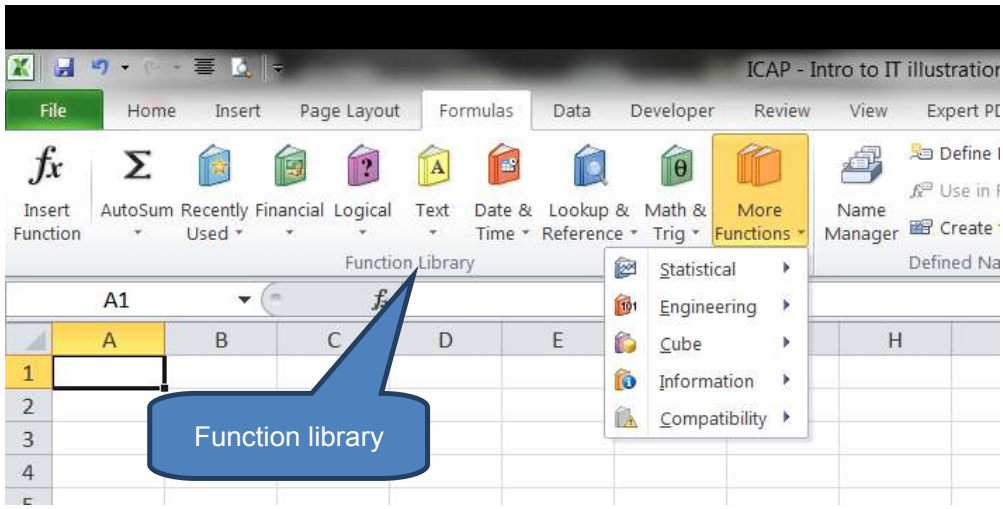
# 2 USEFUL FUNCTIONS FOR ACCOUNTANTS

**Section overview**

- Introduction
- Compatibility functions
- Date and time functions
- Financial functions
- Information functions
- Logical functions
- Lookup and reference functions
- Math and trigonometry functions
- Statistical functions
- Text functions

## 2.1 Introduction

Microsoft Excel functions are categorized by their functionality into the various groupings shown in the ***Function Library*** on the ***Formulas tab***.

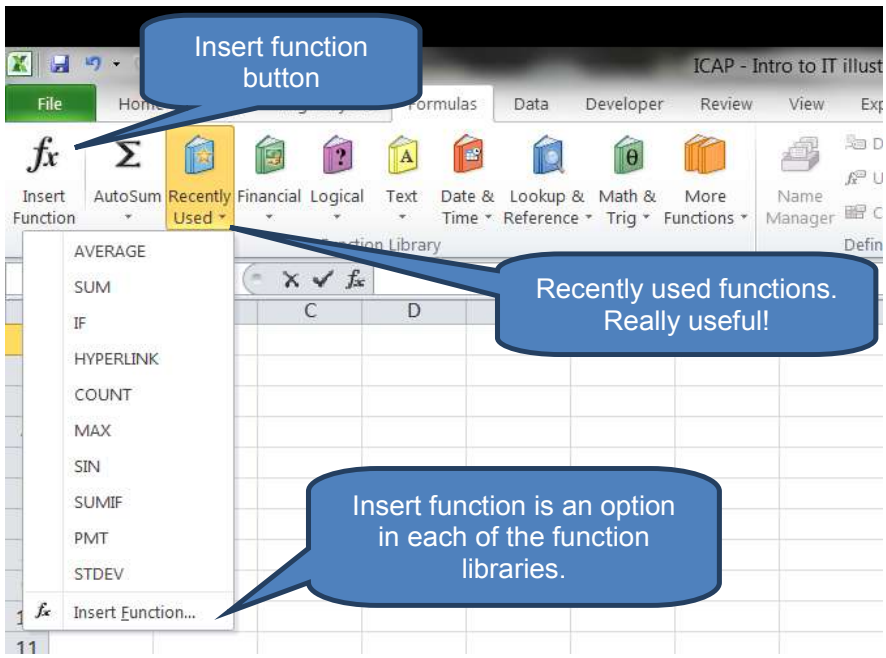



Last section we introduced the mechanics of how to enter, edit and delete functions. In this section we explore each of the function libraries for the functions most commonly used by Accountants giving examples where appropriate.

Note that we have not covered all the available functions by any means, just those that you are most likely to encounter as Accountants.

One really useful option in the functions library is the ***Recently Used*** category, which does exactly what it says – lists your most recently used functions.

Note too that if you can't remember which library a function belongs to you can click '***Insert Function***' either on the Formulas menu bar or at the foot of any of the drop-down Library menus.



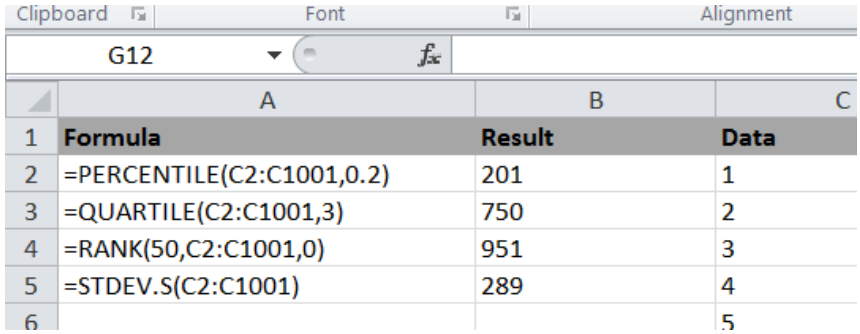

## 2.2 Compatibility functions

| Function | Comment |
|---|---|
| PERCENTILE (array, k) | Returns the k'th percentile of values in a range.<br>e.g. **=PERCENTILE(C1:C1000,0.2)** would return the 20th percentile |
| QUARTILE(array,quart) | Returns the quartile of a dataset (note: quart values can be 0 – minimum value, 1 – 25th percentile, 2 – 50th percentile, 3 – 75th percentile, 4 – maximum value).<br>e.g. **=QUARTILE(C1:C1000,3)** would return the 75th percentile |
| RANK(number,ref,[order]) | Returns the rank of a number in a list of numbers. Note, for 'order', 0 is descending and 1 is ascending.<br>e.g. **=RANK(C20,C1:C1000,0)** |
| STDEV.S(number1, number2, number3 …..) | Estimates standard deviation on a sample.<br>e.g. **=STDEV.S(C1:C1000)** |

If the dataset C2:C1001 was simply a list of numbers from 1 to 1,000, the formulas and results would be as follows:

**Illustration: Compatibility functions**

If the dataset C2:C1001 was simply a list of numbers from 1 to 1,000, the formulas and results would be as follows:




| | A | B | C |
|---|---|---|---|
| 1 | **Formula** | **Result** | **Data** |
| 2 | =PERCENTILE(C2:C1001,0.2) | 201 | 1 |
| 3 | =QUARTILE(C2:C1001,3) | 750 | 2 |
| 4 | =RANK(50,C2:C1001,0) | 951 | 3 |
| 5 | =STDEV.S(C2:C1001) | 289 | 4 |
| 6 | | | 5 |

## 2.3 Date and time functions

| Function | Comment |
|---|---|
| TODAY() | Returns the current date |
| =NOW() | Returns the current time |
| =WEEKDAY(serial_number,[return_type]) | Returns the day of the week corresponding to a date (i.e. serial_number).<br>e.g. **=WEEKDAY(TODAY(),1)** returns 2 (i.e. a Monday as under return type 1, days of the week range from 1 (Sunday) to 7 (Saturday). Other common return_types include:<br>• 2: ranges from 1 (Monday) to 7 (Sunday)<br>• 3: ranges from 0 (Monday) to 6 (Sunday) |
| =WEEKNUM(serial_number,[return_type]) | Returns the week number of a specific date. E.g. week containing january 1 is the first week of the year and is number 1.<br>e.g. **=WEEKNUM(TODAY(),1)** returns 1 if today is 3 January. |

**Illustration: Date and time functions**

| | E | F |
|---|---|---|
| | **Formula** | **Result** |
| | =TODAY() | 01/01/2014 |
| | =NOW() | 01/01/2014 |
| | =WEEKDAY(TODAY(),1) | 4 |
| | =WEEKNUM(TODAY(),1) | 1 |

## 2.4 Financial functions

Microsoft Excel 2010 includes a large range of financial functions. However, they are specialised in nature, for example relating to treasury, banking or actuarial roles.

A number of functions are briefly summarised below but note that detailed knowledge of these functions will not be required in the exam.

| Function | Comment |
|---|---|
| ACCRINT | Returns accrued interest on a secuity paying periodic interest |
| ACCRINTM | As ACCRINT but interest paid at maturity |
| COUPDAYS | Returns number of days in the coupon period that contains the settlement date |
| CUMPRINC | Returns the cumulative principal paid on a loan between two periods |
| EFFECT | Returns effective annual interest rate |
| IRR | Returns the internal rate of return for a series of cash flows. |
| NPV | Returns the net present value of an investment based on a series of periodic cash flows and a discount rate. |
| SLN | Returns the straight-line depreciation of asset for a specified period. |
| YIELD | Returns the yield on a security that pays periodic interest |

## 2.5 Information functions

| Function | Comment |
|---|---|
| IS functions | Each IS function checks the specified value and returns TRUE or FALSE.<br>e.g. ISBLANK(A1) returns TRUE if cell A1 is blank, otherwise returns FALSE.<br>Typically these functions are used in IF statements.<br>e.g. **=IF(ISERROR(C6),"Exception occurred",C6*365)**. This would multiply C1 x 365 unless the value in C1 was an error, in which case the text string "Exception occurred" would be displayed |
| IS functions – examples | • **ISBLANK**(value)<br>• **ISERR**(value) – checks for any error except #N/A<br>• **ISERROR**(value) – checks for any error |

| Function | Comment |
|---|---|
| | • **ISLOGICAL**(value)- checks if it's a logical value e.g. TRUE<br>• **ISNA**(value) – checks if #N/A<br>• **ISNONTEXT**(value) – checks if non-text<br>• **ISNUMBER**(value)<br>• **ISREF**(value) – checks if it's a reference<br>• **ISTEXT**(value) |

**Illustration: Information functions**

| Formula | Result | Comment |
|---|---|---|
| =IF(ISERROR(C6),"Exception occurred",C6*365) | 1095 | Cell C6 = 3 |
| =IF(ISERROR(C7),"Exception occurred",C7*365) | Exception occurred | Cell C7 = #n/a |

## 2.6 Logical functions

| Function | Comment |
|---|---|
| AND(logical1, [logical2], [logical3]…) | Returns TRUE if all it's arguments are TRUE. Note – ALL arguments must be TRUE, otherwise FALSE will be returned.<br>e.g. **=AND(5*5=25,32/8=4)** would return TRUE |
| IF(logical_test,[value_if_true],[value_if_false]) | Returns one value if the condition is TRUE, otherwise returns another value.<br>e.g. if 2011 sales were in cell A1 and 2012 sales in A2 we could specify the following:<br>**=IF(A2>A1,"Sales increased","Sales not increased")** |
| IFERROR(value, value_if_error) | Returns a specified value if a formula (value) evaluates an error. Otherwise the result of the formula is returned. Useful for trapping formula errors.<br>e.g. **=IFERROR(25/0,"Exception")** would return "Exception" but =IFERROR(25/5,"Exception") would return 5. |
| NOT(logical) | Reverses the value of its argument.<br>e.g. **=NOT(2+2=4)** would return FALSE |
| OR(logical1,[logical2],[logical3]…) | Returns TRUE if any argument is TRUE. If all arguments are FALSE then FALSE is returned.<br>e.g. **=OR(A1>10%,A2>15%,A3>20%)** would return TRUE if any of the three tests hold TRUE. |

**Illustration: Logical functions**

| Formula | Result |
|---|---|
| =AND(5*5=25,32/8=4) | TRUE |
| =AND(5*5=23,32/8=4) | FALSE |
| =IF(C15>C14,"Sales increased","Sales not increased") | Sales increased |
| =IFERROR(25/0,"Exception") | Exception |
| =IFERROR(25/5,"Exception") | 5 |
| =NOT(2+2=4) | FALSE |
| =OR(A1>10%,A2>15%,A3>20%) | TRUE |

## 2.7 Lookup and reference functions

| Function | Comment |
|---|---|
| VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup]) | Looks in the first column of an array and moves across the row to return the value of a cell.<br>• **Lookup_value** – the value we're trying to match in the first column<br>• **Table_array** – the dataset that we're searching<br>• **Col_index_num** – Once we've found a match this is the number of columns to count across on that row for the result<br>• **[range_lookup]** – an optional value. Use "TRUE" if you want a 'best-fit' match to the data. Use "FALSE" if you need an exact fit. |
| HLOOKUP – lookup_value, table_array, row_index_num, [range_lookup]) | Works in an almost identical fashion to VLOOKUP except rather than checking for a matching row then moving across a certain number of columns, HLOOKUP checks for a matching column then moves down a certain number of rows. |

### VLOOKUP

The Vlookup function is used to search the first column of a range of cells and then returns a value from any cell on the same row of the range.

This is best described by way of an illustration.

**Illustration: VLOOKUP**

**Let's say we have a list of 1,000 employees in a worksheet with columns arranged as follows:**

- **A: Employee ID**

- B: Surname
- C: Department
- D: Salary

We could use the VLOOKUP function to search the records for employee XYZ2538 and return their salary from the 4th column as follows:

=VLOOKUP("XYZ2538",A1:D1000,4,FALSE)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Employee ID | Surname | Department | Salary |
| 2 | XYZ2528 | Noon | Sales | 100000 |
| 3 | XYZ2529 | Paracha | Sales | 80000 |
| 4 | XYZ2530 | Passi | Marketing | 70000 |
| 5 | XYZ2531 | Paswal | Operations | 40000 |
| 6 | XYZ2532 | Punu khel | Operations | 45000 |
| 7 | XYZ2533 | Qaimkhani | Finance | 60000 |
| 8 | XYZ2534 | Ramay | Finance | 58000 |
| 9 | XYZ2535 | Rana | Servicing | 42000 |
| 10 | XYZ2536 | Ranjha | Servicing | 43000 |
| 11 | XYZ2537 | Rathore | Manufacturing | 18000 |
| 12 | XYZ2538 | Sahi | Manufacturing | 22000 |
| 13 | XYZ2539 | Shanzay | Manufacturing | 30000 |
| 14 | XYZ2540 | Siyal | Manufacturing | 17000 |
| 15 | XYZ2541 | Sipra | Manufacturing | 29000 |
| 16 | XYZ2542 | Spal | Manufacturing | 33000 |

| Formula | Result |
|---|---|
| =VLOOKUP("XYZ2538",A1:D1000,4,FALSE) | 22000 |

## HLOOKUP

The Hlookup function is used to search the first row of a range of cells and then returns a value from any cell in the same column of the range.

This is best described by way of re-arranging a subset of the data from the Vlookup illustration into a columnar format.

**Illustration: HLOOKUP**

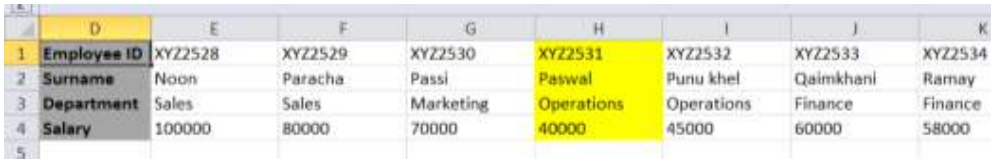
Let's say we have a list of 100 employees in a worksheet with rows arranged as follows:

- Row 1: Employee ID
- Row 2: Surname

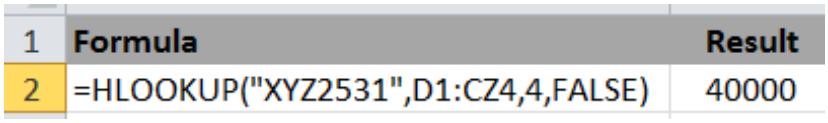
- **Row 3: Department**
- **Row 4: Salary**

**We could use the HLOOKUP function to search the columns for employee XYZ2538 and return their salary from the 4th row as follows:**

**=HLOOKUP("XYZ2531",D1:CZ4,4,FALSE)**



| | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|
| 1 | Employee ID | XYZ2528 | XYZ2529 | XYZ2530 | XYZ2531 | XYZ2532 | XYZ2533 | XYZ2534 |
| 2 | Surname | Noon | Paracha | Passi | Paswal | Punu khel | Qaimkhani | Ramay |
| 3 | Department | Sales | Sales | Marketing | Operations | Operations | Finance | Finance |
| 4 | Salary | 100000 | 80000 | 70000 | 40000 | 45000 | 60000 | 58000 |
| 5 | | | | | | | | |



| 1 | Formula | Result |
|---|---|---|
| 2 | =HLOOKUP("XYZ2531",D1:CZ4,4,FALSE) | 40000 |

## 2.8 Maths and trigonometry functions

| Function | Comment |
|---|---|
| ABS (number) | Returns the absolute value of a number (i.e. the number without its sign)<br>e.g. **=ABS(-3)** = 3 |
| CEILING (number, significance) | Rounds a number up (away from zero) to the nearest multiple of significance.<br>e.g. **=CEILING(7,2)** = 8 i.e. rounds 7 up to the next multiple of 2 |
| FLOOR (number, significance) | Rounds a number down (towards zero) to the nearest multiple of significance.<br>e.g. **=FLOOR(7,2)** = 6 i.e. rounds 7 down to the highest multiple of 2 |
| INT (number) | Rounds a number DOWN to the nearest integer.<br>e.g. **=INT(17.8)** = 17 |
| MOD (number, divisor) | Returns the remainder after a number is divided by the divisor. Note the result has the same sign as the divisor.<br>e.g. **=MOD(7,2)** = 1 i.e. 7/2=3.5, so working backwards 3 x 2 = 6, leaving one left over |
| ROUND (number, num_digits) | Rounds a number to a specified number of digits.<br>e.g. **=ROUND(13.7589,2)** = 13.76 |
| SUBTOTAL (function_num, ref1, [ref2], [ref3]….) | Returns a subtotal in a list or database. However, the term 'subtotal' can be misleading as it is not restricted to the (sum) function.<br>The 'function_num' argument defines which |

| Function | Comment |
|---|---|
| | function should be applied to the dataset, for example function_num 9 means SUM the dataset, whereas function_num 1 means take the average of the dataset.<br>See illustration SUBTOTAL below. |
| SUM (number1, [number2], [number3]…) | Adds all the numbers that are specified as arguments. Note that the arguments can take many forms, e.g. a range, constants, cell references).<br>e.g. **=SUM(2,10,13)** = 25.<br>If cells A1, A2 and A3 contained the values 2, 10 and 13 this could also be written as:<br>**=SUM(A1, A2, A3)** or alternatively<br>**=SUM(A1:A3)** or alternatively<br>**=SUM(A1:A2, A3)** |
| SUMIF (range, criteria, [sum_range]) | This clever function sums the values in a range that meet criteria that you specify. For example in a list of employees and salaries you might want to sum the salaries of all employees with manager grade.<br>See illustration SUMIF below. |
| TRUNC (number, [num_digits]) | Truncates a number to an integer by removing the fractional part of the number. If [num_digits] is not specified then it defaults to zero.<br>e.g. **=TRUNC(17.89,1)** = 17.8<br>e.g. **=TRUNC(17.89)** = 17 |

**Illustration: Maths and trigonometry functions**

| Formula | Result |
|---|---|
| =ABS(-3) | 3 |
| =CEILING(7,2) | 8 |
| =FLOOR(7,2) | 6 |
| =INT(17.8) | 17 |
| =MOD(7,2) | 1 |
| =ROUND(13.7589,2) | 13.76 |
| =SUM(2,10,13) | 25 |
| =TRUNC(17.89,1) | 17.8 |
| =TRUNC(17.89) | 17 |

**Illustration: SUBTOTAL**

Using a list of employees including their employee ID, surname, department and salary we can perform 11 different functions on the salary column using the subtotal function.

The dataset is as follows:

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Employee ID** | **Surname** | **Department** | **Salary** |
| 2 | XYZ2501 | Noon | Sales | 100000 |
| 3 | XYZ2502 | Paracha | Sales | 80000 |
| 4 | XYZ2503 | Passi | Marketing | 70000 |
| 5 | XYZ2504 | Paswal | Operations | 40000 |
| 6 | XYZ2505 | Punu khel | Operations | 45000 |
| 7 | XYZ2506 | Rathore | Manufacturing | 18000 |
| 8 | XYZ2507 | Sahi | Manufacturing | 22000 |
| 9 | XYZ2508 | Qaimkhani | Finance | 60000 |
| 10 | XYZ2509 | Ramay | Finance | 58000 |
| 11 | XYZ2510 | Rana | Servicing | 42000 |
| 12 | XYZ2511 | Ranjha | Servicing | 43000 |
| 13 | XYZ2512 | Shanzay | Manufacturing | 30000 |
| 14 | XYZ2513 | Siyal | Manufacturing | 17000 |
| 15 | XYZ2514 | Sipra | Manufacturing | 29000 |
| 16 | XYZ2515 | Spal | Manufacturing | 33000 |

The subtotal syntax is:

***= SUBTOTAL (function_num, ref1, [ref2], [ref3]….)***

The ref1, ref2 etc. arguments represent the data to be analysed. We can summarise this as the range D2-D16.

The Subtotal function has 11 different function_num arguments built-in which applied to our dataset give the following results:

| F | G | H |
|---|---|---|
| **Formula** | **Result** | **Function_num** |
| =SUBTOTAL(1,D2:D16) | 45800 | 1 = average |
| =SUBTOTAL(2,D2:D16) | 15 | 2 = count |
| =SUBTOTAL(3,D2:D16) | 15 | 3 = counta |
| =SUBTOTAL(4,D2:D16) | 100000 | 4 = max |
| =SUBTOTAL(5,D2:D16) | 17000 | 5 = min |
| =SUBTOTAL(6,D2:D16) | 1.22443242477051E+69 | 6 = product |
| =SUBTOTAL(7,D2:D16) | 23851.3252102627 | 7 = stdev.s |
| =SUBTOTAL(8,D2:D16) | 23042.5693011869 | 8 = stdev.p |
| =SUBTOTAL(9,D2:D16) | 687000 | 9 = sum |
| =SUBTOTAL(10,D2:D16) | 568885714.285714 | 10 = var |
| =SUBTOTAL(11,D2:D16) | 530960000 | 11 = varp |

In fact there are 22 different function_num arguments:

- Those in the range 1 to 11 will include hidden values (i.e. from hidden rows).
- Those in the range 101 to 111 (same order as the 1 to 11 range) will ignore hidden values.

**Illustration: AutoSum**

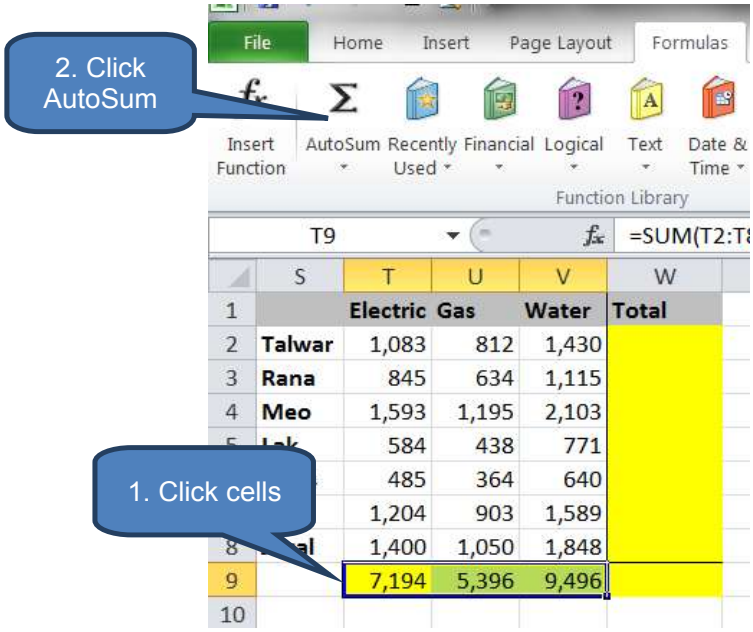
The quick method for summing data is to use the ***AutoSum*** function on the ***Formulas*** tab.

Let's say a property developer has seven tenants and information about how much each tenant owes for electric, gas and water:

| | S | T | U | V | W |
|---|---|---|---|---|---|
| 1 | | Electric | Gas | Water | Total |
| 2 | Talwar | 1,083 | 812 | 1,430 | |
| 3 | Rana | 845 | 634 | 1,115 | |
| 4 | Meo | 1,593 | 1,195 | 2,103 | |
| 5 | Lak | 584 | 438 | 771 | |
| 6 | Kalas | 485 | 364 | 640 | |
| 7 | Gill | 1,204 | 903 | 1,589 | |
| 8 | Jagal | 1,400 | 1,050 | 1,848 | |
| 9 | | | | | |
| 10 | | | | | |

We could add totals for electric, gas and water in cells T9, U9 and V9:

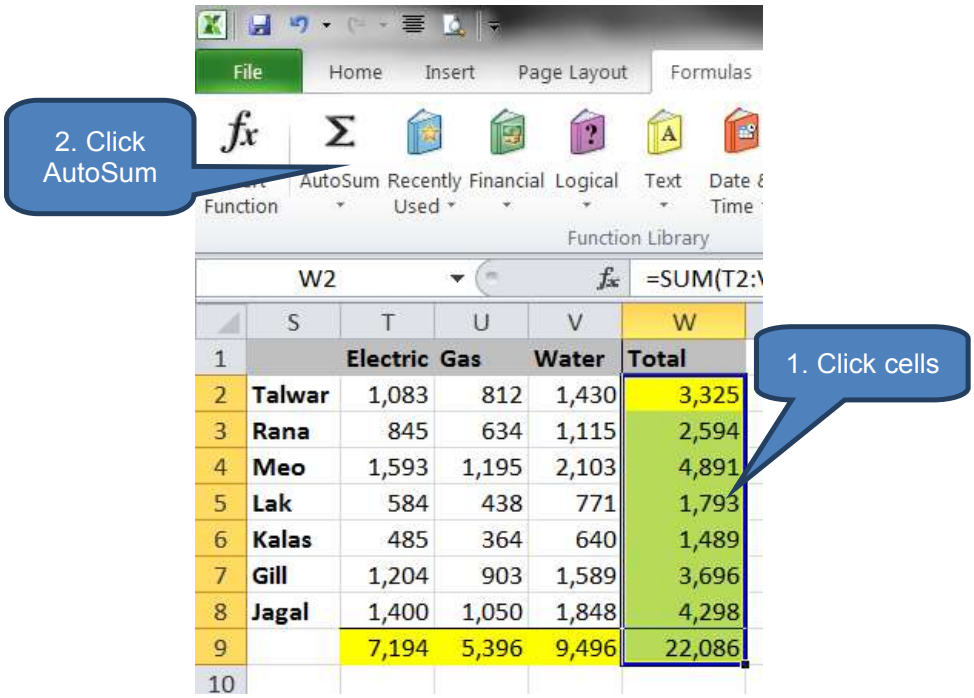
- Click cells T9, U9 and V9
- Click the ***AutoSum*** function on the ***Formulas*** tab




We could also create totals for each tenant in column W:

- Click cells W2 to W9

- Click the ***AutoSum*** function on the ***Formulas*** tab




| | S | T | U | V | W |
|---|---|---|---|---|---|
| 1 | | Electric | Gas | Water | Total |
| 2 | Talwar | 1,083 | 812 | 1,430 | 3,325 |
| 3 | Rana | 845 | 634 | 1,115 | 2,594 |
| 4 | Meo | 1,593 | 1,195 | 2,103 | 4,891 |
| 5 | Lak | 584 | 438 | 771 | 1,793 |
| 6 | Kalas | 485 | 364 | 640 | 1,489 |
| 7 | Gill | 1,204 | 903 | 1,589 | 3,696 |
| 8 | Jagal | 1,400 | 1,050 | 1,848 | 4,298 |
| 9 | | 7,194 | 5,396 | 9,496 | 22,086 |
| 10 | | | | | |

**Illustration: SUMIF**

**A human resources department wants to find out the combined salaries of all the employees in the Manufacturing department. The dataset is as follows:**

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Employee ID | Surname | Department | Salary |
| 2 | XYZ2501 | Noon | Sales | 100000 |
| 3 | XYZ2502 | Paracha | Sales | 80000 |
| 4 | XYZ2503 | Passi | Marketing | 70000 |
| 5 | XYZ2504 | Paswal | Operations | 40000 |
| 6 | XYZ2505 | Punu khel | Operations | 45000 |
| 7 | XYZ2506 | Rathore | Manufacturing | 18000 |
| 8 | XYZ2507 | Sahi | Manufacturing | 22000 |
| 9 | XYZ2508 | Qaimkhani | Finance | 60000 |
| 10 | XYZ2509 | Ramay | Finance | 58000 |
| 11 | XYZ2510 | Rana | Servicing | 42000 |
| 12 | XYZ2511 | Ranjha | Servicing | 43000 |
| 13 | XYZ2512 | Shanzay | Manufacturing | 30000 |
| 14 | XYZ2513 | Siyal | Manufacturing | 17000 |
| 15 | XYZ2514 | Sipra | Manufacturing | 29000 |
| 16 | XYZ2515 | Spal | Manufacturing | 33000 |

We can use the SUMIF formula as follows:

| Formula | Result |
|---|---|
| =SUMIF(C1:D16,"Manufacturing",D1:D16) | 149000 |

The syntax of SUMIF is:

- ***SUMIF (range, criteria, [sum_range])***

So in this illustration:

- **Range** = C1-D16. In practice the first column of the range should be the column that includes the selection criteria, in this case "Manufacturing"
- **Criteria** = "Manufacturing". Note the use of speech marks
- **Sum_range** = D1:D16. This represents the column from which entries should be added if the value in column C on that row matches the criteria.

So in plain terms, add up column D for all rows where column C on that row says 'Manufacturing'. The final result is that the total combined salary of all Manufacturing employees is 149,000.

## 2.9 Statistical functions

Like with the ***Financial*** function library, many of the ***Statistical*** functions are similarly specialised in nature. However, there are a number of useful functions in this library that can routinely assist accountants in their day-to-day work whether as auditors, accountants in industry, or indeed in any of the many other roles that accountants fulfil. These functions are summarised below.

| Function | Comment |
|---|---|
| AVERAGE (number1, [number2], [number3]…) | Returns the average of the arguments.<br>**e.g. =AVERAGE(C1:C1000)** |
| COUNT (value1, [value2], [value3]…) | Counts the number of cells in a range that contain a number (i.e. not text or logical values etc.) plus the number of numbers entered as arguments.<br>e.g. If there are numbers in cells C3, C8 and C11 but text in all other C-cells in the range C1 to C20, then<br>**=COUNT(C1:C20,10,11,12)** would return an answer of 6. i.e. the three numbers in cells C3, C8 and C11 plus three numbers entered as arguments 10, 11 and 12.<br>See illustration below. |
| COUNTA (value1, [value2], [value3]…) | Very similar to COUNT except that COUNTA simply counts non-empty cells and arguments, irrespective of type.<br>See illustration below. |

| Function | Comment |
|---|---|
| COUNTIF (range, criteria) | Countif returns a count of the number of cells in a range that satisfy the criteria.<br>See illustration below. |
| MAX (number1, [number2], [number3]…) | Returns the largest value in a set of values. Note that the arguments can either relate to cells or be constants.<br>e.g. if cells C1:C3 included the values 7, 11, 4<br>**=MAX(C1:C3)** = 11<br>But,<br>**=MAX(C1:C3, 15)** = 15 |
| MEDIAN (number1, [number2], [number3]…) | Returns the median (number in the middle of a set of numbers) of a list (can include a range) of numbers.<br>e.g. **MEDIAN(3,2,7,11,5)** = 5 |
| MIN (number1, [number2], [number3]…) | Opposite to the MAX function.<br>Returns the smallest value in a set of values. Note that the arguments can either relate to cells or be constants.<br>e.g. if cells C1:C3 included the values 7, 11, 4<br>**=MIN(C1:C3)** = 4<br>But,<br>**=MIN(C1:C3, 0)** = 0 |
| PERCENTILE.INC (array, k) | Returns the k-th percentile of values in a range where k is in the range 0..1 inclusive (i.e. 0% = 0 and 100% = 1).<br>e.g. **=PERCENTILE.INC(A1:A1000,0.25)** would return the 25$^{th}$ percentile of cells in the range A1:A1000. |
| STDEV.S (number1, [number2], [number3]…) | Calculates the standard deviation based on a sample of numbers (ignoring text and logical values that may have crept into the dataset).<br>e.g. **=STDEV.S(1,3,5,7,9)** = 3.16 |

**Illustration: Statistical functions**

| | AF | AG |
|---|---|---|
| | **Formula** | **Result** |
| | =AVERAGE(1,2,3,4,5) | 3 |
| | =MAX(7,11,4) | 11 |
| | =MIN(AG1:AG3,0) | 0 |
| | =MEDIAN(3,2,7,11,5) | 5 |
| | =PERCENTILE.INC({0,1,2,3,4,5},0.2) | 1 |
| | =STDEV.S(1,3,5,7,9) | 3.16 (2dp) |

**Illustration: COUNT vs. COUNTA vs. COUNTIF**

- Count returns a count of numbers in the arguments (or within any ranges entered as arguments).
- CountA returns the number of non-empty cells and arguments – i.e. text, error values, logic values etc.
- CountIF returns the number of cells in a range that satisfy the criteria

For example:

| | Z | AA | AB | AC |
|---|---|---|---|---|
| 1 | **Data** | | **Function** | **Result** |
| 2 | TRUE | | =COUNT(Z2:Z9,1,"Extra") | 2 |
| 3 | 1 | | =COUNTA(Z2:Z9,1,"Extra") | 10 |
| 4 | #REF! | | =COUNTIF(Z2:Z9,"Manufacturing") | 3 |
| 5 | Manufacturing | | | |
| 6 | Manufacturing | | | |
| 7 | Finance | | | |
| 8 | Operations | | | |
| 9 | Manufacturing | | | |

## 2.10 Text functions

| Function | Comment |
|---|---|
| EXACT (text1, text2) | The Exact function is useful for testing that text entered into a document is accurate. Also useful when combined with the LEFT, MID and RIGHT functions below for example for testing certain check-digits say in product codes or invoice numbers.<br>Returns TRUE if the text strings are exactly the same. EXACT is case-sensitive but ignores formatting such as bold or underline.<br>e.g. **=EXACT("saMe", "saMe")** = TRUE |
| LEFT (text, [num_chars]) | Returns the left most character (or characters if num_chars is used) of a text string.<br>e.g. **=LEFT("Pakistan",2)** = Pa |
| LEN (text) | Returns the number of characters in a text string<br>Note, spaces, commas etc. are also counted.<br>e.g. **= LEN("Pakistan, Asia")** = 14 |
| LOWER (text) | Converts all uppercase letters in a text string to lowercase.<br>e.g. **= LOWER("paKiSTAn")** = pakistan |
| MID (text, start_num, num_chars) | Returns a specific number of characters (num_chars) from a text string (text), starting at the position you specify (start_num).<br>e.g. =MID("Pakistan",3,4) = kist |
| PROPER (text) | Capitalizes the first letter in a text string plus any other text letters that follow a character other than a letter. All other letters are converted to lower case.<br>e.g. **=PROPER("account NuMBer 36CeB")** = Account Number 36Ceb |
| RIGHT (text, [num_chars]) | The opposite of the LEFT function - returns the right most character (or characters if num_chars is used) of a text string.<br>e.g. **=RIGHT("Pakistan",2)** = an |

| Function | Comment |
|---|---|
| TEXT (value, format_text) | TEXT allows us to convert a numeric value to text. The 'format_text' argument lets us specify the display formatting (e.g. m/d/yyyy, #,##0.00).<br>Note the following guidelines for text formats:<br>• 0 (zero) – Displays insignificant zeros if a number has fewer digits than specified in the format. E.g. 17.8 shows as 17.80 with format #.00<br>• # - Same as 0 (zero) but does NOT display insignificant zeros. Note that in effect this operates as a 'rounding' function when there are more digits than specified in the format.<br>• ? – Same rules as 0 (zero) but adds spaces to ensure the decimal points are aligned in columns.<br>• . (period) – displays the decimal point in a number.<br>e.g. **=TEXT(17.8945,"PKR #.##")** = PKR 17.89 |
| TRIM (text) | TRIM is particularly useful for formatting data received from other sources that may have irregular spacing.<br>TRIM removes all spaces from text except for single spaces between words.<br>e.g. **= TRIM(" Long account end")** = Long account end |
| UPPER (text) | Converts text to uppercase<br>e.g. **=UPPER("pAkiSTan")** = PAKISTAN |

**Illustration: Text functions**

| Formula | Result |
|---|---|
| =EXACT("saMe", "saMe") | TRUE |
| =LEFT("Pakistan",2) | Pa |
| =LEN("Pakistan, Asia") | 14 |
| =LOWER("paKiSTAn") | pakistan |
| =MID("Pakistan",3,4) | kist |
| =PROPER("account NuMBer 36CeB") | Account Number 36Ceb |
| =RIGHT("Pakistan",2) | an |
| =TEXT(17.89,"PKR #0.0") | PKR 17.9 |
| =TEXT(17.8945,"PKR #.##") | PKR 17.89 |
| = TRIM(" Long account end") | Long account end |
| =UPPER("pAkiSTan") | PAKISTAN |

## 3 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Understand and construct basic formulas
- Work with date formulas
- Use functions commonly used by accountants

CHAPTER 7

# Managing data and workbooks

## Contents

# INTRODUCTION

## Learning outcomes

LO 3.6.1 Export data from Excel to other applications and in other formats

LO3.6.2 Import data to Excel from other applications and in other formats

## Exam context

One of the key benefits of Microsoft Office products such as Microsoft Excel is the ability to import and export data between one application and another. This exchange of data occurs over a connection.

The chapter begins by introducing the fundamental concepts of importing and exporting data to and from Microsoft Excel. The introduction also explains the basic concepts of connections.

Subsequent sections then explore a number of examples of frequently used methods for importing and exporting data in a number of formats.

By the end of this chapter students will be able to:

- Understand the basics of data connections between Microsoft Excel and other applications
- Import data from other applications and in alternative formats
- Export data to other applications and in alternative formats

# 1 INTRODUCTION TO MANAGING DATA

**Section overview**

- Introduction to managing data

## 1.1 Introduction to managing data

There are two sources of data in an Excel workbook:

- Storing data directly in the workbook
- Storing data in an external data source

### Storing data directly in the workbook

Storing data locally in a workbook has the benefit of speed, control and accessibility.

However, it can become cumbersome to manage and consume disk space. Furthermore users may encounter accessibility challenges, particularly when sharing workbooks, which can lead to multiple and inconsistent copies of data co-existing. Imagine how dangerous this could be if it related to a human resources database.

This is why many operations benefit from having a single copy of secure and well-managed data that is maintained centrally but that multiple users can share.

### Storing data in an external data source

Examples of external data sources include

- Text files
- Databases
- OLAP (Online Analytical Processing) cubes

The workbook and external data source communicate via a data connection which includes information on location, log-in and accessing the external data source.

The benefits of storing data externally include

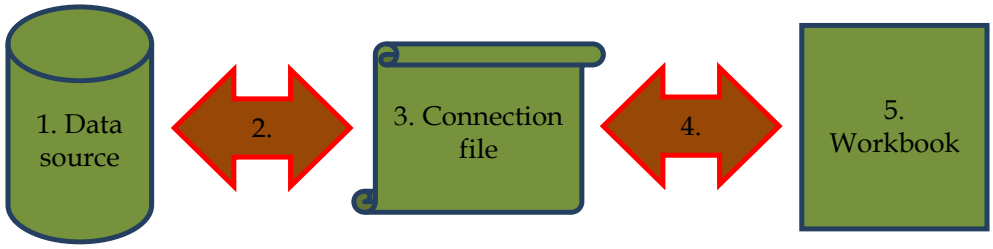
- You can periodically analyse the external data without repeatedly copying the data into your workbook. Such copying of data can be time-consuming and error-prone.
- Once connection has been established you can also automatically refresh (update) the linked Excel workbook from the original data source. This enables the workbook to be kept up-to-date.
- External data sources support data sharing and can promote data integrity by having just one central copy of the data.

Connection information is stored in a workbook and can also be stored in a connection file such as:

- ODC file – Office Data Connection
- .dsn – Data Source Name file

This can be illustrated as follows:

**Illustration: The basics of Excel data connections**




1. Data source such as a text file (.csv, .txt.), SQL Server or Microsoft Access.
2. Data source may have an associated ODBC driver or OLE DB provider. The terms ***ODBC driver*** and ***OLE DB connection*** describe the interface that connects a database with an application such as an Excel workbook. OLE DB is a more up-to-date and versatile method than ODBC.
3. A connection file is required which provides the bridge between the data source and the workbook. This defines all the information needed to access and retrieve data from a data source.
4. Connection information is copied from the connection file into a workbook. Users can then access and edit the connection information from within the workbook.
5. Data is ultimately displayed into the workbook (all the way from the data source) and available directly in the workbook for use.

Section 2 below introduces importing and exporting data with a number of worked examples. Section 3 then explores data connections in more detail.

# 2 IMPORTING AND EXPORTING DATA

**Section overview**

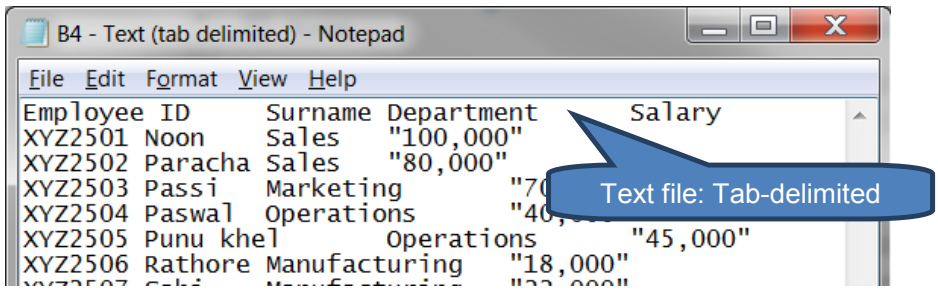
- Importing data from a text file
- Using the Text Import Wizard
- Exporting data to a text file

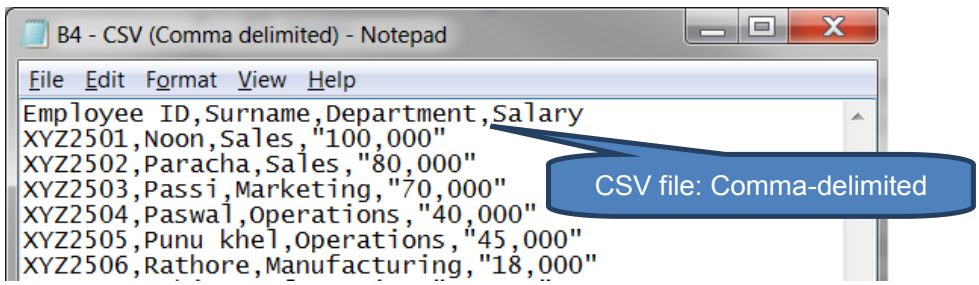
## 2.1 Importing data from a text file

There are two types of text files that you will typically encounter:

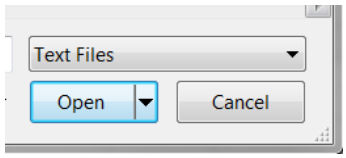
| Text file type | Comments |
|---|---|
| .txt | Delimited text file – the TAB character typically separates each text field. However, other separators are possible such as comma, semicolon and space. |
| .csv | Comma separated values text files – data is separated by a comma in these files. |

We can see the difference by looking at the same data set in Microsoft Notepad in both .txt and .csv formats as follows:



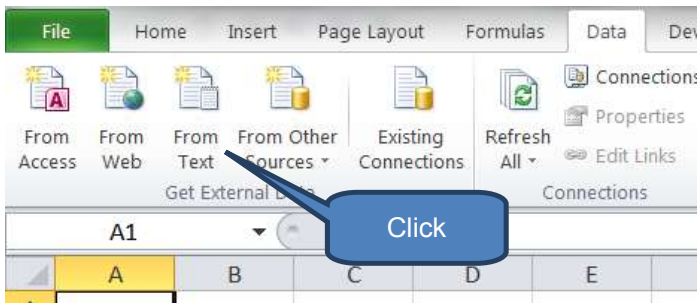

There are a number of methods for using this data in an Excel worksheet:

| Method | Comments |
|---|---|
| Open a .csv file directly into Excel | This is the simplest method. You can either:<br>• use the '**File-Open**' function in Excel (changing file type from 'All Excel Files' to '**Text Files**' so you can find the .csv file')<br>  <br>or<br>• use Windows Explorer to find the .csv file then use the 'Open With…' and select Microsoft Excel.<br>Note:<br>• **Opening a .csv file directly in Excel does NOT import the data nor create a connection**. You are literally in the live and original .csv file so any changes you make will change the .csv file. |
| Import a .csv or .txt using the Text Import Wizard within Excel | We can use the **Text Import Wizard** to generate a copy of the source data from the .csv or .txt file in an Excel Workbook. The process is explained in full detail below.<br>Note:<br>• Importing data using the Text Import Wizard (for both .csv and .txt files) **creates a copy of the source data in your workbook and also creates a connection back to the source file**. The connection can then be subsequently updated to reflect further changes to the source data. |

## 2.2 Using the Text Import Wizard

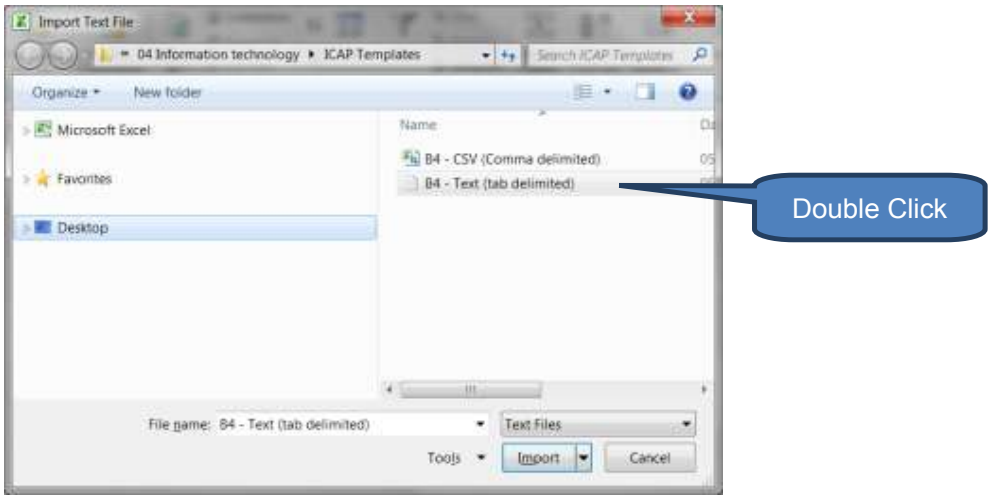
The **Text Import Wizard** assists users with importing data from a text file into a worksheet.

The Text Import Wizard is accessed by clicking ***From Text*** in the ***Get External Data*** group on the ***Data*** tab.




The process is best illustrated by working through an example. Let's import the below tab-delimited text file (shown open in MS Notepad):

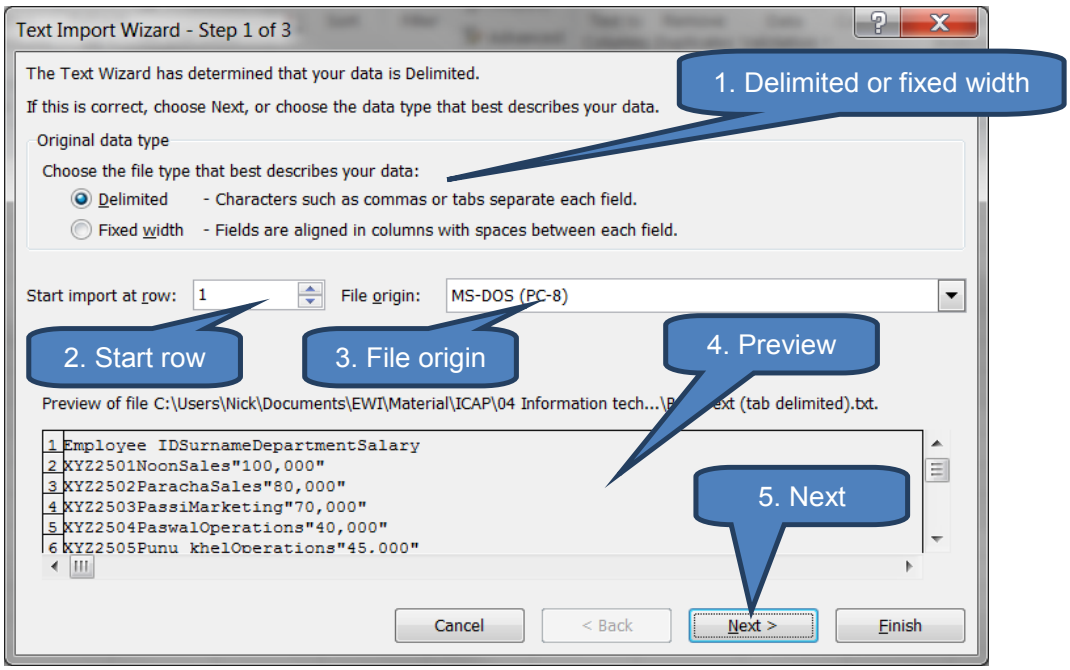
To start the process, double-click the text file to be imported from the **Import Text File** dialog box:




The text import wizard now involves three steps…

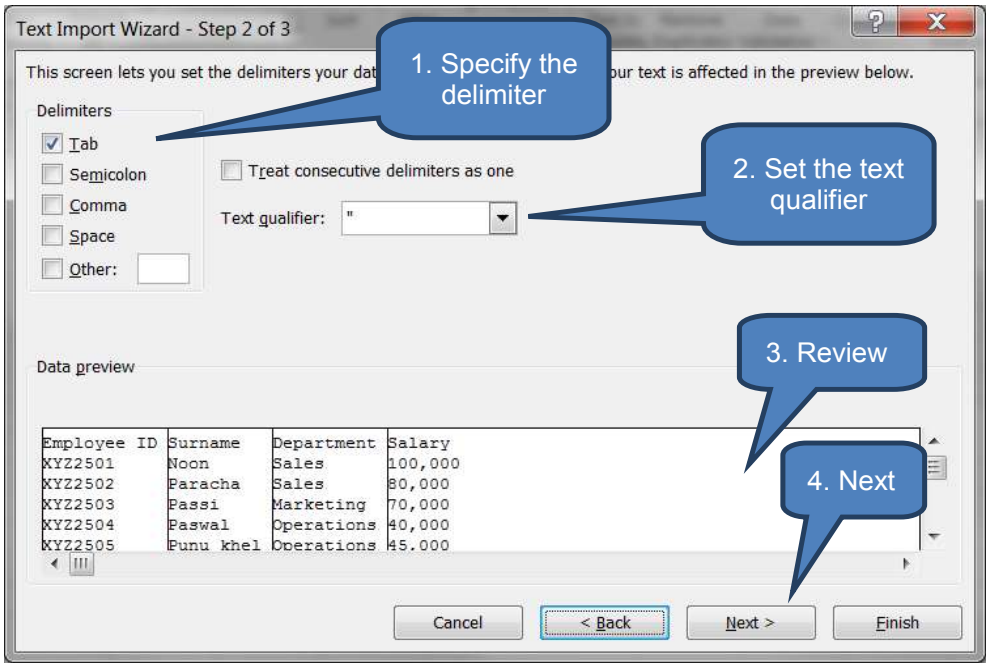
### Step 1 – Establish whether source data is delimited

- Select whether the text is delimited (i.e. fields are separated by a tab, colon, semicolon, space or other character) or fixed width (i.e. every column has the same number of characters)
- Select which row to start the import from. Note that we can easily delete unnecessary data rows from the imported worksheet later.
- Select file origin – i.e. the character set used in the text file. It is rare to need to re-set this from the default setting but you should double-check.
- Review the file preview.



### Step 2a – Delimited text - specify the delimiters

- Select the character that separates values in your text file – i.e. the delimiter.
- Set the text qualifier – i.e. the character that encloses values in the text file. Typically this will be double quotation marks “.
- Review the data preview.

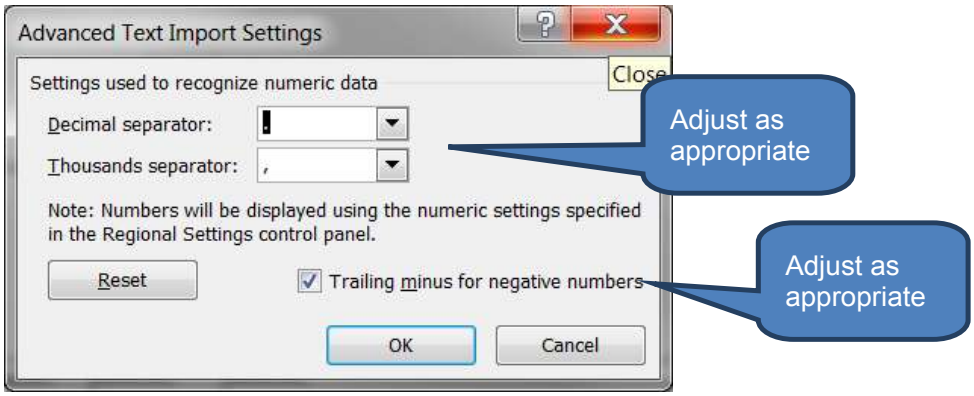



### Step 2b – Fixed width data

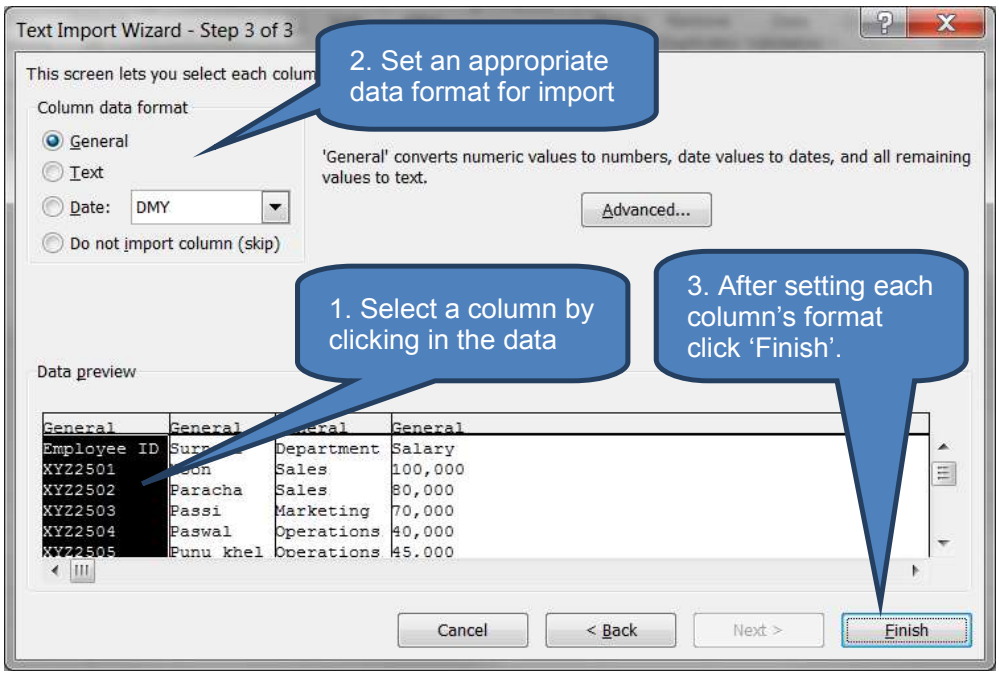
- If the data source is fixed-width then step 2 involves specifying the column widths.

### Step 3 – Specify data format for each column

- A practical approach to step 3 is to start by reviewing the data preview. You very quickly get a feeling for whether the settings are ‘about right’ or ‘need major surgery’.
- The ‘advanced’ button opens an advanced dialog box that allows you to
  - adjust the decimal and thousands separators; and
  - specify that one or more numeric values may contain a trailing minus sign

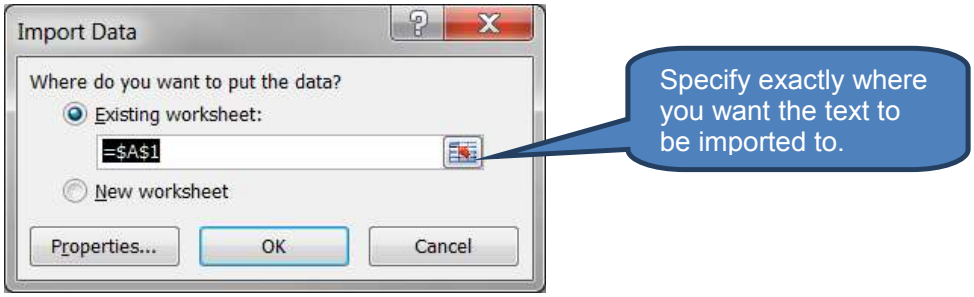



- For each of the data columns
  - Select the column by clicking somewhere on the data
  - Set the column data format (general, text or date) or alternatively select "Do not import column" to exclude that column from importing.

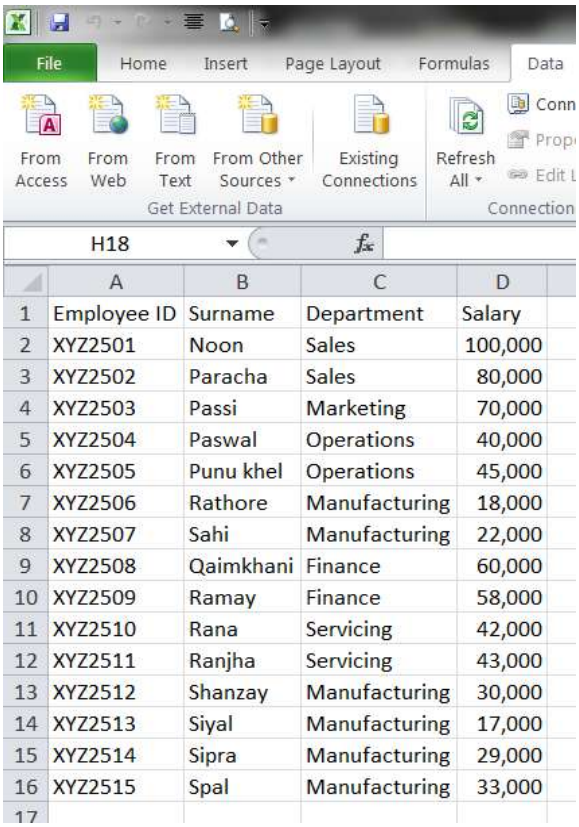



## Final steps

- Clicking the 'finish' button opens a final dialogue box seeking confirmation exactly where you want the imported data importing to.



The imported text data has now populated into your workbook.




| | A | B | C | D |
|---|---|---|---|---|
| 1 | Employee ID | Surname | Department | Salary |
| 2 | XYZ2501 | Noon | Sales | 100,000 |
| 3 | XYZ2502 | Paracha | Sales | 80,000 |
| 4 | XYZ2503 | Passi | Marketing | 70,000 |
| 5 | XYZ2504 | Paswal | Operations | 40,000 |
| 6 | XYZ2505 | Punu khel | Operations | 45,000 |
| 7 | XYZ2506 | Rathore | Manufacturing | 18,000 |
| 8 | XYZ2507 | Sahi | Manufacturing | 22,000 |
| 9 | XYZ2508 | Qaimkhani | Finance | 60,000 |
| 10 | XYZ2509 | Ramay | Finance | 58,000 |
| 11 | XYZ2510 | Rana | Servicing | 42,000 |
| 12 | XYZ2511 | Ranjha | Servicing | 43,000 |
| 13 | XYZ2512 | Shanzay | Manufacturing | 30,000 |
| 14 | XYZ2513 | Siyal | Manufacturing | 17,000 |
| 15 | XYZ2514 | Sipra | Manufacturing | 29,000 |
| 16 | XYZ2515 | Spal | Manufacturing | 33,000 |
| 17 | | | | |

## 2.3 Exporting data to a text file

You can export data to a text file simply by saving the worksheet with a .txt or .csv file-type.

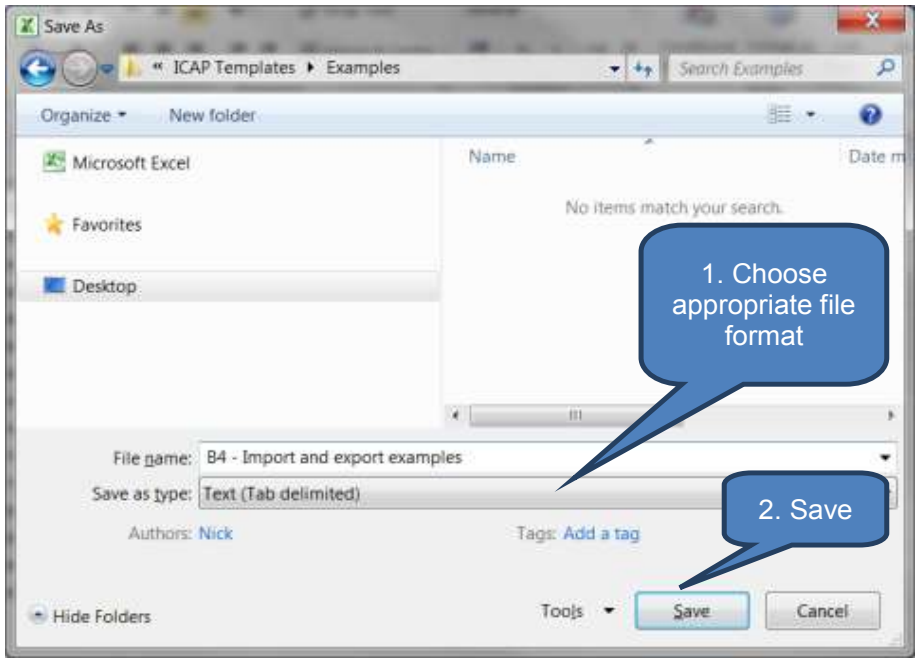
Note:

- You can only save the current worksheet (i.e. not multiple worksheets). So if you need to save multiple worksheets you will need to save each worksheet individually each with a different name.
- Text files are by definition relatively simple files (which minimises file size dramatically) without many of the features of an Excel workbook. Therefore data formatting such as bold, colours and shading will be lost in the export process.

To export data to a text file:

- Click **Save As** on the **File** tab

- Choose the text file format you wish to export to:
  - **Text** (Tab delimited)
  - **CSV** (Comma delimited)
- Click **Save**



# 3 DATA CONNECTIONS

**Section overview**

- Introduction
- Finding existing data connections
- Editing connection properties
- Refreshing data connections
- Exchanging data with other data sources
- Exporting data from Excel to Word

## 3 .1 Introduction

In the earlier worked example in section 2.2 we used the Text Import Wizard to import a text file (15 employee HR records) into Excel.

Behind the scenes Excel created connection data and a link between the Excel worksheet and the source data. This is exactly as described in the illustration in section 1.1 earlier.

During the import process Excel makes a local copy within the workbook of the imported data. However, Excel is clever in that the connection data means it remembers exactly where the imported data came from.

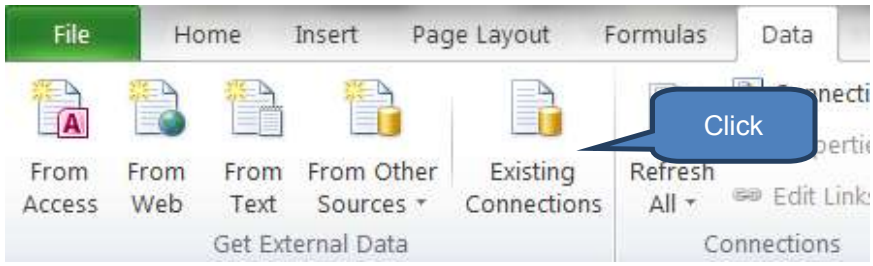
If the source data is changed we can either continue working with the original imported data or alternatively refresh the connection to pick up the updated source data.

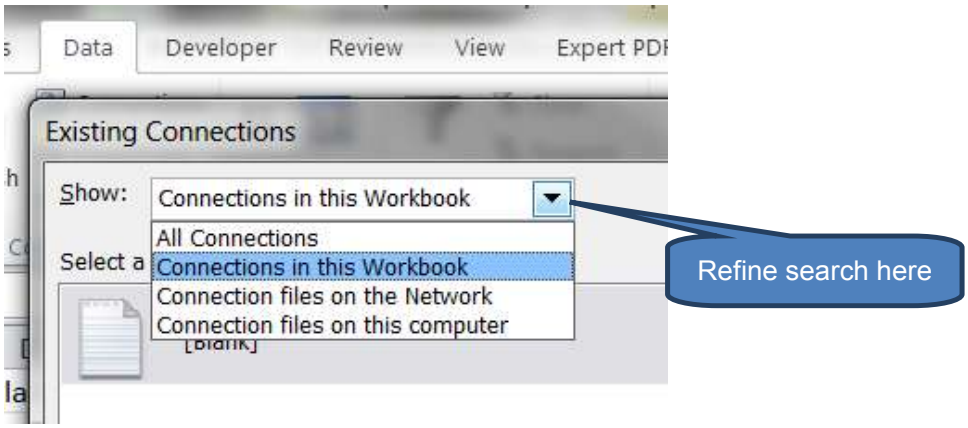
This section explains how we can identify and manage existing data connections.

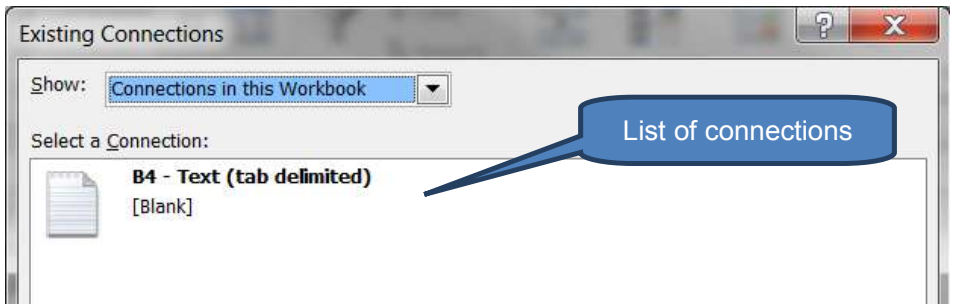
## 3.2 Finding existing data connections

To identify existing connection files:

- Click **Existing Connections** in the **Get External Data** section of the **Data** tab.
- You can narrow your search by selecting from the dialog box drop-down between
  - Connections in this workbook
  - Connection files in network
  - Connection files on this computer



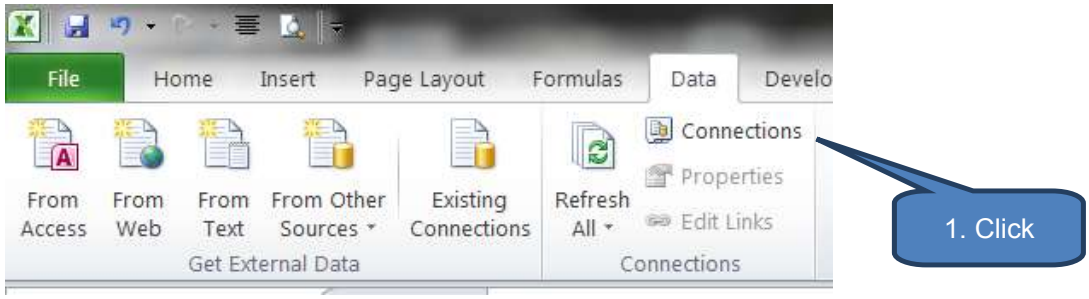


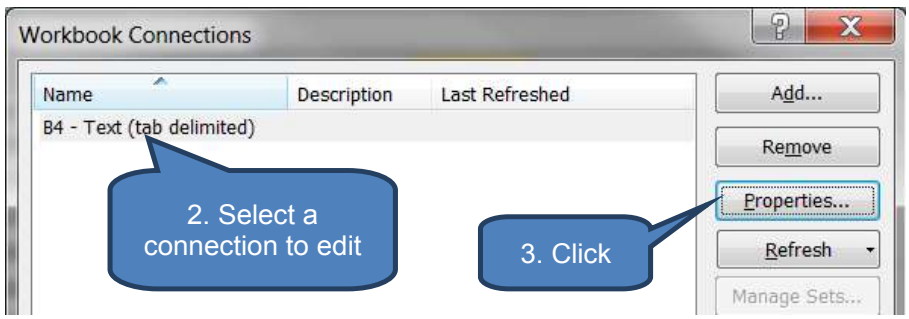



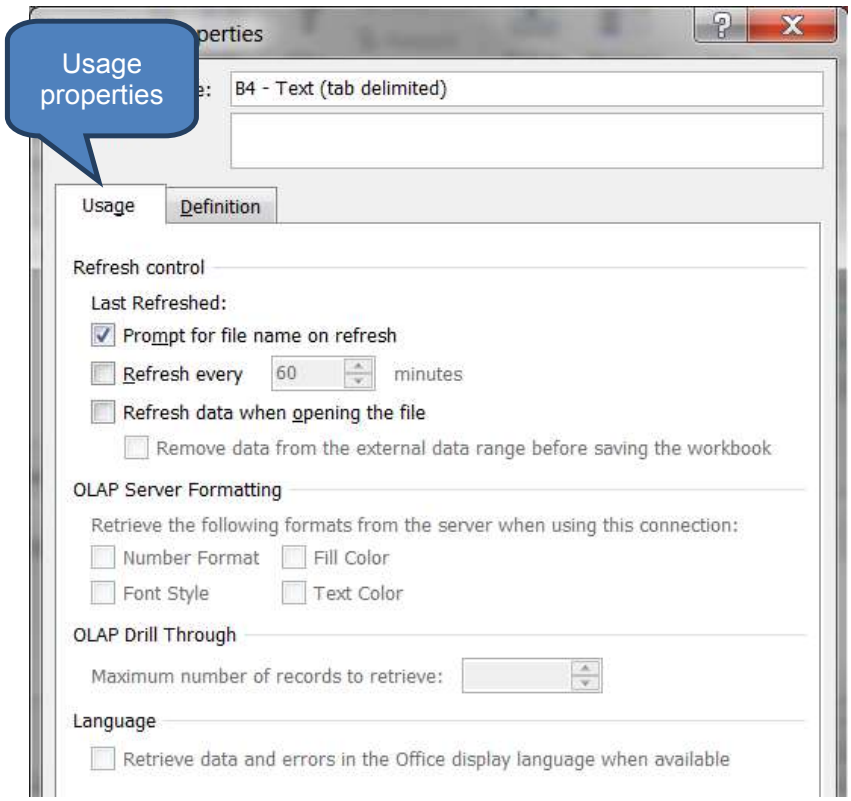

## 3.3 Editing connection properties

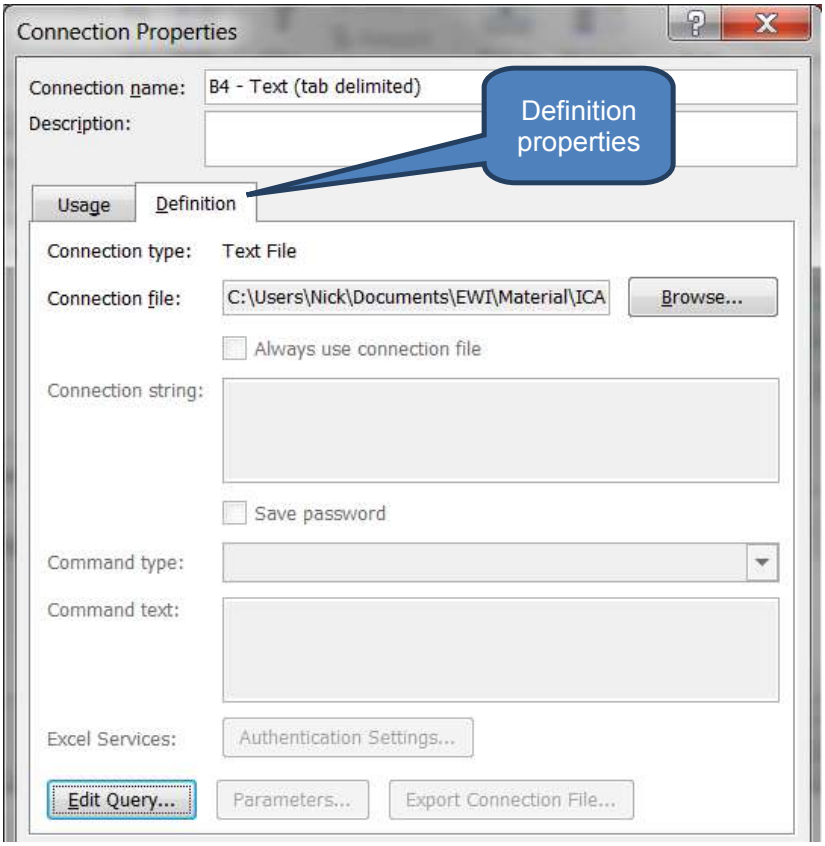
- Click '***Connections***' in the ***Connections*** section on the ***Data*** tab
- Select a connection to edit
- Click ***Properties***.

The Connection Properties dialog box gives numerous options for editing ***Usage*** and ***Definition*** properties.




Usage properties
B4 - Text (tab delimited)
Usage
Definition
Refresh control
Last Refreshed:
Prompt for file name on refresh
Refresh every
60
minutes
Refresh data when opening the file
Remove data from the external data range before saving the workbook
OLAP Server Formatting
Retrieve the following formats from the server when using this connection:
Number Format
Fill Color
Font Style
Text Color
OLAP Drill Through
Maximum number of records to retrieve:
Language
Retrieve data and errors in the Office display language when available


Connection Properties
Connection name:
B4 - Text (tab delimited)
Description:
Definition properties
Usage
Definition
Connection type:
Text File
Connection file:
C:\Users\Nick\Documents\EWI\Material\ICA
Browse...
Always use connection file
Connection string:
Save password
Command type:
Command text:
Excel Services:
Authentication Settings...
Edit Query...
Parameters...
Export Connection File...

## 3.4 Refreshing data connections

Microsoft Excel offers a number of options for when data updates should occur, including:

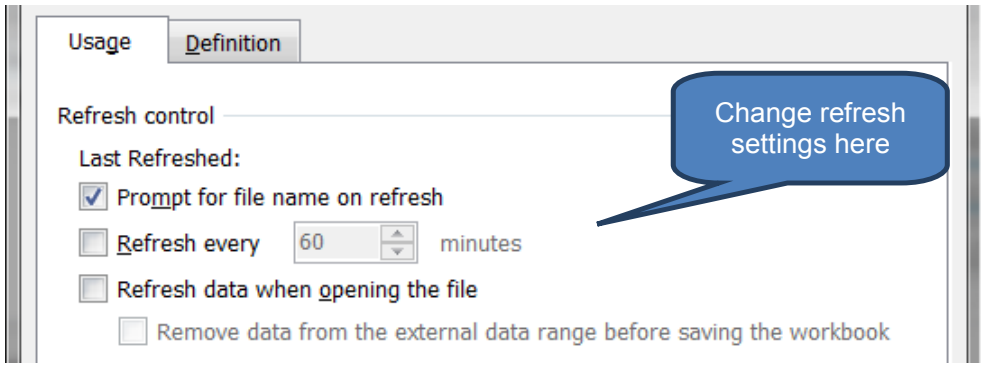
- Automatically refreshing data at timed intervals ("Refresh every x minutes")
- Refreshing data every time the workbook is opened
- Manual updates only – this occurs if neither of the above two options are checked.

You can continue to work on the workbook during refresh periodically checking the refresh status. Note that the external data source may require a password to gain access.

The refresh settings can be found on the Connection Properties dialog box that we opened in 3.3 above.

For each connection where "***Prompt for file name on refresh***" is ticked then you will need to negotiate the ***Import Text*** dialog box and select a file to link to every time you refresh.

Note that 'Prompt for file name on refresh' is ticked by default each time you set up a new connection.




### Manually refreshing connections

There are a number of options for refreshing connections:

- If you have multiple connections you can use the '***Refresh All'*** icon on the ***Connections*** group of the ***Data*** tab to simultaneously refresh all the connections.
- Alternatively you can click on '***Connections'*** in the ***Connections*** group of the ***Data*** tab and:
  - Refresh specific individual connections by ***selecting a connection*** then clicking the ***Refresh*** button; or
  - Refresh all the connections by clicking ***Refresh All*** from the ***Refresh*** drop-down.
- The other method for updating a single connection is
  - select a cell within the range where the connected data is currently populated
  - Click ***Refresh*** from the ***Connections*** group of the ***Data*** tab. This will only refresh the data connection associated with the selected cell.

**Illustration: Manually refresh connections**

**For this illustration we have two data sets each connected to a different text source file. I.e. there are two external connections.**

**The data currently appears as follows:**

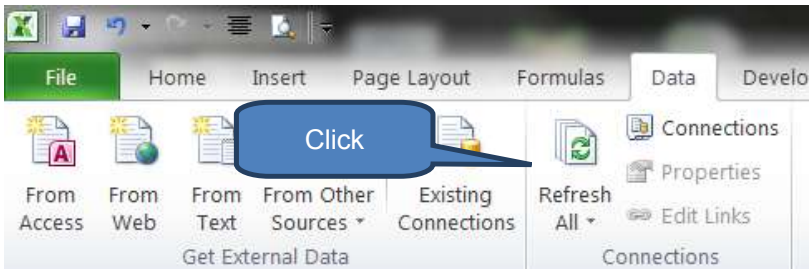
| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Head office | | | | | Research and development | | | |
| 2 | | | | | | | | | |
| 3 | Employee ID | Surname | Department | Salary | | Employee ID | Surname | Department | Salary |
| 4 | XYZ2501 | Noon | Sales | 100,000 | | RDD3201 | Badini | R&D | 200,000 |
| 5 | XYZ2502 | Paracha | Sales | 80,000 | | RDD3202 | Baloch | R&D | 160,000 |
| 6 | XYZ2503 | Passi | Marketing | 70,000 | | RDD3203 | Chandio | R&D | 140,000 |
| 7 | XYZ2504 | Paswal | Operations | 40,000 | | RDD3204 | Chang | R&D | 80,000 |
| 8 | XYZ2505 | Punu khel | Operations | 45,000 | | RDD3205 | Dasti | R&D | 90,000 |
| 9 | XYZ2506 | Rathore | Manufacturing | 18,000 | | RDD3206 | Esani | R&D | 36,000 |
| 10 | XYZ2507 | Sahi | Manufacturing | 22,000 | | RDD3207 | Gabol | R&D | 44,000 |
| 11 | XYZ2508 | Qaimkhani | Finance | 60,000 | | RDD3208 | Gola | R&D | 120,000 |
| 12 | XYZ2509 | Ramay | Finance | 58,000 | | RDD3209 | Jangi | R&D | 116,000 |
| 13 | XYZ2510 | Rana | Servicing | 42,000 | | RDD3210 | Janwari | R&D | 84,000 |
| 14 | XYZ2511 | Ranjha | Servicing | 43,000 | | RDD3211 | Korai | R&D | 86,000 |
| 15 | XYZ2512 | Shanzay | Manufacturing | 30,000 | | RDD3212 | Lari | R&D | 60,000 |
| 16 | XYZ2513 | Siyal | Manufacturing | 17,000 | | RDD3213 | Pitafi | R&D | 34,000 |
| 17 | XYZ2514 | Sipra | Manufacturing | 29,000 | | RDD3214 | Qaisrani | R&D | 58,000 |
| 18 | XYZ2515 | Spal | Manufacturing | 33,000 | | RDD3215 | Sethwi | R&D | 66,000 |

**Some changes have been made in the underlying data files as follows:**

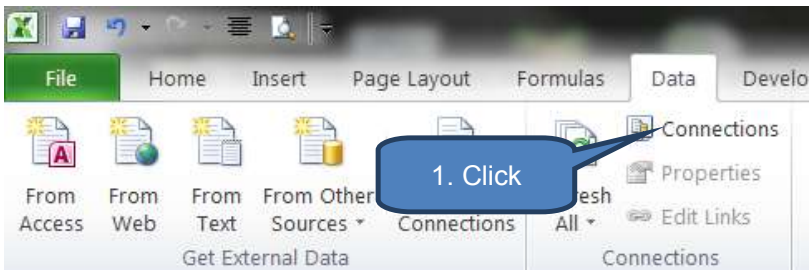
- Employees XYZ2505, RD3211 and RDD3212 have left
- Employee XYZ2516 has joined

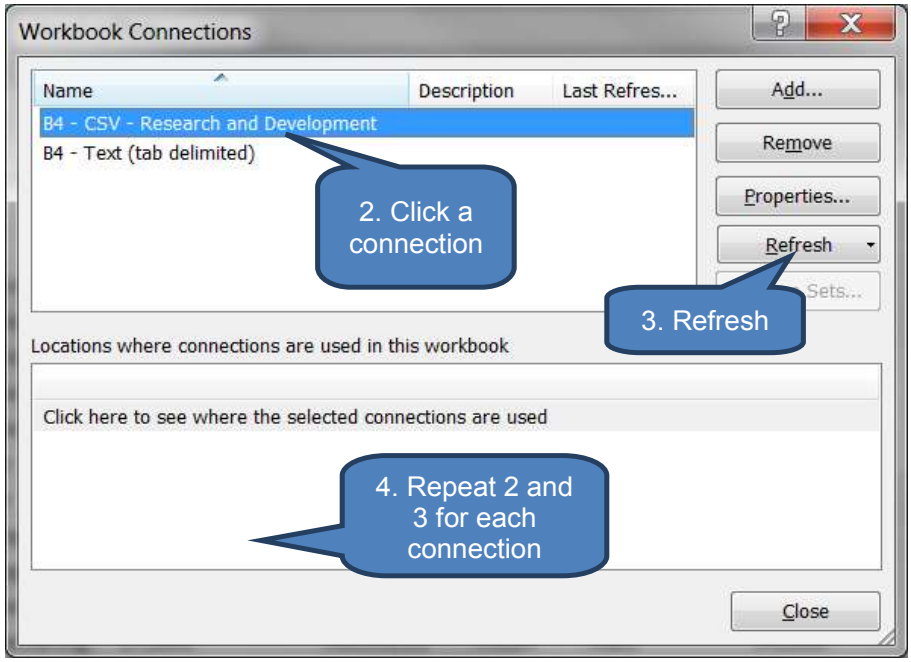
We therefore need to refresh connections to reflect these changes.

**Method 1**

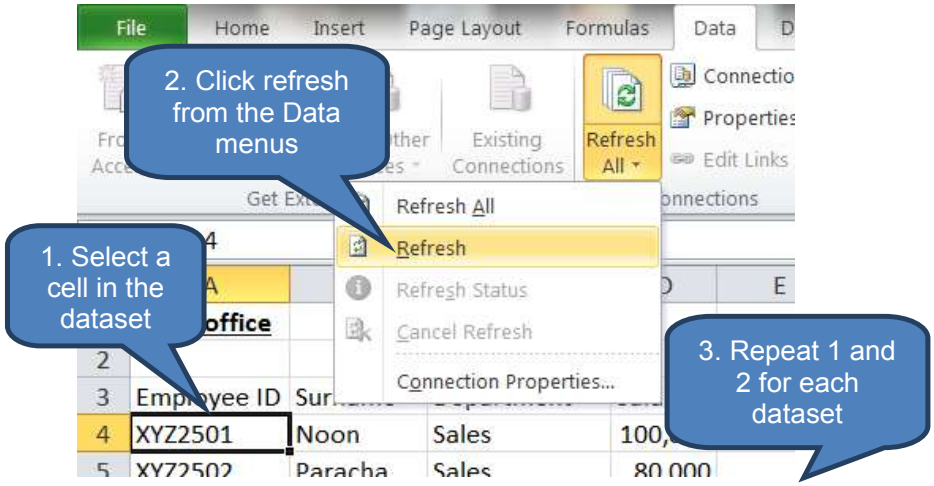



**Method 2**





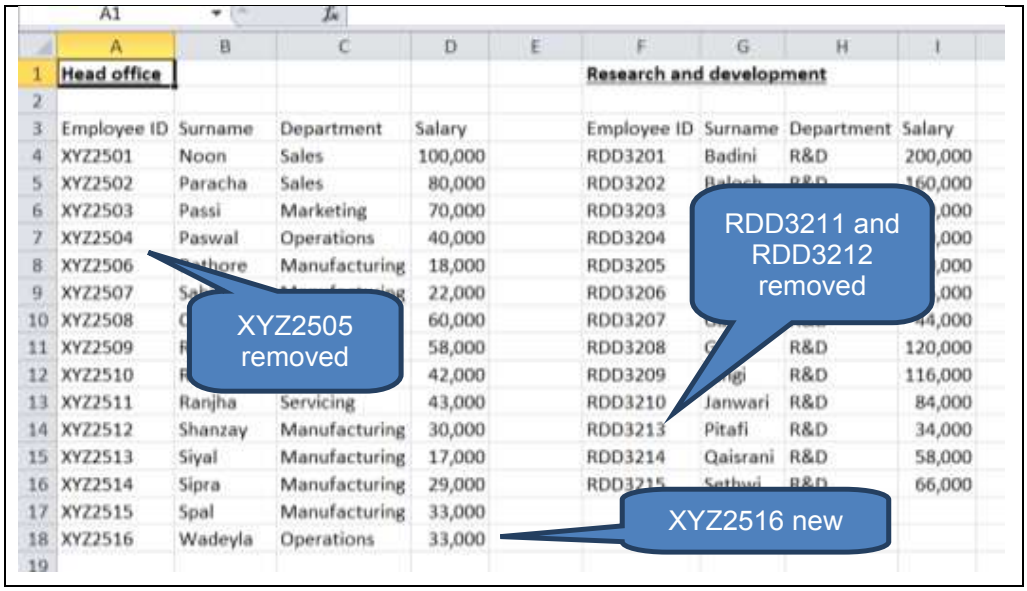

**Method 3**




**Results after refreshing connections**

**We can now see that three employees have been removed and a new one added:**

**(see over)**




| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Head office | | | | | Research and development | | | |
| 2 | | | | | | | | | |
| 3 | Employee ID | Surname | Department | Salary | | Employee ID | Surname | Department | Salary |
| 4 | XYZ2501 | Noon | Sales | 100,000 | | RDD3201 | Badini | R&D | 200,000 |
| 5 | XYZ2502 | Paracha | Sales | 80,000 | | RDD3202 | | | 160,000 |
| 6 | XYZ2503 | Passi | Marketing | 70,000 | | RDD3203 | | | ,000 |
| 7 | XYZ2504 | Paswal | Operations | 40,000 | | RDD3204 | | | ,000 |
| 8 | XYZ2506 | | Manufacturing | 18,000 | | RDD3205 | | | ,000 |
| 9 | XYZ2507 | | | 22,000 | | RDD3206 | | | ,000 |
| 10 | XYZ2508 | | | 60,000 | | RDD3207 | | | 44,000 |
| 11 | XYZ2509 | | | 58,000 | | RDD3208 | | R&D | 120,000 |
| 12 | XYZ2510 | | | 42,000 | | RDD3209 | | R&D | 116,000 |
| 13 | XYZ2511 | Ranjha | Servicing | 43,000 | | RDD3210 | Janwari | R&D | 84,000 |
| 14 | XYZ2512 | Shanzay | Manufacturing | 30,000 | | RDD3213 | Pitafi | R&D | 34,000 |
| 15 | XYZ2513 | Siyal | Manufacturing | 17,000 | | RDD3214 | Qaisrani | R&D | 58,000 |
| 16 | XYZ2514 | Sipra | Manufacturing | 29,000 | | RDD3215 | | | 66,000 |
| 17 | XYZ2515 | Spal | Manufacturing | 33,000 | | | | | |
| 18 | XYZ2516 | Wadeyla | Operations | 33,000 | | | | | |
| 19 | | | | | | | | | |

## 3.5 Exchanging data with other data sources

Microsoft Office supplies the OLE DB providers and ODBC drivers necessary to retrieve data from multiple sources including:

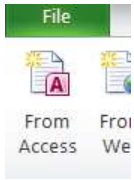
- Text files - as seen above
- Microsoft Access - see below
- XML files
- SQL Server Analysis Services
- Microsoft SQL Server
- HTML files on the World Wide Web (the internet) – see below

The Data Connection Wizard and Microsoft Query also support access to many other data sources that incorporate appropriate OLE DB providers and ODBC drivers. These include:

- Other Excel worksheets
- Paradox
- Oracle
- DB2
- dBASE
- Microsoft FoxPro

The below notes give an overview of importing (and exporting where relevant) with a selection of the above.

### Exchanging data with Microsoft Access and the internet

| Data source | Import | Export |
|---|---|---|
| Microsoft Access | • Copy from an Access table and paste into an Excel worksheet<br>• Set up a connection from an Excel worksheet to an Access database using the '***From Access'*** icon on the '***Get External Data'*** group of the ***Data*** tab<br>  <br>• Export Access data into an Excel worksheet | • Copy data from an Excel worksheet and paste into an Access table<br>• Import an Excel worksheet into an Access table<br>• Link to an Excel worksheet from an Access table |
| The Web | • Use the ***New Web Query*** dialog box (see illustration below) | |

### Other methods of exchanging data with Microsoft Excel

Select one of the options under the '***From Other Sources'*** icon in the ***Get External Data*** group on the ***Data*** tab

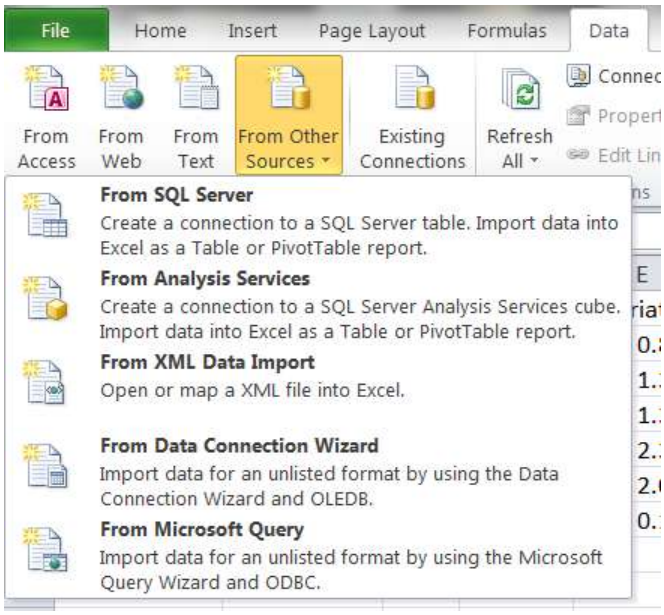
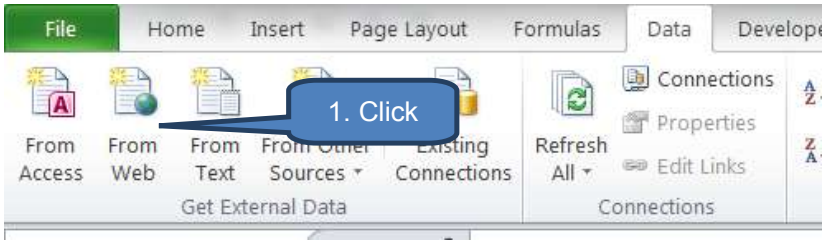
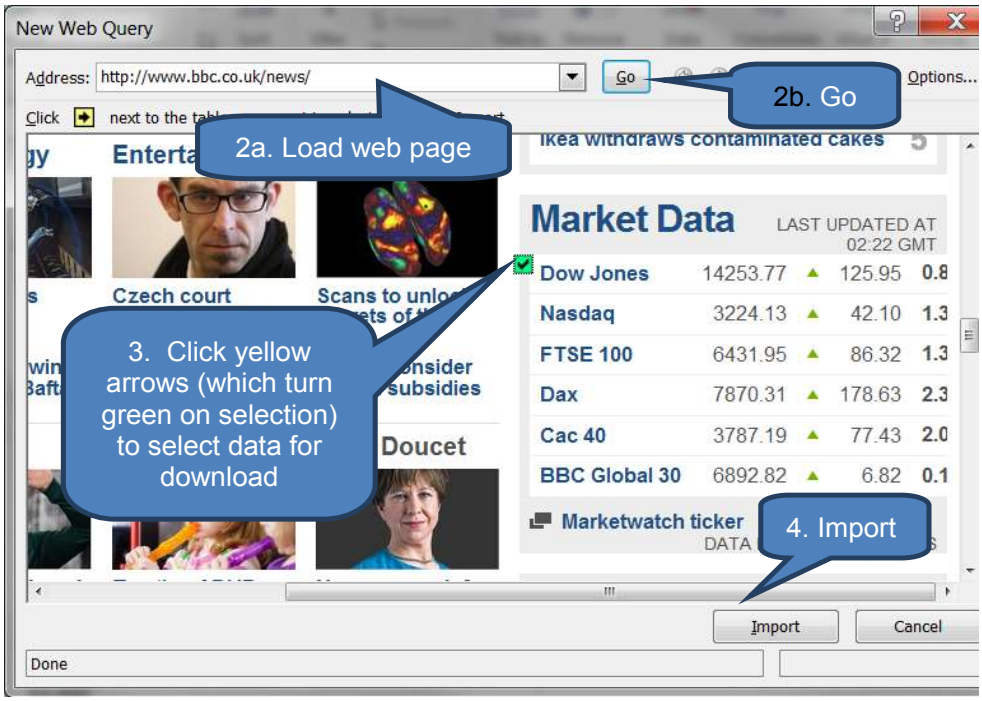
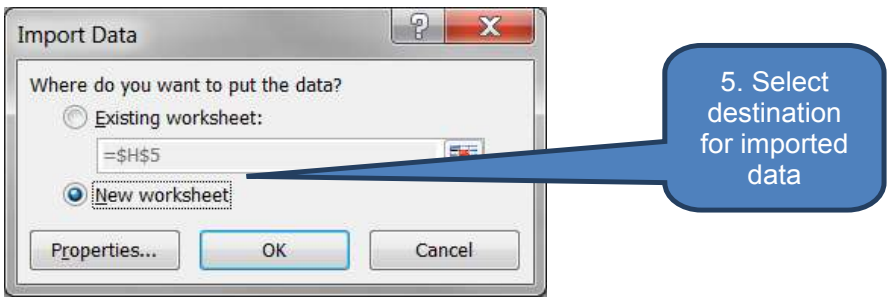


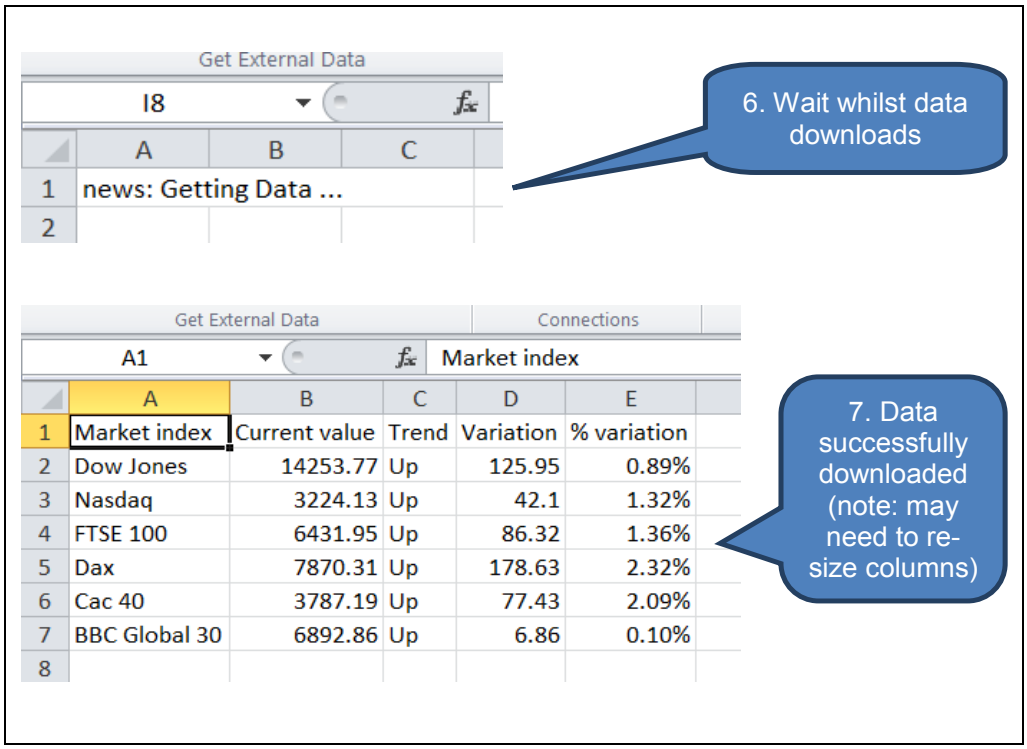
**Illustration: Importing data to Excel from the internet**

1. Click ***From Web*** in the ***Get External Data*** group on the ***Data*** tab
2. Select the web page and click ***Go***
3. Place yellow arrows next to the tables you want to import
4. Click ***Import***
5. Select a destination for the imported data
6. Wait whilst data downloads
7. Success - external data has been imported from the internet



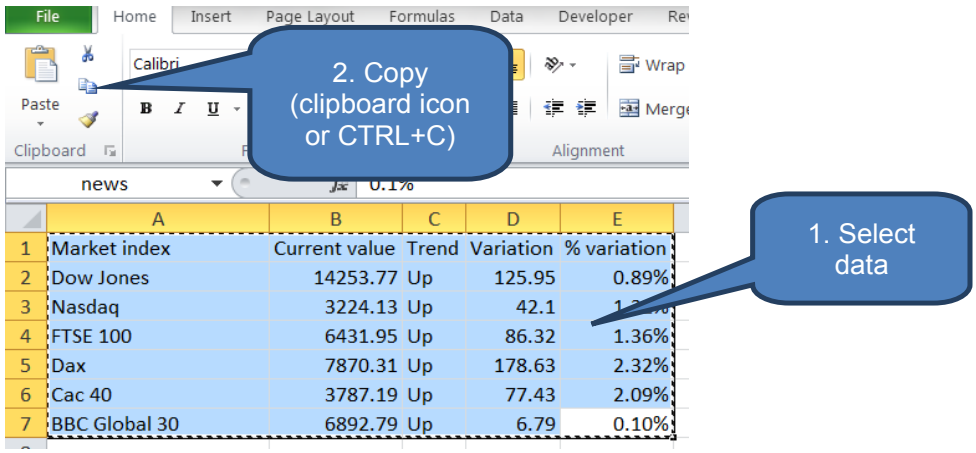


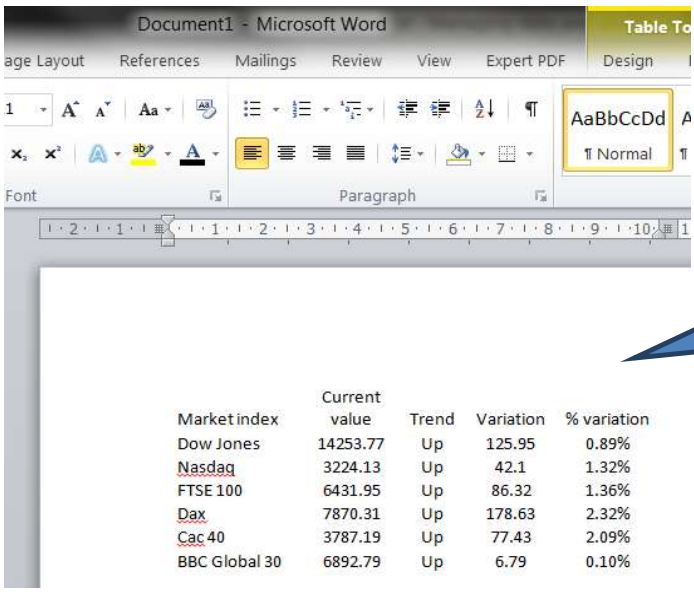

## 3.6 Exporting data from Excel to Word

The simple method is to

- ❑ Select the data in Excel
- ❑ Copy (CTRL+C)
- ❑ Click the location in your Microsoft Word file
- ❑ Paste (CTRL+V)

However, the downside of this method is that the pasted table in Word would normally need re-formatting.






3. Paste (clipboard icon or CTRL+V) and re-format

| Market index | Current value | Trend | Variation | % variation |
|---|---|---|---|---|
| Dow Jones | 14253.77 | Up | 125.95 | 0.89% |
| Nasdaq | 3224.13 | Up | 42.1 | 1.32% |
| FTSE 100 | 6431.95 | Up | 86.32 | 1.36% |
| Dax | 7870.31 | Up | 178.63 | 2.32% |
| Cac 40 | 3787.19 | Up | 77.43 | 2.09% |
| BBC Global 30 | 6892.79 | Up | 6.79 | 0.10% |

The cleaner (but longer) method is:

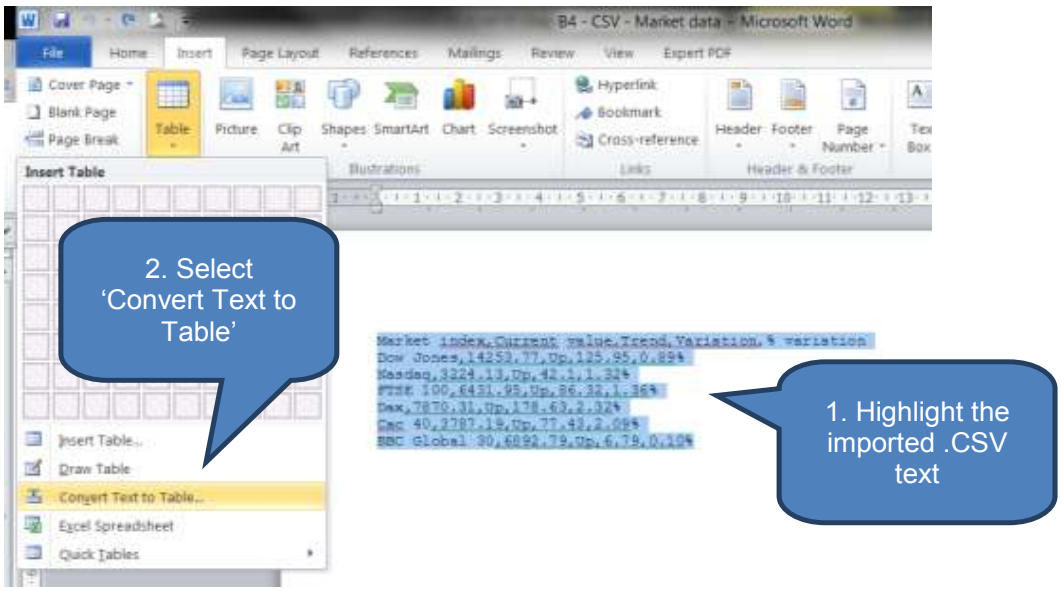
- ❑ Save the table as a ***.CSV*** comma delimited file (see section 2.3)
- ❑ In Microsoft Word open the ***.CSV*** file

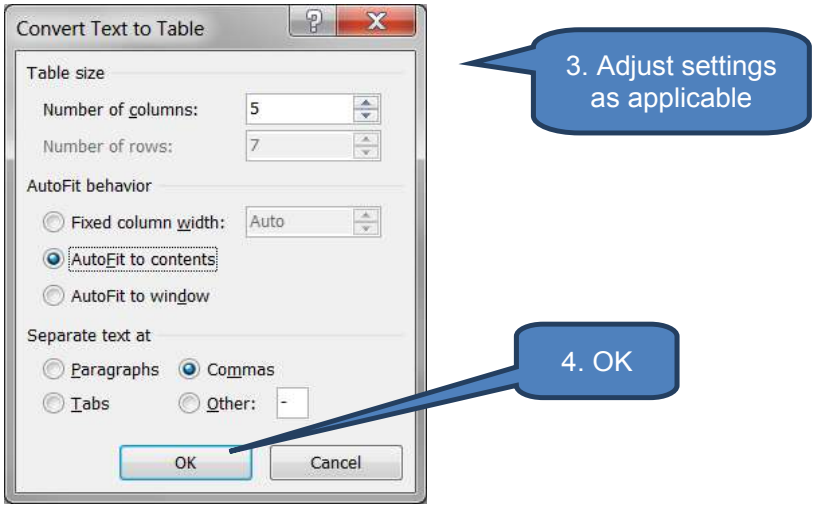
Currently the imported data looks like a jumble of characters. However, remember that it is still in its raw comma delimited format:

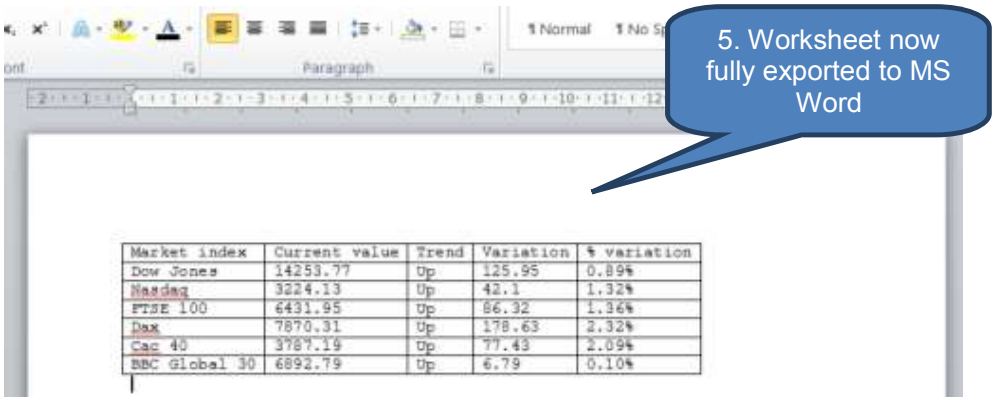
```
Market index,Current value,Trend,Variation,% variation
Dow Jones,14253.77,Up,125.95,0.89%
Nasdaq,3224.13,Up,42.1,1.32%
FTSE 100,6431.95,Up,86.32,1.36%
Dax,7870.31,Up,178.63,2.32%
Cac 40,3787.19,Up,77.43,2.09%
BBC Global 30,6892.79,Up,6.79,0.10%
```

.CSV file opened in MS Word. Currently a jumble of characters

- ❑ In Word:
  - Highlight the imported comma-delimited text
  - Select ***Convert Text to Table*** in the ***Table*** drop-down on the ***Insert*** tab
  - Adjust 'Convert Text to Table' settings as appropriate then click OK




| Market index | Current value | Trend | Variation | % variation |
|---|---|---|---|---|
| Dow Jones | 14253.77 | Up | 125.95 | 0.89% |
| Nasdaq | 3224.13 | Up | 42.1 | 1.32% |
| FTSE 100 | 6431.95 | Up | 86.32 | 1.36% |
| Dax | 7870.31 | Up | 178.63 | 2.32% |
| Cac 40 | 3787.19 | Up | 77.43 | 2.09% |
| BBC Global 30 | 6892.79 | Up | 6.79 | 0.10% |

## 4 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you know how to:

- Understand the basics of data connections between Microsoft Excel and other applications
- Import data from other applications and in alternative formats
- Export data to other applications and in alternative formats

CHAPTER 8

# Security and sharing

## Contents

# INTRODUCTION

## Learning outcomes

LO 3.4.1 Perform the steps to protect certain cells, individual worksheets and an entire workbook

LO 3.5.1 Perform the steps to share a workbook

LO 3.5.2 Perform the steps to merge multiple copies of a shared workbook

## Exam context

Relevant and reliable information that is accurate and accessible is essential in the modern workplace. Organisations manage a huge volume of data and information and must take steps to protect its integrity.

Microsoft Excel offers a wide range of security-based functionality ranging from protecting whole workbooks with passwords (useful for restricting access to highly confidential employee or client data) to protecting individual cells.

The second topic addressed in this chapter shows how multiple users can simultaneously access a shared workbook. This is particularly valuable where it is necessary for users to have up-to-date real-time information such as component pricing or hotel reservations.

By the end of this chapter students will be able to:

- Protect worksheets, workbooks and cells with a combination of techniques such as
  - Passwords
  - Marking as final
  - Worksheet protection
  - Structure protection
  - Use of digital signatures
  - Locking and hiding cells
- Manage the sharing and merging of workbooks including
  - Open a shared workbook
  - Edit a shared workbook
  - Remove users from a shared workbook
  - Resolve conflicting changes in shared workbooks
  - End the sharing of a shared workbook
  - Merge workbooks

# 1 PROTECTING WORKSHEETS, WORKBOOKS AND CELLS

## Section overview

- Password protect a worksheet or workbook
- Mark as final
- Encrypt with a password
- Protect current sheet
- Protect workbook structure
- Add a digital signature
- Lock cells

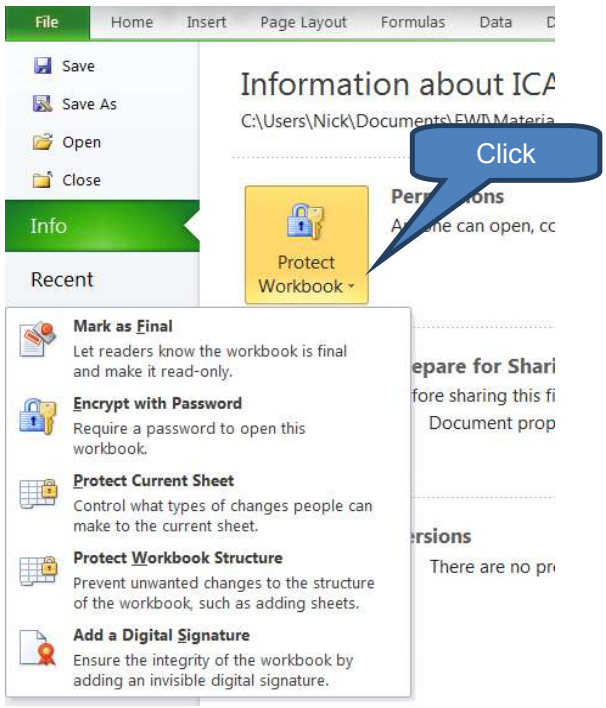
## 1.1 Password protect a worksheet or workbook

Microsoft Excel offers a hierarchy of security features enabling users to protect their work. Users can protect cells, worksheets and even entire workbooks.

The 'Protect Workbook' interface is accessed with the ***Protect workbook*** icon on the ***Info*** group in the ***File*** tab. The drop-down menu offers five further options:

- Mark as Final
- Encrypt with Password
- Protect current Sheet
- Protect Workbook Structure
- Add a Digital Signature

These are explained in more detail below.



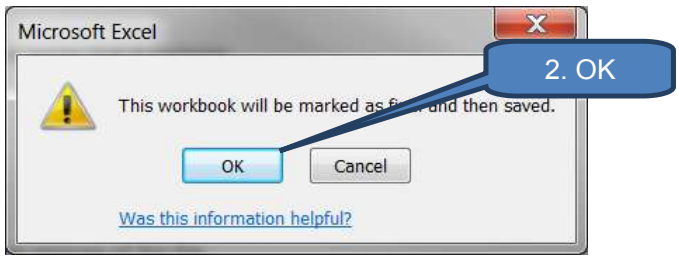
## 1.2 Mark as final

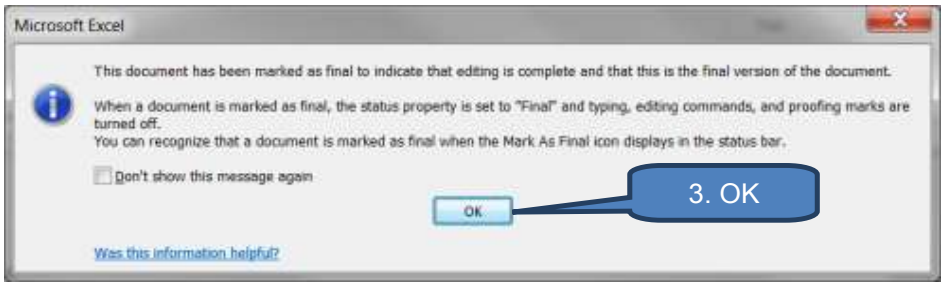
When a workbook is marked as final it becomes read-only. This means that typing, editing commands and proofing marks are disabled and turned off.

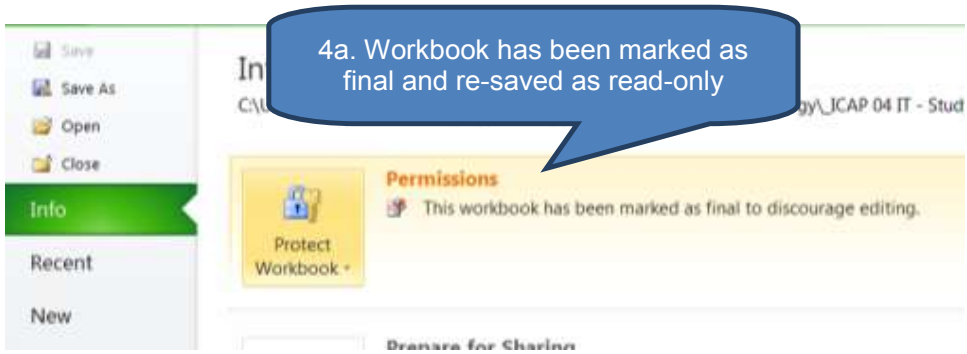
In essence, marking as final helps you communicate to others that you are sharing a completed workbook. Reviewers and readers are prevented from making inadvertent changes to the workbook.

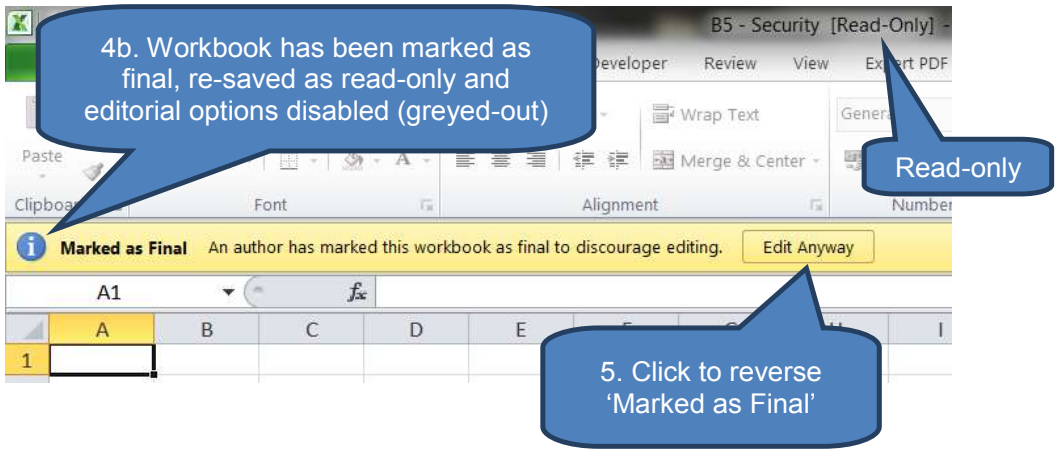
The mark as final procedure is as follows:

- Click ***Mark as Final*** from the ***Protect Workbook*** interface on the ***File*** tab (***Info*** category)
- Select ***OK*** to the warning message
- An information pop-up appears informing you that the document has been marked as final. Click ***OK***.
- The ***Protect Workbook*** interface on the ***File*** tab (***Info*** category) now shows that the workbook has been marked as final.
- If you try to select any of the worksheet editorial tabs such as Home, Insert, Page Layout, Formulas etc.:
  - An information bar is displayed showing “Marked as Final”
  - All of the options with editorial capacity have been disabled (greyed-out). Note that options without editorial rights are still enabled such as:
    - Home - Find & Select
    - Review – Show All Comments
    - View – Zoom




### Remove 'Mark as Final'

- ❑ Click *Edit Anyway* on any of the tabs when the Marked as Final information bar is showing. You can then make changes and either re-save the same file or save-as a new file.

## 1.3 Encrypt with a password

Encrypting a workbook with a password requires users to subsequently enter a password to open a workbook. Without the correct password the workbook will not open (even in read-only mode!).

WARNING – MICROSOFT CAN NOT RETRIEVE FORGOTTEN PASSWORDS. Therefore you should ensure you have a secure method of remembering passwords.

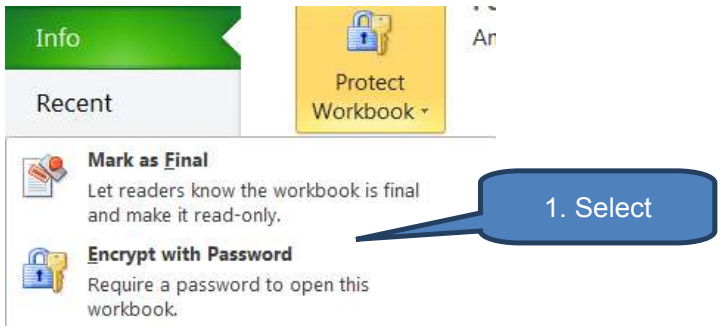
To set-up password security:

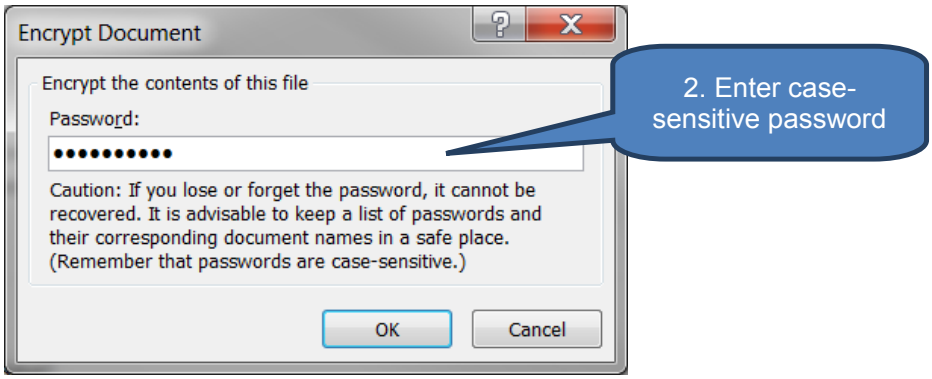
- Click ***Encrypt with Password*** from the ***Protect Workbook*** interface on the ***File*** tab (***Info*** category)
- Enter a password in the ***Encrypt Document*** dialog box.

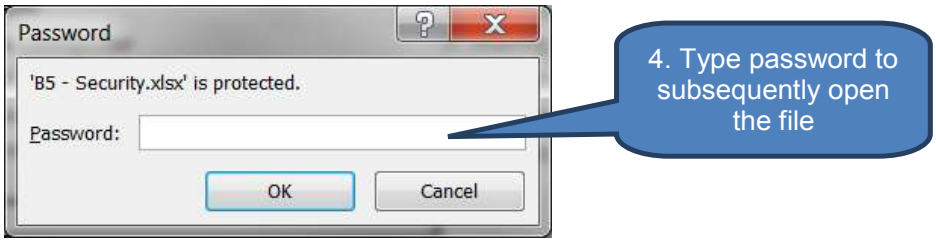
  Note: Passwords are CASE SENSITIVE. For example, paKiSTan must be entered as paKiSTan rather than say Pakistan or pakistaN.
- Re-enter the password in the ***Confirm Document*** dialog box.

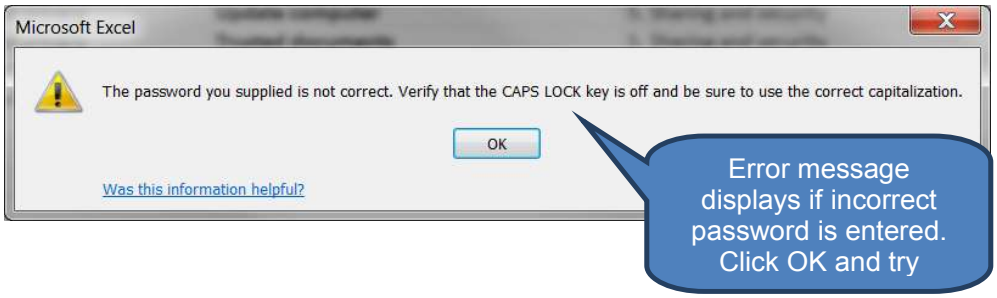
Password protection is now set-up. When someone (including the author) tries to subsequently open the file they must enter the case-sensitive password in the ***Password*** dialog box.

If an incorrect password is entered a warning message is displayed. Click OK then re-open the file and enter the correct password.




### Remove Password Encryption

To remove password encryption:

- Re-open the file entering the password
- Click ***Encrypt with Password*** from the ***Protect Workbook*** interface on the ***File*** tab (***Info*** category)
- As you would expect the Encrypt Document dialog box already shows a password (denoted by asterisks *******)
- Delete the asterisks, click OK and re-save the document.

Password encryption has now been removed.

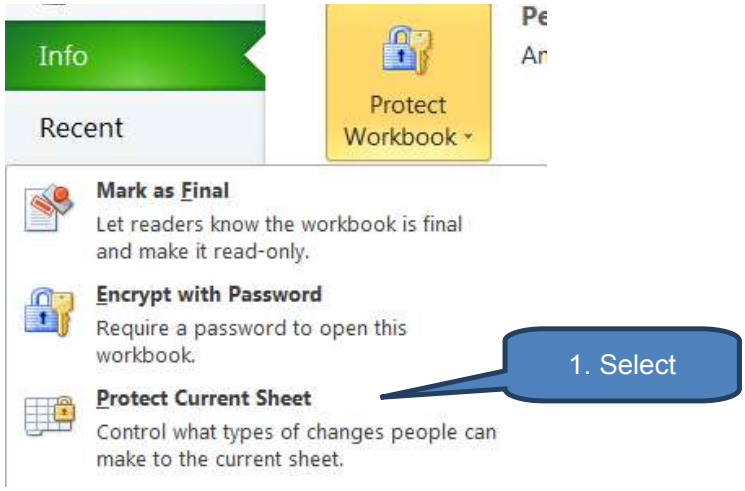

## 1.4 Protect current sheet

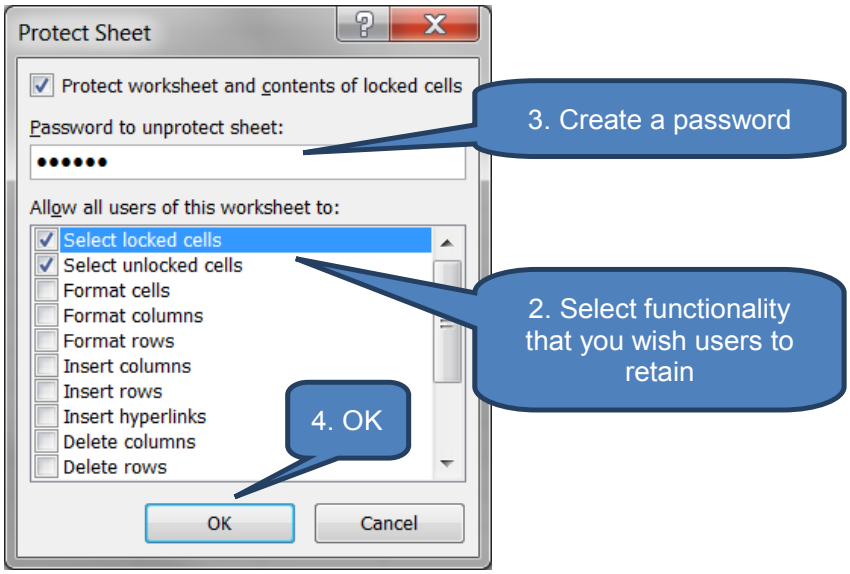
The Protect Current Sheet facility allows us to password-protect individual worksheets. We can specify exactly which features of each worksheet to protect.

To protect a worksheet:

- Click a cell in the worksheet you wish to protect
- Select ***Protect Current Sheet*** from the ***Protect Workbook*** interface on the ***File*** tab (***Info*** category)

- Tick all functionality options that you wish users to retain.
  - By default users will be able to select (but not change) cells (both locked and unlocked).
  - If no options are ticked then users will just be able to view the worksheet but not select any cells. Note that users will see the formula of cell A1 when viewing the protected worksheet.
- If users breach one of the edit rules when subsequently in a protected worksheet they will receive an error message.



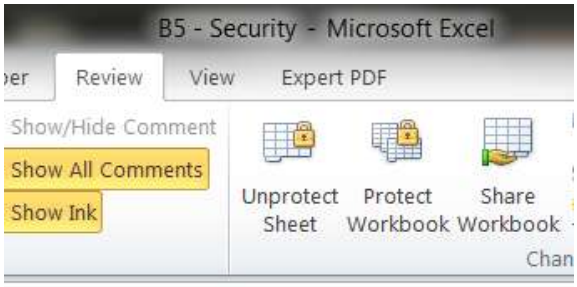

5. Re-confirm password then click OK. The worksheet is now protected.


Warning box that displays if a user breaches one of the protected worksheet rules

### Unprotect a worksheet

To unprotect a worksheet:

- Select the worksheet you wish to un-protect
- On the ***Review*** tab click ***Unprotect Sheet***
- Enter password in the Unprotect Sheet dialog box
- Click ***OK***




To un-protect a worksheet:

1. Click 'Unprotect Sheet'


2. Enter password.

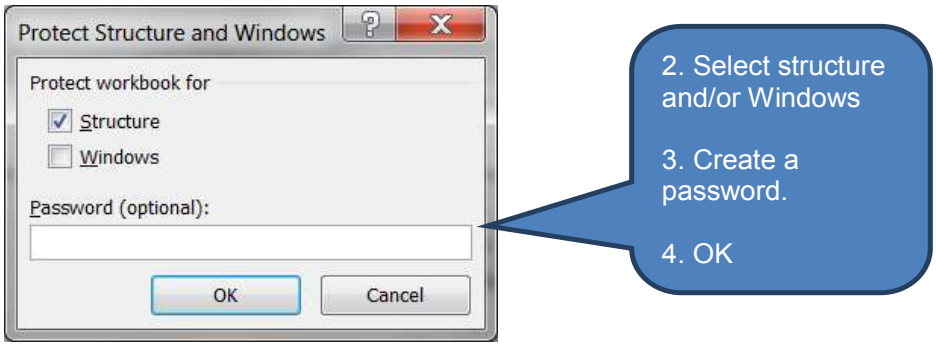
3. OK

## 1.5 Protect workbook structure

The ***Protect Workbook Structure*** facility allows us to protect

- **Workbook structure** – this prevents users from:
  - Viewing hidden worksheets
  - Deleting, hiding, moving or changing the names of worksheets
  - Inserting new worksheets
  - Copying or moving worksheets to another workbook
  - Recording new macros
- **Workbook windows**
  - This ensures workbook windows will retain the same size and position each time the workbook is opened
  - Users will not be able to subsequently change the size and position of the windows for the workbook when the workbook is opened
- Select ***Protect Workbook Structure*** from the ***Protect Workbook*** interface on the ***File*** tab (***Info*** category)
- Select ***Structure*** and/or ***Windows*** depending on which you need to protect
- Create a password
- Confirm the password
- Click ***OK***

The structure and/or windows are is/are now protected.

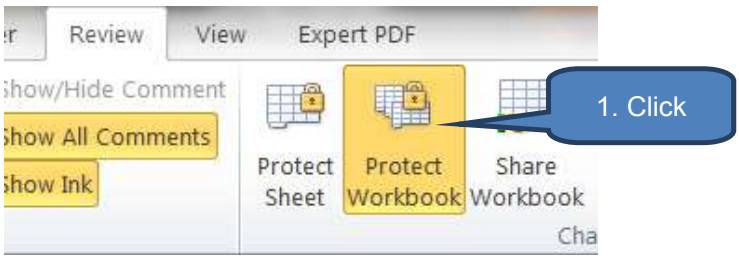


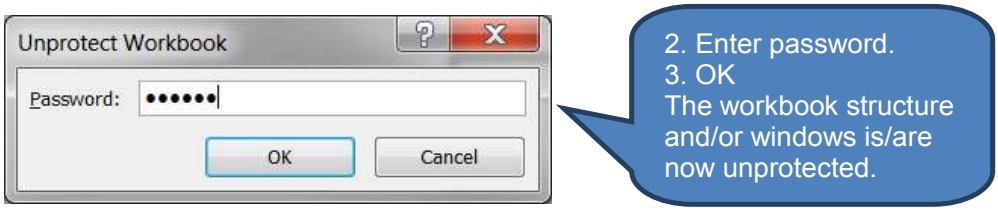


### Unprotect a workbook

To unprotect a workbook:

- On the ***Review*** tab click ***Protect Workbook*** (note – this is not a typo – it does say Protect Workbook. However, when you click on it if the workbook is currently protected then the Unprotect Workbook dialog box will open.
- Enter password in Unprotect Workbook dialog box
- Click ***OK***



## 1.6 Add a digital signature

Digital signatures can be used to sign important documents electronically. There are two types:

- Visible
- Invisible

They both operate similarly in that once a document has been digitally signed it reverts to Final status (see earlier). The difference is that users of the file can see a visible signature whereas an invisible signature is not displayed.

### To add a visible digital signature:

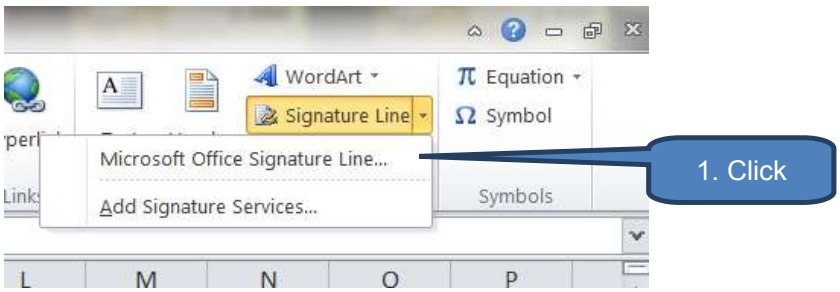
- Click ***Signature Line*** in the ***Text*** group on the ***Insert*** tab
- You can either use a Microsoft Office digital signature or select a signature from an online supplier. We'll adopt the former, so click ***OK*** at the next dialog box.
- Complete the Signature Setup dialog box and click OK

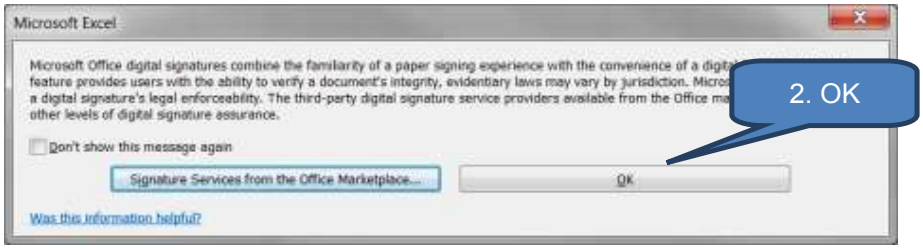
A blank digital signature line has been added to the document which now needs signing.

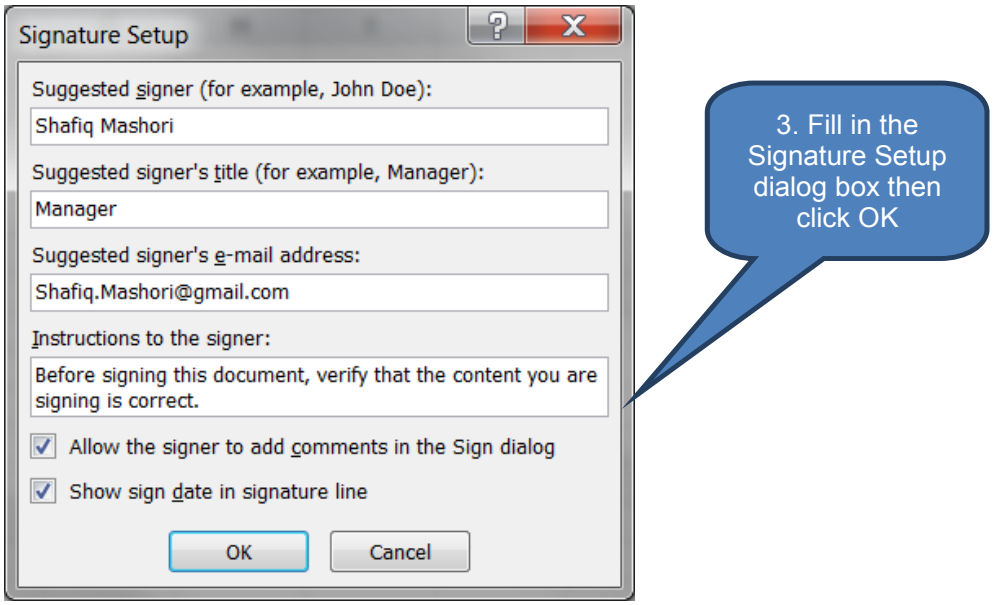
- When the document is re-opened an information bar is displayed alerting that the document needs signing. Click View Signatures to display the list of outstanding signatures.
- Click on the relevant signature. The Signature Setup option re-opens the Signature Setup dialog box that was filled-in earlier. After making any revisions click on the Sign… option then OK. This opens the Sign dialog box.
- The signee now signs the document by doing one of the following:
  - Type name
  - Use a touch-screen to sign with a digital-pen
  - Select an image of the signature from a picture file
- Complete the 'Purpose for signing' and change the 'Signing as:' as necessary.
- Click Sign to complete the sign-off.

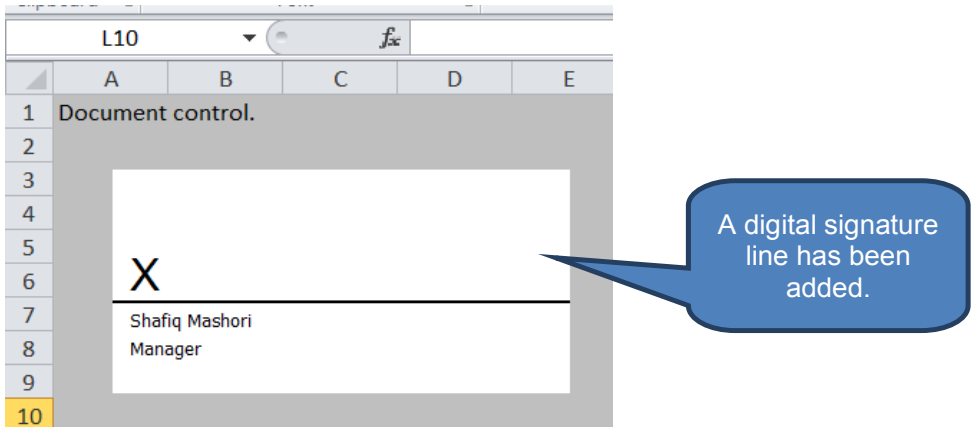
The document is now officially '**signed off**' and is re-saved as 'read-only' in '***Marked as Final***' mode. If the file is subsequently changed (using the 'Edit Anyway' button) then all signatures are removed.

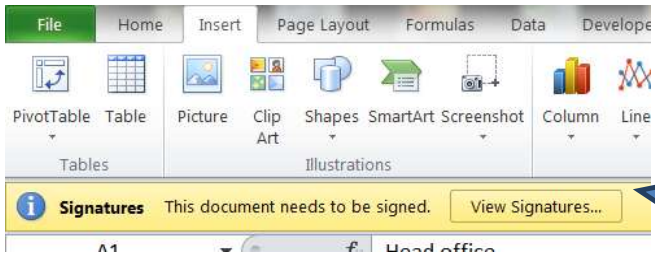
Note that multiple signatures can be used.



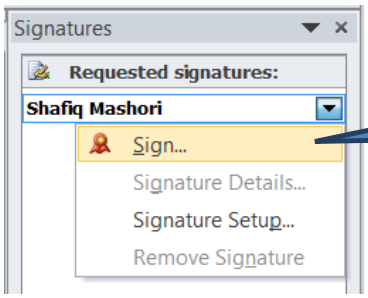

Microsoft Excel
Microsoft Office digital signatures combine the familiarity of a paper signing experience with the convenience of a digita
feature provides users with the ability to verify a document's integrity, evidentiary laws may vary by jurisdiction. Micros
a digital signature's legal enforceability. The third-party digital signature service providers available from the Office ma
other levels of digital signature assurance.
Don't show this message again
Signature Services from the Office Marketplace...
OK
Was this information helpful?
2. OK


Signature Setup
Suggested signer (for example, John Doe):
Shafiq Mashori
Suggested signer's title (for example, Manager):
Manager
Suggested signer's e-mail address:
Shafiq.Mashori@gmail.com
Instructions to the signer:
Before signing this document, verify that the content you are signing is correct.
Allow the signer to add comments in the Sign dialog
Show sign date in signature line
OK
Cancel
3. Fill in the Signature Setup dialog box then click OK


L10
A
B
C
D
E
1
Document control.
2
3
4
5
6
7
8
9
10
X
Shafiq Mashori
Manager
A digital signature line has been added.

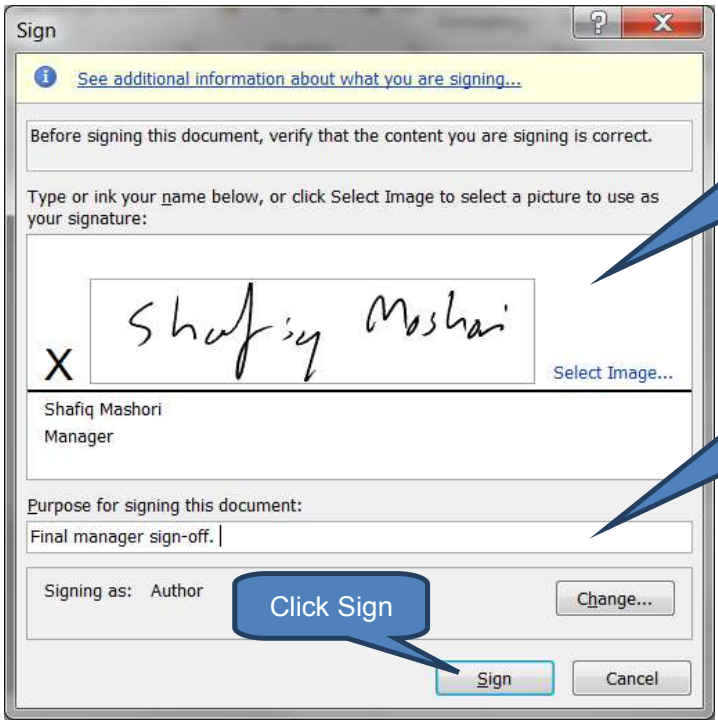



When the file is re-opened an information bar alerts the user that a signature is required. Click View Signatures.




A list of Signatures is displayed. Click 'Sign…' under the appropriate name.


Ok

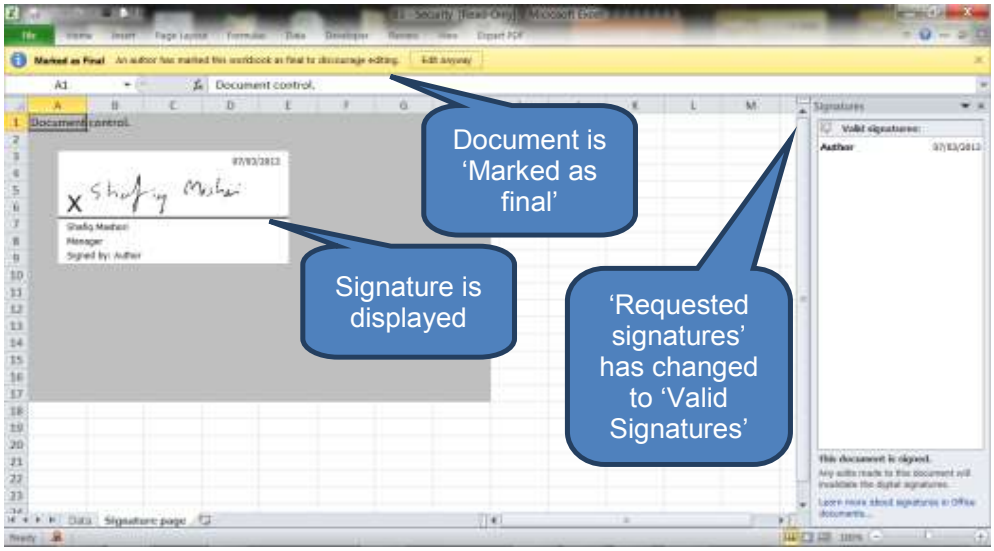


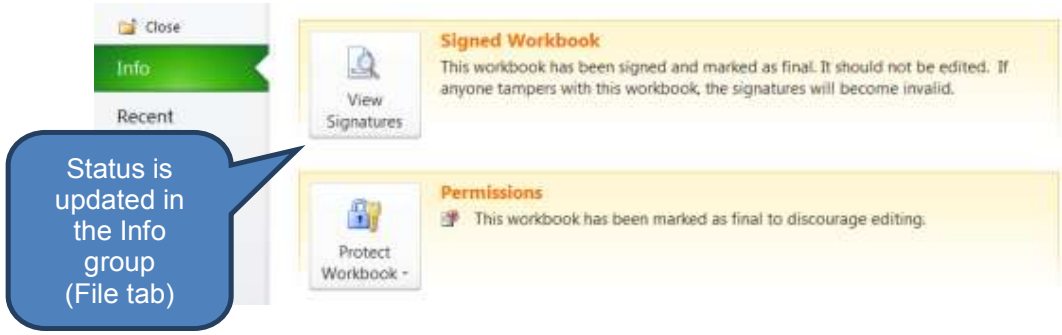

Type name, select signature image or use touchpad to sign.

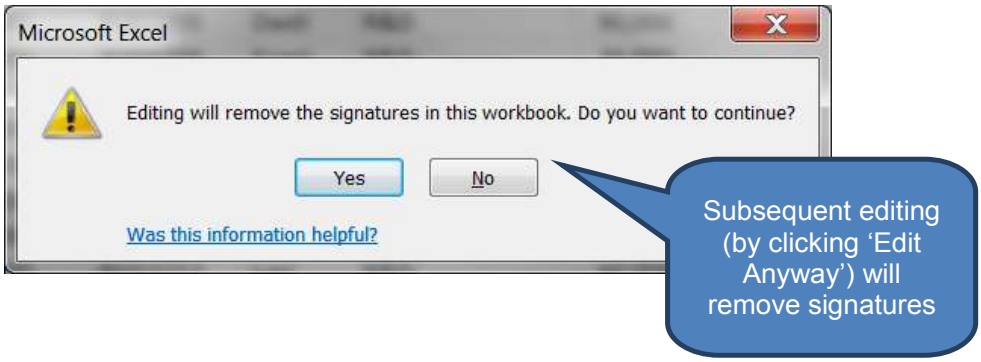
Insert comments as appropriate (if available).

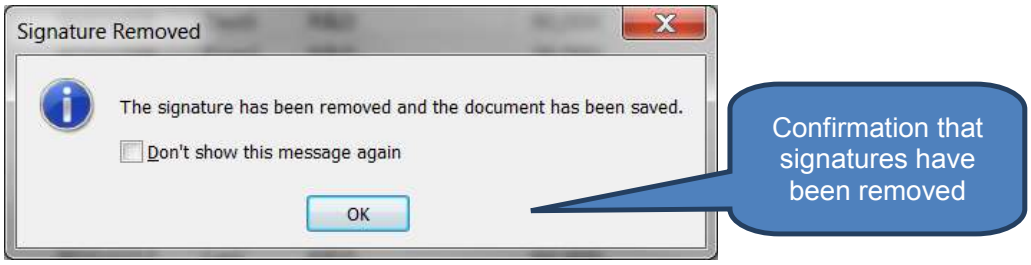
Click Sign


Signature Confirmation
Your signature has been successfully saved with this document.
If the document is changed, your signature will become invalid.
Don't show this message again
OK
Confirmation is displayed


Document is 'Marked as final'
Signature is displayed
'Requested signatures' has changed to 'Valid Signatures'


Close
Info
Recent
View Signatures
Signed Workbook
This workbook has been signed and marked as final. It should not be edited. If anyone tampers with this workbook, the signatures will become invalid.
Protect Workbook
Permissions
This workbook has been marked as final to discourage editing.
Status is updated in the Info group (File tab)

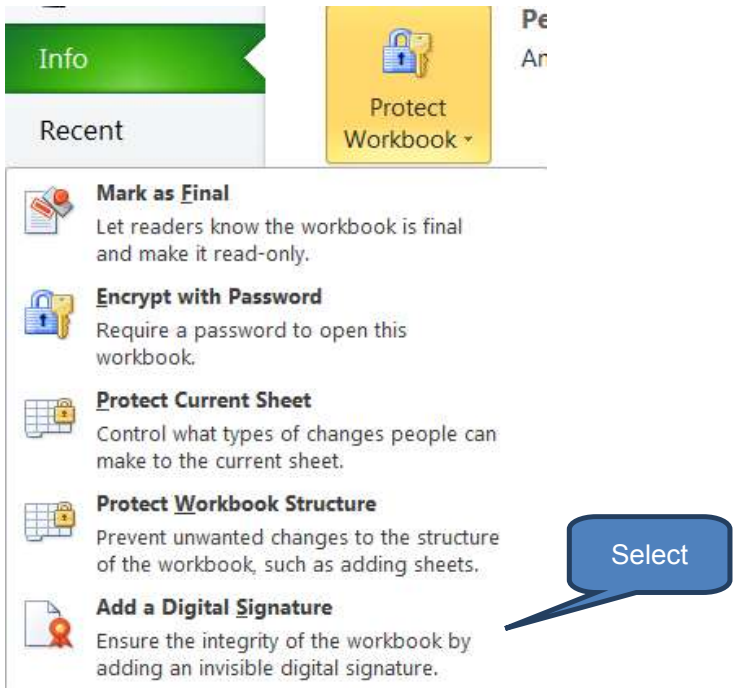

Microsoft Excel
Editing will remove the signatures in this workbook. Do you want to continue?
Yes
No
Was this information helpful?
Subsequent editing (by clicking 'Edit Anyway') will remove signatures

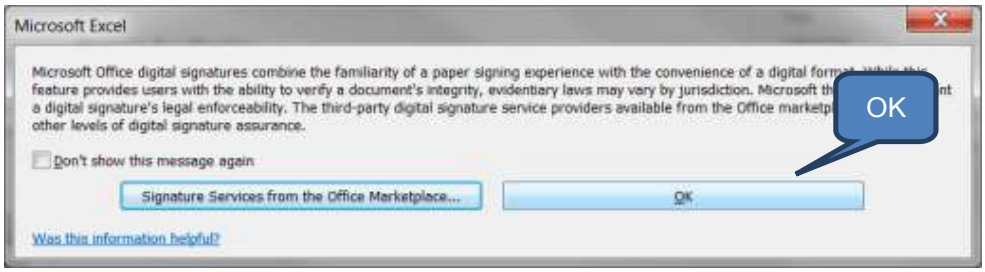


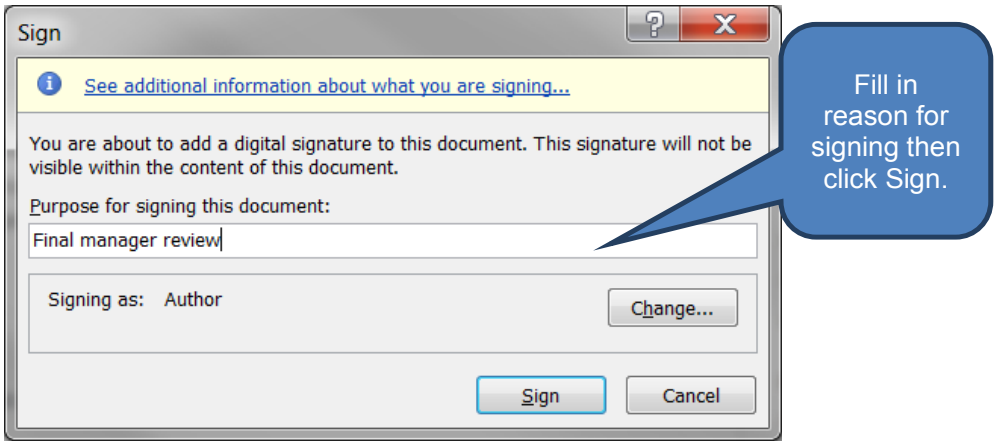

**To add an invisible digital signature:**

- Click ***Add a Digital Signature*** from the ***Protect Workbook*** drop-down in the ***Info*** group on the ***File*** tab
- Click ***Ok***
- You can either use a Microsoft Office digital signature or select a signature from an online supplier. We'll adopt the former, so click ***OK*** at the next dialog box.
- Complete the ***Signature*** dialog box and click ***Sign***.
- Click OK on the signature confirmation.

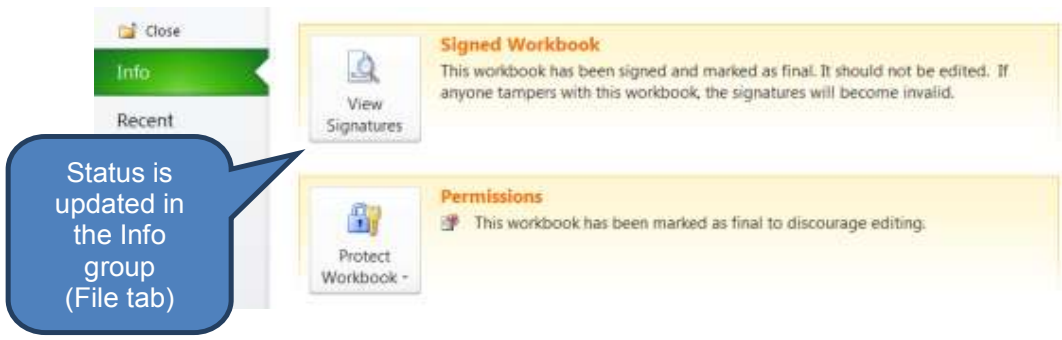
The document is now signed, re-saved in read-only and '***Marked as final'***. Any subsequent editing will remove the signature.

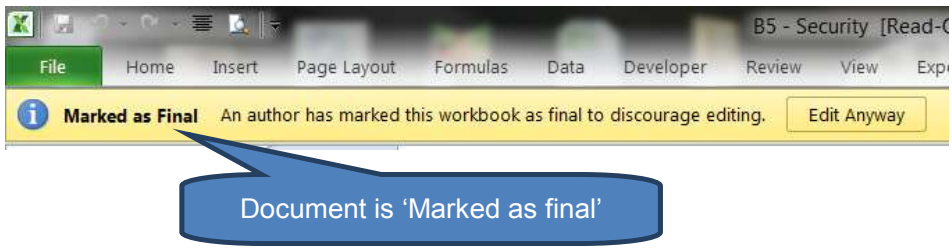



Microsoft Excel
Microsoft Office digital signatures combine the familiarity of a paper signing experience with the convenience of a digital format. While this feature provides users with the ability to verify a document's integrity, evidentiary laws may vary by jurisdiction. Microsoft th nt a digital signature's legal enforceability. The third-party digital signature service providers available from the Office marketp other levels of digital signature assurance.
Don't show this message again
Signature Services from the Office Marketplace...
OK
Was this information helpful?
OK


Sign
See additional information about what you are signing...
You are about to add a digital signature to this document. This signature will not be visible within the content of this document.
Purpose for signing this document:
Final manager review
Signing as: Author
Change...
Sign
Cancel
Fill in reason for signing then click Sign.


Signature Confirmation
Your signature has been successfully saved with this document.
If the document is changed, your signature will become invalid.
Don't show this message again
OK
Confirmation is displayed. Click OK.


Close
Info
Recent
View Signatures
Signed Workbook
This workbook has been signed and marked as final. It should not be edited. If anyone tampers with this workbook, the signatures will become invalid.
Protect Workbook
Permissions
This workbook has been marked as final to discourage editing.
Status is updated in the Info group (File tab)




## 1.7 Lock cells

The combination of **locking cells** and **protecting a worksheet** will lock users out of all cells tagged as locked. This helps prevent users accidentally deleting formulas or changing values.

Note that by default when you open a new worksheet all cells are tagged as being locked. That's why when we activate 'Protect Sheet' the whole worksheet becomes inaccessible to users (for edit purposes).

However, also by default when you open a new worksheet its worksheet protection is not activated. That's why we can still edit all cells – despite them being tagged as locked the locks are not activated.

So in order to lock only specific cells we need to:

- Firstly unlock all cells on a worksheet
- Re-lock just the specific cells we wish to protect
- Activate worksheet protection

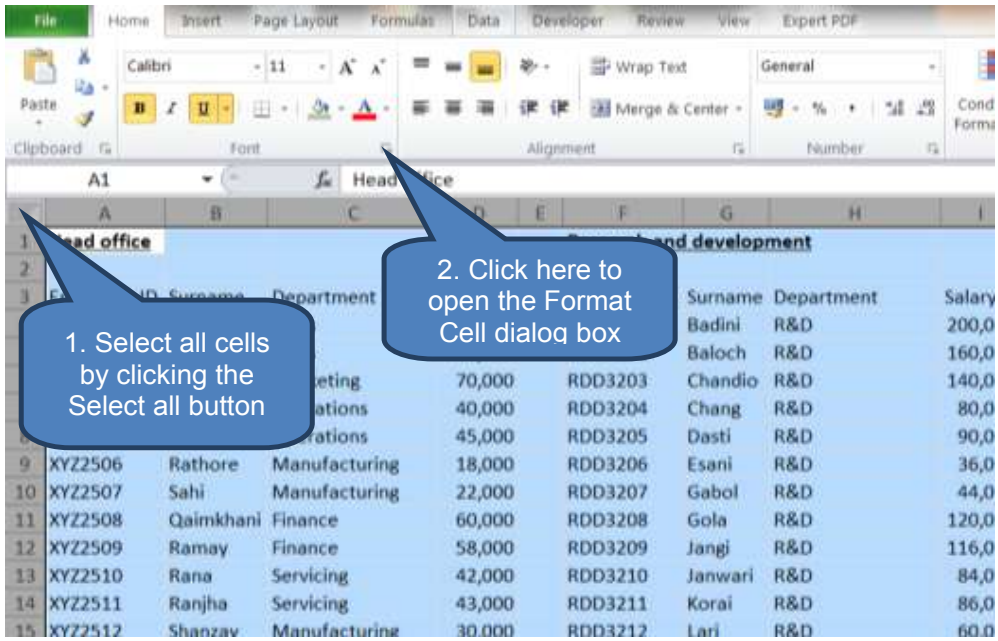
The detailed steps to achieve this are:

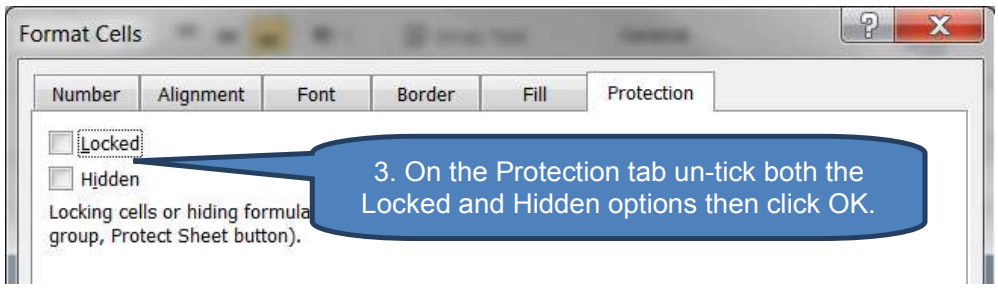
- Select all cells by clicking the ***Select all button***
- Open the ***Format Cells*** dialog box from the ***Font*** group on the ***Home*** tab
- On the ***Protection*** tab un-tick both the ***Locked*** and ***Hidden*** options then click ***OK***
- Back in the worksheet highlight the cells you want to lock
- Re-open the ***Format Cells*** dialog box and tick ***Locked*** and/or ***Hidden*** as applicable. Click ***OK***.
- Click ***Protect Sheet*** in the ***Changes*** group on the ***Review*** tab.
    - Select the elements that you want users to be able to change
    - Enter a password if you also want to password protect the worksheet

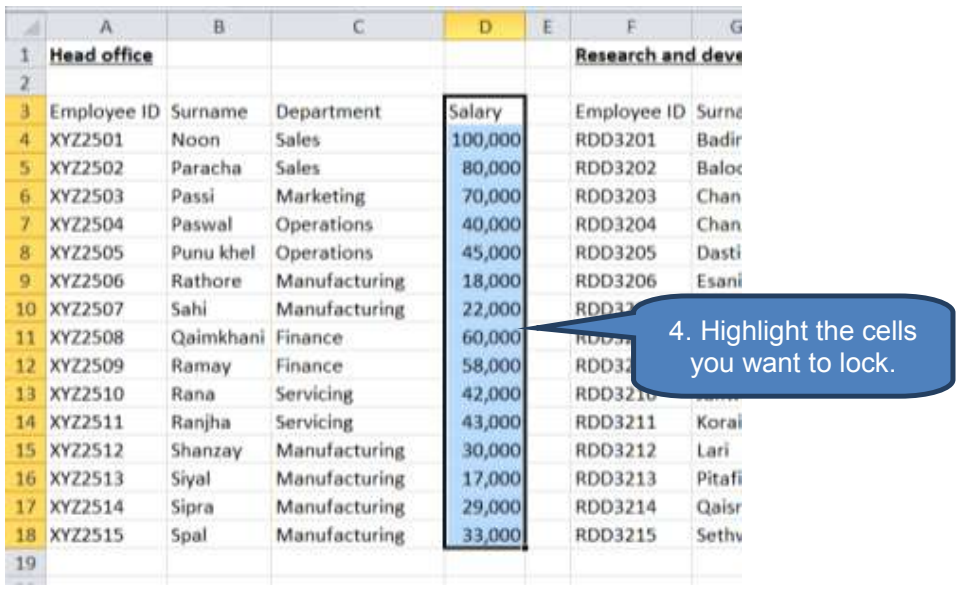
  *Note that if you do not password protect the worksheet then subsequent users can simply unlock the worksheet and edit the previously locked cells.*
- Click ***OK***

The cells are now locked and/or hidden.

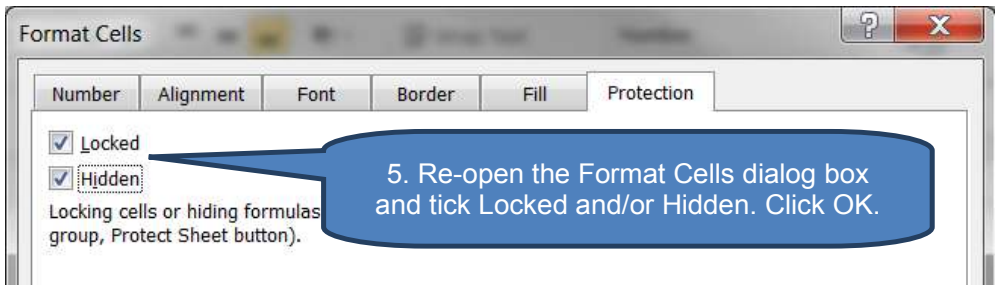
- If a user tries to edit a locked cell they receive an error message.
- If a user clicks on a hidden cell then the formula is hidden from display on the formula bar.

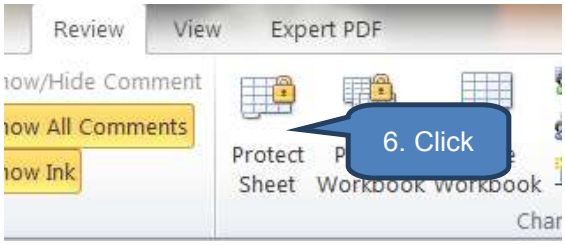


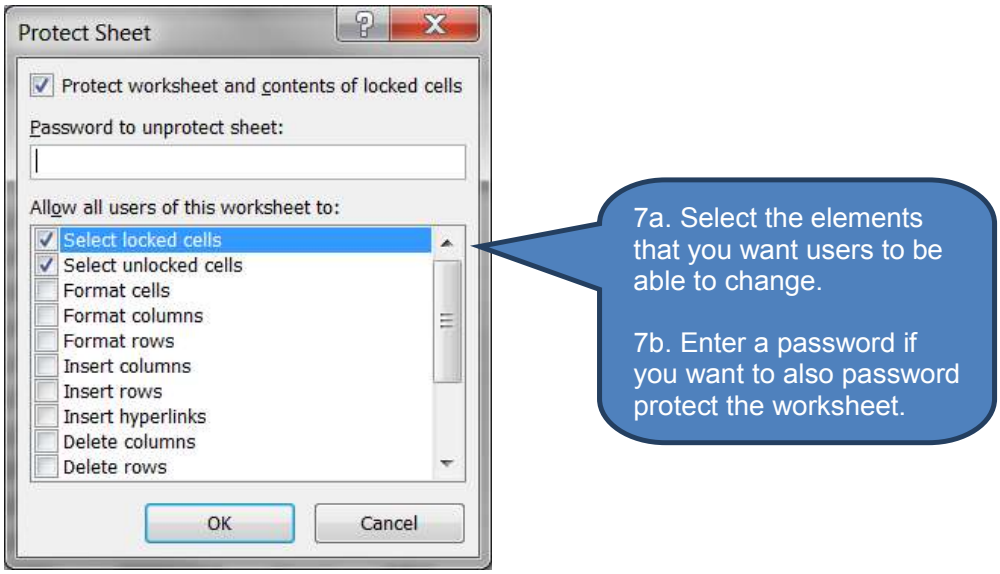



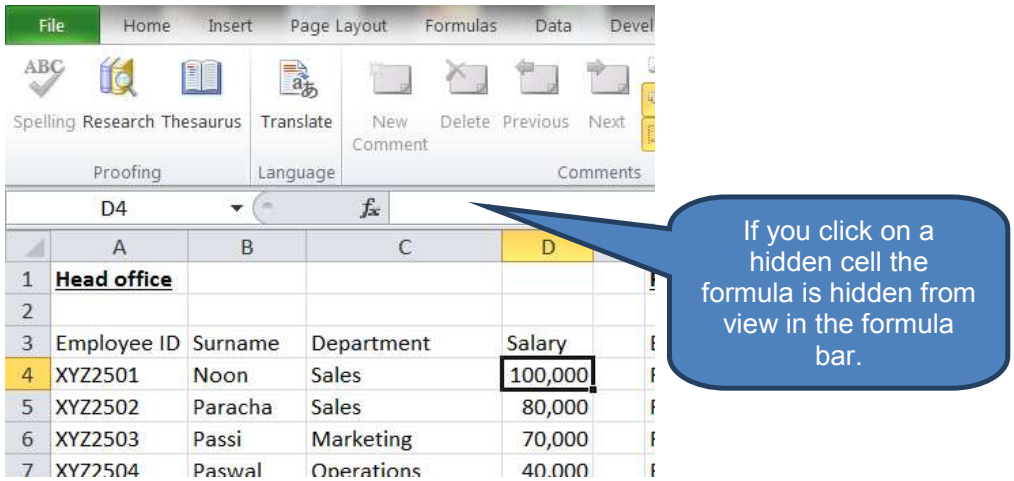

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Head office | | | | | Research and deve | |
| 2 | | | | | | | |
| 3 | Employee ID | Surname | Department | Salary | | Employee ID | Surna |
| 4 | XYZ2501 | Noon | Sales | 100,000 | | RDD3201 | Badir |
| 5 | XYZ2502 | Paracha | Sales | 80,000 | | RDD3202 | Baloc |
| 6 | XYZ2503 | Passi | Marketing | 70,000 | | RDD3203 | Chan |
| 7 | XYZ2504 | Paswal | Operations | 40,000 | | RDD3204 | Chan |
| 8 | XYZ2505 | Punu khel | Operations | 45,000 | | RDD3205 | Dasti |
| 9 | XYZ2506 | Rathore | Manufacturing | 18,000 | | RDD3206 | Esani |
| 10 | XYZ2507 | Sahi | Manufacturing | 22,000 | | RDD3 | |
| 11 | XYZ2508 | Qaimkhani | Finance | 60,000 | | | |
| 12 | XYZ2509 | Ramay | Finance | 58,000 | | RDD3 | |
| 13 | XYZ2510 | Rana | Servicing | 42,000 | | RDD32 | |
| 14 | XYZ2511 | Ranjha | Servicing | 43,000 | | RDD3211 | Korai |
| 15 | XYZ2512 | Shanzay | Manufacturing | 30,000 | | RDD3212 | Lari |
| 16 | XYZ2513 | Siyal | Manufacturing | 17,000 | | RDD3213 | Pitafi |
| 17 | XYZ2514 | Sipra | Manufacturing | 29,000 | | RDD3214 | Qaisr |
| 18 | XYZ2515 | Spal | Manufacturing | 33,000 | | RDD3215 | Sethv |
| 19 | | | | | | | |


Format Cells
Number
Alignment
Font
Border
Fill
Protection
Locked
Hidden
Locking cells or hiding formulas
group, Protect Sheet button).
5. Re-open the Format Cells dialog box and tick Locked and/or Hidden. Click OK.


Review
View
Expert PDF
ow All Comments
ow Ink
Protect Sheet
Workbook
Workbook
6. Click

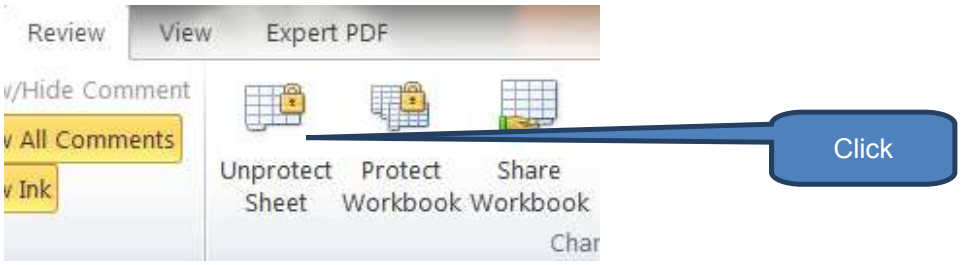

Protect Sheet
Protect worksheet and contents of locked cells
Password to unprotect sheet:
Allow all users of this worksheet to:
Select locked cells
Select unlocked cells
Format cells
Format columns
Format rows
Insert columns
Insert rows
Insert hyperlinks
Delete columns
Delete rows
OK
Cancel
7a. Select the elements that you want users to be able to change.
7b. Enter a password if you want to also password protect the worksheet.


Microsoft Excel
The cell or chart that you are trying to change is protected and therefore read-only.
To modify a protected cell or chart, first remove protection using the Unprotect Shee
may be prompted for a password.
OK
If you try to edit a locked cell you receive this error message.




**To unlock and unhide cells:**

- Click ***Unprotect Sheet*** in the ***Changes*** group on the ***Review*** tab. You will also need to enter the password if the worksheet is password protected.



# 2 SHARING AND MERGING WORKBOOKS

**Section overview**

- Introduction
- Sharing workbooks
- Open a shared workbook
- Editing a shared workbook
- Removing users from a shared workbook
- Resolving conflicting changes in shared workbooks
- End the sharing of a shared workbook
- Merging workbooks

## 2.1 Introduction

**Definition: Shared workbook**

**A workbook that can be simultaneously accessed (viewed, edited and saved) by multiple users across a network.**

It may be useful for multiple users to have simultaneous access to the same workbook, for example in project management in a manufacturing business. It may be necessary for project managers to be able to access a central shared workbook containing a list of latest component prices plus project status, costs and timings for each project.

To facilitate this we can create a shared workbook and place it on a network for multiple users to access. The workbook owner controls user access and resolves any conflicting changes. At the end of the process you can stop sharing the workbook.

## 2.2 Sharing workbooks

You can either create a new workbook or open an existing workbook to share.

Make sure the workbook you want to share is open and that it is the active workbook in your Microsoft Excel session. Easiest way to ensure this is to click any cell on any worksheet within the workbook you want to share.

The 'share workbooks' process has three steps:

- **Step 1**: Share workbook
- **Step 2**: Protect shared workbook
- **Step 3**: Verify links

In detail:

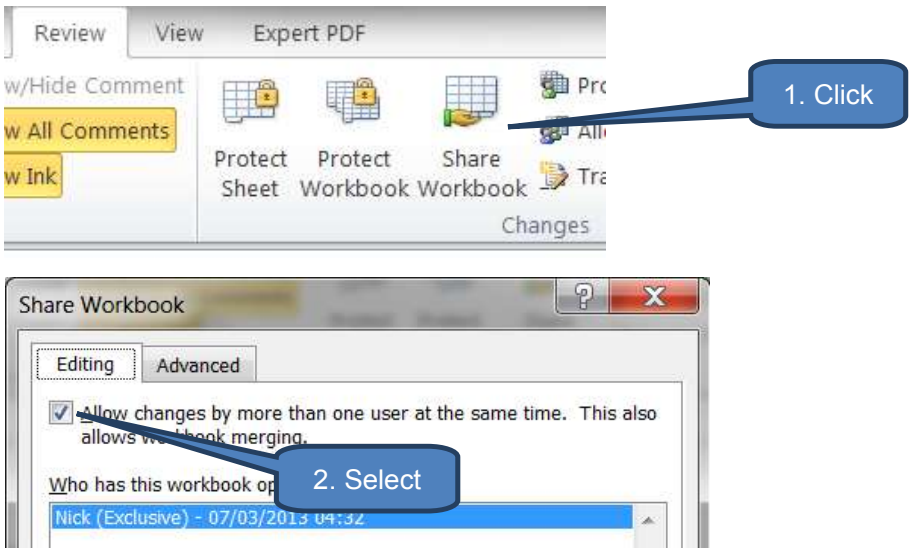
**Step 1**: Share workbook

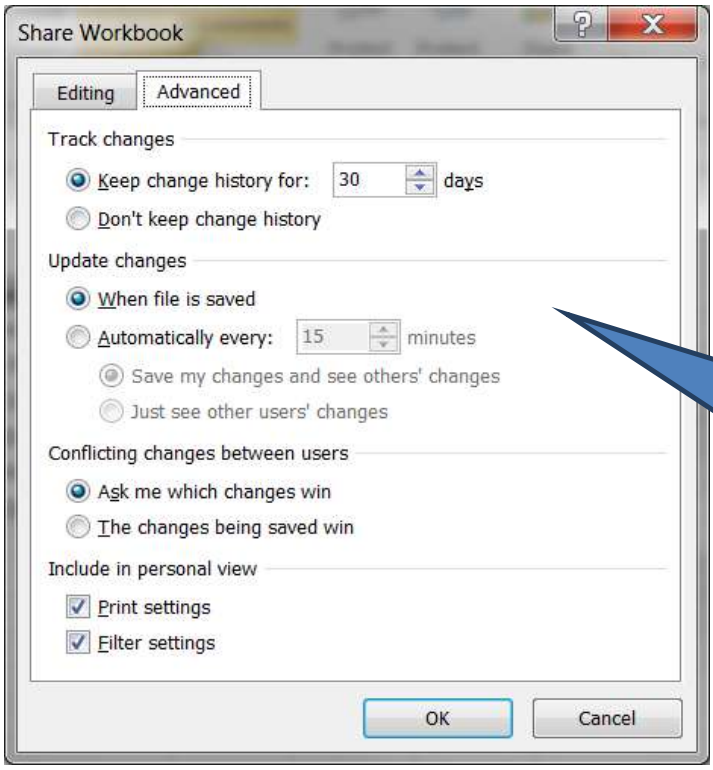
- Click ***Share Workbook*** in the ***Changes*** group on the ***Review*** tab
- Select '***Allow changes by more than one user at the same time***' on the ***Editing*** tab of the ***Share Workbook*** dialog box.

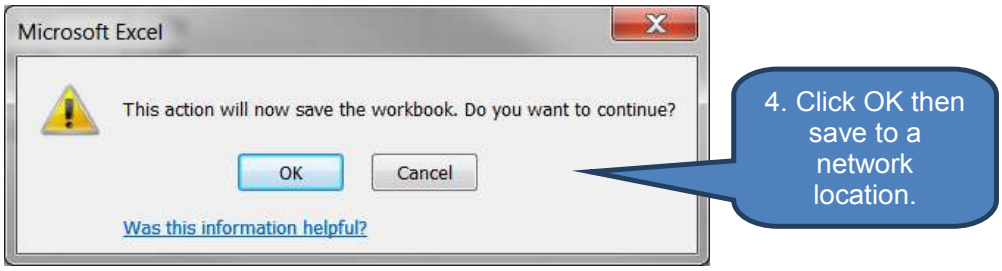
- Select the options you want to use for tracking and updating changes on the ***Advanced*** tab. Then click ***OK***. Also click ***OK*** on the subsequent confirmation dialog box.
- Save the workbook on a shared network drive so other users will ultimately be able to access it.

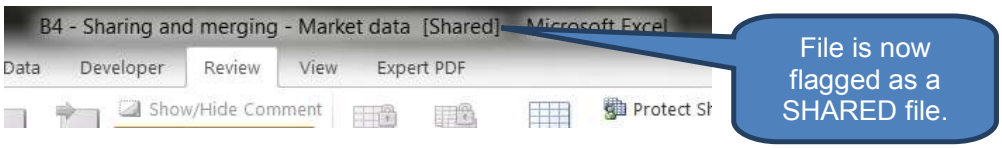
The workbook is now shared. Note though that some productivity is suppressed in file sharing mode. The below list is not comprehensive but gives some examples of suppressed functionality in shared workbooks:

| Suppressed functionality | Comments |
|---|---|
| Delete worksheets | |
| Merge cells or split merged cells | |
| Add or change conditional formats | Existing conditional formats will still update as cell values change |
| Use drawing tools | |
| Protect or unprotect worksheets or the workbook | Existing protection is retained |
| Insert automatic subtotals | Existing subtotals are retained |
| Write, record, change, view or assign macros | Existing macros that don't access unavailable features will still run. |
| Create an Excel table | |





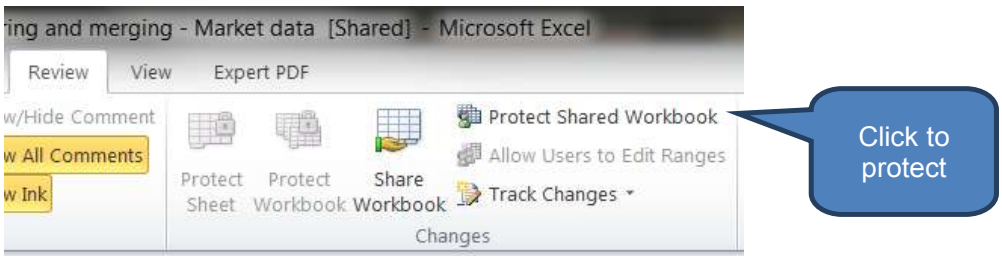




**Step 2** – Protect shared workbook

Once the shared workbook has been saved to a shared network drive all users with access to the shared network drive could open, edit and amend the file. With this in mind you should IMMEDIATELY protect the shared workbook as follows:

- Click ***Protect Shared Workbook*** in the ***Changes*** group on the ***Review*** tab
- To ensure maximum protection you can set a password for the shared workbook. Remember though that Microsoft Excel can NOT recover lost passwords so be careful in managing your password.

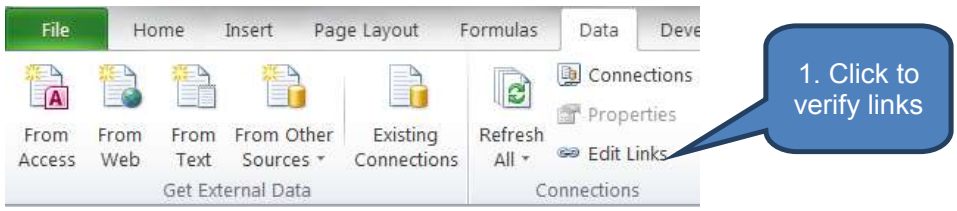


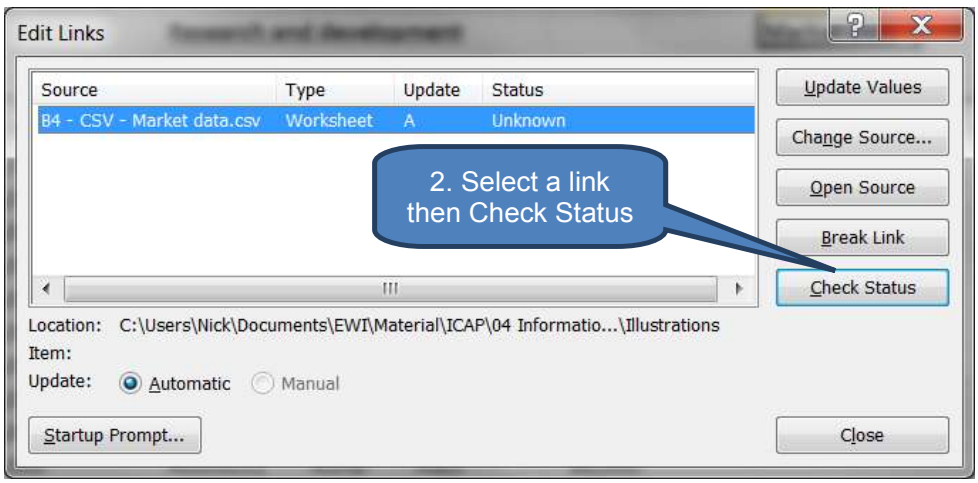

**Step 3** – Verify links

- ❑ If the workbook contains links to other workbooks or documents you should now verify links and update any that are broken. To do this:
  - Click ***Edit Links*** in the ***Connections*** group on the ***Data*** tab. Note – this is disabled if the file does not contain linked information.
  - Click ***Check Status*** to verify the status for all links in the list. Note – may be slow depending on the network speed. You may need to take appropriate action such as:

| Status | Comment |
|---|---|
| OK | No action required |
| Error: Source not found | Click ***Change Source*** and select another workbook. |
| Error: Workbook not found | Click ***Change Source*** and select another worksheet |

- ❑ Re-save the workbook using either the save icon or press ***CTRL+S***.



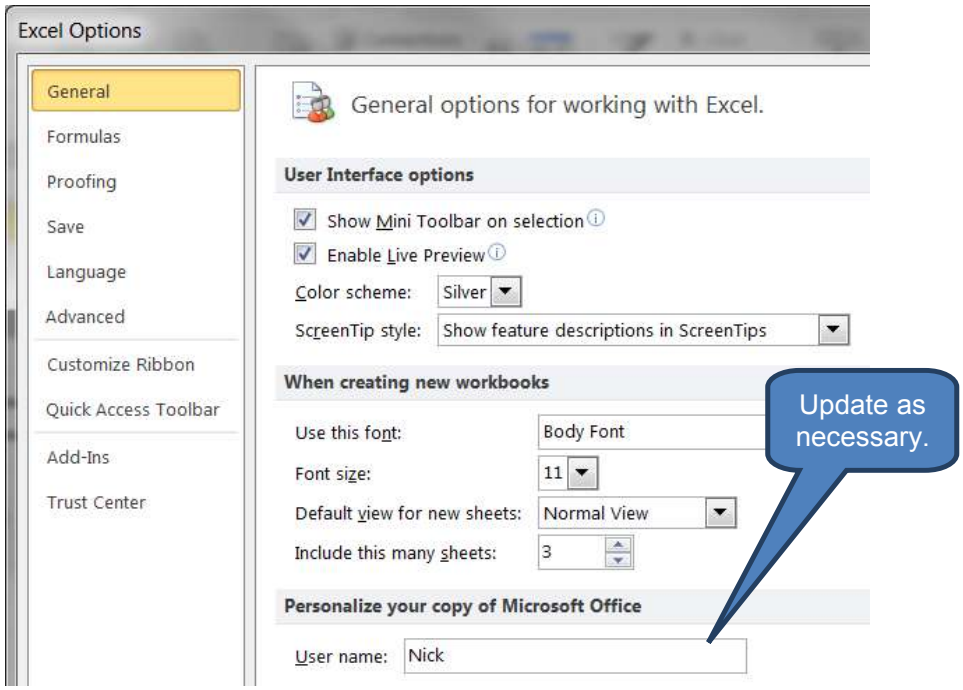



## 2.3 Opening a shared workbook

So long as a user can find the shared workbook on the network they can open the shared workbook on their workstation (subject to any password protection that may have been set up) just like opening any other existing workbook.

Once a user has opened the shared workbook they should confirm the User name that will identify their work in the shared workbook. To do this:

- Click ***Options*** on the ***File*** tab
- Select the ***General*** tab
- Enter the user name under ***Personalize your copy of Microsoft Office***
- Click ***OK***

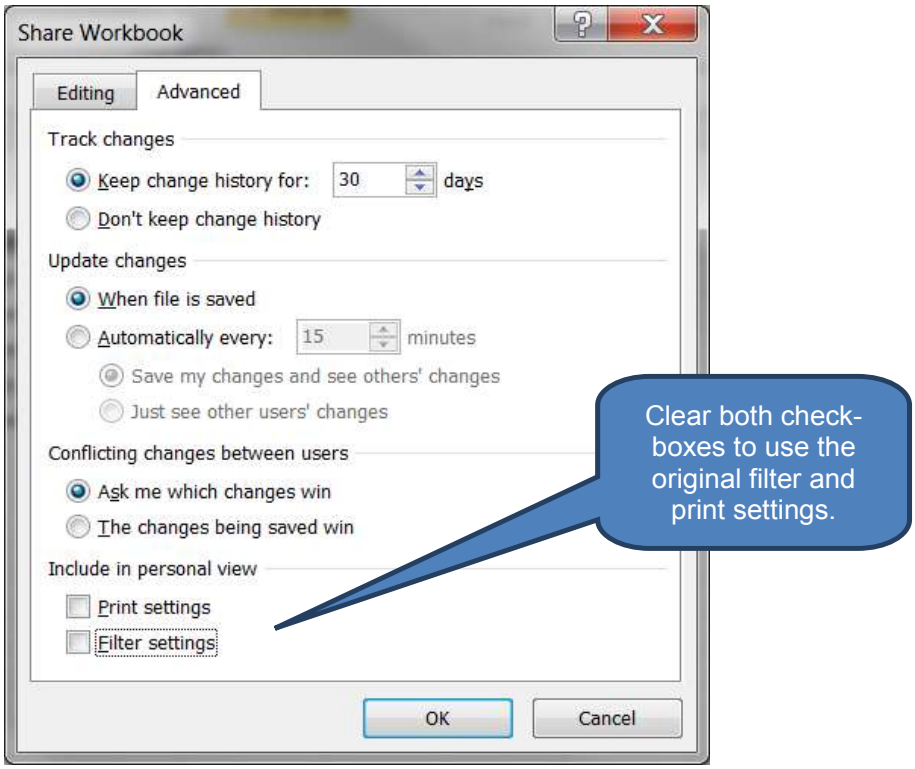



## 2.4 Editing a shared workbook

Once a shared workbook is open, users can enter and edit data on the worksheets as usual. As mentioned above though, remember that certain functionality is disabled in shared workbook view such as changing merged cells, conditional formats, charts, pictures, subtotals, workbook and worksheet protection and macros.

However, you can personalise filter and print settings, or alternatively adopt those of the original author. To use the original filter and print settings:

- Click ***Share Workbook*** in the ***Changes*** group on the ***Review*** tab
- Clear the ***Print settings*** and ***Filter settings*** check boxes under ***Include in personal view*** on the ***Advanced*** tab.
- Click ***OK***.




Click the Save icon or press CTRL+S to save your changes to the workbook and see changes other users have made since your last save.

You will need to 'resolve conflicts' if the ***Resolve Conflicts*** dialog box appears. See 2.6 below.

## 2.5 Removing a user from a shared workbook

There may be occasions when you need to disconnect users from a shared workbook. This might be for example prior to a period of known network maintenance, or because you need to perform one of the suppressed functions such as moving or creating worksheets.

Before disconnecting users, make sure they have completed and saved their work on the workbook. Any unsaved work will be lost when you remove them.

To remove a user from a shared workbook:

- Click ***Share Workbook*** in the ***Changes*** group on the ***Review*** tab
- Review the names of active users in the ***Who has this workbook open now*** list on the ***Editing*** tab.
- Select the name of the user you want to disconnect and click Remove User.

The user has now been disconnected. Note though this is not a permanent expulsion – it just reflects that point in time and won't stop them editing the shared workbook again in the future.

## 2.6 Resolving conflicting changes in a shared workbook

**Definition: Shared workbook conflict**

**A shared workbook conflict occurs when multiple users have edited the same shared workbook and attempt to save changes that affect the same cell.**

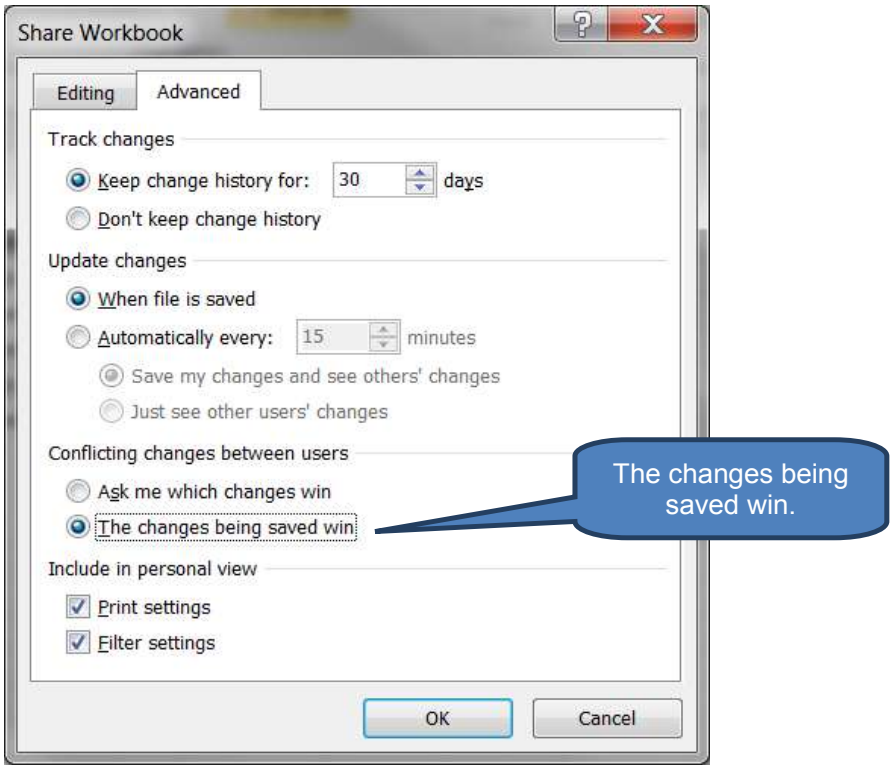
**Excel can only retain one of the changes in that cell so it displays the *Resolve Conflicts* dialog box to the second user when they attempt to save their workbook.**

When the ***Resolve Conflicts*** dialog box is displayed address the conflicts as follows:

- Click ***Accept Mine*** or ***Accept Other*** for each conflict.
- If there are multiple conflicts and your response will be the same for all conflicts you can click ***Accept All Mine*** or ***Accept All Others***.

You can make your changes override all other changes without displaying the ***Resolve Conflicts*** dialog box. Do this by clicking ***The changes being saved win*** on the ***Advanced*** tab of the ***Share Workbook*** dialog box.

Remember this is opened by clicking ***Share Workbook*** in the ***Changes*** group on the ***Review*** tab.

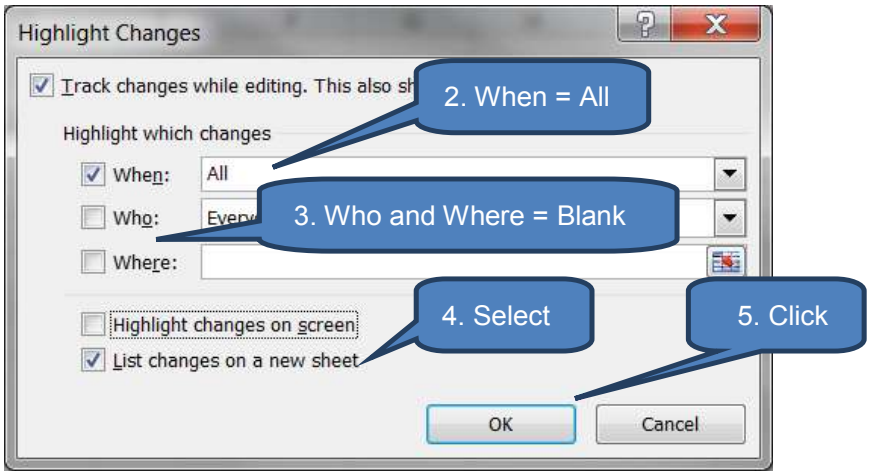


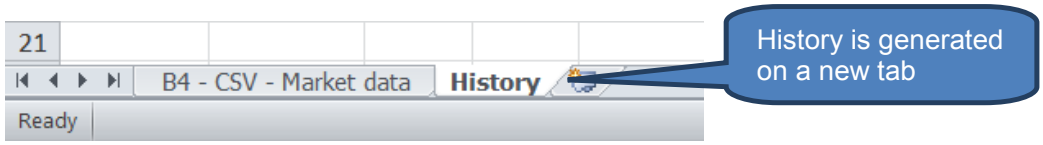

To view past conflict resolutions:

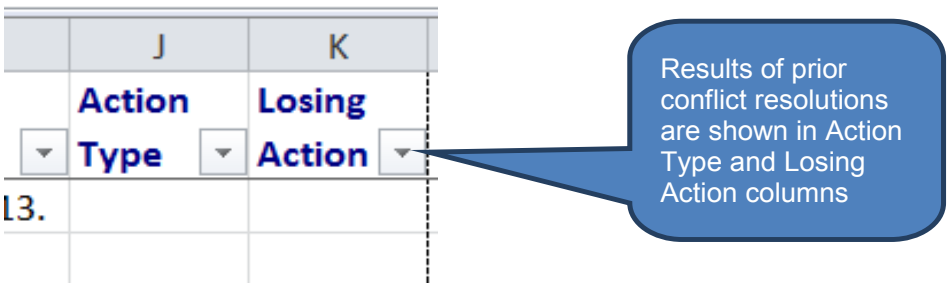
- Click ***Track Changes*** in the ***Changes*** group on the ***Review*** tab
- Click ***Highlight Changes***

- Select (or type) ***All*** in the ***When*** list.
- Clear the ***Who*** and ***Where*** check-boxes
- Select ***List changes on a new sheet*** then click OK

View the ***Action Type*** and ***Losing Action*** columns on the ***History*** worksheet for details of how previous resolutions were resolved.

## 2.7 End the sharing of a shared workbook

Ending the sharing of a shared workbook will prevent other users from accessing the workbook. Any unsaved changes will be lost and the change history will be deleted. With this in mind you need to carefully manage the end of sharing using the following steps:

Overview:

- **Step 1**: Ensure all other users have completed their work.
- **Step 2**: Generate the history worksheet then print or copy it to another workbook.
- **Step 3**: If the shared workbook is protected you must first unprotect the workbook.
- **Step 4**: End the sharing.

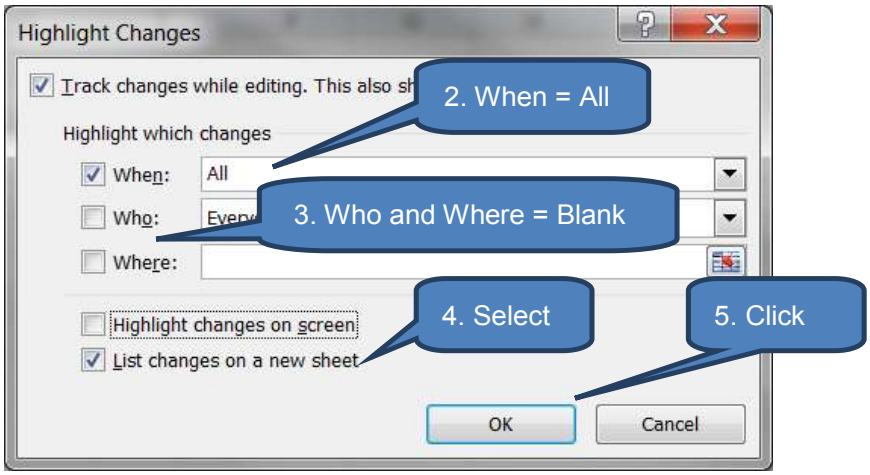
In detail:

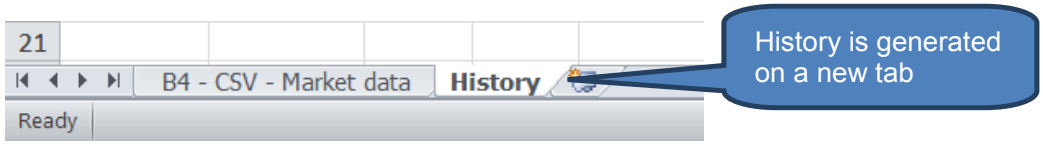
**Step 1** – Ensure all other users have completed their work – see Merging workbooks below.

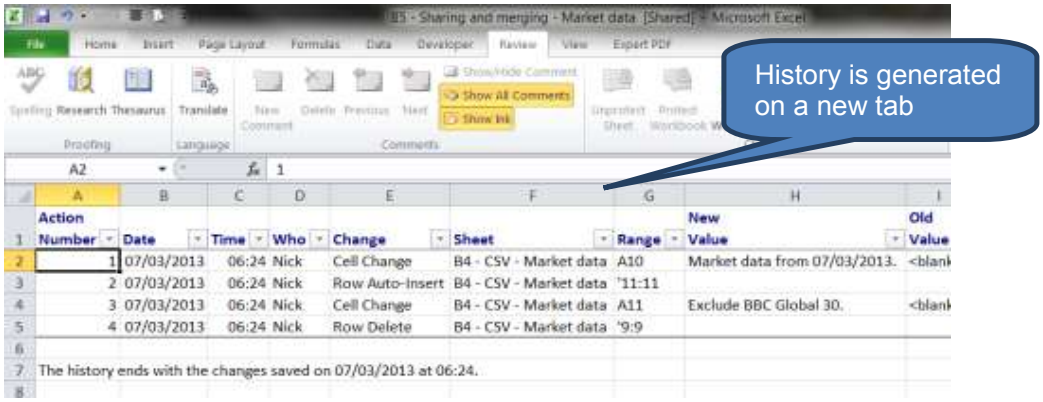
**Step 2** - To generate the history worksheet (*reminder from earlier*):

- Click ***Highlight Changes*** under ***Track Changes*** in the ***Changes*** group on the ***Review*** tab
- Select (or type) "***All***" in the ***When*** list.
- Clear the ***Who*** and ***Where*** check boxes
- Select the ***List changes on a new sheet*** check box. Click ***OK***

The change history appears in a new worksheet which you can then either print or copy to another workbook.

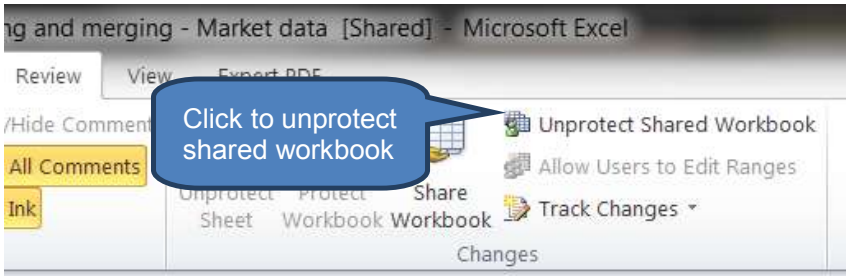



**Step 3** - To unprotect the shared workbook:

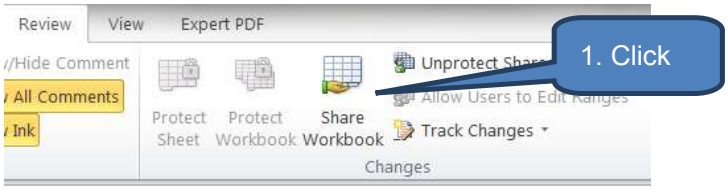
- ❑ If the shared workbook is protected you must first unprotect the workbook.
  - Click ***Unprotect Shared Workbook*** in the ***Changes*** group on the ***Review*** tab
  - Enter the password if prompted then click ***OK***.

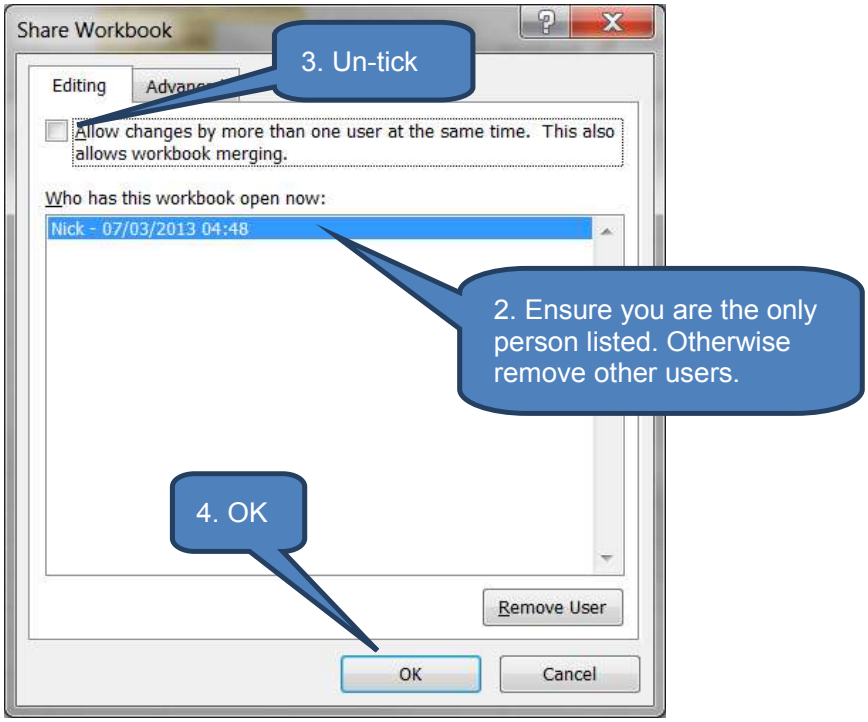


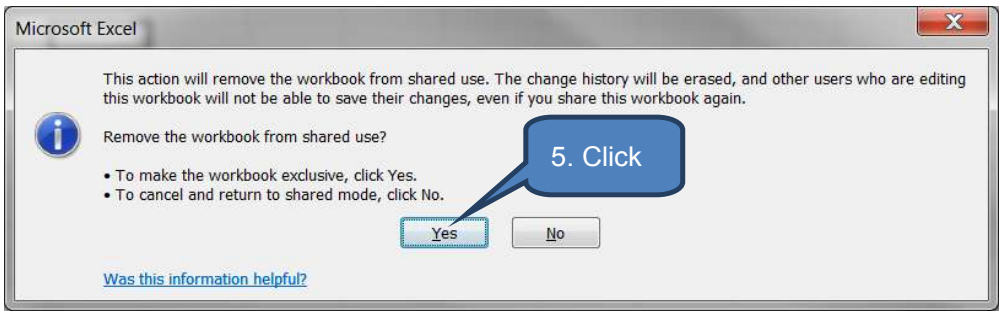
**Step 4** - To end the sharing:

- Click ***Share Workbook*** in the ***Changes*** group on the ***Review*** tab.
- Make sure you are the only person listed in the ***Who has this workbook open now*** list on the Editing tab. You can remove any additional users first as described earlier.
- End sharing by clearing the ***Allow changes by more than one user at the same time*** option then click ***OK***. Click **Yes** on the confirmation dialog box.

Note this activates the workbook ***merging check box***. See later section for details on merging workbooks.



## 2.8 Merging workbooks

**Definition: Merging workbooks**

**Merging workbooks initially involves multiple users making amendments to a shared workbook. Users must save their amended copies of the shared workbook with a new filename in the same network directory as the original source shared workbook was saved.**

**The original shared workbook can then be re-opened and integrated with the amendments made in any of the copies of that shared workbook.**

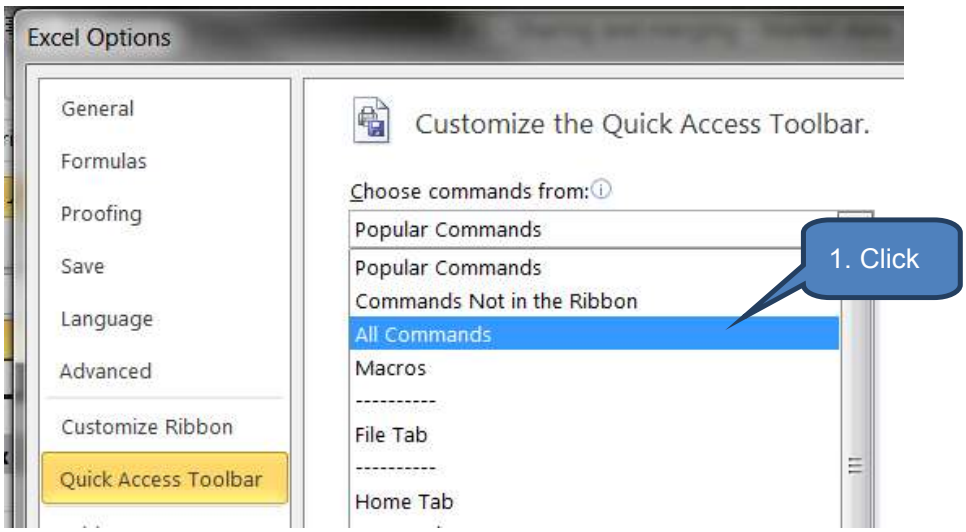
**The process is called 'merging' because multiple copies of the workbook are all merged into a single workbook.**

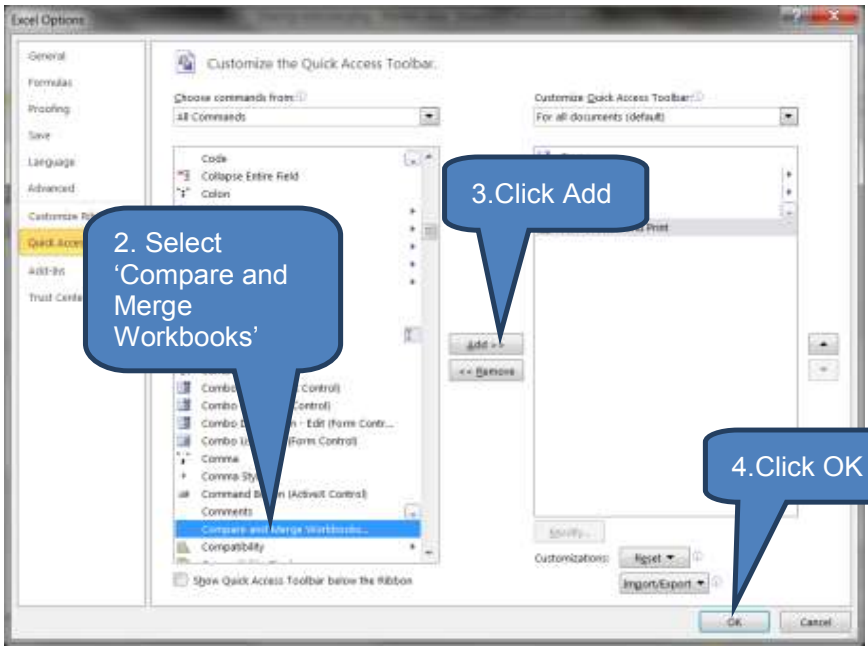
### Add the Compare and Merge Workbooks command

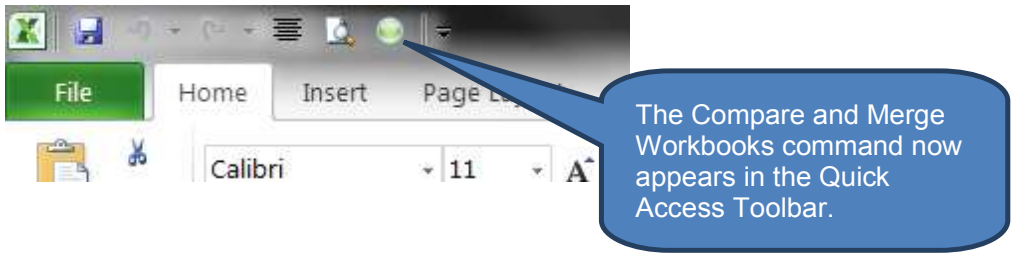
The ***Compare and Merge Workbooks*** command that you need does not appear as standard in the ***Review/Changes*** group. Therefore it must be added to the ***Quick Access Toolbar*** as follows:

- In the shared workbook click ***Options*** on the ***File*** tab.
- Click ***All Commands*** in the ***Choose commands from*** list in the ***Quick Access Toolbar*** category
- Select ***Compare and Merge Workbooks*** in the list then click ***Add*** and ***OK***.

The ***Compare and Merge Workbooks*** command now appears in the ***Quick Access Toolbar*** (i.e. the string of icons at the top left of the Excel window).






### Merge workbooks

To merge workbooks:

- Open the copy of the shared workbook into which you want to merge changes.
- Click ***Compare and Merge Workbooks*** on the ***Quick Access Toolbar***
- Save the workbook if prompted
- Click the copy (or multiple copies by holding down the ***CTRL*** or ***SHIFT*** key) of the workbook that contains the changes that you want to merge.
- Click ***OK***.

Multiple copies of the shared workbook have now been merged into your current copy of the shared workbook.

As usual you can use the ***Track Changes*** facility (from the ***Changes*** group on the ***Review*** tab) to generate the change history relating to all the changes that have just been applied during merging.

Note that the source copies of the shared workbook that you select for merging MUST be direct copies of the destination shared workbook into which you are merging workbooks.

**Illustration: Merge workbooks.**

This illustration merges three workbooks into one.

Original shared workbook saved as "B5 - Share and merge - Market data - V1.xls"

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | ***Market data*** | **08/03/2013** | | | |
| 2 | | | | | |
| 3 | **Market index** | **Current value** | **Trend** | **Variation** | **% variation** |
| 4 | Dow Jones | 14329.49 | Up | 33.25 | 0.23% |
| 5 | Nasdaq | 3232.09 | Up | 9.72 | 0.30% |
| 6 | FTSE 100 | 6439.16 | Up | 11.52 | 0.18% |
| 7 | Dax | 7939.77 | Up | 20.44 | 0.26% |
| 8 | Cac 40 | 3793.78 | Up | 20.02 | 0.53% |
| 9 | BBC Global 30 | 6952.17 | Up | 1.03 | 0.01% |
| 10 | | | | | |
| 11 | | | | | |

A second copy has been saved by another user as "B5 - Share and merge - Market data – V2.xls"

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | ***Market data*** | **08/03/2013** | | | Version 2 |
| 2 | | | | | |
| 3 | **Market index** | **Current value** | **Trend** | **Variation** | **% variation** |
| 4 | Dow Jones | 14329.49 | Up | 33.25 | 0.23% |
| 5 | Nasdaq | 3232.09 | Up | 9.72 | 0.30% |
| 6 | FTSE 100 | 6439.16 | Up | 11.52 | 0.18% |
| 7 | Dax | 7939.77 | Up | 20.44 | 0.26% |
| 8 | Cac 40 | 3793.78 | Up | 20.02 | 0.53% |
| 9 | BBC Global 30 | 6952.17 | Up | 1.03 | 0.01% |
| 10 | | | | | |
| 11 | | 42686.46 | | | |

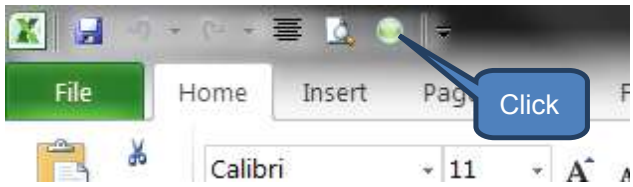
Cells E1 and B11 were changed.

A third copy has also been saved by another user as "B5 - Share and merge - Market data – V3.xls"

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | ***Market data*** | **08/03/2013** | | | Version 3 |
| 2 | | | | | |
| 3 | **Market index** | **Current value** | **Trend** | **Variation** | **% variation** |
| 4 | Dow Jones | 14329.49 | Up | 33.25 | 0.23% |
| 5 | Nasdaq | 3232.09 | Up | 9.72 | 0.30% |
| 6 | FTSE 100 | 6439.16 | Up | 11.52 | 0.18% |
| 7 | Dax | 7939.77 | Up | 20.44 | 0.26% |
| 8 | Cac 40 | 3793.78 | Up | 20.02 | 0.53% |
| 9 | BBC Global 30 | 6952.17 | Up | 1.03 | 0.01% |
| 10 | | | | | |
| 11 | | | | 95.98 | |

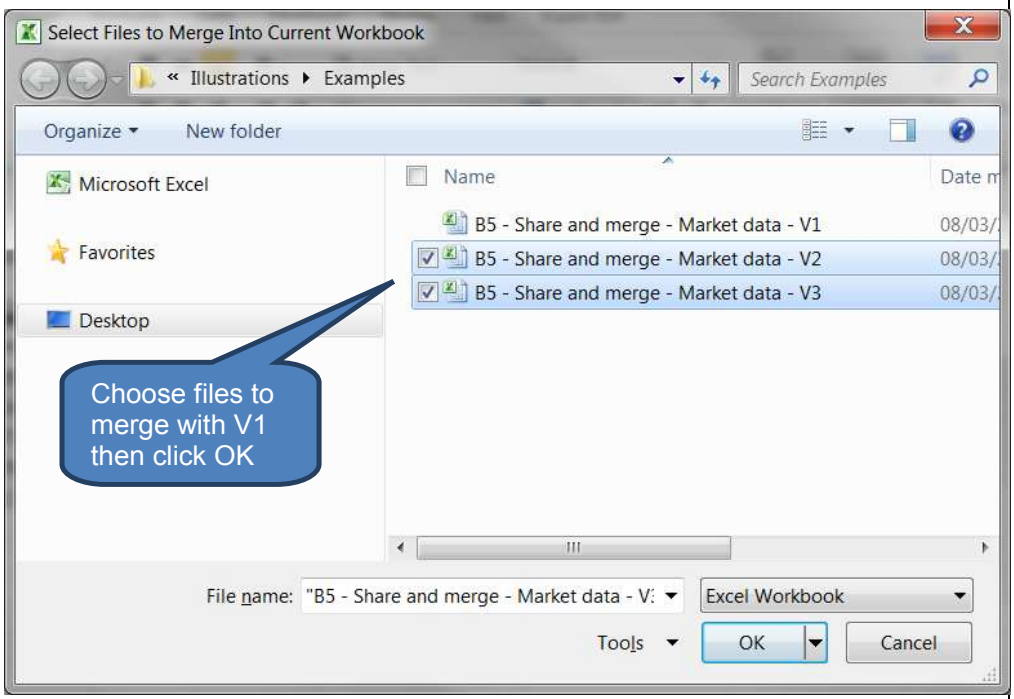
Cells E1 and D11 were changed.

Open version 1 of the shared workbook and click ***Compare and Merge Workbooks*** on the ***Quick Access Toolbar*** (OK to save if asked).





Select versions v2 and v3 by holding down the SHIFT key. Then click OK.

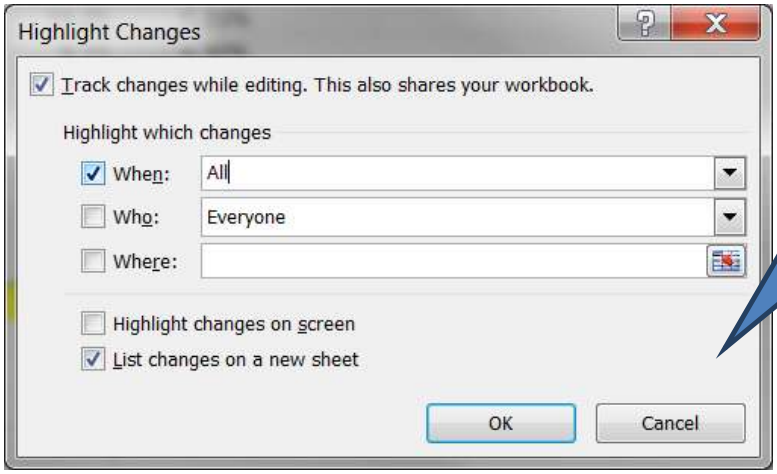



The three files have now merged into the central V1 file resulting in the following worksheet. Note how cell E1 was initially updated with the text string “Version 2” when file V2 was merged but was then subsequently overwritten with “Version 3” when file V3 was merged.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | ***Market data*** | **08/03/2013** | | | Version 3 |
| 2 | | | | | |
| 3 | **Market index** | **Current value** | **Trend** | **Variation** | **% variation** |
| 4 | Dow Jones | 14329.49 | Up | 33.25 | 0.23% |
| 5 | Nasdaq | 3232.09 | Up | 9.72 | 0.30% |
| 6 | FTSE 100 | 6439.16 | Up | 11.52 | 0.18% |
| 7 | Dax | 7939.77 | Up | 20.44 | 0.26% |
| 8 | Cac 40 | 3793.78 | Up | 20.02 | 0.53% |
| 9 | BBC Global 30 | 6952.17 | Up | 1.03 | 0.01% |
| 10 | | | | | |
| 11 | | 42686.46 | | 95.98 | |
| 12 | | | | | |

Final merged worksheet

**We can review all the changes by creating the history tab using Track Changes-Highlight Changes from the Review tab:**




Settings = "All" and "List changes in a new sheet"

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Action Number | Date | Time | Who | Change | Sheet | Range | New Value | Old Value |
| 2 | 1 | 08/03/2013 | 01:12 | Nick | Cell Change | B5 - Share & Merge | B11 | '=SUM(B4:B10) | <blank> |
| 3 | 2 | 08/03/2013 | 01:12 | Nick | Cell Change | B5 - Share & Merge | E1 | Version 2 | <blank> |
| 4 | 3 | 08/03/2013 | 01:13 | Nick | Cell Change | B5 - Share & Merge | E1 | Version 3 | <blank> |
| 5 | 4 | 08/03/2013 | 01:13 | Nick | Cell Change | B5 - Share & Merge | D11 | '=SUM(D4:D10) | <blank> |
| 6 | | | | | | | | | |
| 7 | The history ends with the changes saved on 08/03/2013 at 01:13. | | | | | | | | |

Change history

## 3 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Protect worksheets and workbooks with passwords including
  - Password protect workbooks
  - Mark workbooks as final
  - Protect worksheets
  - Protect structures
  - Use digital signatures
  - Lock and hide cells
- Manage the sharing and merging of workbooks including
  - Open a shared workbook
  - Edit a shared workbook
  - Remove users from a shared workbook
  - Resolve conflicting changes in shared workbooks
  - End the sharing of a shared workbook
  - Merge workbooks

CHAPTER 9

# Introduction to Microsoft Word

## Contents

# INTRODUCTION

## Learning outcomes

LO 4.1.1 Use various Word features to present letters, reports and other documents in a presentable custom style

Note: Chapter C2 also relates to learning objective 4.1.1

## Exam context

Many students will have some kind of prior experience of Microsoft Word from their former studies, job or even home life. However, this exam assumes no prior knowledge. Therefore do not be alarmed if you have not used Microsoft Word previously.

As with all the Microsoft Office based chapters in this Study Text you will benefit significantly from having access to Microsoft Word in order to practice the techniques described. Active learning through practical experience will not only help you remember new techniques but also ensure you have understood exactly what has been described.

By the end of this chapter students will be able to:

- Manage new documents including:
  - opening a new blank document
  - basing a new document on an existing document
  - basing a new document on a template
- Add cover pages and themes
- Work with page numbers, headers and footers, page and section breaks
- Setup pages including
  - watermarks
  - rulers
  - orientation
  - line numbers
  - margins
- Recognise and use components of the Office Backstage view in Word
- Save and print from Microsoft Word

# 1 INTRODUCTION TO MICROSOFT WORD

**Section overview**

- Introduction to Microsoft Word 2010
- Practical uses for Word

## 1.1 Introduction to Microsoft Word 2010

**Definition: Microsoft Word 2010**

**Microsoft Word 2010 is the official word processor tool of the Microsoft Office 2010 suite. It seems nowadays that nearly every office and boardroom employs Microsoft Word if not daily then certainly frequently, whether for preparing letters to clients, invoices or reports.**

Many ICAP students may already have encountered Microsoft Word at some stage of their lives whether preparing their own reports, letters, and CVs or receiving work from their lecturers who have used Microsoft Word in preparing hand-outs and exercises. However, accountants (and trainee accountants) may be more comfortable in the 'numbers-based' world of Microsoft Excel and may have less experience using Microsoft Word for preparing professional reports and business letters.

The sections of the study text covering Microsoft Word will therefore be for some a revision tool with perhaps a small element of new functionality encountered, whereas for others it will represent a whole new subject area.

Either way remember that the examiner has the scope (and is likely) to examine any part of the syllabus. Therefore you must avoid complacency and ensure you are comfortable with the entire contents of every chapter.

## 1.2 Practical uses for Microsoft Word

Microsoft Word's substantial power and flexibility make it a useful tool for both personal and business use. It can be used to create both simple and complex documents with the ability to add numerous types of graphics such as pictures, charts and tables.

Some examples of how it is used include:

| Use | Comment |
|---|---|
| Write a business plan | Business plans are commonly used when a business is looking to attract new funding and investment. They might be aimed for example at banks or potential new major shareholders. |
| Prepare a CV or job profile | Applicants for a new job will often use Word to prepare their CV. Within organisations Word is commonly used to draft job profiles. |

| Use | Comment |
|---|---|
| Write a letter | Whether it's formal business letters or something much less formal, Word is a great tool for assisting you in writing an impressively presented letter. |
| Compose a client report | Similar to a business plan, Word's many formatting features and ability to integrate graphics and illustrations mean it is perfect for composing a client report. |
| Prepare a meeting agenda | Lists and numbered bullet points can be mixed with tables to prepare clear, concise and logical meeting agendas. |
| Create business cards and labels | The power of Microsoft Word can be matched to the increasing sophistication of home and business printing to enable users to create professional looking business cards and address labels quickly and efficiently. |
| Issue certificates | The numerous templates and style features mean that Word is useful for preparing certificates, whether for safety compliance, completion of a course, high achievement or certification of authenticity. |
| Write minutes of a meeting | Subsequent to having prepared meeting agendas, Word can also be used in the follow-up to a meeting for writing-up notes (minutes) from the meeting highlighting points discussed and actions agreed. |
| Generate customer statements and invoices | Word can be used to generate clear and effective customer invoices and monthly statements. |

# 2 CREATING AND SAVING A NEW DOCUMENT

## Section overview

- Open a new, blank document
- Save a document
- Base a new document on an existing document
- Base a new document on a template
- Create and edit your own templates
- Adding and deleting pages, cover pages and themes

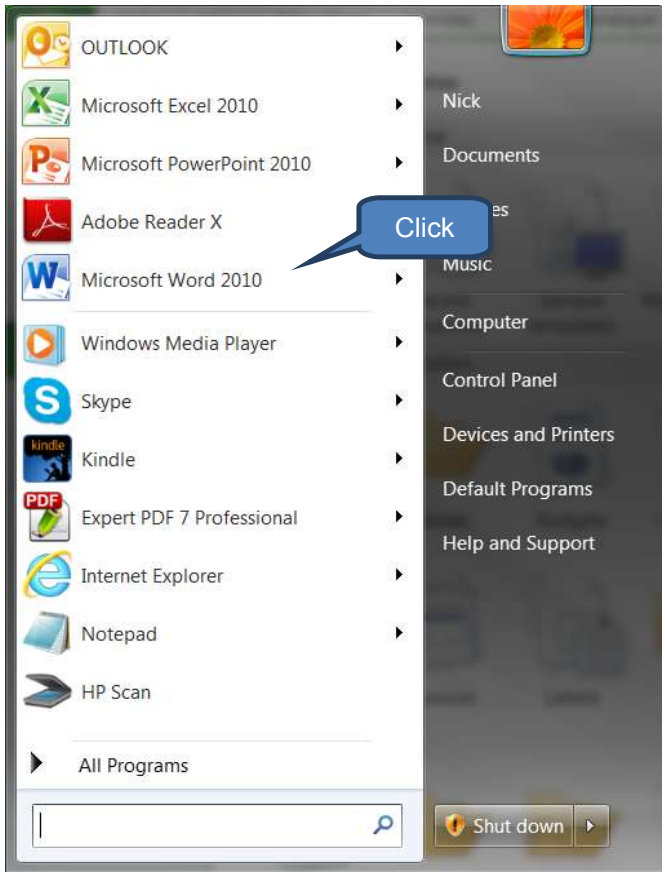
## 2.1 Open a new, blank document

**Definition: Document**

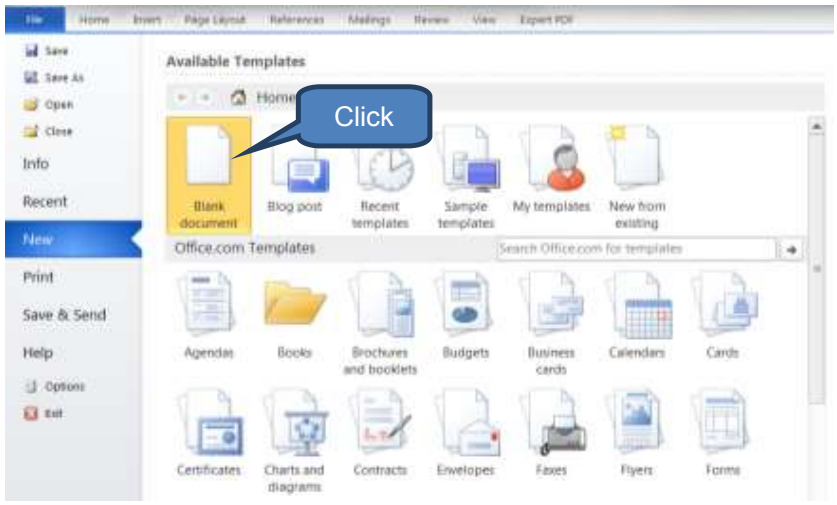
**A document is the file comprising one or more pages and sections that represents the work you are word-processing. For example a report, invoice, certificate or letter.**

There are a number of ways to open a new, blank document.

- Click ***Microsoft Word 2010*** from the start menu. This launches a new session of Word and a new blank document will open automatically.



- If Word is already open click ***New*** + ***Blank document*** on the ***File tab***. This will open a new document in addition to an already open document.




- You can also press ***CTRL +N*** whilst in an existing document to quickly create a new, blank document.

## 2.2 Save a document

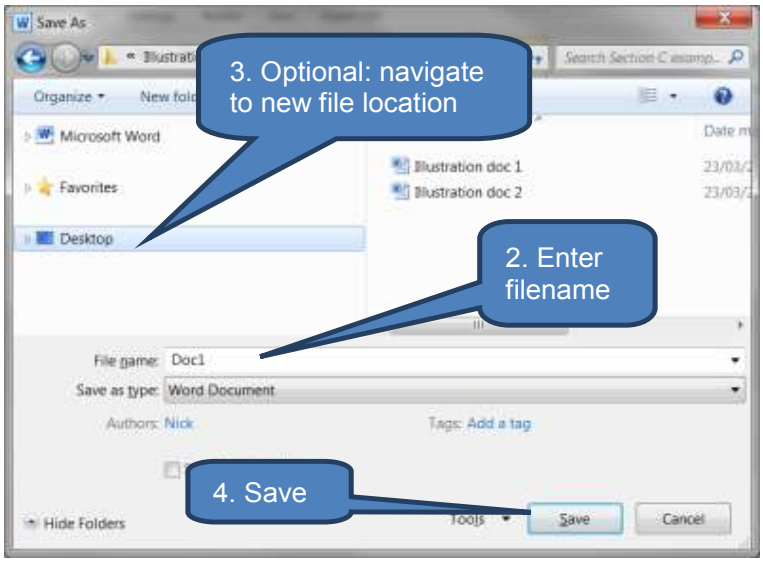
### Save a document for the first time

There are two ways of saving a document for the first time. Either:

- Click ***Save*** on the ***Quick Access Toolbar***; or
- Press ***CTRL + S***

Both of these actions will open the ***Save As*** dialog box. Type in a file name (or alternatively leave the default name as it is), then either:

- Click ***Save*** to save to the default location; or
- Navigate to an appropriate file location, then click ***Save***.

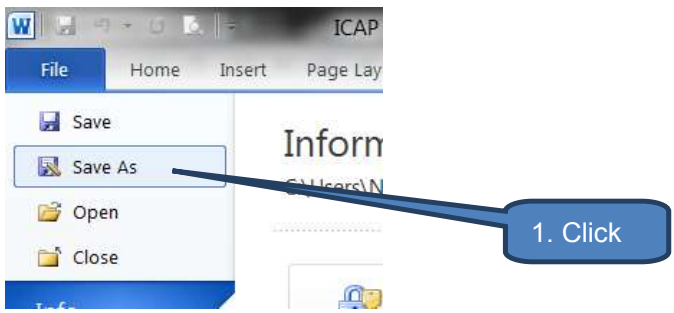


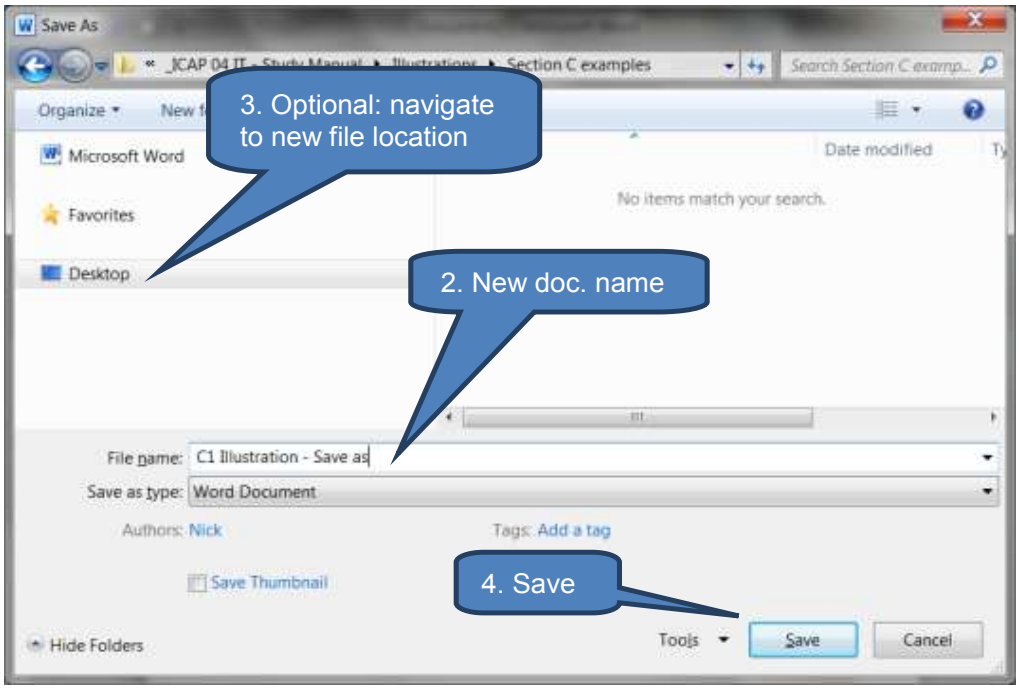

### Save an existing document as a new document

This technique is called '***Save As***' and prevents a user from overwriting the original document. Best practice would be to save the document as a new file as soon as you open the original document.

To save an existing document as a new document:

- Open the document you wish to save as a new document
- Click on the ***File*** tab
- Click ***Save As***
- Enter a new document name. You can save the new document to the same directory as the existing file (which is the default) or alternatively navigate to a new directory
- Click ***Save***

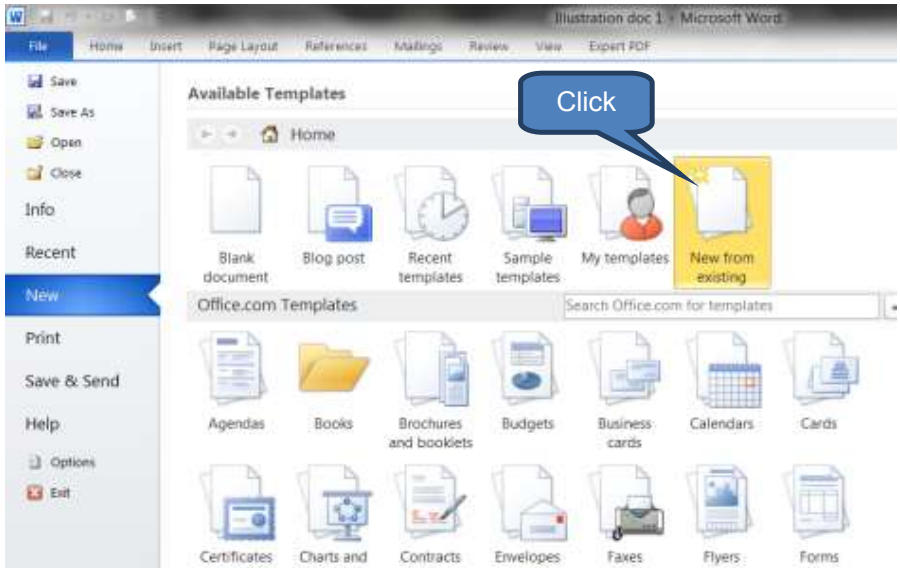




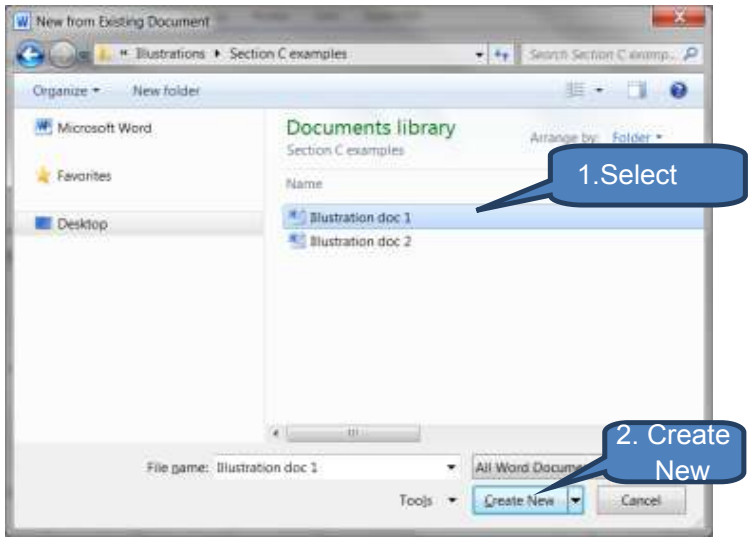

## 2.3 Base a new document on an existing document

You may be able to save time and effort by recycling previous work and basing a new document on an existing document. There are two ways to do this:

- If Word is already open click ***New*** + ***New from existing*** on the ***File tab***.




- Navigate to the existing document you wish to recycle through the dialog box. Then click ***Create New.***




## 2.4 Base a new document on a template

**Definition: Word template**

**A Microsoft Word template is a preformatted document designed for a specific purpose such as preparing an agenda, contract, letter or report.**

Using templates can remove much of the set-up and design efforts where a template already exists that suits your needs. Furthermore it will help achieve consistency in the 'look and feel' of your documents. This may or may not be of benefit to you depending on how bespoke or standard your situation is.

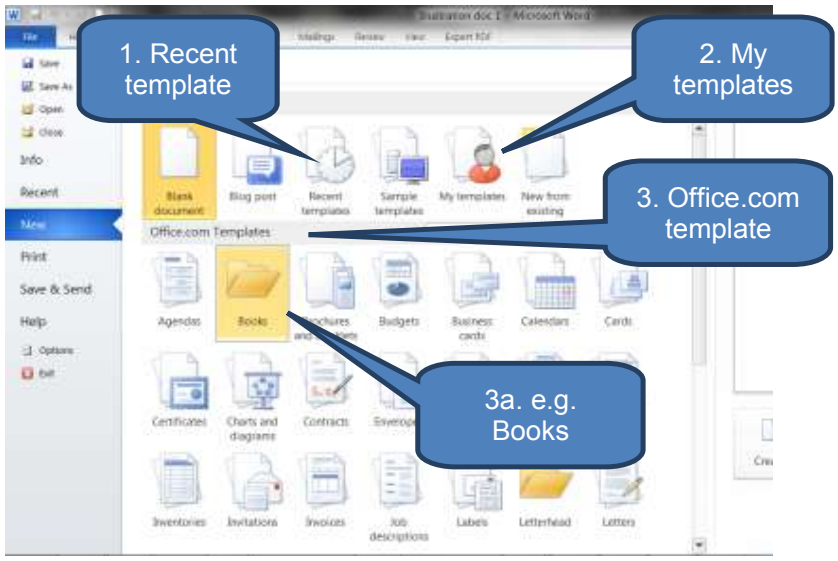
Templates exist for a wide range of uses such as agendas, contracts, letters, reports, minutes and time sheets.

To base a new document on a template do the following:

- ❑ Open Word
- ❑ Click ***New*** on the ***File tab***
- ❑ Now you have a range of options including the following:
  1. Open a recently used template from ***Recent templates;***
  2. Open a template you recently saved in ***My templates***; and
  3. Open an Office.com standard templates.

     Note – you may be offered further sub-options within a category. For example ***Books*** opens a second suite of options from which you might select ***Address and phone books*** and then finally the ***Membership directory*** (see 3a, 3b and 3c below).

     To open the selected template either ***double-click*** the template or click ***download*** when invited.


1. Recent template
2. My templates
3. Office.com template
3a. e.g. Books
Office.com Templates
Books


3b. e.g. Address and phone books
Available Templates
Office.com Templates
Academic books
Address and phone books
Bookmarks and bookplates
Photo albums
Other books

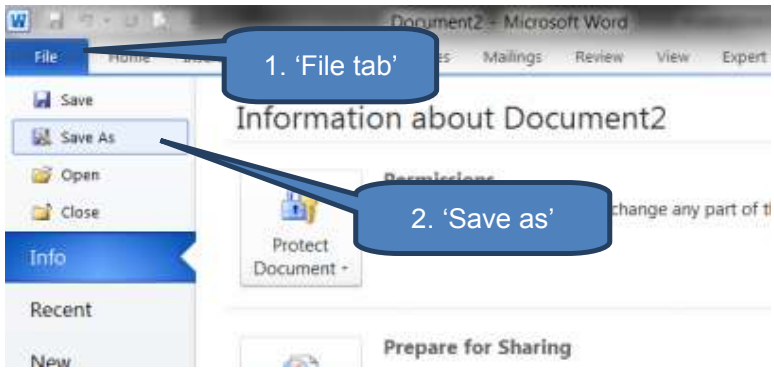

Preview screen
3c. e.g. Membership directory
Download
Available Templates
Membership directory

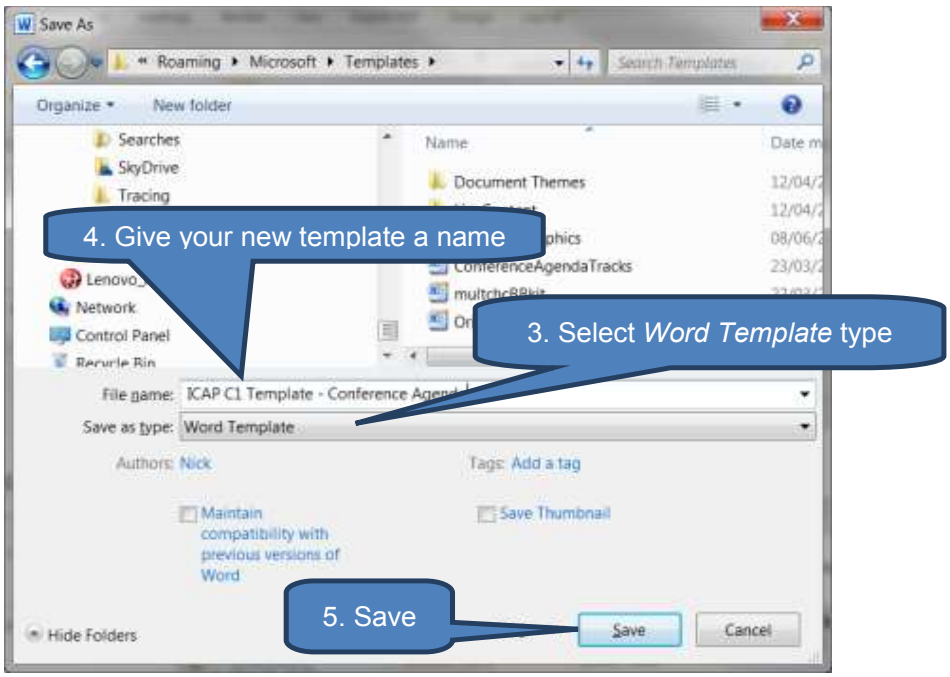
## 2.5 Create and edit your own templates

### Create your own template

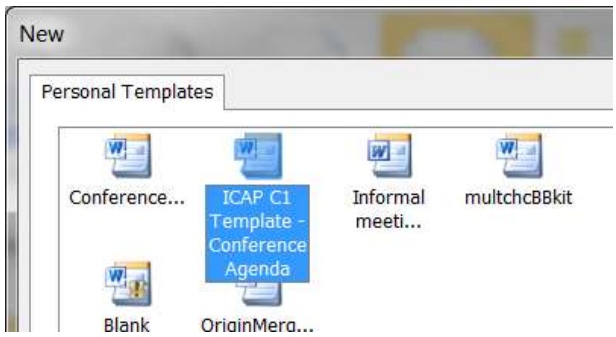
To create your own template:

- ❑ Create and design a document that you wish to use as a future template
- ❑ Click the ***File tab***
- ❑ Click ***Save As***
- ❑ In the '***Save as type***' drop-down select ***Word Template***, give your new template a name, then click ***Save***



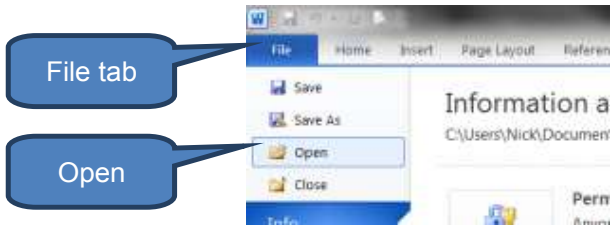

Your new template will appear as an option in ***My templates*** when you next open a new file from the ***File tab***



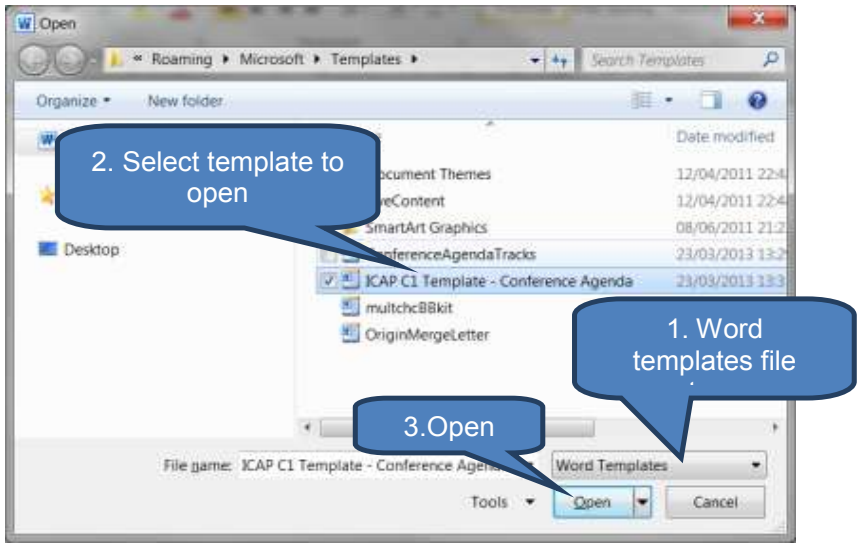

### Edit your own template

To edit your own template:

- Click on the ***File tab***
- Click ***Open***




- Select '***Templates'*** file type
- Choose the saved template you wish to re-open to edit
- Click ***Open***




You can now edit your previously saved template. Once finished editing simply re-save the file by either:

- Click ***File tab*** then ***Save***; or
- CRTL + S

## 2.6 Adding and deleting pages cover pages and themes

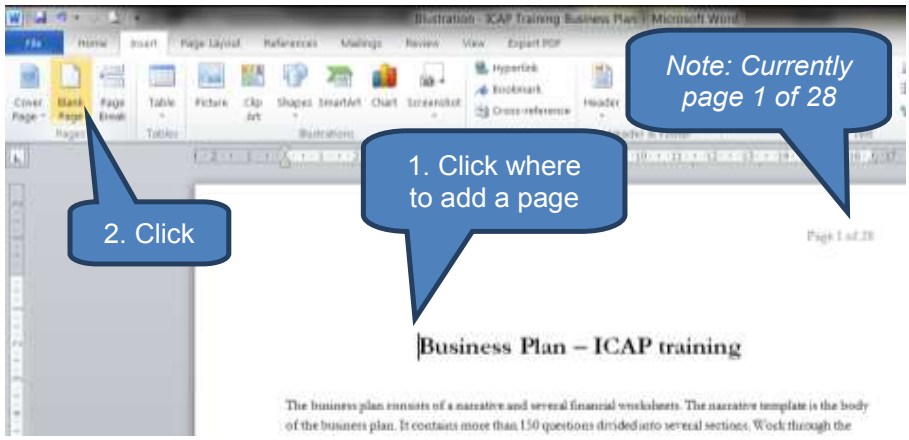
### Add a blank page

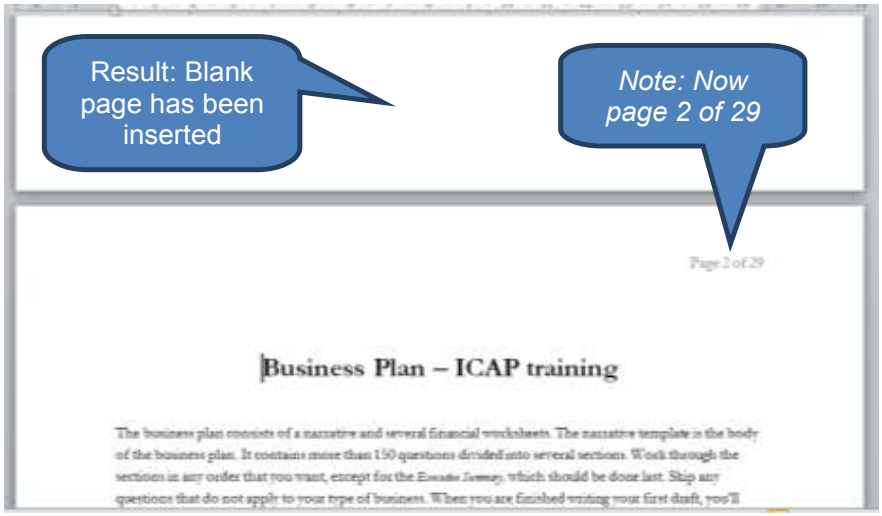
- Click in the document where you want to add a blank page.

  *Note that the newly inserted page will appear immediately before the cursor location, so for example if your cursor was at the start of the document a new blank page would be inserted at the start.*

- Click ***Blank Page*** in the ***Pages*** group on the ***Insert*** tab

  *Remember that page breaks will be visible when the paragraph markers are visible – Click* ***Show/Hide*** ¶ *in the* ***Paragraph*** *group on the* ***Home*** *tab.*

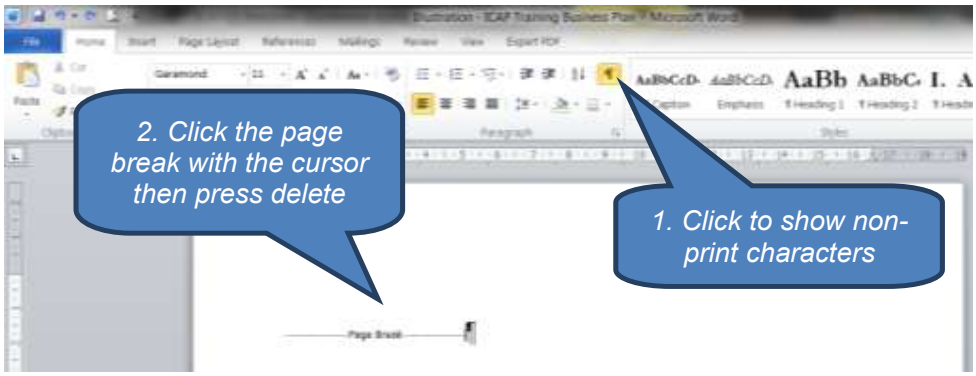



### Delete a page

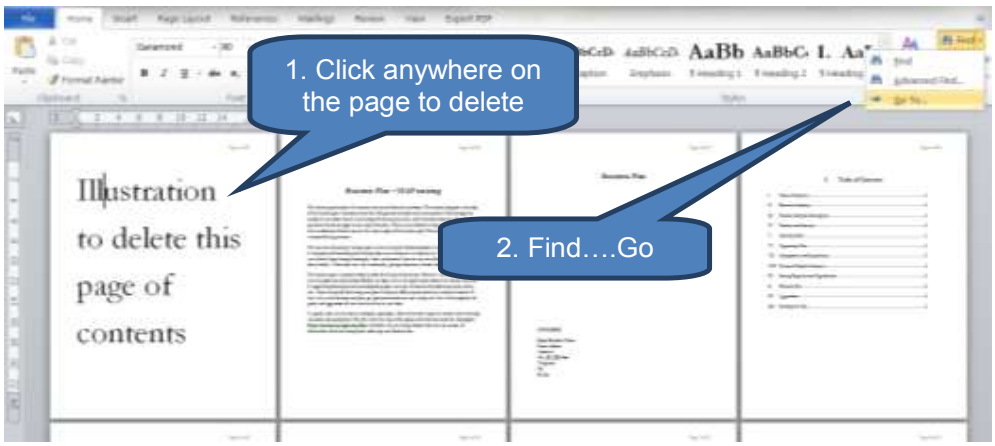
To delete a blank page:

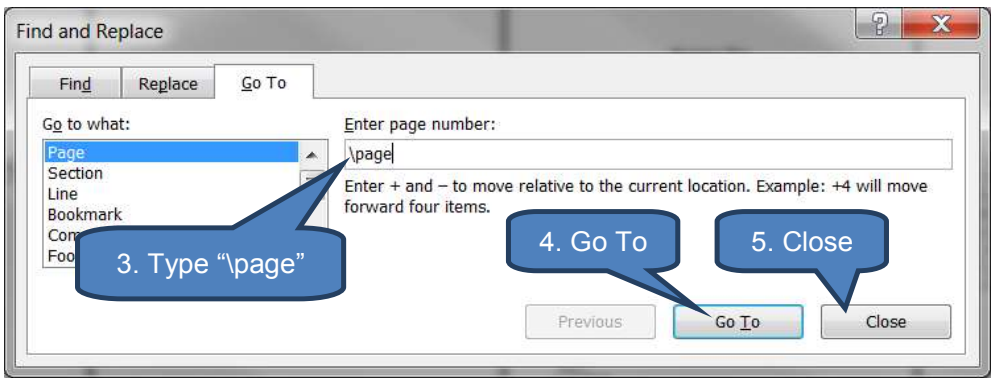
- Ensure 'non-print' characters (such as tab and page-break) are visible. If they are not click ***Show/Hide*** ¶ in the ***Paragraph*** group on the ***Home*** tab.
- Delete the "page break" marking at the end of the blank page.

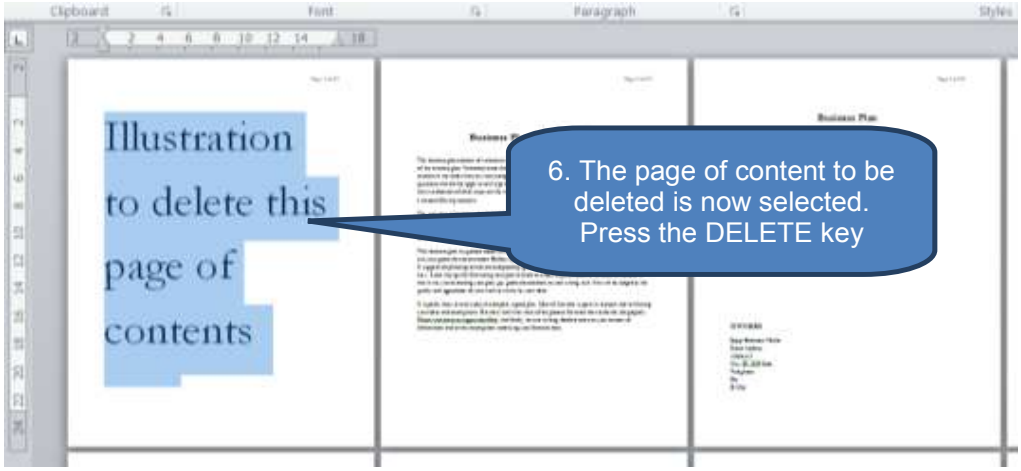


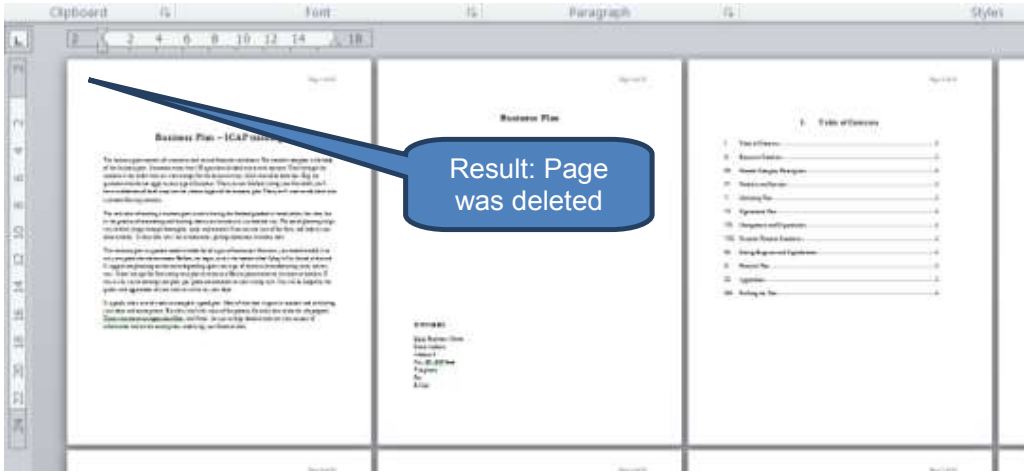

To delete a non-blank page (i.e. a page that has some contents such as text, diagrams or tables:

- Click anywhere in the page you wish to delete
- Click the ***Find*** drop-down in the ***Editing*** group on the ***Home*** tab
- Select ***Go To***
- Type ***\page*** in the ***Enter page number*** box then click ***Go To***. This will select the full content of the current page.
- Click ***Close*** then press the ***DELETE*** key





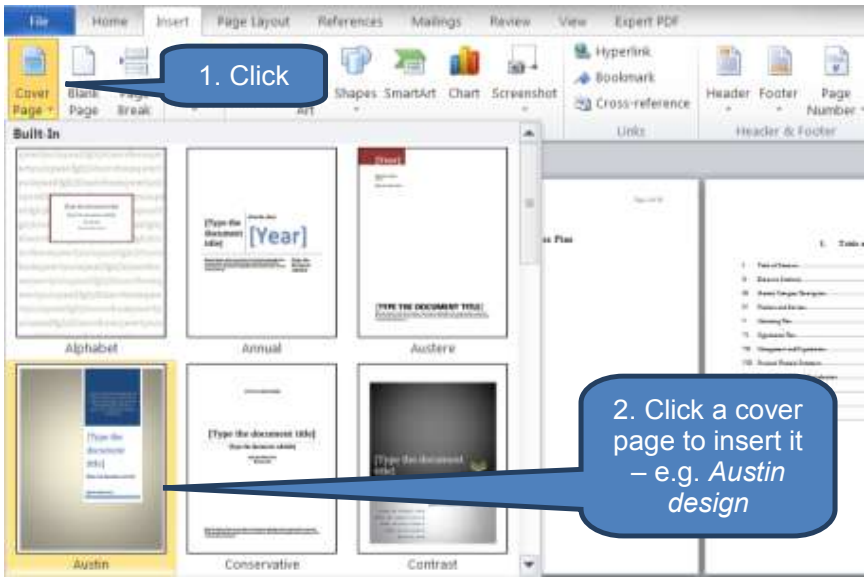

### Add a cover page

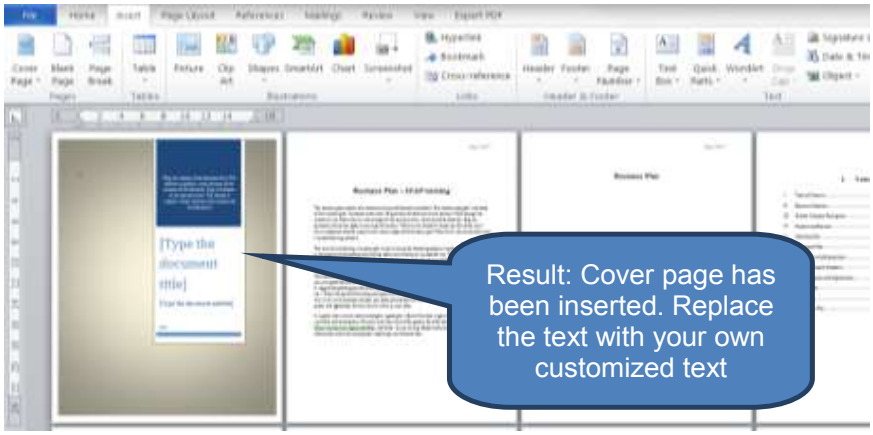
Microsoft Word incorporates an excellent gallery of pre-designed cover pages that can used with as little or much customization as desired. Simply add a cover page then replace the sample text with your own.

To add a cover page:

- Click ***Cover Page*** in the ***Pages*** group on the ***Insert*** tab
- Select a cover page layout from the gallery of options then click to insert it

Note that if you insert an alternative Cover Page the previous Cover Page will be replaced.

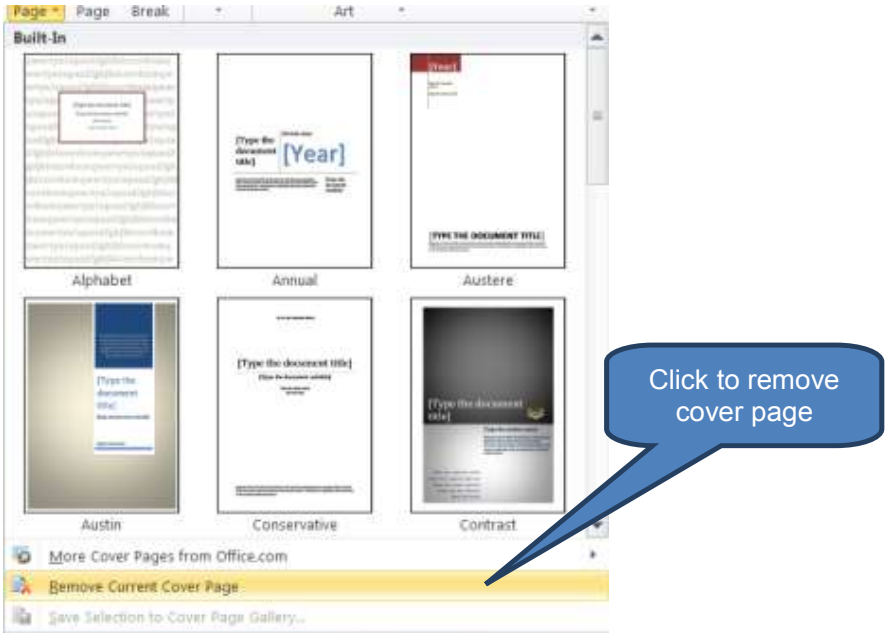



### Delete a cover page

To delete a cover page:

- Click ***Remove Current Cover Page*** under ***Cover Page*** in the ***Pages*** group on the ***Insert*** tab



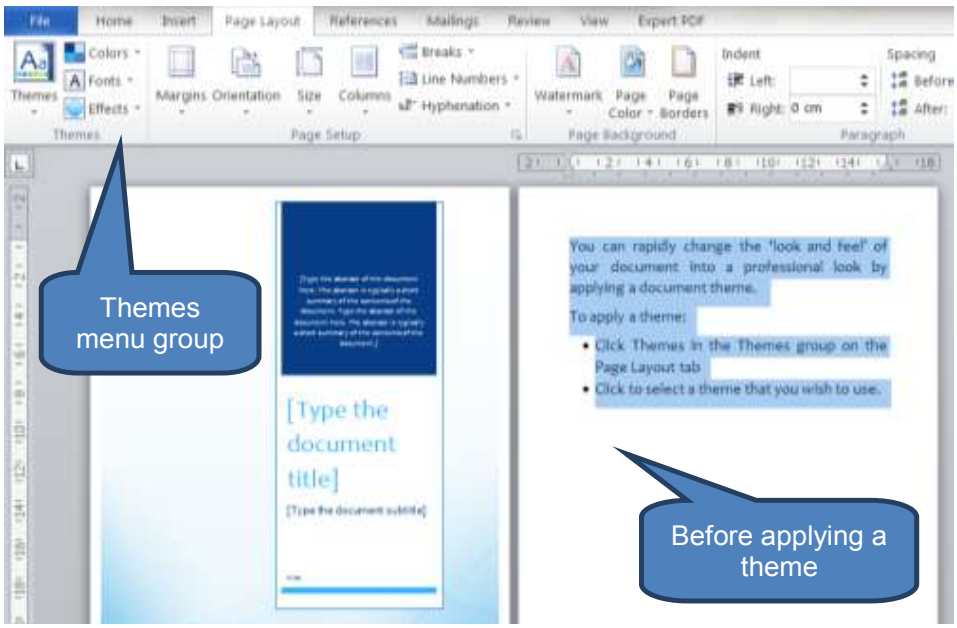

## Themes

**Definition: Themes**

**A document Theme is a suite of pre-set formats incorporating a set of theme colours, fonts (including heading and body text fonts) and effects (such as lines and fill effects).**

You can craft the 'look and feel' of your document into a professional look by applying a document theme as follows:

- Click ***Themes*** in the ***Themes*** group on the ***Page Layout*** tab
- Click to select the theme that you wish to use



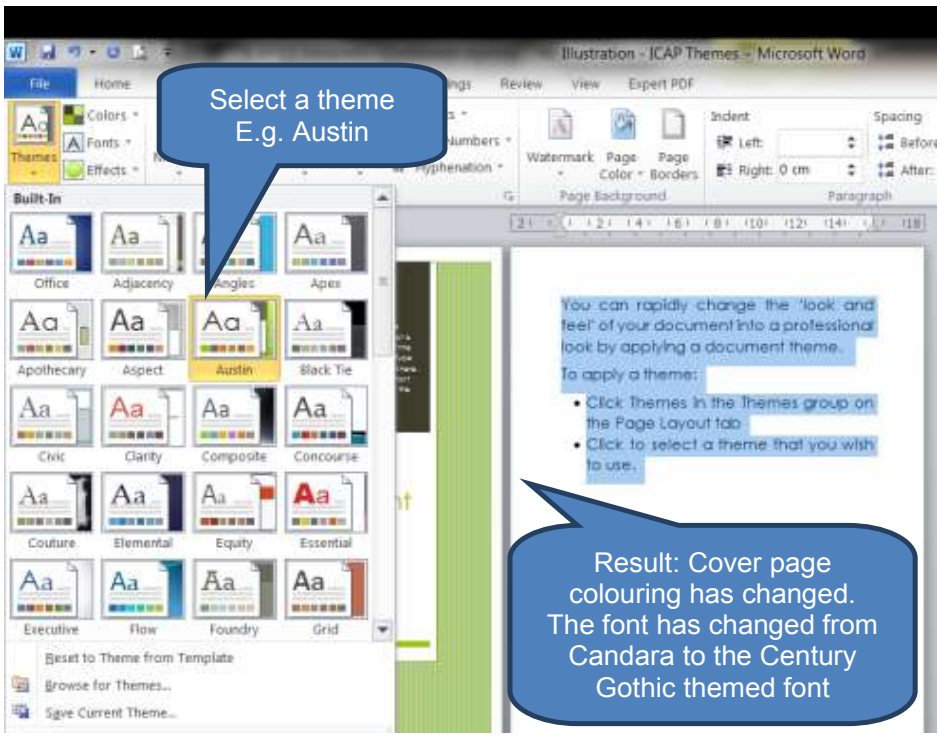


Illustration - ICAP Themes - Microsoft Word
Select a theme
E.g. Austin
Built-In
Office
Adjacency
Angles
Apex
Apothecary
Aspect
Austin
Black Tie
Civic
Clarity
Composite
Concourse
Couture
Elemental
Equity
Essential
Executive
Flow
Foundry
Grid
Reset to Theme from Template
Browse for Themes...
Save Current Theme...
You can rapidly change the 'look and feel' of your document into a professional look by applying a document theme.
To apply a theme:
Click Themes in the Themes group on the Page Layout tab
Click to select a theme that you wish to use.
Result: Cover page colouring has changed. The font has changed from Candara to the Century Gothic themed font

# 3 PAGE NUMBERS, HEADERS AND FOOTERS

**Section overview**

- Adding headers and footers
- Adding page numbers
- Removing page numbers, headers and footers

**Definition: Headers and footers**

**Headers and footers are pieces of text or graphics that appear at the top and bottom of a page. After setting up a header or footer they will appear on all the pages.**

**Typical contents include:**

- **Page number**
- **Document name**
- **File location**
- **Date and time**
- **Copyright mark**
- **Corporate logo**

## 3.1 Adding headers and footers

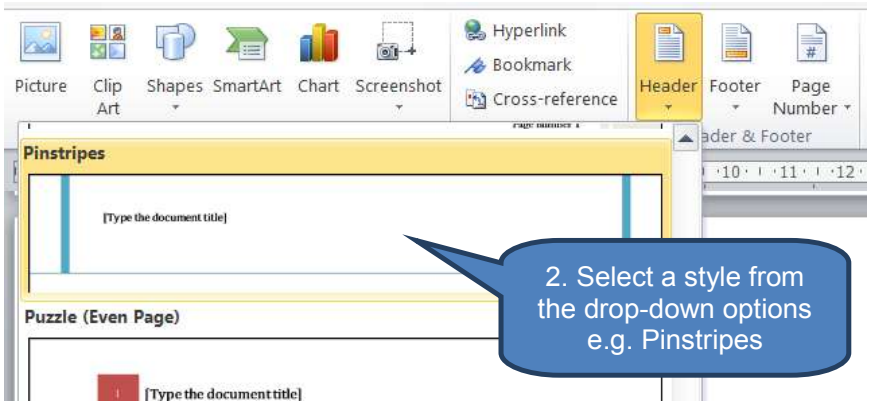
### Adding headers and footers from the gallery

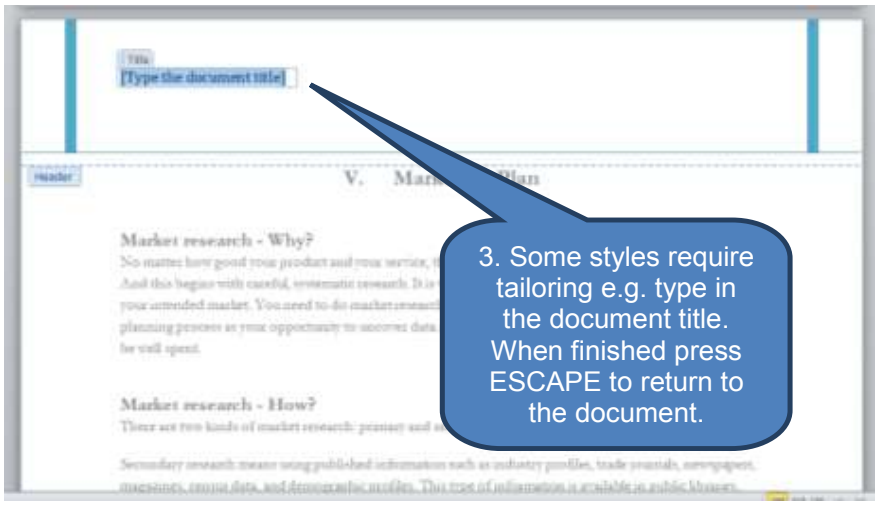
Microsoft Word includes a suite of pre-defined headers and footers that can be easily and quickly inserted. These can then be customized to your particular requirements.

To add a header or footer from the gallery:

- ❑ Click ***Header*** or ***Footer*** in the ***Header & Footer*** group on the ***Insert*** tab
- ❑ Select a style from the various drop-down options then click to insert
- ❑ Press ***ESCAPE*** to return to the document


1. Click Header or Footer in the Header & Footer group on the Insert tab


Picture
Clip Art
Shapes
SmartArt
Chart
Screenshot
Hyperlink
Bookmark
Cross-reference
Header
Footer
Page Number
Pinstripes
[Type the document title]
Puzzle (Even Page)
[Type the document title]
2. Select a style from the drop-down options e.g. Pinstripes

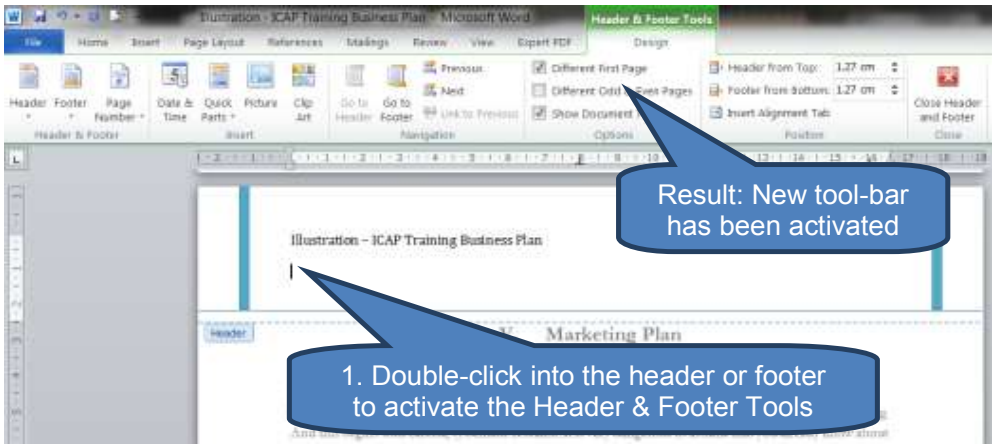

[Type the document title]
3. Some styles require tailoring e.g. type in the document title. When finished press ESCAPE to return to the document.

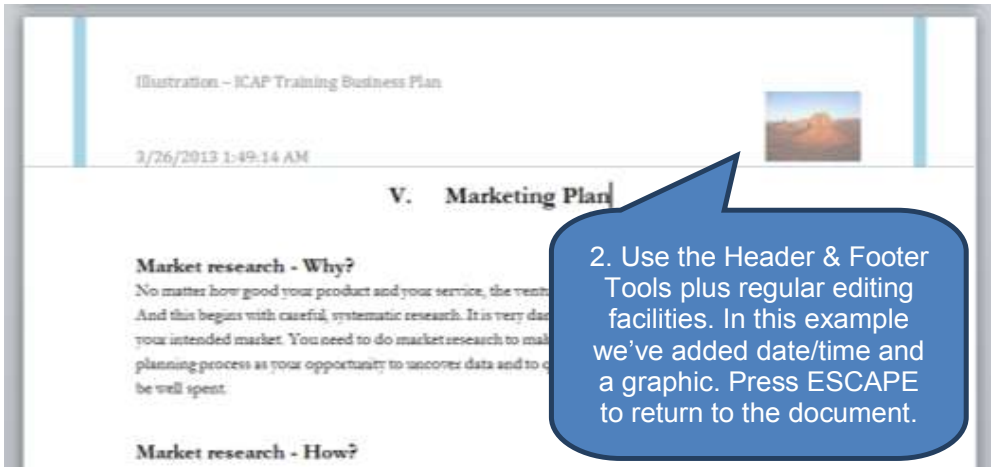

V. Marketing Plan
Market research - Why?
Market research - How?
Result: Header has been inserted

### Customizing headers and footers

You can customize headers and footers as follows:

- Enter the header or footer by double-clicking somewhere in the header or footer area. This will activate the ***Header & Footer Tools*** tab. Note that the ***Header & Footer Tools*** tab is only visible when a header or footer is selected for editing.
- You can then edit the header or footer just like you would edit any other part of the document - for example using the bold, underline and shading formatting available on the ***Home*** tab. The ***Header & Footer Tools*** tab offers additional functionality for quickly adding items such as page numbers, dates & times, pictures and Clip Art.




## 3.2 Adding page numbers

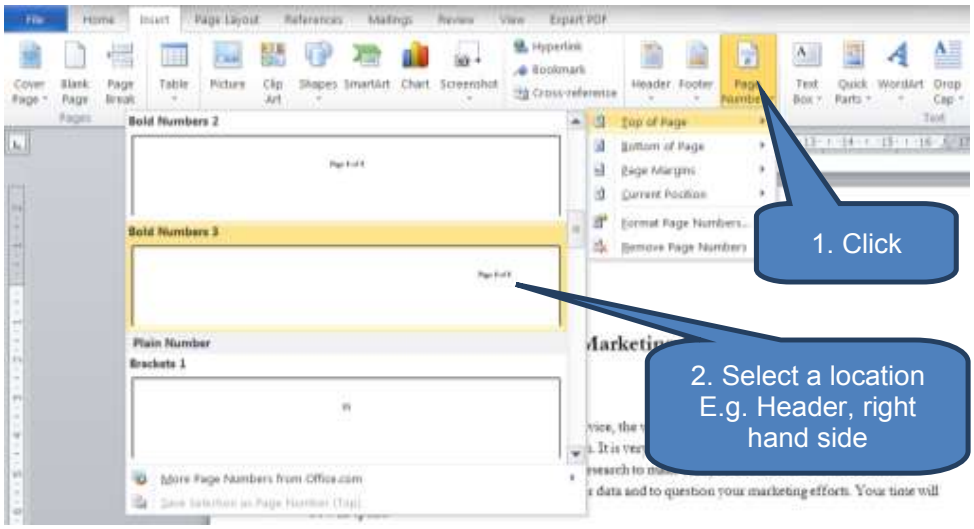
Microsoft Word offers a range of page number formats that can easily be inserted into a document. Page numbers can be inserted into a header, footer or the current location (i.e. where the cursor currently sits).

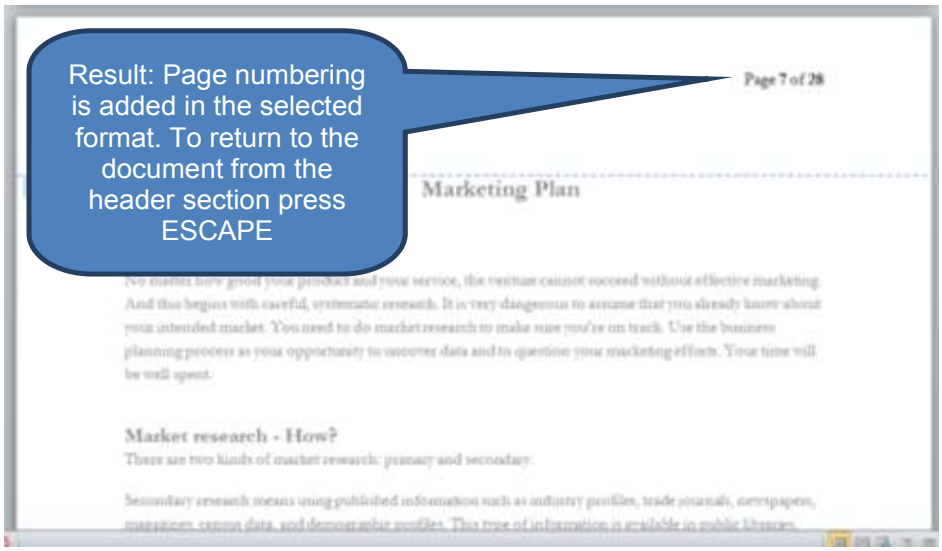
To add page numbers:

- Click ***Page Number*** in the ***Header & Footer*** group on the ***Insert*** tab
- Select a location and style from the various drop-down options then click to insert

If you inserted a page number into either a header or footer then to return to the body of the document either:

- Click ***Close Header and Footer*** on the ***Design*** tab under ***Header & Footer Tools***; or
- Press the ***ESCAPE*** key

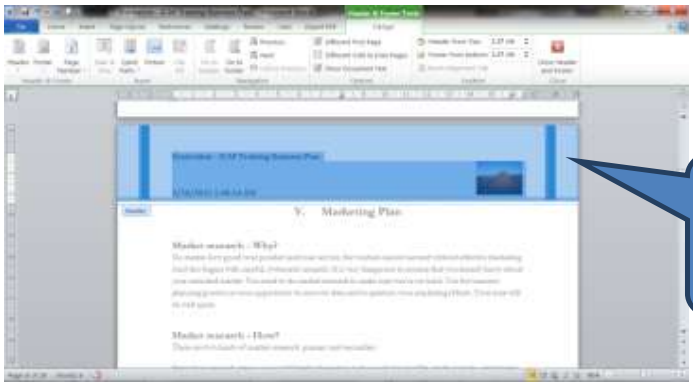


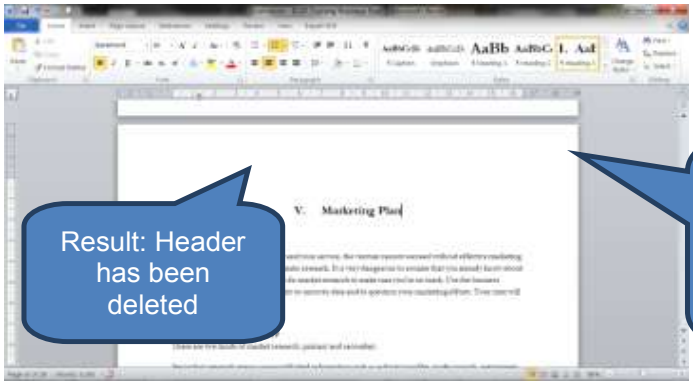



## 3.3 Removing page numbers, headers and footers

To remove page numbers, headers or footers:

- Double-click the page number, header or footer containing the item(s) you wish to delete
- Select the relevant text then press the ***DELETE*** key



# 4 PAGE BREAKS AND SECTION BREAKS

**Section overview**

- Page breaks
- Section breaks

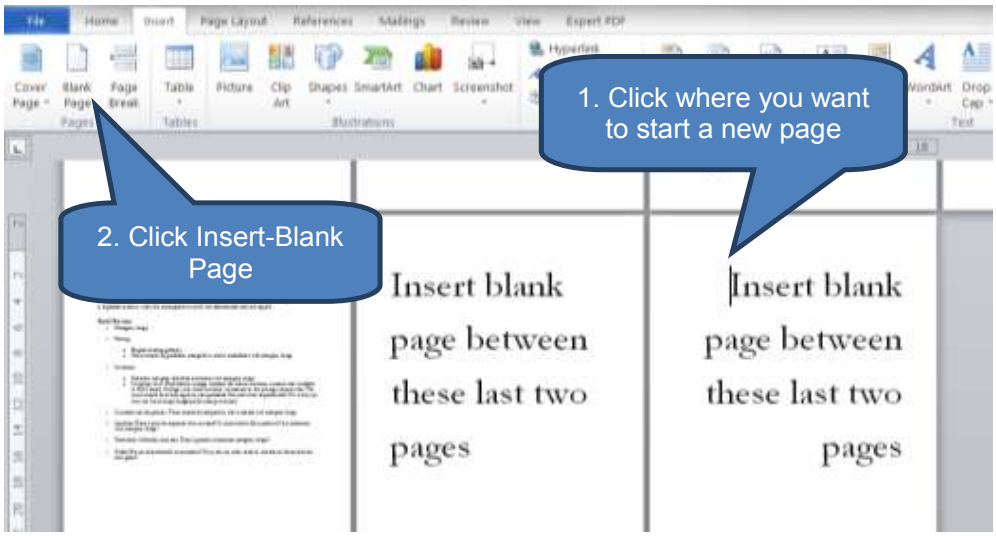
## 4.1 Page breaks

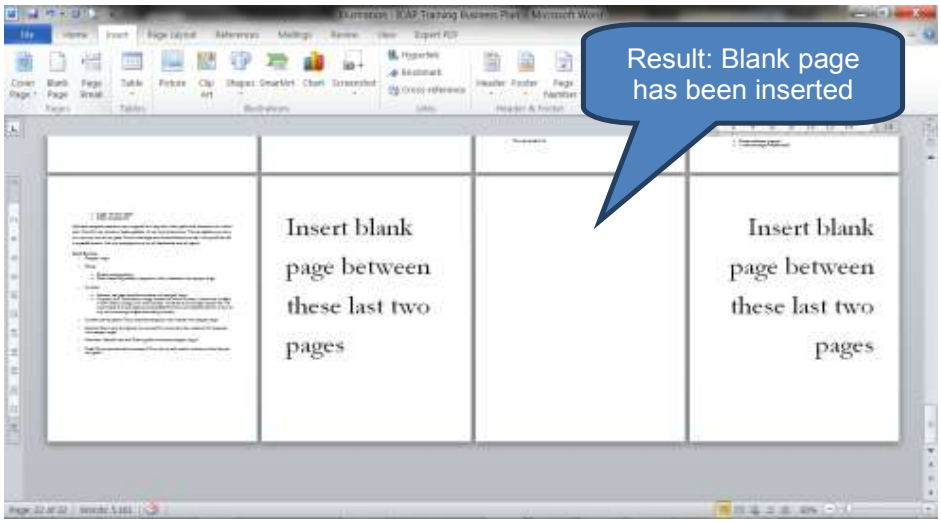
### Insert a page break

When creating a document Word automatically inserts page breaks at the end of each page. You can change the default Word rules so that automatic page breaks are placed where you want them. You can also insert manual page breaks.

To insert a manual page break:

- Click where you want to start a new page. The character immediately to the right of the cursor will become the first character on the new page.
- Click ***Page Break*** in the ***Pages*** group on the ***Insert*** tab





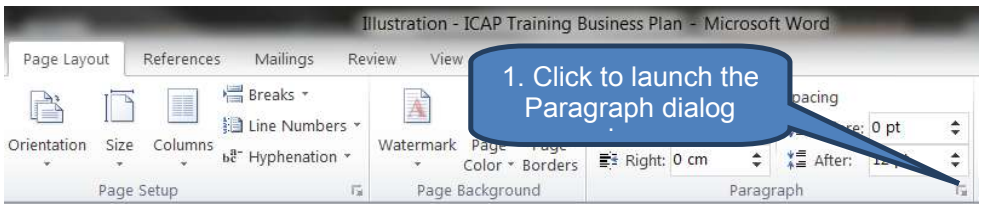

### Change Word's default auto-page break rules

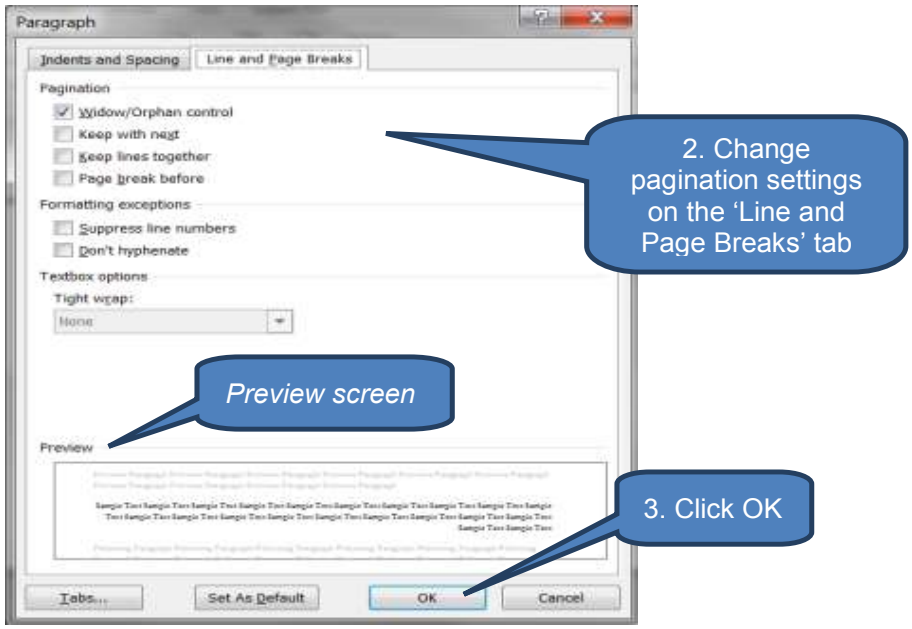
Accountants are typically involved in a broad variety of activities throughout their careers during which they will encounter a huge array of reports, presentations and other documents. Many of these documents will be more than a few pages long and potentially some might stretch into the hundreds of pages.

Customizing Word's default auto-page break rules can substantially reduce subsequent editing time adjusting default page-breaks.

Page break rules can be customized using the ***Line and Page Breaks*** tab in the ***Paragraph Dialog Box*** on the ***Line and Page Layout*** tab to achieve the following effects:

| Option | Effect |
|---|---|
| ***Keep lines together*** | Prevent page breaks in the middle of a paragraph |
| ***Keep with next*** | Prevent page breaks between paragraphs to keep the selected paragraphs together on a single page |
| ***Page break before*** | Insert a page break before the selected paragraph |
| ***Widow/Orphan control*** | Professional documents never end a page with just one line of a new paragraph (an orphan) or start a page with just the last line of the previous paragraph (a widow). Widow/Orphan control prevents widows and orphans within the selected paragraphs. |



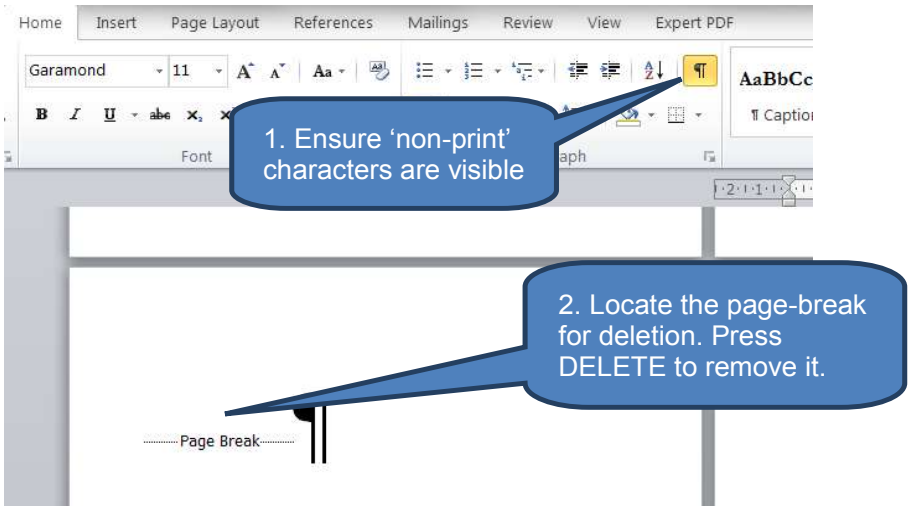



### Removing a page break

You cannot remove page-breaks that Word inserts automatically. However, you can remove a page break that has been inserted manually.

To remove a manually inserted page-break:

- Ensure 'non-print' characters (such as tab and page-break) are visible. If they are not click ***Show/Hide*** ¶ in the ***Paragraph*** group on the ***Home*** tab.
- Locate the manually inserted page-break then delete by pressing ***DELETE***



## 4.2 Section breaks

**Definition: Section breaks**

**A Word document is split into sections each of which has its own:**

- **page numbering scheme;**
- **headers and footers**
- **line numbering**
- **margin sizes; and**
- **page orientation**

**When you create a new blank document the default number of sections is one. This means that any page numbering or headers and footers will by default be applied to all pages.**

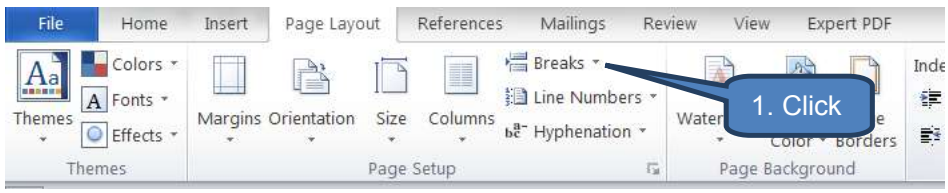
**Adding section breaks will allow you to split your document into multiple sections and vary the styles between sections.**

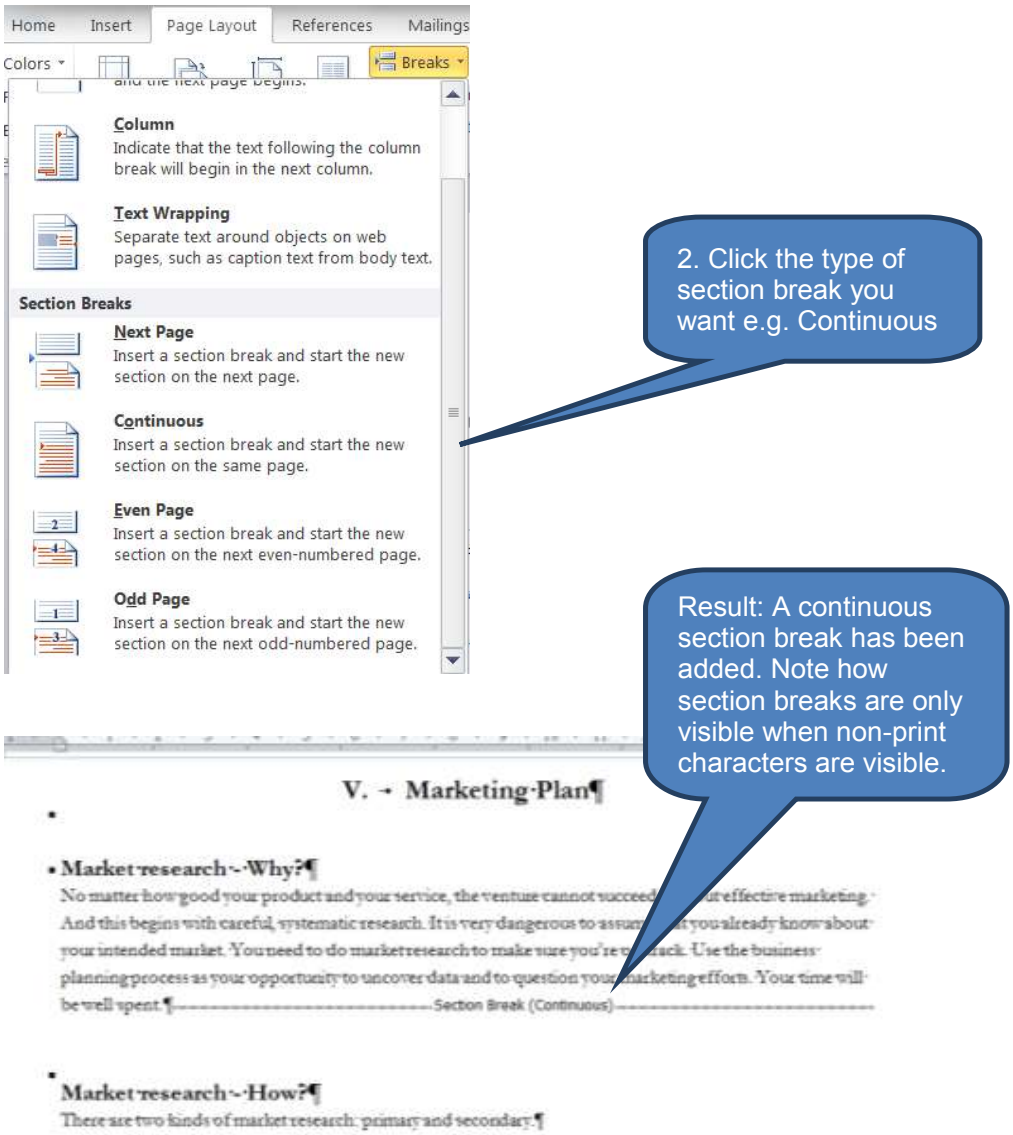
### Insert a section break

To insert a section break:

- Click the ***Breaks*** drop-down arrow in the ***Page Setup*** group on the ***Page Layout*** tab
- Click the relevant section break that you want to add from the below options.

| Option | Effect |
|---|---|
| ***Next page*** | Insert section break and start next section on the next page |
| ***Continuous*** | Insert section break and start next section on the same page |
| ***Even page*** | Insert section break and start next section on the next even-numbered page |
| ***Odd page*** | Insert section break and start next section on the next odd-numbered page |






### Removing a section break

To remove a section break:

- ❑ Ensure 'non-print' characters (such as tab and page-break) are visible. If they are not click ***Show/Hide*** ¶ in the ***Paragraph*** group on the ***Home*** tab.
- ❑ Locate the section-break then delete by pressing ***DELETE***

### Insert columns of text

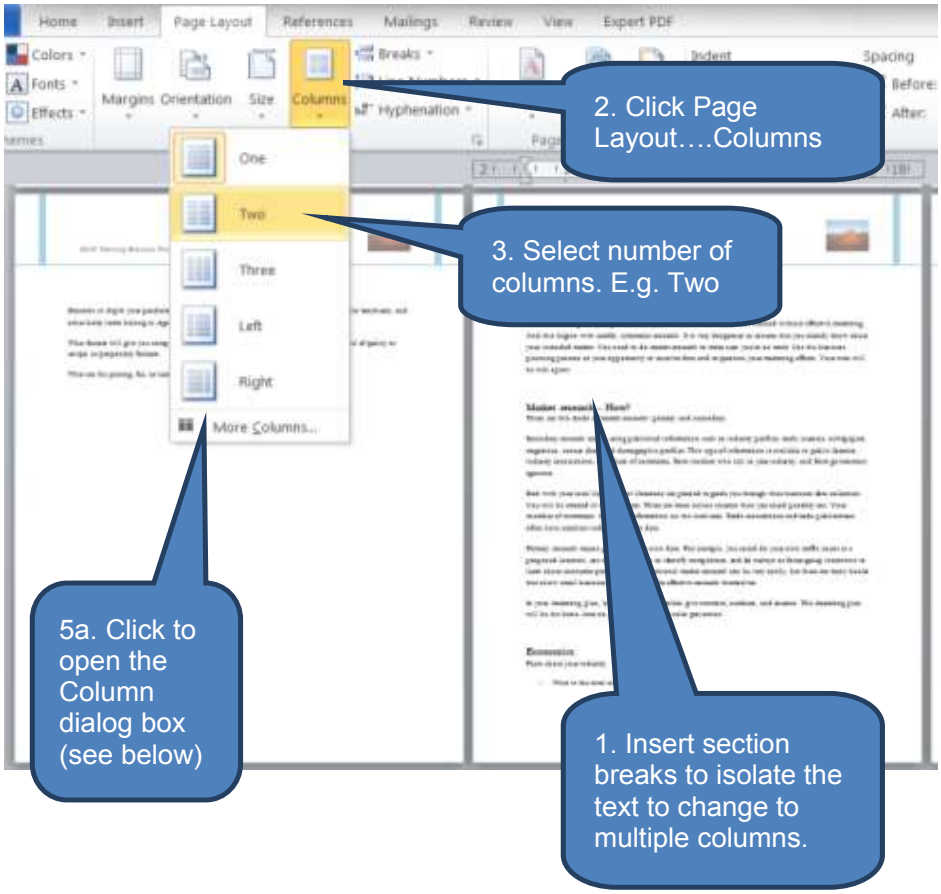
When you read a newspaper the text typically appears in columns. This can be achieved in Microsoft Word by altering the number of columns within a section.

When you create a new document the default number of columns is one. To increase the number of columns in a section:

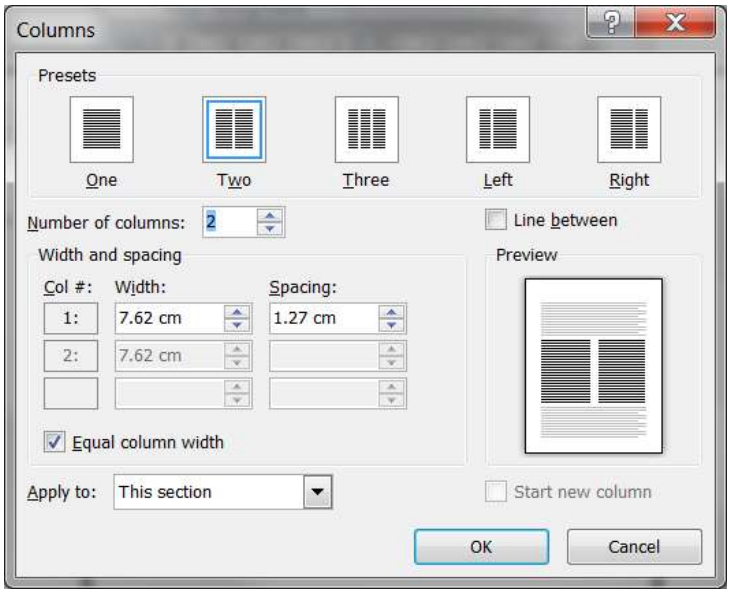
- ❑ Insert a section break (or breaks) as described above to isolate the section you wish to change to multiple text columns

- Click ***Columns*** in the ***Page Setup*** group on the ***Page Layout*** tab
- Select the number of columns of text you want

You can further customize column settings with the ***Columns*** dialog box by clicking ***More Columns…*** on the ***Columns*** drop-down.




4. Result: Section now comprises two columns of text




5b. Make further customization in the Columns dialog box

### Remove columns of text

To remove columns of text:

- Click anywhere in the section currently formatted with multi-column text
- Click ***Columns*** in the ***Page Setup*** group on the ***Page Layout*** tab
- Select ***One*** (i.e. number of columns of text is re-set to one column)

# 5 PAGE SETUP

**Section overview**

- Watermarks
- Rulers
- Page orientation
- Line numbers
- Margins

## 5.1 Watermarks

**Definition: Watermarks**

**Watermarks are text or pictures that appear behind document text. Typical watermarks include:**

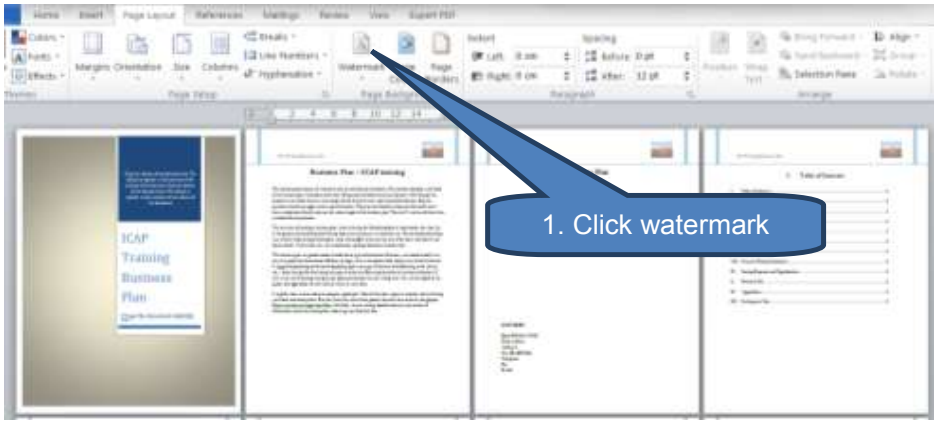
- **Draft**
- **Confidential**
- **Urgent**
- **Corporate image or logo**

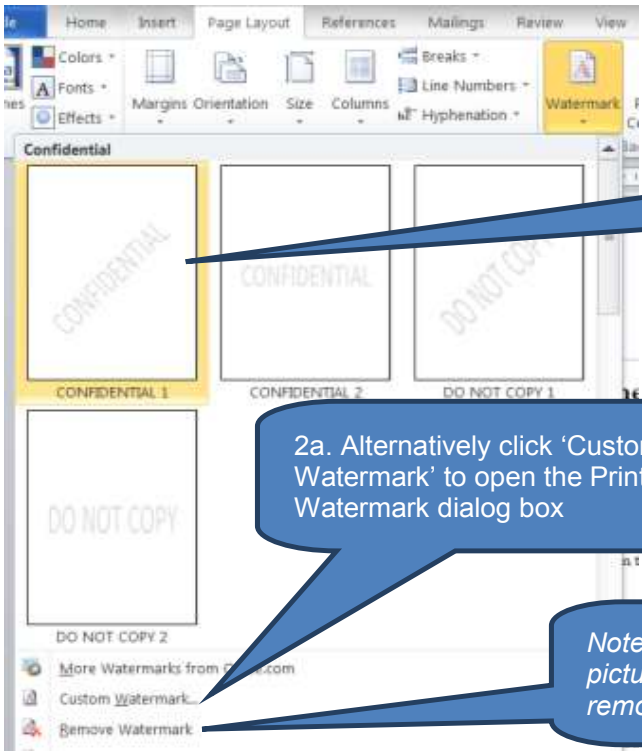
**Watermarks are visible in Print Layout view, Full Screen reading view or in a printed document.**

### Insert a text watermark

To insert a text watermark:

- ❑ Click ***Watermark*** in the ***Page Background*** group on the ***Page Layout*** tab
- ❑ Either:
  - Select a ***pro-forma*** watermark from the gallery such as Urgent or Confidential; or
  - Click ***Custom Watermark*** followed by ***Text watermark*** then enter (and format) the required text and press ***OK***

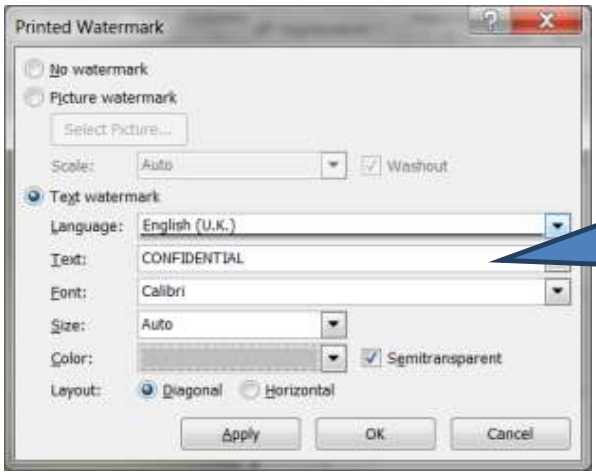





2. Select a pro-forma watermark e.g. Confidential 1

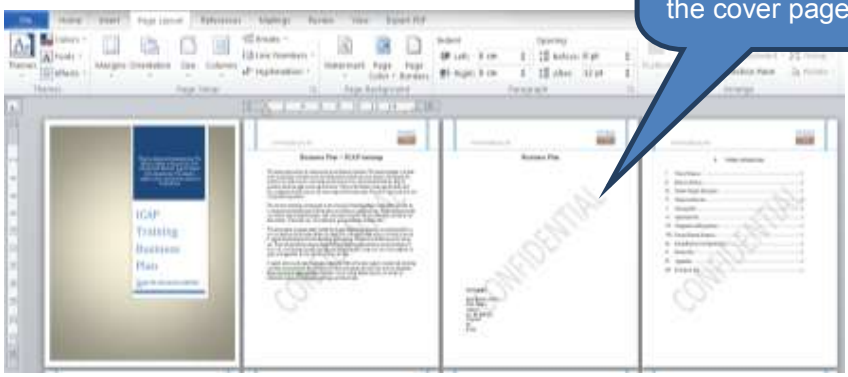
2a. Alternatively click 'Custom Watermark' to open the Printed Watermark dialog box

*Note: Watermarks (text and picture) can be subsequently removed by clicking here*




2a continued: Enter a custom watermark (and font) in the dialog box then click OK

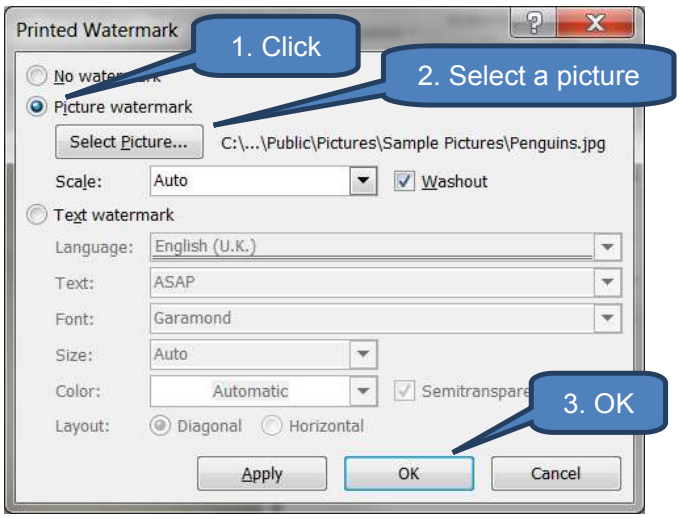
Result: Text watermark appears on all pages (except the cover page)



### Insert a picture watermark

To insert a picture as a watermark:

- Click ***Watermark*** in the ***Page Background*** group on the ***Page Layout*** tab (as shown above)
- Click ***Custom Watermark*** followed by ***Picture watermark*** in the Printed Watermark dialog box
- Find and select a picture you wish to use as the Watermark then click ***OK***





### Remove a watermark

To delete a watermark:

- Click ***Watermark*** in the ***Page Background*** group on the ***Page Layout*** tab (as shown above)
- Click ***Remove watermark***

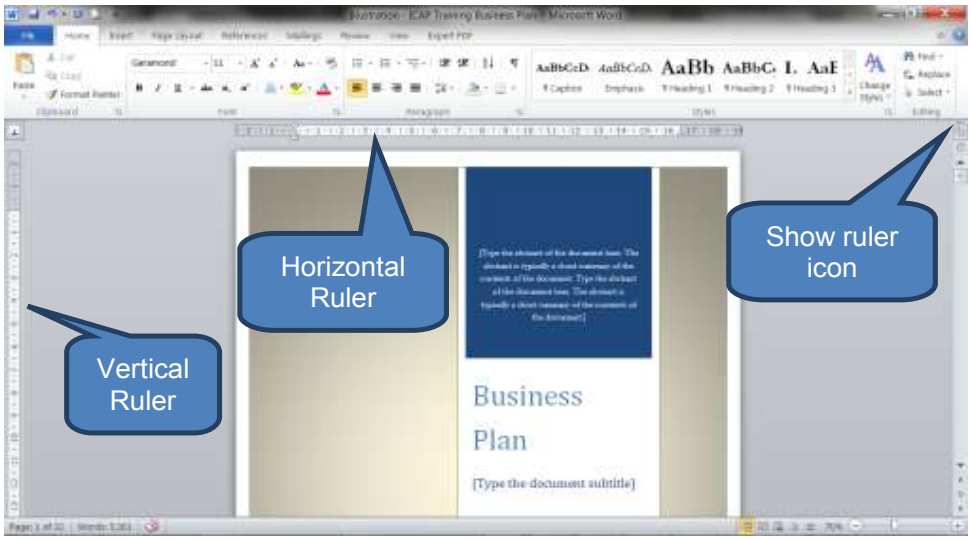
*See illustration above under 'Insert a text watermark'*

## 5.2 Rulers

**Definition: Rulers**

**Rulers are the horizontal and vertical numbered and measured bars that appear across the top and the left side of a document. Rulers are used to align items within the document such as paragraphs and tables by setting indents and tab stops.**

**Rulers can be switched between visible and invisible by clicking the 'show ruler' icon.**




### Set tab stops

To set tab stops:

- Ensure the ruler is visible. If not then click ***View Ruler*** icon at the top of the vertical scroll bar.
- Click the tab selector at the left end of the ruler to select the required tab type. Repeated clicking toggles between the different types of tabs available. Note that the tab selector also includes two indent options – first line and indent (see below for description).
- Click the ruler where you want to set the tab stop.

The different tab selector options available are:

| Option | Description |
|---|---|
| **Left tab** | Sets the start position of text that will run to the right as you type. |
| **Center tab** | Sets the position of the middle of the text. Text centres on this position as you type. |
| **Right tab** | Sets the right end of the text. As you type, the text moves to the left. |

| Option | Description |
|---|---|
| **Decimal tab** | Aligns numbers around a decimal point |
| **First line indent** | Sets the position where you want the first line of a paragraph to begin |
| **Hanging indent** | Sets the position where the second and subsequent lines of text start |

### Set indentation

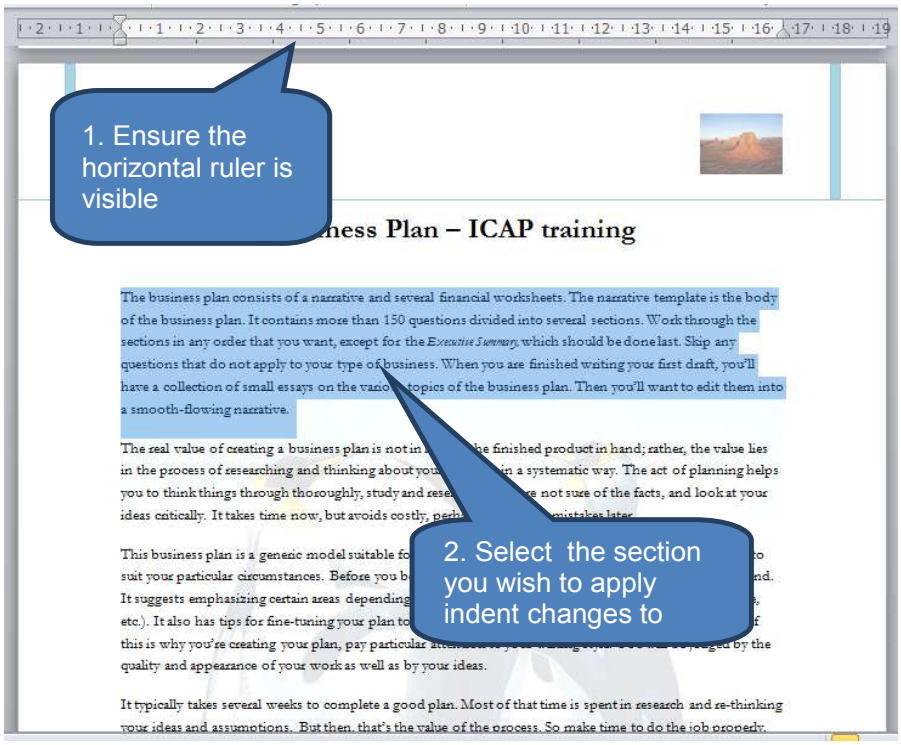
Indentation settings are used to establish the left- and right- boundaries for text and graphic presentation.

Indentation settings are shown on the horizontal ruler and can be adjusted for the current selection by clicking and sliding the indent marker.

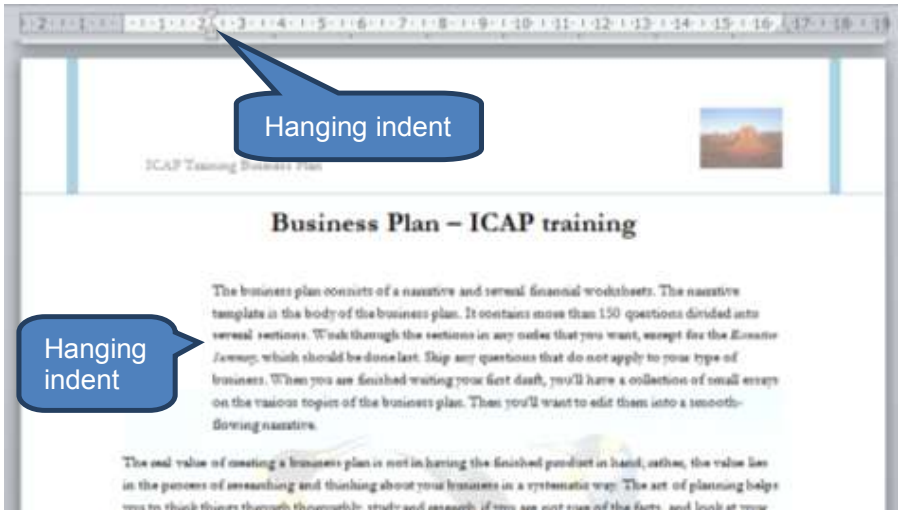
There are three indent markers, two of which we have already seen above:

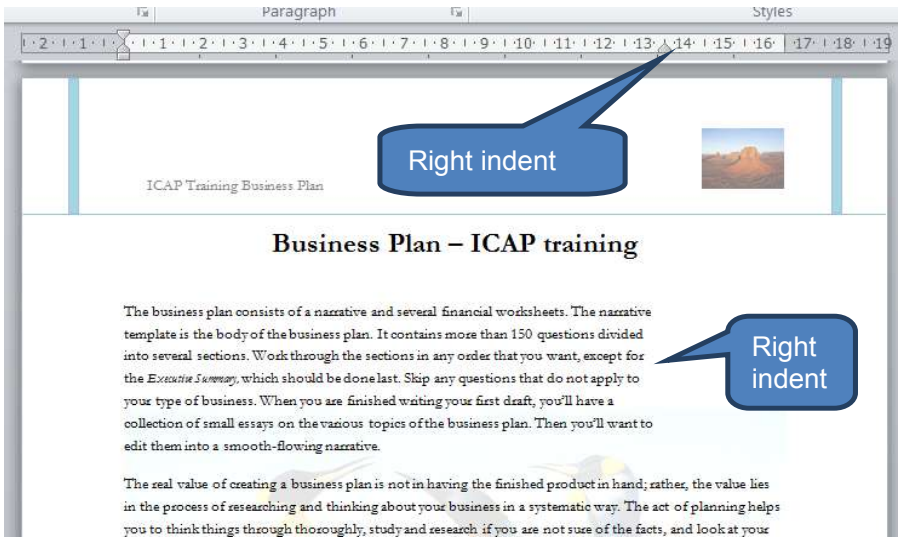
- First line indent
- Hanging indent (note this also incorporates the left indent)
- Right indent

These effects are demonstrated in the below illustrations. Note that the indents have been restricted to the first paragraph by highlighting the paragraph before then changing the indents.




First line indent
ICAP Training Business Plan
Business Plan – ICAP training
First line indent


Hanging indent
ICAP Training Business Plan
Business Plan – ICAP training
Hanging indent


Paragraph
Styles
Right indent
ICAP Training Business Plan
Business Plan – ICAP training
The business plan consists of a narrative and several financial worksheets. The narrative template is the body of the business plan. It contains more than 150 questions divided into several sections. Work through the sections in any order that you want, except for the Executive Summary, which should be done last. Skip any questions that do not apply to your type of business. When you are finished writing your first draft, you'll have a collection of small essays on the various topics of the business plan. Then you'll want to edit them into a smooth-flowing narrative.
Right indent
The real value of creating a business plan is not in having the finished product in hand; rather, the value lies in the process of researching and thinking about your business in a systematic way. The act of planning helps you to think things through thoroughly, study and research if you are not sure of the facts, and look at your

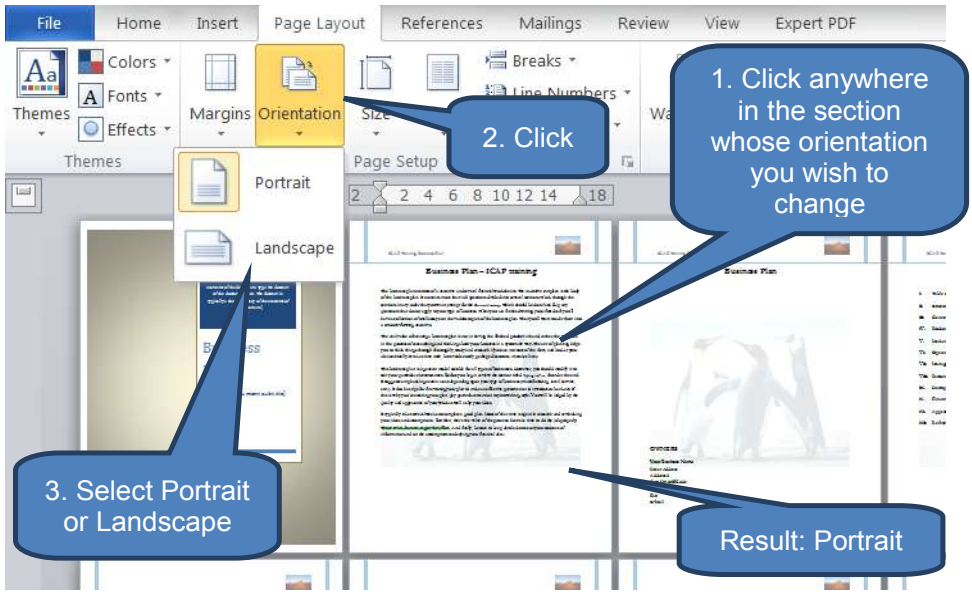
## 5.3 Page orientation

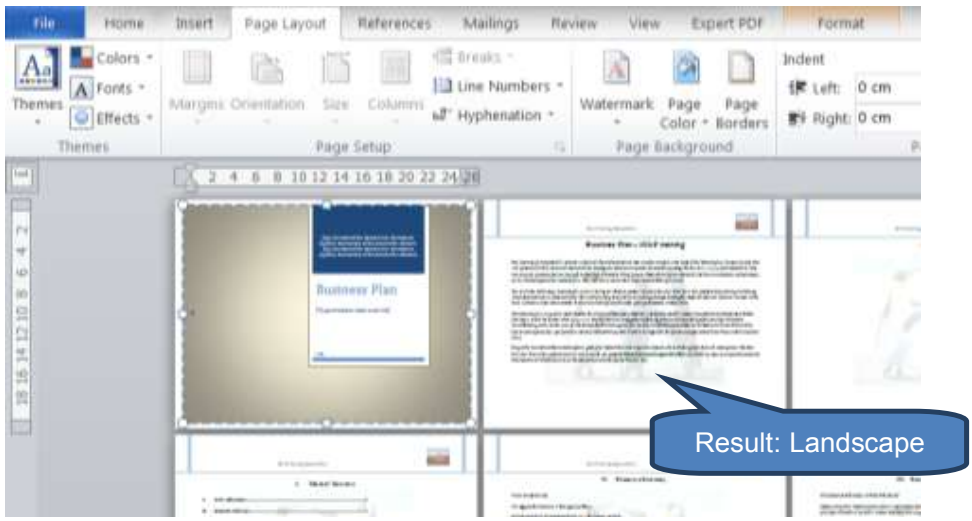
You can set page orientation as portrait (vertical) or landscape (horizontal) in your document. Page orientation is applied across the whole document or set on a section basis.

**To set the orientation of a particular section of the document:**

- ❑ Split your document into sections by inserting section breaks as described in section 4.2 above
- ❑ Click anywhere in the section whose orientation you wish to change
- ❑ Click ***Orientation*** in the ***Page Setup*** group on the ***Page Layout*** tab
- ❑ Click ***Portrait*** or ***Landscape*** as applicable

Note that if you have not inserted any section breaks then the orientation of the whole document will be set consistently.

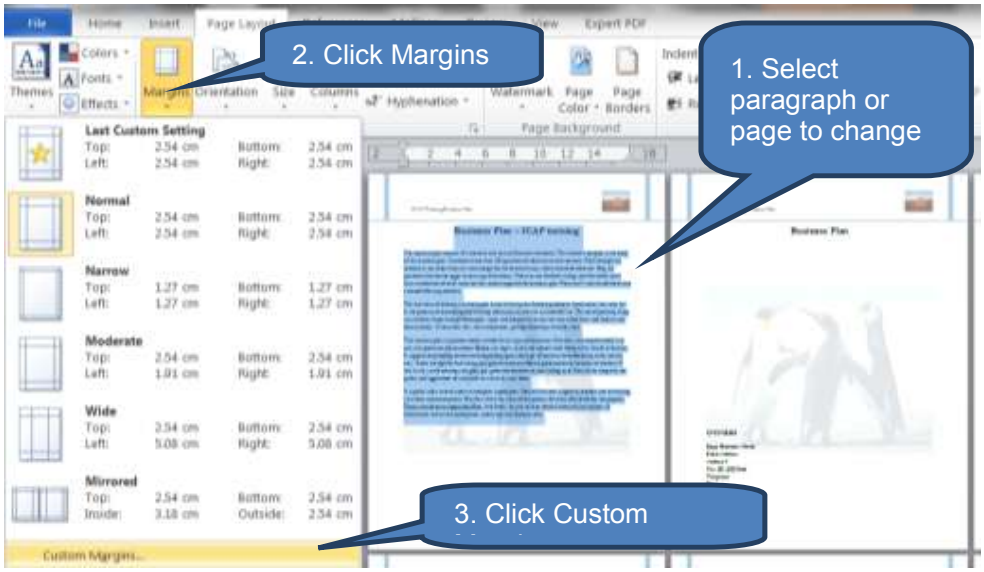


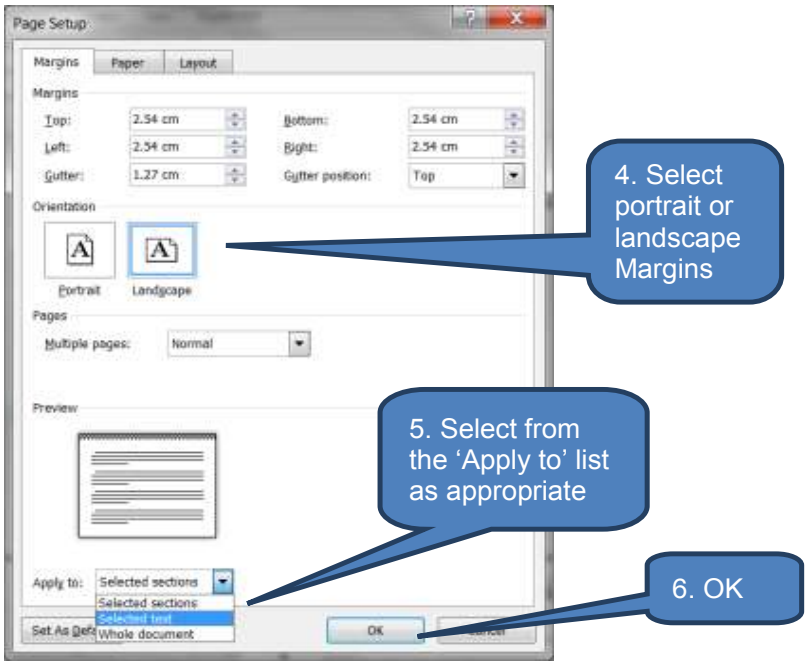



**Alternative method for setting the orientation of a particular section of the document:**

- Select the paragraphs or pages you want to change orientation
- Click ***Margins*** in the ***Page Setup*** group on the ***Page Layout*** tab
- Click ***Custom Margins***
- Click ***Portrait*** or ***Landscape*** on the ***Margins*** tab
- Click one of the following in the ***Apply to*** list:
  - ***Selected section***
  - ***Selected text***
  - ***Whole document***
- Click ***OK***

Note that Microsoft Word will automatically create new sections for orientation change in case of “selected text” option.







## 5.4 Line numbers

Line numbering can be a critical reference point for professional documents in professions such as accountancy and law. Being able to refer to specific lines can be useful when reviewing documents and improve the efficiency of the whole process.

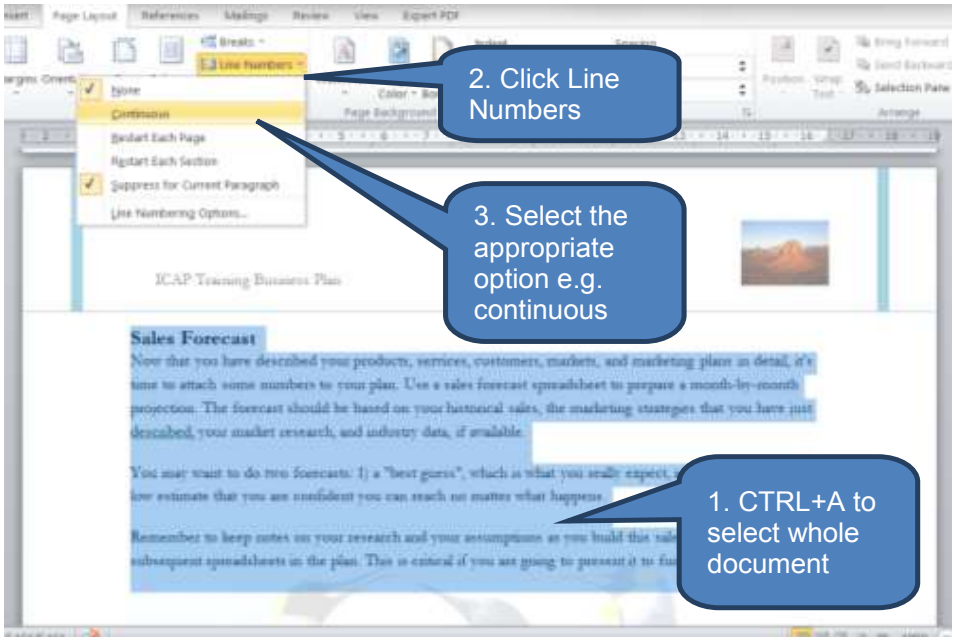
*Note that Microsoft Word numbers all lines in a document except tables, footnotes, endnotes, text boxes, headers and footers.*

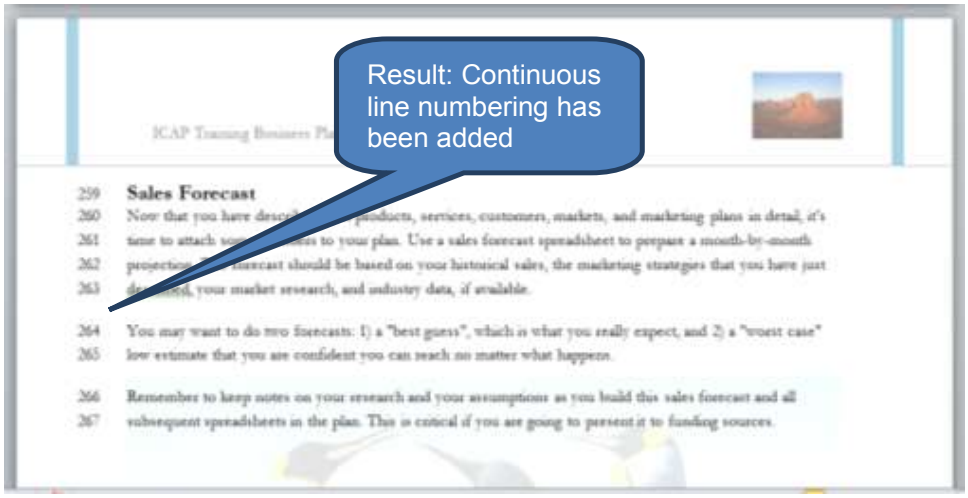
### Add line numbers

To add line numbers:

- Press ***CTRL + A*** to select the whole document
- Click ***Line Numbers*** in the ***Page Setup*** group on the ***Page Layout*** tab

- Select one of the following as appropriate:
  - ***Continuous***
  - ***Restart Each Page***
  - ***Restart Each Section***



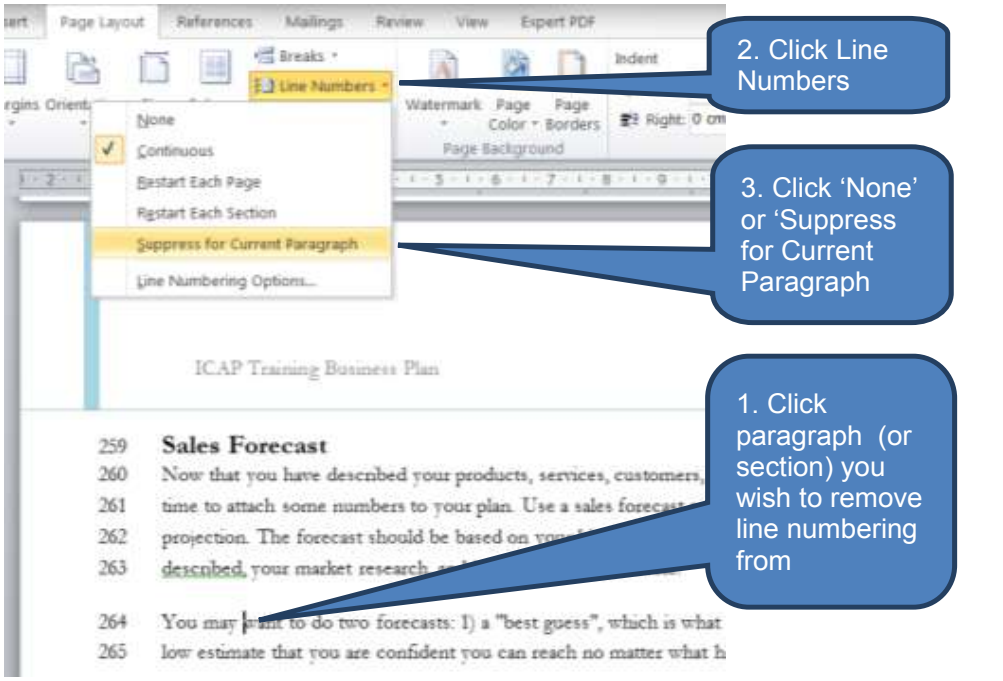



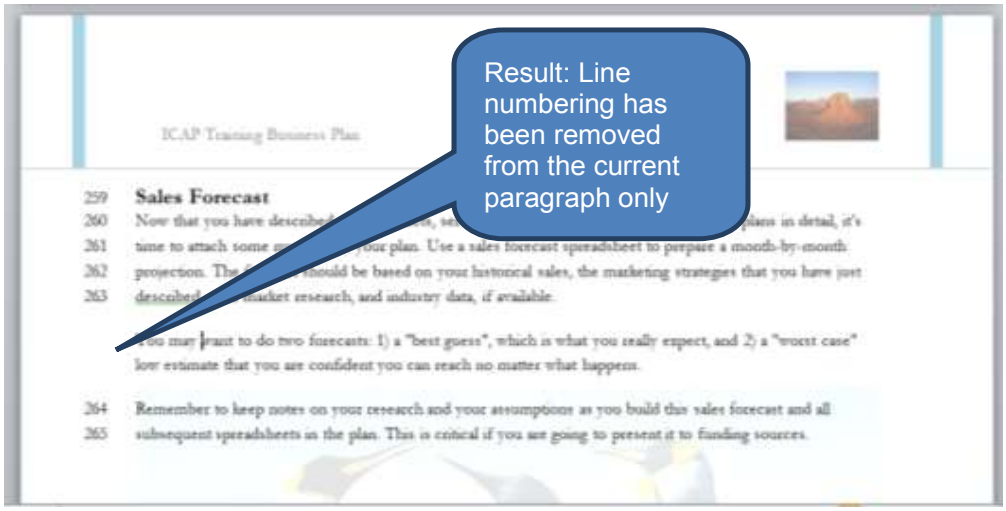

### Remove line numbers

To remove line numbers:

- Click the paragraph (or section) from which you want to remove line numbering. Alternatively click ***CTRL + A*** to select the whole document
- Click ***Line Numbers*** in the ***Page Setup*** group on the ***Page Layout*** tab

- Select one of the following as appropriate:
  - To remove line numbers from the entire document or section select ***None***
  - To remove line numbers from just the current paragraph click ***Suppress for Current Paragraph***




## 5.5 Margins

**Definition: Margins**

**Margins are the empty spaces along the four edges of each page – left, right, top and bottom. Headers and footers appear in the top and bottom margins respectively.**

**Text is indented from the left and right margins and pages break on the bottom margin.**

**Note the difference between a margin and an indent – text is indented from the margin (rather than the edge of the page). So an indent of zero means that text will start at the edge of the margin.**

**Other relevant terms include:**

- ***Gutter*: The part of the paper that the binding eats into when binding a document.**
- ***Mirror margins*: A term used with duplex (double-sided) printing. When printing double-sided the terms left and right margin are meaningless. More relevant are the terms inside and outside margins. Inside margins are in the middle of a page spread next to the bindings.**

### Apply one of Word's predefined margin settings

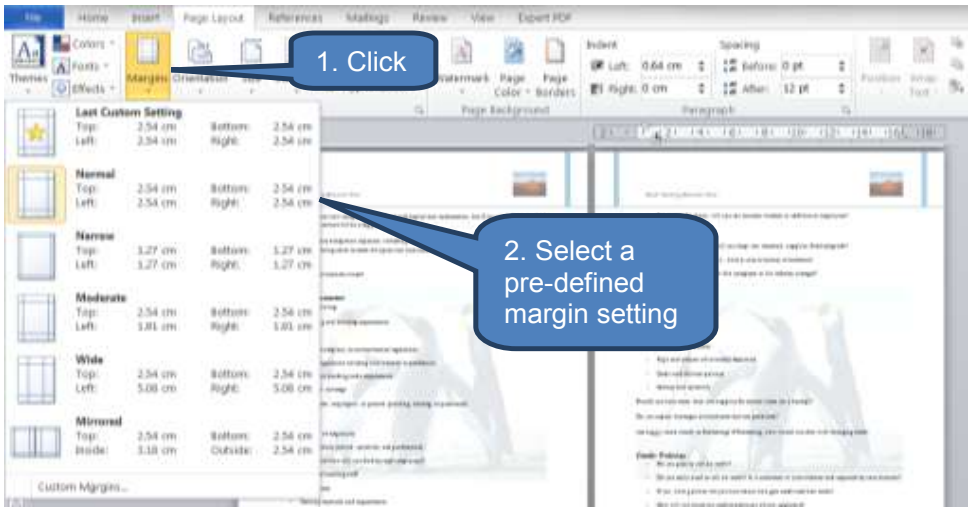
Margins can be adjusted to either one of Word's built-in predefined settings or customized to your own specific needs.

***Tip:** Take care when adjusting margins as margins define the 'useable' portion of each page. If you change margins after having entered content such as text, tables and pictures, Microsoft Word will re-position the document content based on the new margins. This could well change where the auto page-breaks fall and therefore any manual page-breaks may need revising.*

To use one of the pre-defined margin settings:

- ❑ Click ***Margins*** in the ***Page Setup*** group on the ***Page Layout*** tab
- ❑ Click the margin type that you want to apply

Note that if your document contains multiple sections (rather than the default single section of a new blank document) the margin settings will only be applied to the current section.

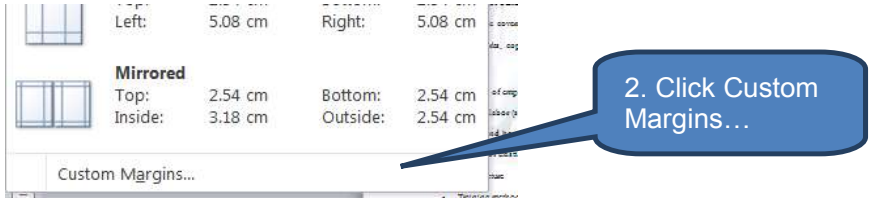


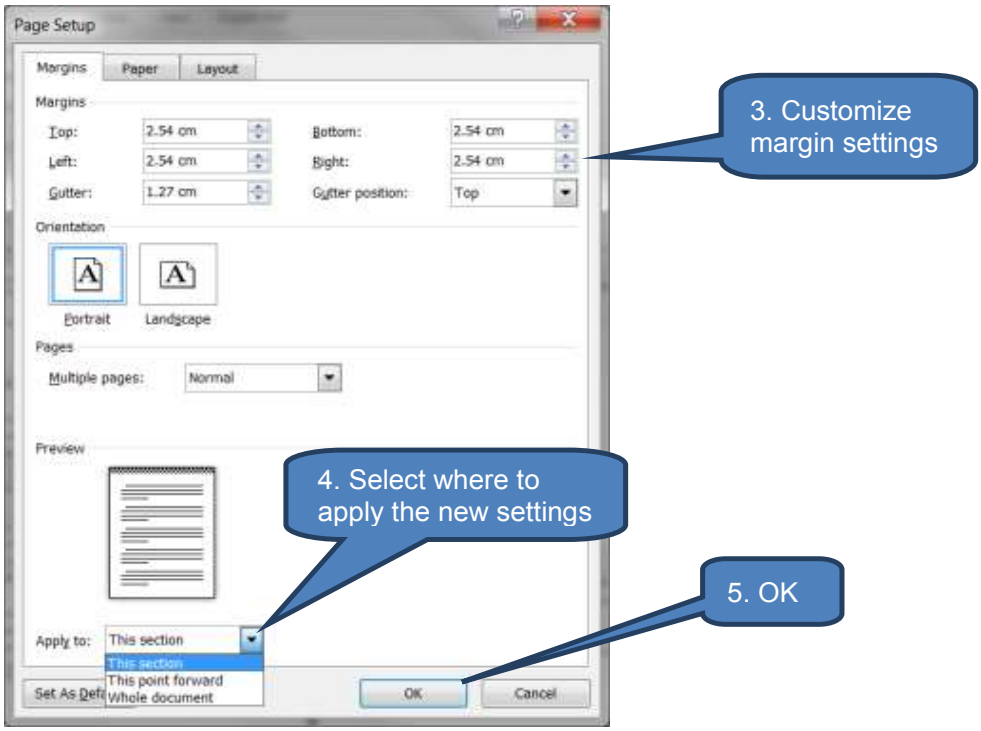

### Customize margin settings

To create your own customized margin settings:

- ❑ Click ***Margins*** in the ***Page Setup*** group on the ***Page Layout*** tab

- Click ***Custom Margins…*** at the bottom of the drop-down
- Customize settings on the ***Margins*** tab as appropriate.
- Select where to apply the new settings to from the ***Apply To*** drop-down:
  - This section
  - This point forward
  - Whole document
- Click ***OK***

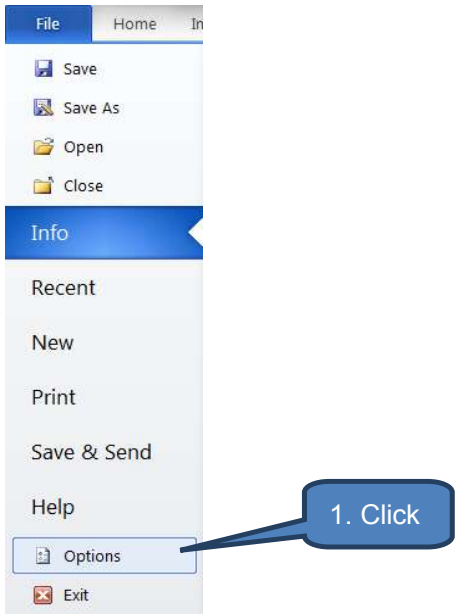



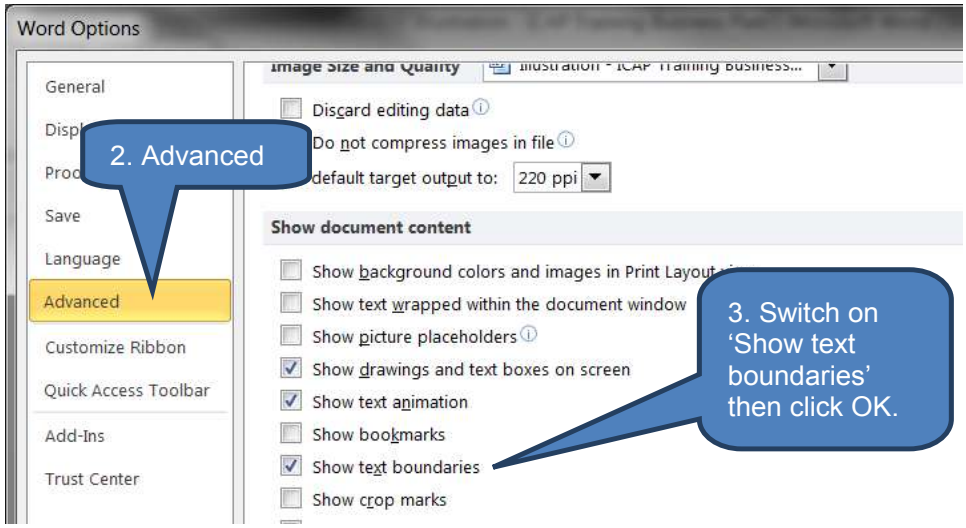
### View page margins

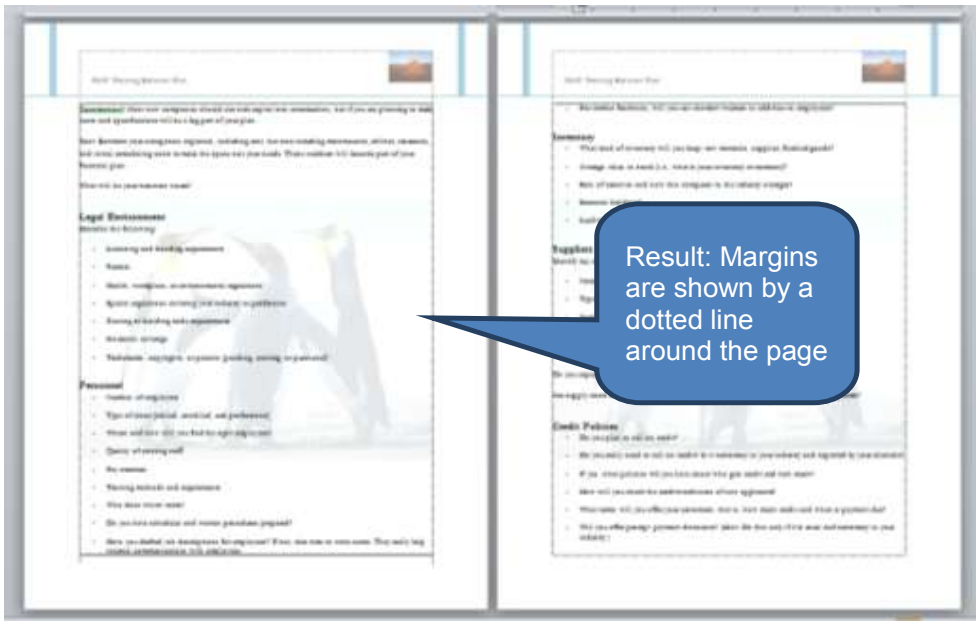
It can be useful to see exactly where the margins lie whilst writing your document. To do this you must switch the margins to visible.

To view page margins:

- Click ***Options*** in the ***File*** tab
- Click ***Advanced***
- Within ***Show document content*** select ***Show text boundaries*** then click ***OK***




Result: Margins are shown by a dotted line around the page

# 6 THE OFFICE BACKSTAGE VIEW IN MICROSOFT WORD

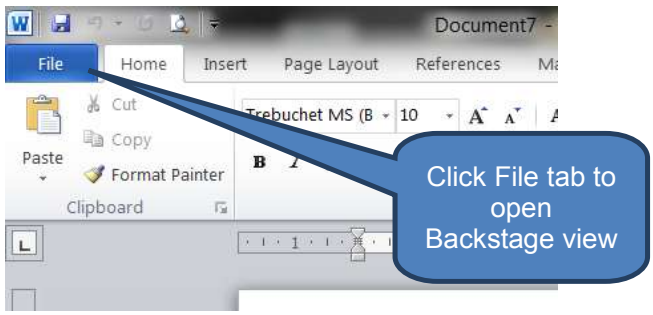
**Section overview**

- The Office Backstage view in Microsoft Word
- Comparing the Office backstage views of Word and Excel

## 6.1 The Office backstage view in Microsoft Word

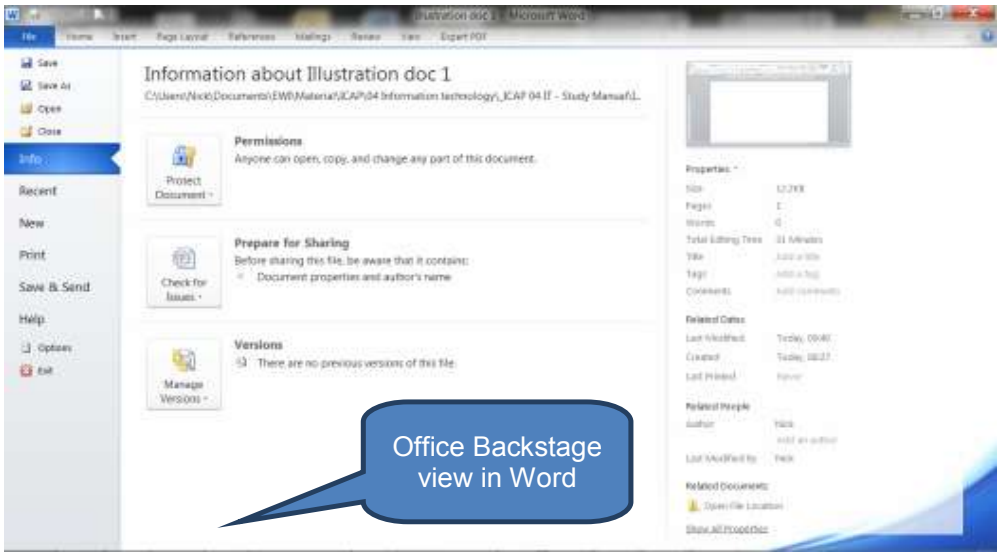
We first saw the Office Backstage view when introducing Microsoft Excel in chapter B1. As a reminder, the Office Backstage view is everything that you do TO a file that you don't do IN the file. For example creating, saving and setting options.

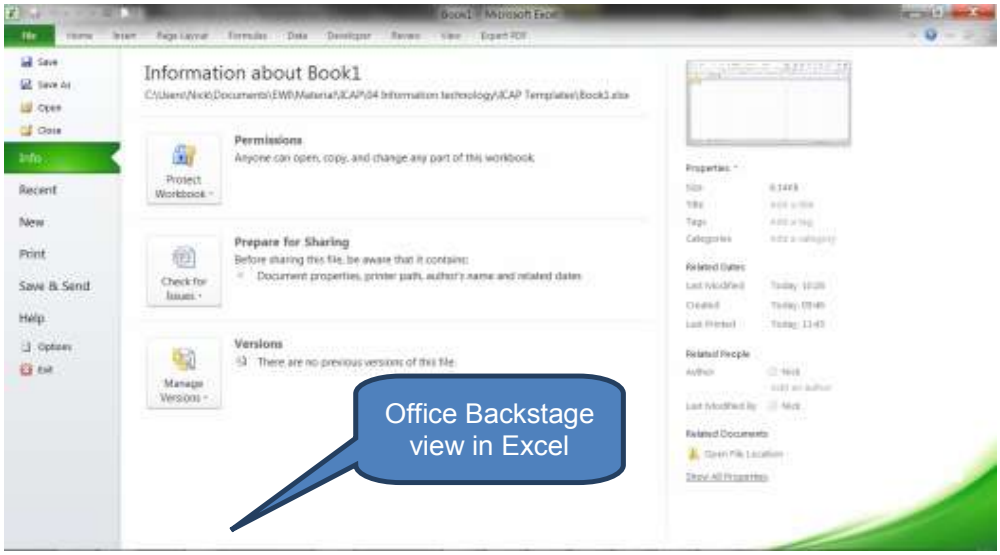
The Backstage view in Microsoft Word is almost identical to that in Microsoft Excel so you are already familiar with most of its features. Once again you access the Microsoft Office Backstage view in Microsoft Word by clicking the ***File tab*** within a Word document.




## 6.2 Comparing the Office backstage views of Word and Excel

Let's compare the backstage views from Microsoft Word and Microsoft Excel to demonstrate just how much you already know about using Word without even realising it.




The key differences in functionality you are likely to encounter between the Backstage options are:

| Option | Comment |
|---|---|
| Info | • Both applications allow users to 'Mark as Final', 'Encrypt with Password' and 'Add a digital signature'<br>• In addition to these three options Excel also allows users to protect the current worksheet and the workbook structure<br>• Word also supports restrictions on editing split between formatting restrictions and editing restrictions (both with a range of options) |
| Printing | The printing Backstage options are essentially the same |
| Save & Send | The core options are the same except Microsoft Word also support "Publish as Blog Post" within 'Save & Send" |
| Options | • As you might expect there are a number of differences in the Options section with tailoring for workbooks in Excel and documents in Word<br>• For example, Excel includes '***Formulas'*** options whereas Word includes '***Page Setup'*** options (incorporating page display, formatting marks and print options) |

# 7 PRINTING A DOCUMENT

## Section overview

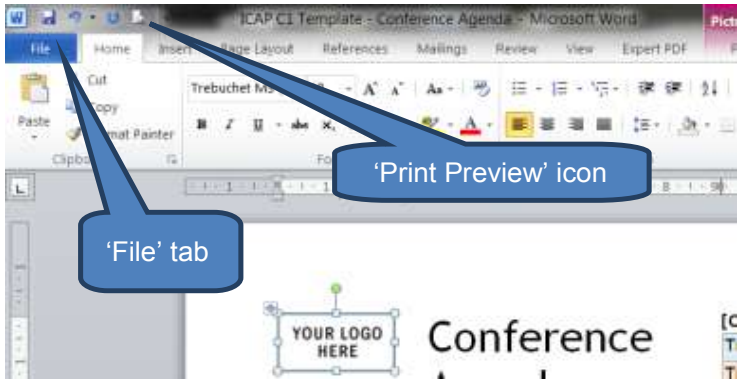
- Previewing documents before printing
- Printing documents
- Print tracked changes

## 7.1 Previewing documents before printing

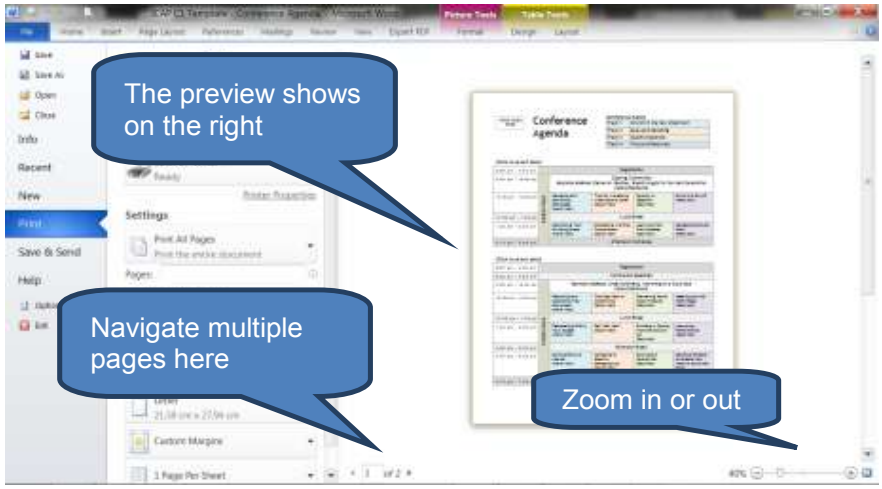
**Definition: Print preview in Microsoft Word**

***Print preview*** **allows you to see on-screen exactly how the document will look when you proceed with printing it to paper (or another output file). This saves both time and money by avoiding wasteful print-runs when further amendments may still be required.**

To preview a document either click ***File tab,*** click the ***Print Preview*** icon or press ***CTRL + F2***

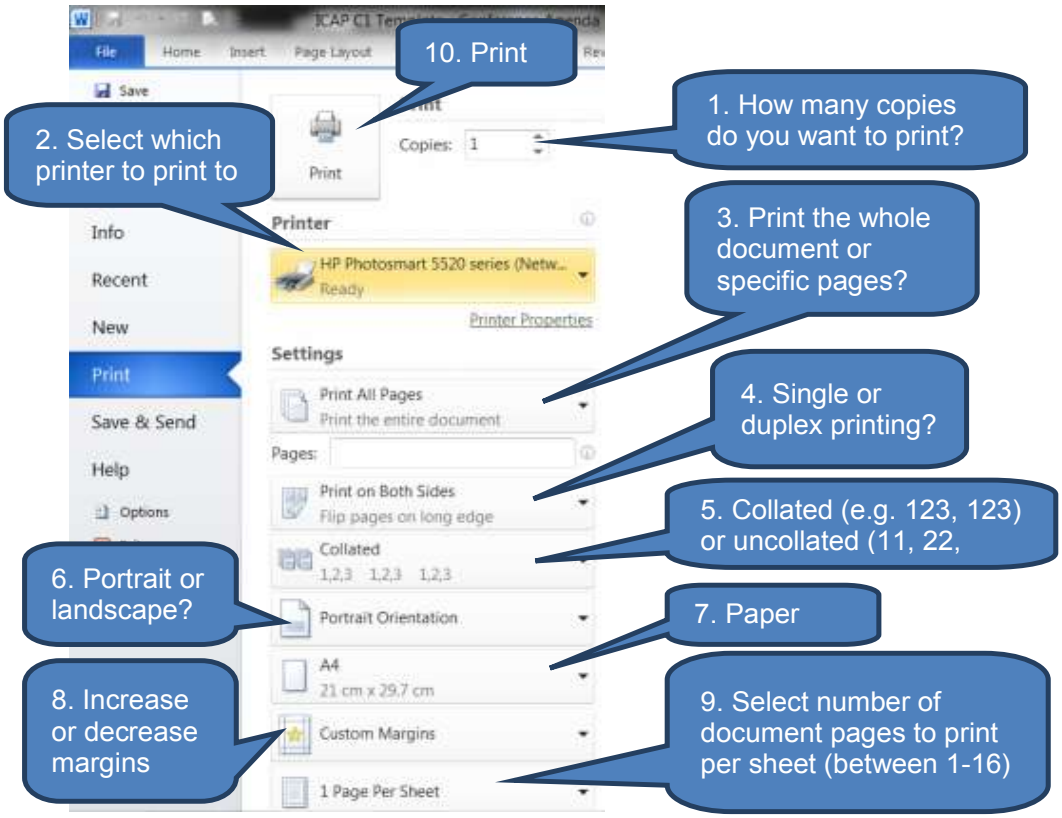



❑ Illustrative print preview screen



## 7.2 Printing documents

Continuing the above example once you're in the print preview screen select appropriate print options, double check the preview on the right hand side, then click ***Print***.

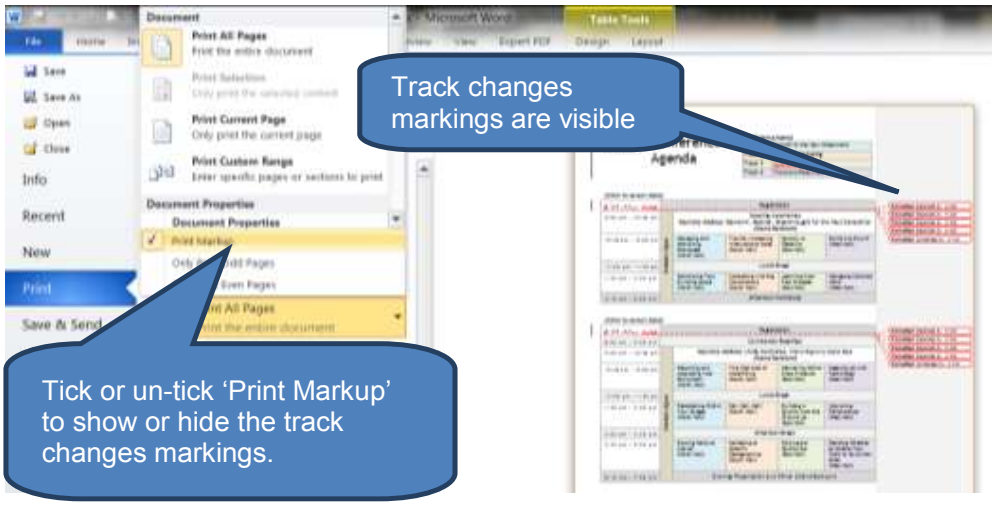


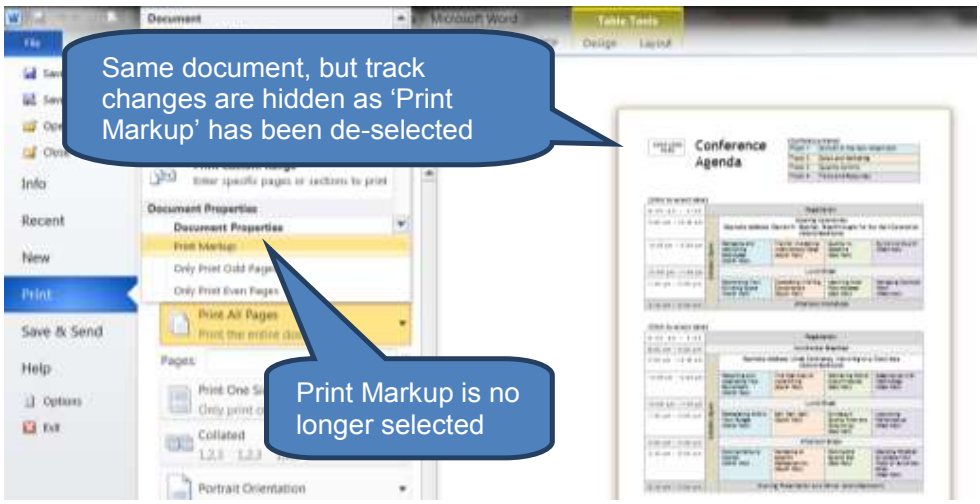

## 7.3 Print tracked changes

After editing the document with Track Changes enabled you can select between printing with the tracking marks either visible or hidden.

To show or hide the tracking marks for printing:

- Click ***Print*** on the ***File*** tab
- Tick or un-tick '***Print Markup'*** under the '***Print All Pages'*** drop-down within ***Settings***


Track changes markings are visible
Tick or un-tick 'Print Markup' to show or hide the track changes markings.


Same document, but track changes are hidden as 'Print Markup' has been de-selected
Print Markup is no longer selected

## 8 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Manage new documents including:
  - opening a new blank document
  - basing a new document on an existing document
  - basing a new document on a template
- Add cover pages and themes
- Work with page numbers, headers and footers, page and section breaks
- Setup pages including
  - watermarks
  - rulers
  - orientation
  - line numbers
  - margins
- Recognise and use components of the Office Backstage view in Word
- Save and print from Microsoft Word

CHAPTER 10

# Formatting, illustrations and table

## Contents

# INTRODUCTION

## Learning outcomes

LO 4.1.1 Use various Word features to present letters, reports and other documents in a presentable custom style

Note: Chapter C1 also relates to learning objective 4.1.1

LO 4.1.2 Select an appropriate pre-defined table style for improved presentation

LO 4.2.1 Use Word's built-in features to sort contents saved in tables

LO 4.3.1 Use formatting tools to improve readability of data in tables

## Exam context

In the previous chapter you were introduced to Microsoft Word and learnt about creating, setting up the structure of, editing, printing and saving documents. By working through the illustrations you also developed a good intuition for navigating around the various Microsoft Office tabs including its Backstage view.

In this chapter we focus more specifically on three areas:

- **Formatting** – Having already learnt how set up the overall structure of the document we now focus on specific text formatting including features like underlining, highlighting, superscript and subscript.
- **Illustrations** – Learn how to make your documents more effective by including visual illustrations such as pictures, Clip Art, shapes and charts
- **Tables** – Learn how to efficiently and clearly present data and information in tables

By the end of this chapter students will be able to:

- Understand and apply standard formatting techniques including
  - Styles
  - Fonts
  - Paragraph settings
- Sort lists alphabetically
- Work with illustrations in Word documents including
  - Pictures and Clip Art
  - Shapes
  - Charts
  - Text boxes
  - WordArt
- Insert, edit and delete tables

# 1 FORMATTING

## Section overview

- Styles
- Fonts
- Paragraph settings
- Sorting lists alphabetically

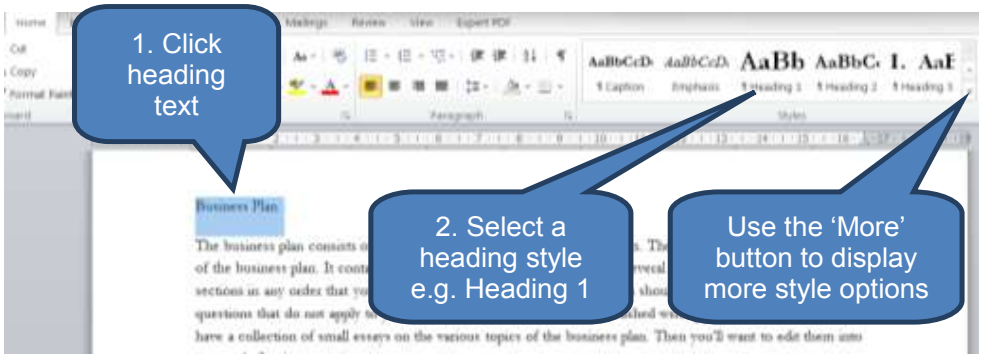
## 1.1 Styles

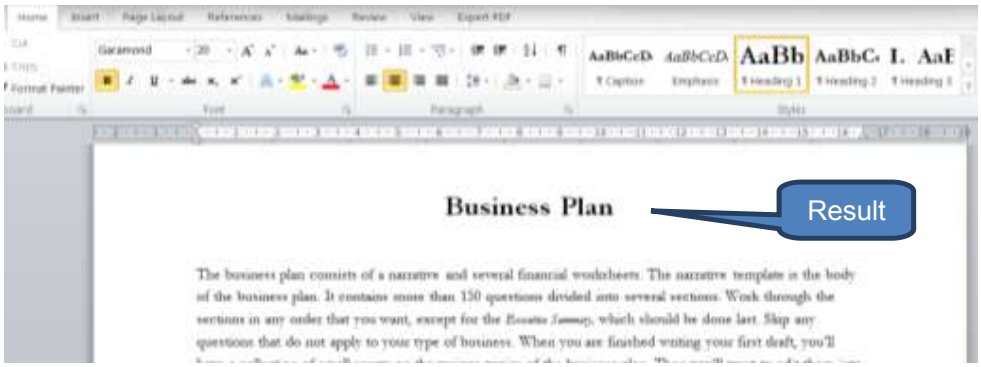
### Headings

Using Word's in-built styles is often the best way to add headings to your document. This will help ensure consistency not only within the current document but also with other documents.

To apply a heading style:

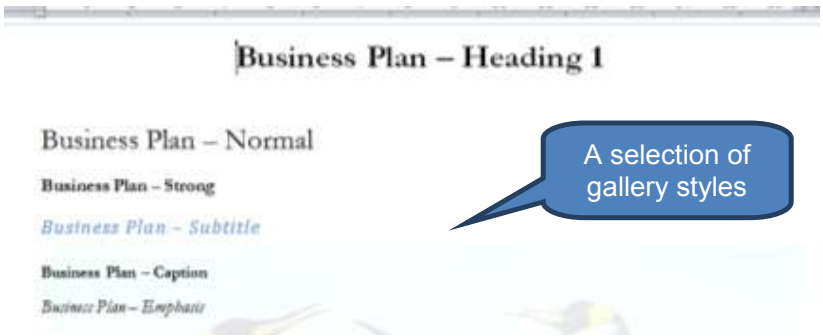
- ❑ Select the text you wish to use as the heading
- ❑ Click the heading style you want in the ***Styles*** group on the ***Home*** tab. Use the ***More*** button to expand the built-in styles gallery.



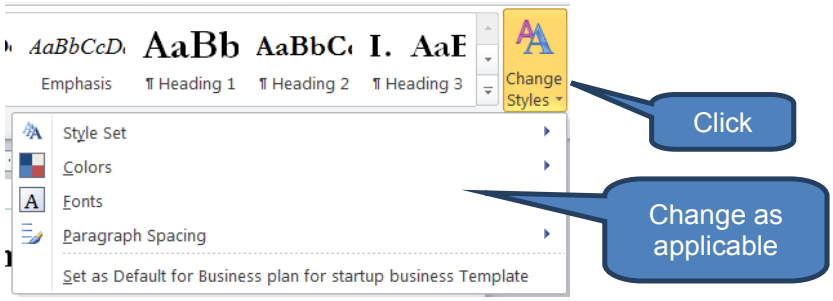
### Other styles

The Styles group on the Home tab provides other styles in addition to the heading styles discussed above. The below illustration shows a sample of styles including Heading 1, Normal, Strong, Subtitle, Caption and Emphasis.

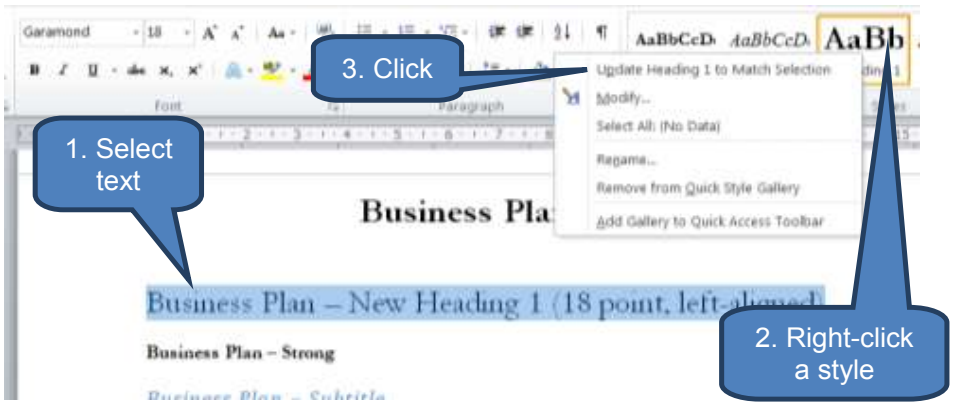


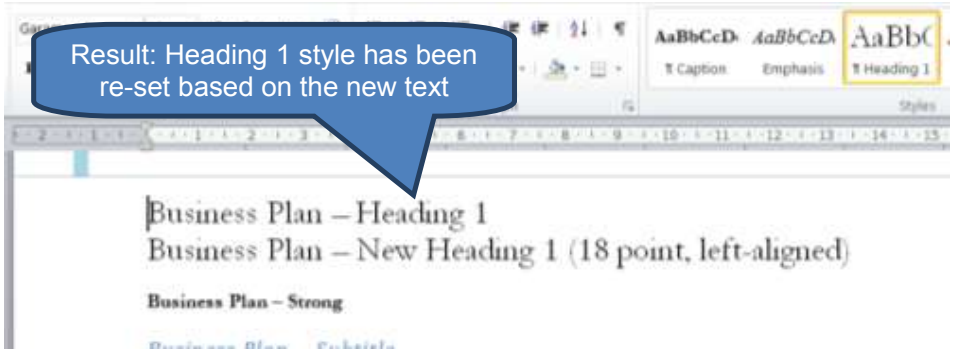

Two other useful style features be aware of include:

- Change styles (colours, fonts, paragraph spacing) using the ***Change Styles*** drop-down in the ***Styles*** group on the ***Home*** tab




- You can overwrite a style with the font settings of a highlighted section of text as follows:
  - Select the text you wish to base an existing style on
  - Right-click the style you want to amend in the style group
  - Click ***Update [style] to Match Selection***






## 1.2 Fonts

The ***Font*** group on the ***Home*** tab provides quick access to all the commonly used font settings.

You can also open the Font dialog box to access advanced options.

See below for:

- Snap-shot of the ***Font*** group from the ***Home*** tab
- Table explaining each of the icons in the ***Font*** group
- Illustration of a number of icons applied from the ***Font*** group


| Icon | Description |
|---|---|
| B | Bold (see illustration below) |
| I | Italics (see illustration below) |
| U | Underline (see illustration below). Note – Use the drop-down to select the underline style and weighting |
| abc | Strikethrough (see illustration below) |
| $x_2$ | Subscript (see illustration below) |
| $x^2$ | Superscript (see illustration below) |

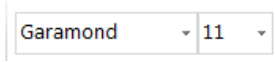
| Icon | Description |
|---|---|
|  | Text effects – change the look of text such as its fill, outline, shadows, reflections and glows |
|  | Highlight colour (see illustration below) |
|  | Font colour |
|   | Font and font size. Use the drop-downs to change these |
|  | Increase or decrease font size |
|   | Change case – use this button to change the case of highlighted text. Options include sentence case, uppercase, lowercase, capitalize each word and toggle case |
|  | Clear formatting – removes formatting and reverts the selected text to 'Normal' style |

**Illustration: Fonts**

**The below example illustrates different font settings from the *Font* group on the *Home* page**


## 1.3 Paragraph settings

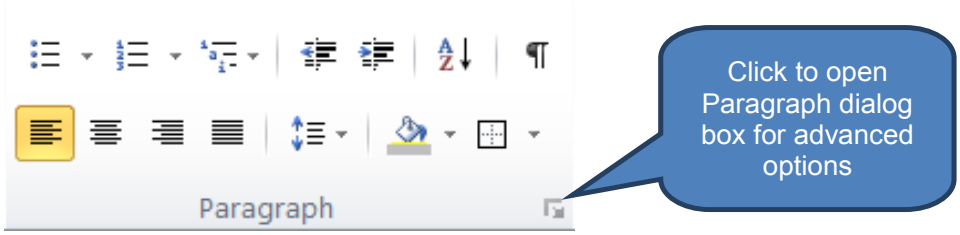
The ***Paragraph*** group on the ***Home*** tab provides quick access to all the commonly used paragraph settings.

There is another ***Paragraph*** group on the ***Page Layout*** tab. However, that only incorporates ***Indent*** and ***Spacing*** options both of which are accessible from the ***Paragraph*** dialog box. The ***Paragraph*** dialog box can be launched from the ***Paragraph*** group on the ***Home*** tab.

See below for:

- Snap-shot of the ***Paragraph*** group from the ***Home*** tab

- Table explaining each of the icons in the ***Paragraph*** group
- Illustration of a number of icons applied from the ***Paragraph*** group




| Icon | Description |
|---|---|
| | Align text left (see illustration below) |
| | Center text (see illustration below) |
| | Align text right (see illustration below) |
| | Justify (see illustration below) |
| | Line and paragraph spacing – click the drop-down arrow to access line and paragraph spacing options (see illustration below) |
| | Shading – click the drop-down arrow to access paragraph shading options (see illustration below) |
| | Borders – click the drop-down arrow to access paragraph border options (see illustration below) |
| | Bullets – emphasise items in a list by choosing one of the bullet options from the drop-down menu (see illustration below) |
| | Numbering – emphasise items in a list by choosing one of the numbering options from the drop-down menu (see illustration below) |
| | Decrease indent / increase indent (see illustration below) |
| | Sort - (see illustration below) |

**Illustration: Paragraphs**

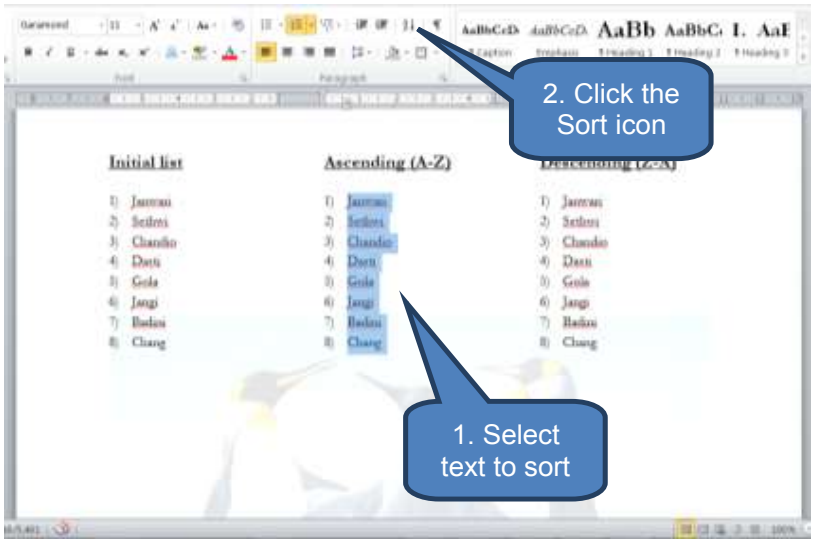
The below examples illustrate a number of different settings from the ***Paragraph*** group on the ***Home*** tab

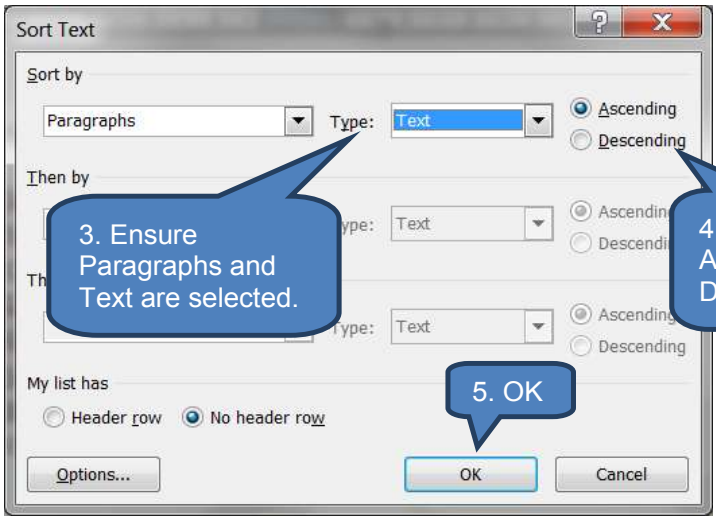

## 1.4 Sorting lists alphabetically

One-level bulleted or numbered lists of text can be quickly sorted into alphabetical order (ascending: A-Z or descending: Z-A) using the ***Sort*** icon.

To sort lists alphabetically:

- ❑ Select the text in the numbered or bulleted list you wish to sort
- ❑ Click ***Sort*** in the ***Paragraph*** group on the ***Home*** tab to open the ***Sort Text*** dialog box
- ❑ Click ***Paragraphs*** and ***Text*** under ***Sort*** by and press ***OK***






| Initial list | Ascending (A-Z) | Descending (Z-A) |
|---|---|---|
| 1) Janwari | 1) Badini | 1) Sethvi |
| 2) Sethvi | 2) Chandio | 2) Janwari |
| 3) Chandio | 3) Chang | 3) Jangi |
| 4) Dasti | 4) Dasti | 4) Gola |
| 5) Gola | 5) Gola | 5) Dasti |
| 6) Jangi | 6) Jangi | 6) Chang |
| 7) Badini | 7) Janwari | 7) Chandio |
| 8) Chang | 8) Sethvi | 8) Badini |

Result: Sorted text

# 2 ILLUSTRATIONS

**Section overview**

- Pictures and Clip Art
- Shapes
- Charts
- Text boxes
- WordArt

## 2.1 Pictures and Clip Art

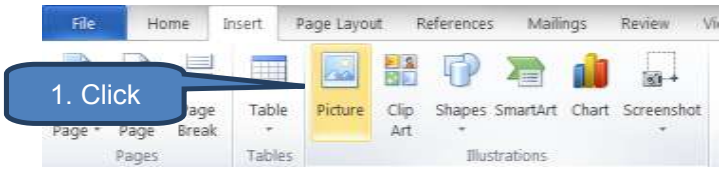
Illustrations can vastly improve the impact and effectiveness of a document. We will start our exploration by learning how to insert pictures from sources including files, the internet and Clip Art before then taking a look at how to insert shapes, charts, text boxes and WordArt.

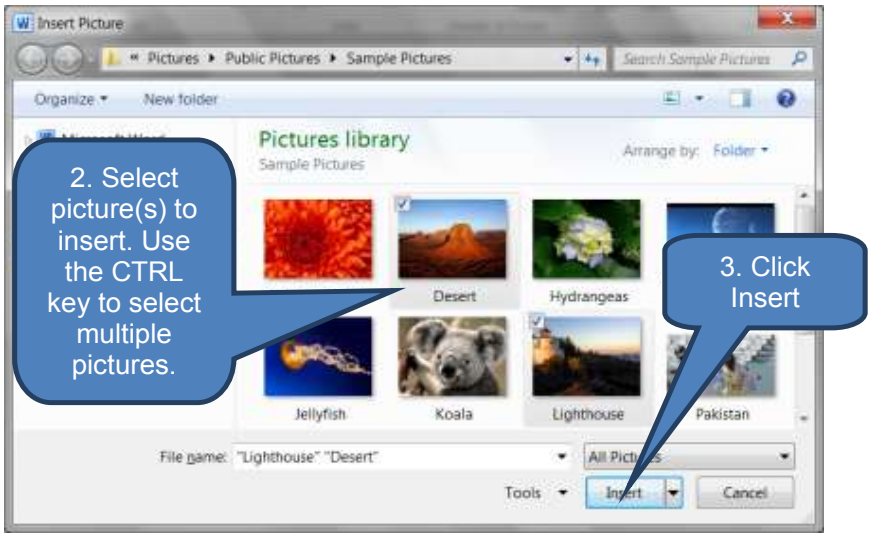
### Insert a picture from a file

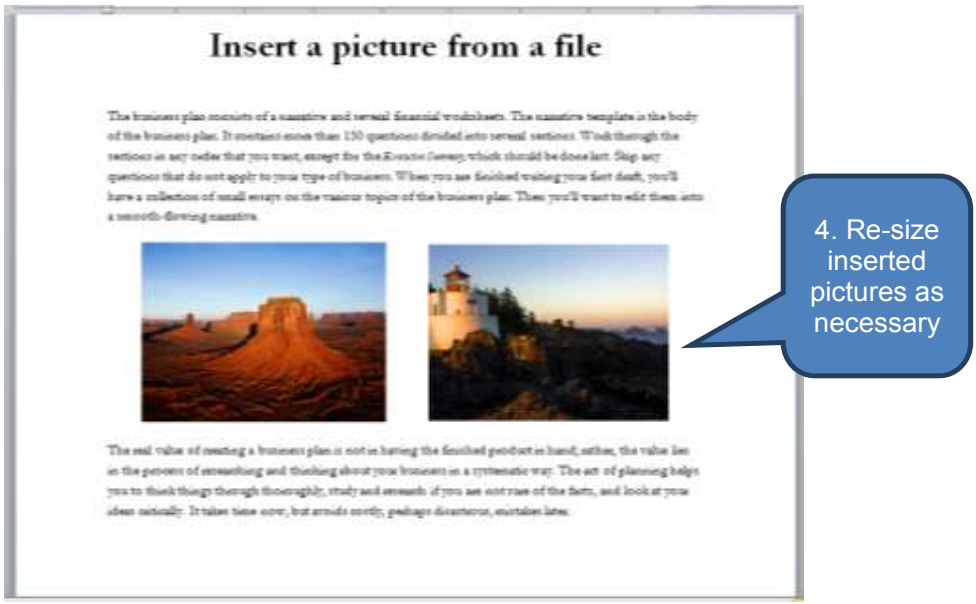
First, you will need to save the picture files to your computer, perhaps from a scanner, transferred from an external device like a smart phone or camera, or perhaps a picture attachment from an email.

To insert a picture from a file:

- Click the document location where you want to insert the picture
- Click ***Picture*** in the ***Illustrations*** group on the ***Insert*** tab
- To add a picture, locate the picture you want to insert using the file manager then double-click it. Alternatively, you can add multiple pictures by pressing and holding ***CTRL*** while clicking all the pictures then pressing ***Insert***.
- You can resize the picture by selecting it then dragging a sizing handle at the edge or in a corner





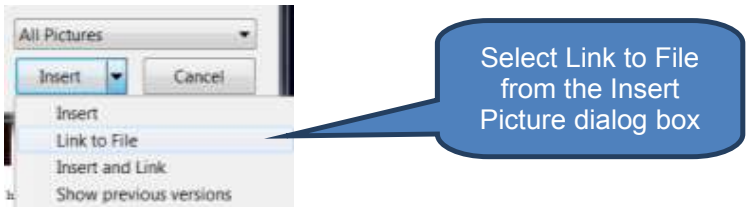




### Link to file

When Microsoft Word inserts a picture into your document it actually embeds the inserted picture – essentially taking a copy of it. This means that document file sizes increase rapidly if you add multiple pictures.

To reduce the document file size you can link to the source picture rather than inserting it. To do this follow the same steps as above apart from the last step where you should select ***Link to File*** from the ***Insert drop-down***.

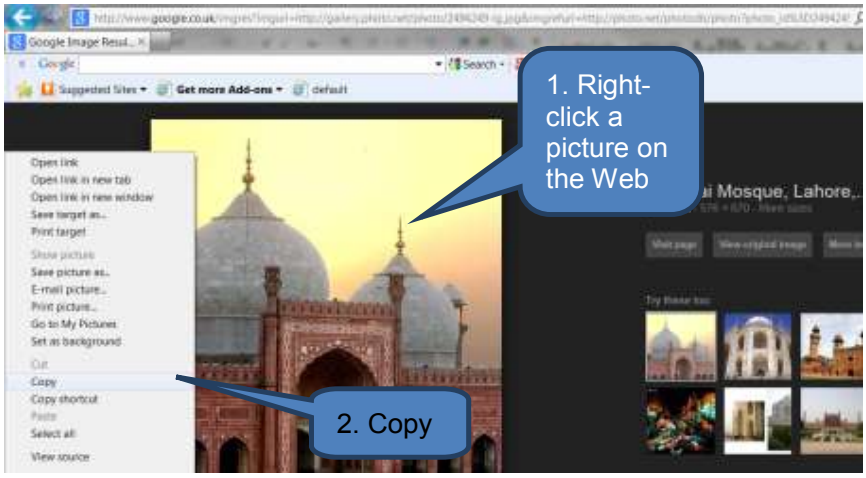
Note that you must ensure the linked picture remains in the directory location that you linked from otherwise the link will be broken and picture will not display.

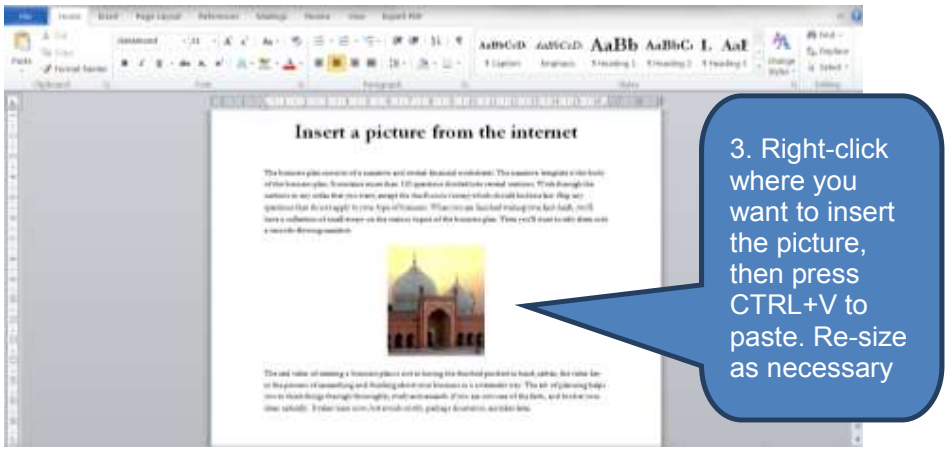



### Insert a picture from the Web

To insert a picture from a web page:

- Find the picture you want on a Web page then right-click the picture
- Click ***Copy*** on the menu
- Click in the document where you want to insert the picture, then press CTRL+V (or right-click and select ***Paste)***
- You can resize the picture by selecting it then dragging a sizing handle at the edge or in a corner

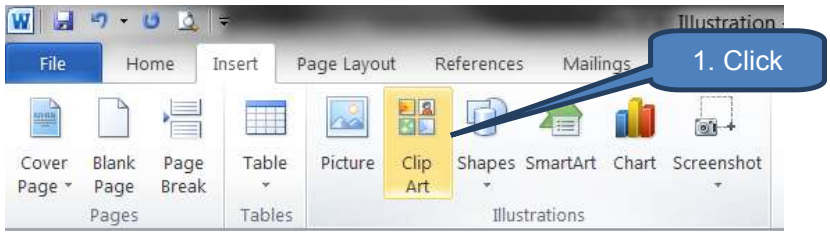


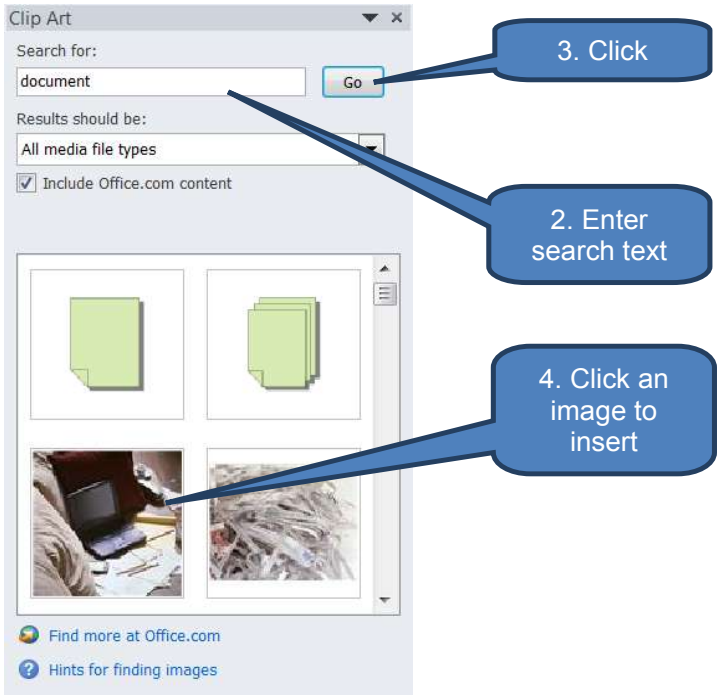



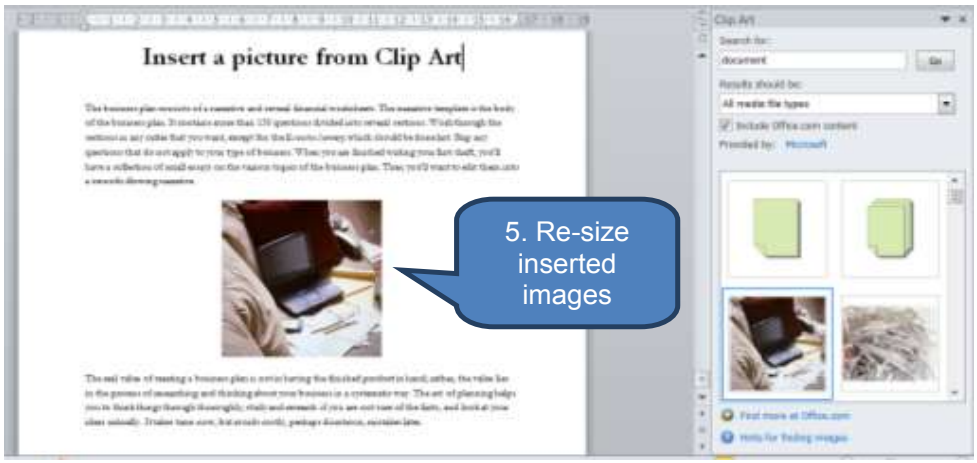

### Insert clip art

To add a Clip Art image to your document:

- Click in the document where you wish to add Clip Art
- Click ***Clip Art*** in the ***Illustrations*** group on the ***Insert*** tab
- Type a word or phrase describing the Clip Art you want in the Search for text box in the ***Clip Art*** task pane – for example "document"
- Click ***Go***.
- Choose an appropriate image from the results list shown. To insert the image into the document click on the image.
- Re-size the inserted image by clicking and dragging an edge or corner



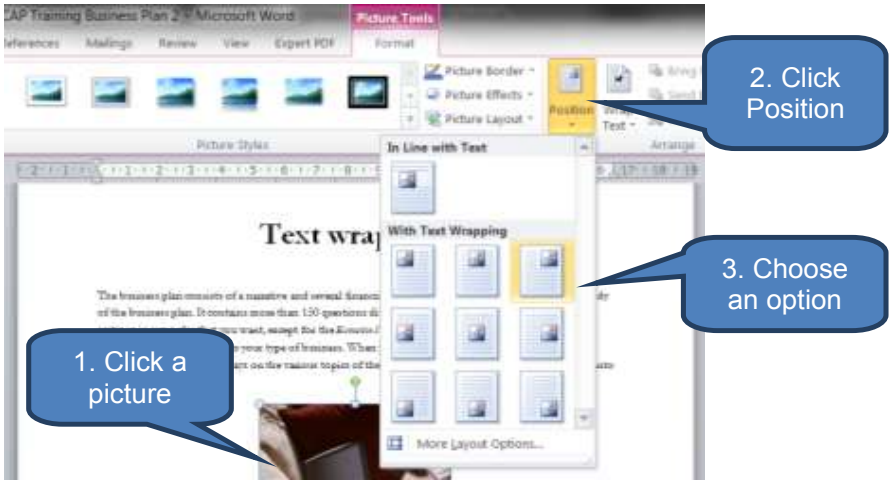



## Text wrapping

Text wrapping is a clever feature that allows you to maintain the relative position of a picture then wrap text around it.

To use text wrapping:

- Click on a picture
- Select an option from the ***Position*** drop-down in the ***Arrange*** group on the ***Picture Tools*** tab




## 2.2 Shapes

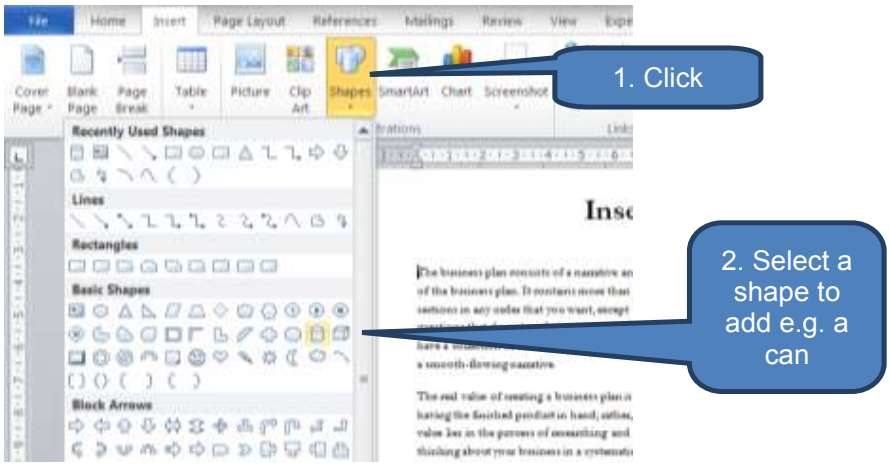
### Add a shape to a document

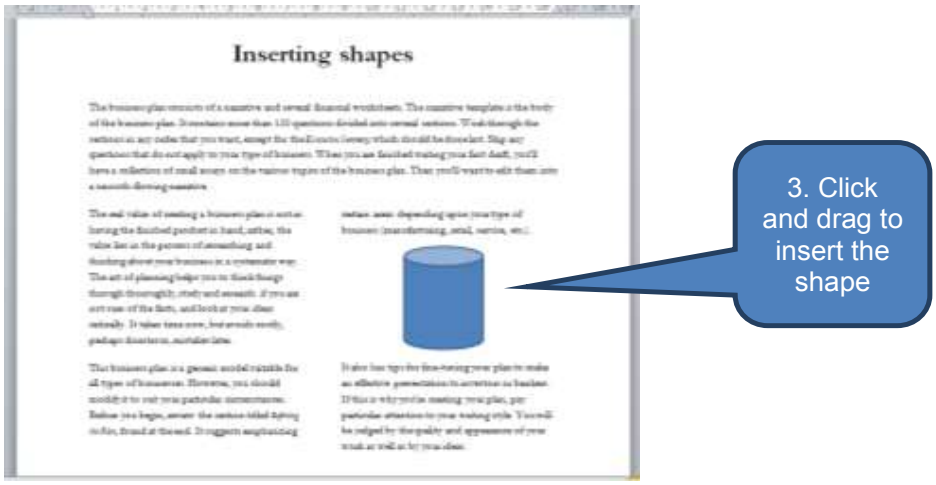
To add a shape to a document:

- ❑ Click ***Shapes*** in the ***Illustrations*** group on the ***Insert*** tab
- ❑ Select a shape to add
- ❑ Click in the document where you want to insert the shape
- ❑ Drag and release to place the shape

Note: to retain the relative horizontal and vertical position of a shape press and hold the SHIFT key whilst you drag.

Note too that you can apply text wrapping to shapes in exactly the same way as we applied text wrapping to photos. See 2.1 above.



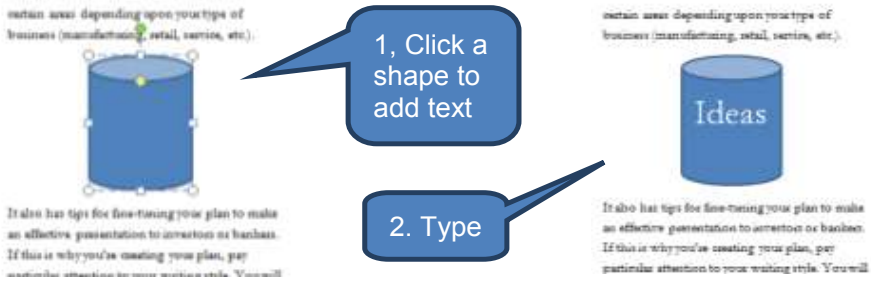

### Add text to a shape

To add text to a shape:

- ❑ Click the shape you want to add text to

- ❑ Type your text

Note: you can use the font and paragraph options on the ***Home*** tab to format the text.




### Delete a shape

To delete a shape:

- ❑ Click the shape you want to delete
- ❑ Press the ***DELETE*** key

## 2.3 Charts

.

There are two techniques you can use to add Microsoft Excel charts in Microsoft Word:

| Technique | Description |
|---|---|
| Insert a new chart | Inserting a chart directly into a document will embed both the chart and an underlying Excel Worksheet into your document. This technique is best used for simple charts. |
| Copy a chart from Excel | For more complex charts you will find it easier to first create and edit the chart in Excel. Then you can copy and paste the chart from Excel into the Word document. |

### Insert a new chart

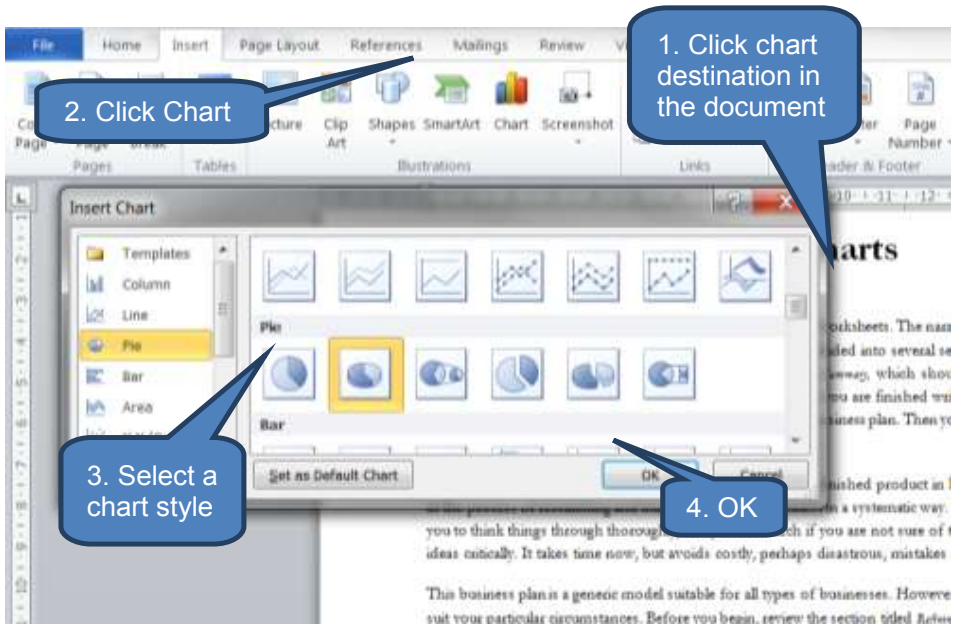
To insert a new chart:

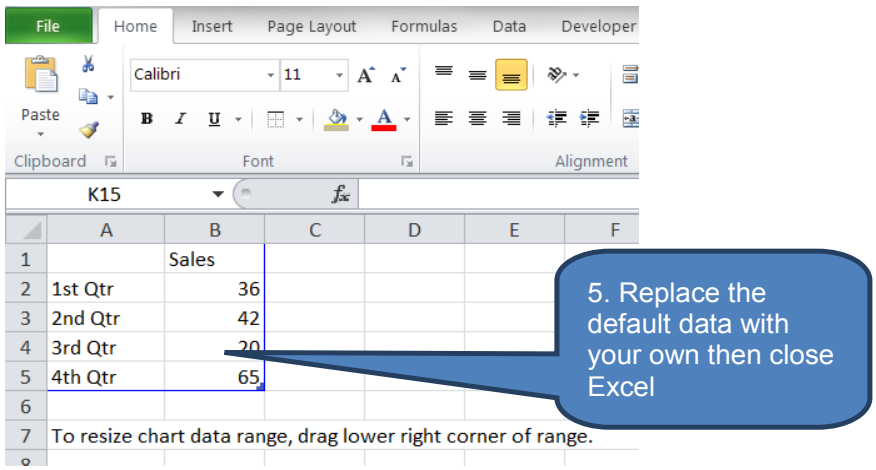
- ❑ Click in the document where you want the chart to appear
- ❑ Click ***Chart*** on the ***Insert*** tab
- ❑ Select a chart type then click ***OK***.
- ❑ Replace the default data with your own information in the Worksheet that appears. Then close the Worksheet.

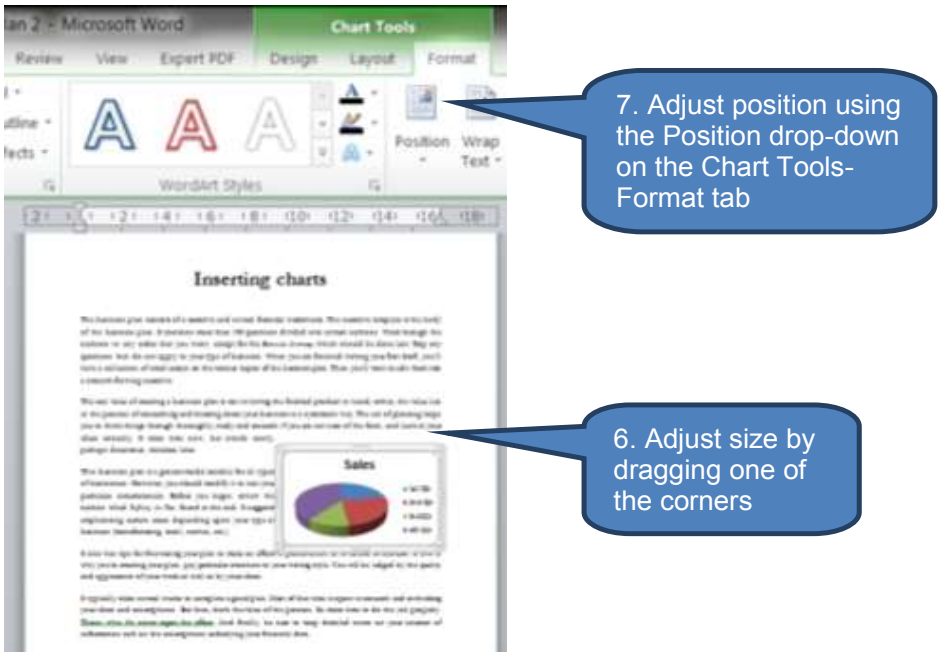
  To subsequently re-open the Worksheet to amend the data:

  - Right-click on the chart
  - Click ***Edit Data…***

- You can adjust the sizing and positioning of the new chart:
  - To adjust sizing, drag one of the re-size handles at the edge of the chart object
  - To adjust positioning click on the chart then select one of the *Position* options from the *Arrange* group in the *Chart Tools-Format* tab.




### Copy a chart from Excel

To copy an existing chart from Excel

- Select the chart in Excel
- Click ***Copy*** (or press CTRL + C)
- Select the destination in your Word document
- Click Paste (or press CTRL + V)
- Re-size and re-position as above

## 2.4 Text boxes

**Definition: Text box**

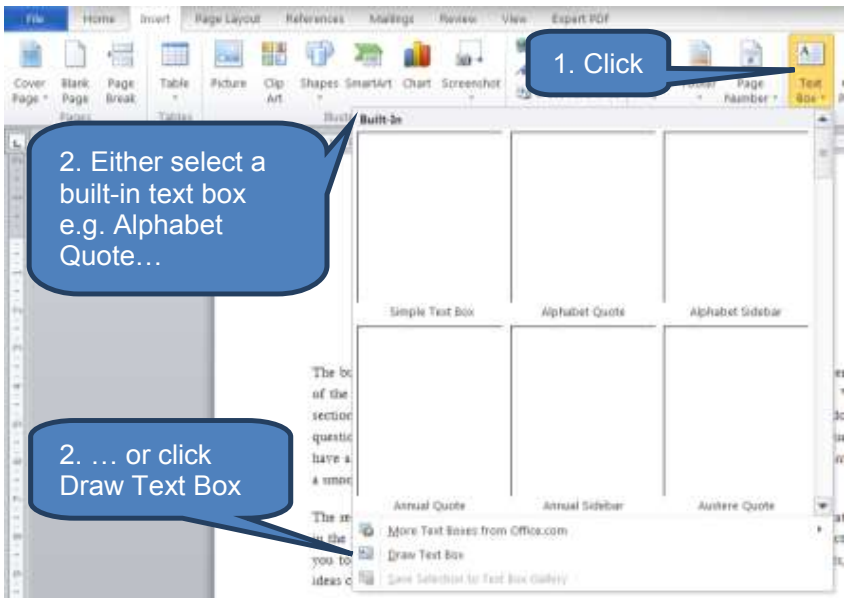
**Text boxes are objects that let you put and type text anywhere in your document. You can use one of Microsoft Word's built-in text box templates or create your own text box.**

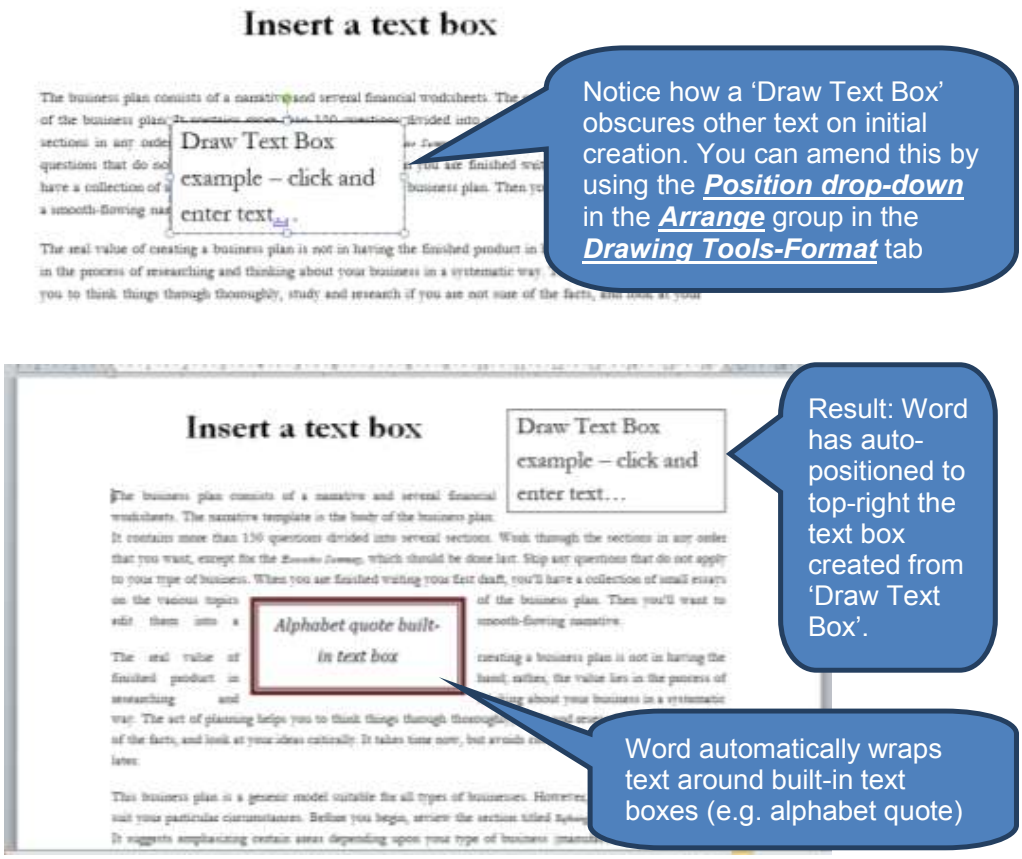
### Add a text box

To add a text box:

- ❑ Click ***Text Box*** in the ***Text*** group on the ***Insert*** tab
- ❑ Either:
  - Click ***Draw Text Box***
  - Click in the document where you want the text box to appear and then drag to draw the text box the size that you want.
  - Click inside the text box and either type or paste text
- ❑ Or:
  - Select one of the built-in text boxes

Once you have inserted a text box you can click the border to drag and resize it to a new location. You can also use the ***Position*** tool in the ***Arrange*** group on the ***Drawing Tools-Format*** tab to incorporate wrapped text and automatically re-position the text box as described in section 2.1 above.






### Delete a text box

To delete a text box:

- ❑ Click the border of the text box you want to delete.
- ❑ Press DELETE

## 2.5 WordArt

A WordArt image consists of one or more words that have been stretched, skewed or manipulated with some other decorative effect such as shadowing or mirroring. These special effects assist the author with adding decoration and emphasis to their documents.

### Convert existing text to WordArt

To convert existing text to WordArt:

- ❑ Select the text that you want to convert to WordArt
- ❑ Click ***WordArt*** in the ***Text*** group on the ***Insert*** tab
- ❑ Select the ***WordArt*** style you want to use then enter your text



### Add new WordArt

To add new WordArt text:

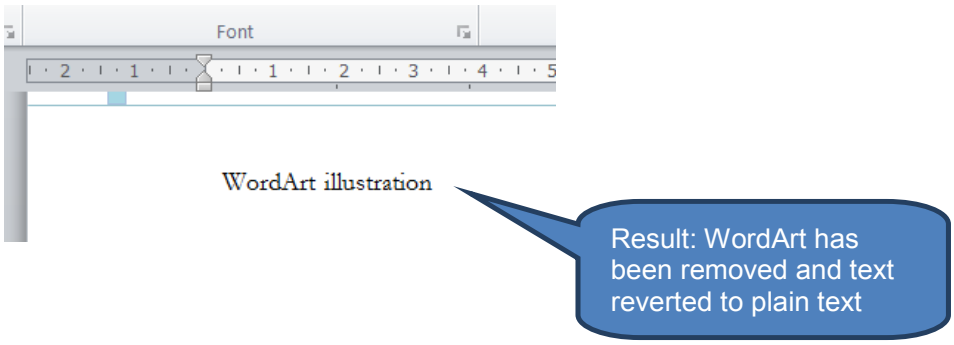
- Place the cursor where you want the WordArt to appear
- Click ***WordArt*** in the ***Text*** group on the ***Insert*** tab (as above)
- Select a ***WordArt*** style (as above)
- Enter your text at the "Your text here" prompt


### Remove a WordArt style

To remove a WordArt style and convert the text to plain text:

- Select the text from which you want to remove WordArt
- Click ***Clear Formatting*** in the ***Font*** group on the ***Home*** tab


1. Select text
2. Click Clear Formatting
WORDART
ILLUSTRATION


Font
WordArt illustration
Result: WordArt has been removed and text reverted to plain text

# 3 TABLES

**Section overview**

- Create a table
- Edit a table
- Delete a table

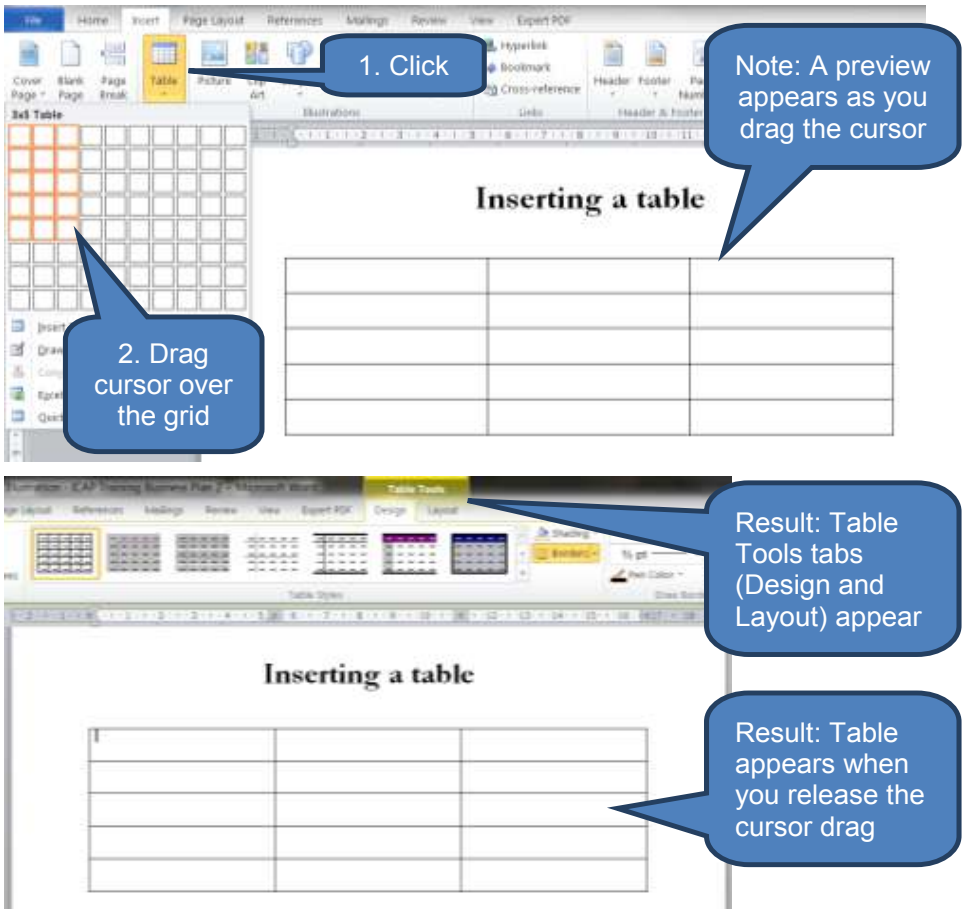
## 3.1 Create a table

### Insert a basic table

Using the ***Table grid*** is the quickest way to add a basic table. To add a basic table using the table grid:

- Click ***Table*** on the ***Insert*** tab
- Move the cursor over the grid until you have highlighted the desired number of rows and columns
- Click to insert the table

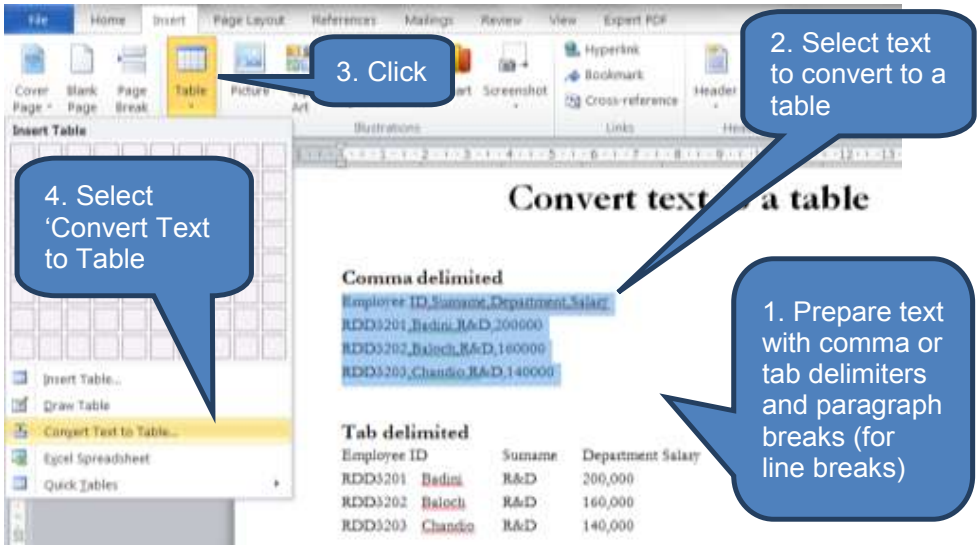
Once Word has inserted a table the ***Table Tools Design*** and ***Layout*** tabs appear. These tabs are activated whenever a table is selected. Note that the tabs disappear when a table is not selected.

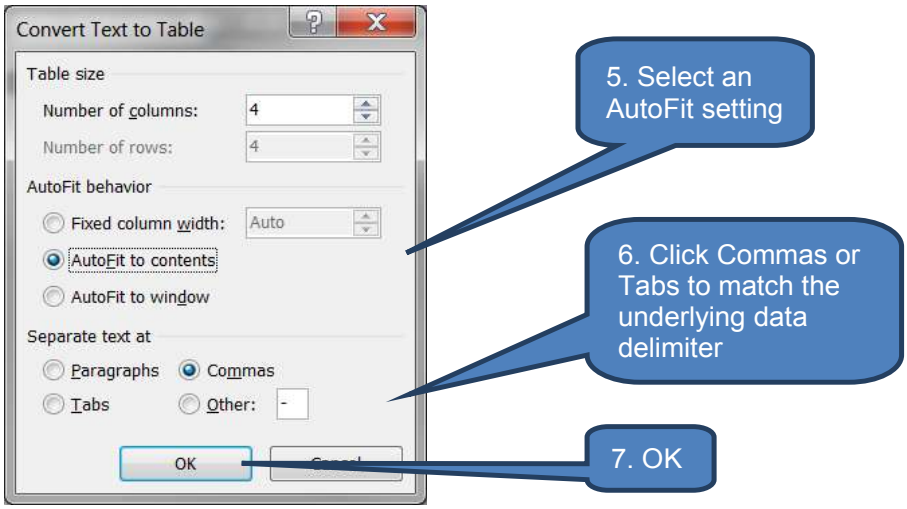


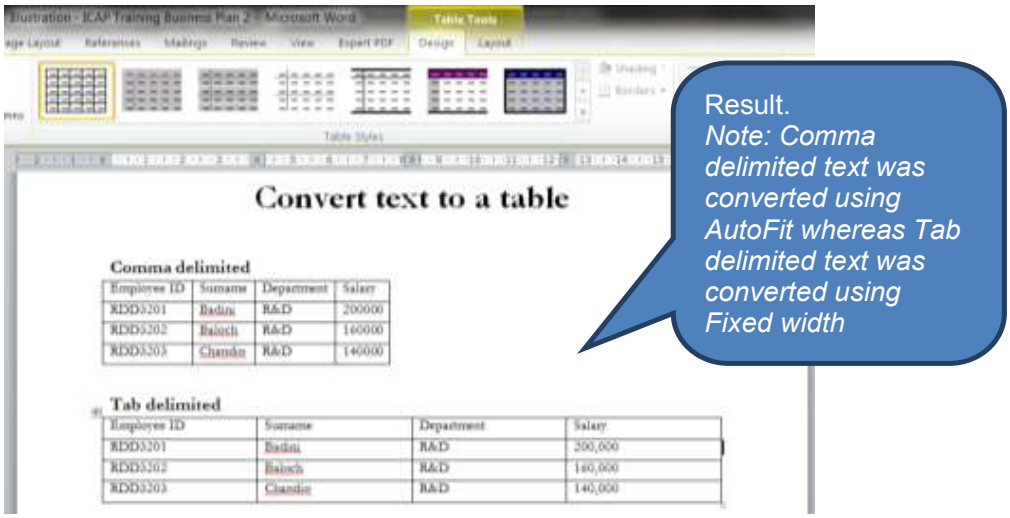
### Convert text to a table

To convert text to a table:

- ❑ Firstly you need to edit the text to be converted to a table into an appropriate format. This requires:
  - text to be entered into different cells must be separated either by a ***tab*** or a ***comma*** (note – choose one or the other for each table);
  - each place you want to start a new table row you must enter a ***paragraph break*** (i.e. use the ENTER key).
- ❑ Select the text to be converted
- ❑ Click ***Convert Text to Table*** in the ***Table*** drop-down on the ***Insert*** tab
- ❑ In the ***Convert Text to Table*** dialog box:
  - Select ***AutoFit to contents*** for variable width columns, or ***Fixed column width***
  - under ***Separate text at*** click ***Tab*** or ***Comma*** to match how you pre-prepared the underlying text
- ❑ Click ***OK***






*See also section 3.6 in chapter B4.*

## 3.2 Edit a table

### Add or delete cells, columns or rows

There are two popular methods for adding or deleting cells, columns or rows in tables.

Method 1:

- ❑ Click a cell in the table
- ❑ Right-click then do one of the following
  - Click ***Insert*** and choose one of the options:
    - insert row above/below selected cell;
    - insert column to the left or right of the selected cell;
    - insert an individual cell.
  - Click ***Delete Cells…*** and choose one of the options:
    - Shift cells left (this will delete only the highlighted cells an shift all cells to the right of the deleted cell to the left)
    - Shift cells right (the opposite of Shift cells left)
    - Delete entire row
    - Delete entire column

Note that you can use the above techniques to add or delete multiple cells/rows/columns simultaneously. To do this you should highlight the same number of cells/rows/columns that you want adding or deleting.

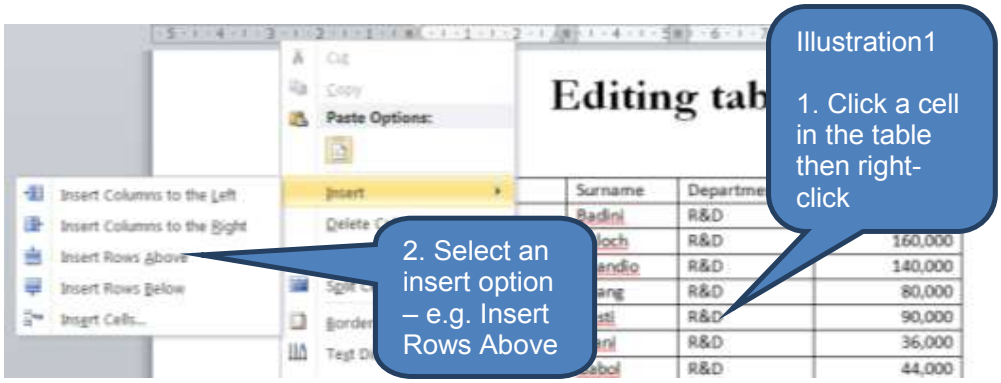
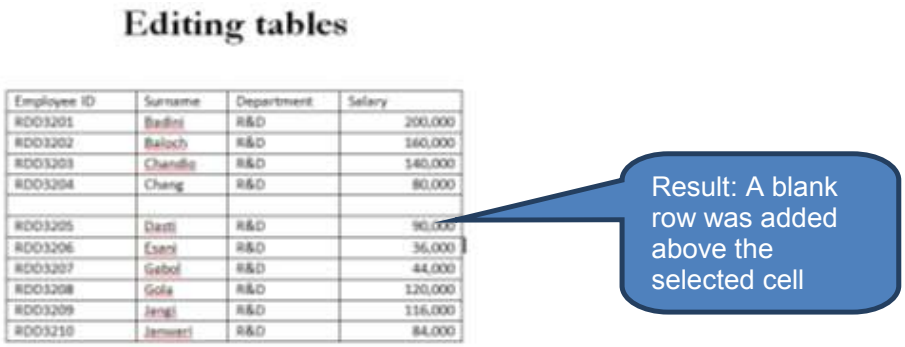
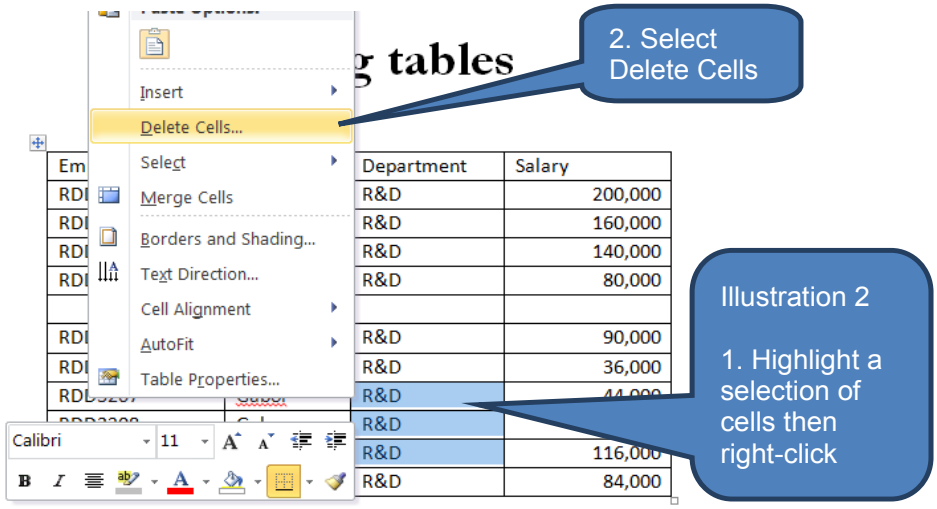
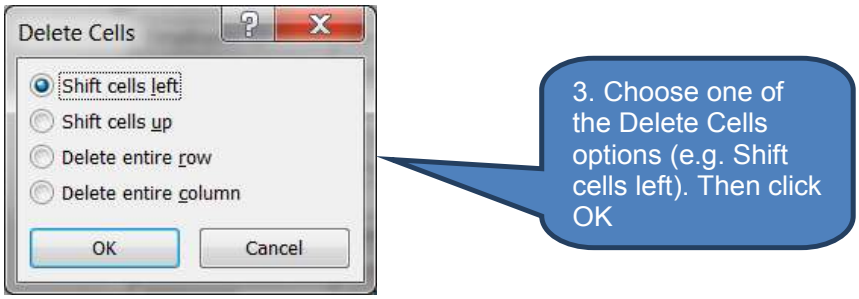
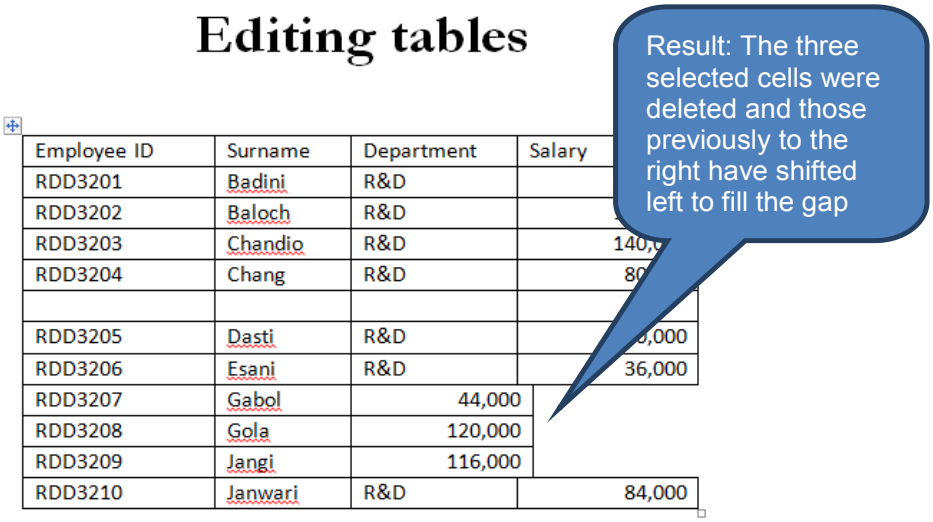


Illustration1
1. Click a cell in the table then right-click
2. Select an insert option – e.g. Insert Rows Above
Editing tab
Paste Options:
Insert Columns to the Left
Insert Columns to the Right
Insert Rows Above
Insert Rows Below
Insert Cells...
Insert
Surname
Department
R&D
160,000
140,000
80,000
90,000
36,000
44,000


Editing tables
Result: A blank row was added above the selected cell

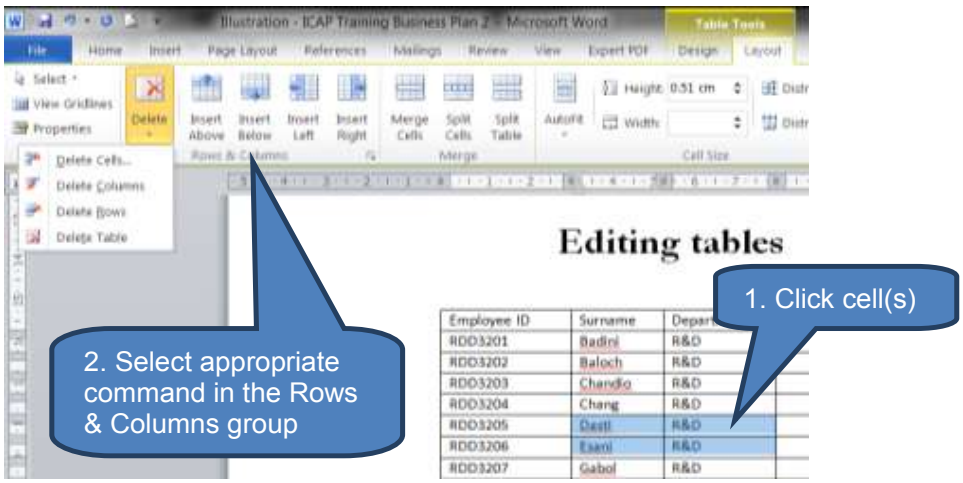

2. Select Delete Cells
Insert
Delete Cells...
Select
Merge Cells
Borders and Shading...
Text Direction...
Cell Alignment
AutoFit
Table Properties...
Department
Salary
R&D
200,000
160,000
140,000
80,000
90,000
36,000
116,000
84,000
Calibri
11
Illustration 2
1. Highlight a selection of cells then right-click


Delete Cells
Shift cells left
Shift cells up
Delete entire row
Delete entire column
OK
Cancel
3. Choose one of the Delete Cells options (e.g. Shift cells left). Then click OK




Method 2:

- Click a cell or cells in the table
- Use an appropriate command in the Rows & Columns group on the Table Tools-Layout tab to insert rows or columns or delete rows, columns or cells




### Use a formula in a Word table

Calculations and logical comparisons can be made in a table using formulas. The formulas are similar to those used in Excel so you should already be familiar with a number of formulas such as SUM, AVERAGE and COUNT.

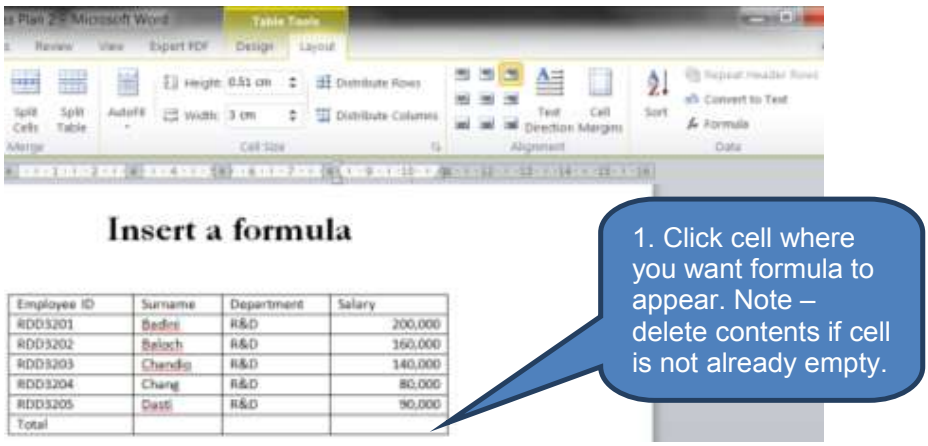
To insert a formula to a Word table:

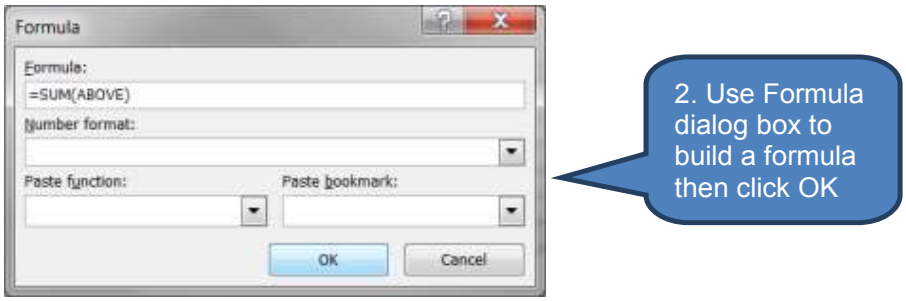
- Select the table cell where you want the formula to appear. Note: if the cell is not empty you must delete the contents first using the DELETE key
- Click ***Formula*** in the ***Data*** group on the ***Table Tools Layout*** tab
- Use the ***Formula dialog box*** to create a formula

Note: Formulas are re-calculated in three instances:

- When first created

- Each time the document is re-opened
- By selecting a formula then pressing F9 (this only updates the selected formula – therefore if your document contains multiple formulas you should close the document then re-open it so all formulas are re-calculated)




## Insert a formula

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |
| RDD3204 | Chang | R&D | 80,000 |
| RDD3205 | Dasti | R&D | 90,000 |
| Total | | | 670,000 |

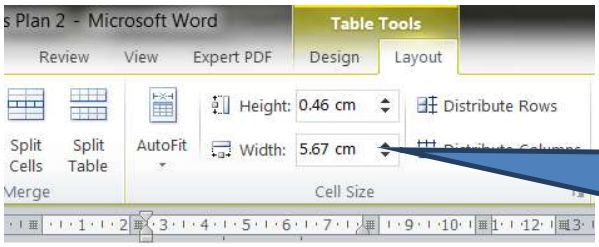
Result

### Resize a table, column or row

There are a number of techniques you can use to resize columns, rows and even a whole table.

| Text | Text |
|---|---|
| Change column width | Do one of the following:<br>• Hover the cursor on the right side of the column boundary you want to move until it becomes a resize cursor. Then drag the boundary to re-size.<br>• Click a cell in the column to resize. Specify the Width (in cm) in the ***Cell Size*** group on the ***Table Tools Layout*** tab. You can use the up and down arrows by the Width prompt to experiment. |
| Change row height | Do one of the following:<br>• Hover the cursor on the row boundary you want to move until it becomes a resize cursor. Then drag the boundary to re-size.<br>• Click a cell in the column to resize. Specify the Height (in cm) in the ***Cell Size*** group on the ***Table Tools Layout*** tab. You can use the up and down arrows by the Height prompt to experiment. |
| Use AutoFit | 1. Selet the table by clicking a cell<br>2. Click ***AutoFit*** in the ***Cell Size group*** on the ***Table Tools Layout*** tab<br>3. Select one of the following<br>a. ***AutoFit Contents*** – this will adjust column width automatically<br>b. ***AutoFit Window*** – use this to adjust the table width automatically |
| Resize an entire table manually | 1. Ensure you are in Print Layout View<br>2. Hover the cursor on the table until the table resize handle appears in the lower-right corner of the table<br>3. Hover the cursor on the resize handle until it becomes a double-headed arrow<br>4. Drag the boundary to re-size the table |

**Illustration: Change column width**




2. Specify column width for the selected cells e.g. to change width from 5.67 to 3.3cm

Change column width - Before

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | | |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

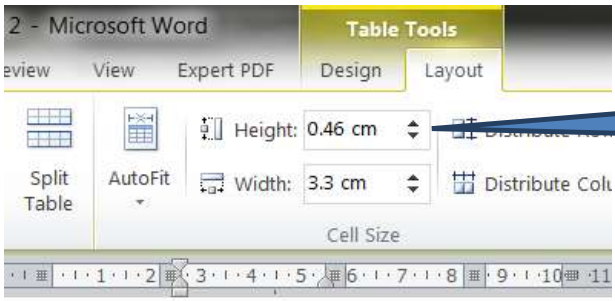
1. Select cells to re-size

Change column width - After

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | |
| RDD3203 | Chandio | R&D | 140,000 |

Result = 3.3cm wide

**Illustration: Change row height**




2. Specify new row height

Change row height - Before

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | | |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

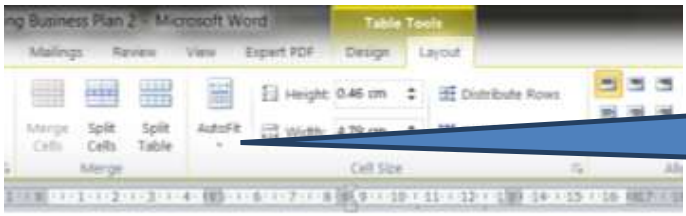
1. Select a cell in the row you wish to re-size

Change row height - After

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

Result = 1cm high

**Illustration: Use AutoFit**




2. Click an AutoFit option from the drop-down

AutoFit - Before

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

1. Click a table

AutoFit Contents (after)

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

AutoFit Window (after)

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

**Illustration: Resize an entire table manually**

Resize entire table - Before

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

1. Hover the cursor over the table until re-size handle appears. Then hover over re-size handle until it turns into a double ended arrow.

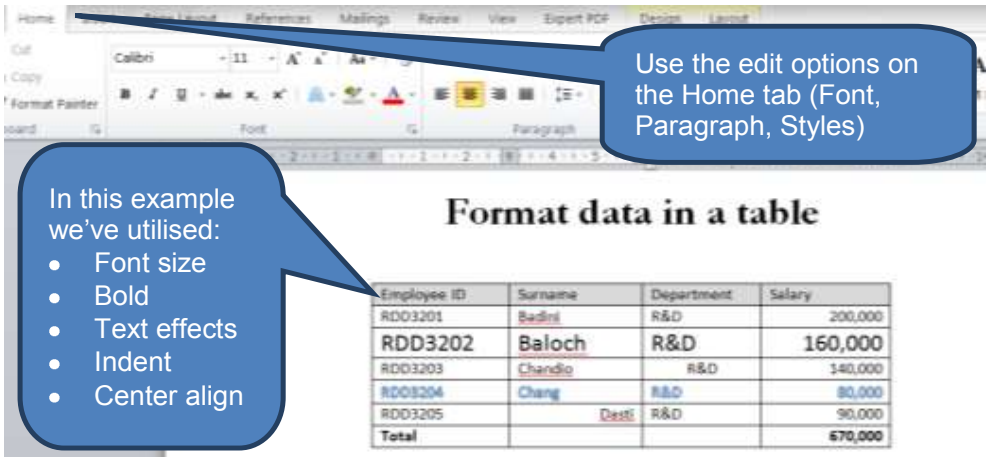
Resize entire table - After

| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |

2. Drag the re-size handle to re-size

### Format data in a table

Use the ***Font***, ***Paragraph*** and ***Styles*** groups on the ***Home*** tab to format data in a table just like you would edit any other document text. In fact you can also insert pictures, Clip Art, shapes, charts and text boxes into table cells using the techniques described earlier in this chapter.

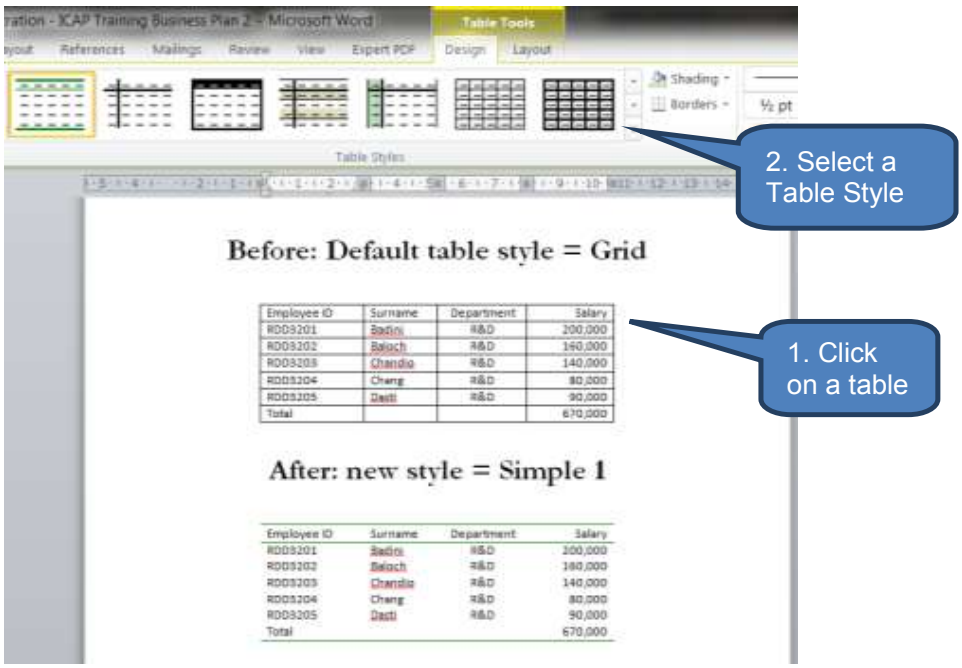



### Apply a table style

Word provides a suite of built-in table styles that allow you to present a different 'look and feel' to your tables whilst maintaining consistent and professional documents.

To apply a table style:

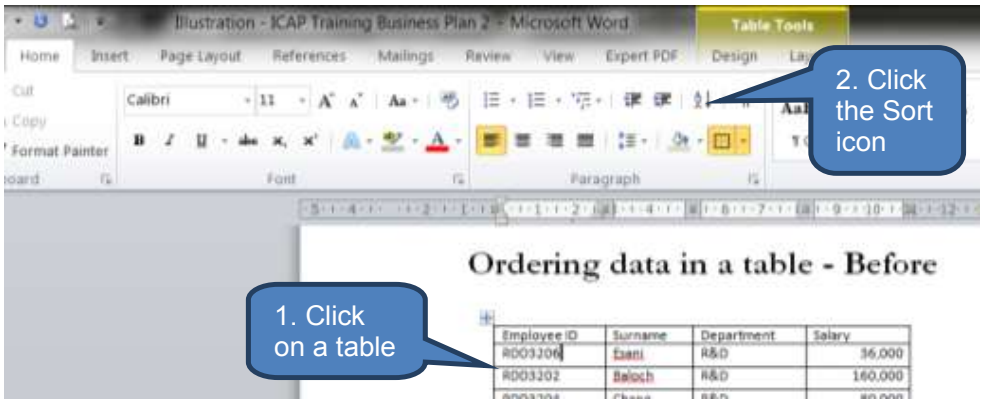
- ❑ Click on a table
- ❑ Select a ***Table Style*** on the ***Table Tools-Design*** tab

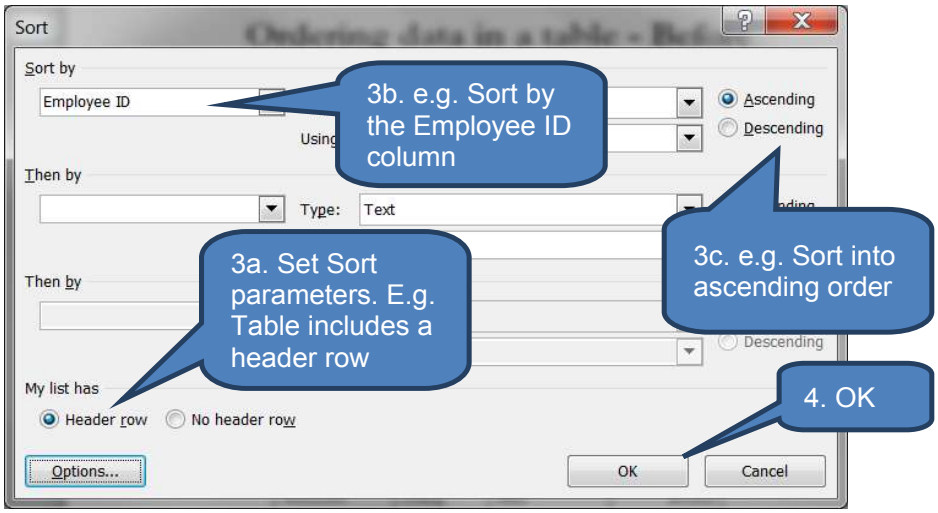


### Order a list of data in a table

Word can re-order the data in a table into either ascending or descending order. To do this:

- Click a cell in the table you want to re-order
- Click the ***Sort*** icon in the ***Paragraph*** group on the ***Home*** tab
- Set the sort parameters in the ***Sort*** dialog box then click ***OK***




After – Ordered by Employee ID

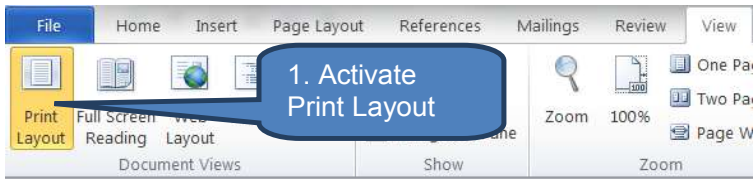
| Employee ID | Surname | Department | Salary |
|---|---|---|---|
| RDD3201 | Badini | R&D | 200,000 |
| RDD3202 | Baloch | R&D | 160,000 |
| RDD3203 | Chandio | R&D | 140,000 |
| RDD3204 | Chang | R&D | 80,000 |
| RDD3205 | Dasti | R&D | 90,000 |
| RDD3206 | Esani | R&D | 36,000 |

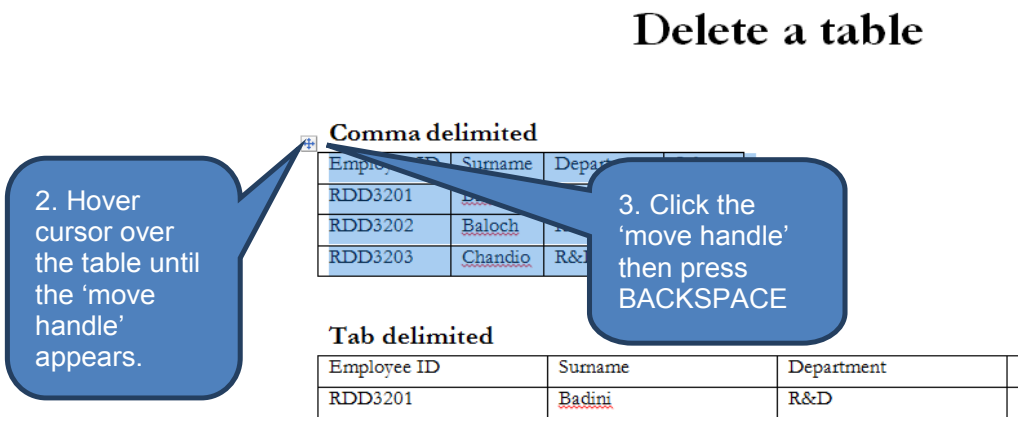
## 3.3 Delete a table

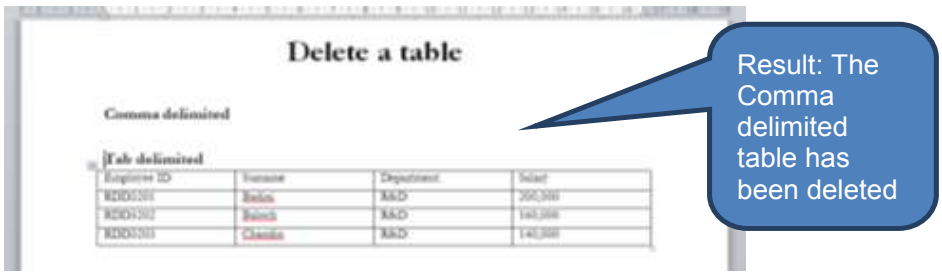
### Delete the whole table

To delete a table including both the contents and structure:

- ❑ Make sure you are in Print Layout view by clicking ***Print Layout*** on the ***View*** tab
- ❑ Hover the cursor over the table until the '***move handle'*** appears
- ❑ Click the '***move handle'*** then press ***Backspace***




### Delete the contents of a table

To delete information that is inside a table:

- ❑ Select the text with the cursor
- ❑ Press the ***DELETE*** key

Using the DELETE key means the table row and column borders (i.e. the structure) remain whilst the contents are deleted.

## 4 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Apply standard formatting techniques including
  - Styles
  - Fonts
  - Paragraph settings
- Sort lists alphabetically
- Work with illustrations in Word documents including
  - Pictures and Clip Art
  - Shapes
  - Charts
  - Text boxes
  - WordArt
- Insert, edit and delete tables

CHAPTER 11

# Table of contents and other references

## Contents

# INTRODUCTION

## Learning outcomes

LO 4.4.1 Identify the basic formatting requirements to insert a table of contents

LO 4.4.2 Demonstrate performance level knowledge to insert and modify a table of contents

LO 4.5.1 Demonstrate performance level knowledge to insert and modify endnotes, footnotes, captions & cross references

## Exam context

Having learnt in the previous two chapters how to produce the core of a Microsoft Word document we conclude our study of Microsoft Word in this chapter by taking a look at a number of other highly useful functions.

The functions in this chapter add value as they save the author time by using clever in-built functionality (e.g. for generating an automatic table of contents) plus help give documents a highly professional look and feel.

By the end of this chapter students will be able to:

- Create and modify a built-in or custom-designed table of contents
- Use footnotes and endnotes
- Insert, edit and delete captions and cross references
- Create a bibliography

# 1 CREATING A TABLE OF CONTENTS

**Section overview**

- Introduction
- Use built-in heading styles to mark entries
- Create a table of contents from the gallery
- Create a custom-style table of contents
- Update a table of contents
- Delete a table of contents

## 1.1 Introduction

By far the simplest way of creating a table of contents is to use Microsoft Word's superb built-in table of contents functionality and let Word do the hard work.

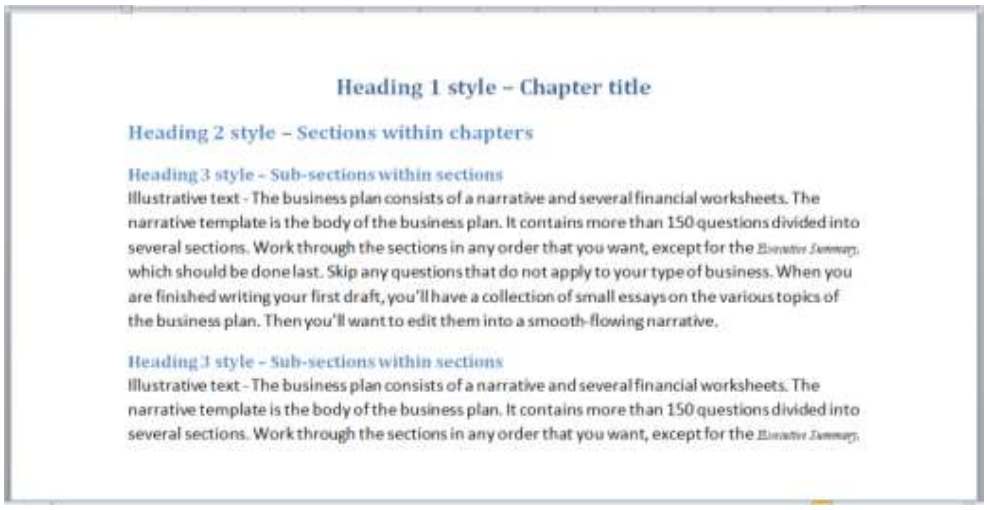
In summary the approach involves the following:

- Apply built-in heading styles to the headings throughout your document that you want to appear in the table of contents
- Use the ***Table of Contents*** function on the ***References*** tab to automatically generate a table of contents. The table will be based on the heading styles you just applied.

Let's look at this in detail.

## 1.2 Use built-in heading styles to mark entries

Heading styles are categorized into levels – level 1, 2, 3 etc. For example:



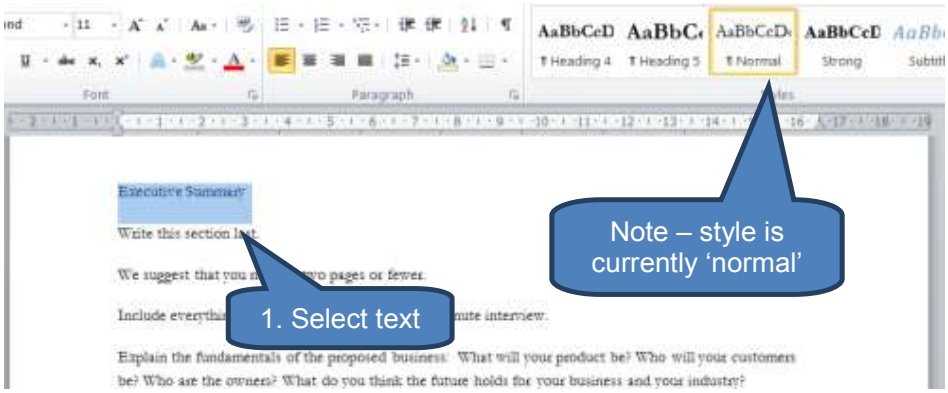

For a long document it is probable that you only want the level 1 headings to appear in the table of contents. However, there are times when you may also want lower levels in the table too. The key though is to apply heading style levels consistently throughout the document.

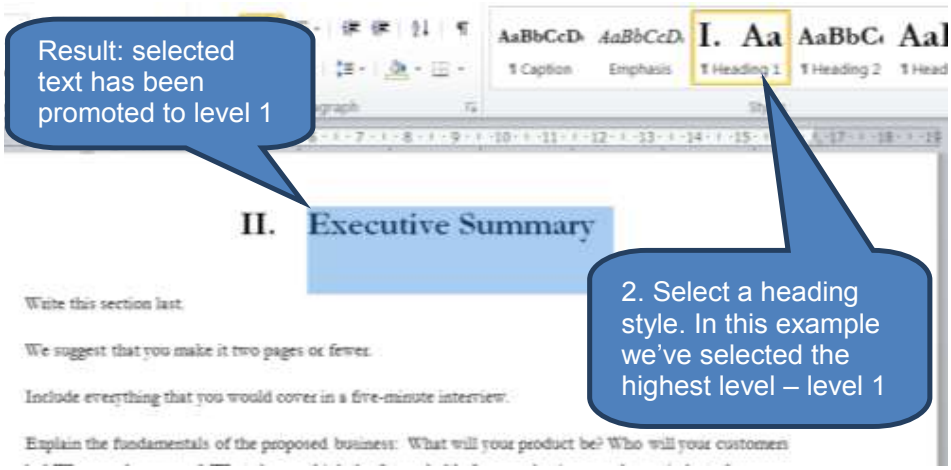
Imagine for example if you used heading style 1 for the title in chapter 1 but heading style 2 for the title in chapter 2. Chapter 2 would look like a child of

chapter 1 parent in the automatically generated table of contents when in fact it should be ranked at the same level.

To mark entries using built-in heading styles:

- ❑ Select the text that you want to appear in the table of contents (e.g. a chapter title)
- ❑ Click an appropriate style in the ***Styles*** group on the ***Home*** tab. Note that the important link for the table of contents is the LEVEL.




## 1.3 Create a table of contents from the gallery

To create a table of contents from the gallery:

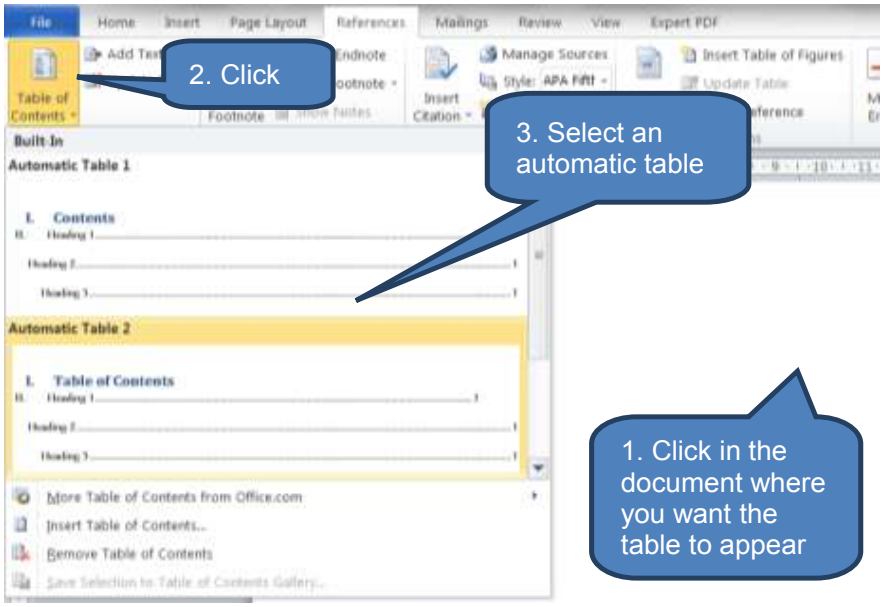
- ❑ Click in the document where you want to insert the table of contents. This is normally at the beginning of a document after the title page but before body of the document.
- ❑ Click ***Table of Contents*** in the ***Table of Contents*** group on the ***References*** tab and select one of the automatic table styles.

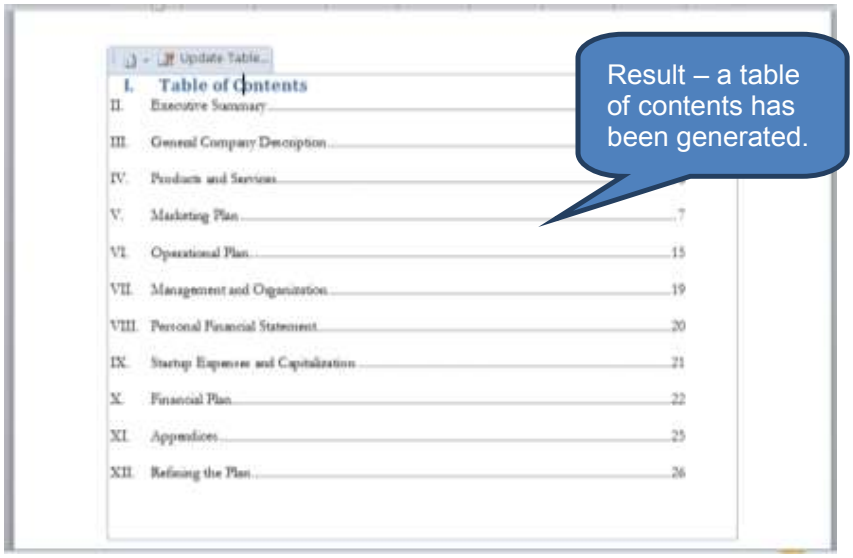
Note the following:

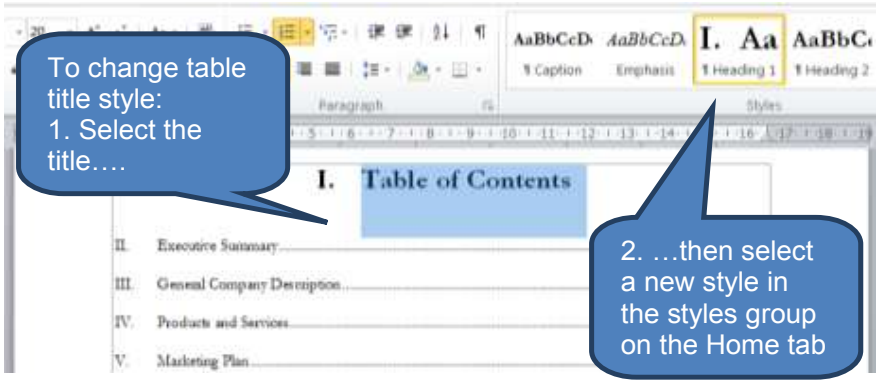
- ❑ The only difference between the two automatic styles is the title:
  - Table 1 = Contents

- Table 2 = Table of Contents

- Word applies a style called ***TOC heading*** to the title of the table. You can change this by highlighting the table heading text then applying an alternative style from the ***Styles*** group on the ***Home*** tab – e.g. Heading 1.
- The two automatic tables only incorporate heading levels 1-3. If you need to incorporate lower levels you will need to build a custom table of contents.






## 1.4 Create a custom-style table of contents

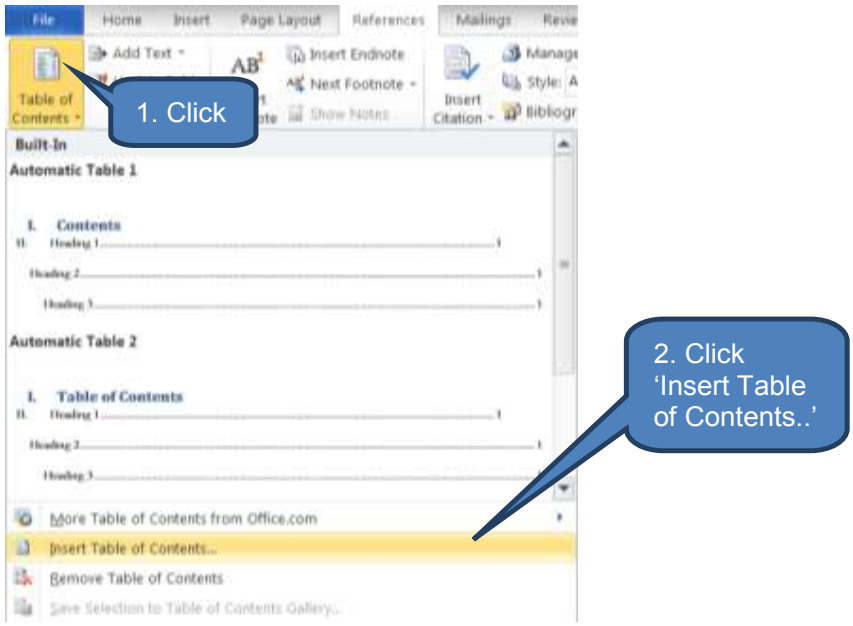
Rather than use one of Word's built-in table formats as described above you can design a custom-style table of contents.

To create a custom-style automatic table of contents:

- Click ***Insert Table of Contents…*** under ***Table of Contents*** in the ***Table of Contents*** group on the ***References*** tab
- Amend settings in the ***Table of Contents*** dialog box as applicable then click ***OK***

The various settings include the following:

| Setting | Comment |
|---|---|
| Show page numbers | On or off |
| Right align page numbers | Recommended to right align |
| Tab leader | This relates to the filler between each heading and the page number. Choose between ….. / ----- / ___ / none |
| User hyperlinks instead of page numbers | When posted on the internet it is more useful for the user to navigate via hyperlinks rather than page numbers. |
| Formats | Choose a format style that matches the look and feel of the rest of the document. |
| Show levels | You can select up to a maximum of 9 levels for inclusion in the table. However, consider the general rule of 'the fewer the better' – keep it simple |
| Options | Click Options to map how common styles are presented in the table of contents. The default settings are to match headings 1, 2 and 3 with levels 1, 2 and 3 respectively in the table of contents. |


File
Home
Insert
Page Layout
References
Mailings
Add Text
Insert Endnote
Next Footnote
Table of Contents
Insert Citation
1. Click
Built-In
Automatic Table 1
Contents
Automatic Table 2
Table of Contents
More Table of Contents from Office.com
Insert Table of Contents...
Remove Table of Contents
2. Click 'Insert Table of Contents..'

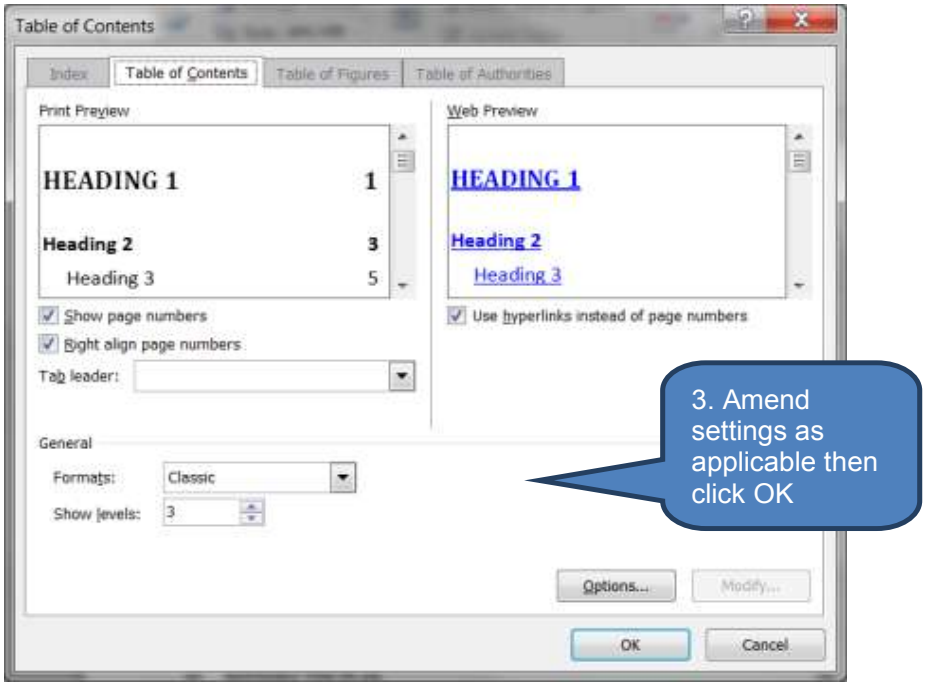
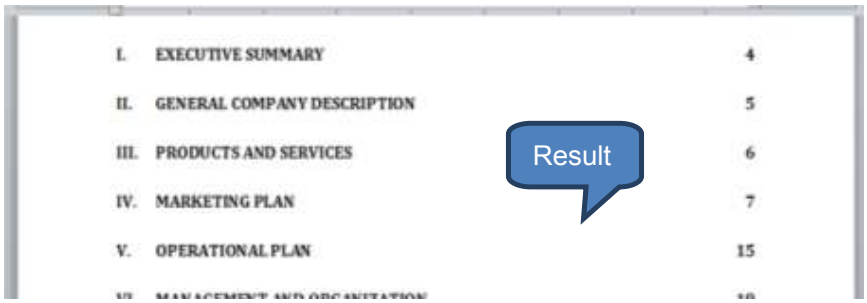


Table of Contents
Index
Table of Contents
Table of Figures
Table of Authorities
Print Preview
HEADING 1 1
Heading 2 3
Heading 3 5
Web Preview
HEADING 1
Heading 2
Heading 3
Show page numbers
Right align page numbers
Tab leader:
Use hyperlinks instead of page numbers
General
Formats: Classic
Show levels: 3
3. Amend settings as applicable then click OK
Options...
Modify...
OK
Cancel



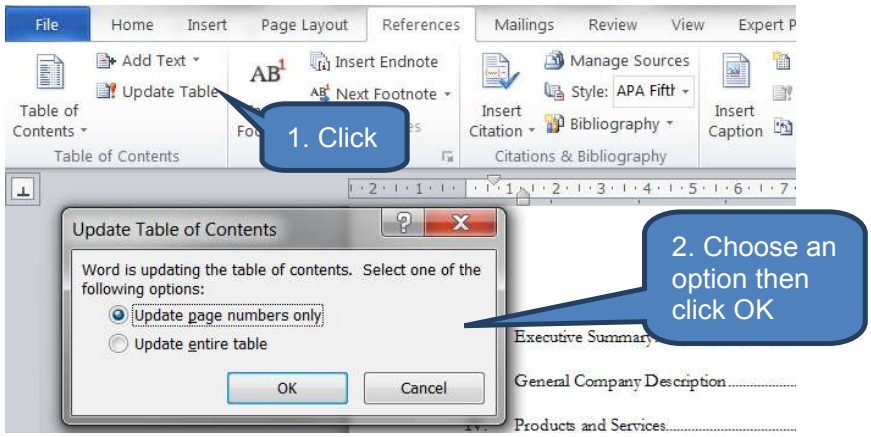

## 1.5 Update a table of contents

If you add, amend or remove level 1-3 headings or add further pages under the various headings after having created an automatic table of contents you will need to update the table of contents to reflect the changes.

To update the table of contents:

- ❑ Click ***Update Table*** in the ***Table of Contents*** group on the ***References*** tab
- ❑ Select one of the following:
  - ***Page numbers only*** – This option will only update page numbers for the headings currently showing in the table
  - ***Entire table*** – This option will capture all new headings as well as update page numbers for the headings currently showing in the table
- ❑ Click ***OK***

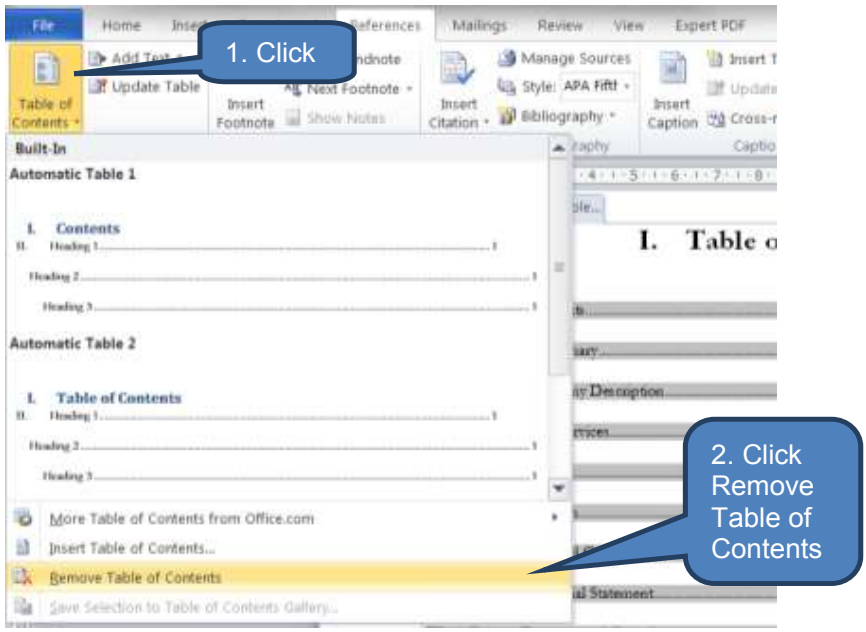
*Note: if you have deleted any of the headings currently showing in the table the **Update Table** command in the **Table of Contents** group will not open the '**Update Table of Contents'** dialog box. Word will in fact update the entire table instead.*



## 1.6 Delete a table of contents

To delete an automatically generated table of contents:

- Click ***Table of Contents*** in the ***Table of Contents*** group on the ***References*** tab
- Click ***Remove Table of Contents***



# 2 USING FOOTNOTES AND ENDNOTES

## Section overview

- Insert a footnote or endnote
- Edit a footnote or endnote
- Delete a footnote or endnote

## 2.1 Insert a footnote or endnote

**Definition: Footnotes and endnotes**

**Footnotes and endnotes comprise two components:**

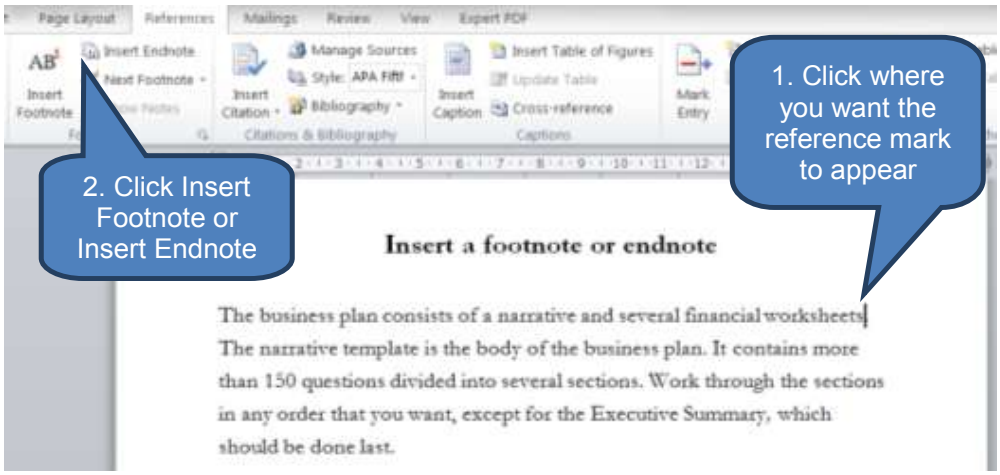
- **The footnote or endnote reference mark (which appears next to the document text that has been footnoted or endnoted)**
- **The footnote or endnote explanatory text**

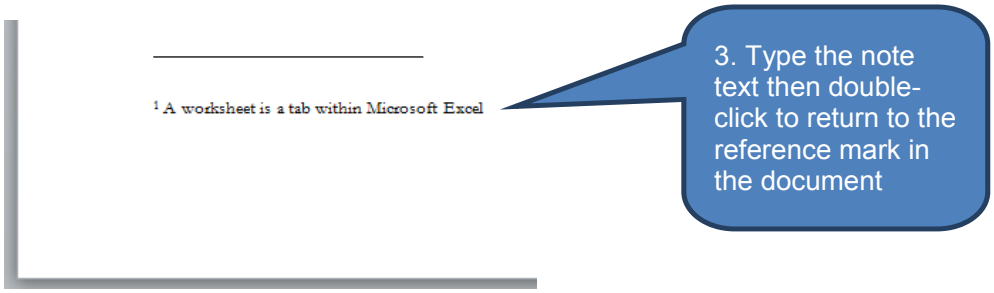
**Footnotes appear at the bottom of the same page as the text to which they refer whereas endnotes all appear at the end of the document in one place.**

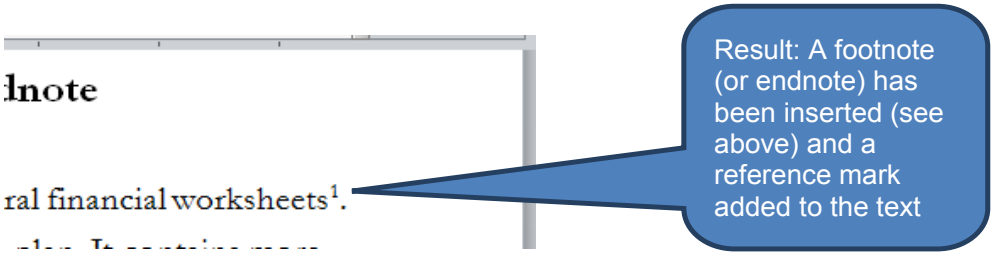
### Insert a footnote or endnote

To insert a footnote or endnote:

- ❑ Ensure you are in ***Print Layout*** view – click ***Print Layout*** on the ***View*** tab
- ❑ Click in the text where you want the reference mark to appear
- ❑ Click either ***Insert Footnote*** or ***Insert Endnote*** in the ***Footnotes*** group on the ***References*** tab






## 2.2 Edit a footnote or endnote

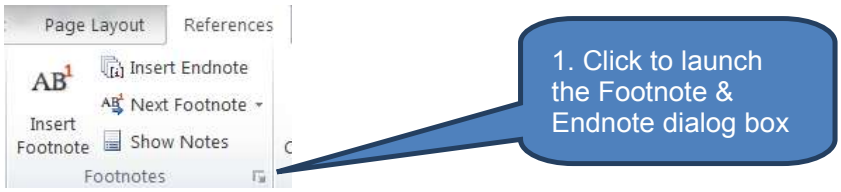
### Edit a footnote or endnote

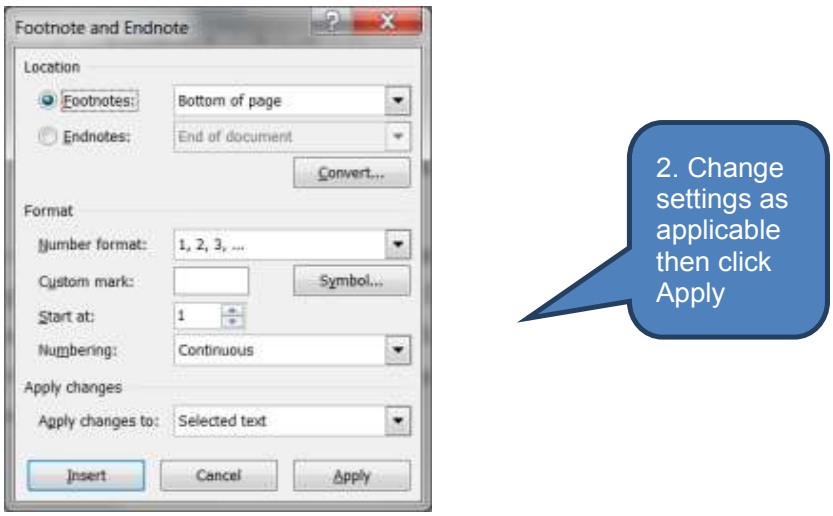
You can edit the text in a footnote or endnote simply by double-clicking the note and editing the text.

You can also edit footnote or endnote settings by using the Footnote & Endnote dialog box.

To launch the Footnote & Endnote dialog box:

- Click the dialog box launcher in the ***Footnotes*** group on the ***References*** tab



The various settings include the following:

| Setting | Description |
|---|---|
| Location | • Footnote = bottom of page or below text<br>• Endnote = end of document or end of section |
| Convert | Use the button to do one of the following:<br>• Convert footnotes to endnotes<br>• Convert endnotes to footnotes<br>• Swap endnotes and footnotes |
| Number format | Choose one of the inbuilt number formats such as 1,2,3 / a,b,c / i,ii,iii |
| Custom mark | Use a symbol as a custom reference mark |
| Numbering | Choose between:<br>• Continuous<br>• Restart each section<br>• Restart each page |
| Apply changes | Apply the settings changes to one of the following:<br>• Selected text<br>• Selected section<br>• Whole document |

## 2.3 Delete a footnote or endnote

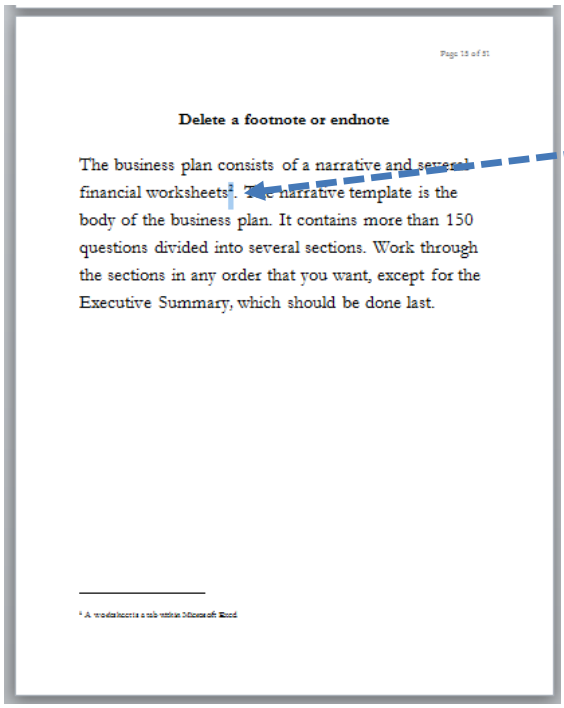
### Delete a footnote or endnote

When you delete a footnote or endnote you work with the note reference mark in the text rather than the text in the note itself.

To delete a footnote or endnote:

- ❑ Select the note reference mark of the note you wish to delete
- ❑ Press ***DELETE***

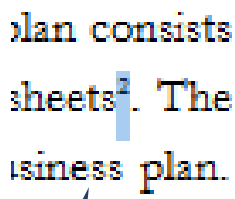
Note that Word will renumber the other automatically numbered notes when you delete a footnote or endnote.



Delete a footnote or endnote

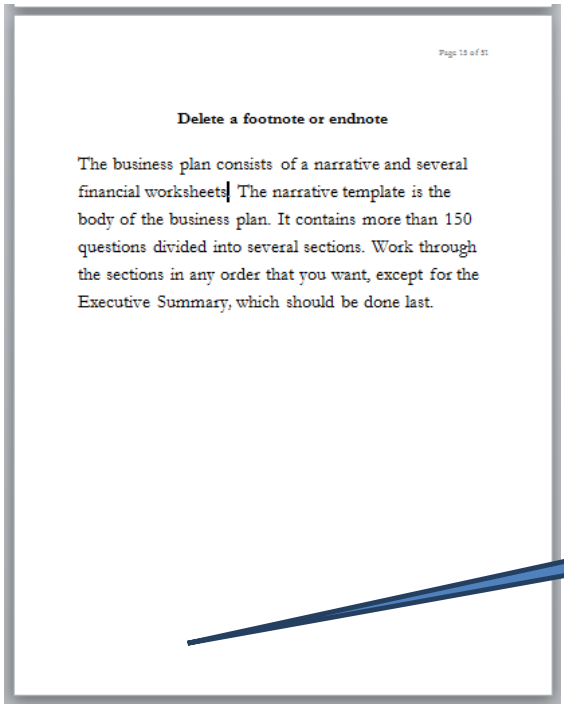
The business plan consists of a narrative and several financial worksheets[1]. The narrative template is the body of the business plan. It contains more than 150 questions divided into several sections. Work through the sections in any order that you want, except for the Executive Summary, which should be done last.

[1] A worksheet is a tab within Microsoft Excel.



plan consists
sheets[2]. The
siness plan.

Select the note reference mark of the note you wish to delete. Then press the DELETE key.



Delete a footnote or endnote

The business plan consists of a narrative and several financial worksheets. The narrative template is the body of the business plan. It contains more than 150 questions divided into several sections. Work through the sections in any order that you want, except for the Executive Summary, which should be done last.

Result: Footnote (or endnote) has been deleted

# 3 CAPTIONS AND CROSS REFERENCES

**Section overview**

- Introduction
- Insert captions
- Insert cross-references

## 3.1 Introduction

**Definition: Caption**

**A caption is a line of text that appears below an object to describe it. For example: "Figure 2: Sales".**

**Definition: Cross-reference**

**Cross-references refer to items such as headings, tables and figures by inserting a cross reference such as "Turn to page 3" or "See table 4 above"**

You can add captions to tables, figures, equations and other options. You can also add cross-references to items such as headings, tables and figures.

The benefit of using Word's built-in functionality is that Word can automatically update all the details within captions and cross-references (such as page or heading number referred to) whenever captions or cross-references have been amended.

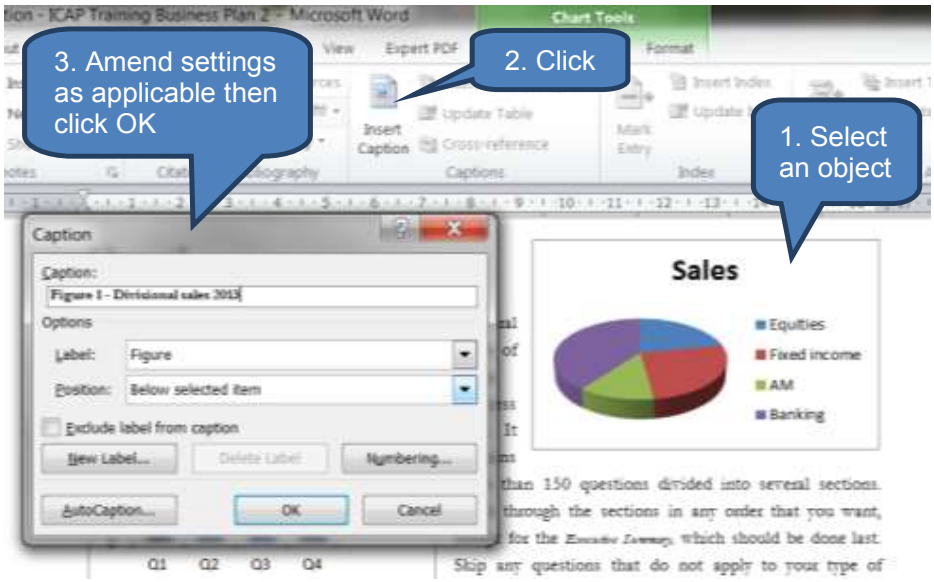
You can also use captions to create a table of figures or table of equations.

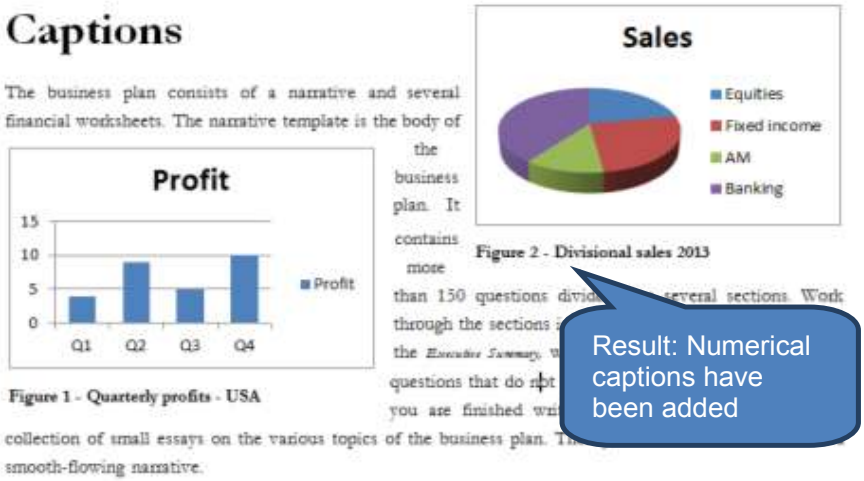
## 3.2 Insert captions

### Add a caption

To add a caption to an item:

- ❑ Select the object that you want to add a caption to – e.g. a figure, table or equation
- ❑ Click ***Insert Caption*** in the ***Captions*** group on the ***References*** tab to launch the Caption dialog box
- ❑ Adjust the settings as applicable e.g.
  - Select the label that best describes the object such as picture or equation. You can also click ***New Label*** to use your own
  - Type text (including punctuation) that you want to appear after the label
  - Change numbering style
- ❑ Click ***OK***



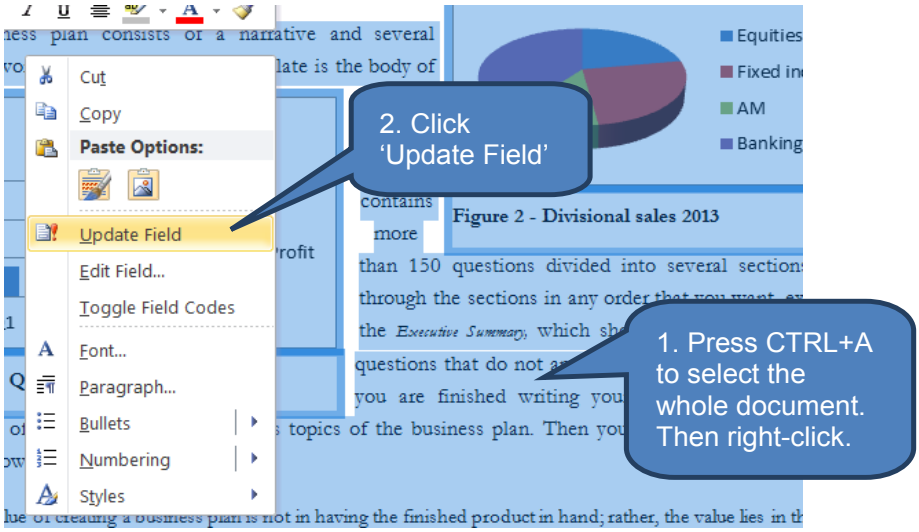




## Update caption numbers

Whenever you insert a new caption, Word automatically updates all the caption numbers so they remain sequential. However, if you move or delete a caption the update is not automatic so you must perform a manual update.

To manually update caption numbers:

- Click anywhere in the document and press ***CTRL+A*** to select the entire document
- Right-click
- Click ***Update Field***




### Modify an existing caption

To modify an existing caption:

- ❑ Highlight the caption
- ❑ Click ***Insert Caption*** in the ***Captions*** group on the ***References*** tab to re-launch the Caption dialog box

## 3.3 Insert cross-references

### Insert a cross-reference

You can make cross-references to all kinds of items such as headings, figures, footnotes, endnotes, tables and bookmarks. Word can then automatically update the variable items referred to in a cross reference such as a page number, figure number or heading text.

To insert a cross-reference:

- ❑ Click in the document where you want the cross-reference to appear
- ❑ Enter any fixed text that you want to complement the cross-references then re-position the cursor where you want the cross-reference to appear.

  For example you might want to say

  "See Figure 1 – Quarterly profits – USA on page 14"

  This phrase consists of two components - the cross-reference and the fixed-text.

  In the above example the cross-reference components are:

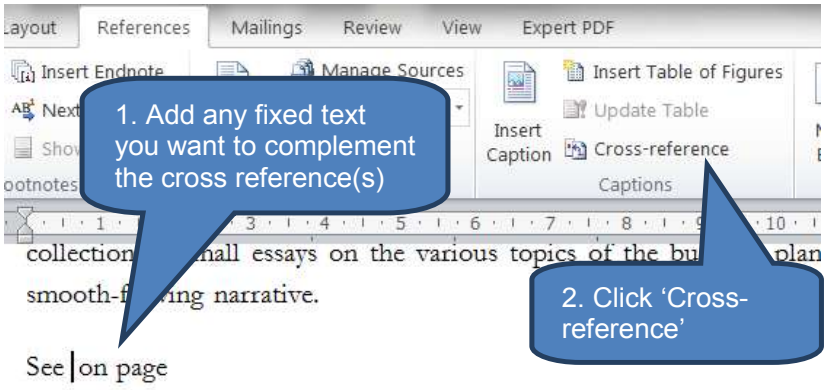
  - Figure 1 – Quarterly profits – USA; and
  - 14

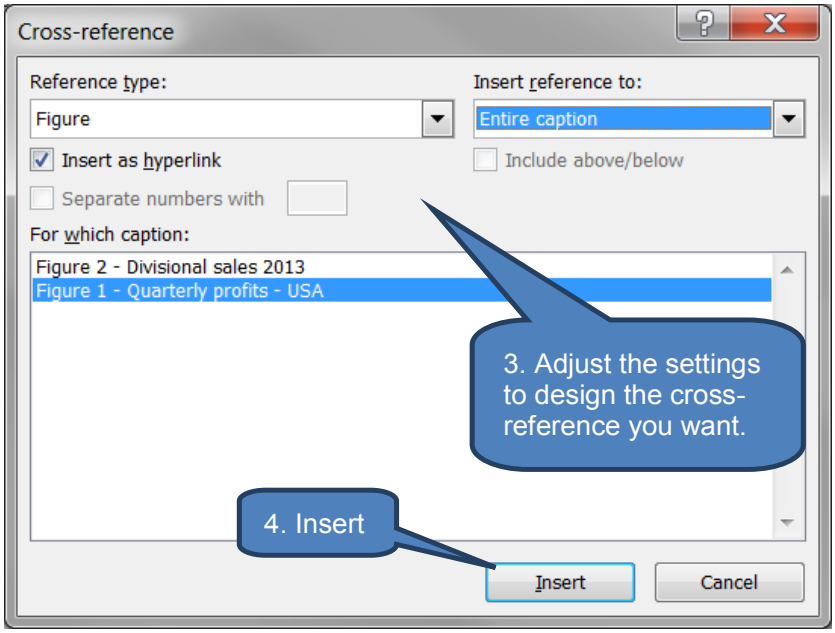
  The fixed text components are:

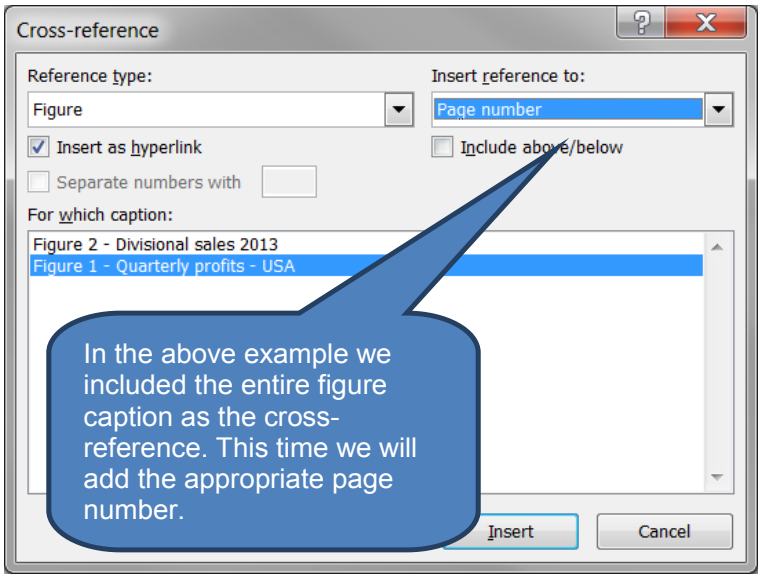
  - "See " and
  - " on page "

  *Note that fixed text can also be added after inserting the cross-reference components*

- Click ***Cross-reference*** in the ***Captions*** group on the ***References*** tab
- Adjust the settings as applicable then click ***Insert***





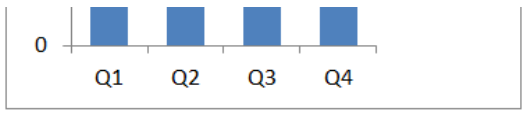



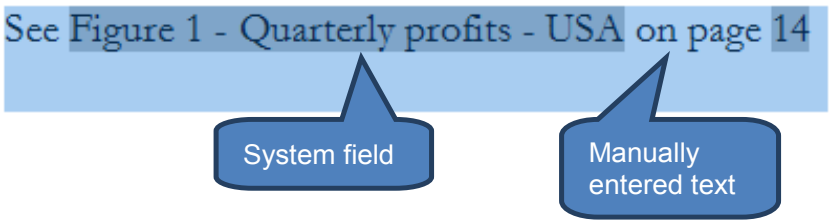

**Figure 1 - Quarterly profits - USA**

through the sections
the *Executive Summary*,
questions that do not
you are finished wr
collection of small essays on the various topics of the business plan.
smooth-flowing narrative.

See Figure 1 - Quarterly profits - USA on page 14

Result

If you highlight the caption and surrounding text you can clearly see the shading that Microsoft Word has adopted. The shading differentiates between system fields that Word controls (i.e. the cross-references) and the simple text that you typed in.




### Update cross-references

The technique for updating cross-references (for example to reflect changed page numbering) is the same as that for updating captions.

I.e.

- Click anywhere in the document and press ***CTRL+A*** to select the entire document
- Right-click
- Click ***Update Field***

# 4 CREATING A BIBLIOGRAPHY

**Section overview**

- Introduction
- Add a new citation and source into a document
- Create a bibliogrphy

## 4.1 Introduction

**Definition: Bibliography**

**A bibliography is a list of sources consulted or referred to whilst creating a document. Bibliographies are typically placed at the end of a document.**

**Definition: Source**

**A source is something you have consulted or referred to whilst creating a document. Examples of sources include:**

- **Books**
- **Journals**
- **Periodicals**
- **Reports**

**Sources are listed in the bibliography**

**Definition: Citation**

**A citation is a reference made within the document to a source listed in the bibliography. The reference typically shows as a bracketed number so the reader can easily identify the source in the bibliography**

The process for generating a bibliography is as follows:

- ❑ Record the sources that have been used
- ❑ Add citations in the document that indicate when sources have been referred to
- ❑ Generate the bibliography (normally at the end of the document)

In practice the first two steps are often combined.

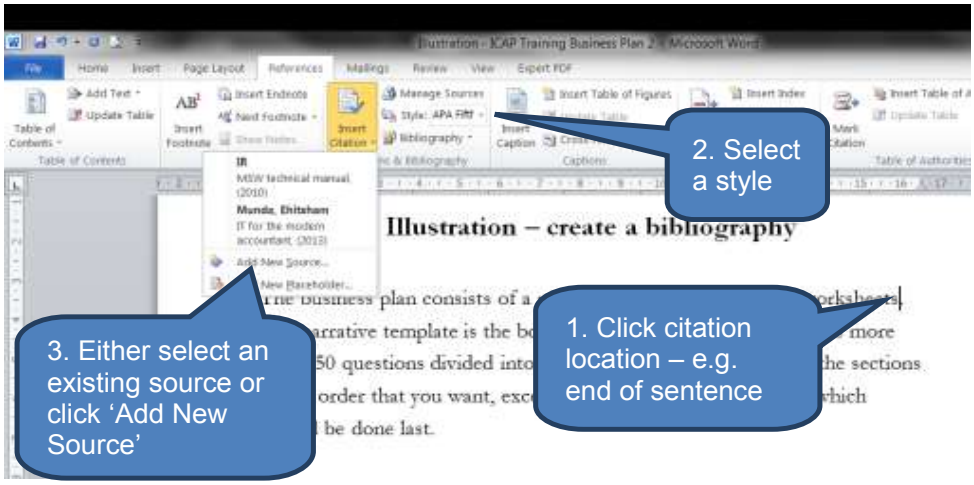
## 4.2 Add a new citation and source into a document

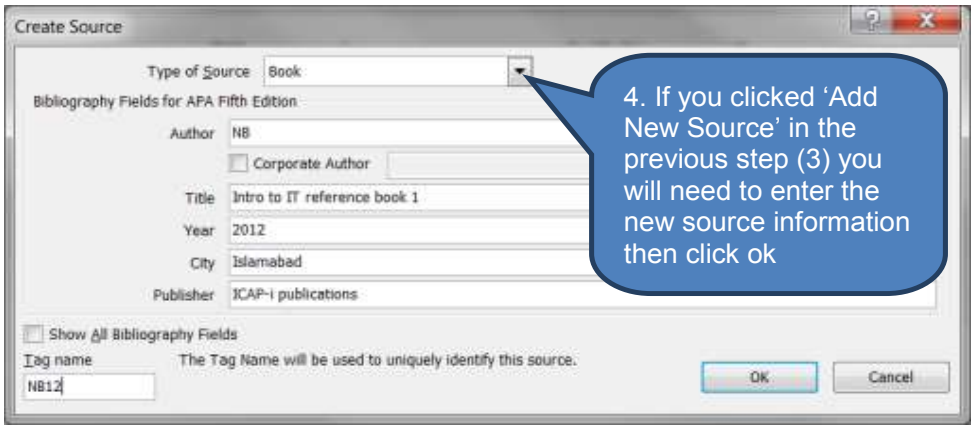
### Add a new citation

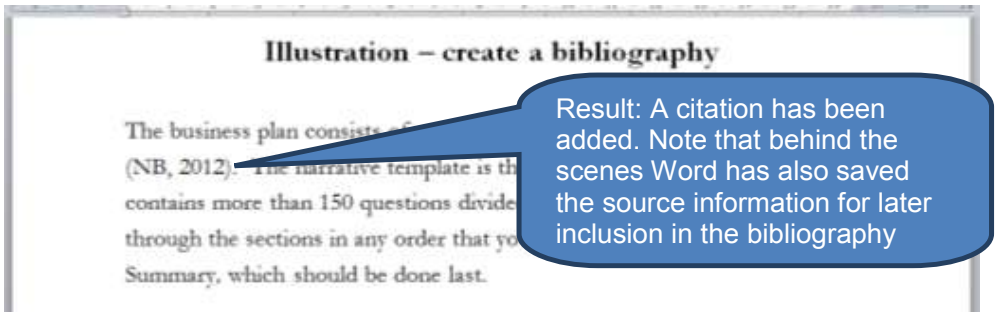
To add a new citation into a document:

- ❑ Click the location where you want the citation to appear in the document (e.g. the end of a sentence where you made reference to a source)

- Select a style from the ***Citations & Bibliography*** group on the ***References*** tab. This style defines what the citation will look like – e.g. "(8)" or "(NRT, 1998)"
- Click ***Insert Citation*** in the ***Citations & Bibliography*** group on the ***References*** tab. Then do one of the following:
  - To create a new source click ***Add New Source*** then fill in the source information in the dialog box. Click ***OK***
  - To refer to an existing source click the relevant source from the drop-down menu



### Manage sources

Microsoft Word maintains a separate library (file) of sources used in all your various documents. Think of this as being similar to templates which are also separate files hidden away by Microsoft Word separate from the current document.

When you create a new source Microsoft Word adds it to the central library of sources. This becomes useful when you subsequently refer to an existing source in a new document. Rather than re-enter (duplicate) the source information in every document, you simply add the existing source information from the central library to your current document's bibliography.

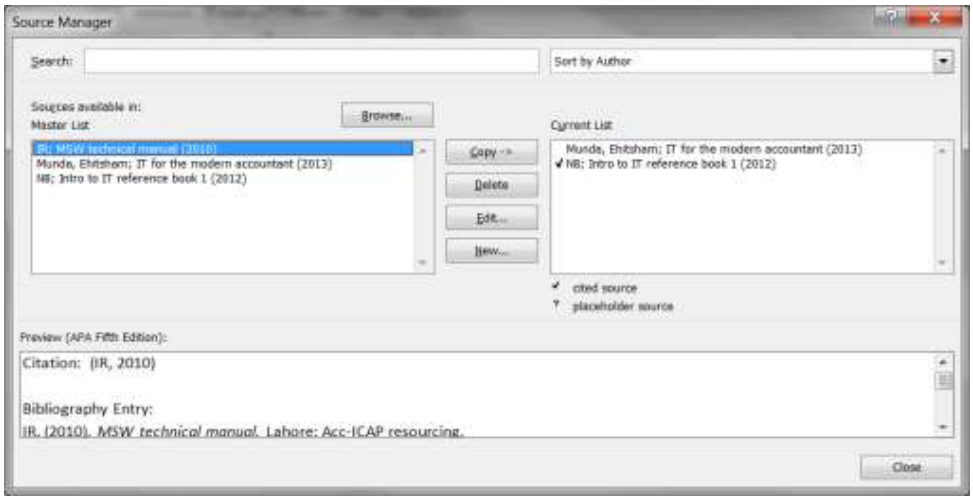
To open the source manager:

- Click ***Manage Sources*** in the ***Citations & Bibliography*** group on the ***References*** tab

**Illustration:**

**Illustration: Source Manager**

The below Source Manager was launched by clicking ***Manage Sources*** in the ***Citations & Bibliography*** group on the ***References*** tab




- **The master list of sources (on the left side) includes three sources. The exact location of the sources library file can be accessed from the Browse... button.**
- **The current document has two sources in its bibliography as shown on the right side in 'Current List'. Note that only one of these two sources has actually been referred to (with a citation) in the document text – each cited source is accompanied by a small tick.**
- **You can add and remove sources between the central library and current list using the Copy, Delete and Edit buttons.**

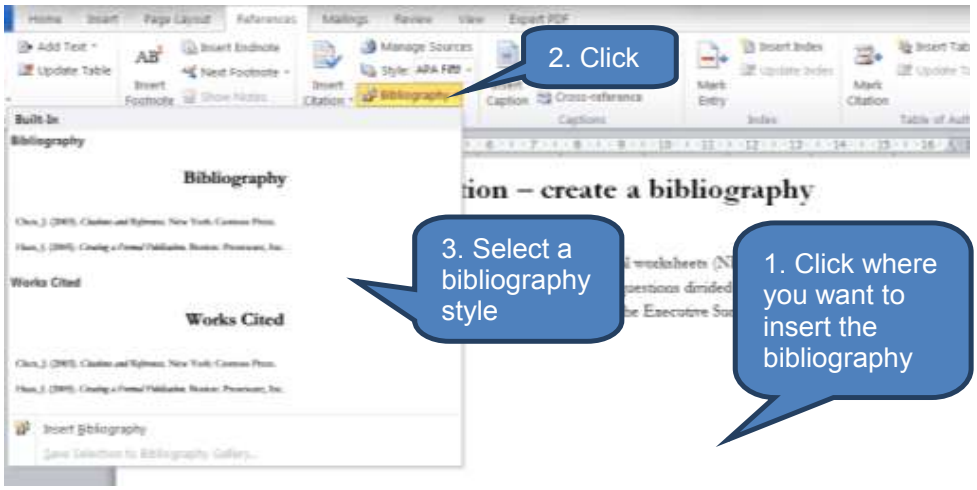
**To add a new source to the central library click the *New...* button.**

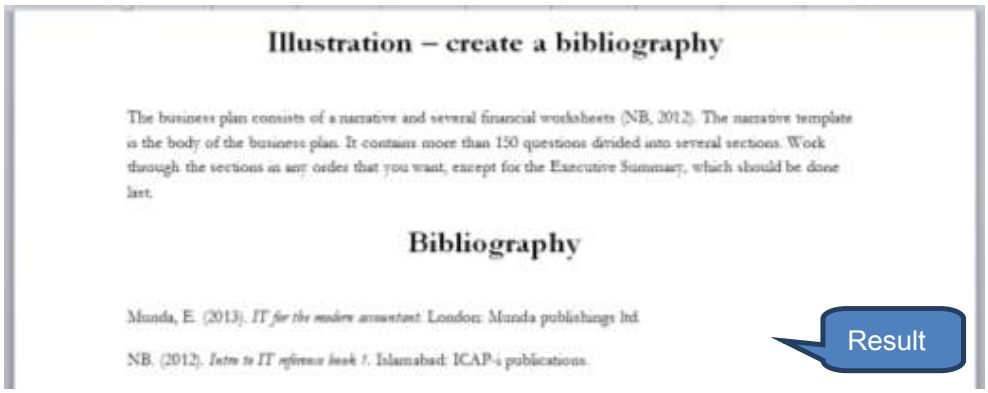
## 4.3 Create a bibliography

A bibliography presents all the sources in a document's Current List (see Source Manager illustration above) in a professional and consistent format. It makes sense then that you can only create a bibliography after having inserted one or more sources into a document.

To create a bibliography:

- Click where you want to insert the bibliography. This would typically be at the end of a document.
- Click ***Bibliography*** in the ***Citations & Bibliography*** group on the ***References*** tab
- Select one of the predesigned bibliography formats to insert the bibliography into the document



## 5 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Create and modify a built-in or custom-designed table of contents
- Use footnotes and endnotes
- Insert, edit and delete captions and cross references
- Create a bibliography

CHAPTER 12

# Introduction to Microsoft PowerPoint

## Contents

# INTRODUCTION

## Learning outcomes

LO 5.1.1 Select a template from PowerPoint's sample templates to construct simple presentations

LO 5.2.1 Perform inserting and editing of text based content

## Exam context

Many students will have some kind of prior experience of Microsoft PowerPoint from their former studies, job or even home life. However, this syllabus assumes no prior knowledge. Therefore do not be alarmed if you have not used Microsoft PowerPoint previously.

As with all the Microsoft Office based chapters in this Study Text you will benefit significantly from having access to Microsoft PowerPoint in order to practice the techniques described. Active learning through practical experience will not only help you remember new techniques but also ensure you have understood exactly what has been described.

By the end of this chapter students will be able to:

- Create new original PowerPoint presentations or base presentations on an existing presentation or template
- Create and edit your own templates
- Work with slide Masters and Layouts
- Insert and edit text-based content including:
  - Add text to a placeholder, text box or shapes
  - Work with bullets, numbers, indents and colours
  - Edit fonts including superscript, subscript, capitalization, paragraph settings and changing the direction of text
  - Use the AutoFit function
  - Work efficiently with the Find and Replace facility
- Recognise and use components of the Office Backstage view in PowerPoint
- Print from Microsoft PowerPoint

# 1 INTRODUCTION TO MICROSOFT POWERPOINT

**Section overview**

- Introduction to Microsoft PowerPoint 2010
- Practical uses for Microsoft PowerPoint
- Building effective presentations

## 1.1 Introduction to Microsoft PowerPoint 2010

**Definition: Microsoft PowerPoint 2010**

**Microsoft PowerPoint is a presentation software application that allows users to combine text and graphics for on-screen presentations.**

**Microsoft PowerPoint is a component of the Microsoft Office productivity suite for Microsoft Windows and is the successor to Microsoft PowerPoint 2007.**

Microsoft PowerPoint 2010 is the presentation tool of the Microsoft Office 2010 suite. It seems nowadays that nearly every office and boardroom employs Microsoft PowerPoint if not daily then certainly frequently.

Many ICAP students may already have encountered Microsoft PowerPoint at some stage of their lives whether preparing their own presentations or attending University lectures where lecturers have used Microsoft PowerPoint. However, Accountants (and trainee accountants) may be more comfortable in the 'numbers-based' world of Microsoft Excel and may well have much less experience on average of using Microsoft PowerPoint for preparing professional presentations.

The sections of the study text covering Microsoft PowerPoint will therefore be for some a revision tool with perhaps a small element of new functionality encountered, whereas for others it will represent a whole new subject area.

Either way remember that the examiner has the scope (and is likely) to examine any part of the syllabus. Therefore you must avoid complacency and ensure you are comfortable with the entire contents of each chapter.

## 1.2 Practical uses for Microsoft PowerPoint

Microsoft PowerPoint's substantial power and flexibility make it a useful tool for both personal and business use. It is typically used as a graphical approach to presentations in the form of slide shows that accompany oral delivery of the topic.

Users create dynamic, informational slides through the use of

- Text
- Graphics
- Animation

Some examples of how it is used include:

| Use | Comment |
|---|---|
| Sales and marketing presentations | Present the companies' products in an exciting, engaging and dynamic way |
| Education | PowerPoint is often used by Universities and technical colleges for lecture slides |
| Internal meetings | PowerPoint can help bring to life internal meetings with charts, graphs and tables |
| Professional training | Many businesses use PowerPoint for internal training courses |
| Create a photo album or slideshow | Whether for personal use, displaying a companies' portfolio of products or presenting some design pictures in a product development seminar, PowerPoint can provide a highly professional landscape for sharing pictures and videos |

## 1.3 Building effective presentations

One of the key criticisms of Microsoft PowerPoint is the boredom that audiences can encounter from poorly designed presentations, commonly paraphrased as "Death by PowerPoint". The criticism refers to the state of boredom and fatigue that can be induced by information overload from a badly designed presentation.

Therefore you should consider the following tips when constructing a presentation:

- Your goal is not to impress the audience with your amazing PowerPoint skills, but rather to communicate a message.
- Think about what you want to communicate to the audience. The message may be the transfer of information, to persuade the audience of a particular perspective, or to motivate an audience in a certain direction. Whatever the message, be clear in your mind before you start constructing the presentation.
- Start by writing the text in Microsoft Word. Essentially you are telling a story, so by writing it first in Word will ensure there is logical flow and the story reaches the desired conclusion.
- Consider the audience when choosing a design. Is this a presentation to the sales and marketing team, a group of consumers, a technical development team or a finance group?
- Keep it simple. The presentation should not detract from the presenter but support them. Too many flashy features might change your presentation from a useful business tool into an overly complex and confusing circus.
- Don't use too many slides. One frequently quoted benchmark is the 'minimum one minute per slide rule'.
- Don't just use words, use visuals too.

# 2 CREATING A NEW PRESENTATION

**Section overview**

- Open a new, blank PowerPoint presentation
- Base a new presentation on an existing presentation
- Base a new presentation on a PowerPoint template
- Create and edit your own templates
- Slide master and placeholders

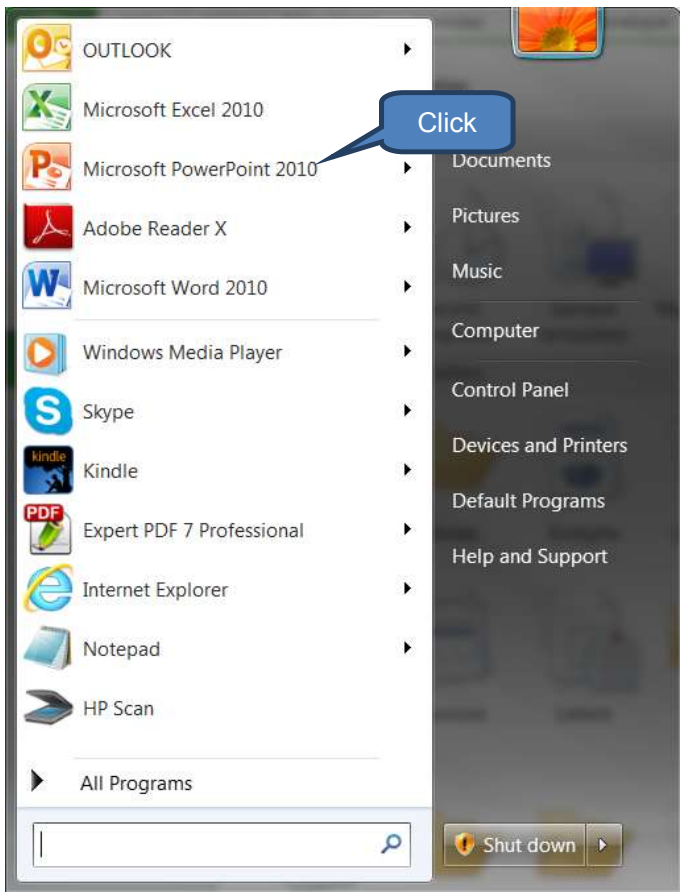
## 2.1 Open a new, blank PowerPoint presentation

**Definition: PowerPoint presentation**

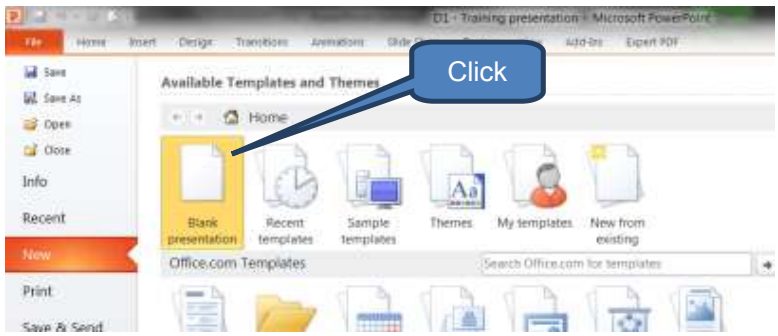
**A PowerPoint presentation is a file that contains one or more slides that collectively present various kinds of related information in a dynamic way.**

There are a number of ways to open a new, blank presentation.

- Click ***Microsoft PowerPoint 2010*** from the start menu. This launches a new session of PowerPoint and a new blank presentation will open automatically.



If PowerPoint is already open click ***New*** + ***Blank presentation*** on the ***File*** tab. This will open a new presentation in addition to the already open presentation.

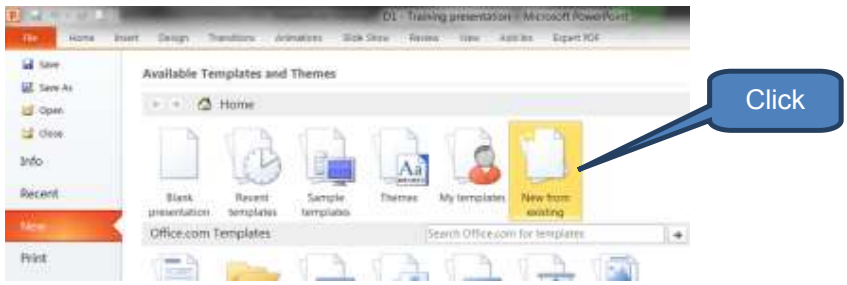



- You can also press ***CTRL + N*** whilst in an existing presentation to quickly create a new, blank presentation.

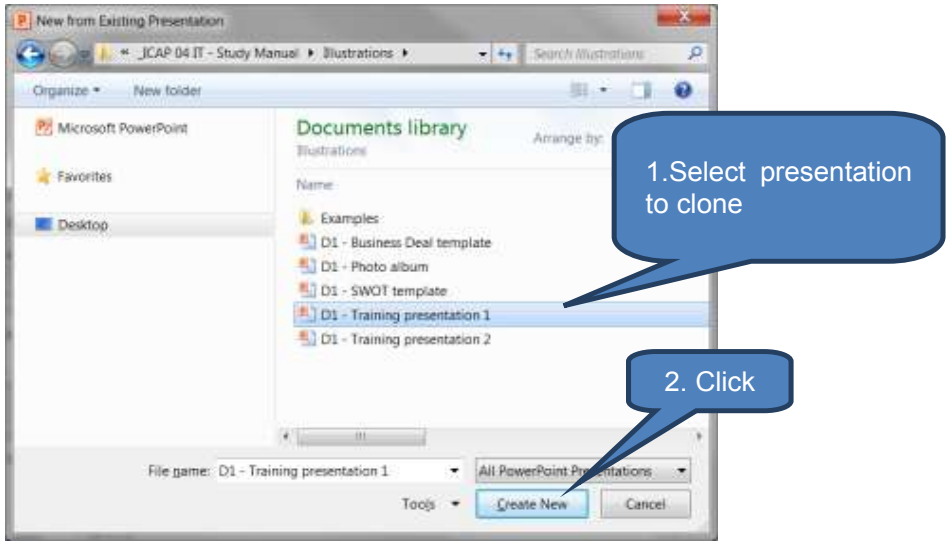
## 2.2 Base a new presentation on an existing presentation

You may be able to save time and effort by recycling previous work and basing a new presentation on an existing presentation. There are two ways to do this:

- If PowerPoint is open click ***New*** + ***New from existing*** on the ***File*** tab.




- Navigate to the existing presentation you wish to recycle via the dialog box. Then click ***Create New.***



## 2.3 Base a new presentation on a PowerPoint template

**Definition: PowerPoint template**

**A PowerPoint template is a preformatted presentation designed for a specific purpose such as presenting financial summaries, preparing a SWOT analysis or creating a business plan.**

Using templates can remove much of the set-up and design effort where a template already exists that suits your needs. Furthermore it will help achieve consistency in the 'look and feel' of your presentations. This may or may not be of benefit to you depending on how bespoke or standard your situation is.

PowerPoint templates exist for a wide range of uses such as agendas, certificates, flyers, forms, labels, business plans, reports and other business presentations.

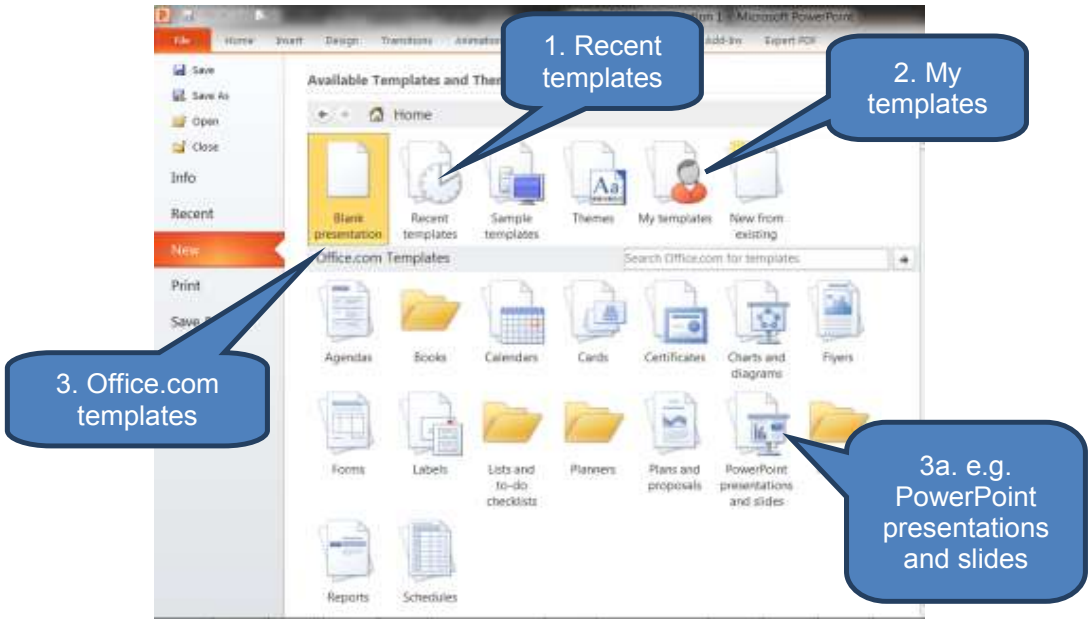
To base a new presentation on a template do the following:

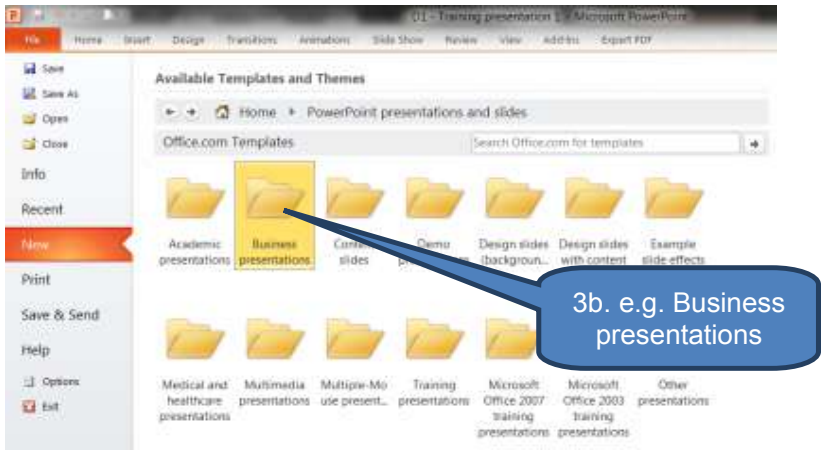
- ❑ Open Microsoft PowerPoint
- ❑ Click ***New*** on the ***File tab***
- ❑ Now you have a range of options including the following:
  - Open a recently used template from ***Recent templates;***
  - Open a template you recently saved in ***My templates***; and
  - Open an Office.com standard template.

    Note: you may be offered further sub-options within a category.

    For example ***PowerPoint presentations and slides*** opens a second suite of options from which you might select ***Business presentations*** and then the ***Business deal presentation*** (see 3a, 3b and 3c below).

    To open the selected template either ***double click*** the template or click ***download*** after checking the ***preview***.


1. Recent templates
2. My templates
3. Office.com templates
3a. e.g. PowerPoint presentations and slides


3b. e.g. Business presentations

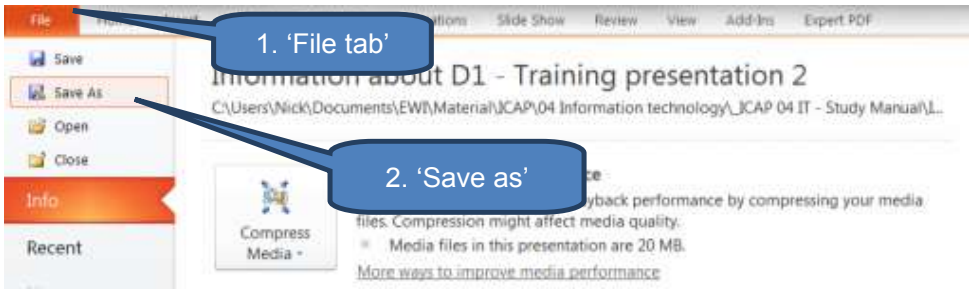

3c. e.g. Business deal presentation
4. Check the preview
5. Download

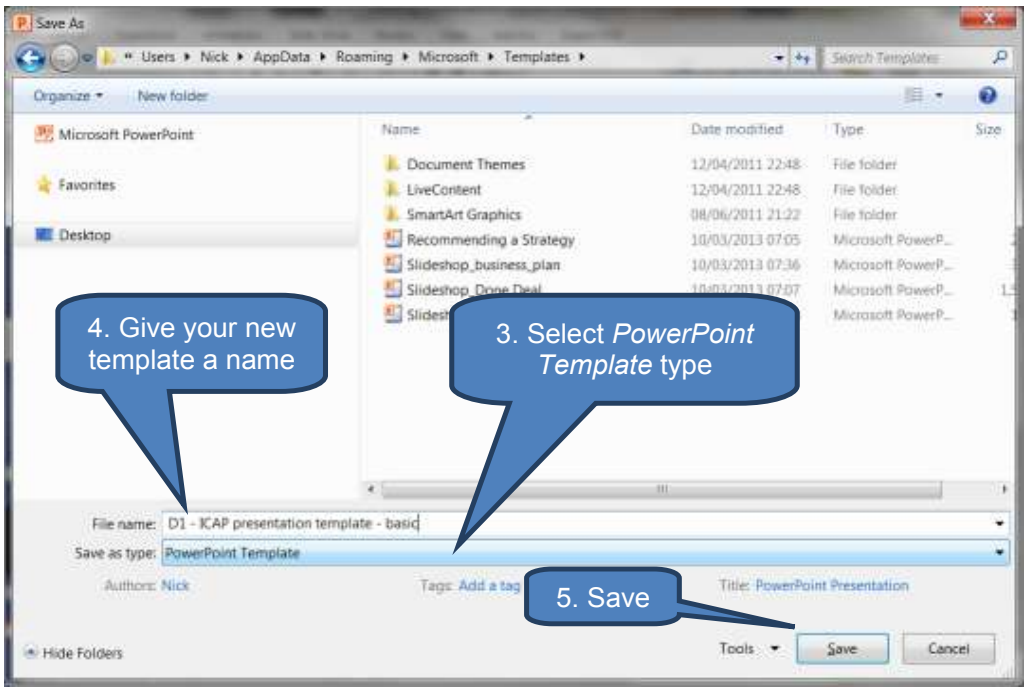
## 2.4 Create and edit your own templates

### Create your own template

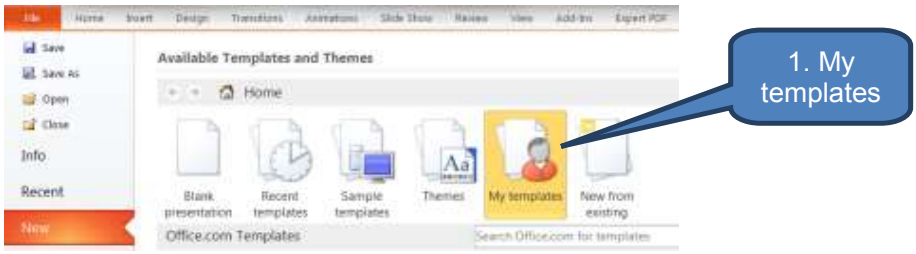
To create your own template:

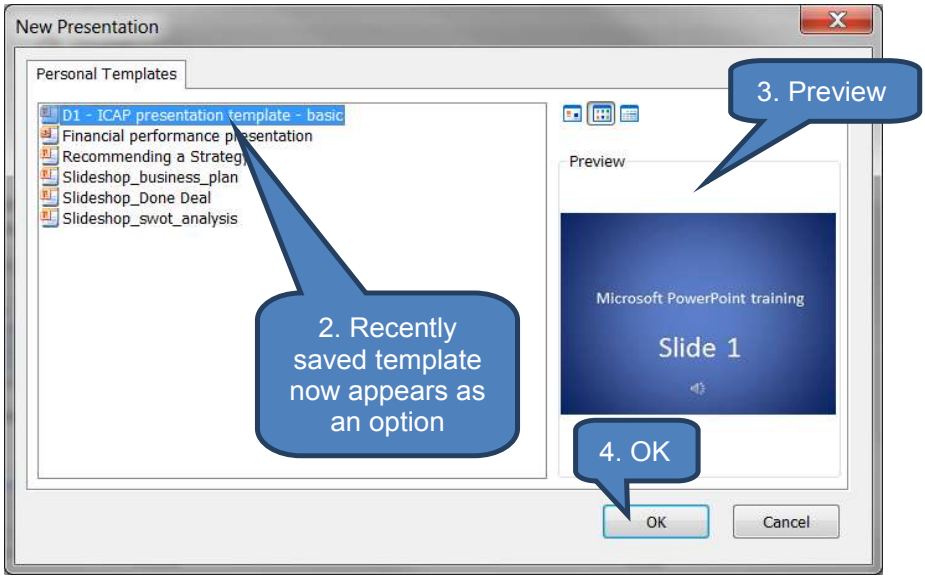
- ❑ Click the ***File tab***
- ❑ Click ***Save As***
- ❑ In the '***Save as type***' drop-down select ***PowerPoint Template***, give your new template a name, then click ***Save***




Your new template will now appear as an option in ***My templates*** when you next open a new file from the ***File*** tab using '***My templates***'



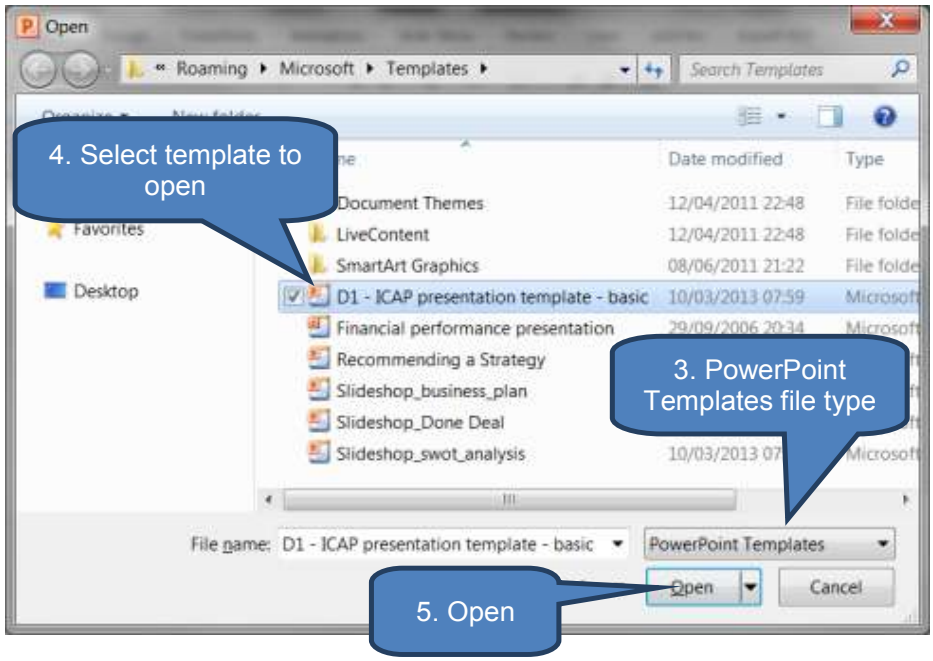




### Edit your own template

To edit your own template:

- ❑ Click on the ***File tab***
- ❑ Click ***Open***


- ❑ Select the '***PowerPoint Templates***' file type
- ❑ Choose the saved template you wish to re-open to edit
- ❑ Click ***Open***




You can now edit your previously saved template. Once finished editing simply re-save the file by either:

- Click ***File tab*** then ***Save***; or
- Press ***CRTL+S***

## 2.5 Slide master and placeholders

**Definition: Slide master**

**A slide master is the highest level slide in a hierarchy of slides that stores information about slide layouts and themes in a presentation. The information stored includes background, fonts, positioning, effects and placeholder sizes (see below for definition of placeholders).**

**Every presentation contains at least one slide master and it is not atypical for a presentation to have a range of between 10-20 associated layouts.**

**Each time a new slide is added to the presentation the author selects which slide master or associated layout to clone (or alternatively just add a completely blank slide). The benefit is that subsequent modifications to a slide master or associated layout will update all slides cloned on that slide.**

**This helps ensure consistency within the presentation and saves significant time by using pre-prepared layouts avoiding the need to tailor every single new slide. This is particularly useful with long presentations.**

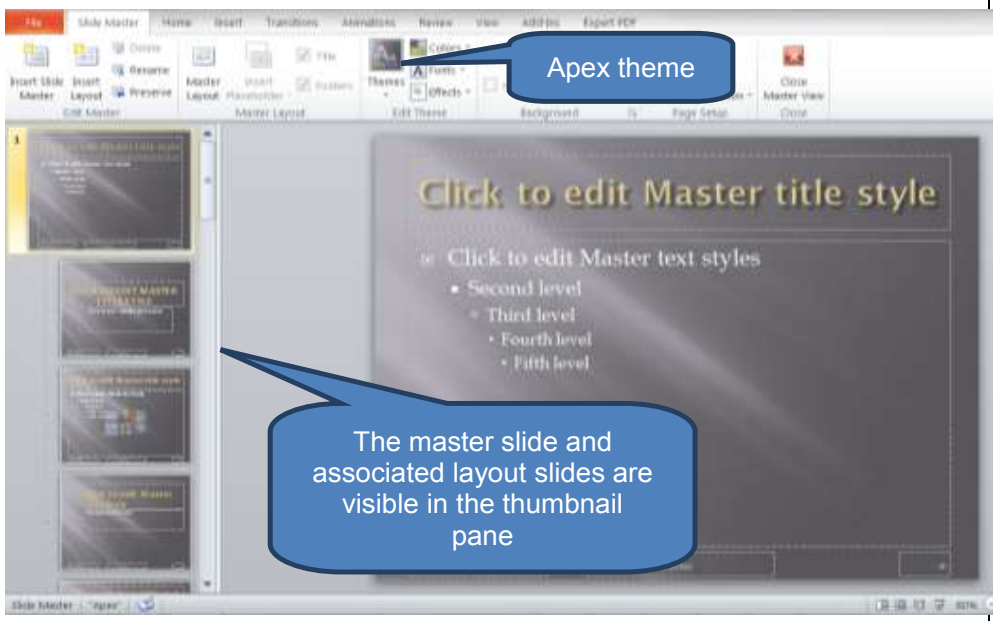
**Definition: Placeholders**

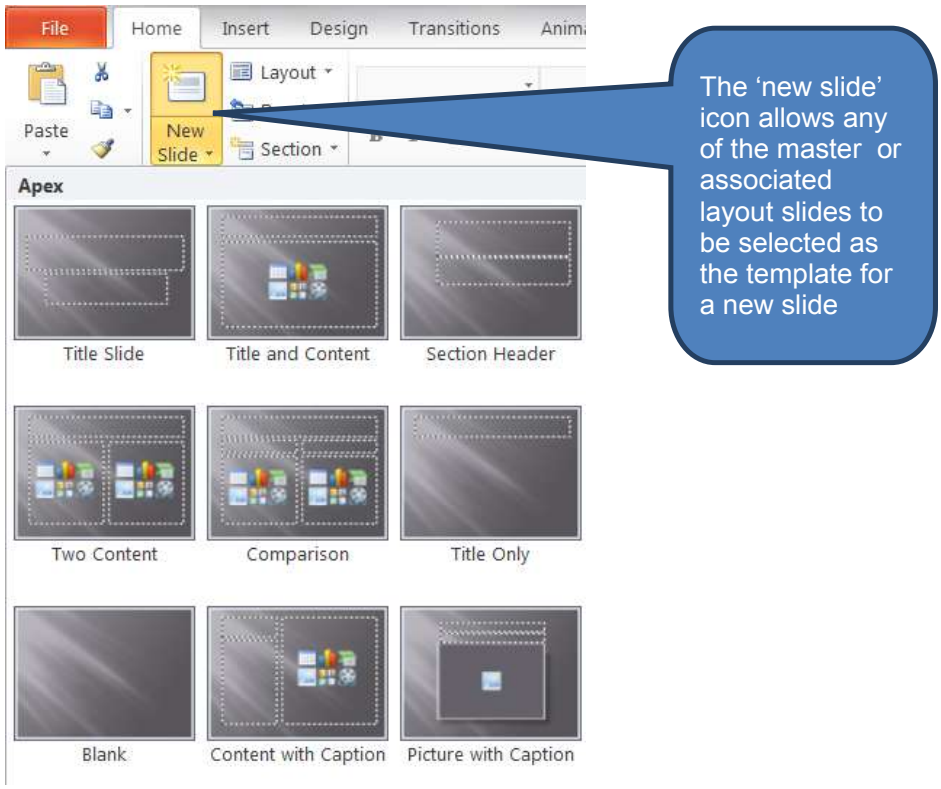
**A placeholder is a box with dotted or hatch-marked borders that form part of most slide layouts. These boxes hold title and body text. They can also include objects such as charts, tables and pictures.**

**Illustration: Apex themed master slides**

The illustration below shows the Microsoft PowerPoint default master slide pack with the Apex theme applied. No other customizations have been made.

This was created by opening a new presentation then adding the Apex theme on the slide master view.



### Create your own slide master

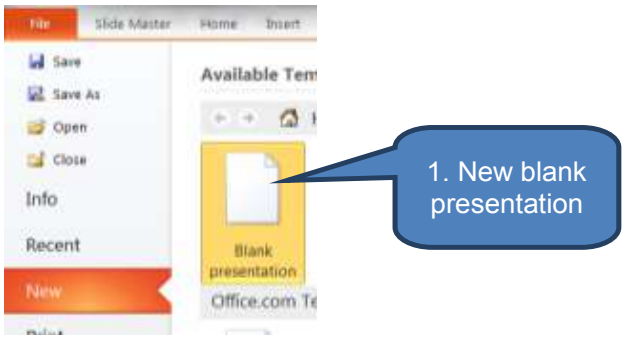
Organisations can customize one of the Microsoft PowerPoint library slide masters as a foundation for their own organisation's subsequent presentations.

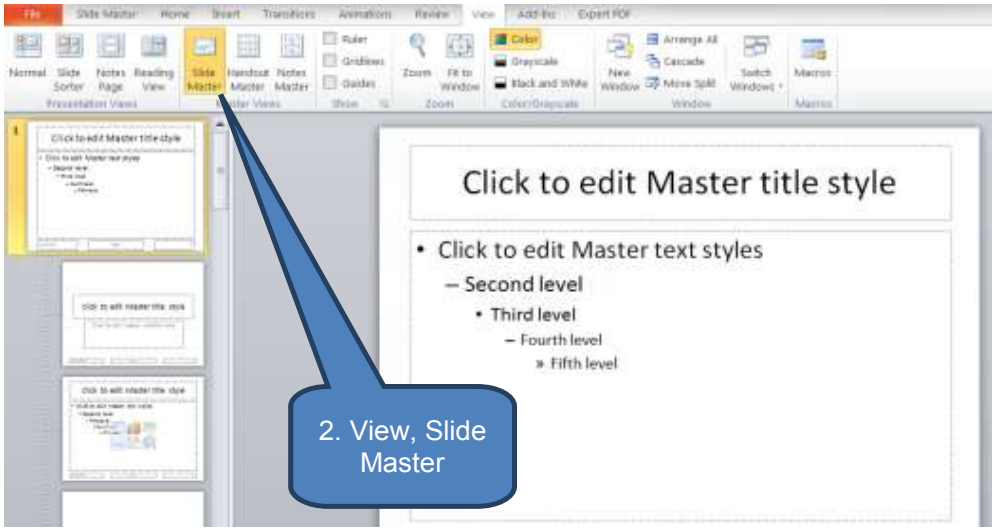
Best practice for creating customized slide masters (and associated slides) includes:

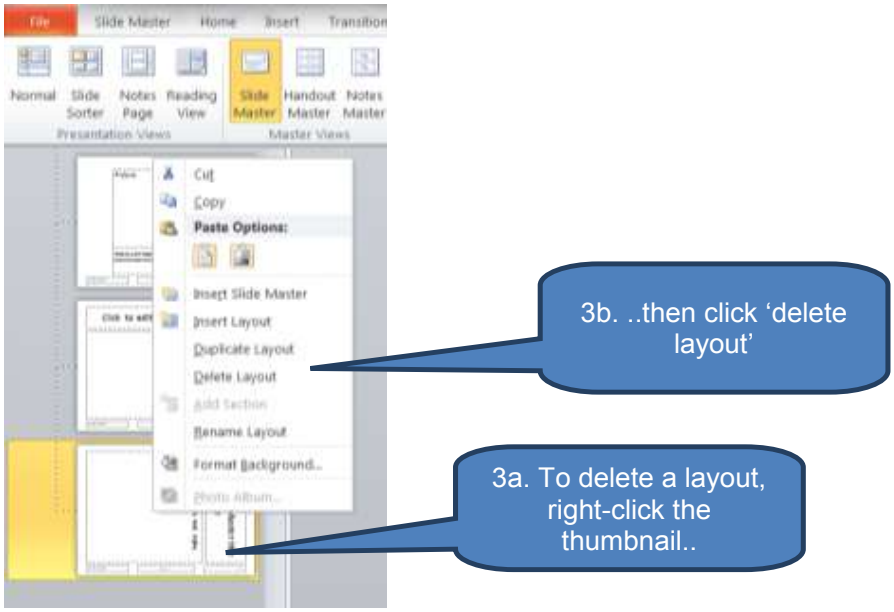
- Create a slide master before starting to build individual slides rather than the other way around. If you build individual slides first then construct a slide master you may well find that many slides do not conform to the slide master design
- Create a presentation that contains one or more slide masters that are customized to your organisation. Then save this presentation as a template for others to create future presentations using the same corporate theme and styling.
- Work in ***Slide Master*** view to edit slide masters given they impact the look and feel of the entire presentation
- Some slide master features such as formatting and background can be customized on individual slides. However, others (such as footers and logos) can only be modified in ***Slide Master*** view.

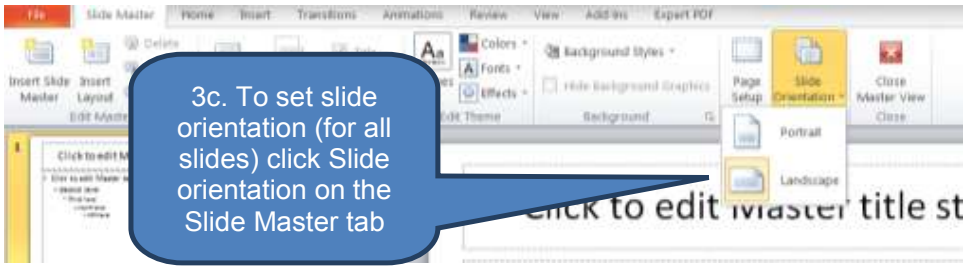
To create or customize a slide master:

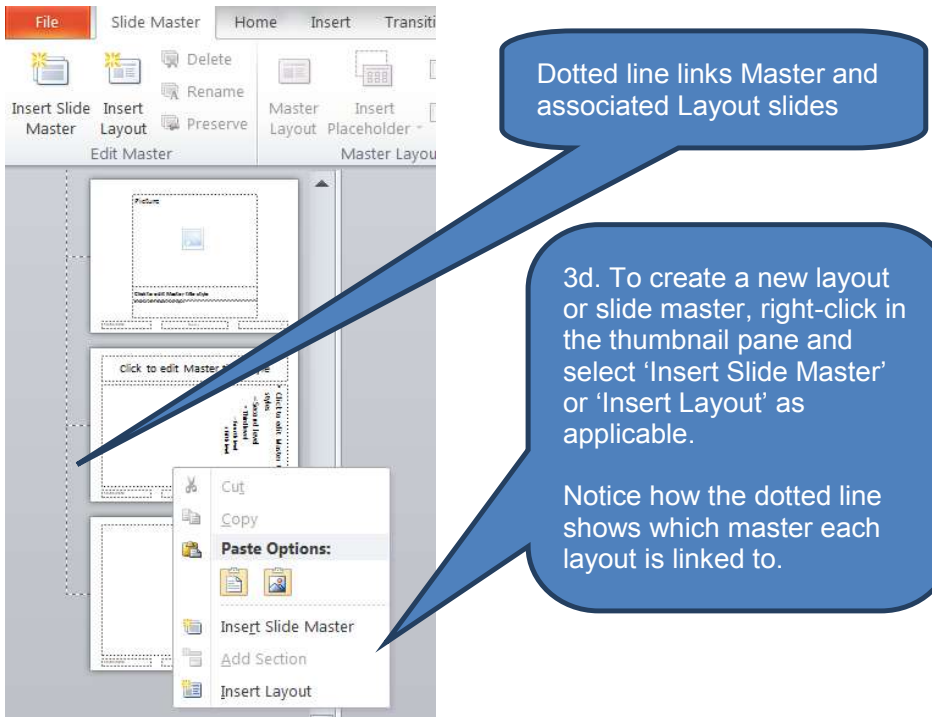
- Open a blank presentation
- Click ***Slide Master*** in the ***Master Views*** group on the ***View*** tab. This opens the slide master with the default associated layouts. The slide master is identifiable as it is the largest slide in the thumbnail pane.
    - To delete any of the built-in layouts right-click the slide thumbnail you wish to delete, then click ***Delete Layout***
    - Set the page orientation for all the slides in your presentation to either ***Portrait*** or ***Landscape***. To do this click ***Slide Orientation*** in the ***Page Setup*** group on the ***Slide Master*** tab.
    - Create new layouts and customize existing layouts as necessary. For example you can apply design or theme-based colours, fonts, effects and backgrounds.
    - You can also add and delete placeholders.
        - To add a placeholder, select the placeholder type form the ***Insert Placeholder*** drop-down in the ***Master Layout*** group of the ***Slide Master*** tab
        - Draw the placeholder where you want it to appear.
        - To delete a placeholder select it with the mouse then click ***DELETE***
- Click ***Save As*** on the ***File*** tab.
- Enter a name in the ***File name*** box
- Click ***PowerPoint Template*** in the ***Save as*** type list. Click ***Save***.
- Back on the ***Slide Master*** tab, click ***Close Master View*** in the ***Close*** group.

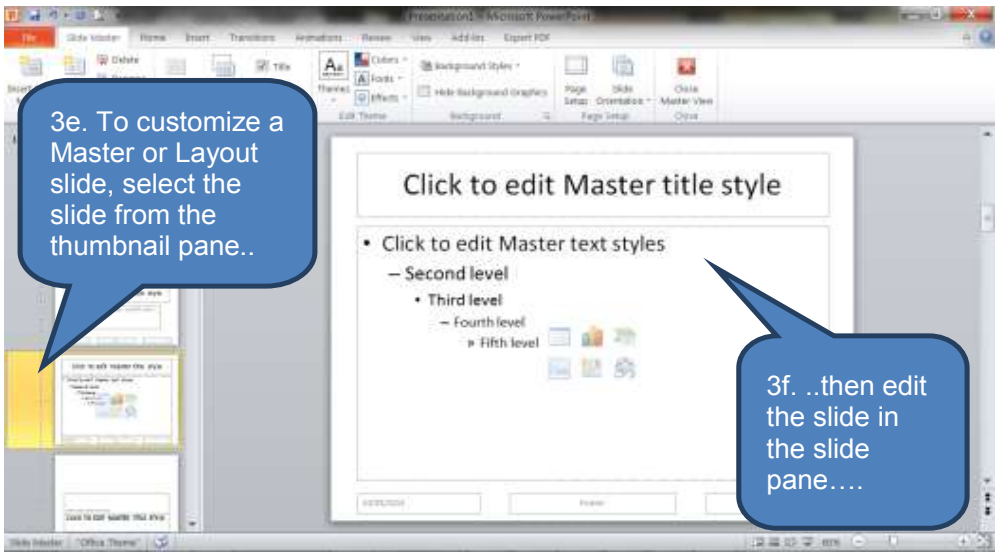

Save
Save As
Open
Close
Info
Recent
New
Blank presentation
1. New blank presentation

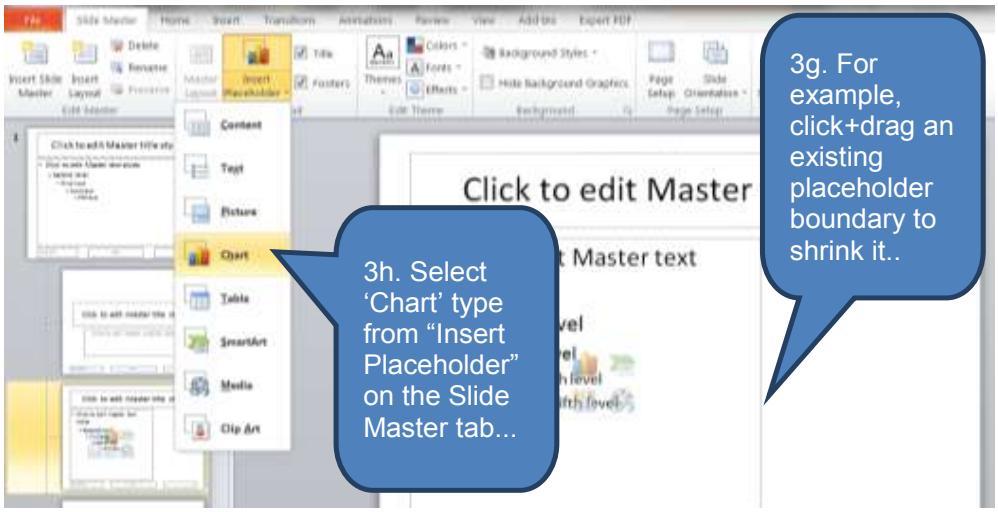

Click to edit Master title style
Click to edit Master text styles
Second level
Third level
Fourth level
Fifth level
2. View, Slide Master

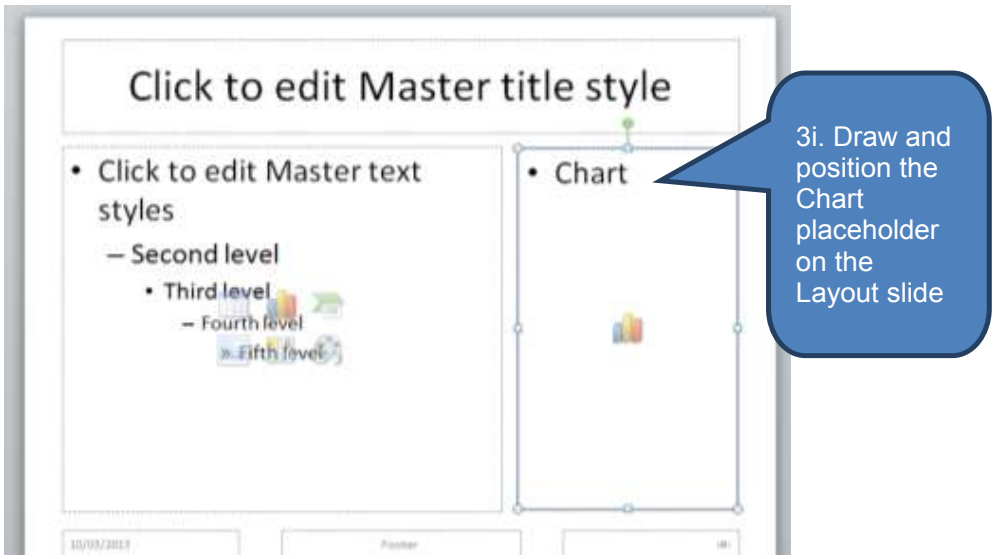

Cut
Copy
Paste Options:
Insert Slide Master
Insert Layout
Duplicate Layout
Delete Layout
Rename Layout
Format Background...
3b. ..then click 'delete layout'
3a. To delete a layout, right-click the thumbnail..


3c. To set slide orientation (for all slides) click Slide orientation on the Slide Master tab
Portrait
Landscape

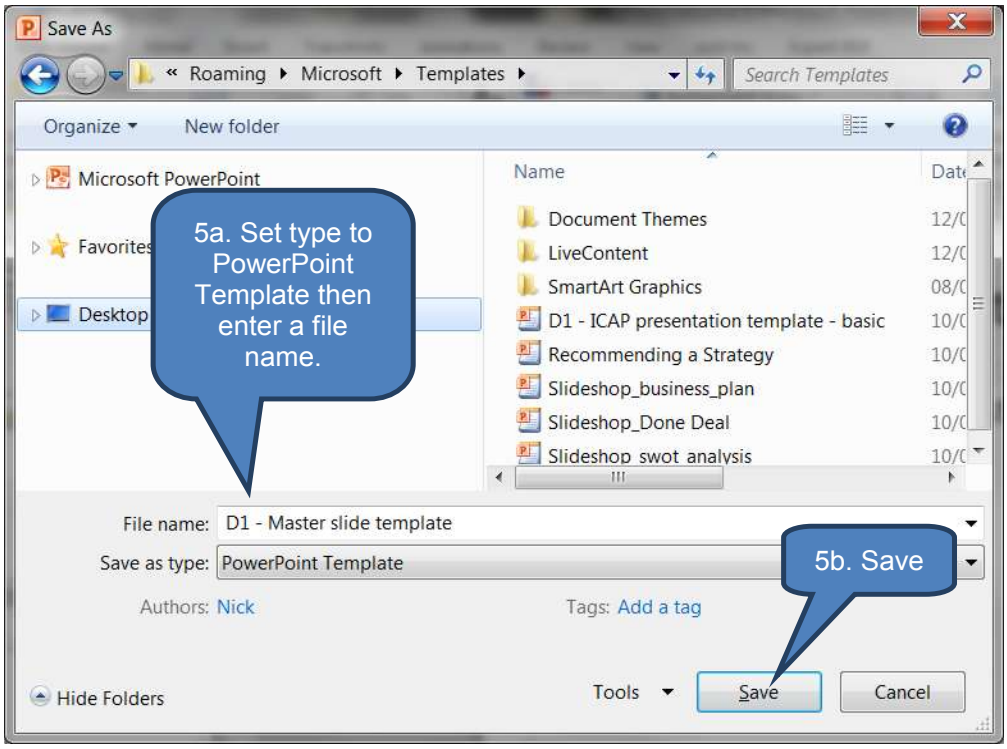

File
Slide Master
Home
Insert
Insert Slide Master
Insert Layout
Delete
Rename
Preserve
Edit Master
Master Layout
Insert Placeholder
Dotted line links Master and associated Layout slides
3d. To create a new layout or slide master, right-click in the thumbnail pane and select 'Insert Slide Master' or 'Insert Layout' as applicable.
Notice how the dotted line shows which master each layout is linked to.
Cut
Copy
Paste Options:
Insert Slide Master
Add Section
Insert Layout

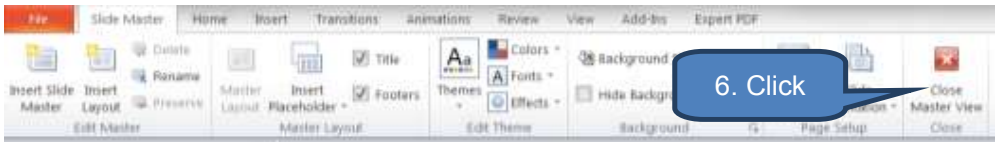

3e. To customize a Master or Layout slide, select the slide from the thumbnail pane..
Click to edit Master title style
Click to edit Master text styles
Second level
Third level
Fourth level
Fifth level
3f. ..then edit the slide in the slide pane….


3g. For example, click+drag an existing placeholder boundary to shrink it..
3h. Select 'Chart' type from "Insert Placeholder" on the Slide Master tab...
Click to edit Master
Content
Text
Picture
Chart
Table
SmartArt
Media
Clip Art


Click to edit Master title style
Click to edit Master text styles
Second level
Third level
Fourth level
Fifth level
Chart
3i. Draw and position the Chart placeholder on the Layout slide


File
Slide Master
Save
Save As
Open
Close
Info
4. Save


Save As
Roaming ▸ Microsoft ▸ Templates ▸
Search Templates
Organize
New folder
Microsoft PowerPoint
Favorites
Desktop
Name
Document Themes
LiveContent
SmartArt Graphics
D1 - ICAP presentation template - basic
Recommending a Strategy
Slideshop_business_plan
Slideshop_Done Deal
Slideshop_swot_analysis
5a. Set type to PowerPoint Template then enter a file name.
File name: D1 - Master slide template
Save as type: PowerPoint Template
5b. Save
Authors: Nick
Tags: Add a tag
Hide Folders
Tools
Save
Cancel


6. Click

# 3 INSERTING AND EDITING TEXT-BASED CONTENT

**Section overview**

- Introduction
- Add text to a placeholder or text box
- Add text to shapes
- Bullets and numbers
- Indents
- Colours
- Superscript, subscript and capitalization
- Changing the direction of text
- Fonts
- Paragraph settings
- AutoFit
- Find and replace

## 3.1 Introduction

This section looks at the text-based content of presentations. Populating slides with appropriate text-based content and visual aids lies at the heart of creating effective presentations.

In this section we discuss the following:

| Function | Description |
|---|---|
| Add text to a placeholder or text box | Enter text into a presentation either directly into a placeholder or alternatively as a text box |
| Add text to shapes | Add text directly into shapes or as a text box |
| Bullets, numbers and indents | Neatly present information in bulleted and numbered lists. Indent points to create sub-lists |
| Colours | Bring your presentation to life by varying the colour of text |
| Superscript, subscript and capitalization | Change text into superscript or subscript. Learn about the auto-capitalization functions. |
| Changing the direction of text | Change text direction so that it reads vertically instead of horizontally |
| Fonts | Experiment with different fonts and font sizes |

| Function | Description |
|---|---|
| Autofit | Learn about PowerPoint's autofit function that assists with automatically and neatly fitting text into placeholders |
| Find and replace | Learn to use this simple tool for finding text strings in your document and replacing them with new strings. Particularly useful when rolling forward a presentation from prior year or for cloning an existing presentation (or template) for use with another client. |

## 3.2 Add text to a placeholder or text box

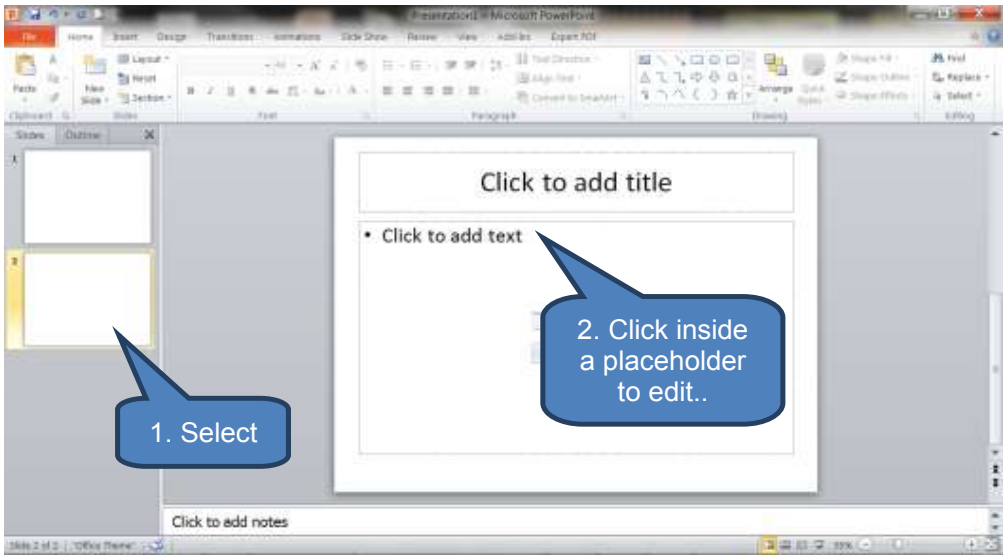
### Adding text to a placeholder

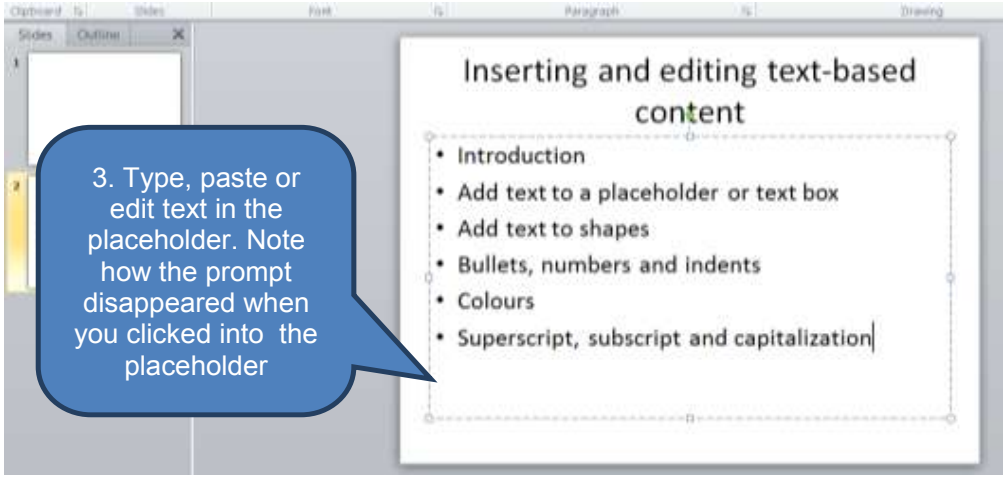
As we saw in the previous section placeholders are created in the Master and Layout slides to form the slide templates for our presentation.

When we add a new slide from the Master and Layout library we can then enter text in the pre-defined placeholders. To do this:

- Select a slide from the thumbnail pane
- Click inside the placeholder you want to edit
- Then type, paste or edit text

Note that the prompt text within a placeholder disappears when you click into the placeholder to edit it.



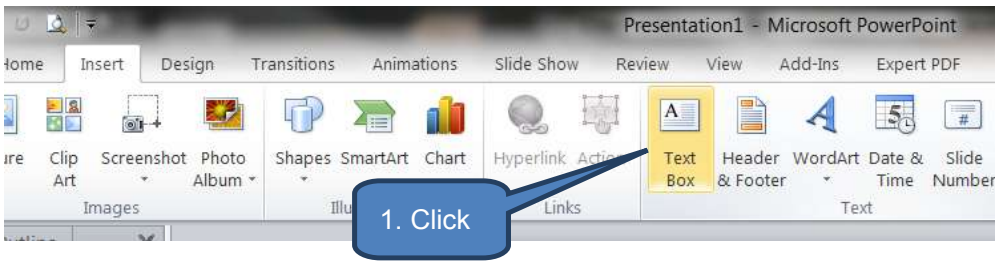


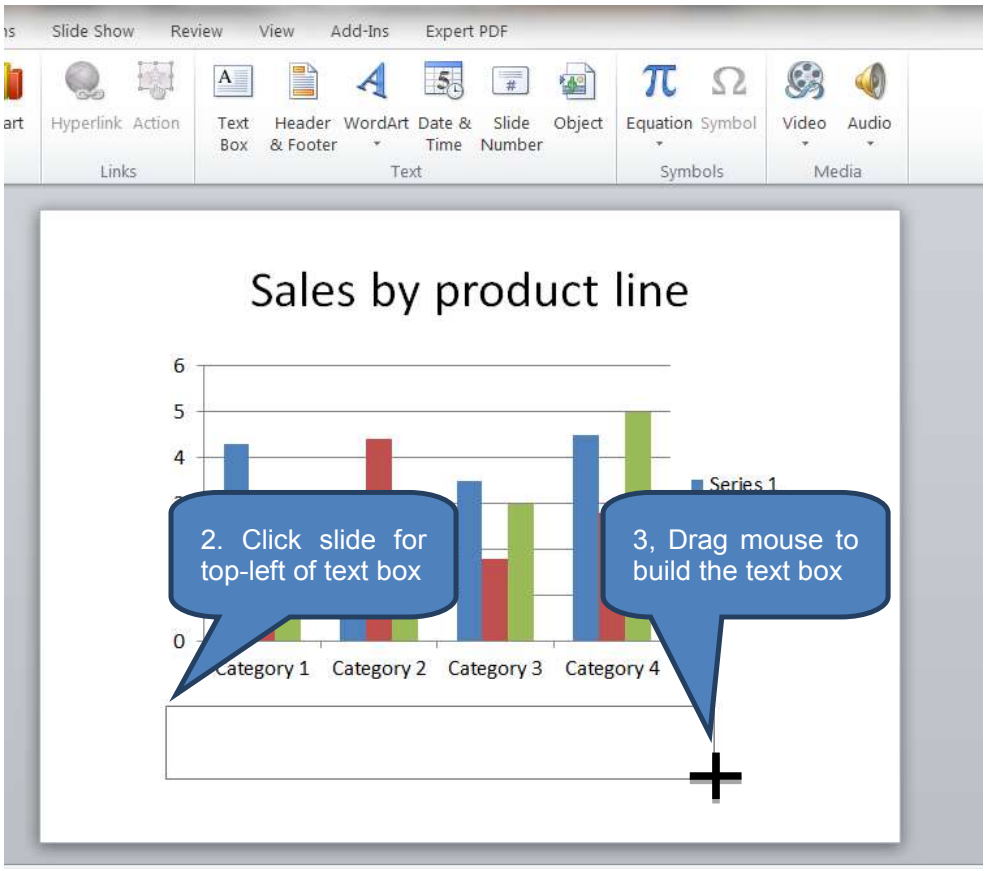

### Add text to a text box

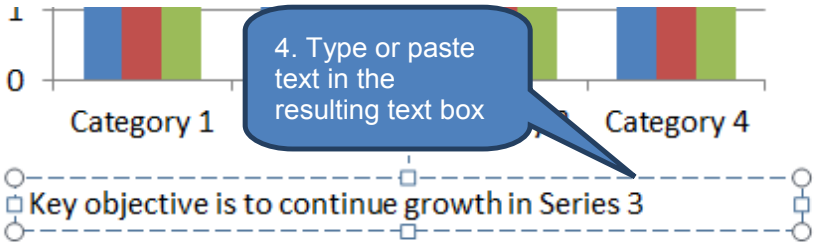
Whilst placeholders provide a consistent look and feel to our presentation there will be times when we need to customize a slide's layout and enter text outside a placeholder, for example when adding a caption to a picture. To do this we need to add what is called a text box as follows:

- Click ***Text Box*** in the ***Text*** group on the ***Insert*** tab
- Click the slide (the position will be the top-left of the resultant text box), and then drag the pointer to draw the text box
- Click inside the text box and then type or paste text.

Note that text is editable by all users if entered as a text box in Normal View (as above). However, if a text box is added into a ***Slide Master*** in ***Slide Master*** view, then that text will be permanent and un-editable outside the slide master.





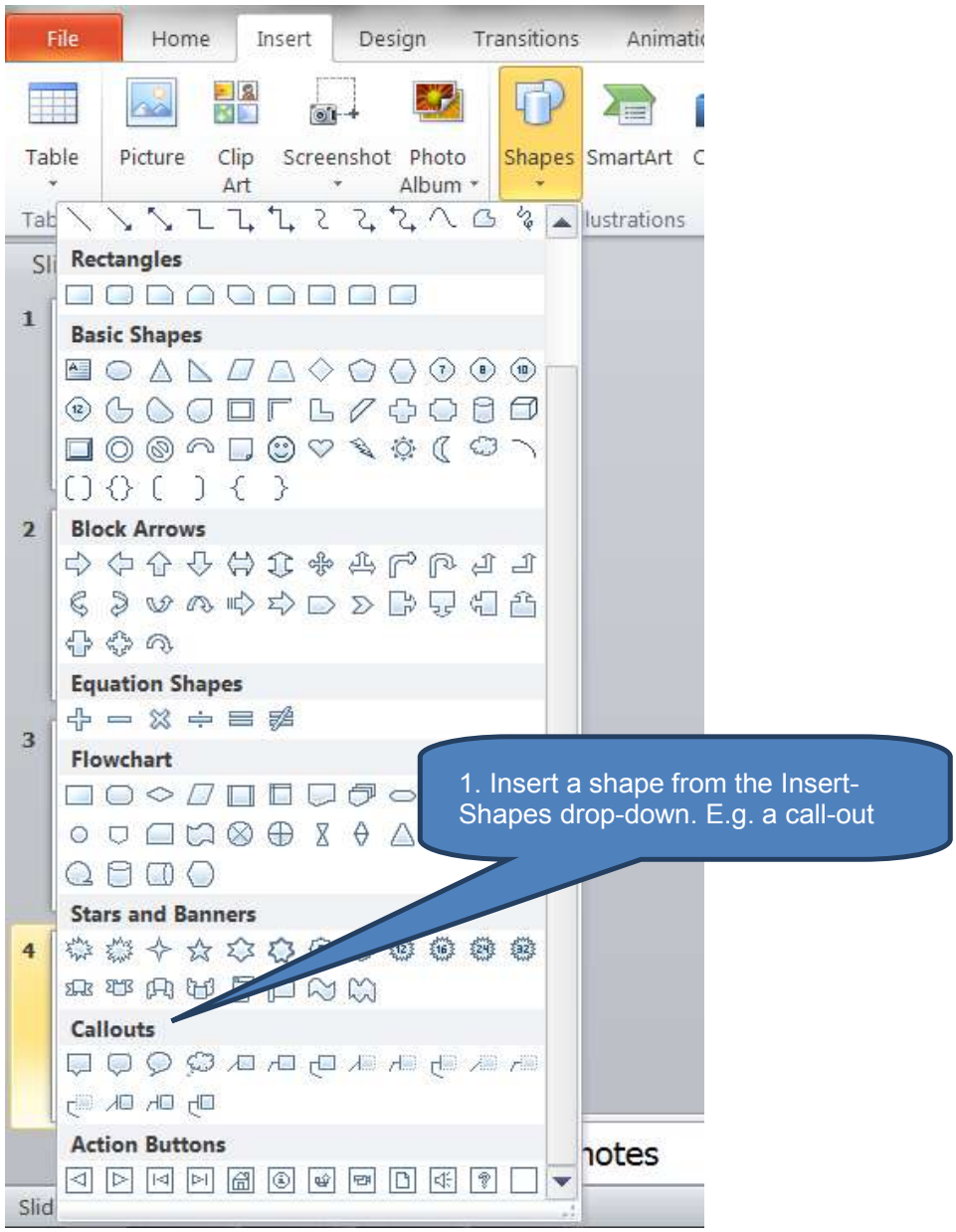



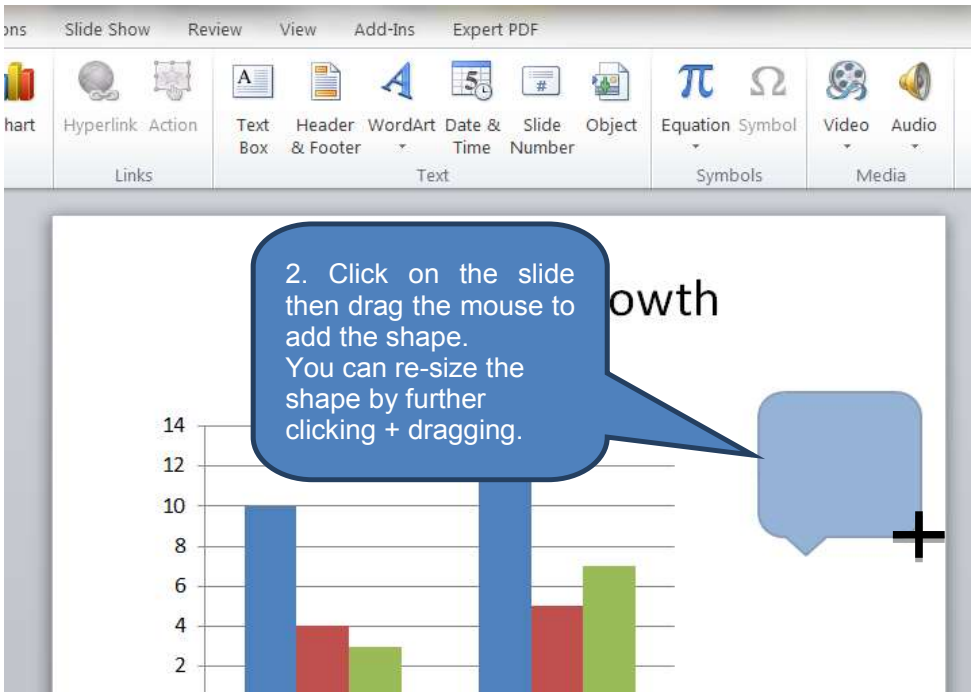

## 3.3 Add text to shapes

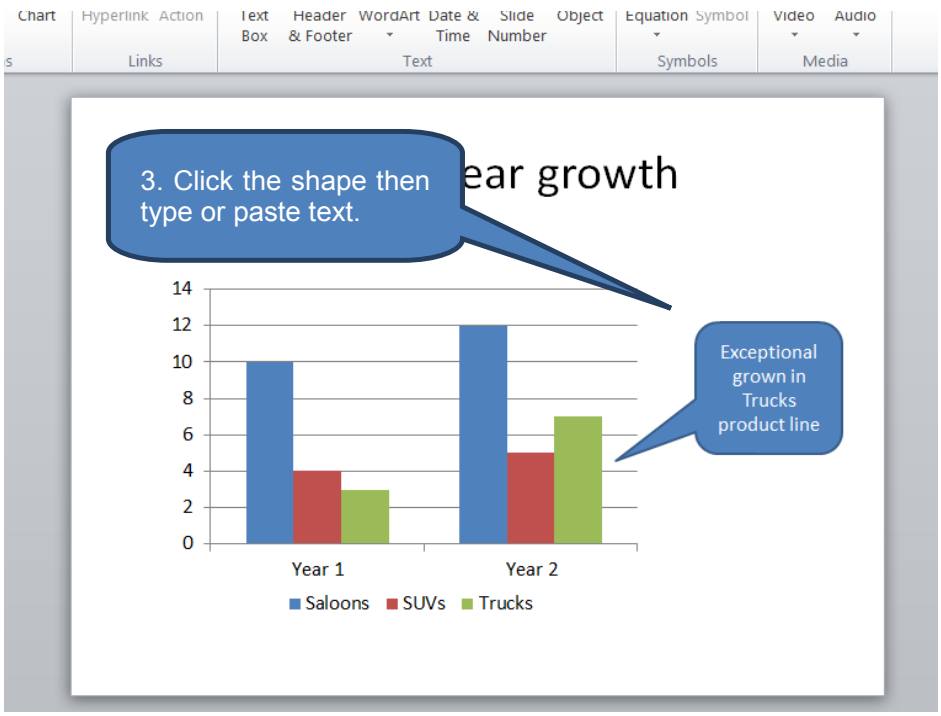
When you insert shapes (e.g. callout balloons and block arrows) using the ***Shapes*** option in the ***Illustrations*** group on the ***Insert*** tab, those shapes can contain text that becomes part of a shape. Alternatively you could add a text box as described in 3.2 above.

To add text that becomes part of a shape:

- ❑ Select the shape by clicking it
- ❑ Type or paste text


File
Home
Insert
Design
Transitions
Table
Picture
Clip Art
Screenshot
Photo Album
Shapes
SmartArt
Rectangles
Basic Shapes
Block Arrows
Equation Shapes
Flowchart
Stars and Banners
Callouts
Action Buttons
1. Insert a shape from the Insert-Shapes drop-down. E.g. a call-out



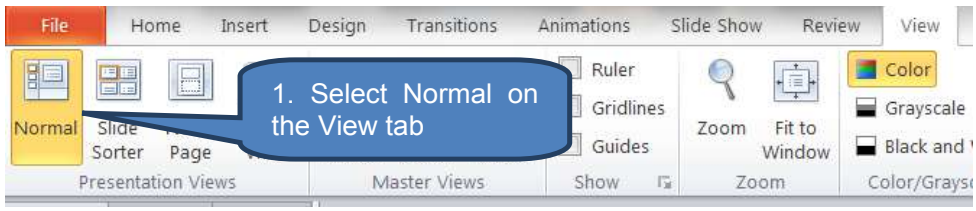



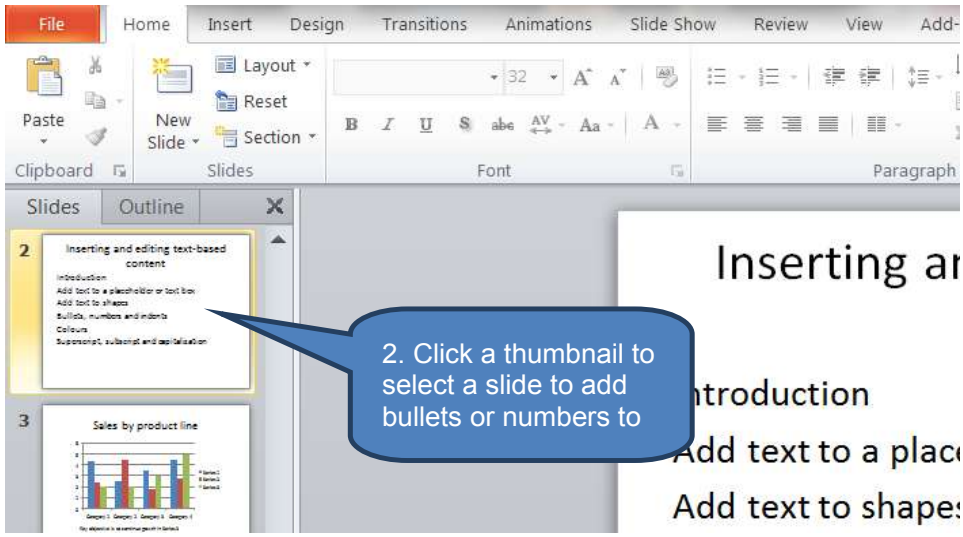

## 3.4 Bullets and numbers

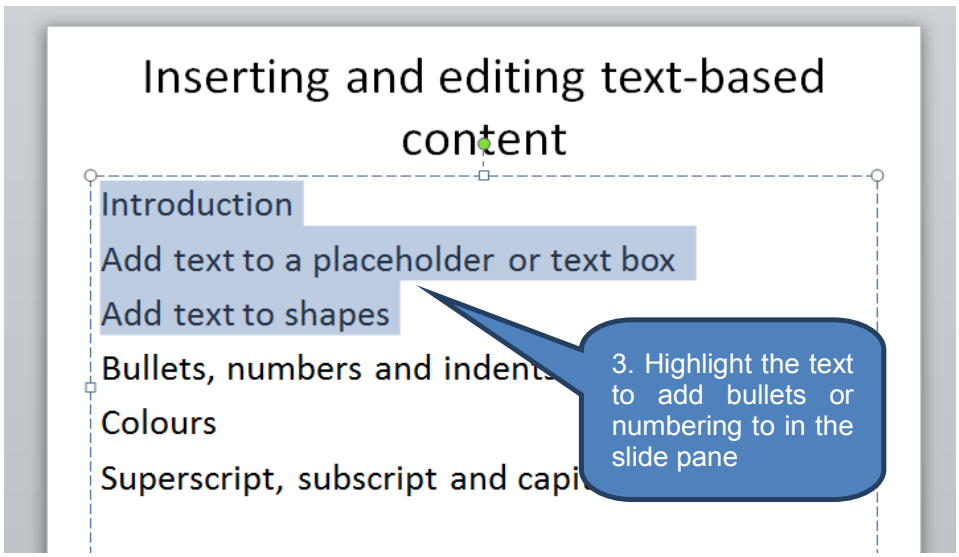
### Adding bullets and numbers

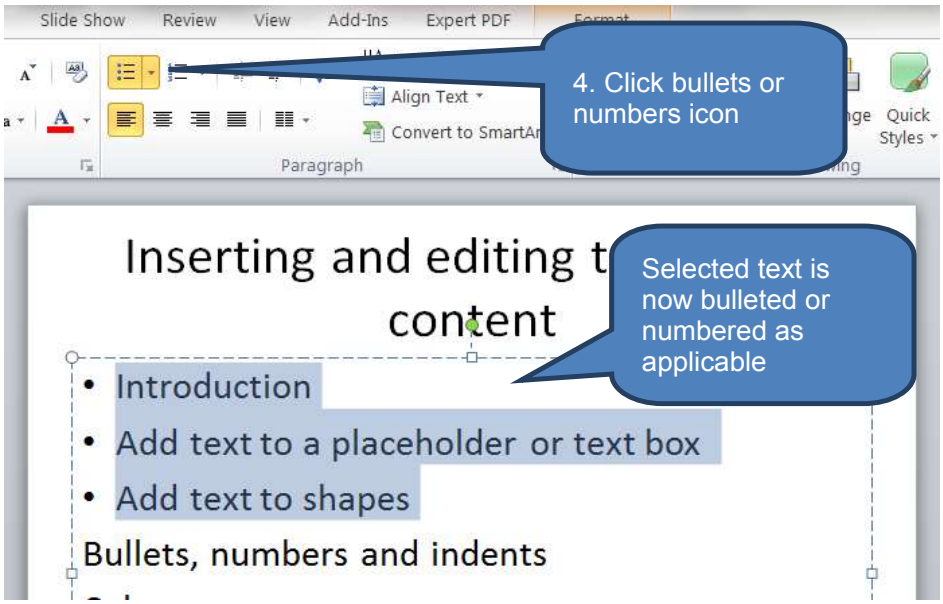
Bulleted or numbered lists are an effective way of presenting lots of text or a sequential process in a presentation. They can be added as follows:

- Click ***Normal*** in the ***Presentation Views*** group on the ***View*** tab.
- Select a slide thumbnail you want to add bulleted or numbered text to.
- Select the lines of text in a text placeholder or table that you want to add bullets or numbering to.
- Click ***Bullets*** or ***Numbering*** in the ***Paragraph*** group on the ***Home*** tab to apply basic bullets or numbering.



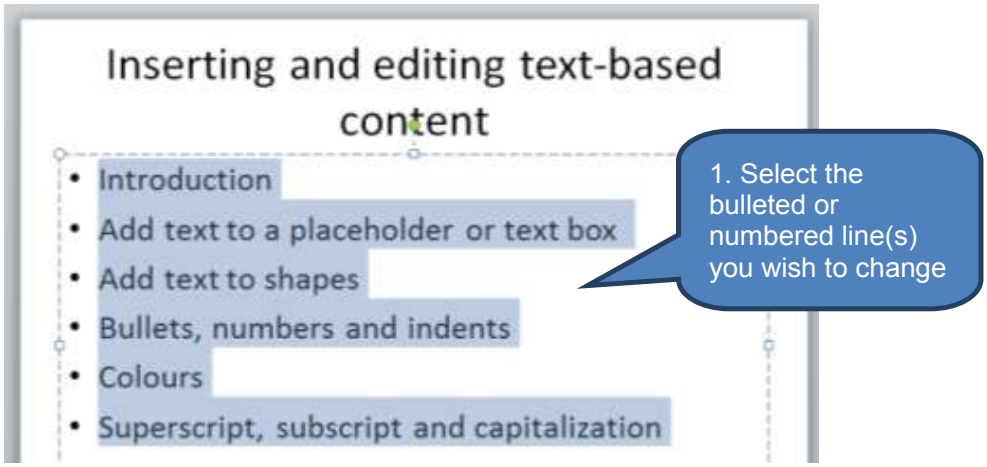



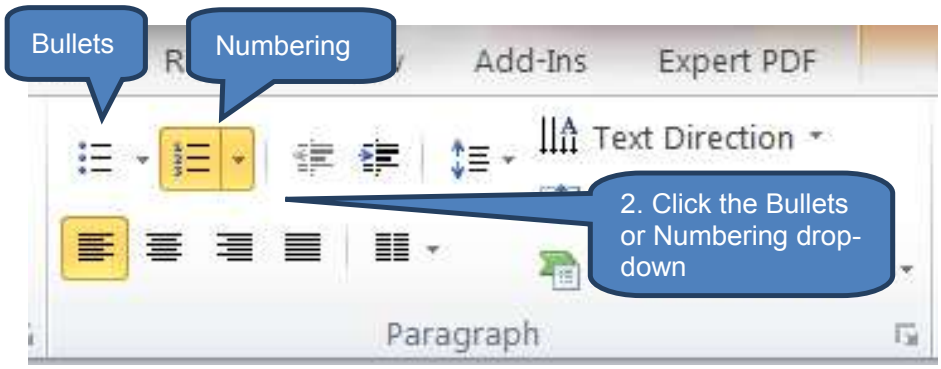


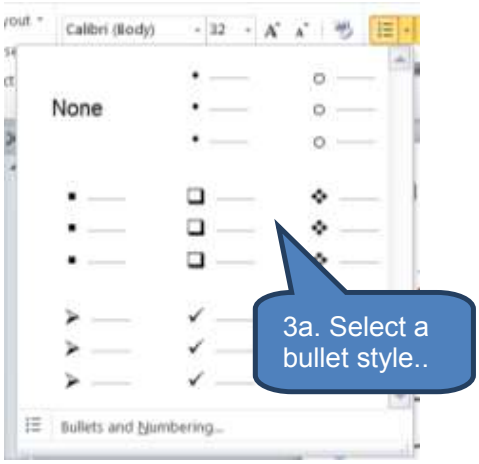

### Changing the appearance of bullets and numbers

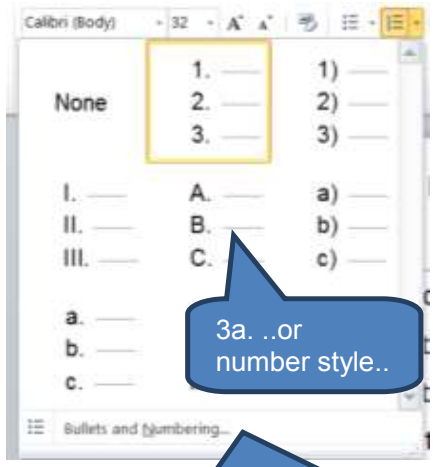
You can make changes to the bullet or number style and also change the starting number by using the Bullets and Numbering drop-downs as follows:

- Place the cursor anywhere on the bulleted or numbered line that you wish to change. You can change multiple lines simultaneously by highlighting the text in all of the bullets or numbers you want to change.
- Click the ***Bullets*** or ***Numbering*** drop-down in the ***Paragraph*** group on the ***Home*** tab.
- Select one of the visible styles from the drop-down menu or open the ***Bullets and Numbering*** dialog box by clicking "***Bullets and Numbering***" for further options.

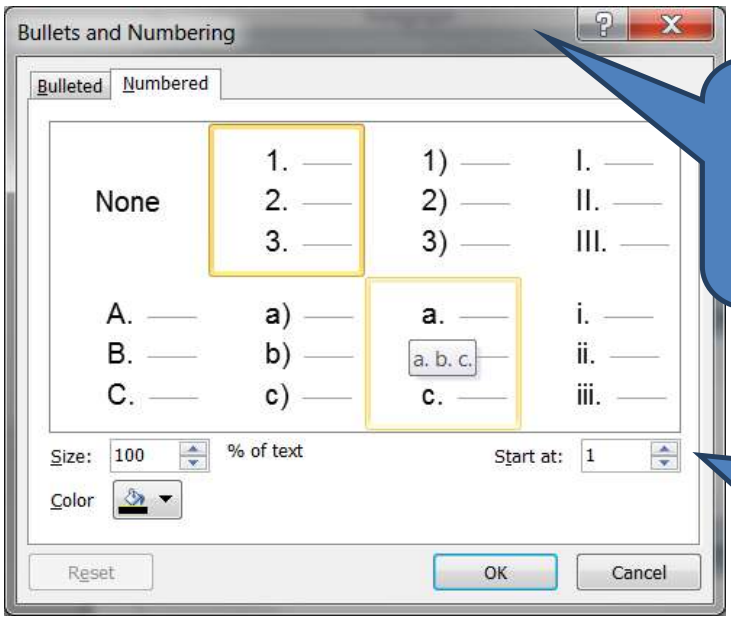





3b. ..or click here to open the Bullets and Numbering dialog box




Bullets and Numbering dialog box for further options – Numbered tab is selected

Change first bulleted number value here

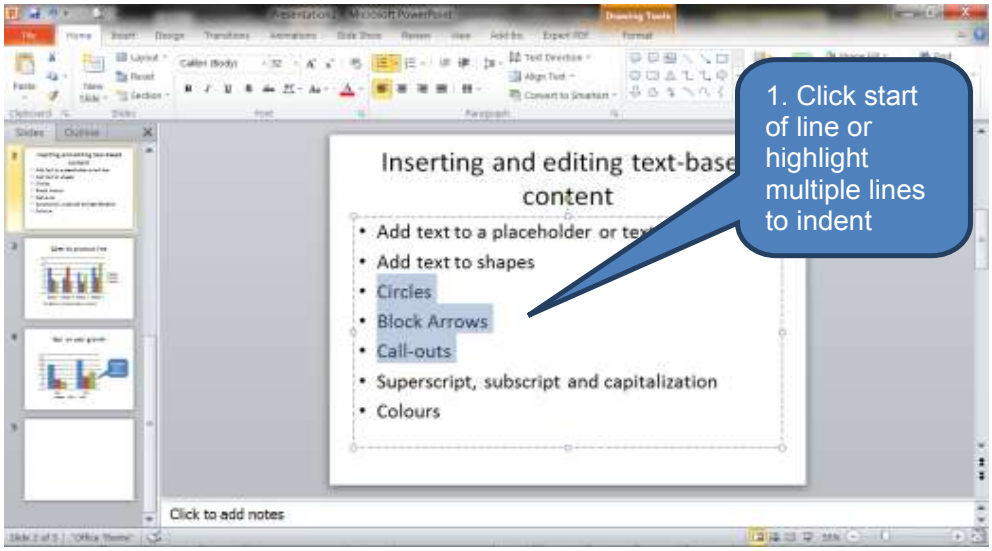
## 3.5 Indents

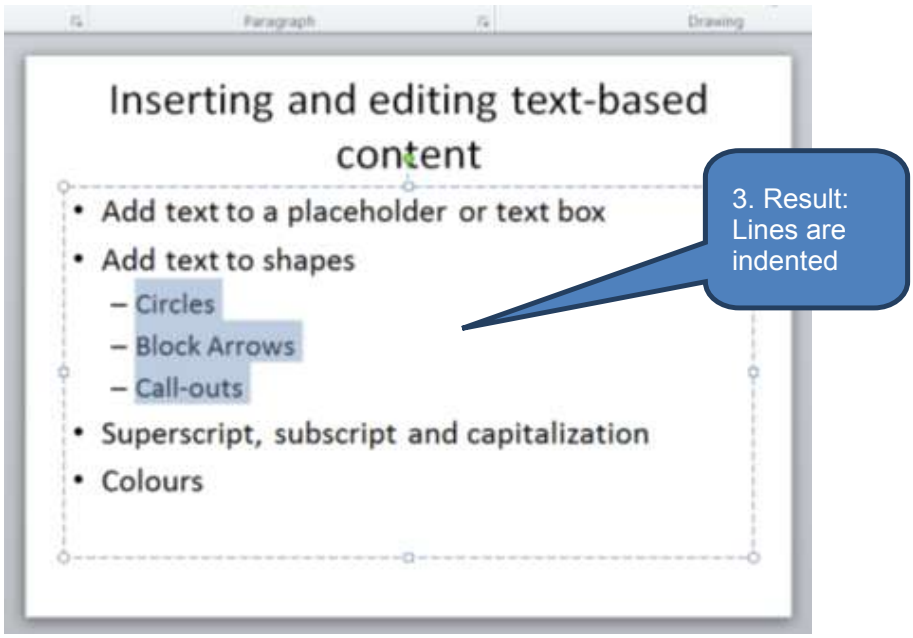
To create an indented list within a list:

- Place cursor at the start of the line you want to indent (or highlight a number of lines to indent multiple lines)
- Click ***Increase List Level*** in the ***Paragraph*** group on the ***Home*** tab

You can also do the reverse and move text back to a less indented level as follows:

- Place cursor at the start of the line where you want to reduce indent (or highlight a number of lines to reduce indent on multiple lines)
- Click ***Decrease List Level*** in the ***Paragraph*** group on the ***Home*** tab





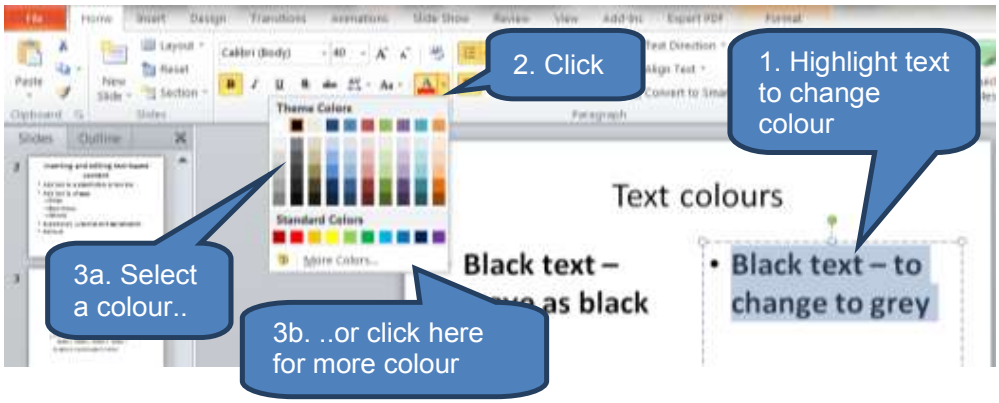
## 3.6 Colours

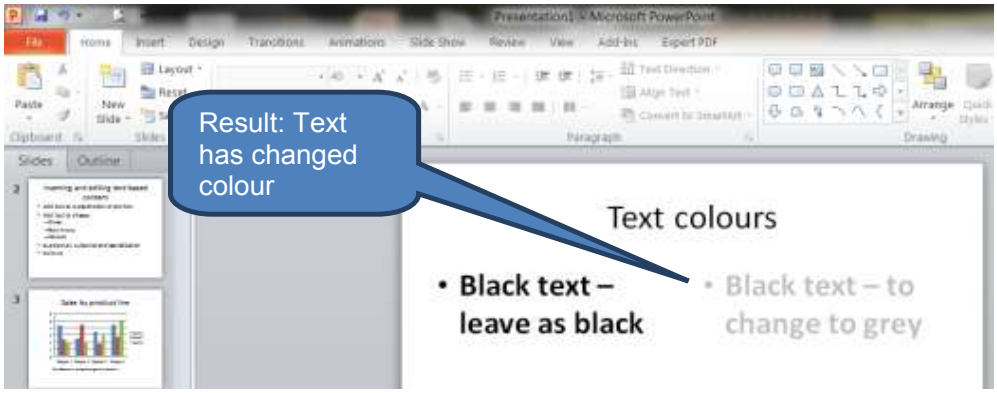
### Changing the colour of text on a slide

You can change the colour of specific text on a particular slide or all text on all slides. To change colour on a particular slide:

- Select the text you want to change colour
- Click the down-arrow next to ***Font Colour*** in the ***Font*** group on the ***Home*** tab
- Click the colour you want.

Note: for more options beyond the standard theme colours click ***More Colours***.




### Changing the colour of text on all slides

You can change the colour of text on all slides generated from a ***Master Slide*** or associated ***Layout*** simultaneously as follows:

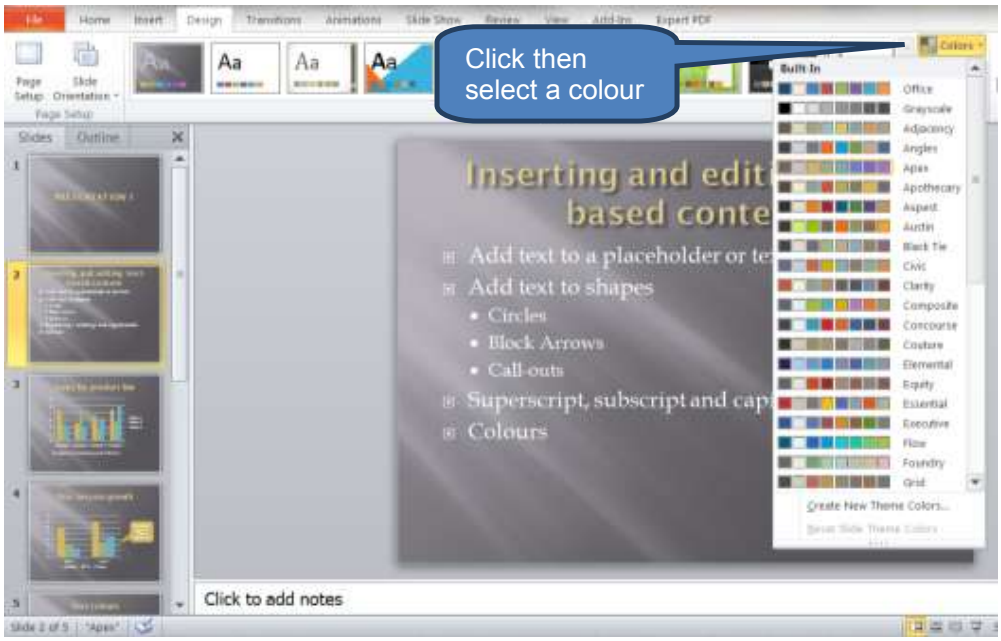
- Click ***Slide Master*** in the ***Master Views*** group on the ***View*** tab
- Select the ***Slide Master*** or ***Layout*** slide where you wish to amend text colour. Note that if you amend the ***Slide Master*** this will change text colour on all the associated ***Layout*** slides. If you select one of the ***Layout*** slides this will change text colour only on slides generated from that individual ***Layout*** slide.
- Select the text you want to change colour
- Click the down-arrow next to ***Font Colour*** in the ***Font*** group on the ***Home*** tab
- Choose an appropriate colour. As above, click ***More Colours*** for more options beyond the standard theme colours

*Note – see section 2.5 above if you need to revise Master and Layout slides.*

### Changing theme colours

You can change a theme colour whilst still retaining the same theme.

- Click ***Colours*** in the ***Themes*** group on the ***Design*** tab
- Select a colour.



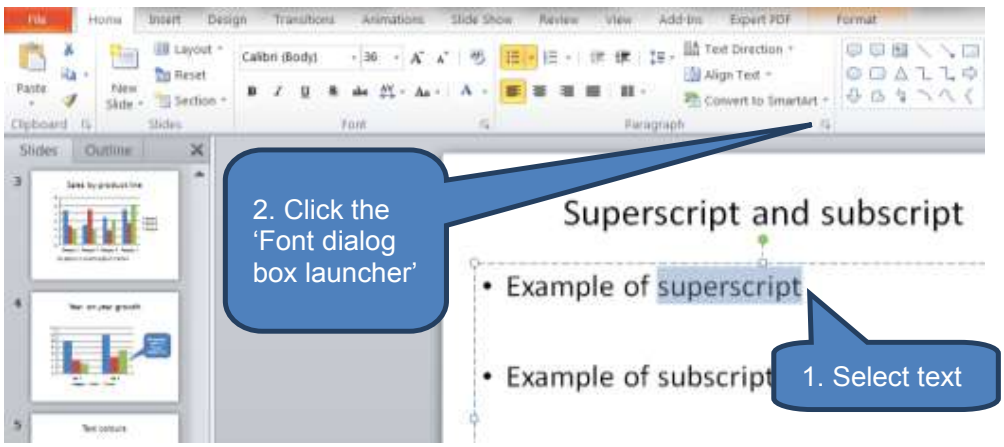

## 3.7 Superscript, subscript and capitalization

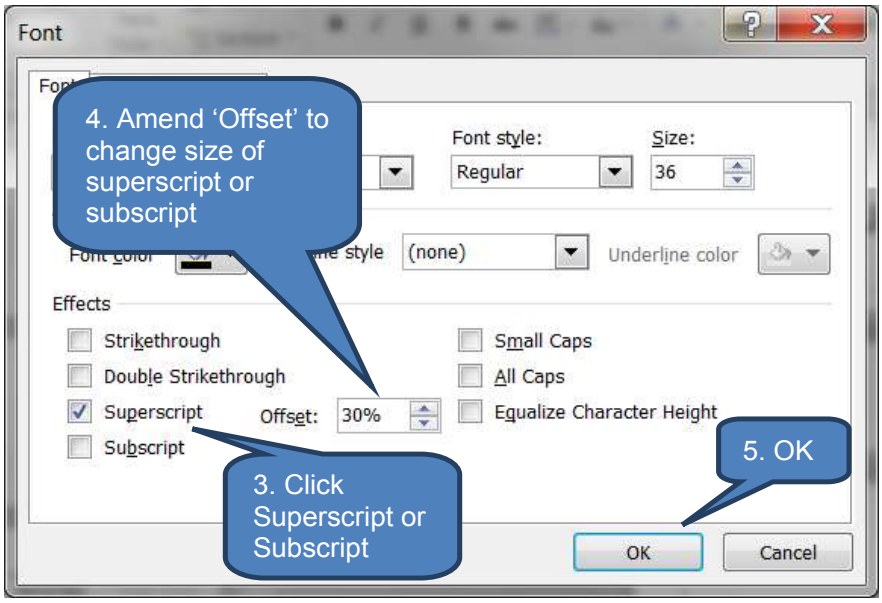
### Superscript and subscript formats

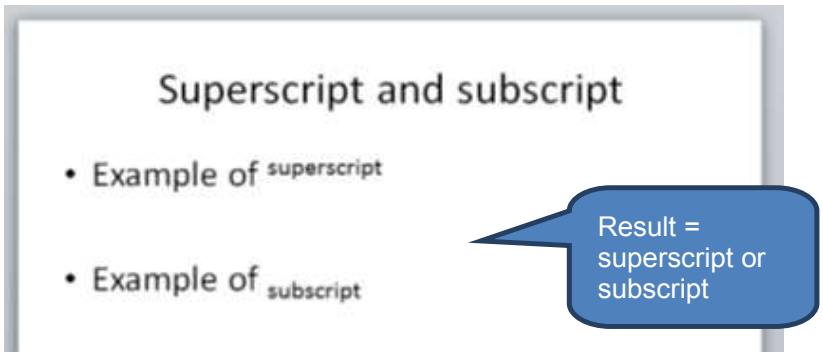
To format text as superscript or subscript:

- Select the text you want to format
- Click the ***Font Dialog Box Launcher*** in the ***Font*** group on the ***Home*** tab
- Select ***Superscript*** or ***Subscript*** under ***Effects*** in the ***Font*** dialog box
- Click ***OK***

Note that PowerPoint automatically applies a smaller font size to superscript and subscript formats. If you wish to apply a larger font size enter a higher percentage in the ***Offset***.



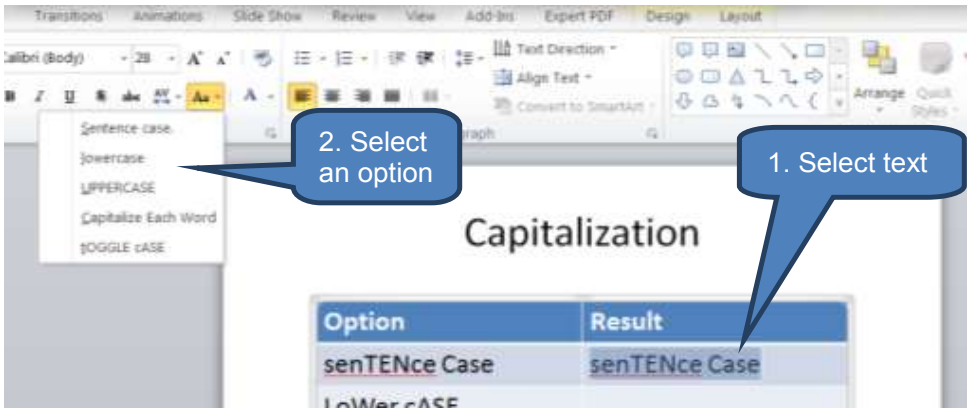


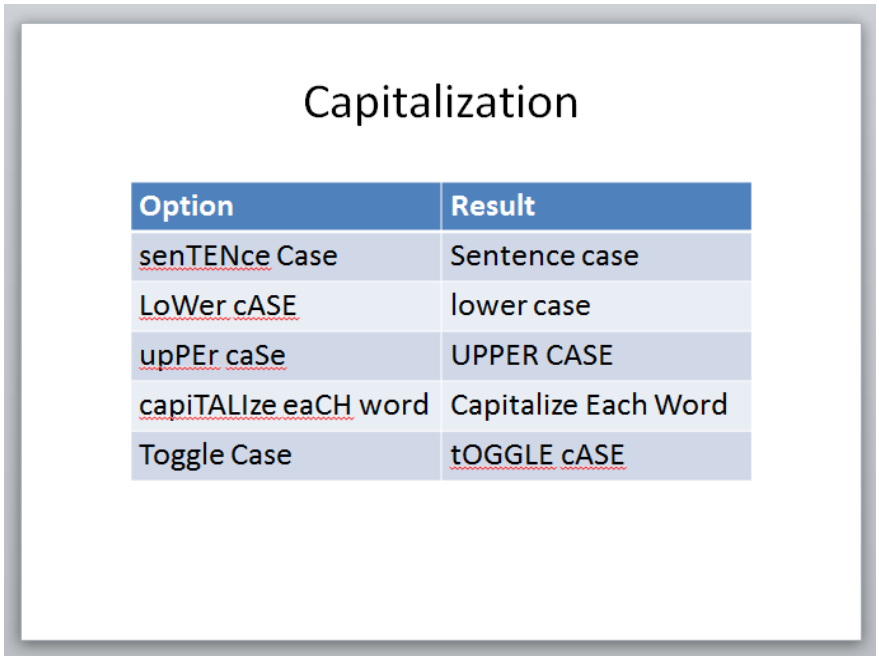

### Capitalization

Change the capitalization of sentences, words or paragraphs as follows:

- Select text that needs changing
- Click the ***Change Case*** drop-down in the ***Font*** group on the ***Home*** tab.
- Select an option to apply the capitalization required.



The following table shows the effect of each of the five capitalization options:



Capitalization

| Option | Result |
|---|---|
| senTENce Case | Sentence case |
| LoWer cASE | lower case |
| upPEr caSe | UPPER CASE |
| capiTALIze eaCH word | Capitalize Each Word |
| Toggle Case | tOGGLE cASE |

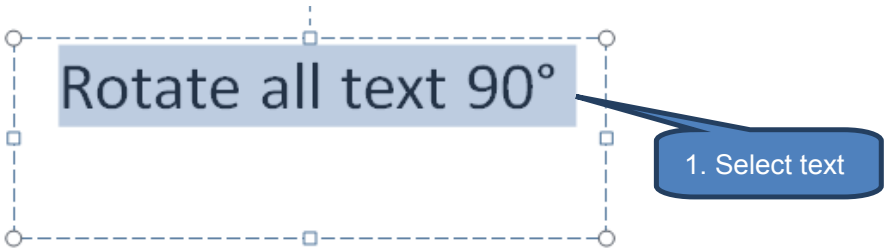
## 3.8 Changing the direction of text

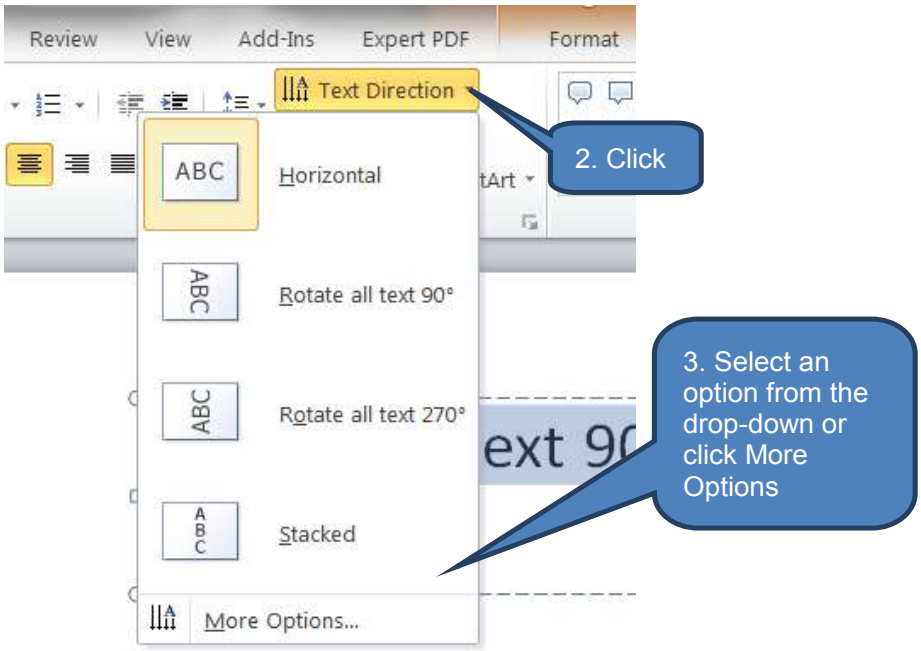
Text can be displayed in a number of ways including:

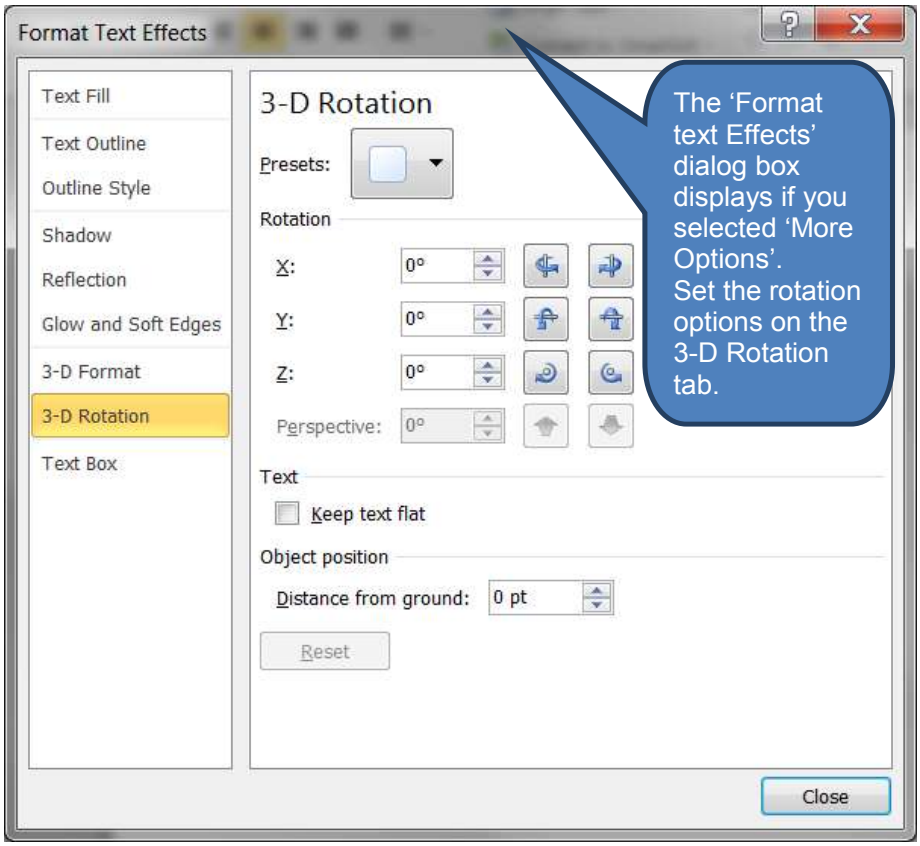
- Vertically with stacked letters
- Horizontally
- Rotated facing right or left margin

In order to achieve the effect do the following:

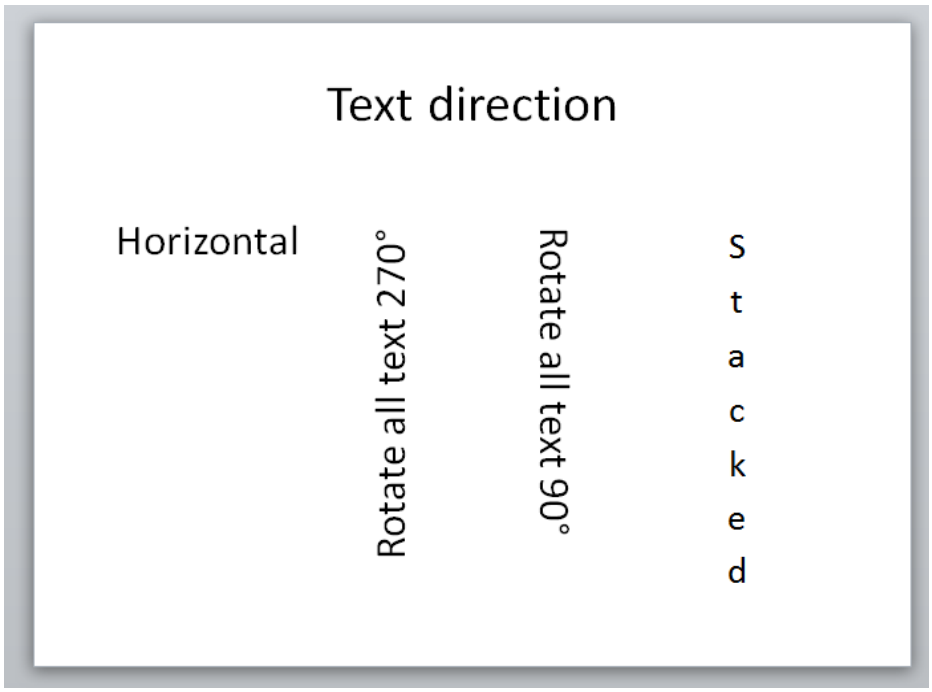
- Select the text you wish to stack or rotate
- Click ***Text Direction*** in the ***Paragraph*** group on the ***Home*** tab
- Select the direction you wish the text to take from the ***Text Direction*** drop-down. Alternatively click ***More Options*** to launch the ***Format Text Effects*** dialog box






The following slide illustrates the effect of each of the four main rotation and stack options from the ***Text Direction*** drop-down.



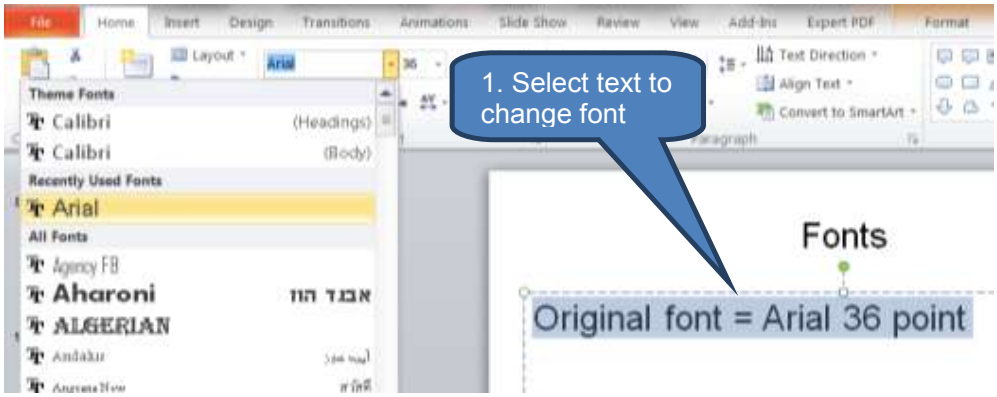

## 3.9 Fonts

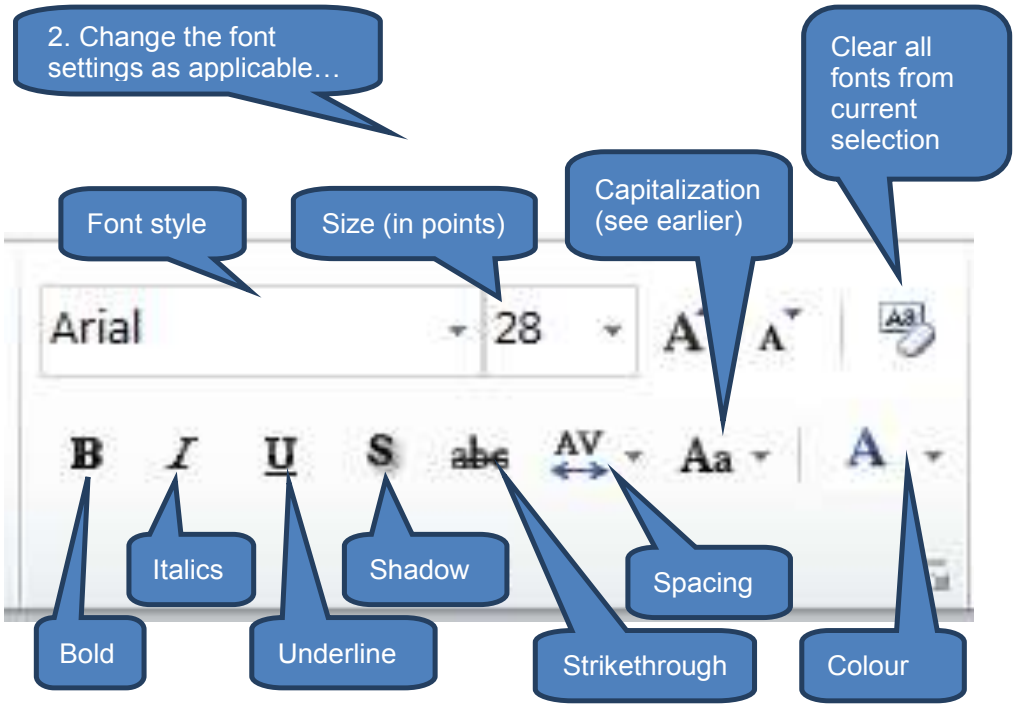
### Changing text font on a slide

You can change the text font of specific text on a particular slide or all text on all slides.

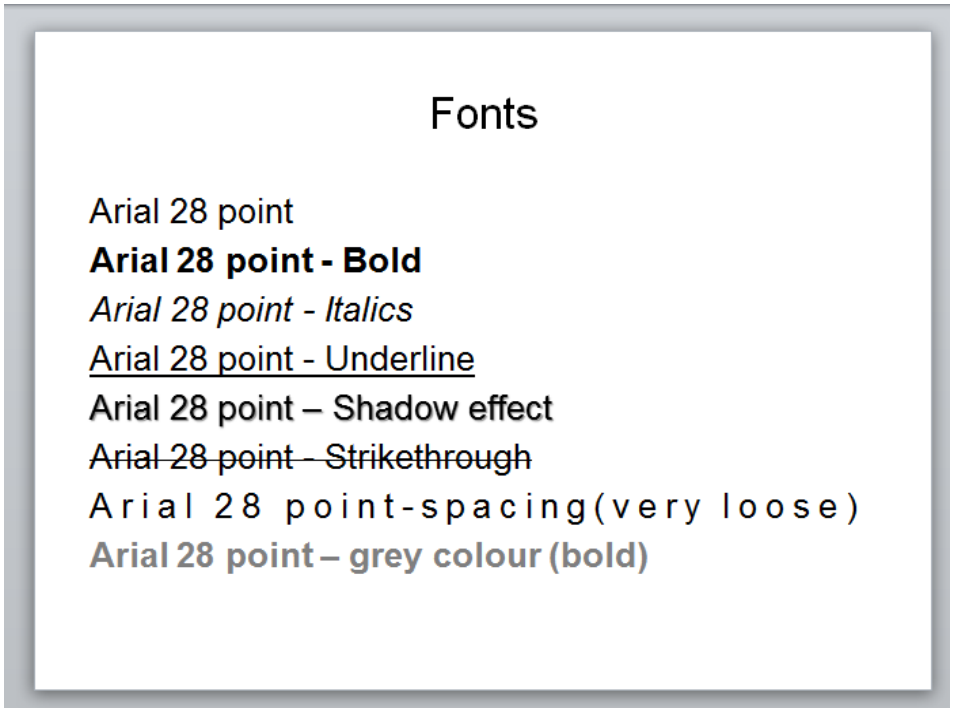
To change font on a particular slide:

- Select the text where you want to change font
- Change font settings in the ***Font*** group on the ***Home*** tab.






The following slide illustrates the effect of each of the main font options from the ***Font*** group on the ***Home*** tab shown above.



### Changing text font on all slides

You can change the font on all slides generated from a ***Master Slide*** or associated ***Layout*** simultaneously as follows:

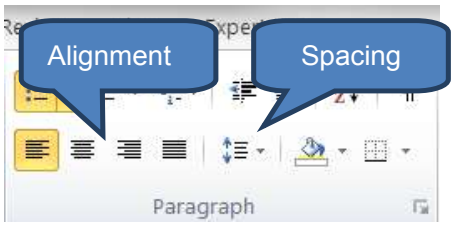
- Click ***Slide Master*** in the ***Master Views*** group on the ***View*** tab
- Select the ***Slide Master*** or ***Layout*** slide where you wish to amend text font. Note that if you amend the ***Slide Master*** this will change font on all the associated ***Layout*** slides. If you select one of the ***Layout*** slides this will change font only on slides generated from that individual ***Layout*** slide.
- Select the text where you want to change font
- Choose appropriate font settings from the ***Font*** group on the ***Home*** tab.

*Note – see section 2.5 above if you need to revise Master and Layout slides.*

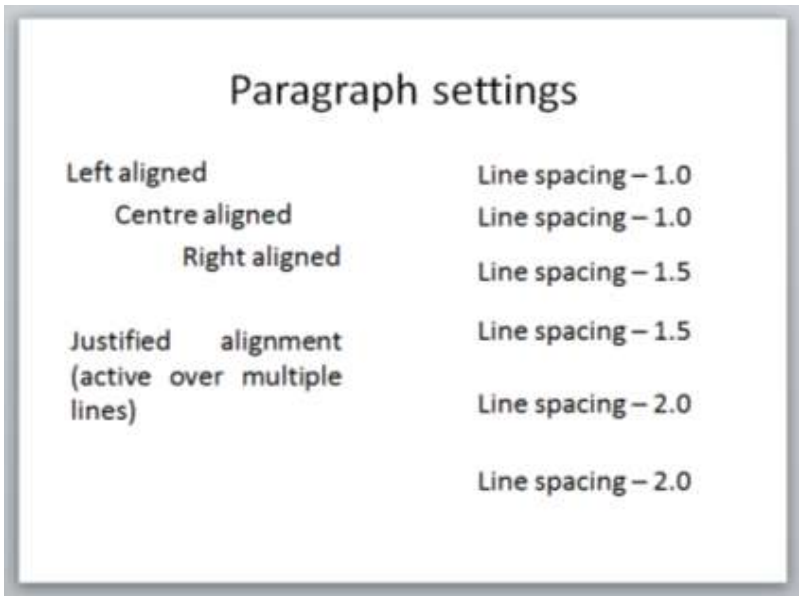
## 3.10 Paragraph settings

We've already seen the bulleted and numbered lists plus indent function in action from the ***Paragraph*** group of the ***Home*** tab. Other useful functions to note include:

- Alignment – Left, center, right, justified
- Line and paragraph spacing options

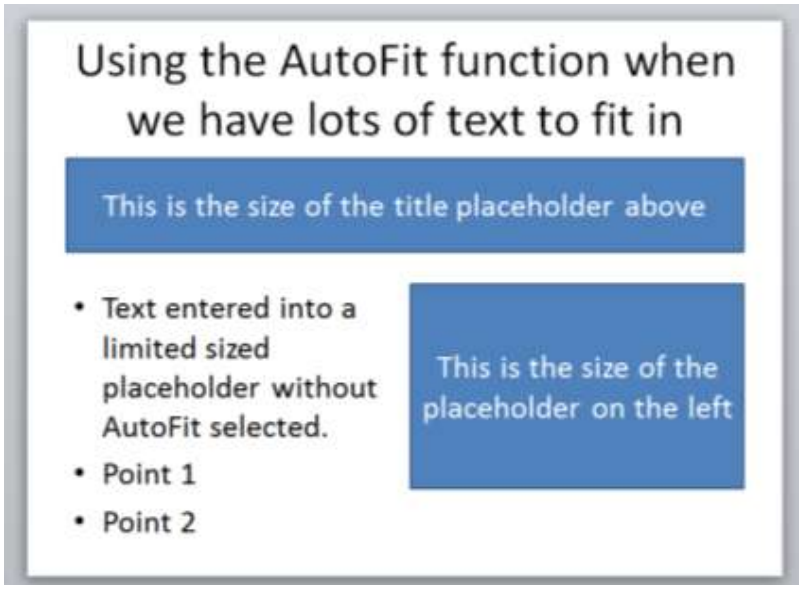


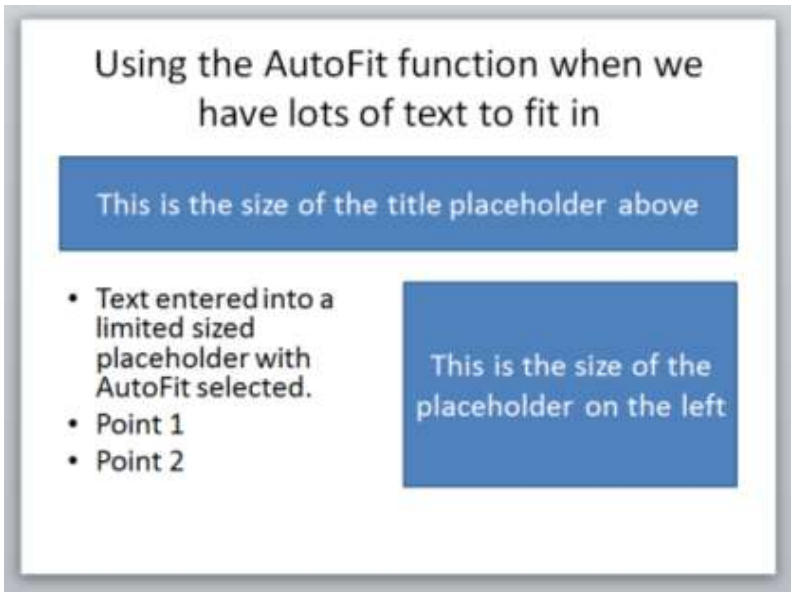

This can best be illustrated with an example:



### 3.11 AutoFit

AutoFit helps ensure that title text and body text automatically fit in a placeholder. This can be illustrated as follows:



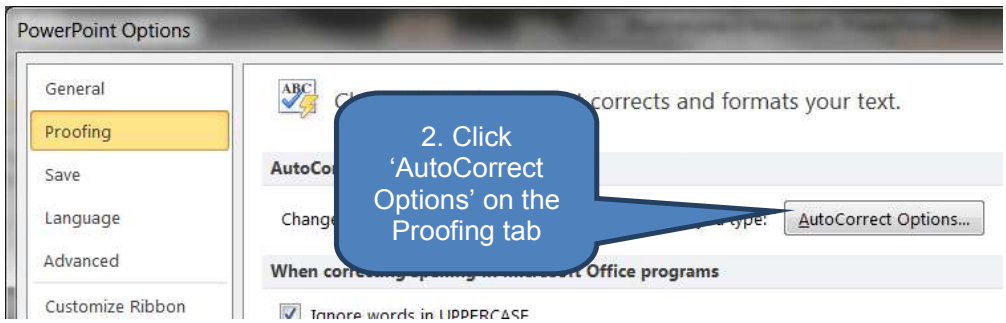



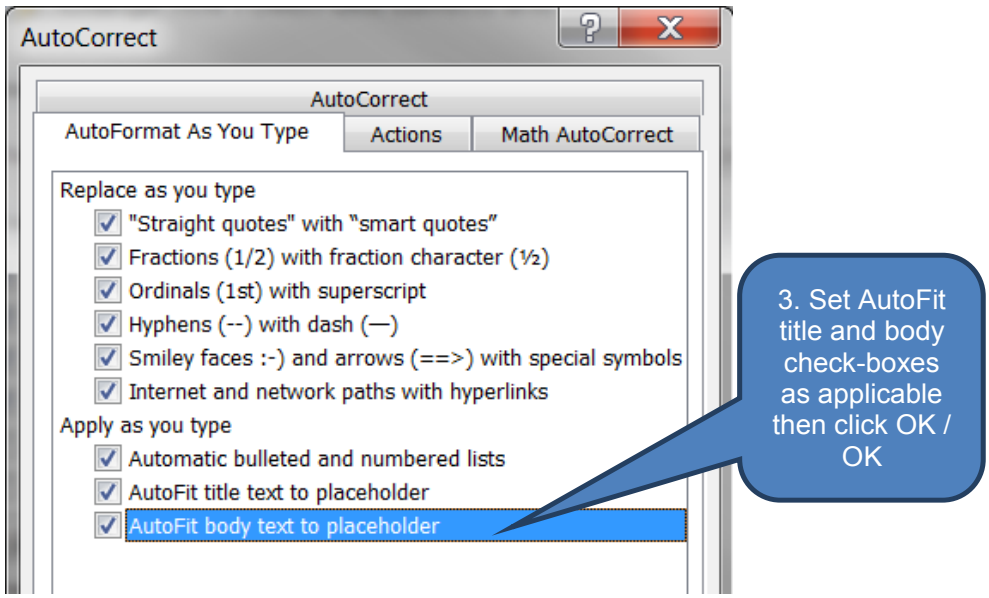

Note how both the title and body placeholder contents have automatically shrunk to fit them into the available placeholder area. This occurred after having switched on both title and body AutoFit.

To switch AutoFit functionality on or off:

- Click ***Options*** under ***Help*** on the ***File*** tab
- Click ***Proofing*** in the left pane of the ***PowerPoint Options*** dialog box
- Click ***AutoCorrect Options***

- Select the ***AutoFormat As You Type*** tab
- Clear or check the following check boxes as applicable:
  - ***AutoFit title text to placeholder***
  - ***AutoFit body text to placeholder***
- Click ***OK*** then ***OK***


Note how the AutoFit options impact editing behaviour across the whole presentation as they are global settings.

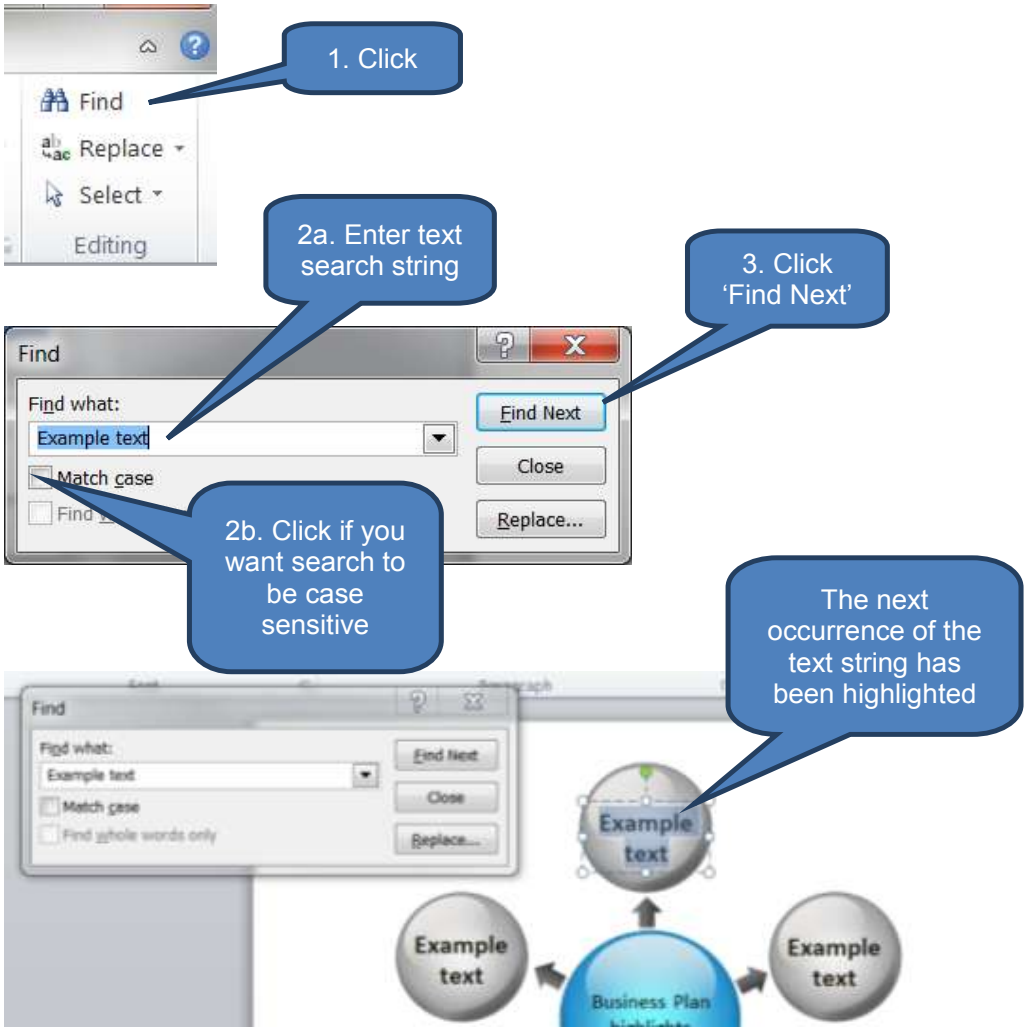
## 3.12 Find and replace

### Find

The Find function can be used to locate text strings with an option to make the search case sensitive.

To find a text string:

- Click ***Find*** in the ***Editing*** group on the ***Home*** tab
- Enter the text search string in the ***Find*** dialog box
- Click ***Find Next***

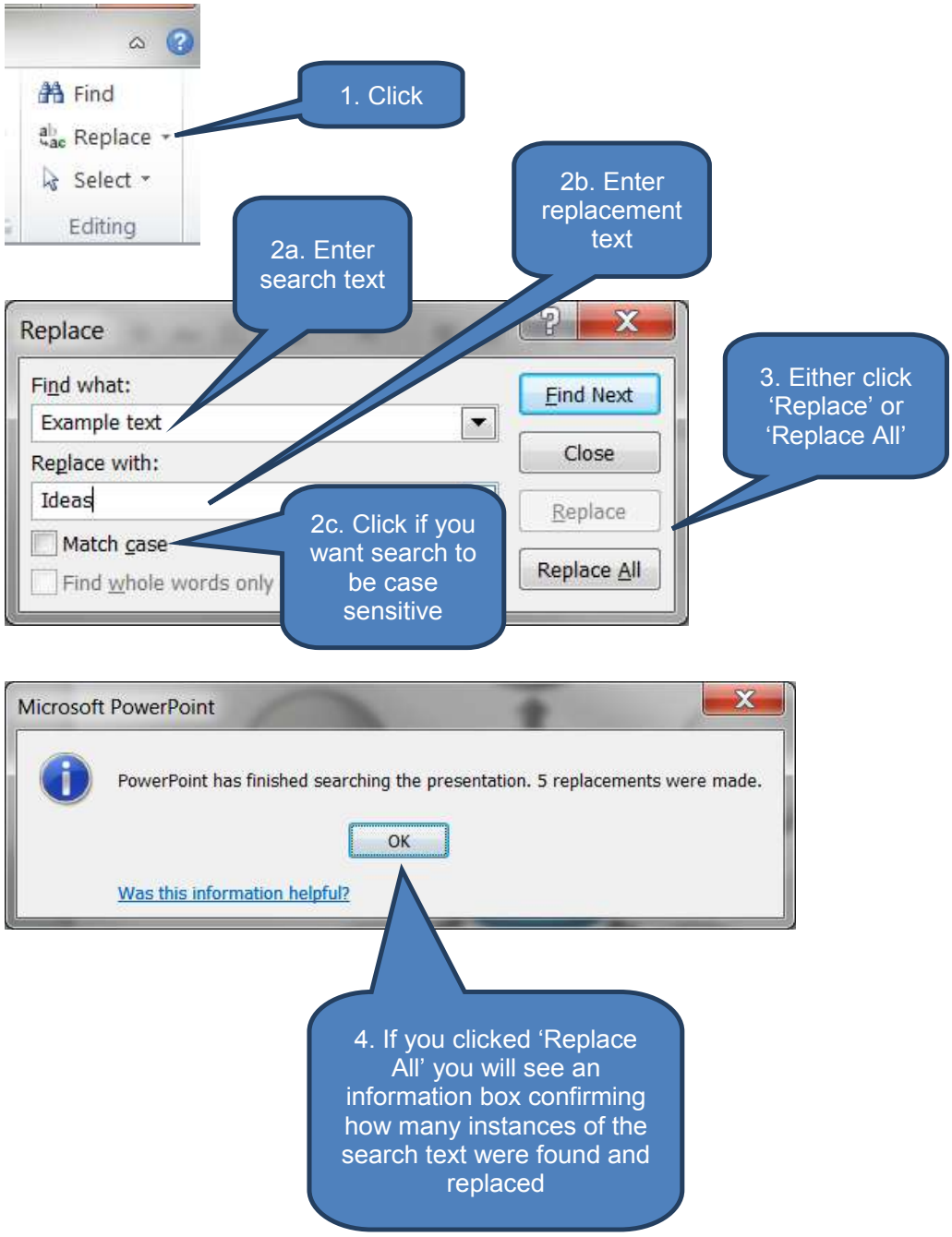


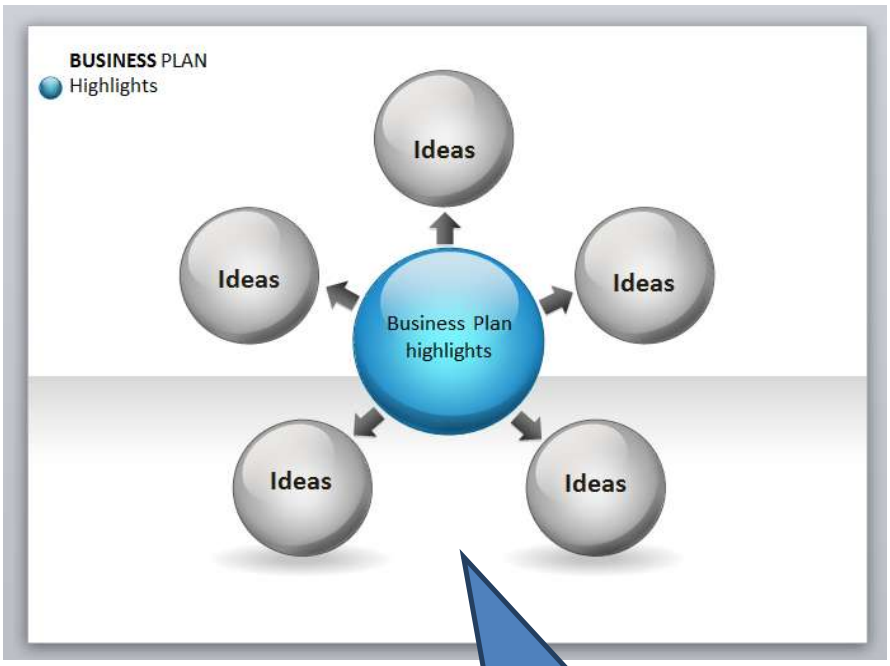

### Replace

The replace function can be used to replace search text with replacement text as follows:

- Open the ***Replace*** dialog box using one of the below methods:
  - Click ***Replace*** in the ***Editing*** group on the ***Home*** tab; or
  - Click the ***Replace*** button on the ***Find*** dialog box

- Enter the text search string in the ***Find What*** prompt
- Enter the replacement text in the ***Replace with*** prompt
- Either:
  - Click ***Replace*** to replace instances of the search text one by one; or
  - Click ***Replace All*** to replace all instances of the search text at the same time






Result: Five instances of "Example text" have been replaced with "Ideas"

# 4 THE OFFICE BACKSTAGE VIEW IN MICROSOFT POWERPOINT

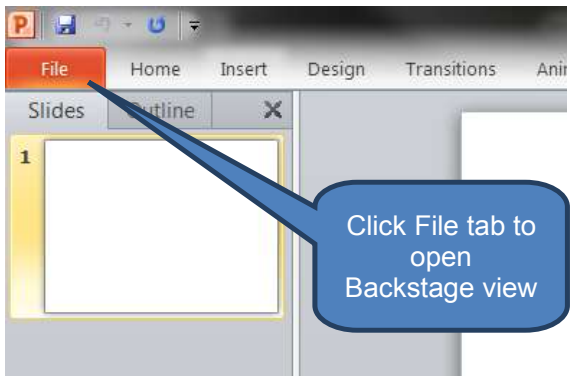
**Section overview**

- The Office Backstage view in Microsoft PowerPoint
- Comparing the Office backstage views of PowerPoint and Excel

## 4.1 The Office backstage view in Microsoft PowerPoint

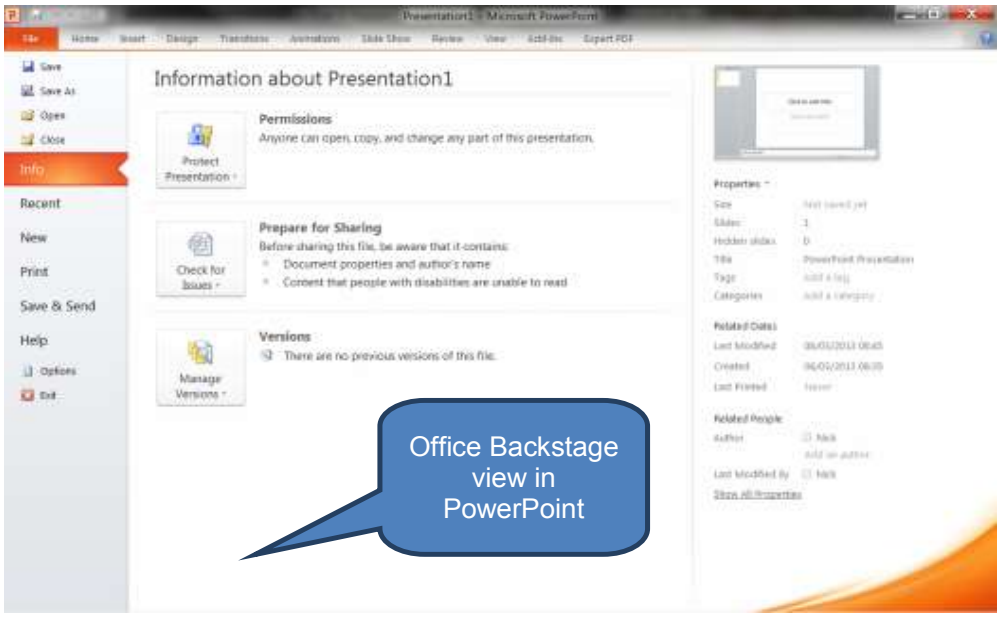
We first saw the Office Backstage view when introducing Microsoft Excel in chapter B1. As a reminder, the Office Backstage view is everything that you do TO a file that you don't do IN the file. For example creating, saving and setting options.

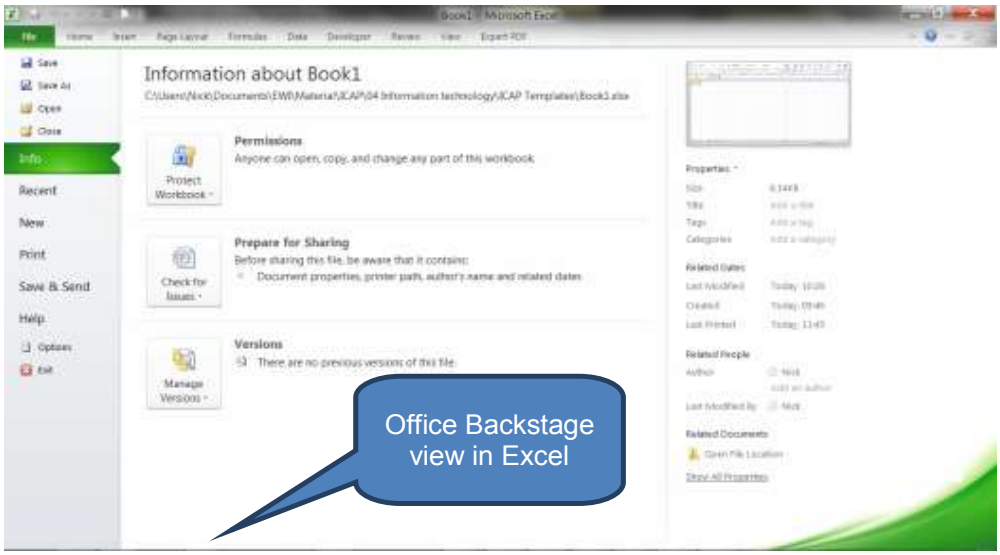
The Backstage view in Microsoft PowerPoint is almost identical to that in Microsoft Excel so you are already familiar with most of its features. Once again you access the Microsoft Office Backstage view in Microsoft PowerPoint by clicking the ***File tab*** within a PowerPoint presentation.




## 4.2 Comparing the Office backstage views of PowerPoint and Excel

Let's compare the backstage views from Microsoft PowerPoint and Microsoft Excel to demonstrate just how much you already know about using PowerPoint without even realising it.




The key differences in functionality you are likely to encounter between the Backstage options are:

| Option | Comment |
|---|---|
| Info | • Both applications allow users to 'Mark as Final', 'Encrypt with Password' and 'Add a digital signature'.<br>• In addition to these three options Excel also allows users to protect the current worksheet and the workbook structure |
| Printing | The printing Backstage options are broadly similar except that PowerPoint includes some extra print layout options tailored to presentations. These include:<br>• Layout: Full page, notes or outline<br>• Number of slides per page |
| Save & Send | The core options are the same but PowerPoint offers some extra file types including:<br>• Broadcast slide show<br>• Publish slides<br>• Create video<br>• Package presentation for CD<br>• Create handouts |
| Options | • As you would expect there are a number of differences in the Options group with options tailored to workbooks in Excel and presentations in PowerPoint.<br>• For example, Excel includes '***Formulas'*** options whereas PowerPoint includes '***Presentation'*** options (within ***Advanced***) |

# 5 PRINTING

## Section overview

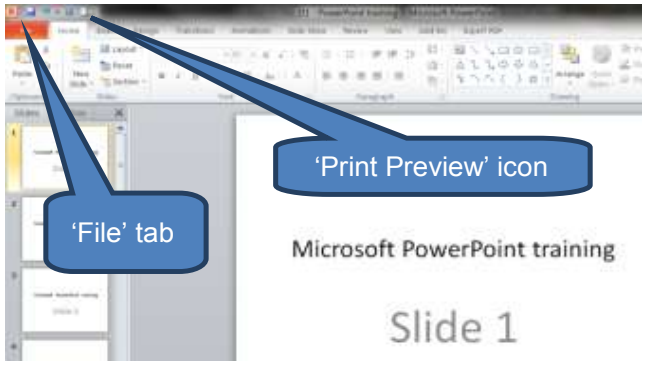
- Previewing presentations before printing
- Printing presentations
- Print examples

## 5.1 Previewing presentations before printing

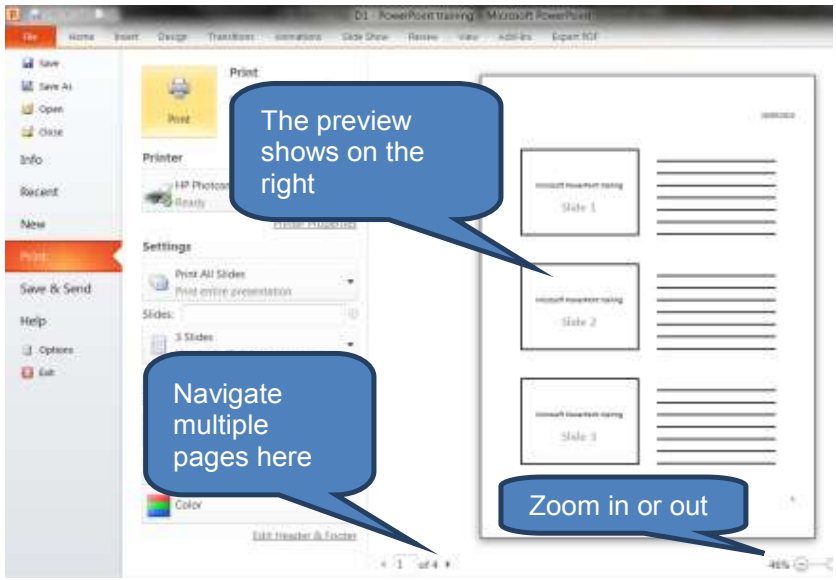
**Definition: Print preview in Microsoft PowerPoint**

***Print preview*** **allows you to see on-screen exactly how the presentation will look when you proceed with printing it to paper (or another output file). This saves both time and money by avoiding wasteful print-runs when further amendments may still be required.**

To preview a presentation either click on ***File*** tab**,** click the ***Print Preview*** icon or press CTRL + F2




- Illustrative print preview screen



## 5.2 Printing presentations

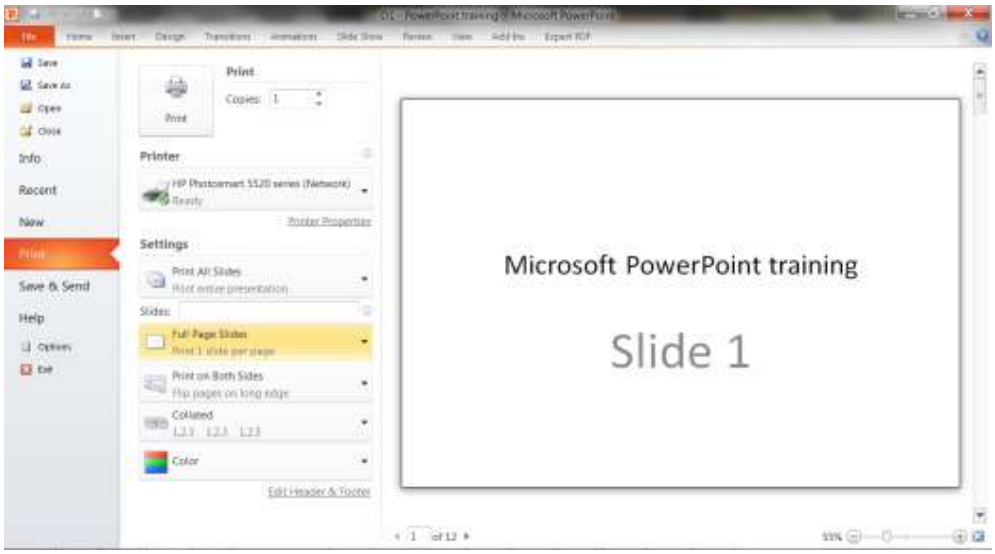
Continuing the above example once you're in the print preview screen select appropriate print options, double check the preview on the right hand side, then click ***Print***.


## 5.3 Print examples

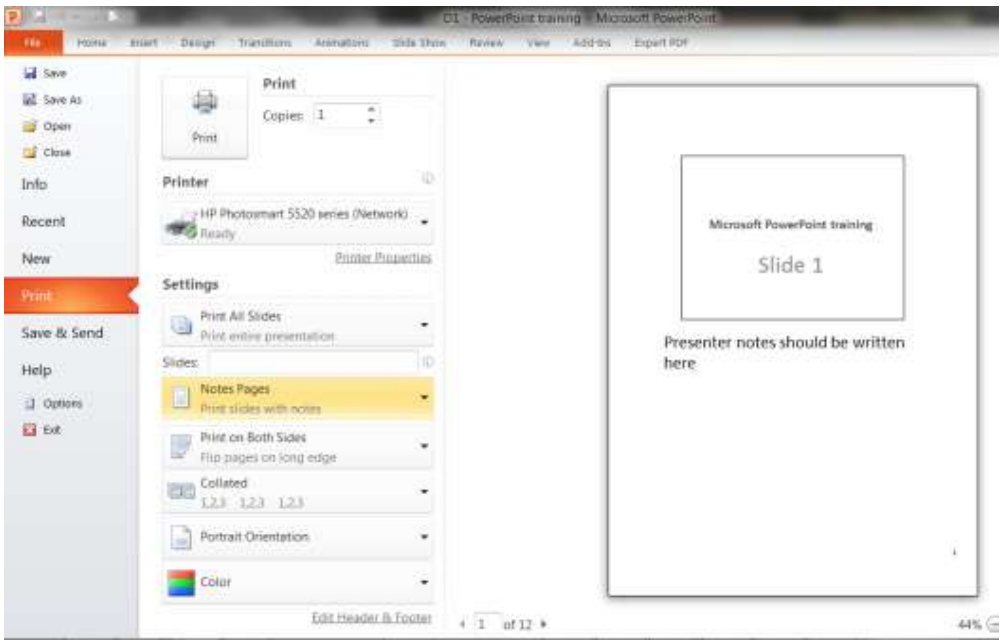
The below examples illustrate the various options available for printing presentations under point 4 above.

Note that 6-horizontal and 9-horizontal follow the same pattern as illustration 7, and 6-vertical and 9-vertical follow the same pattern as illustration 8.

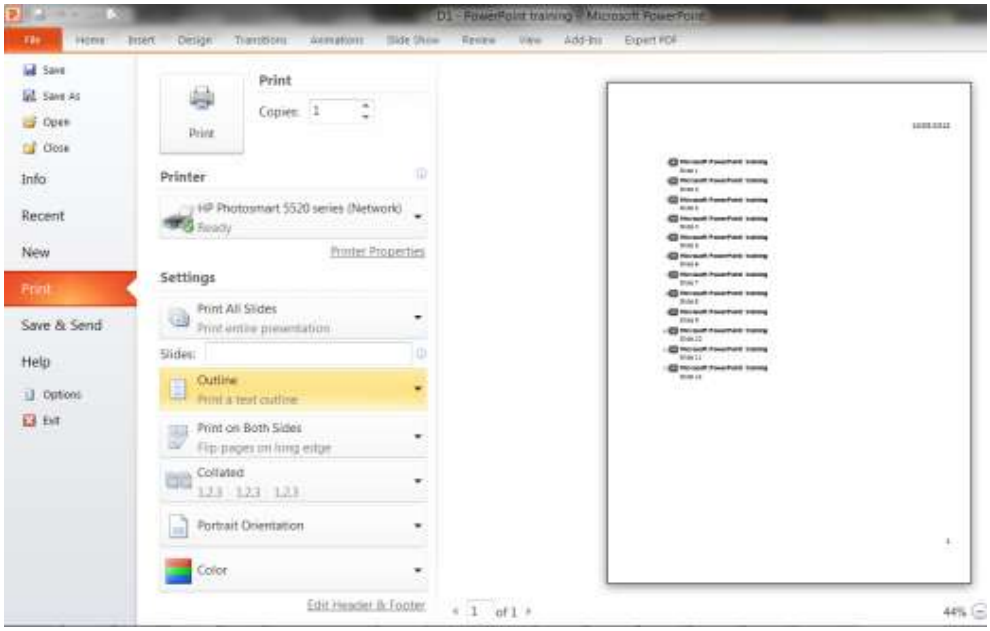
## Illustration 1 – Full page



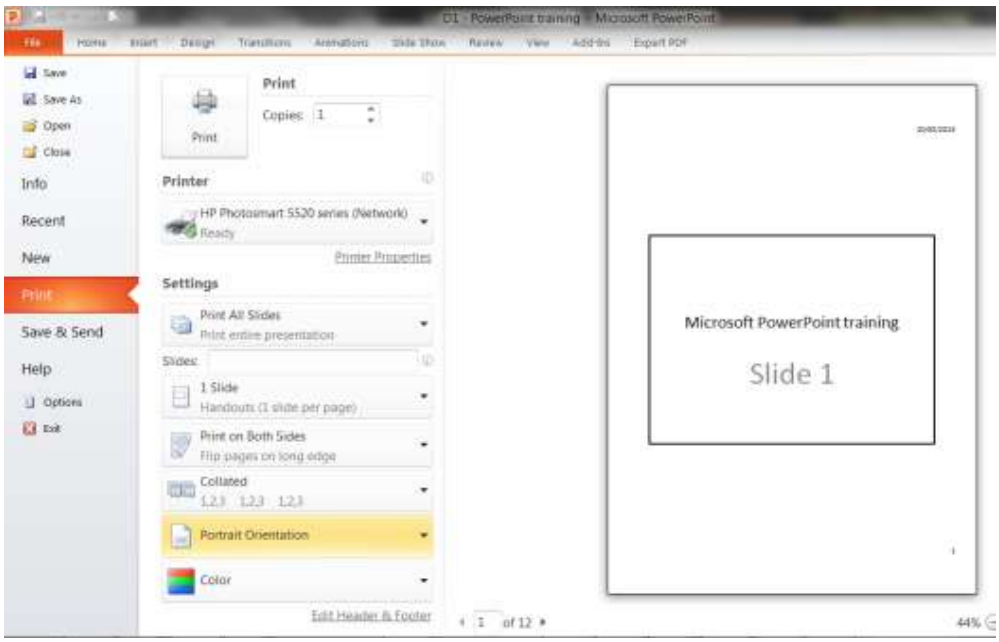

## Illustration 2 – Notes



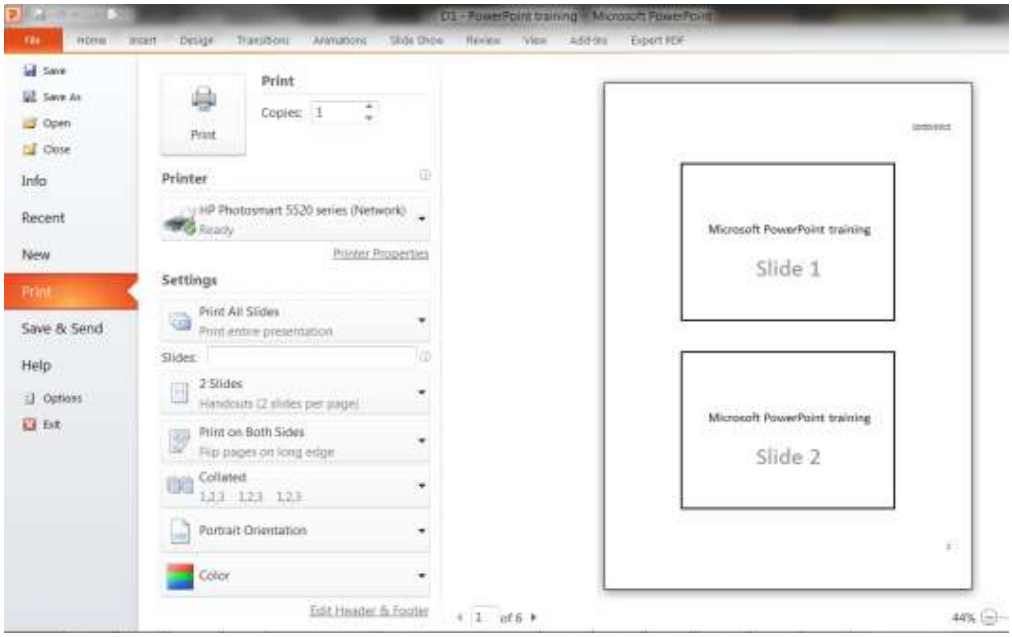
### Illustration 3 – Outline



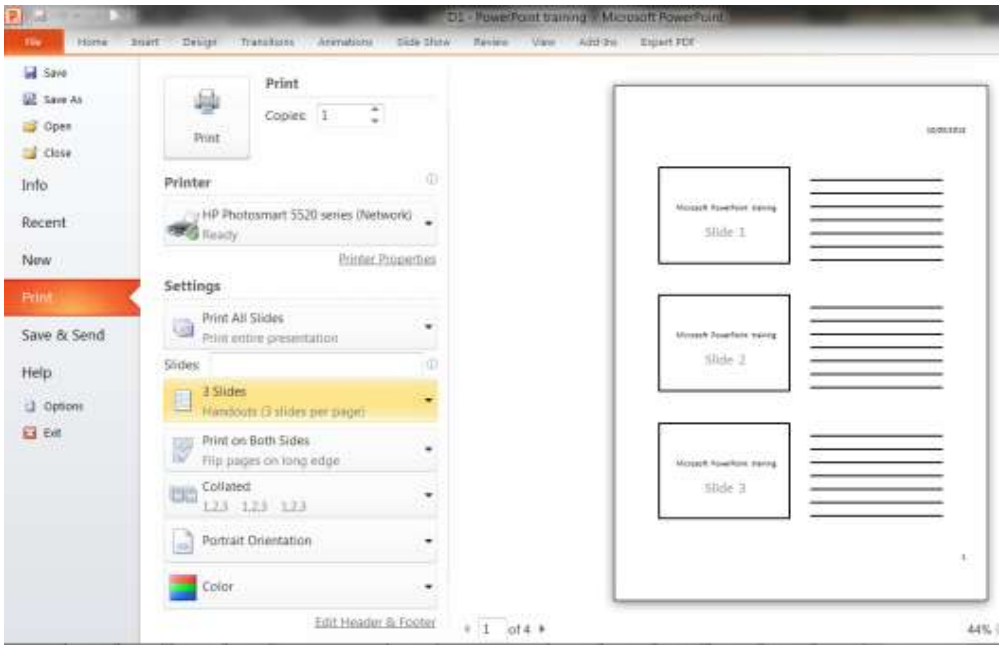

### Illustration 4 – Handouts: 1 slide per page



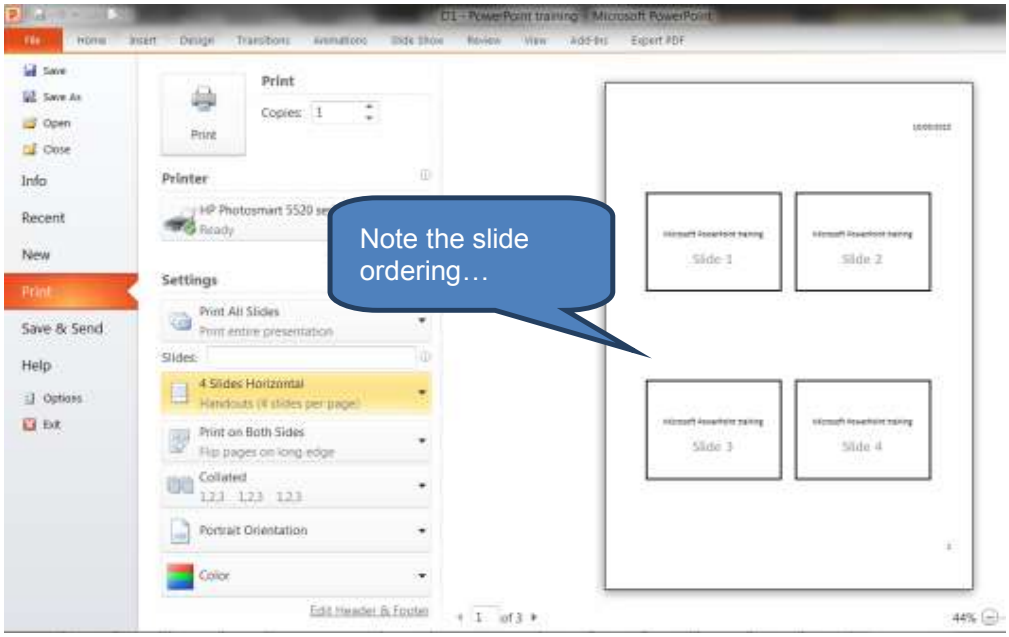
## Illustration 5 – Handouts: 2 slides per page



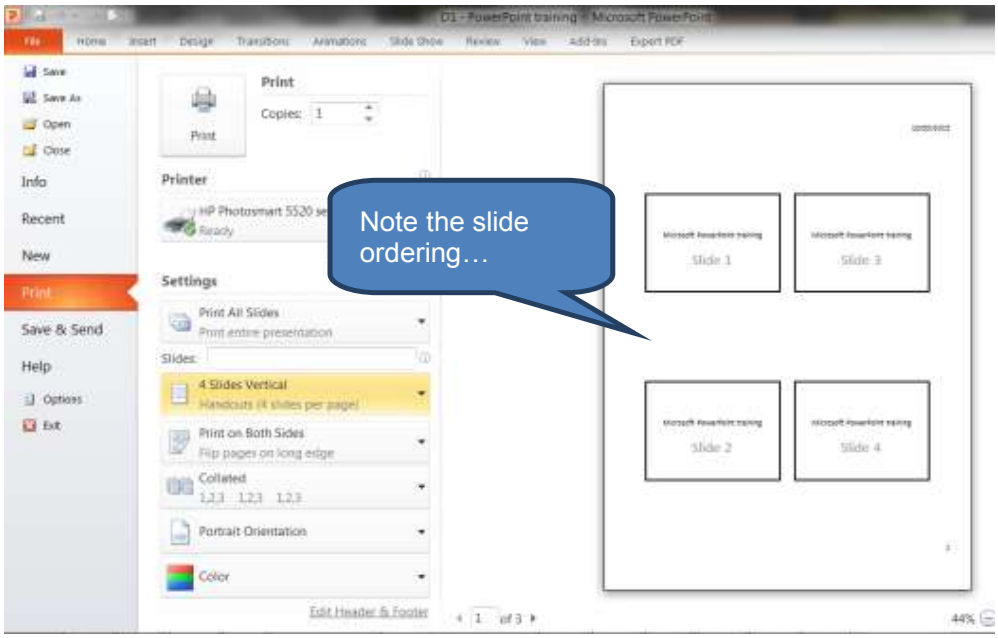

## Illustration 6 – Handouts: 3 slides per page



### Illustration 7 – Handouts: 4 slide per page horizontal




### Illustration 8 – Handouts: 4 slides per page vertical



## 6 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Create new original PowerPoint presentations or base presentations on an existing presentation or template
- Create and edit your own templates
- Work with slide Masters and Layouts
- Insert and edit text-based content including:
- Add text to a placeholder, text box or shapes
- Work with bullets, numbers, indents and colours
- Edit fonts including superscript, subscript, capitalization, paragraph settings and changing the direction of text
- Use the AutoFit function
- Work efficiently with the Find and Replace facility
- Recognise and use components of the Office Backstage view in PowerPoint
- Print from Microsoft PowerPoint

CHAPTER 13

# Using visual aids in presentations

## Contents

# INTRODUCTION

## Learning outcomes

LO 5.3.1 Demonstrate performance-level knowledge of inserting and editing tables, charts and other objects in the presentation

LO 5.3.2 Use appropriate PowerPoint features to insert pictures, videos, graphs and other objects in the presentation

## Exam context

The previous chapter dealt with setting up, editing and structuring basic presentations.

Chapter D2 builds on this foundation and shows us how to bring presentations to life with visual (and audible) aids. These aids help make presentations more memorable and enjoyable for the audience and also assist the presenter in communicating their message more effectively.

By the end of this chapter students will be able to:

- Insert and edit tables
- Insert and edit images including photos, Clip Art and screenshots
- Insert and edit illustrations including shapes, Screen Art and charts.
- Insert and edit media including both video and audio

# 1 INTRODUCTION

**Section overview**

- Using visual aids in presentations

## 1.1 Using visual aids in presentations

As the average business person becomes much more computer literate so the level of sophistication expected within presentations also increases. This is where incorporating visual aids in presentations can really enhance a presentation's effectiveness.

This chapter is split into four sections covering tables, images, illustrations and media.

### Tables

In the tables section you will learn how to create a table in Microsoft PowerPoint, import tables from Microsoft Word and Excel, enter text into tables and modify their design and layout.

### Images

In the images section you learn how to incorporate pictures, Clip Art and Screen-shots in our presentation.

### Illustrations

In the illustrations section you will learn how to include shapes, SmartArt, charts and graphs in your presentations.

### Media

In the media section you will learn how to add videos and audios to your presentations.

# 2 TABLES

**Section overview**

- Introduction
- Create a table in Microsoft PowerPoint
- Copy and paste a table from Microsoft Word
- Copy and paste cells from Microsoft Excel
- Insert an Excel worksheet into Microsoft PowerPoint
- Entering text into a cell
- Modifying a table's design and layout

## 2.1 Introduction

There are four main methods to add a table to a PowerPoint presentation:

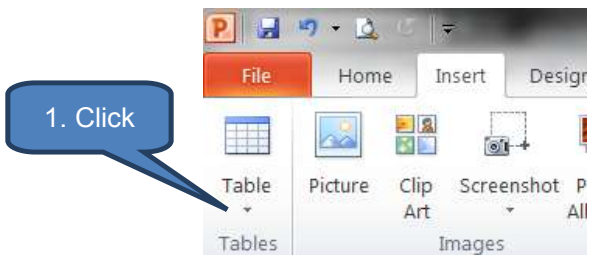
- ❑ Create a table in Microsoft PowerPoint
- ❑ Copy and paste a table from Microsoft Word
- ❑ Copy and paste cells from Microsoft Excel
- ❑ Inserting an Excel worksheet into Microsoft PowerPoint

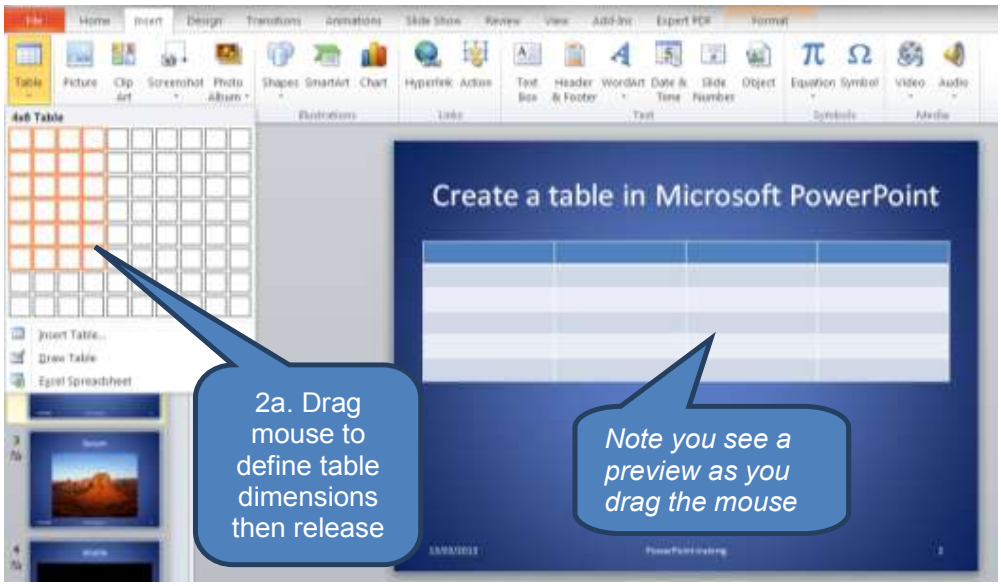
In this section we cover each of the four methods above for adding tables to presentations and also consider how to add text to a table plus modify the table design and layout.

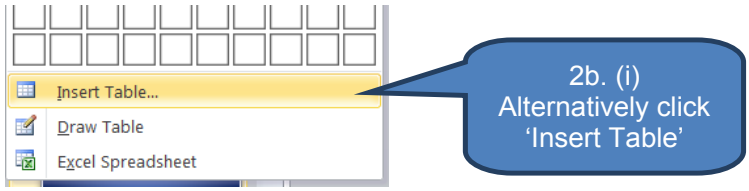
## 2.2 Create a table in Microsoft PowerPoint

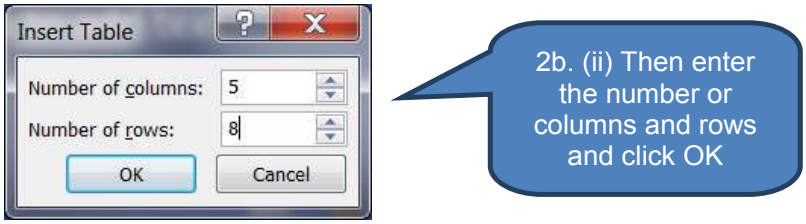
To create a table in Microsoft PowerPoint:

- ❑ Select the slide on which you want your table to appear
- ❑ Click ***Table*** in the ***Tables*** group on the ***Insert*** tab
- ❑ To create the table either:
  - Click and move the pointer to select the number of columns and rows you need in your table, then release the mouse button
  - Click ***Insert Table*** then enter the ***Number of rows*** and ***Number of columns***




Create a table in Microsoft PowerPoint
2a. Drag mouse to define table dimensions then release
Note you see a preview as you drag the mouse


Insert Table...
Draw Table
Excel Spreadsheet
2b. (i) Alternatively click 'Insert Table'


Insert Table
Number of columns: 5
Number of rows: 8
OK
Cancel
2b. (ii) Then enter the number or columns and rows and click OK

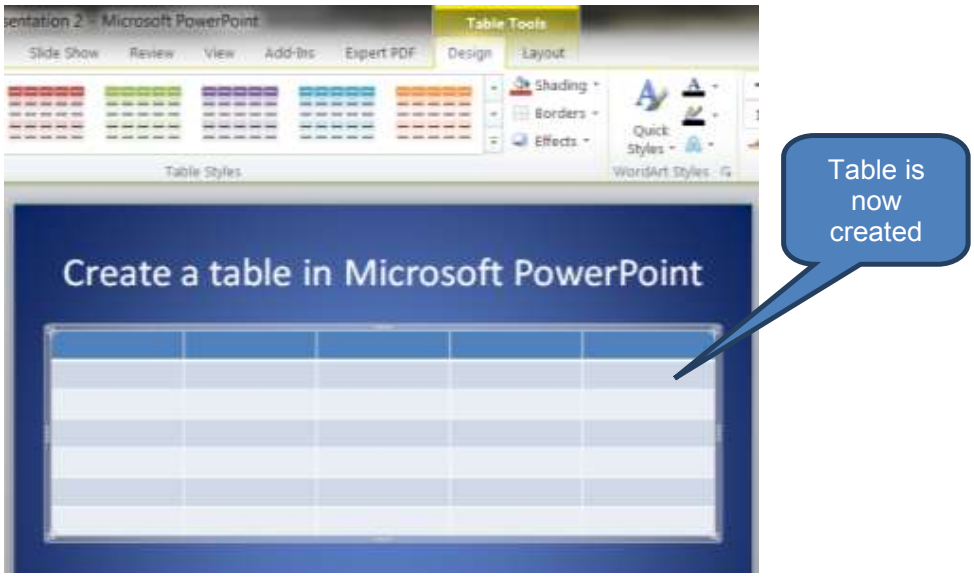
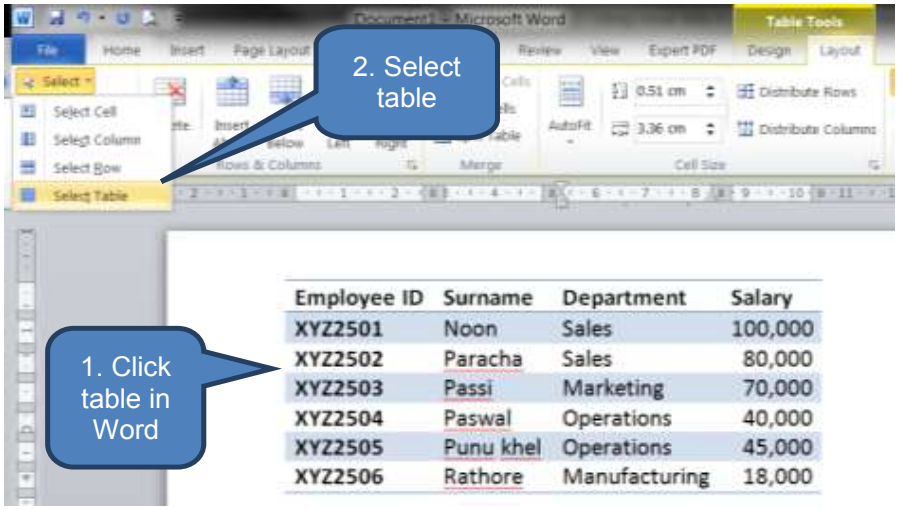


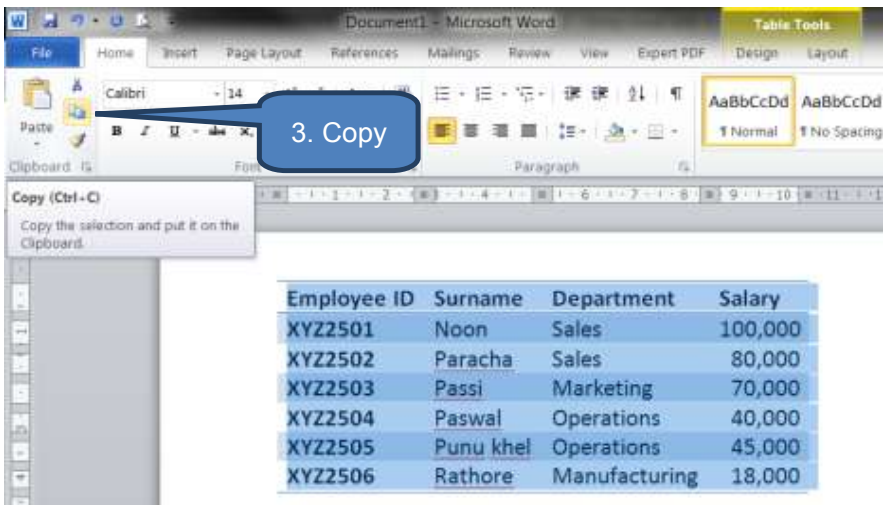
Table Tools
Design
Layout
Create a table in Microsoft PowerPoint
Table is now created

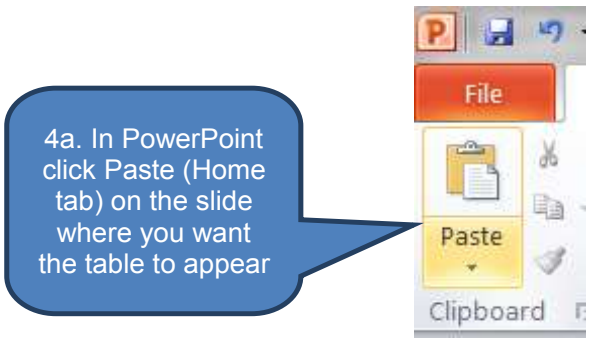
## 2.3 Copy and paste a table from Microsoft Word

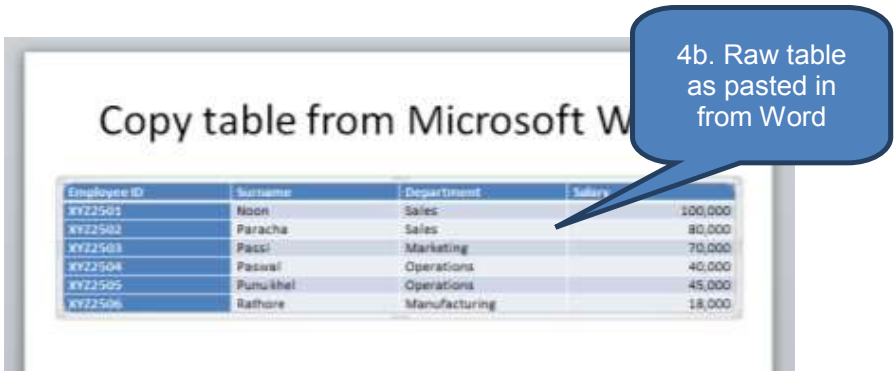
To copy a table from Microsoft Word then paste it into a Microsoft PowerPoint presentation:

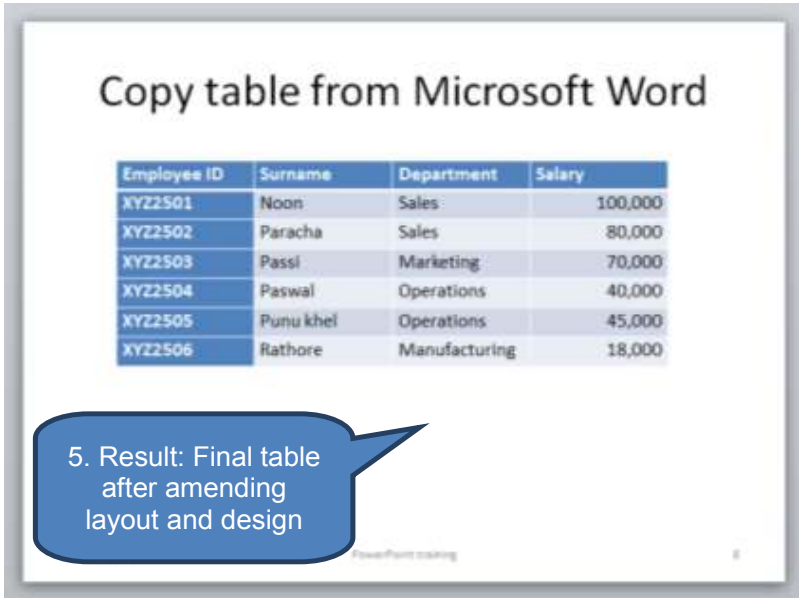
- In Word:
  - Click the table you want to copy
  - Click the arrow next to ***Select*** in the ***Table*** group on the ***Layout*** tab under ***Table Tools***
  - Click ***Select Table***
  - Click ***Copy*** in the ***Clipboard*** group on the ***Home*** tab (or press CTRL+C)
- Back in your PowerPoint presentation:
  - Select the slide where you want to copy the table to
  - Click ***Paste*** in the ***Clipboard*** group on the ***Home*** tab
  - Re-format the table layout and design as appropriate





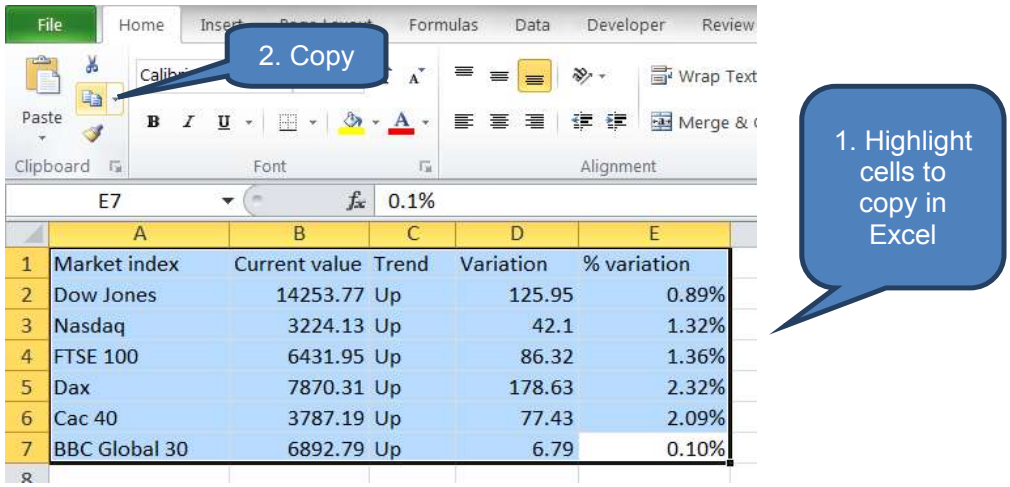



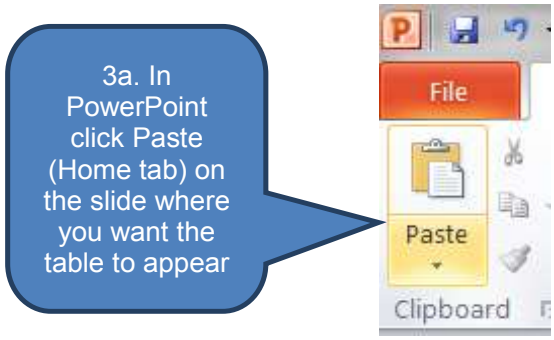

## 2.4 Copy and paste cells from Microsoft Excel

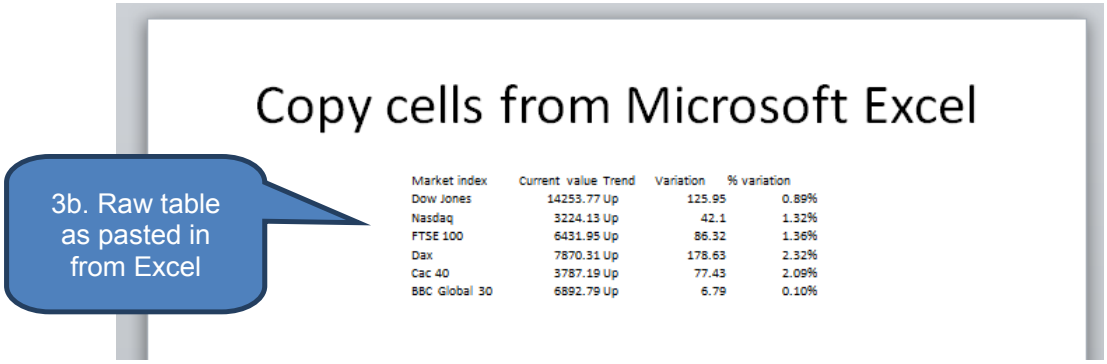
Similar to when we copied a table from Microsoft Word into Microsoft PowerPoint above it is also possible to copy cells from a Microsoft Excel worksheet into a PowerPoint presentation. To do this:

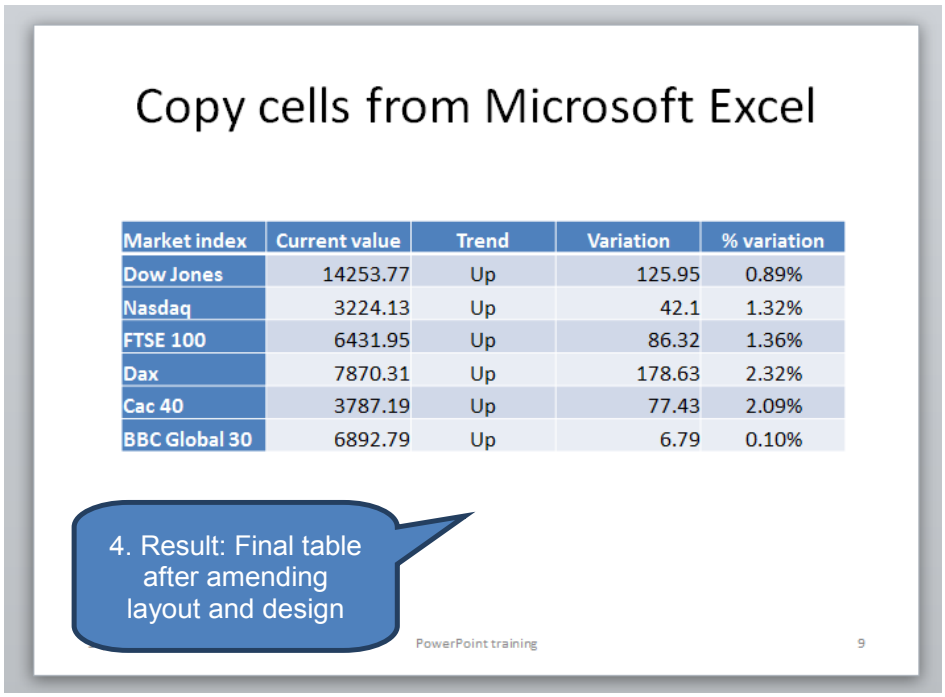
- In the Excel worksheet:
  - Highlight the cells you want to copy (click the upper-left cell of the group then drag to select further cells)
  - Click ***Copy*** in the ***Clipboard*** group on the ***Home*** tab
- Back in PowerPoint:
  - Click the slide where you want to paste the cells
  - Click ***Paste*** in the ***Clipboard*** group on the ***Home*** tab
  - Re-format the table layout and design as appropriate




| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Market index | Current value | Trend | Variation | % variation |
| 2 | Dow Jones | 14253.77 | Up | 125.95 | 0.89% |
| 3 | Nasdaq | 3224.13 | Up | 42.1 | 1.32% |
| 4 | FTSE 100 | 6431.95 | Up | 86.32 | 1.36% |
| 5 | Dax | 7870.31 | Up | 178.63 | 2.32% |
| 6 | Cac 40 | 3787.19 | Up | 77.43 | 2.09% |
| 7 | BBC Global 30 | 6892.79 | Up | 6.79 | 0.10% |






## 2.5 Insert an Excel worksheet into Microsoft PowerPoint

PowerPoint allows us to insert and embed an Excel worksheet into a presentation rather than copying from worksheet cells then pasting them into a PowerPoint table.

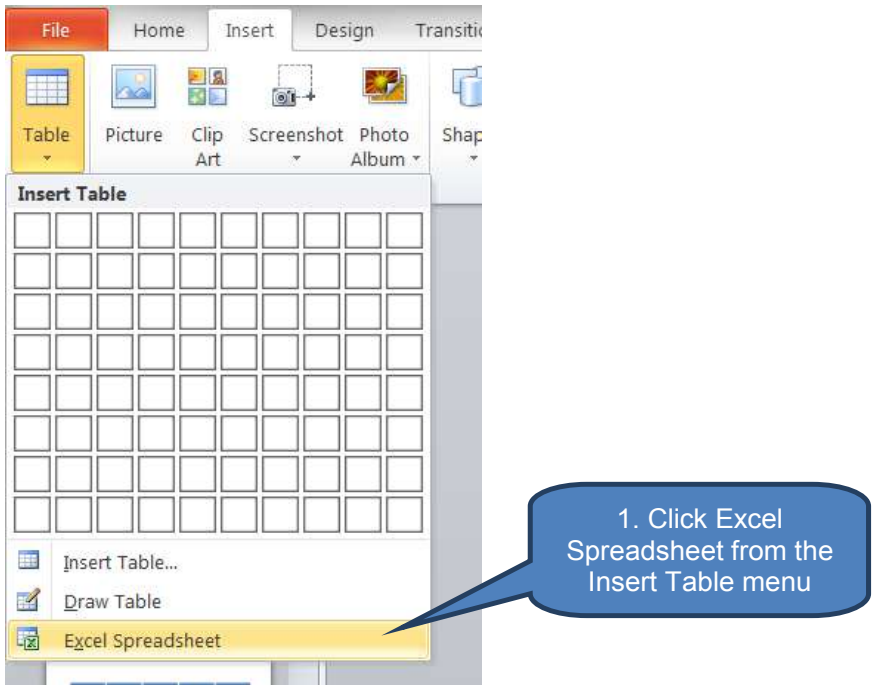
The insert and embed approach has the benefit that many Excel features are retained in the embedded worksheet including functions, formulae and data import features.

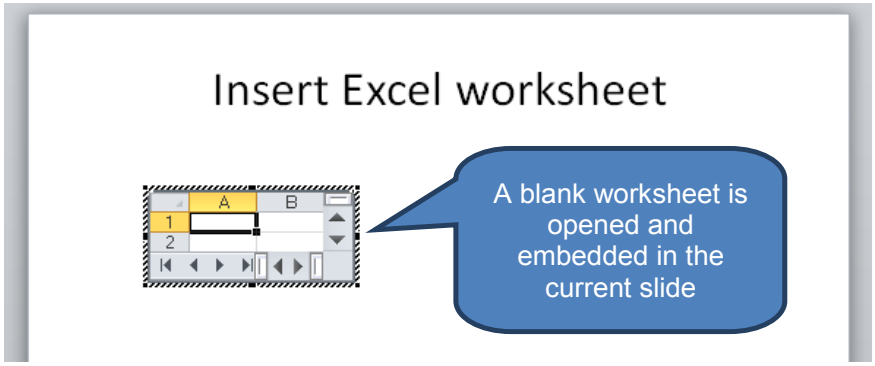
To insert an Excel worksheet into a presentation:

- Select the slide where you want to embed a worksheet
- Click ***Table*** in the ***Tables*** group on the ***Insert*** tab
- Click ***Excel Spreadsheet***. This opens a blank worksheet embedded in the current slide.
- To enter text in the worksheet click a cell and enter text. Edit other cells then click outside the table once complete.

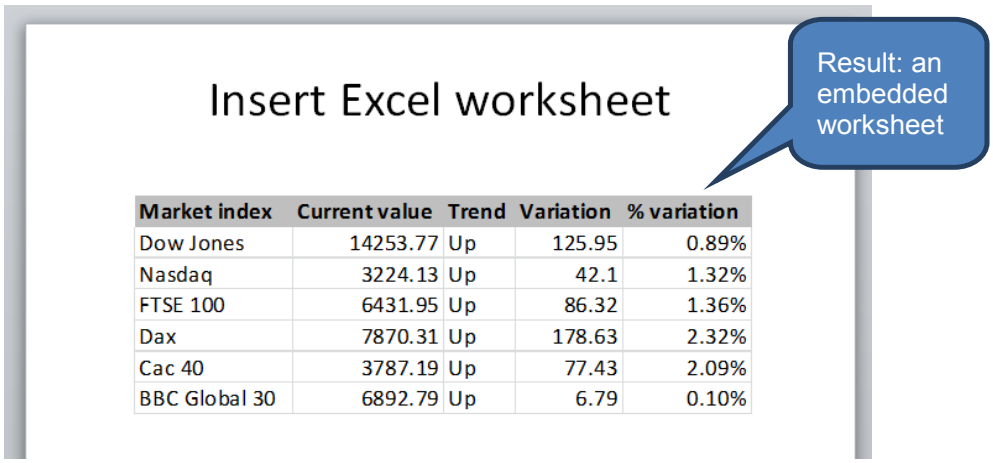
To edit the worksheet after it has been deselected, double-click the table to re-activate worksheet view.

You can also format the worksheet (e.g. fonts, shading and column widths) whilst the worksheet is activate (double-clicked).


File
Home
Insert
Design
Table
Picture
Clip Art
Screenshot
Photo Album
Insert Table
Insert Table...
Draw Table
Excel Spreadsheet
1. Click Excel Spreadsheet from the Insert Table menu


Insert Excel worksheet
A
B
1
2
A blank worksheet is opened and embedded in the current slide

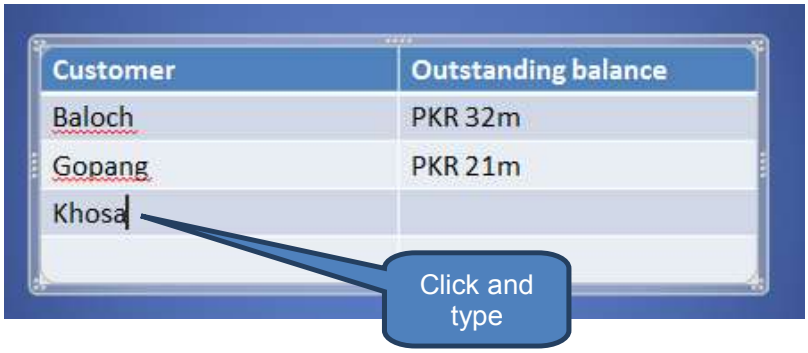

Insert Excel worksheet
2. Enter text into the workbook and update format and layout as applicable.
Drag the borders to resize the visible area of the worksheet




## 2.6 Entering text into a cell

To enter text into a cell in a table:

- click inside the cell
- enter new text or edit existing text
- click outside the table to save the text

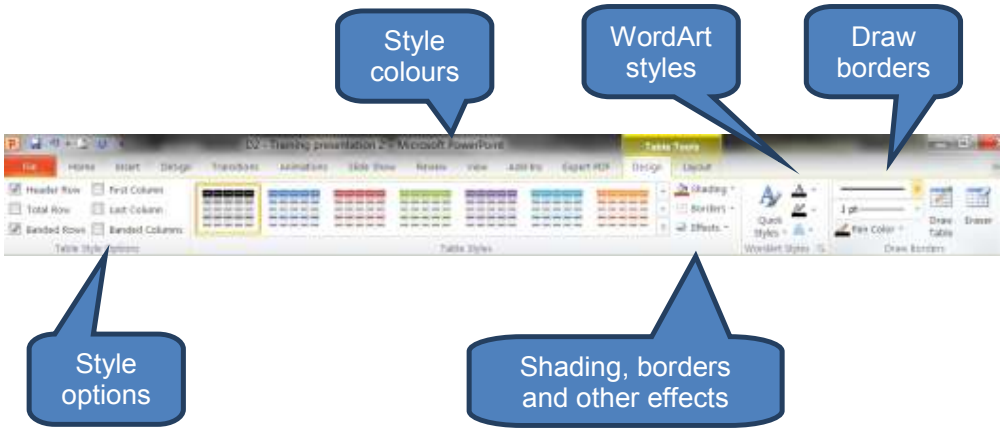



## 2.7 Modifying a table's design and layout

When part or all of a table is active (e.g. because you clicked in a cell, or highlighted a number of rows) two new tabs appear on the PowerPoint ribbon under ***Table Tools***:

- The Design tab
- The Layout tab

### The Design tab

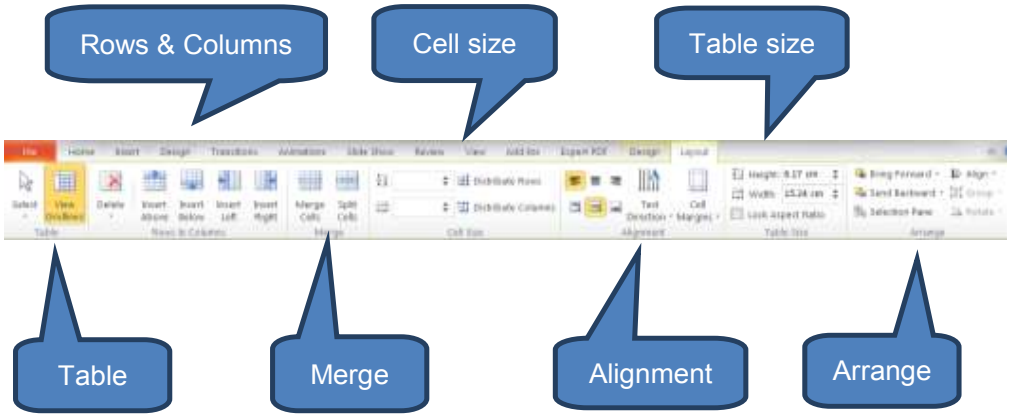



The best way to explore the Design tab is to create a table yourself then click on each of the options to see what impact they have.

To briefly summarise:

| Design option | Description |
|---|---|
| Style options | • Highlight rows and columns in a different colour to mark them as headers (first) or totals (last)<br>• Banded rows/columns means alternating light and dark row/column shading to help users identify different rows or columns when reading the table |
| Style colours | Select one of the default table colour schemes |
| Shading, borders and other effects | • Shading: Change the fill colour of the selected cells<br>• Borders – add or remove cell borders around the selected cells<br>• Effects – Add effects such as bevel, shadow or reflection |
| WordArt styles | Apply WordArt styles to selected text |
| Draw borders | Allows users to quickly add or remove cell borders having changed the mouse to a pen |

### The Layout tab




As with the ***Design tab*** the best way to explore the ***Layout tab*** is to create a table yourself then click on each of the options to see what impact they have.

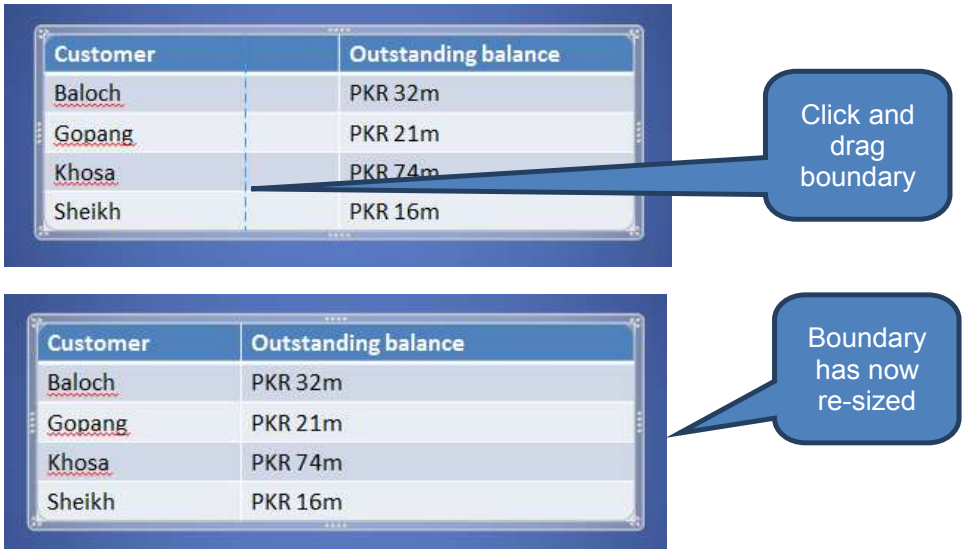
To briefly summarise:

| Layout option | Description |
|---|---|
| Table | • Select a row, column or the whole table<br>• Switch 'View Gridlines' on or off |
| Rows & Columns | Insert or delete columns or rows |
| Merge | Merge or split cells |
| Cell size | • Change the width of columns and height of rows<br>• ***Distribute Rows*** creates rows of equal height within the existing overall table height.<br>• ***Distribute Columns*** creates columns of equal width within the existing overall table width. |
| Alignment | Users can select to left/center/right align text on the horizontal axis or top/middle/bottom align text on the vertical axis. |
| Table size | Users can enter specific row heights and column widths in cm |
| Arrange | Various options including where the table appears on a slide (align) and whether it takes precedence against overlapping objects (Bring Forward) or ranks lower (Send Backward) |

### Changing column width or row height

To change the width of a column or height of a row you can use options on the ***Layout tab*** as described above, or:

- ❑ click one of the boundaries between cells or an outer boundary of the table
- ❑ drag the boundary to re-size



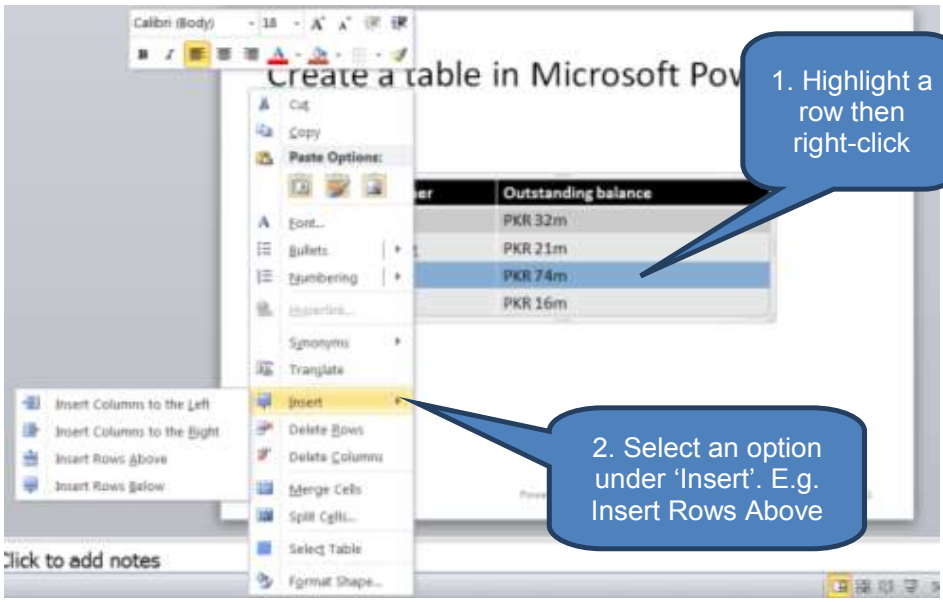

### Add a row or column to a table

To add a row to the table you can use options on the ***Layout tab*** as described above, or:

- ❑ To add a new bottom row, click inside the last cell of the last row, then press ***TAB***; or
- ❑ To add a new row part way through a table
  - Highlight a row
  - Right-click
  - Select one of the options under 'Insert'. E.g. '***Insert Rows Above'***

Note that you can add multiple rows simultaneously by highlighting multiple rows before right-clicking. Note that the same number or rows will be added as were highlighted.

To add columns use the same process as above for adding rows, except choose one of the column options under '***Insert'***.



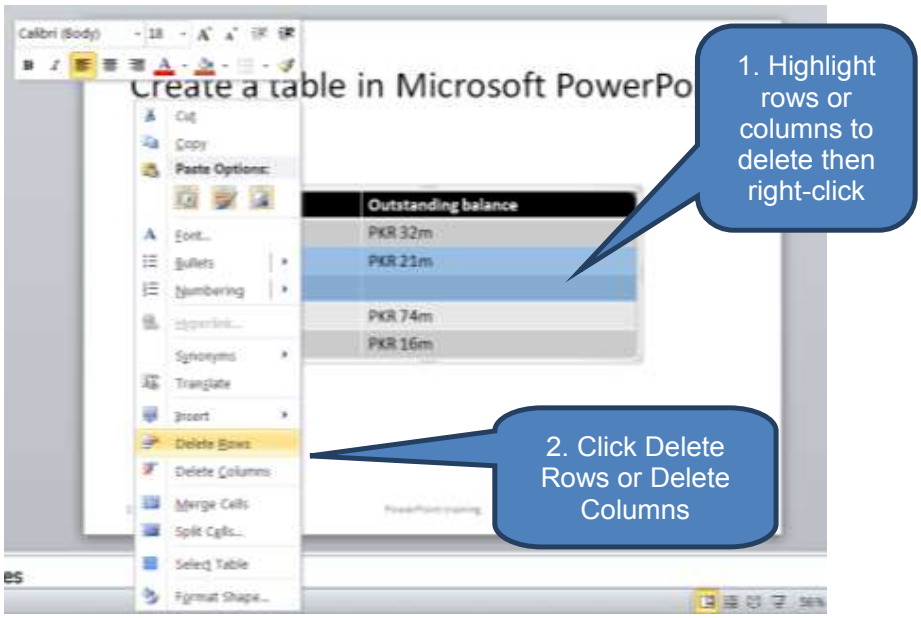

| Customer | Outstanding balance |
|---|---|
| Baloch | PKR 32m |
| Gopang | PKR 21m |
| | |
| Khosa | PKR 74m |
| Sheikh | PKR 16m |

New row has appeared above the highlighted row

### Delete rows or columns from a table

To delete rows or columns from a table you can use options on the ***Layout*** tab as described above, or:

- Highlight the rows or columns to be deleted
- Right-click
- Select ***Delete Rows*** or ***Delete Columns*** as appropriate




| Customer | Outstanding balance |
|---|---|
| Baloch | PKR 32m |
| Khosa | PKR 74m |
| Sheikh | PKR 16m |

Rows have been deleted

# 3 IMAGES

## Section overview

- Pictures
- Clip Art
- Screen-shots

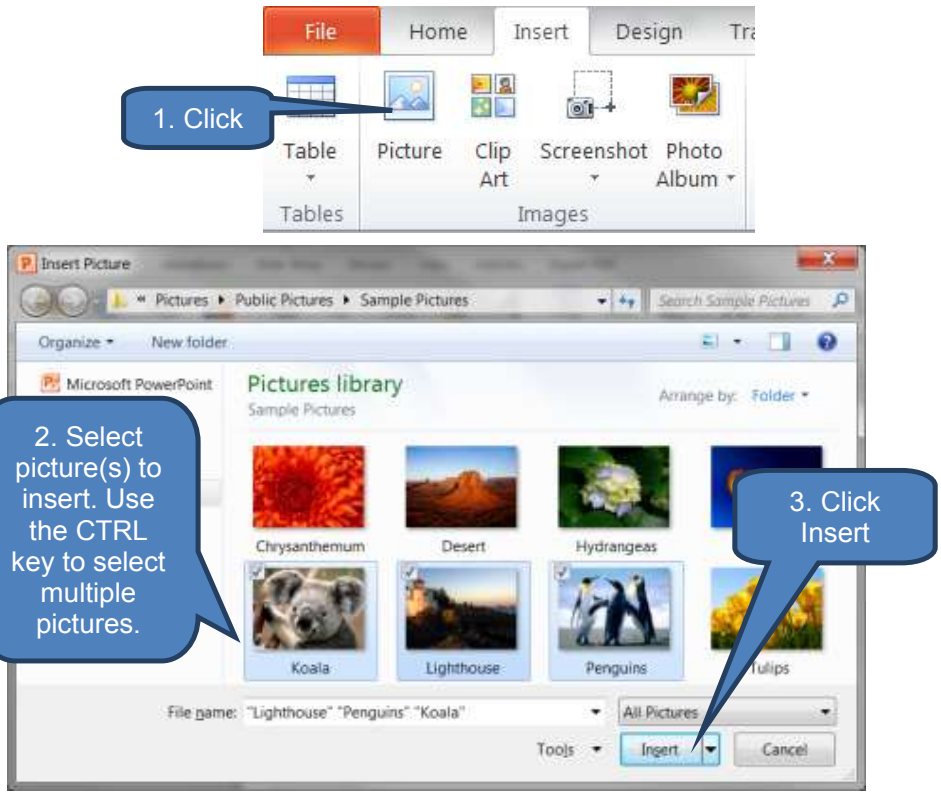
## 3.1 Pictures

### Insert a picture from a file

You can add pictures into your presentation from files saved on your computer. First, you will need to save the picture files to your computer perhaps from a scanner, transferred from an external device like a smart phone or camera, or alternatively a saved picture attachment from an email.

To insert a picture from a file:

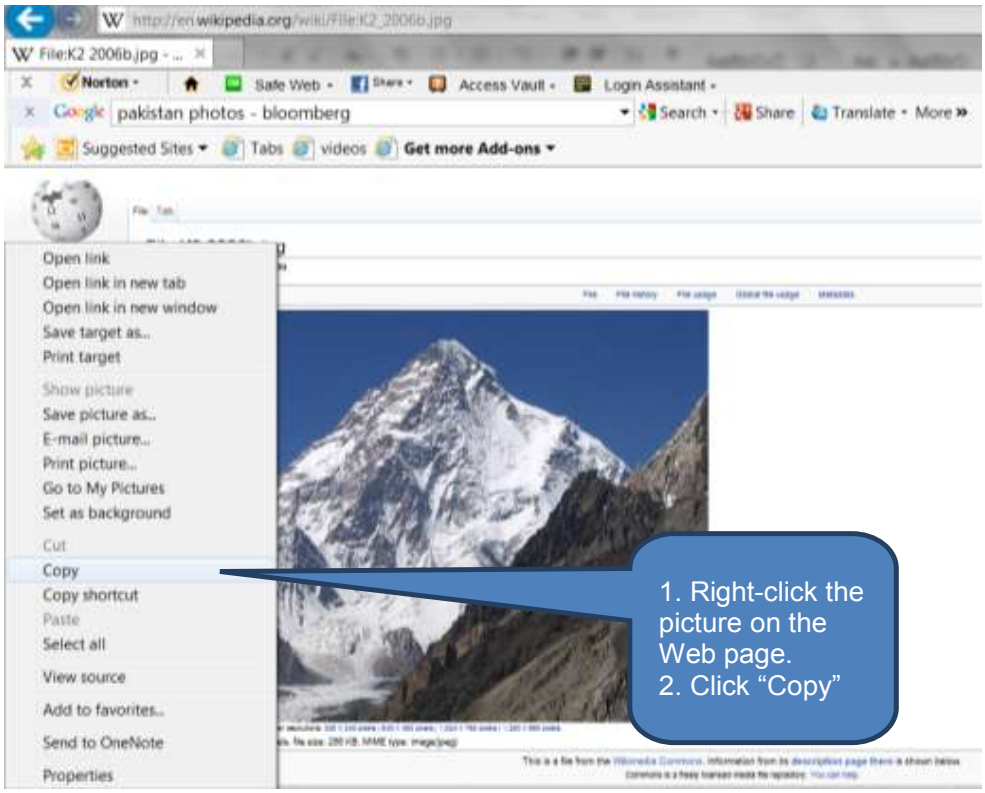
- ❑ Click the slide where you want to insert the picture
- ❑ Click ***Picture*** in the ***Images*** group on the ***Insert*** tab
- ❑ To add a picture, locate the picture you want to insert using the file manager then double-click it. Alternatively you can add multiple pictures by pressing and holding ***CTRL*** while clicking all the required pictures then pressing Insert.
- ❑ You can resize the picture by selecting it then dragging a sizing handle

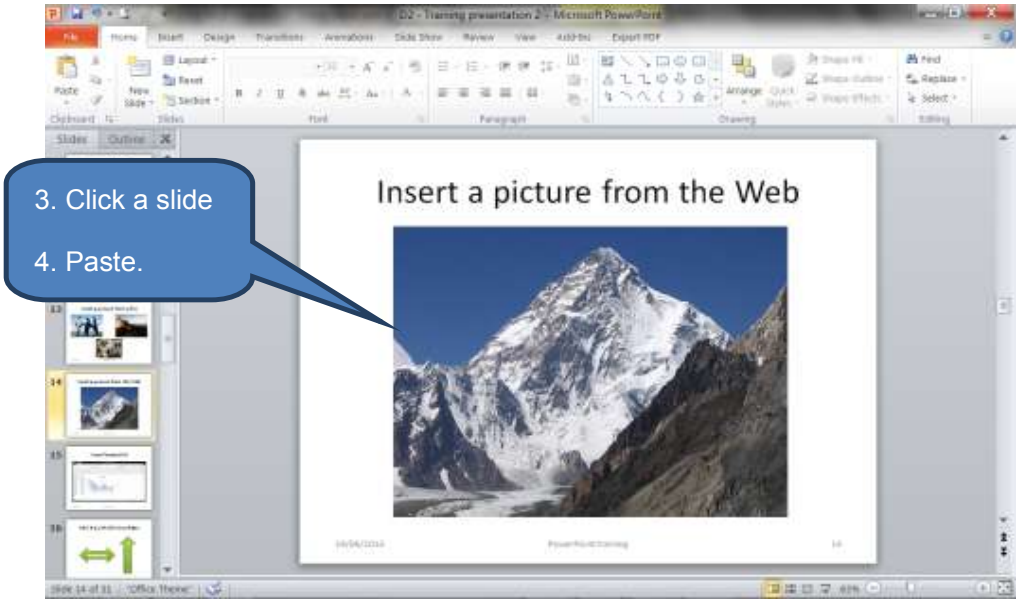



### Insert a picture from the Web

To insert a picture from a web page:

- Right-click the picture you want on the Web page
- Click ***COPY*** from the menu
- Click the slide where you want to insert the picture
- Right-click and select the ***PASTE*** option (or press ***CTRL+V***)


Open link
Open link in new tab
Open link in new window
Save target as...
Print target
Show picture
Save picture as...
E-mail picture...
Print picture...
Go to My Pictures
Set as background
Cut
Copy
Copy shortcut
Paste
Select all
View source
Add to favorites...
Send to OneNote
Properties
1. Right-click the picture on the Web page.
2. Click “Copy”


3. Click a slide
4. Paste.
Insert a picture from the Web

## 3.2 Clip Art

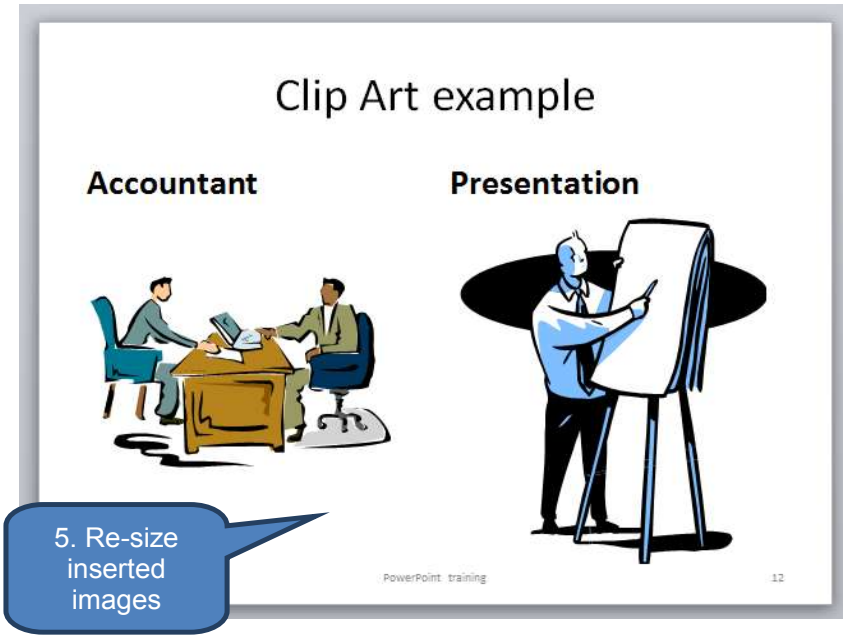
**Definition: Clip Art**

**Clip Art describes pre-drawn pictures and symbols that users can add to their PowerPoint presentation. Clip Art is used extensively in both personal and commercial presentations and has evolved to include a wide variety of content, file formats and illustration styles.**

**Clip Art is generally composed exclusively of illustrations (hand-drawn or computer generated) rather than photography.**

To add a Clip Art image to your presentation:

- Select the slide you wish to add Clip Art to
- Click ***Clip Art*** in the ***Images*** group on the ***Insert*** tab
- Type a word or phrase describing the Clip Art you want in the Search for text box in the ***Clip Art*** task pane – for example "Accountant" or "Presentation"
- Click ***Go***.
- Choose an appropriate image from the results list shown. To insert it into the presentation click the image.
- Re-size the inserted image by clicking and dragging an edge or corner


## 3.3 Screen-shots

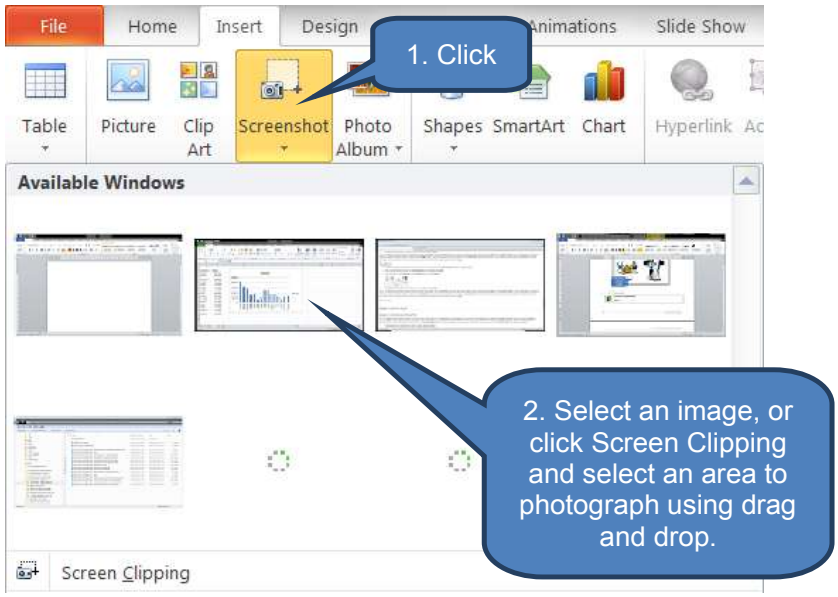
**Definition: Screen-shot**

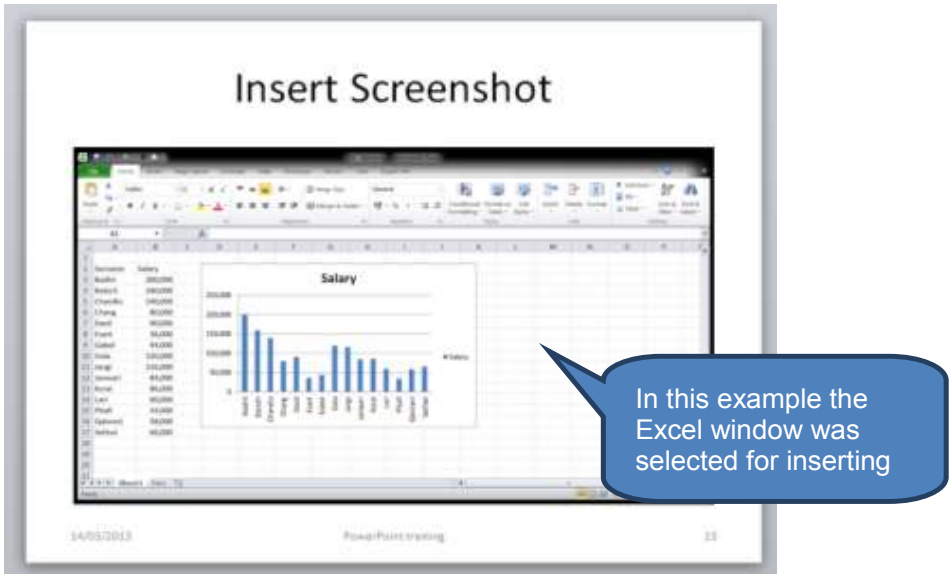
**A screen-shot is a photograph of the display on a computer screen. This is typically used to demonstrate the operation of a program or communicate what a window looks like.**

**A screen shot can be taken of a particular window (e.g. Microsoft Excel, PowerPoint or Word), the whole desktop, or an area defined by the user.**

To add a screen shot to a presentation:

- Click ***Screenshot*** in the ***Images*** group on the ***Insert*** tab
- Either
  - Click one of the windows to insert a picture of; or
  - Click Screen Clipping then drag the mouse over the screen to select an area to photograph and insert



# 4 ILLUSTRATIONS

## Section overview

- Shapes
- SmartArt
- Charts and graphs

## 4.1 Shapes

**Definition: Shapes**

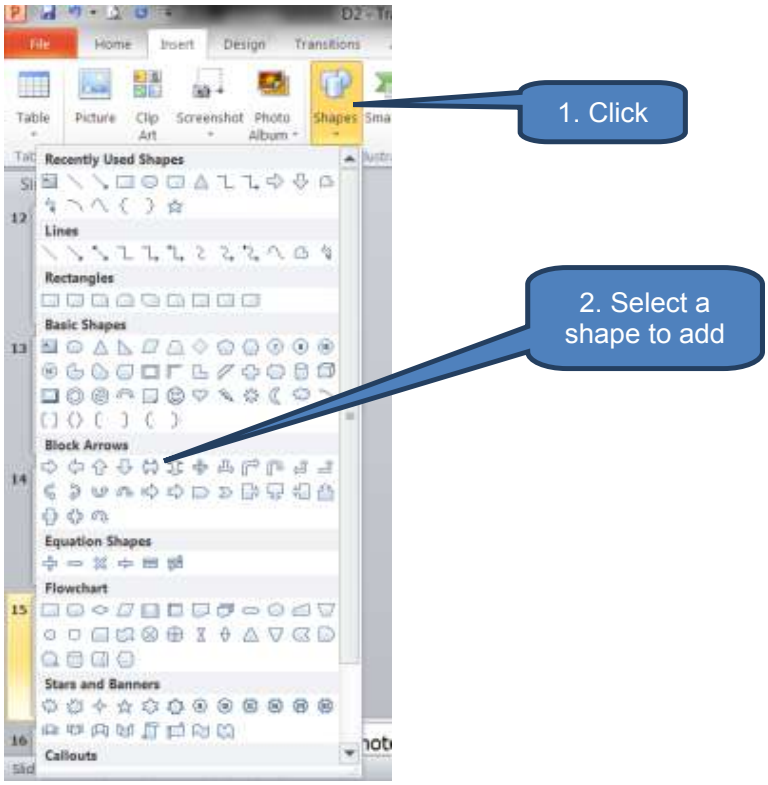
**Shapes are pre-defined graphics that include lines, geometric shapes, arrows, equation shapes, flowchart symbols, banners, stars and callouts that can be added to presentations either individually or combined into more complex shapes.**

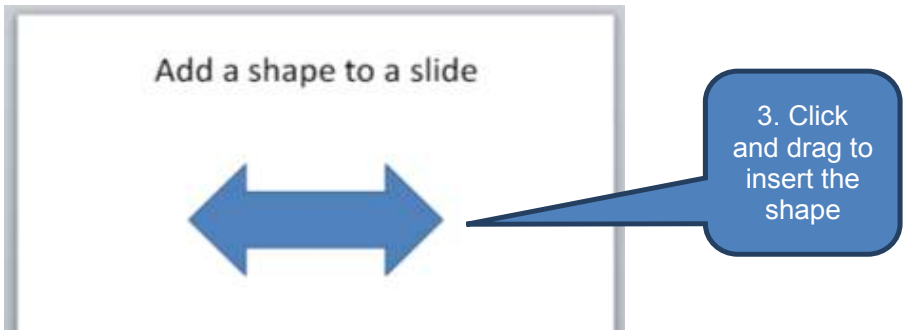
### Add a shape to a slide

To add a shape to a slide:

- ❑ Click ***Shapes*** in the ***Drawing*** group on the ***Insert*** tab
- ❑ Select a shape to add
- ❑ Click on the slide where you want to insert the shape
- ❑ Drag and release to place the shape

Note: to retain the pre-set dimensions of a shape press and hold the SHIFT key whilst you drag.

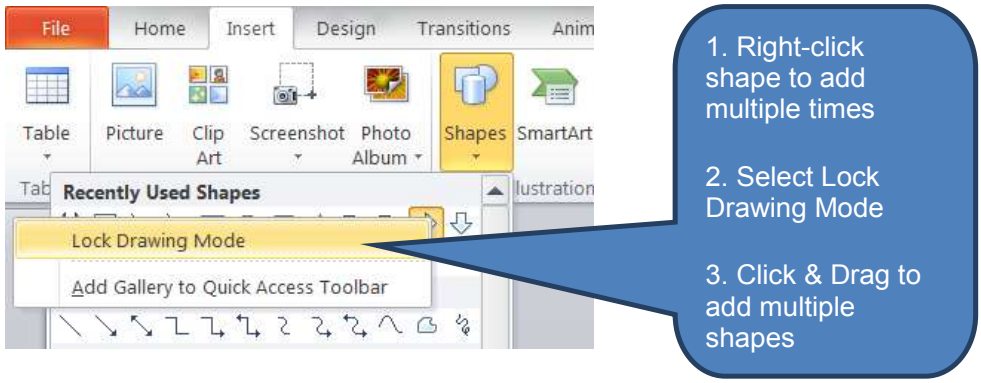





### Add multiple copies of same shape to a slide

To add multiple copies of same shape to a slide:

- Click ***Shapes*** in the ***Drawing*** group on the ***Insert*** tab
- Right-click the shape you wish to add multiple times
- Click ***Lock Drawing Mode*** option
- Click on the slide where you want to insert the first shape
- Drag and release to place the shape
- Repeat the above two steps until you have added all the shapes you want then press ***ESC*** to exit Lock Drawing Mode

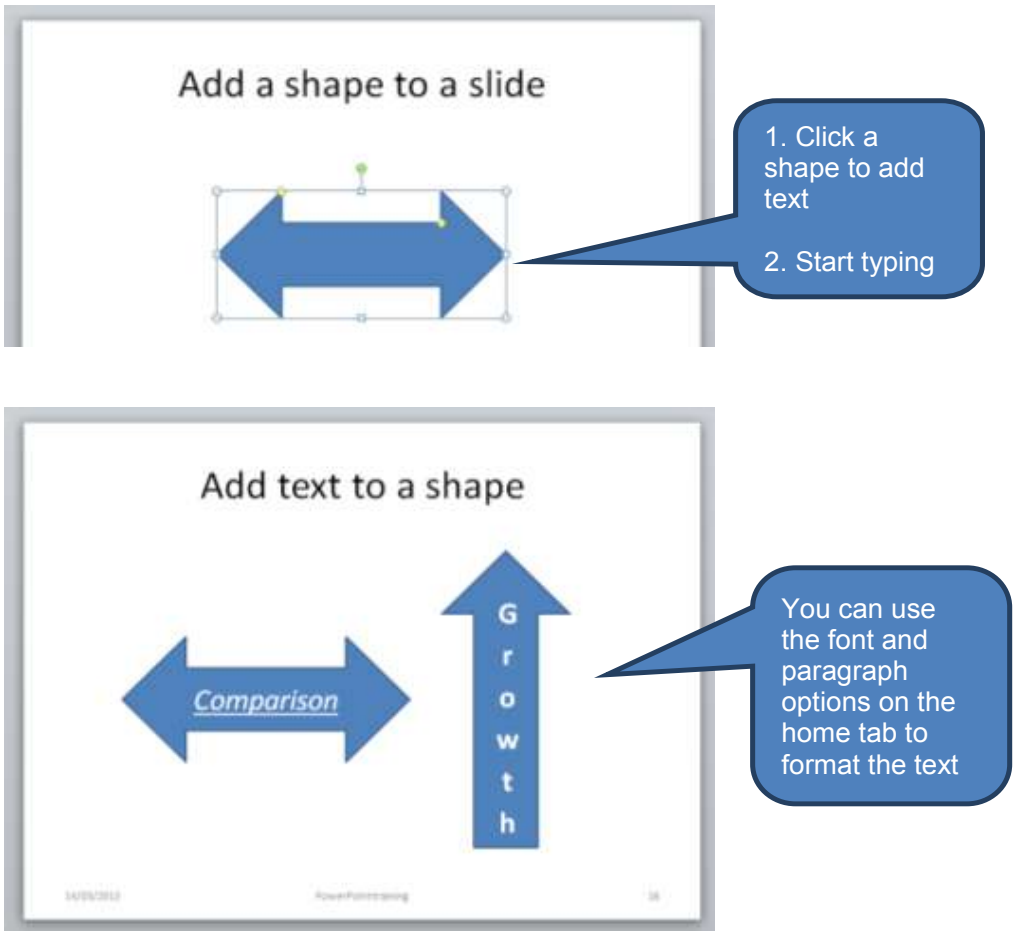



### Add text to a shape

To add text to a shape:

- Click the shape you want to add text to
- Type your text

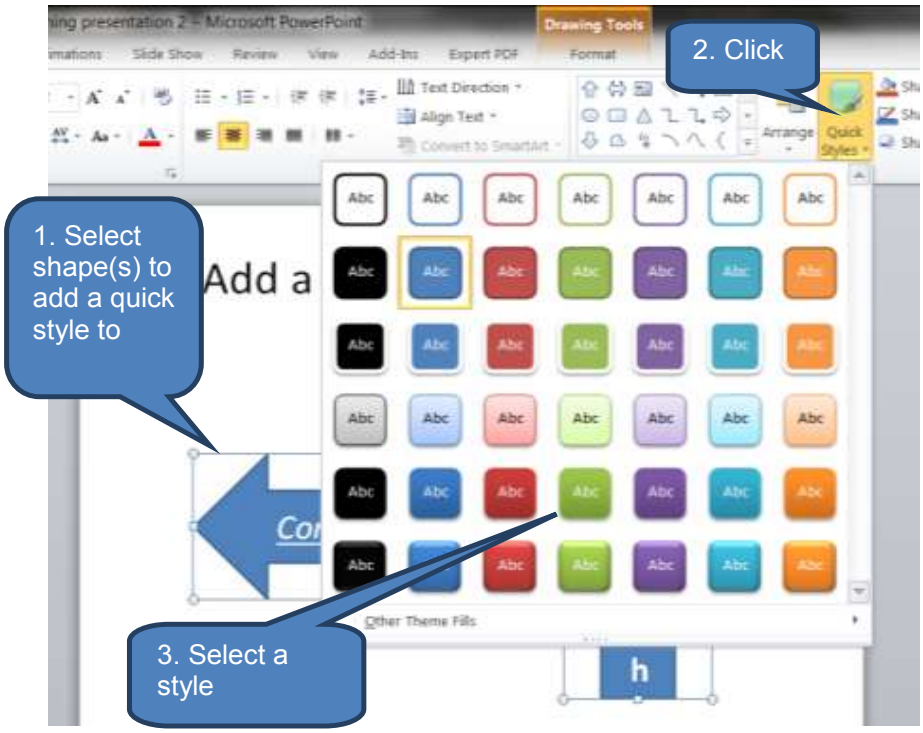
Note: you can use the font and paragraph options on the ***Home*** tab to format the text.

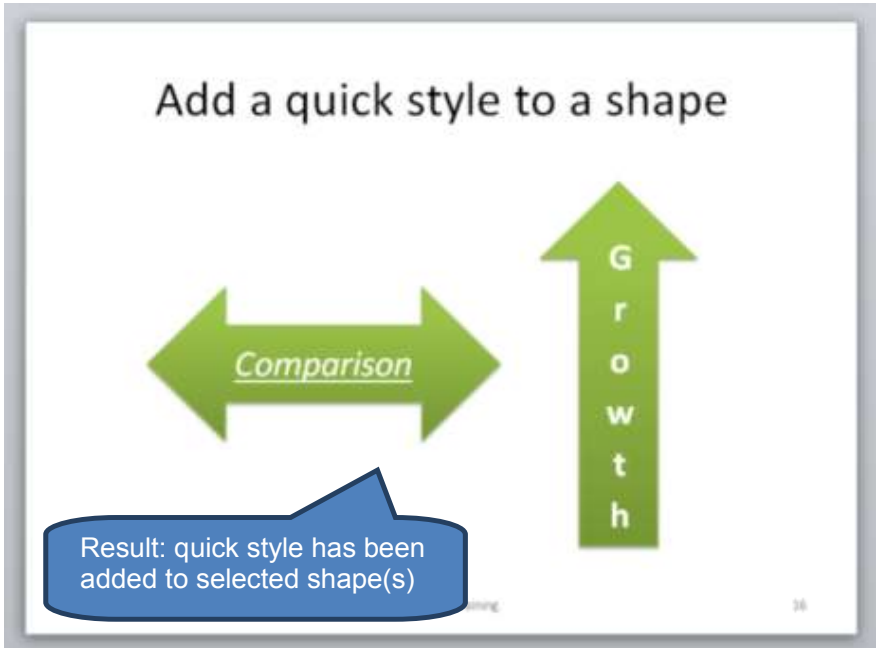



### Add a quick style to a shape

To add a quick style to a shape:

- Click a shape you want to apply a new or different ***Quick Style*** to. You can select multiple shapes simultaneously by holding down the ***SHIFT*** key.
- Select a ***Quick Style*** in the ***Drawing*** group on the ***Format*** tab (under ***Drawing Tools*** which appears when shapes are selected).




### Delete a shape

To delete a shape:

- Click the shape you want to delete
- Press the ***DELETE*** key

## 4.2 SmartArt

**Definition: SmartArt**

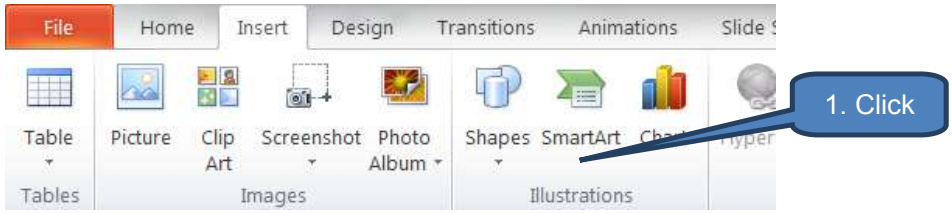
**The SmartArt facility enables users to create simple and effective diagrams, organization charts and flow charts.**

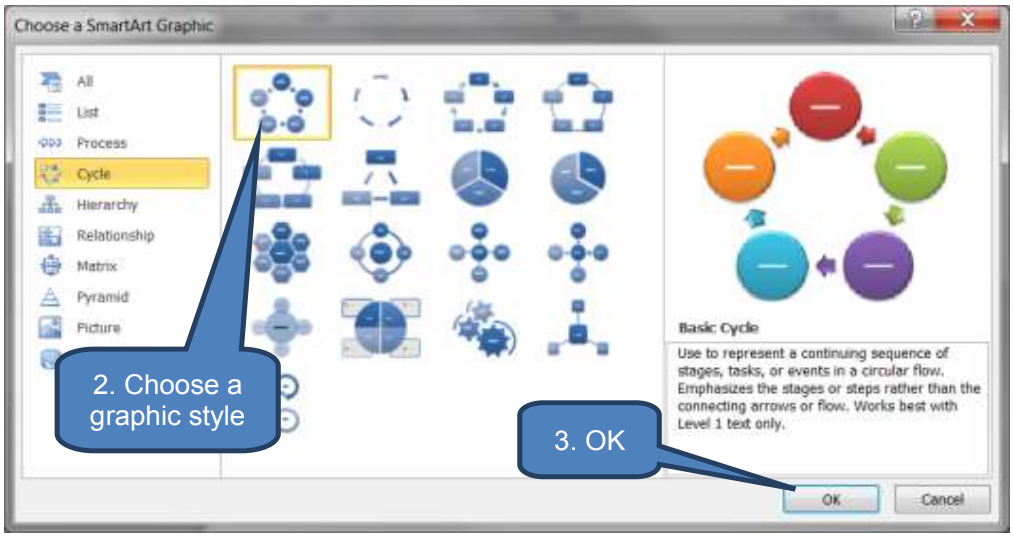
**SmartArt offers an effective alternative method of presentation for bulleted lists and text-only slides. This is particularly useful given that illustrations improve understanding and memory. Illustrations also better encourage action.**

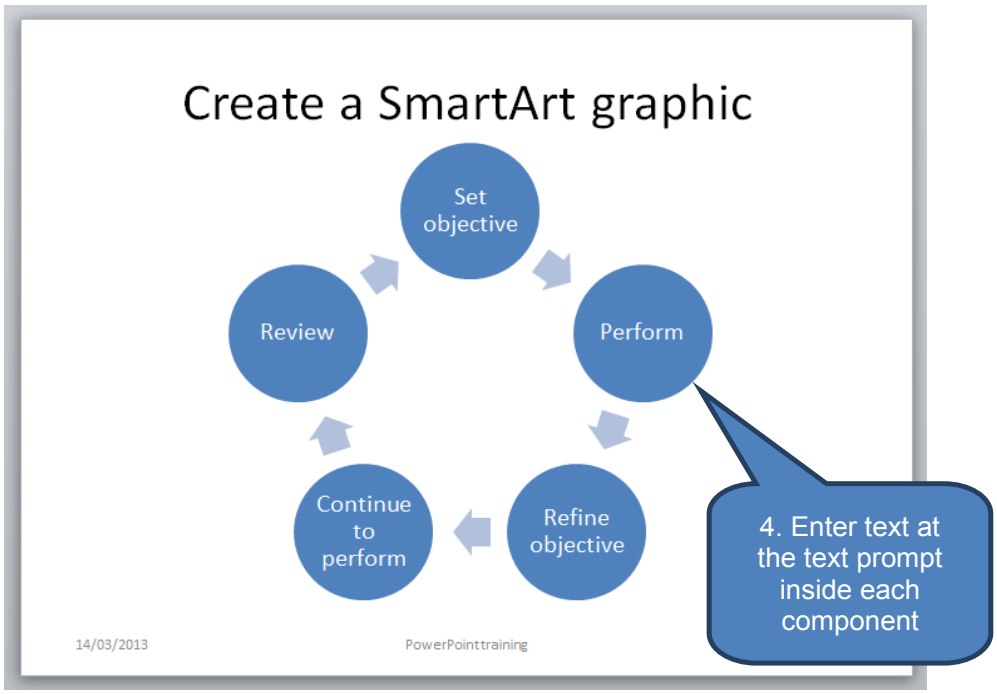
### Create a SmartArt graphic

To create a SmartArt graphic:

- Click ***SmartArt*** in the ***Illustrations*** group on the ***Insert*** tab
- Click the type and layout you want in the ***Choose a SmartArt Graphic*** dialog box then click ***OK*** to insert the graphic
- Click the ***Text*** prompt in a SmartArt graphic component then type your text



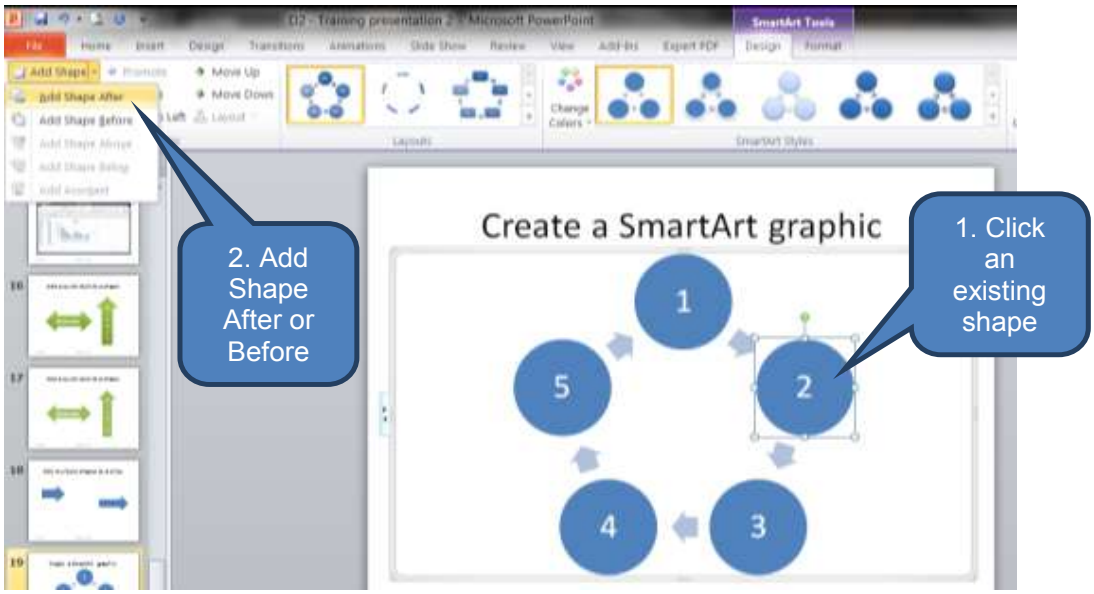



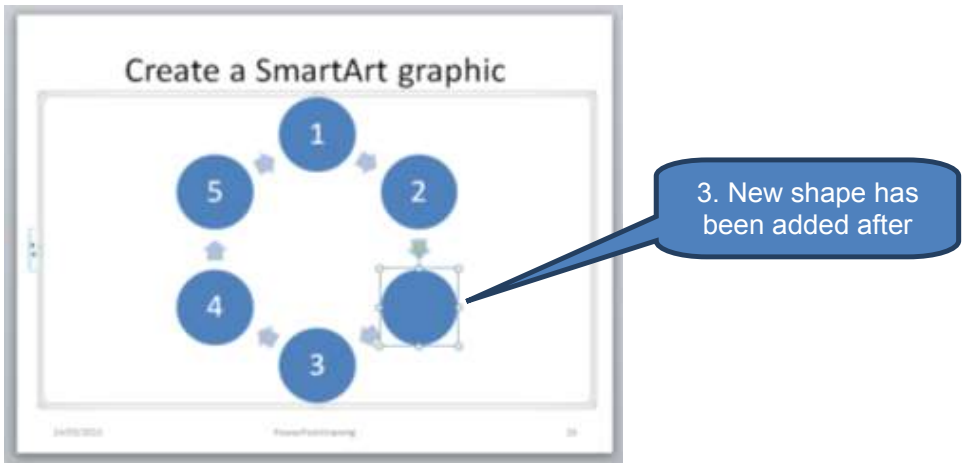



### Add shapes to a SmartArt graphic

To add shapes to a SmartArt graphic:

- Click the SmartArt graphic you want to add another shape to
- Click an existing shape closest to where you want to add the new shape
- Click the ***Add Shape*** arrow in the ***Create Graphic*** group on the ***Design*** tab under ***SmartArt Tools***
- Select either ***Add Shape After*** or ***Add Shape Before***






### Delete shapes from a SmartArt graphic

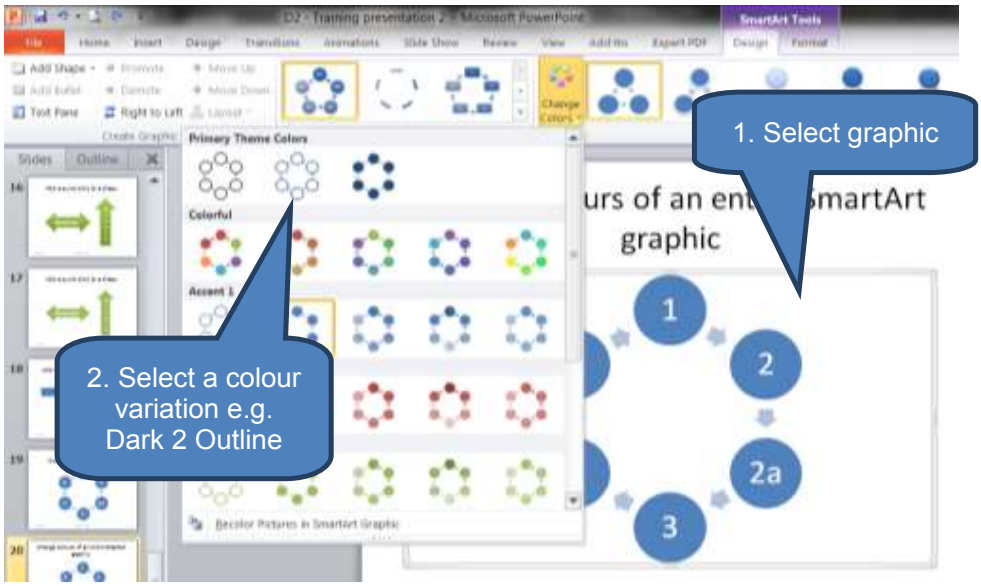
To delete shapes from a SmartArt graphic:

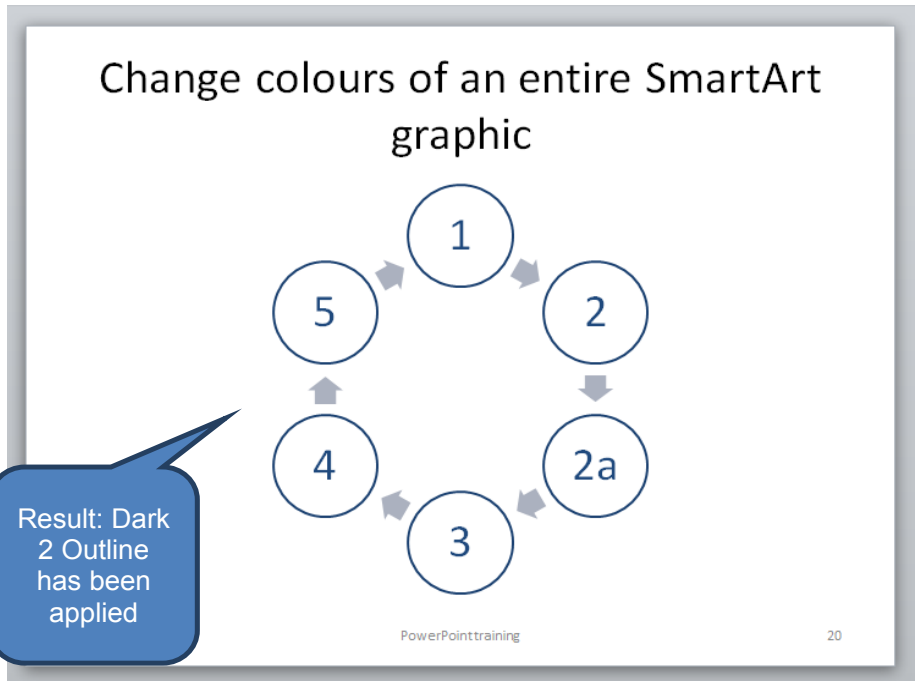
- Click the shape you want to delete then press the ***DELETE*** key.
- To delete an entire SmartArt graphic click the SmartArt graphic border and then press ***DELETE***

### Change colours of an entire SmartArt graphic

To change the colours of an entire SmartArt graphic:

- Click a SmartArt graphic
- Click ***Change Colours*** in the ***SmartArt Styles*** group on the ***Design*** tab under ***SmartArt Tools***
- Click the desired colour variation to apply a colour scheme to the selected SmartArt graphic

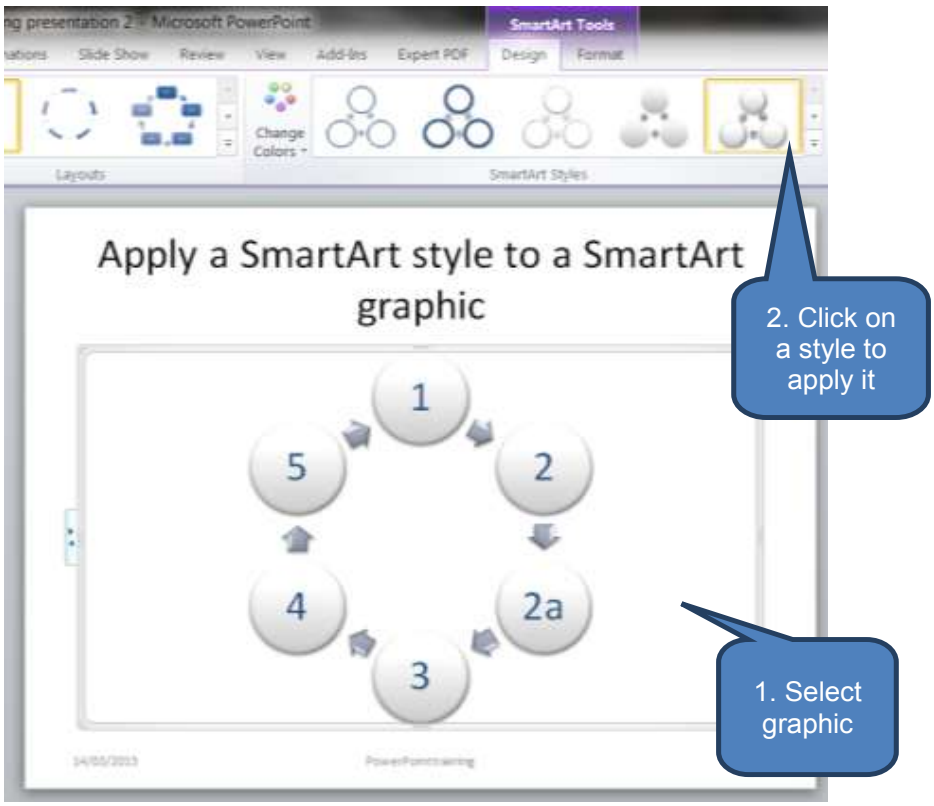





### Apply a SmartArt style to a SmartArt graphic

To apply a SmartArt style to a SmartArt graphic:

- Click a SmartArt graphic
- Select a style in the ***SmartArt Styles*** group on the ***Design*** tab under ***SmartArt Tools***



## 4.3 Charts and graphs

**Definition: Charts and graphs**

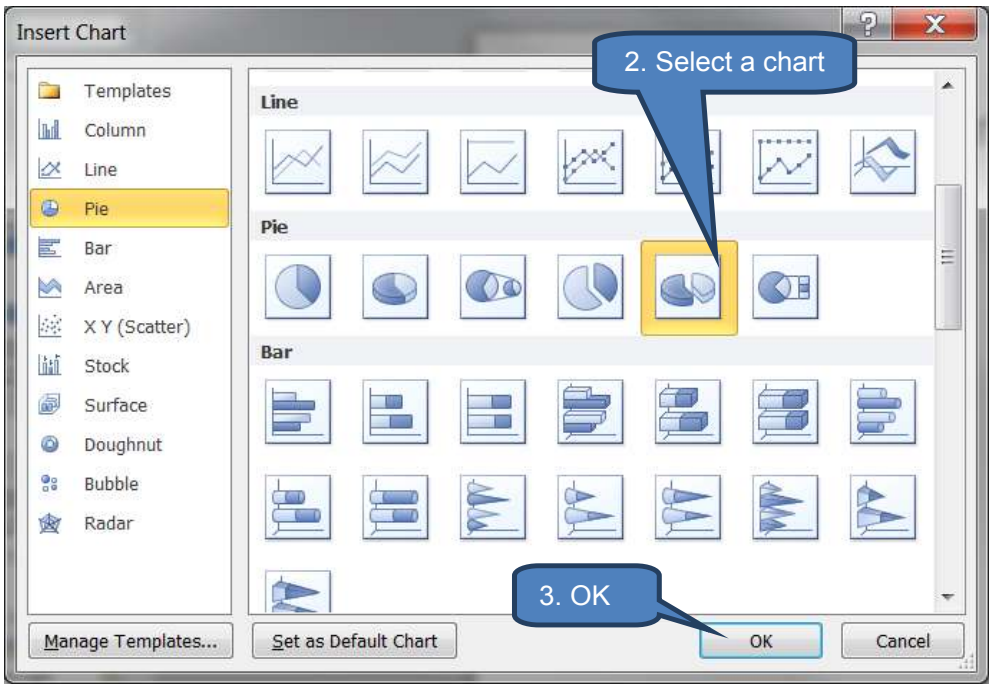
**There are many kinds of data charts and graphs that can be added to Microsoft PowerPoint presentations including column charts, line graphs, radar graphs, bubble graphs, doughnut charts, surface charts, stock charts, scatter graphs, area graphs, bar charts and pie charts.**

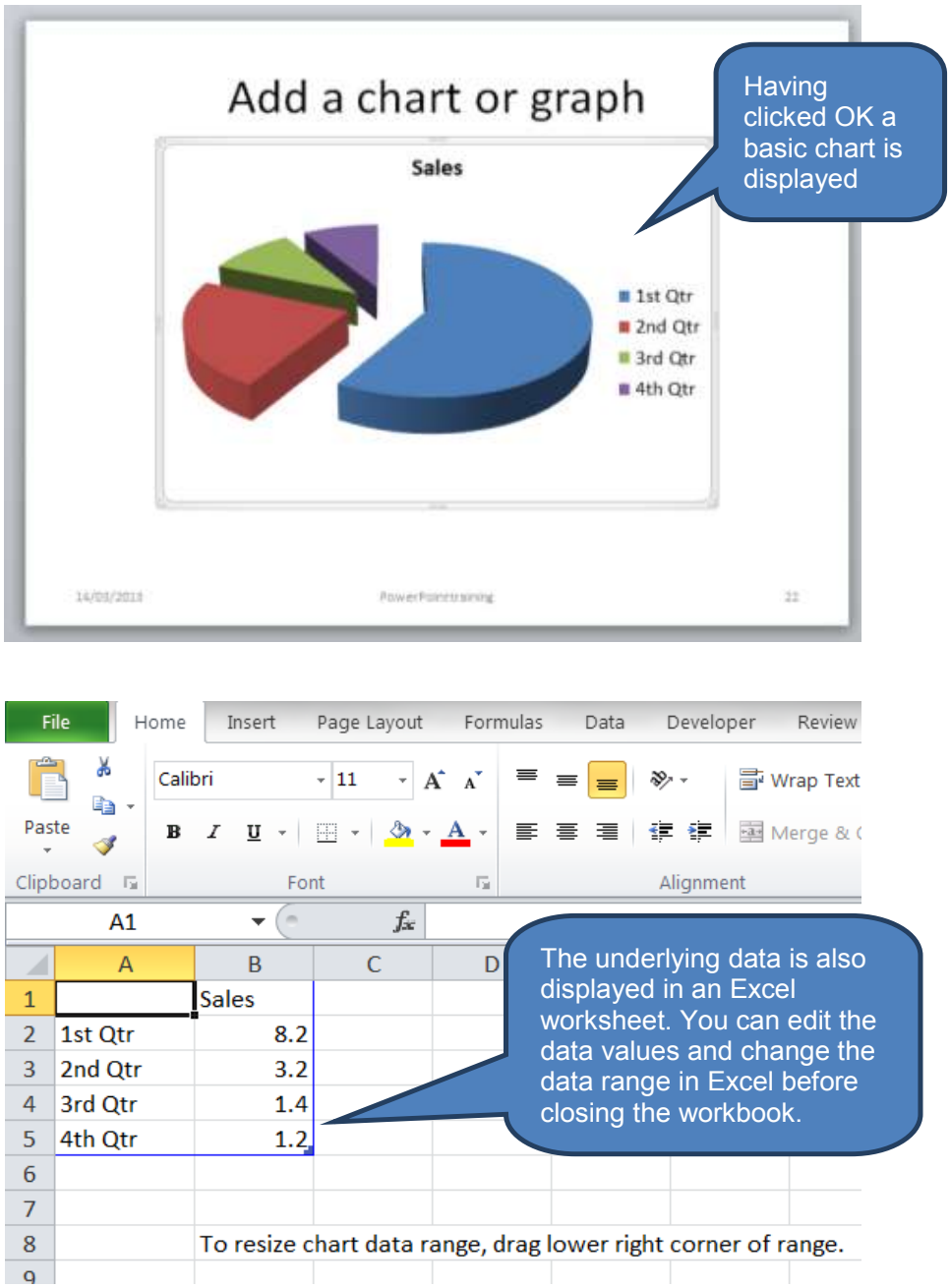
### Add a chart or graph to a presentation

To add a chart or graph to a presentation:

- Click ***Chart*** in the ***Illustrations*** group on the ***Insert*** tab
- Select the type of chart you want in the ***Insert Chart*** dialog box then click ***OK***

This inserts a standard default chart into the presentation and also opens an Excel worksheet with the underlying data. You can edit the data in the worksheet then close the worksheet once complete.

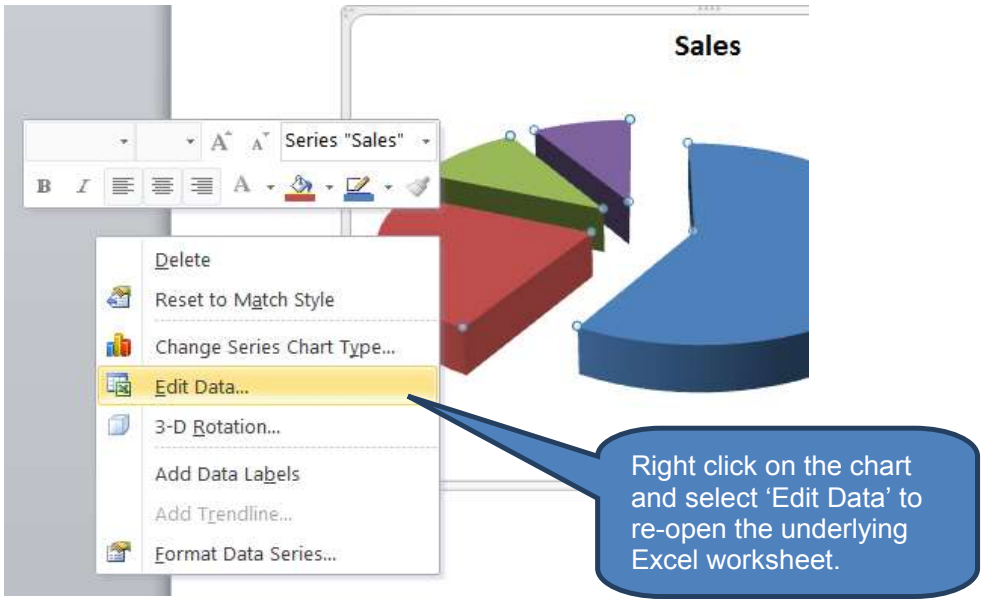



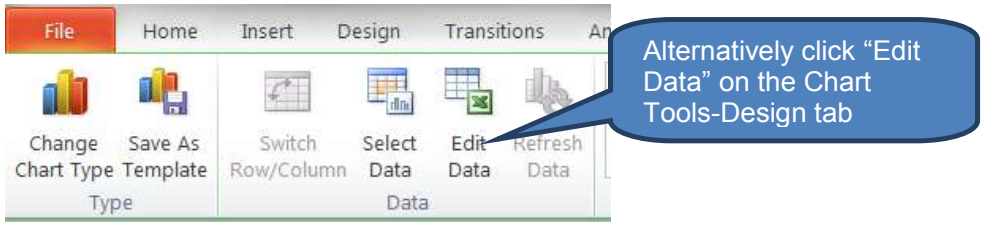



To subsequently edit the underlying data either:

- Right-click the chart or graph then click ***Edit Data;*** or
- Click ***Edit Data*** on the ***Chart Tools-Design*** tab

This will re-open the underlying Excel worksheet allowing further editing of the data values and range.



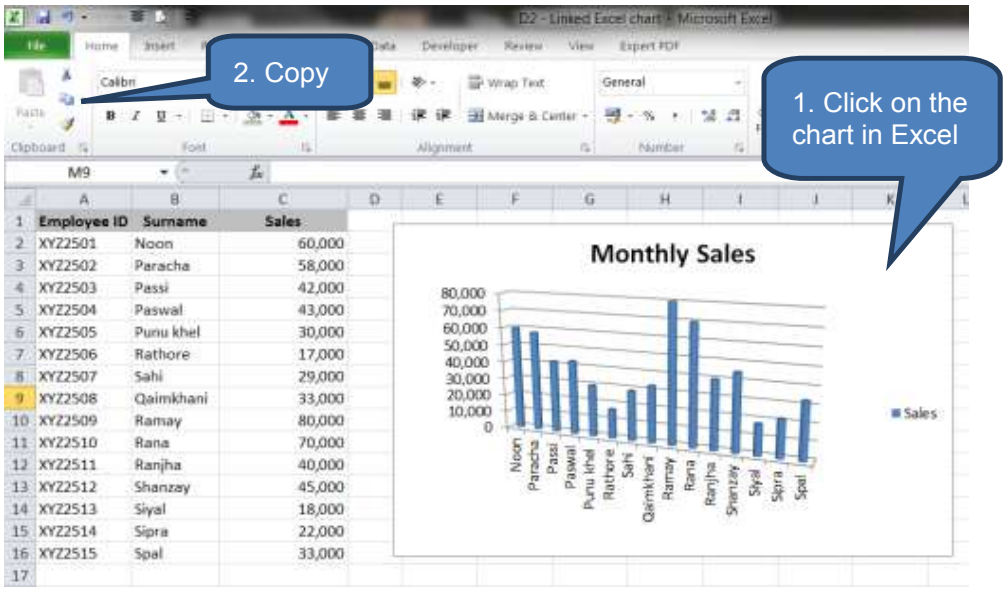



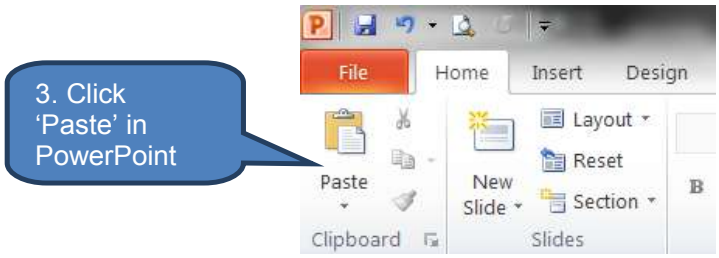

### Insert a linked Excel chart

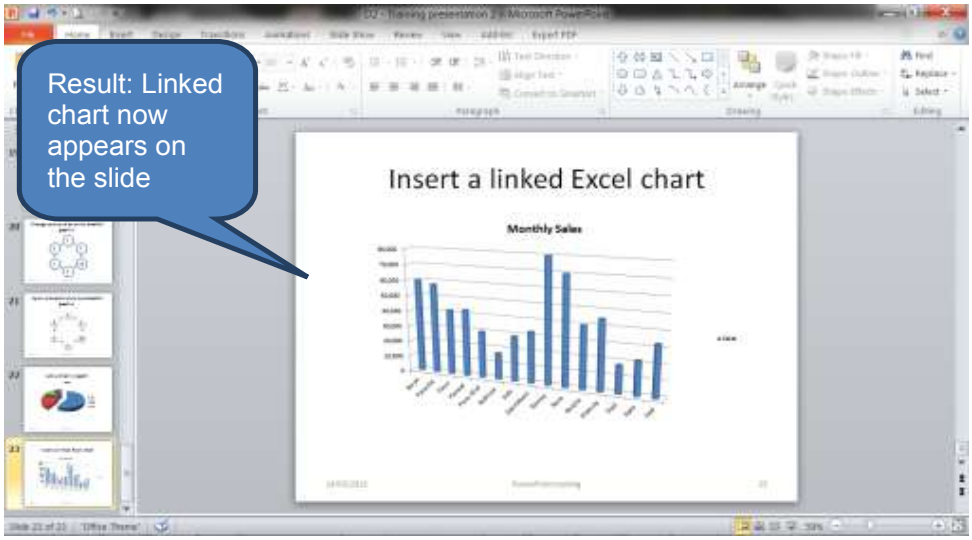
Rather than create a new chart in PowerPoint and enter new data you can base a chart on an existing Excel worksheet. This creates a link between the PowerPoint presentation and the Excel worksheet.

To insert a linked Excel chart in PowerPoint:

- In Excel:
  - Open the Excel workbook containing the chart you want to link. Note – the workbook must have been saved.
  - Select the chart by clicking it
  - Click ***Copy*** in the ***Clipboard*** group on the ***Home*** tab
- In PowerPoint:
  - Select the slide where you want to insert the chart
  - Click the ***Paste*** arrow in the ***Clipboard*** group on the ***Home*** tab
    - If you wish to retain the look and feel of the chart as it appeared in Excel select ***Keep Source Formatting & Link Data***
    - Alternatively select Use ***Destination Theme & Link Data***



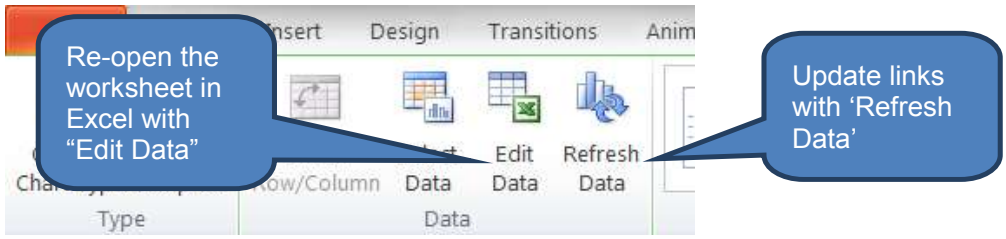




In order to capture any changes in the underlying Excel chart the link must be refreshed. To refresh the link:

- Click ***Refresh Data*** in the ***Data*** group on the ***Design*** tab under ***Chart Tools***

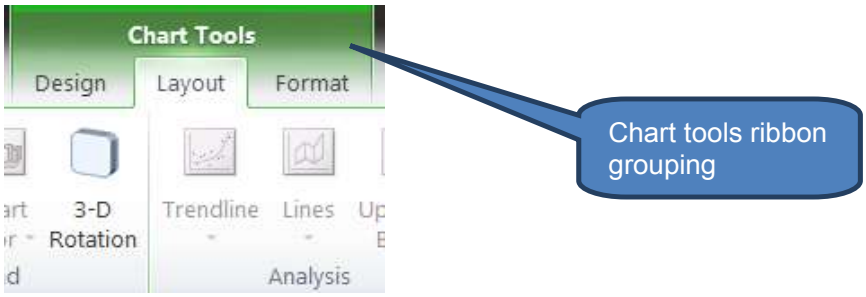
You can also re-open the linked worksheet as follows:

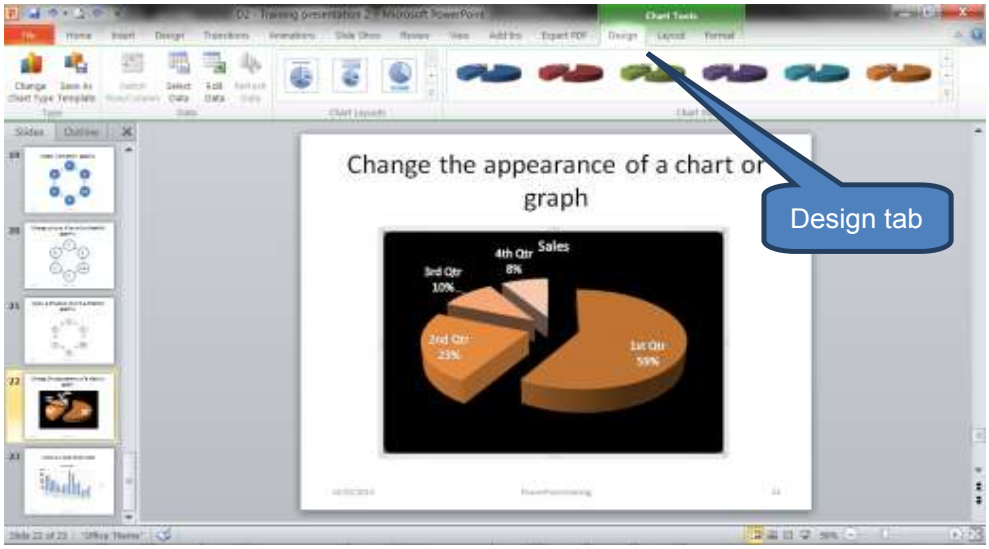
- Select the chart by clicking on it
- Click ***Edit Data*** in the ***Data*** group on the ***Design*** tab under ***Chart Tools***

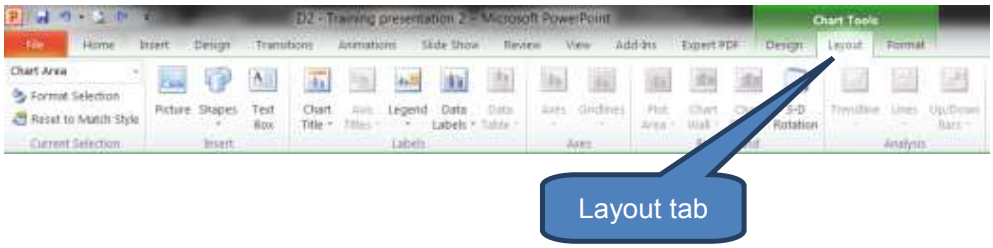


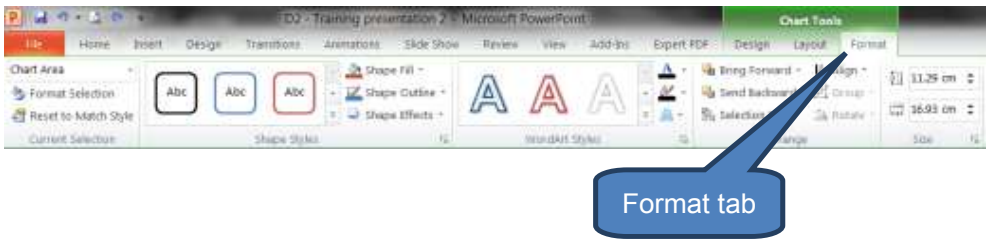

### Change the appearance of a chart or graph

When you click on a chart or graph the Chart Tools ribbon grouping is displayed. The group includes three tabs – Design, Layout and Format.






You can explore the various options in more detail in a live session of Microsoft PowerPoint which are summarised in the following table:

| Tab | Functionality |
|---|---|
| Design | • Type – change chart type or save as a new template<br>• Data – Select data, edit data, refresh data<br>• Chart layout<br>• Chart style |
| Layout | • Insert – picture, shapes, text box<br>• Labels – edit the chart labels<br>• Axes – edit the axes<br>• Background – format the chart background<br>• Analysis – add trendlines |
| Format | • Edit shape styles – fill, outline and effects<br>• Use WordArt styles<br>• Arrange – promote and demote the chart object versus other objects |

# 5 MEDIA

**Section overview**

- Videos
- Audio

## 5.1 Videos

### Introduction

There are two methods for adding videos to presentations – linking and embedding.

| Method | Description |
|---|---|
| Link a video | When you link to a video you create a connection between the PowerPoint presentation and the linked video file.<br><br>The advantage of this is that you reduce the file size of your presentation dramatically because the video remains external to the presentation file.<br><br>However, the disadvantage is that you can experience issues with missing files and broken links (particularly where network drives are used). Therefore if you move a presentation file that includes linked videos (e.g. to show the presentation on a laptop) remember to also move the video file and re-link after both files have been moved. |
| Embed a video | When you embed a video into a presentation you are literally taking a copy of the video and adding it to the presentation file.<br><br>The advantage of this approach is that you do not need to worry about broken links and locating the source video files.<br><br>However, the disadvantage is that the file size of the PowerPoint presentation will be significantly larger to accommodate the video features. |

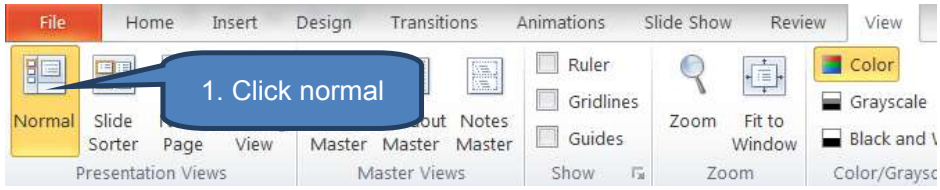
### Link to an external video from your presentation

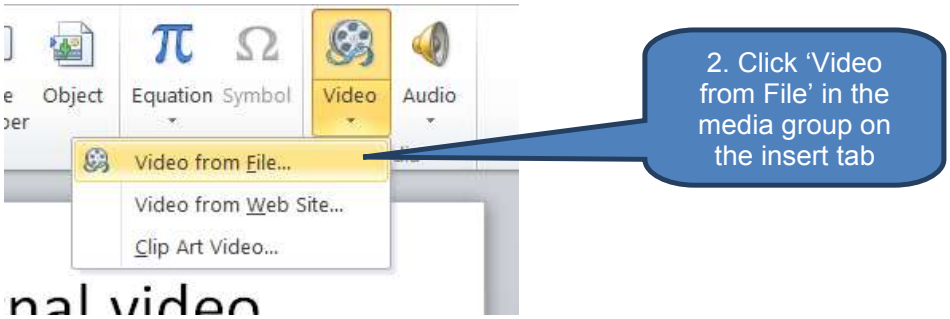
To link to an external video to your presentation:

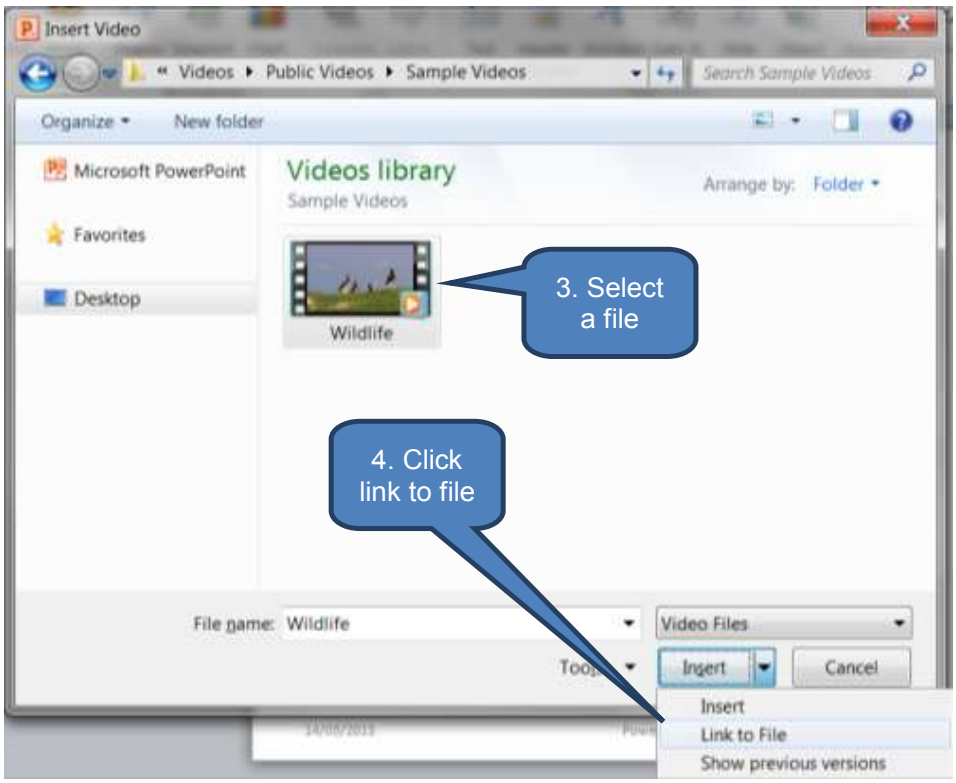
- ❑ Ensure you are in ***Normal*** view (click ***Normal*** on the ***View*** tab)
- ❑ Click the slide where you want to add a link to a video
- ❑ Click the ***Video*** arrow in the ***Media*** group on the ***Insert*** tab
- ❑ Click ***Video from File***
- ❑ Locate then select the file you want to link using the file manager

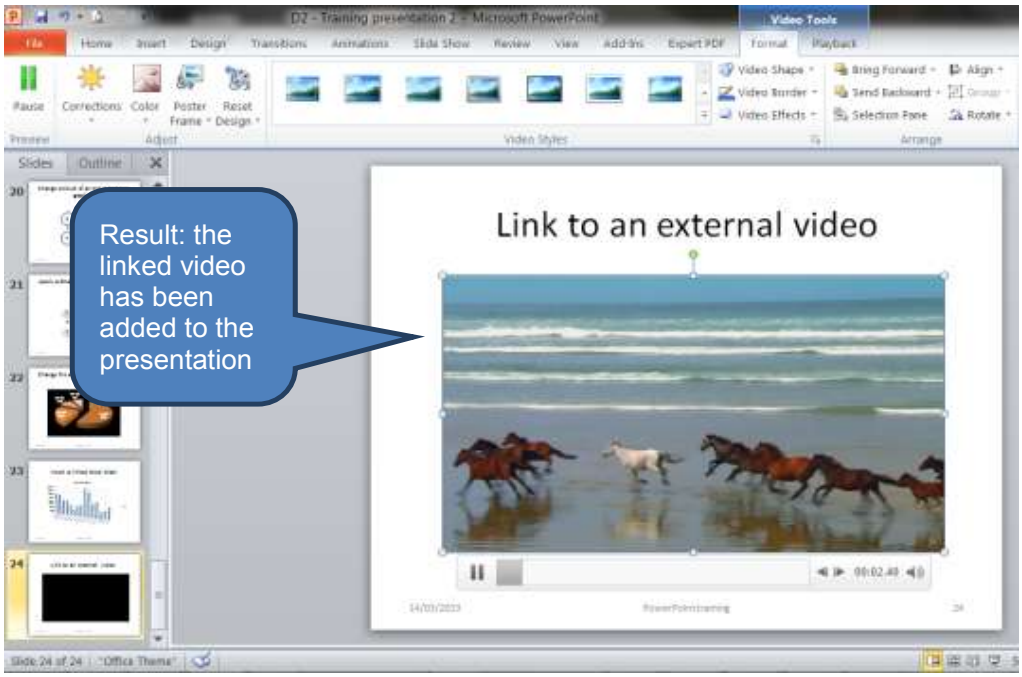
- Click ***Link to file*** on the ***Insert*** button

Tip: To help minimise the risk of broken links you could adopt the tactic of copying the videos to the same folder as your presentation then link to them there.



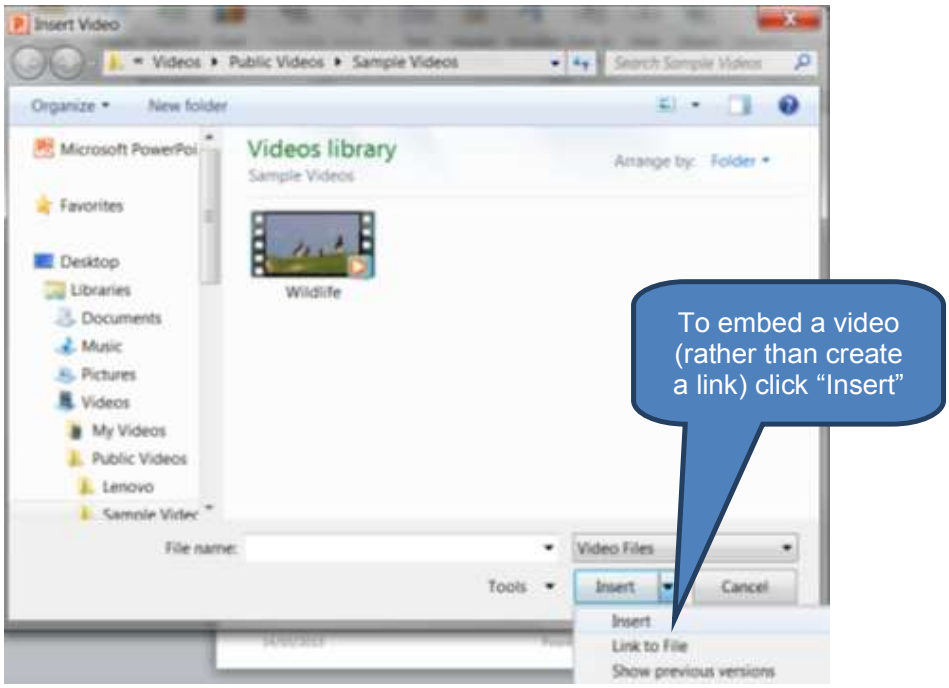






### Embed a video in your presentation

To embed a video in your presentation follow the same procedure as for linking a video as described above apart from the final step. Here, you must select ***Insert*** rather than ***Link to File*** on the Insert video dialog box.



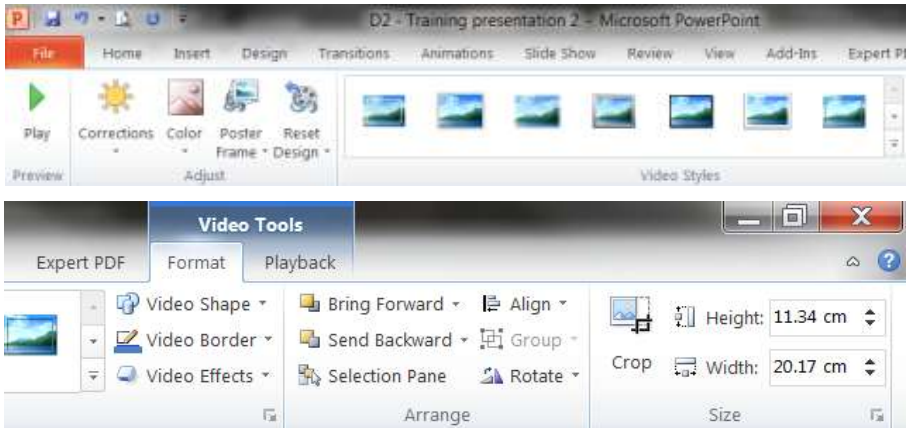
### Video playback settings - Overview

There are a number of playback settings you can adjust for presentation videos which are accessible from the ***Video Tools*** tabs.

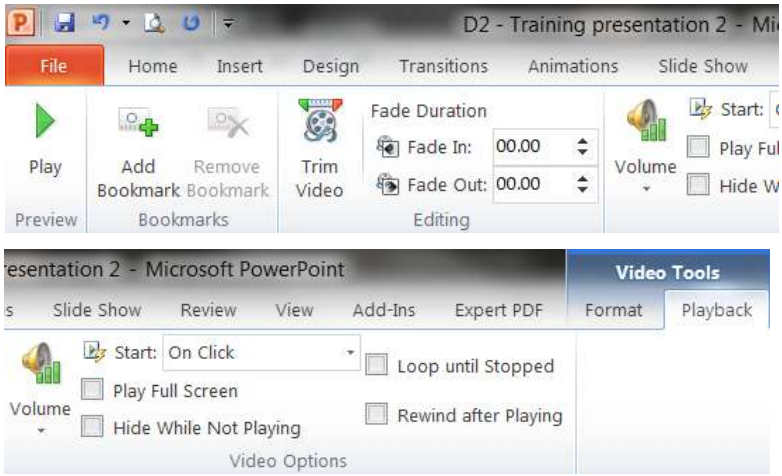
To access the playback options:

- Click a video in your PowerPoint presentation. This will activate the ***Format*** and ***Playback*** tabs under ***Video Tools***.
- The Format options impact how the video appears on the slide. Examples include framing, shape, borders and other effect.
- Playback options include:
  - Trim (edit) the video
  - Fade in and fade out (plus duration)
  - Volume
  - Whether the video should start automatically or on click
  - Full screen mode
  - Hide whilst not playing mode
  - Loop mode
  - Rewind after playing facility

### Video playback settings - Format tab



### Video playback settings - Playback tab




## 5.2 Audio

**Definition: Audio in presentations**

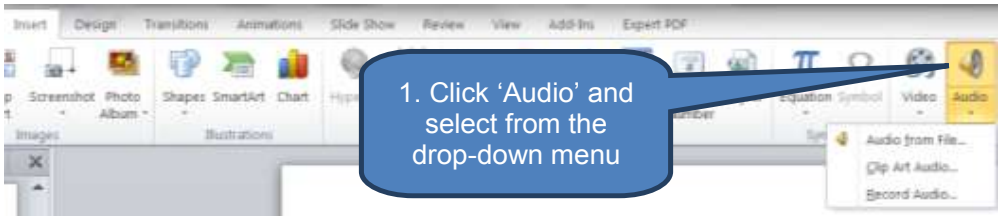
**As with embedded videos, audio can also be used to help bring a presentation to life. You can add audio clips from files on the computer, a network or the Clip Art task pane. You can even use music from a CD or record your own audio to add to a presentation.**

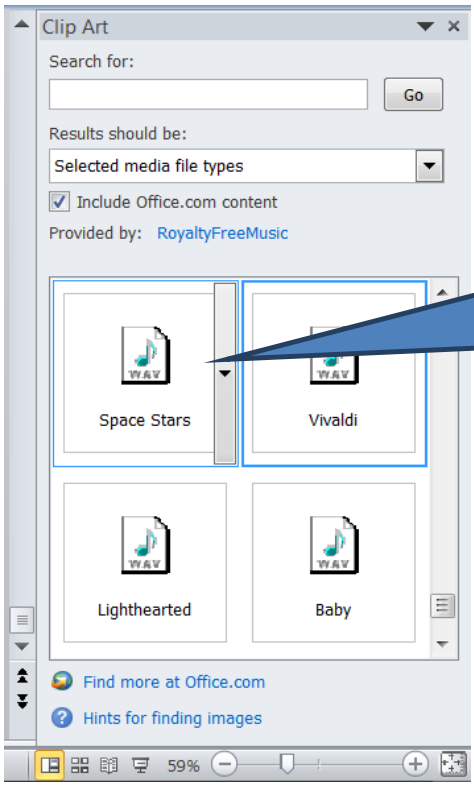
**Take care not to over-use embedded audio as it can distract the audience.**

### Add an audio clip to a presentation

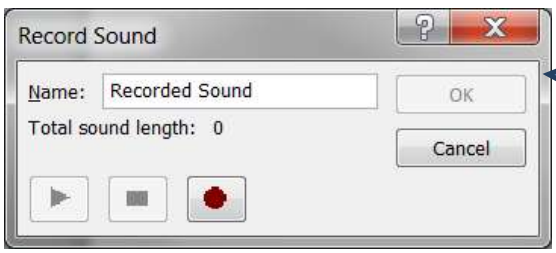
To add an audio clip to a presentation:

- ❑ Select the slide in which you want to add an audio clip
- ❑ Click ***Audio*** in the ***Media*** group on the ***Insert*** tab
- ❑ Either
  - Click ***Audio from File***. Once you've located the audio file double-click the file to add it; or
  - Click ***Clip Art Audio*** and browse the Clip Art task pane for an appropriate audio clip. Once found, click an audio clip to add it; or
  - Click ***Record Audio*** and use the ***Record Sound*** dialog box to record your audio (i.e. click ***Record*** followed by ***Stop*** then ***OK***).

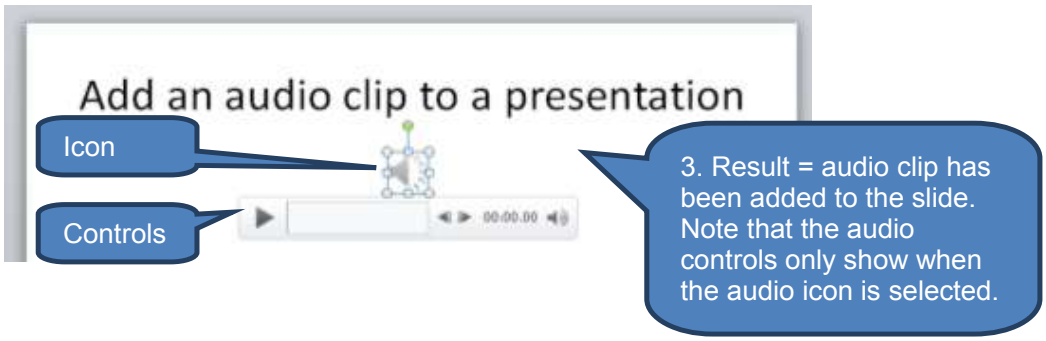



2b. 'Clip Art audio: Search the Clip Art library for an appropriate clip then click it to insert.
To preview a clip click the down-arrow to the right of the clip and select preview.




2c. 'Record Audio: Press 'Record' button to start recording then 'Stop' to finish. Press 'Play' to preview and 'OK' to insert.



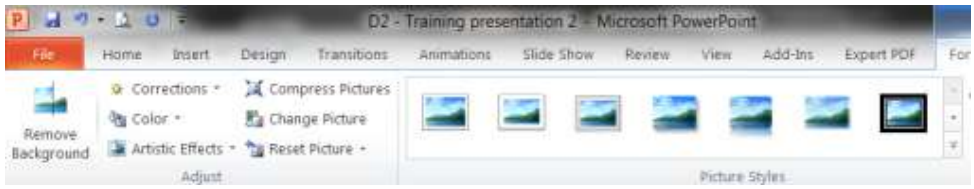

### Set the playback options for an audio clip

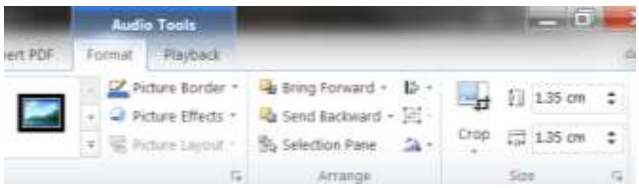
Similar to adding videos there are a number of playback settings you can adjust for audio clips which are accessible from the ***Audio Tools*** tabs.

To access the playback options:

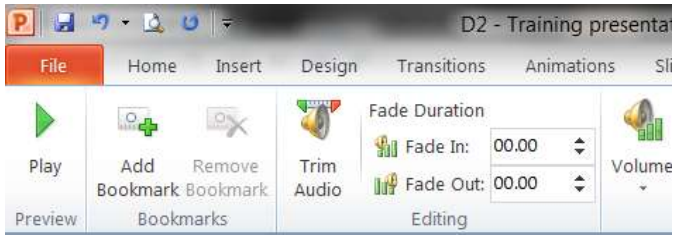
- ❑ Click an audio clip in your PowerPoint presentation. This will activate the ***Format*** and ***Playback*** tabs under ***Audio Tools***.
- ❑ The Format options impact how the audio icon appears on the slide. Examples include picture styles and artistic effects.
- ❑ Playback options include:
  - Trim (edit) the audio
  - Fade in and fade out (plus duration)
  - Volume
  - Whether the audio should start automatically or on click
  - Full screen mode
  - Hide during show mode
  - Loop mode
  - Rewind after playing facility

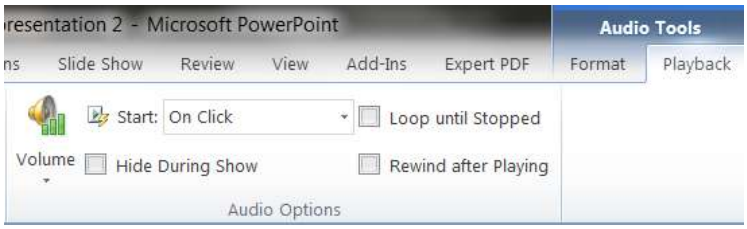
### Audio playback settings - Format tab



### Audio playback settings - Playback tab



## 6 CHAPTER REVIEW

### Chapter review

Before moving on to the next chapter check that you now know how to:

- Insert and edit tables
- Insert and edit images including photos, Clip Art and screenshots
- Insert and edit illustrations including shapes, Screen Art and charts.
- Insert and edit media including both video and audio

CHAPTER 14

# Slide transitions and animation

## Contents

# INTRODUCTION

## Learning outcomes

LO 5.4.1 Demonstrate performance-level knowledge whilst applying meaningful slide transitions

## Exam context

Slide transitions (movement between slides) and animations (movements on a slide) are another way to bring life to a presentation.

By the end of this chapter students will be able to:

- Add, amend and remove slide transitions
- Add, amend and remove slide animations

# 1 SLIDE TRANSITIONS

## Section overview

- Add a transition to a slide
- Change transition settings
- Remove a transition

**Definition: Slide transitions**

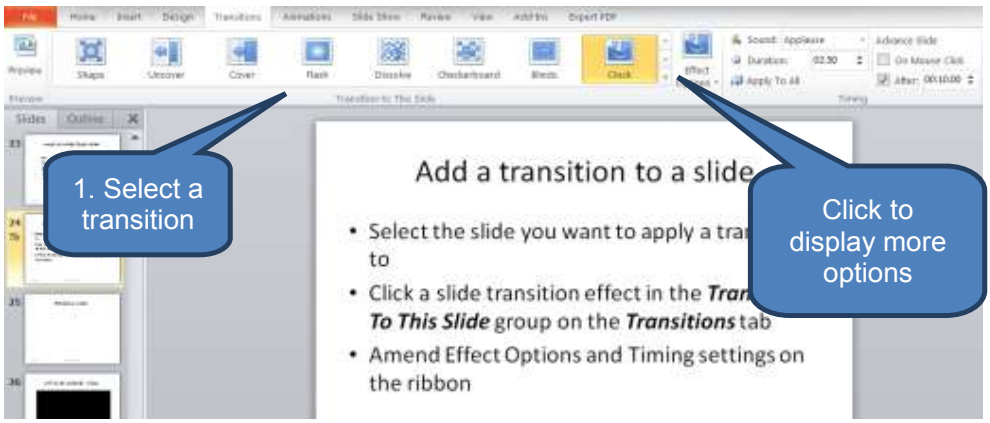
**Slide transitions describe the motion between slides in Slide Show view as one slide leaves the screen and the next slide enters. Transitions can be customized and even sound can be added.**

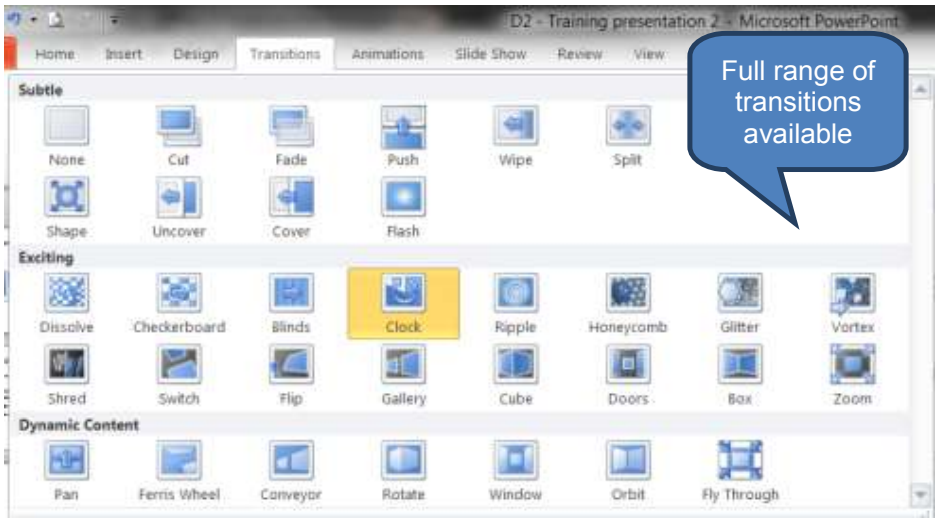
**Take care not to over-use transitions as too many can distract the audience.**

## 1.1 Add a transition to a slide

To add a transition to a slide:

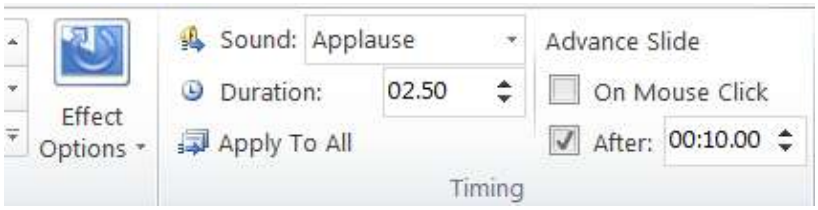
- ❑ Select the slide you want to apply a transition to
- ❑ Click a slide transition effect in the ***Transition To This Slide*** group on the ***Transitions*** tab. Note: click the down-arrow to display the full range of transitions to choose from.






## 1.2 Change transition settings

You can change transition settings by selecting appropriate settings in the '***Effect Options***' and ***Timing*** group on the ***Transitions*** tab. These are summarised in the table below.



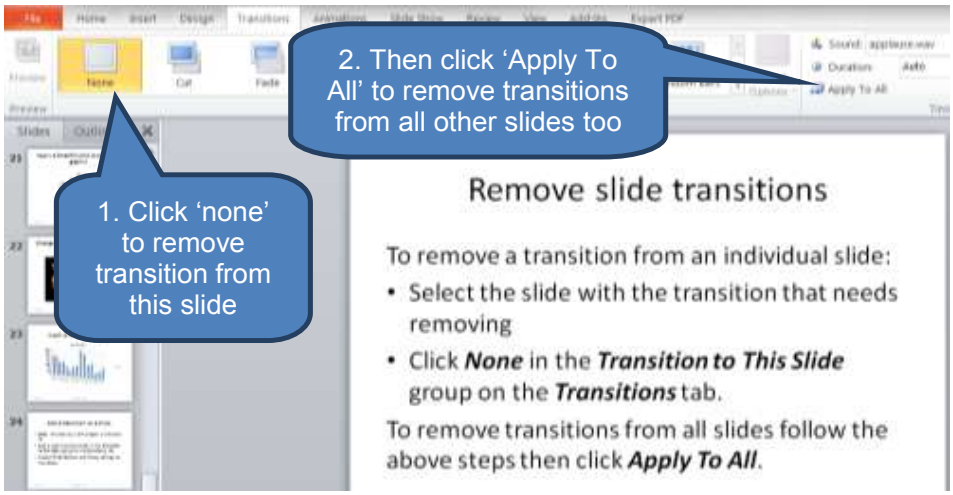

| Setting | Description |
|---|---|
| Effect Options | These vary depending on the transition that was selected. For example, effect options for Clock transition are clockwise, counterclockwise and wedge. The effect options for Blinds transition are horizontal or vertical |
| Sound | The selected sound will occur during transition |
| Duration | Defines how long the transition will take. The maximum setting is 59 seconds. |
| Apply To All | Clicking this will apply the current slide transition settings to all slides |
| Advance slide | These settings can be used to define when a slide transitions to the next slide.<br><br>Use 'After' to automatically transition to the next slide after a set time has elapsed. This can be very useful for an ongoing looped presentation. |

## 1.3 Remove a transition

To remove a transition from an individual slide:

- Select the slide with the transition that needs removing
- Click ***None*** in the ***Transition to This Slide*** group on the ***Transitions*** tab.

To remove transitions from all slides follow the above steps then click ***Apply To All***.



# 2 SLIDE ANIMATIONS

## Section overview

- Add animation to text or an object
- Change animation settings
- Removing animations

**Definition: Slide animation**

**Slide animation describes movement on a slide. For example a bulleted list might be animated by each bullet appearing on a slide one at a time each time the mouse is clicked.**

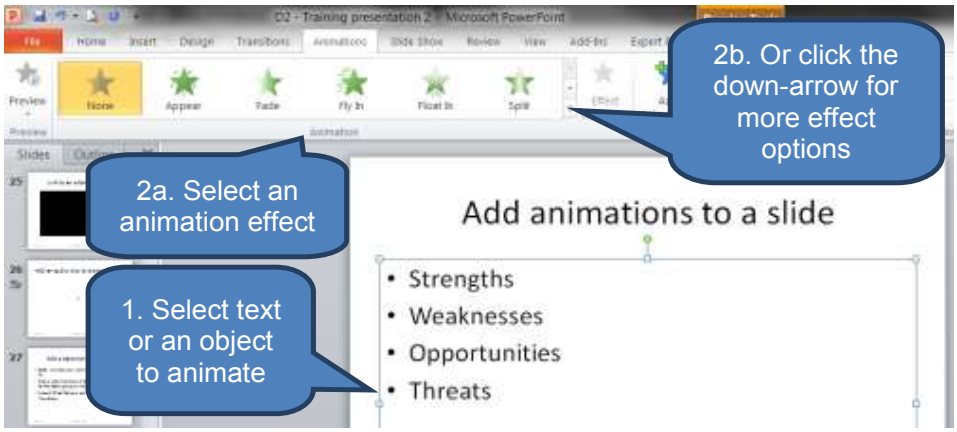
**There are three types of animation:**

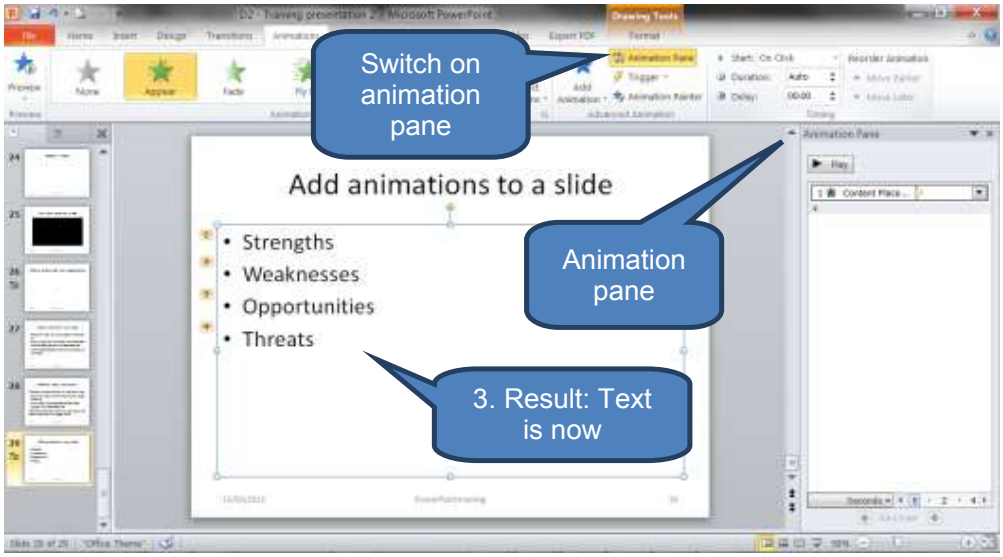
- **Entrance – e.g. appear or float in**
- **Emphasis – e.g. spin or bold flash**
- **Exit – e.g. fly out or bounce**

## 2.1 Add animation to text or an object

To add animation to text or an object:

- ❑ Select the text or object that you wish to apply animation to
- ❑ Click an animation effect in the ***Animation*** group on the ***Animations*** tab. Note:
  - Entrance effects are coloured green
  - Emphasis effects are coloured yellow
  - Exit effects are coloured red



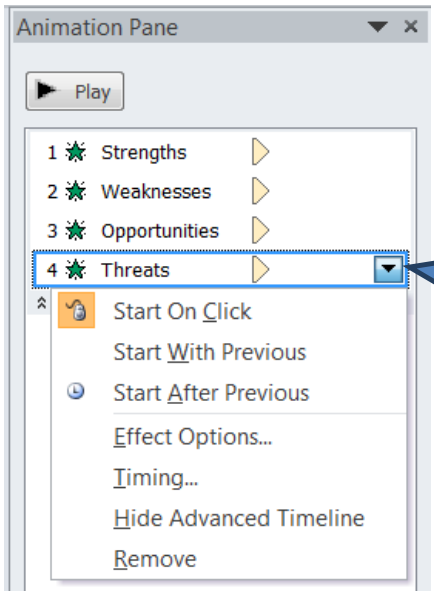




## 2.2 Change animation settings

You can change animation settings as follows:

- Click the animated text or object whose animation you want to edit
- Open the animation pane by clicking ***Animation Pane*** in the ***Advanced Animation*** group on the ***Animations*** tab (see above)
- You can change settings from the drop-down menu to the right of the animated text (see below)

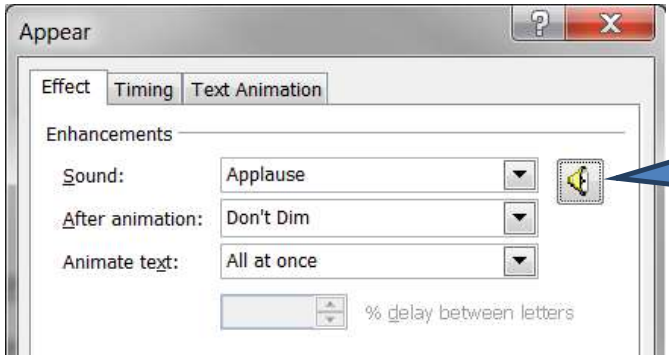
Alternatively you can use the Animations ribbon to adjust a selection of the animation settings.



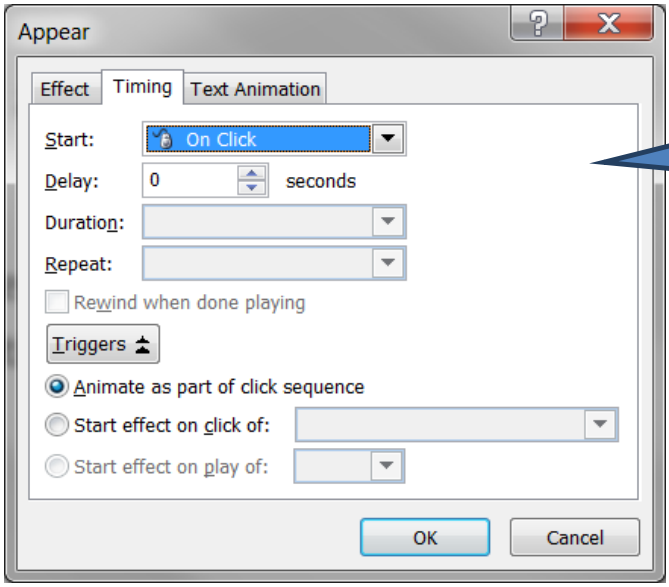

Select options from the drop-down menu

- 'Start on/with/after' defines when the animation should take effect.

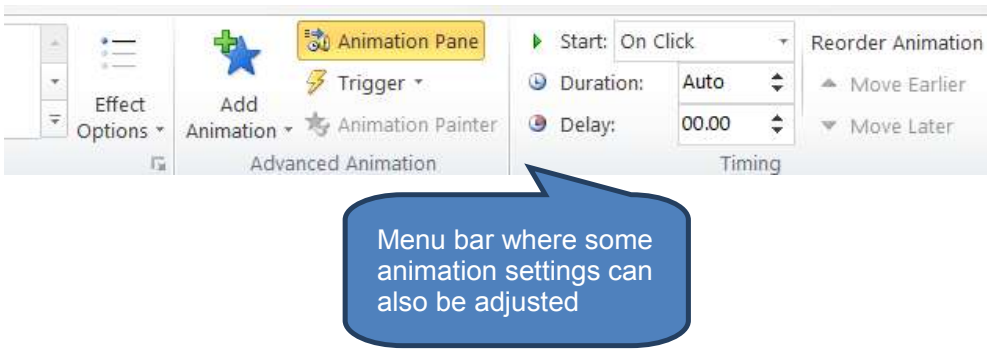
- Effect Options… and 'Timing…' open the 'Appear' dialog box – see below




Change animation effects on the Effect tab – e.g. add sound




Change animation timings on the Timing tab



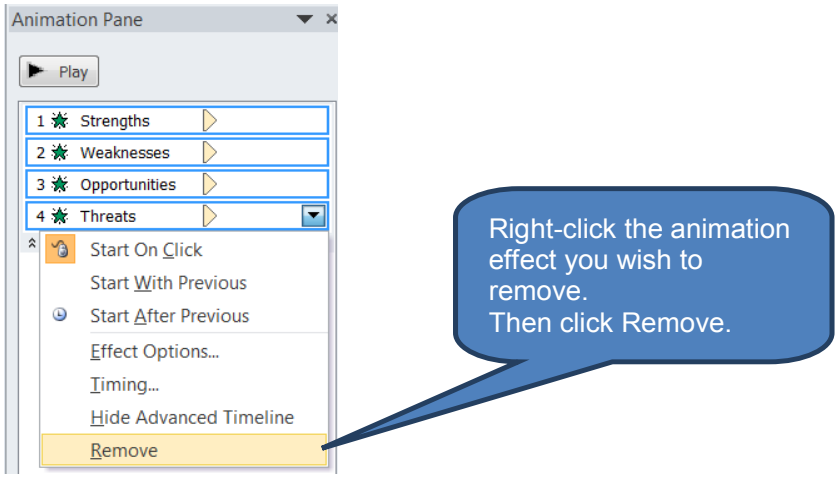

## 2.3 Remove animations

You can remove specific animation effects, all animation from a single object or all animation from all objects on a slide.

### Remove specific animation effects

To remove specific animation effects:

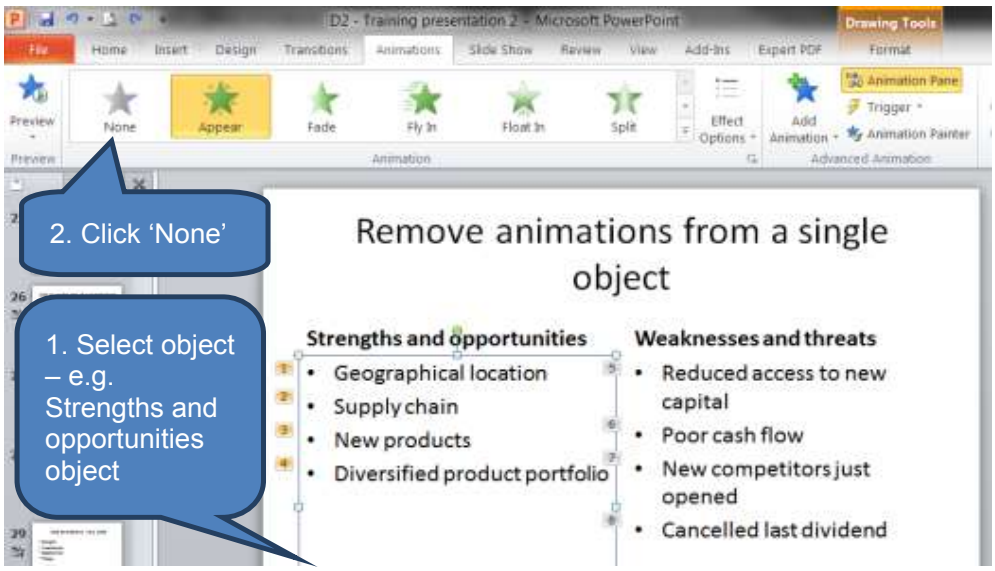
- Click ***Animation Pane*** in the ***Advanced Animation*** group on the ***Animations*** tab
- Right-click the animation effect you want to remove in the ***Animation Pane*** then click ***Remove***

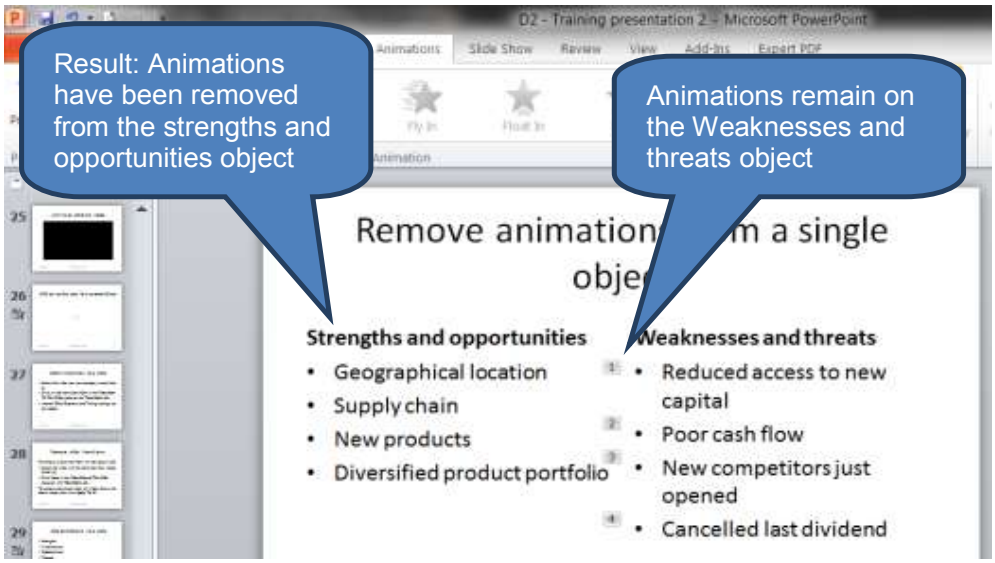



### Remove all animation from a single object

To remove all animation from a single object:

- Select the object that you want to remove all animations from
- Select ***None*** in the ***Animations*** group on the ***Animation*** tab

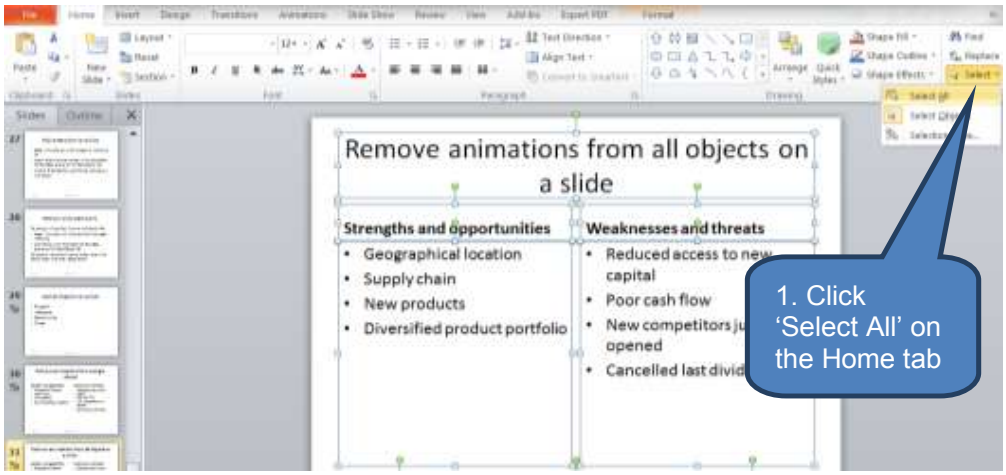


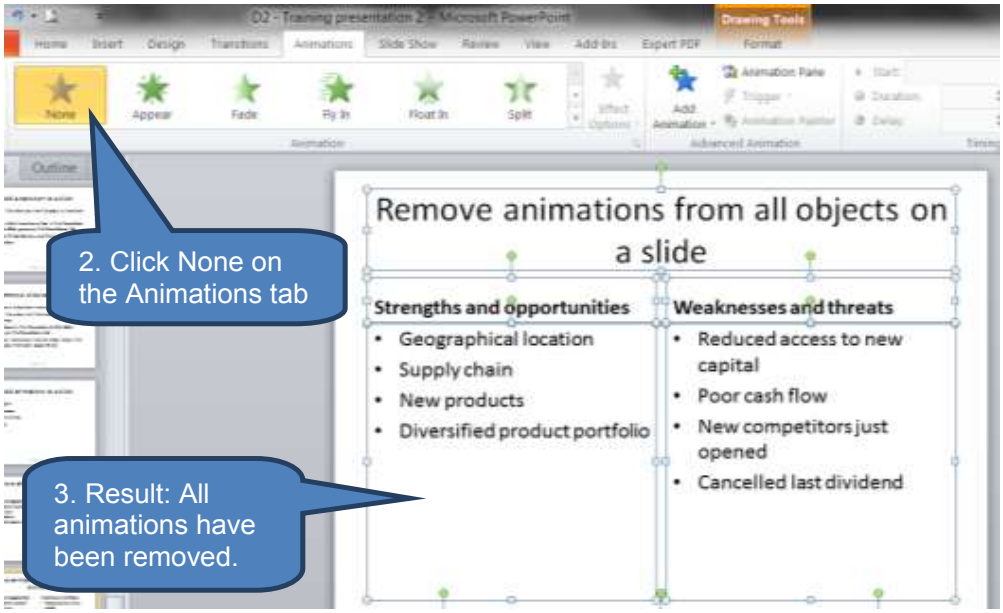




### Remove all animation from a slide

To remove all animation from all objects on a slide:

- Select the slide that you want to remove all animations from
- Click ***Select*** then ***Select All*** in the ***Editing*** group on the ***Home*** tab
- Select ***None*** in the ***Animations*** group on the ***Animation*** tab


Remove animations from all objects on a slide
Strengths and opportunities
Geographical location
Supply chain
New products
Diversified product portfolio
Weaknesses and threats
Reduced access to new capital
Poor cash flow
1. Click 'Select All' on the Home tab


2. Click None on the Animations tab
Remove animations from all objects on a slide
Strengths and opportunities
Geographical location
Supply chain
New products
Diversified product portfolio
Weaknesses and threats
Reduced access to new capital
Poor cash flow
New competitors just opened
Cancelled last dividend
3. Result: All animations have been removed.

## 3 CHAPTER REVIEW

### Chapter review

Before moving on check that you now know how to:

- Add, amend and remove slide transitions
- Add, amend and remove slide animations

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