

ECDL Module 4

REFERENCE MANUAL

Spreadsheets

Microsoft Excel XP Edition for ECDL Syllabus Four



Approved
Courseware
Syllabus
Version 4.0

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4.1 Using the Application

4.1.1 First Steps with Spreadsheets

What are Workbooks and Worksheets?

- You enter your data into a worksheet. It consists of rows and columns and is essentially a very large table.

The worksheets in turn are grouped together into workbooks. By default each workbook in Excel contains 3 worksheets, which are identified by tabs displayed along the bottom of your screen, which identify the individual worksheets making up the workbook. By default the first worksheet is called **Sheet1**, the next is **Sheet2** and so on.



By default each new workbook you open will contain 3 blank worksheets, although you can increase this number or reduce it down to a workbook, which only contains one worksheet.

4.1.1.1 Open (and close) a spreadsheet application.

To start Excel using the Windows Start menu

- Click on the **Start** icon to display the **Start** menu and then move the mouse pointer onto **All Programs**.
- From the sub-menu select **Microsoft Excel**.

To close Excel

- From the **File** menu, select **Exit**
OR press **Alt+F4**
OR click on the Excel **Close** icon (top-right of the Excel program window).



4.1.1.2 Open one, several spreadsheets.

To open an existing workbook

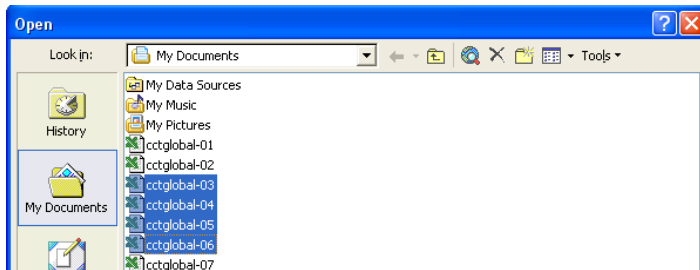
- From the **File** menu, choose **Open**
OR click on the **Open** icon on the **Standard** toolbar.

- Locate the file which you wish to open and then double click on the file name to open it. If you need to change to a different folder, then you can use the **Up One Level** icon **OR** you can click on the down arrow next to the **Look in** field.

NOTE: By default the **My Documents** folder is displayed.

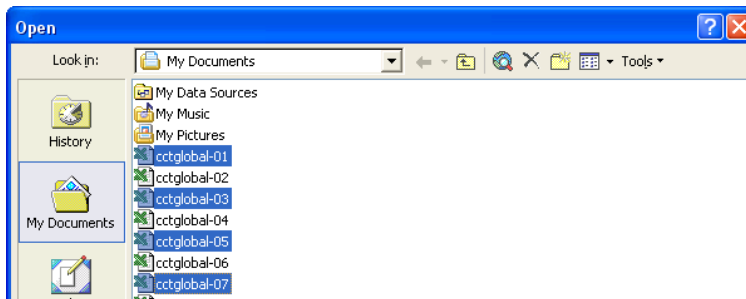
To select, and open a continuous block of files

- Click on the **Open** icon which will display the file Open dialog box. Click on the first file of the block which you wish to select, and then while depressing the **Shift** key, click on the last file of the required block. When you release the **Shift** key the entire block will remain selected.



To select, and open, multiple files which are not in a continuous block

- Click on the **Open** icon which will display the file Open dialog box. Click on the first file which you wish to select and while keeping the **Ctrl** key depressed, click on the other files which you wish to select. When you release the **Ctrl** key, the selected files will continue to be highlighted.



4.1.1.3 Create a new spreadsheet (default template).

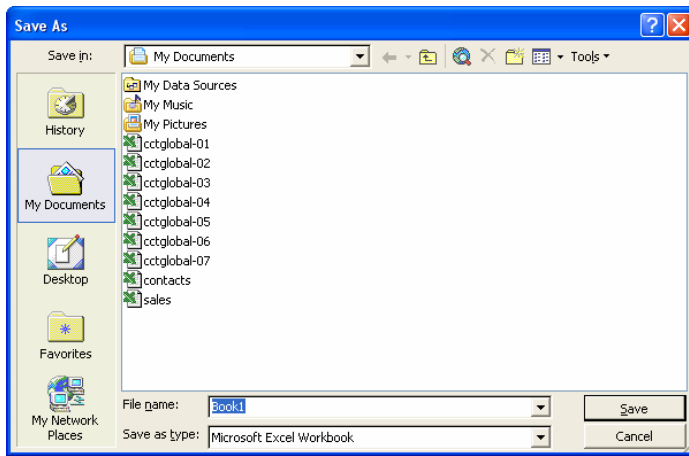
To create a new default workbook

- Click on the **New** icon located within the **Standard** toolbar **OR** press **Ctrl+N**

4.1.1.4 Save a spreadsheet to a location on a drive.

To save the workbook

- To save the workbook, click on the **Save** icon, and you will see the **Save As** dialog box.



- In the section of the dialog box called **File Name**, enter a name for your file. Then click on the **Save** button to save the file.

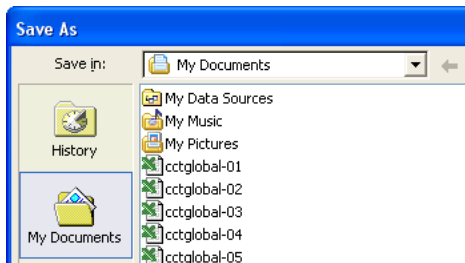
4.1.1.5 Save a spreadsheet under another name.

To save a workbook (using a different name)

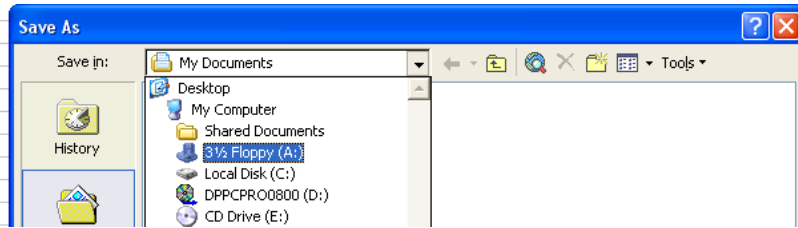
- Click on the **File** drop down menu and then select the **Save As** command. The **Save As** dialog box will be displayed. If necessary select a different folder in which you may wish to save the file.
- Enter the new file name in the **File name** text box.
- Click on the **Save** button.

To save a file to a diskette

- Click on the **File** drop down menu and select the **Save As** command. A dialog box will be displayed similar to that illustrated.



- Click on the down arrow to the right of the **Save in** section of the dialog box, which will display a drop down menu, as illustrated.

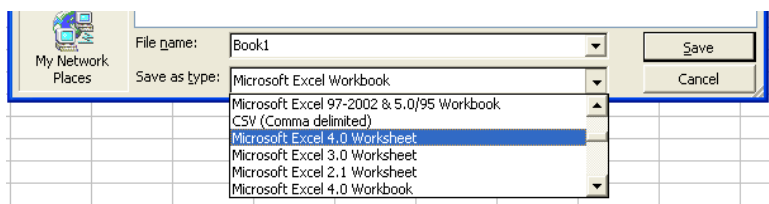


- Select the **3 1/2 Floppy (A:)** icon.
- Enter a file name and then click on the **Save** button.

4.1.1.6 Save a spreadsheet in another file type such as: text file, HTML, template, software specific file extension, version number.

To save a file in a format other than Excel format, such as Lotus 123

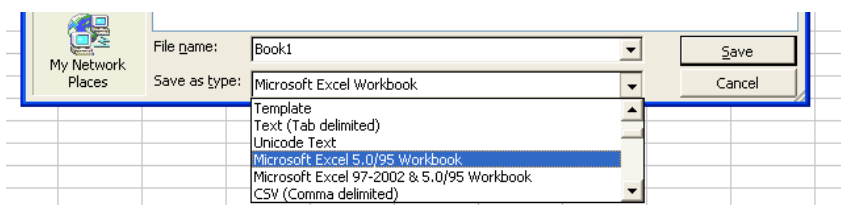
- From the **File** drop down menu, click on the **Save As** command.
- If necessary, select the folder in which you wish to save the file from the **Look in** list box.
- Click on the down arrow to the right of the **Save as type:** box, and select the type of file format in which you wish to save the file as, i.e. WKS, Excel 4 etc.



- Enter a file name.
- Click on the **Save** button to save it in the required format.

To save a file in an earlier Excel format

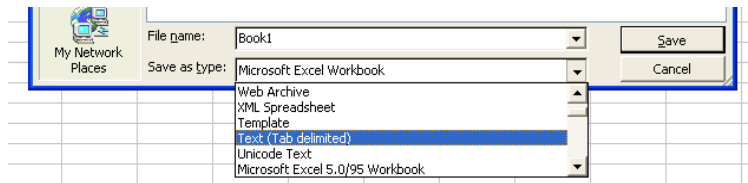
- From the **File** drop down menu, click on the **Save As** command.
- If necessary, select the folder in which you wish to save the file in from the **Look in** list box.
- Click on the down arrow to the right of the **Save as type:** box, and select the type of file format you wish to save the file as, such as the example shown where we have selected the **Microsoft Excel 5.0/95** format.



- Enter a file name.
- Click on the **Save** button to save it in the required format.

To save an Excel file as a text file

- From the **File** drop down menu, click on the **Save As** command.
- If necessary, select the folder in which you wish to save the file from the **Look in** list box.
- Click on the down arrow to the right of the **Save as type:** box, and select the type of text format you wish to save the file as, such as **Text (Tab delimited)**



- If necessary, enter a file name.
- Click on the **Save** button to save it in the required format.

What are Templates?

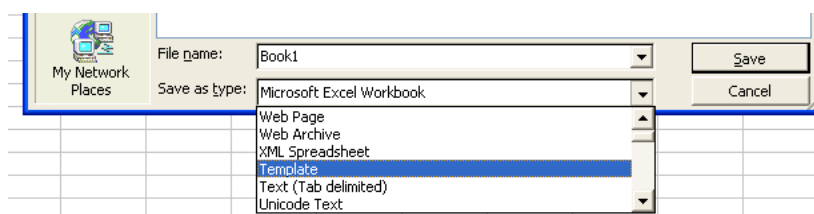
- Frequently when working with spreadsheets you want to use the same layout or design. You can re-create the design every time you want to use it, or you can create a spreadsheet to use as a pattern. The spreadsheet pattern is called a template.

Templates can be produced which include the following elements:

- Text and graphics
 - Formatting information
 - Layouts
 - Styles
 - Headers and Footers
 - Formulas
 - Macros
- Templates are stored with the extension **.XLT** and when they are accessed to create a new sheet, a copy of the original is made. The original template is left untouched ready for further use. A template is produced by creating a spreadsheet which contains all the elements you want, and then saving it as an **.XLT** file.

To save a workbook as a template file

- You may save your workbook as an Excel template, by selecting **Template** from the **Save as type** section of the Save dialog box.



To use a template

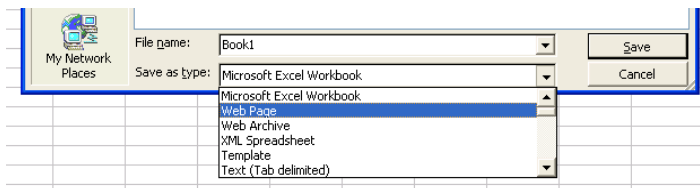
- From the **File** menu, select **New** to display the **New** dialog box.

- Select the template you require. Notice that you normally see a number of tabs on this dialog box, such as **General** and **Spreadsheet Solutions**. If you wish to use the default template, select **Workbook** from the **General** tab.
- Select **OK** to open a copy of the template, i.e. a **Workbook**.

To save a file in a format suitable for posting on a Web site

- From the **File** drop down menu, click on the **Save As** command.
- Click on the down arrow to the right of the **Save as type:** box, and select the type of file format you wish to save the file as, i.e.

Web Page (.htm:*.html)



- Enter a file name.
- Click on the **Save** button to save it in the required format.

NOTE: Some formatting information which is contained in the original may be lost in the process!

4.1.1.7 Switch between worksheets, open spreadsheets.

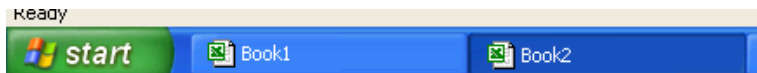
To switch to a different worksheet within a workbook

- Click on the required worksheet tab, displayed along the bottom of your screen, as illustrated.



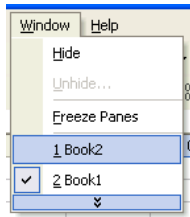
To switch to a different, open workbook (using the Windows Status bar)

- Click on the required workbook icon, displayed within the Windows Status Bar, which is along the bottom of your screen, as illustrated.



To switch to a different, open workbook (using the Window drop down menu)

- Within Excel, click on the **Window** drop down menu, and you will see workbooks listed, as illustrated (in this case **Book1** and **Book2**)



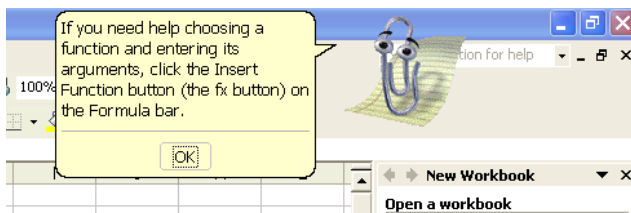
4.1.1.8 Use available Help functions.

What is the Office Assistant?

- By default this friendly little creature will watch what you do and offer tips on how to work more productively.

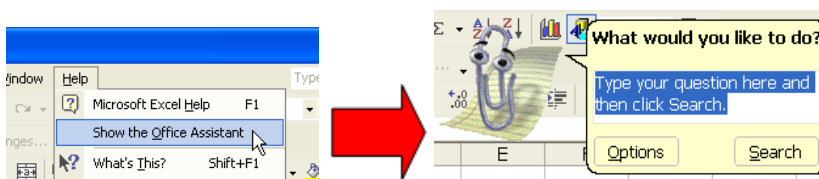
Today's Tip

- By default Excel will display a tip of the day each time you start Excel. If you take the time to read these when they are displayed, then you will soon find that you are on the way to becoming an Excel expert!



To display the Assistant

- If the assistant has been hidden you can reactivate it, select **Show the Office Assistant** command from the **Help** menu. This will display a dialog box allowing you to ask questions.



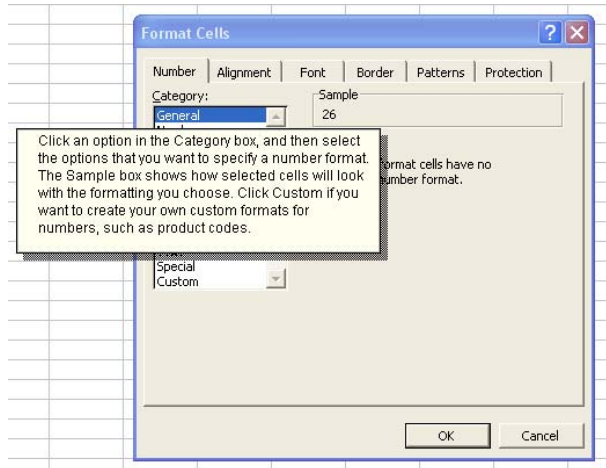
To hide the Assistant

- Right click on the Office Assistant, and from the pop-up menu displayed, select **Hide**.



To use 'what is this' Help within a dialog box

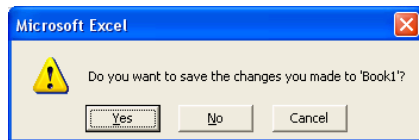
- Within many dialog boxes, you will see a question mark icon in the top-right of the dialog box. For instance if you click on the **Format** drop down menu, and then select the **Cells** command, it will display the Format Cells dialog box. If we wanted to know the purpose of the **Category** options, you would click on the question mark icon, and then click on the **Category** area of the dialog box. A popup box will be displayed, as illustrated, which explains the function of the item you clicked on.



4.1.1.9 Close a spreadsheet.

To close a spreadsheet

- From the **File** menu, select **Close**.



You will be asked if you wish to save any changes you have made to the file. Select **Yes** to save, or **No** to ignore the changes.

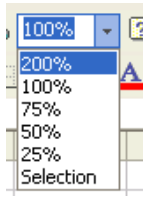
If you are saving a new file, the **Save As** dialog box will be displayed. In the **File name** text box, enter a name and click on the **Save** button.

4.1.2 Adjust Settings

4.1.2.1 Use magnification/zoom tool.

To zoom the view

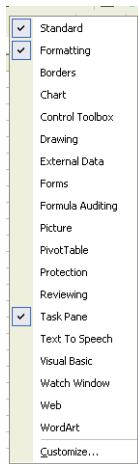
- Use the **Zoom** icon within the Standard Excel toolbar.



4.1.2.2 Display or hide built-in toolbars.

To display or hide a toolbar

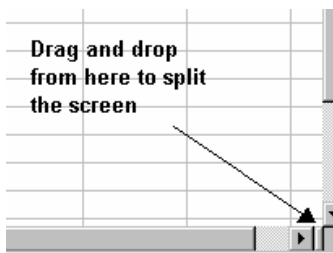
- To display a toolbar, select the **Toolbars** command from the **View** menu to display the **Toolbars** drop down menu. A list of toolbars is displayed.
- Choose the **Toolbar** you want to display by clicking on it from the list.



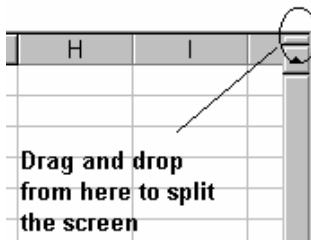
4.1.2.3 Freeze, unfreeze row and/or column titles.

To freeze panes

- To freeze a horizontal (column) heading, move the mouse pointer to the location indicated and drag and drop to display one or more column.



- To freeze a vertical (row) heading, move the mouse pointer to the location indicated and drag and drop to display one or more row.



- From the **Window** menu, select **Freeze Panes**.

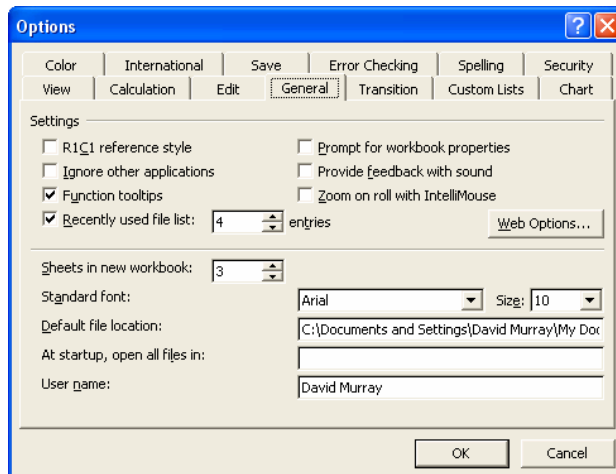
To unfreeze panes

- From the **Window** menu, choose **Unfreeze Panes**.

4.1.2.4 Modify basic options/preferences in the application: user name, default directory/ folder to open, save spreadsheets.

To modify basic preference options

- Click on the **Tools** drop down menu and select the **Options** command, which will display a dialog box. Click on the **General** tab.



To set the user name: Enter your name in the **User Name** section of the dialog box.

To set the default directory: Enter the path to the directory which you wish to set up as the default directory, in the **Default file location** section of the dialog box. Once applied this default directory will be the one displayed in opening and saving dialog boxes within Excel

4.2 Cells

4.2.1 Insert Data

4.2.1.1 Enter a number, a date, text in a cell.

To enter numbers

- Select the cell in which you want to enter a number and type in the number. If you want to make the number a negative, type a minus sign in front of it or enclose it in parentheses (i.e. brackets).
- To indicate decimal places, you type a full stop.
- The numbers will be right aligned by default. If you wish to enter a number or formula as text, type an apostrophe before it.

To enter dates or times

- Select the cell in which you want to enter the date or time and then type in the date or time. Separate the date with either hyphens or slashes.
- To enter the current date, press **Ctrl+**; to enter the current time, press **Ctrl+:**

To enter text into a cell

- Simply click on the cell and start typing the text which you wish to appear in that cell. To move to the next cell use the **Tab** key. To move down a cell press the **Enter** key.

4.2.2 Select Cells

4.2.3.1 Select a cell, range of adjacent cells, range of non-adjacent cells, entire worksheet.

To select a cell

- Click on the cell you wish to select.

To select non-adjacent cells

- Click on the first cell you wish to select.
- Depress the **Control** key.
- Click on the other cells which you wish to select.
- Release the **Control** key when you have finished.

To select a range of cells by dragging the mouse

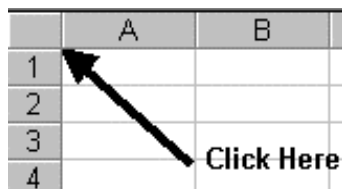
- Click on the first cell in the range.
- Hold down the left-hand mouse button and drag over the cells you wish to include in the selection.

To select a range of adjacent cells (making up a rectangular block)

- Click on the first cell of the rectangular block which you wish to select (i.e. the top-left hand corner).
- Move down to the cell which marks the bottom-right corner of the rectangular block.
- Depress the **Shift** key (and keep it depressed).
- Click once on the last cell of the required block.
- Release the **Shift** key.

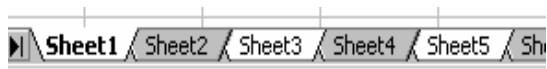
To select an entire worksheet

- Click the **Select All** icon in the top, left-hand corner of the worksheet where the row heading and column heading meet, or press **Ctrl+A**.



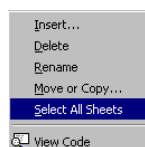
To select several worksheets

- Click on the first sheet tab.
- Click on other sheet tabs you wish to select whilst depressing the **Ctrl** key.



To select all worksheets

- Click on a sheet tab using the right-hand mouse button to display the shortcut menu. Choose **Select All Sheets**.



4.2.2.2 Select a row, range of adjacent rows, range of non-adjacent rows.

To select a row

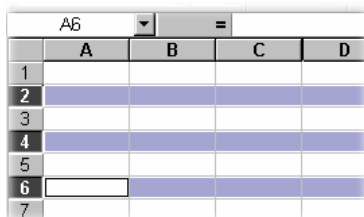
- Click the row heading number.

To select a range of adjacent rows

- Click the row heading number of the first row which you wish to select.
- Position the mouse pointer at the last row in the range which you wish to select.
- Depress the **Shift** key and keep it depressed.
- Click on the last row in the range which you wish to select.
- Release the **Shift** key.

To select a range of non-adjacent rows

- Click the row heading number of the first row which you wish to select.
- Position the mouse pointer at another row heading of a row which you wish to select.
- Depress the **Ctrl** key and keep it depressed.
- Click on further row heading numbers which you wish to select.
- Release the **Ctrl** key. The selected row(s) will remain selected, as illustrated.



The screenshot shows an Excel spreadsheet with columns A, B, C, and D, and rows 1 through 7. The row numbers 2, 4, and 6 are highlighted in blue, indicating they are selected. The active cell is A6, and the formula bar shows an equals sign (=).

4.2.2.3 Select a column, range of adjacent columns, range of non-adjacent columns.

To select a column

- Click on the column-heading letter.

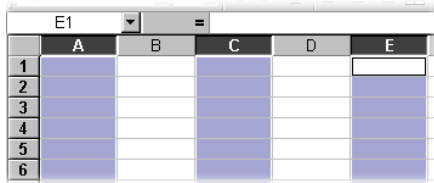
To select a range of adjacent columns

- Click the column heading number of the first column which you wish to select.
- Position the mouse button at the last column in the range which you wish to select.
- Depress the **Shift** key and keep it depressed.
- Click on the last column in the range which you wish to select.
- Release the **Shift** key.

To select a range of non-adjacent columns

- Click the column heading number of the first column which you wish to select.
- Position the mouse button at another column heading of a column which you wish to select.
- Depress the **Control** (Ctrl) key and keep it depressed.
- Click on further column heading numbers which you wish to select

- Release the **Control** (Ctrl) key. The selected columns will remain selected, as illustrated.



4.2.3 Rows and Columns

4.2.3.1 Insert rows, columns in a worksheet.

To insert a row into a worksheet

- Select the row you want to move down when the new row is inserted above it.
- To select more than one row, drag the mouse pointer across the required row headings (with the mouse button depressed).
- Right click over the selected row(s) to display a pop-up menu.
- Select **Insert**. Any existing data will move down to accommodate the new rows.

To insert a column into a worksheet

- Select the column you want to move to the right when the new row is inserted.
- To select more than one column, drag the mouse pointer across the required column headings (with the mouse button depressed).
- Right click over the selected column(s) to display a pop-up menu.
- Select **Insert**. Any existing data will move right to accommodate the new columns.

4.2.3.2 Delete rows and columns in a worksheet

To delete a row or column

- Select the row(s) or column(s) you wish to delete.
- Right click on a selected row or column and choose **Delete** from the pop-up menu.

4.2.3.3 Modify column widths and row heights.

To change the width of a column

- Find the right-hand border of the column you wish to change and follow it to the top of the worksheet into the area of the column heading.
- When the mouse pointer is moved in this area, it changes to a thick crosshair.

- Click on the right-hand column heading border and drag the mouse to the left to reduce the column, or to the right to increase the column size.

NOTE: If you enter text which exceeds the column width, it will spill over into the next column as long as the cell does not contain any data. If it contains data the entry will be truncated at the edge of the cell. Although the entire entry does not appear, it will still be intact. If you enter a number which exceeds the width of a column, ### signs will be displayed in the cell to let you know that the column is not wide enough.

To set the column width to match the data automatically

- Find the right-hand column border in the column heading area.
- Double click on the border to make the column change to fit the data in it. The column will be as wide as the largest entry in it.

To change the width of multiple columns to match the data

- Click on the heading (column letter) of the first column you want to change, and drag to highlight the other columns.
- Double click on the right-hand border of the column heading of any of the highlighted columns.
- The column widths will change to match their largest entry.

To set new default column widths

- From the **Format** menu, choose **Column Standard Width** to display the **Standard Width** dialog box.
- Enter a new width for standard columns and click on **OK**.

To change the height of a row

- Select the row(s) you wish to change and from the **Format** menu, select **Row** and choose **Height** from the **Format Row** menu. The **Row Height** dialog box is displayed.
- Enter the value you want (from 0-409) in the **Row Height** text box. The value represents the row height in points and click on **OK**.

To automatically change a row height to match the data

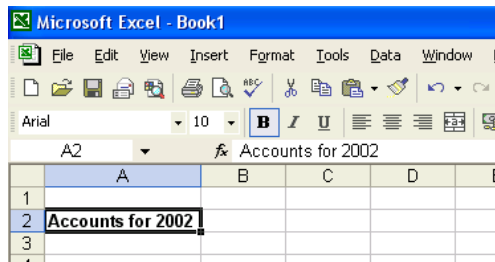
- Select the row(s) you wish to change and from the **Format** menu, select **Row** and choose **AutoFit** from the **Format Row** menu.

4.2.4 Edit Data

4.2.4.1 Insert additional cell content, replace existing cell content.

To insert additional cell contents, or to modify existing cell contents

- Click on the cell containing the data which you wish to change. In the example shown, we have clicked on cell A2 containing the text **Accounts for 2002**.



- Let's say that we wanted to change the data in the selected cell from **Accounts for 2002** to **Accounts for 2003** There are two ways of doing this:

Method One: Click in the editing bar towards the top of your screen, where you will see the contents of the selected cell displayed. Make your changes.

Method Two: Called 'in place editing'. Double click on the cell containing the data which you wish to edit, and then edit the data directly within that cell.

To replace existing cell contents

- Click on the cell contents which you wish to replace. Type in the new data and the data you enter will automatically replace the existing contents.

4.2.4.2 Use the undo, redo command.

To undo a command

- Click the **Undo** icon on the **Standard** toolbar



OR select **Undo** from the **Edit** menu
OR press **Ctrl+Z**.

To redo a command

- Click the **Redo** icon on the **Standard** toolbar.



4.2.5 Duplicate, Move, Delete

4.2.5.1 Duplicate the content of a cell, cell range within a worksheet, between worksheets, between open spreadsheets.

To copy a cell range within a worksheet

- Select the cell (or cell range) which you wish to copy.
- Press **Ctrl+C** to copy the selected range to the Windows Clipboard.
- Click on the location where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To copy a row or column within a worksheet

- Select the row or column which you wish to copy.
- Press **Ctrl+C** to copy the selected range to the Windows Clipboard.
- Select the row or column where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To copy a cell range between worksheets

- Select the cell (or cell range) which you wish to copy.
- Press **Ctrl+C** to copy the selected range to the Windows Clipboard.
- Click on the worksheet tab (at the bottom of your screen), of the worksheet to which you wish to copy.
- Click on the location where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To copy a row or column between worksheets

- Select the row or column which you wish to copy.
- Press **Ctrl+C** to copy the selected range to the Windows Clipboard.
- Click on the worksheet tab (at the bottom of your Excel screen), of the worksheet to which you wish to copy.
- Select the row or column where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To copy a cell range from a worksheet in one workbook, to a worksheet in a different workbook

- Select the cell (or cell range) which you wish to copy.
- Press **Ctrl+C** to copy the selected range to the Windows Clipboard.
- Switch to (or open, or create) a second workbook.
- Click on the worksheet tab to select the required worksheet within the second workbook.
- Click on the location where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To copy a row or column from a worksheet in one workbook, to a worksheet in a different workbook

- Select the row or column which you wish to copy.
- Press **Ctrl+C** to copy the selected range to the Windows Clipboard.
- Switch to (or open, or create) a second workbook.

- Click on the worksheet tab to select the required worksheet within the second workbook.
- Click on the worksheet tab (at the bottom of your Excel screen), of the worksheet to which you wish to copy.
- Select the row or column where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

4.2.5.2 Use the autofill tool/copy handle tool to copy, increment data entries.

To use AutoFill

- Enter a starting value for the series which you wish to create.
- Enter the second value in the next cell.
- Move the mouse pointer to the "fill handle" (this is the small black square at the bottom right of the selected area). When the mouse pointer is over the fill handle, it will change shape, from a large white cross to a small black cross.
- Depress the mouse button and drag as far as you wish to extend the range.
- When you release the mouse button the range will have been filled with incremental values.
- Autofill can be used for number sequencing, days of the week, or months of the year.

Before using Autofill

	A
1	2
2	4
3	
4	
5	

After using Autofill

	A
1	2
2	4
3	6
4	8
5	10
6	12
7	14
8	

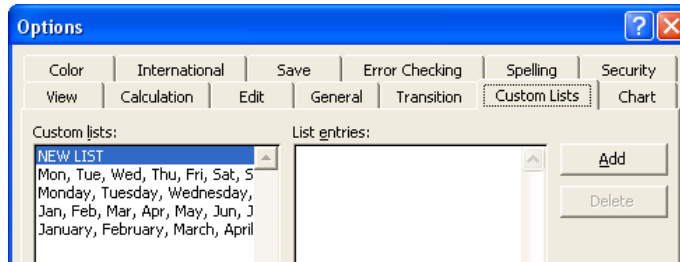
	A
1	Monday
2	Tuesday
3	
4	

	A
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday
7	Sunday
8	Monday
9	Tuesday
10	

To see what AutoFill options are available

- Click on the **Tools** drop down menu and select the **Options** command. From the dialog box displayed select the **Custom Lists** tab. You will see a number of pre-defined lists displayed here.

NOTE: You could add your own custom lists using this dialog box.



4.2.5.3 Move cell range contents, entire row(s), entire column(s) within a worksheet, between worksheets, between open spreadsheets.

To move a cell range within a worksheet

- Select the cell (or cell range) which you wish to move.
- Press **Ctrl+X** to move the selected range to the Windows Clipboard.
- Click on the location where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To move a row or column within a worksheet

- Select the row or column which you wish to move.
- Press **Ctrl+X** to move the selected range to the Windows Clipboard.
- Select the row or column where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To move a cell range between worksheets

- Select the cell (or cell range) which you wish to move.
- Press **Ctrl+X** to move the selected range to the Windows Clipboard.
- Click on the worksheet tab (at the bottom of your screen), of the worksheet where you wish to move.
- Click on the location to which you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To move a row or column between worksheets

- Select the row or column which you wish to move.
- Press **Ctrl+X** to move the selected range to the Windows Clipboard.
- Click on the worksheet tab (at the bottom of your Excel screen), of the worksheet to which you wish to move.
- Select the row or column where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To move a cell range from a worksheet in one workbook, to a worksheet in a different workbook

- Select the cell (or cell range) which you wish to move.
- Press **Ctrl+ X** to move the selected range to the Windows Clipboard.

- Switch to (or open, or create) a second workbook.
- Click on the worksheet tab to select the required worksheet within the second workbook.
- Click on the worksheet tab (at the bottom of your screen), of the worksheet to which you wish to move.
- Click on the location where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

To move a row or column from a worksheet in one workbook, to a worksheet in a different workbook

- Select the row or column which you wish to move.
- Press **Ctrl+ X** to move the selected range to the Windows Clipboard.
- Switch to (or open, or create) a second workbook.
- Click on the worksheet tab to select the required worksheet within the second workbook.
- Click on the worksheet tab (at the bottom of your screen), of the worksheet to which you wish to copy to.
- Select the row or column where you wish to paste the copied data.
- Press **Ctrl+V** to paste the copied data.

4.2.5.4 Delete cell contents.

To delete the contents of a cell or range

- Select the cell or range which you want to delete.
- Press the **Delete** key.

NOTE: If you delete values from cells, which are used in formulas, the formulas will return errors.

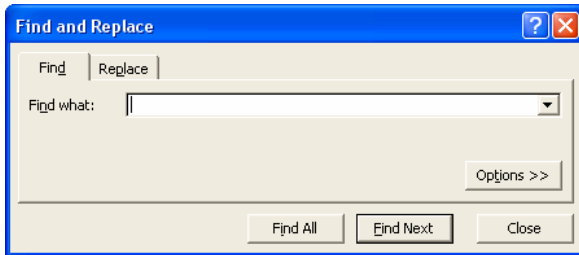
4.2.6 Search and Replace

4.2.6.1 Use the search command for specific content in a worksheet.

To find text in a worksheet

- Place the insertion point where you want to begin the search.
- Select the **Find** command from the **Edit** menu, or press **Ctrl+F** to display the **Find** dialog box.

- Type the text you wish to find in the **Find what** text box.

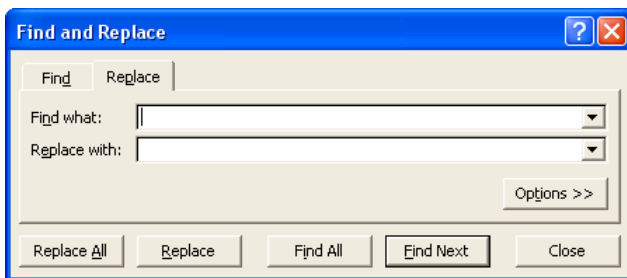


- Click on the **Find Next** button to find the next occurrence of the text you are looking for.

4.2.6.2 Use the replace command for specific content in a worksheet.

To find and replace text within a worksheet

- Place the insertion point where you want to begin the search.
- Select the **Replace** command from the **Edit** menu, or press **Ctrl+H** to display the **Find and Replace** dialog box.
- Type the text you wish to find and replace in the **Find what** text box.



- Type the replacement text in the **Replace with** text box. Select from the following:

Find Next: Finds the next occurrence of the text.

Replace: Replaces this instance of the text.

Replace All: Will replace all occurrences of the text in the **Find What** section with the text in the **Replace With** section.

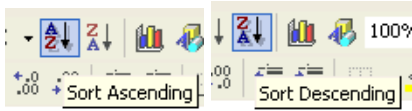
- Select **Cancel** to stop the search or to close the dialog box.

4.2.7 Sort Data

4.2.7.1 Sort a cell range by one criterion in ascending, descending numeric order, ascending, descending alphabetic order.

To sort a list using the Sort icons

- Within your data, click within the column by which you wish to sort, then click on either the **Sort Ascending** or **Sort Descending** icons.



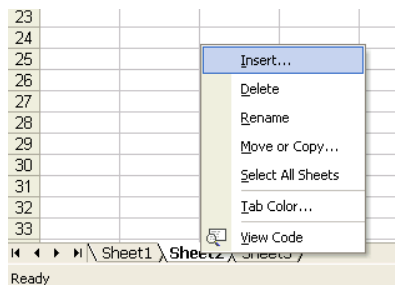
4.3 Worksheets

4.3.1 Handling Worksheets

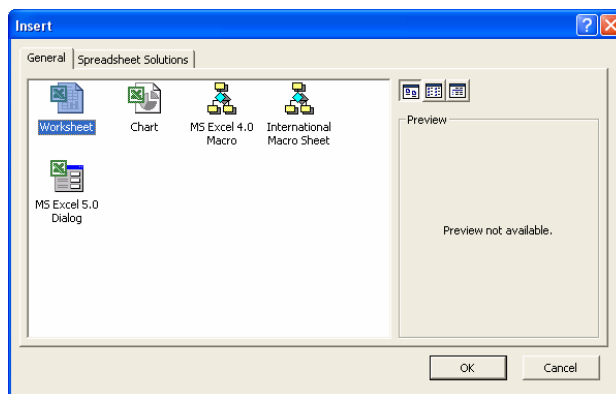
4.3.1.1 Insert a new worksheet.

To insert a worksheet tab

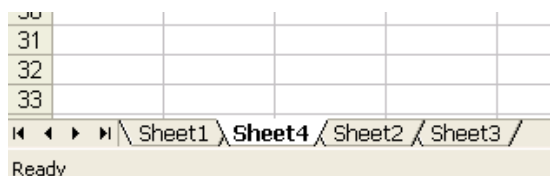
- Right click on the worksheet which you wish to insert a new worksheet in front of. In this case we have selected sheet two.
- From the popup menu displayed, select **Insert**, as illustrated.



- You will see a dialog box displayed, click on the **OK** button.



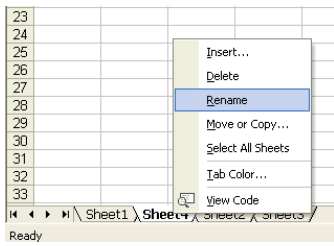
The effect is illustrated below, where the new sheet four has been inserted before sheet two.



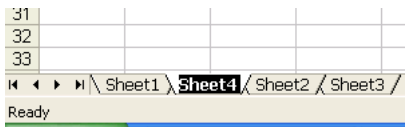
4.3.1.2 Rename a worksheet.

To rename a worksheet tab

- Right click on the worksheet tab which you wish to rename. From the popup menu displayed select the **Rename** command.



- You can then type over the default worksheet name, which will become highlighted.



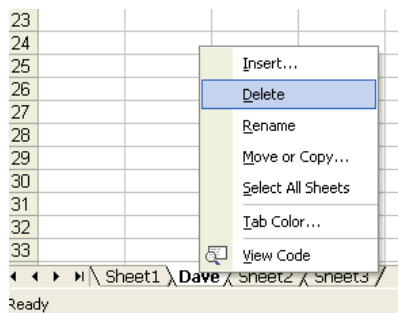
- In this case the worksheet name **Dave** has been used.



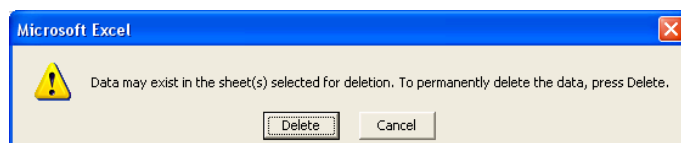
4.3.1.3 Delete a worksheet.

To delete a worksheet (by right-clicking)

- Click on the relevant worksheet tab with the right-hand mouse button.
- Select **Delete** from the popup menu displayed.



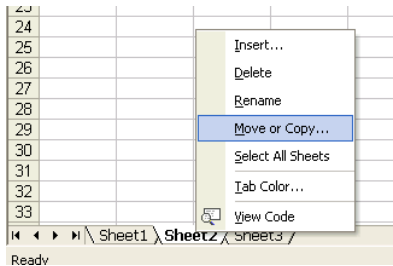
If the worksheet contains data, a warning dialog box is displayed. Select **Delete** to continue.



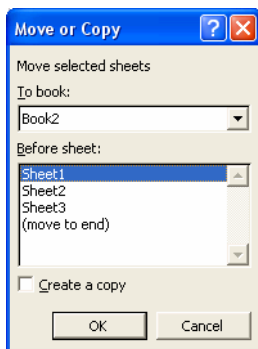
4.3.1.4 Duplicate a worksheet within a spreadsheet or between open spreadsheets.

To copy a worksheet within a workbook (the long way)

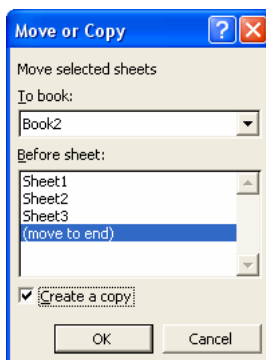
- Select the worksheet tab of the worksheet which you wish to copy.
- Right click on the worksheet tab, and select the **Move or Copy** command.



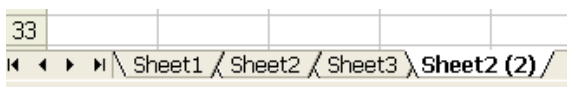
- A dialog box is displayed.



- Select (for example) **move to end**.
- Click on **Create a copy**. This will copy, rather than move.



- Click on the **OK** button. An example of the effect is illustrated below.

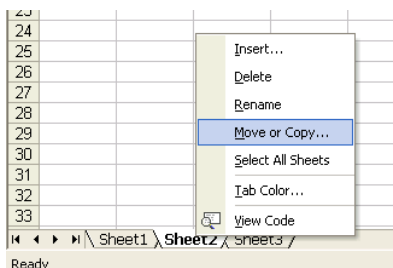


To copy a worksheet within a workbook (the quick way)

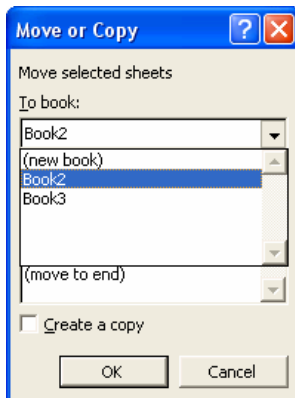
- Select the worksheet tab, of the worksheet which you wish to copy.
- Depress the **Ctrl** key (and keep it depressed).
- Drag the worksheet tab, either left or right to the required position.
- Release the mouse button and then release the **Ctrl** key.
- A copy of the worksheet tab will be displayed.

To copy a worksheet to another workbook

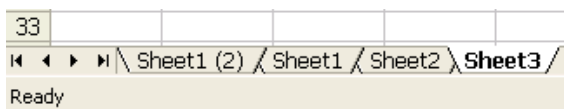
- Make sure that you have two workbook files open; the first containing a worksheet, which you wish to copy to the second workbook.
- Within the first workbook, select the worksheet tab, of the worksheet which you wish to copy.
- Right click on the worksheet tab, and select the **Move or Copy** command.



- A dialog box is displayed.
- Click on the down arrow to the right of the **To book** section of the dialog box. Select the name of the second workbook, (**Book2**, in the example illustrated).



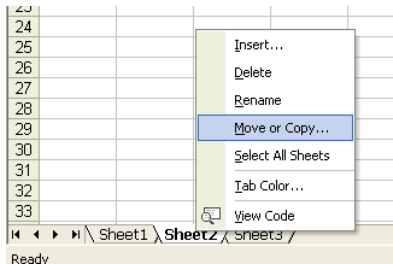
- Click on the down arrow to the right of the **Before Sheet** section of the dialog box. Select which worksheet you wish to insert the copy in front of.
Click on **Create a copy**.
- Click on the **OK** button. An example of the effect is illustrated below (in this example we choose to insert before worksheet 1)



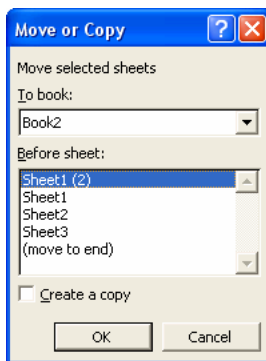
4.3.1.5 Move a worksheet within a spreadsheet or between open spreadsheets.

To move a worksheet within a workbook (the long way)

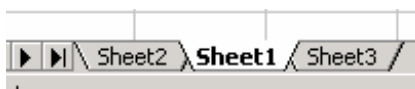
- Select the worksheet tab, of the worksheet which you wish to move.
- Right click on the worksheet tab, and select the **Move or Copy** command.



- A dialog box is displayed.
- Use the **Before sheet** section of the dialog box, to decide where to move the worksheet to.
- Make sure that the **Create a copy** is not selected.



- Click on the **OK** button. An example of the effect is illustrated below. In the example shown, **Sheet 1** was moved to before **Sheet 3**.



To move a worksheet within a workbook (the quick way)

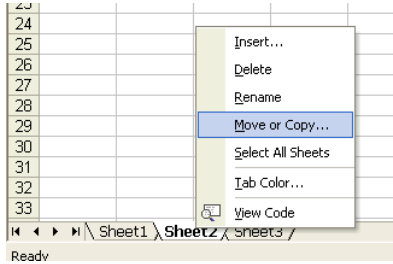
- Select the worksheet tab, of the worksheet which you wish to move.
- Drag the worksheet tab either left or right to the required position. As you can see a small, downwards pointing, arrow indicates where the worksheet will be moved to, when you release the mouse button.



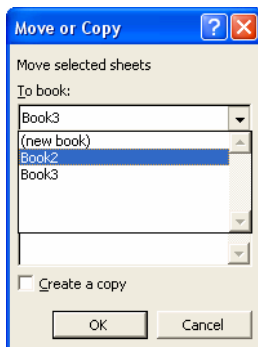
- Release the mouse button and the worksheet will be moved to the required location

To move a worksheet to another workbook

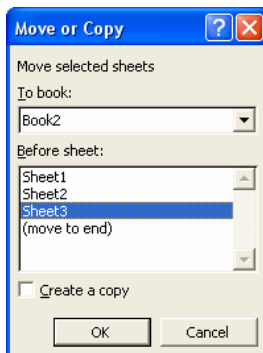
- Make sure that you have two workbook files open; the first containing a worksheet which you wish to move to the second workbook.
- Within the first workbook, select the worksheet tab, of the worksheet which you wish to move.
- Right click on the worksheet tab, and select the **Move or Copy** command.



- A dialog box is displayed.
- Click on the down arrow to the right of the **To book** section of the dialog box. Select the name of the second workbook, (**Book2**, in the example illustrated).



- Click on the down arrow to the right of the **Before Sheet** section of the dialog box. Select which worksheet you wish to insert the copy in front of.



- Make sure that the **Create a copy** option is not selected.
- Click on the **OK** button.

4.4 Formulas and Functions

4.4.1 Arithmetic Formulas

4.4.1.1 Generate formulas using cell references and arithmetic operators (addition, subtraction, multiplication, division).

To enter formulas into the worksheet cell

- Place the cursor in the cell where the formula will appear.
- Enter an = (equal) sign.
- Enter the expression which will produce the result you want. This can consist of operands, values, variables, and symbols which represent mathematical procedures such as A5+E5.

You can use the following symbols: -

- + to add
- to subtract
- * to multiple
- / to divide

- When the formula is complete, press **Enter**. The result of the formula will be calculated and displayed in the cell.
- You can display the formula itself in the **Formula** bar at the top of the screen by placing the cell pointer on the cell.
- If there is an error in a formula, an error message is displayed which will begin with a # sign.

NOTE: If you cannot find an error in a function you can use the **Paste Function** to debug it. Highlight the problem cell and click on the **Paste Function** icon on the formula bar or **Standard** toolbar.

To enter a cell or range reference by pointing

- Enter the formula up to the point of the cell or range reference, e.g. to enter the formula =E2+E5, only enter the equal (=) sign.
- Move the cell pointer to the first cell reference using the arrow keys. The formula will track your progress and enter the current address into the formula.
- Press **Enter** to complete the formula when you have reached the cell you require.

Operator evaluation order within Excel

- In Microsoft Excel operators are executed in this order:

AND, OR, NOT functions
+ or - (unary)
^
* or /
+ or -
&
= < > <= >= <>

4.4.2.1 Recognise and understand standard error values associated with using formulas.

Common formula error messages

- When writing formulas it is easy to make a mistake: listed below are some common error messages.

#####

The contents of the cell cannot be displayed correctly as the column is too narrow.

#REF!

Indicates that a cell reference is invalid. This is often displayed when you delete cells which are involved in a formula.

#NAME?

Excel does not recognise text contained within a formula.

On-line Help with formula error messages

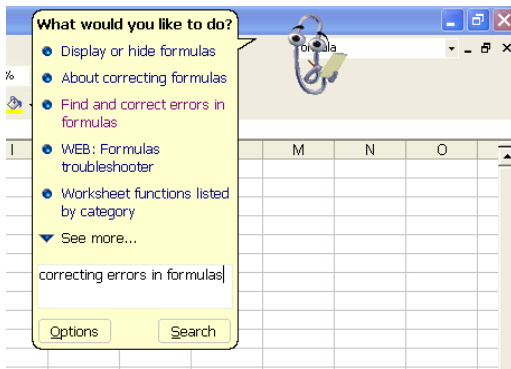
- You can use the on-line Help to get further information about errors within formulas and the meaning of the error messages.
- Click on the **Microsoft Excel Help** icon.



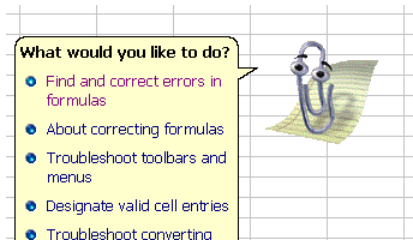
- When the Office Assistant is displayed, enter the phrase:-

correcting errors in formulas

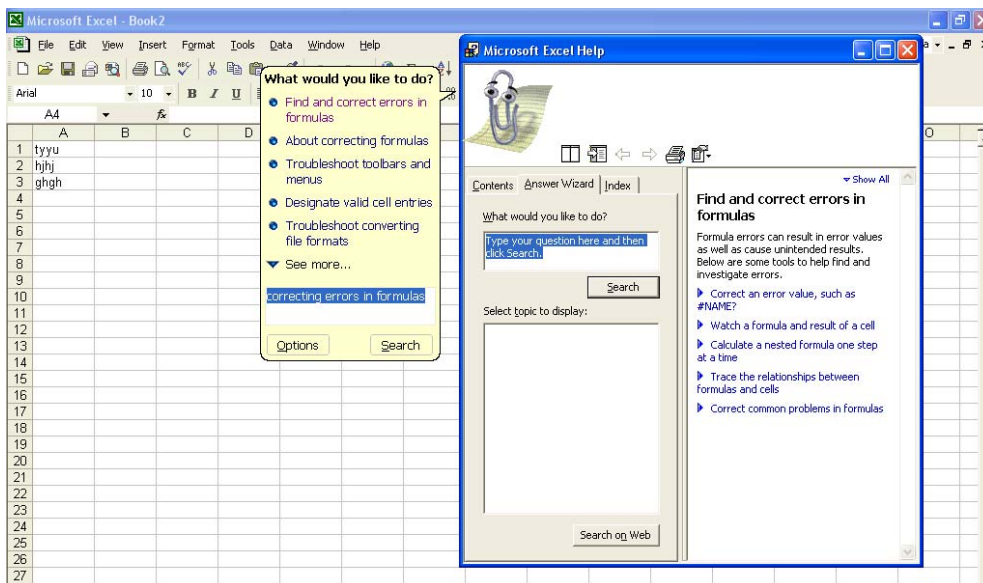
and then click on the **Search** button.



- Select "Find and correct errors in formulas".



- You will then see the following displayed.

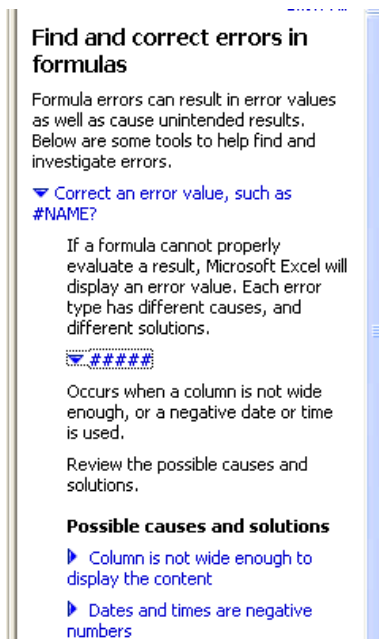


- From this screen you can get detailed information about each type of error message.



- In the example below we clicked on

▶ #####



4.4.2 Cell Referencing

4.4.2.1 Understand and use relative, mixed, absolute cell referencing in formulas.

What is relative addressing?

- By default Excel uses relative addressing. This means that when you use a formula the components in the formula are relative. What does this mean? Consider the following example:

	A	B	C	D	E	F
1					VAT Rate	17.50%
2						
3						
4						
5	Items	Price (excluding VAT)	VAT	Price (including VAT)		
6	Laser printer	500	87.5	587.5		
7	Computer	900				
8	Scanner	200				
9						
10						

The VAT (Value Added Tax) rate is contained in cell **F1**.

In cell **B6** is the price of a laser printer

In cell **C6** is the formula **=B6*F1**

In cell **D6** is the formula **=B6+C6**

If we used drag and drop techniques to highlight cells **C6** and **D6** and extend the formulas down the page, we might expect this to work OK but it does not.

- To try this click on cells **C6** and while keeping the **Control** key depressed click on cell **D6**. Release the **Control** key and the two cells will remain selected.

	A	B	C	D	E
1					VAT R
2					
3					
4					
5	Items	Price (excluding VAT)	VAT	Price (including VAT)	
6	Laser printer	500	87.5	587.5	
7	Computer	900			
8	Scanner	200			

- Move the mouse pointer to the fill handle, i.e. the small, square black dot at the bottom right corner of the selected range.
- Depress the mouse button and drag down for two rows, then release the mouse button.
- If you look in cells C7 and C8 there is no VAT calculated!

	A	B	C	D	E
1					VAT F
2					
3					
4					
5	Items	Price (excluding VAT)	VAT	Price (including VAT)	
6	Laser printer	500	87.5	587.5	
7	Computer	900	0	900	
8	Scanner	200	0	200	
9					
10					

- Clicking on cell C7 gives the clue as to why this did not work. It contains a formula as follows:
=B7*E2%

I.e. instead of picking up the VAT rate from cell E1, the formula is pointing to E2 (which is blank).

	A	B	C	D	E
1					
2					
3					
4					
5	Items	Price (excluding VAT)	VAT	Price (inc	
6	Laser printer	500	87.5		
7	Computer	900	0		
8	Scanner	200	0		

- This illustrates relative referencing: The referencing is using an X (i.e. right-left) and Y (i.e. up-down) set of co-ordinates rather than an absolute addressing system, which would always point to the contents of a particular cell.

What is absolute addressing?

- Following on from the previous example, where relative references was used, we can fix the problem by using an absolute address. Remember that we had a VAT percentage amount in a cell, and when this was referenced in a relative manor while dragging and dropping formulas, then the formula no longer worked. Again we will start with the following:

	A	B	C	D	E	F
1					VAT Rate	17.50%
2						
3						
4						
5	Items	Price (excluding VAT)	VAT	Price (including VAT)		
6	Laser printer	500	87.5	587.5		
7	Computer	900				
8	Scanner	200				
9						
10						

- The VAT (Value Added Tax) rate is contained in cell **F1**.

In cell **B6** is the price of a laser printer

In cell **C6** is the formula **=B6*\$F\$1**

In cell **D6** is the formula **=B6+C6**

If we used drag and drop techniques to highlight cells C6 and D6 and extend the formulas down the page, we might expect this to work OK and this time it does!

	A	B	C	D	E	F
1					VAT Rate	17.50%
2						
3						
4						
5	Items	Price (excluding VAT)	VAT	Price (including VAT)		
6	Laser printer	500	87.5	587.5		
7	Computer	900	157.5	1057.5		
8	Scanner	200	35	235		
9						

- To try this click on cell **C6** and while keeping the **Control** key depressed click on cell **D6**. Release the **Control** key and the two cells will remain selected.
- Move the mouse pointer to the fill handle, i.e. the small, square black dot at the bottom right corner of the selected range.
- Depress the mouse button and drag down for two rows, then release the mouse button.

As you can see to use absolute addressing, you prefix both parts of the cell address, by a dollar (\$) symbol.

NOTE: While entering formula into a worksheet you can use the F4 key to quickly convert a relative cell reference to absolute, e.g. Select a cell and type =B4 and press the **F4** key, Excel will insert the dollar symbols for you.

4.4.3 Working with Functions

4.4.3.1 Generate formulas using sum, average, minimum, maximum, count, functions.

What is a function?

- A function allows you to calculate a result such as summing numbers together, or finding the average of a range of numbers.

Common functions

- Some commonly used functions include:

AVERAGE: Used to determine the average number of the selected cells.

COLUMNS: Used to return the number of columns within a reference.

COUNT: Used to count how many numbers are in the list of arguments.

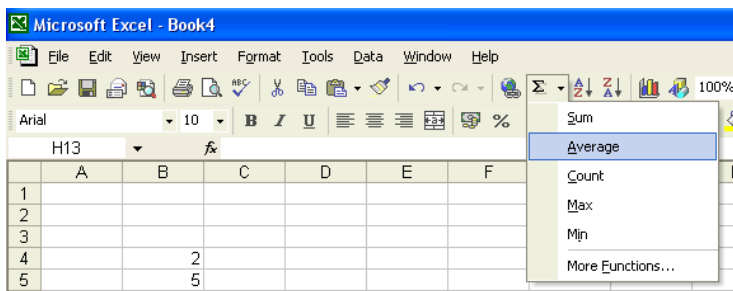
MAX: Used to return the maximum number from a list of arguments.

MIN: Used to return the minimum number from a list of arguments.

ROUND: Used to round off numbers to a specified number of decimal points.

SUM: Used to add the contents of selected cells.

Commonly used functions, as displayed when you click on the down arrow next to the AutoSum icon.



To use the SUM function

- Select the cell you want to contain the sum formula. This is normally just under a column of numbers, or just to the right of a row of numbers.
- Click the **AutoSum** icon on the **Standard** toolbar. Excel will create a sum formula, using the range it thinks you want to sum.



- If the range is correct, press **Enter**. In the example shown, clicking on the AutoSum icon produced the following **=SUM(F3:F6)**. This means that the numbers within the cell range, F3:F6 will be summed.

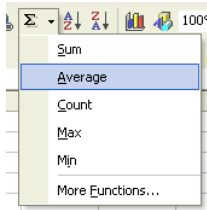
	F	G
day	Friday	
	7	
	1	
	6	
	5	
	=SUM(F3:F6)	

If Excel has not summed the correct range, then select the range you want to sum and press **Enter**.

To use the AVERAGE function

- The AVERAGE function will display the average value for a range of numbers.

- Select the cell you want to contain the Average formula. This is normally just under a column of numbers, or just to the right of a row of numbers.
- Click on the **down arrow** next to the **AutoSum** icon and select the **Average** function.



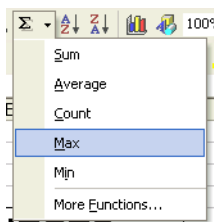
- In the example illustrated, the function has automatically selected the range **D7:D10**, and will calculate the average value of the grades for English tests.

SUM						
	A	B	C	D	E	F
1						
2						
3						
4						
5				SUBJECTS		
6			Name	English	History	Art
7			Dave	60%	94%	56%
8			Peter	74%	81%	45%
9			Yvette	91%	87%	69%
10			Lou	54%	82%	88%
11			Average grades	=AVERAGE(D7:D10)		
12				AVERAGE(number1, [number2], ...)		
13						
14						

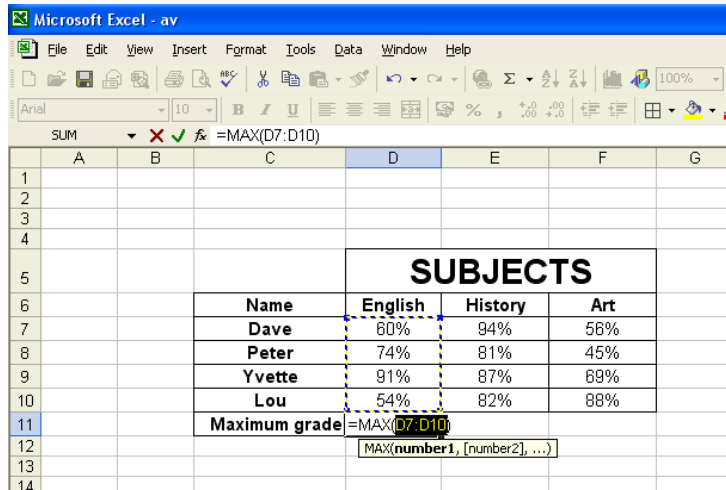
- Press the **Enter** key to see the result.

To use the MAX function

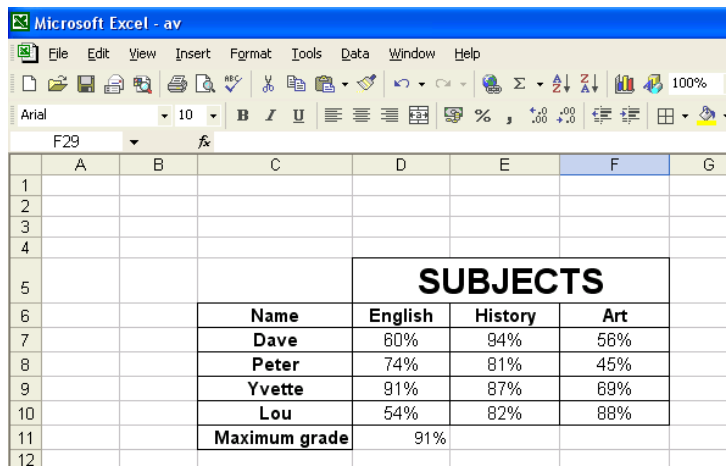
- The MAX function will display the maximum number within a range.
- Select the cell you want to contain the Max formula. This is normally just under a column of numbers, or just to the right of a row of numbers.
- Click on the **down arrow** next to the **AutoSum** icon and select the **Max** function.



- In the example illustrated, the function has automatically selected the range **D7:D10**, and will calculate the maximum value.

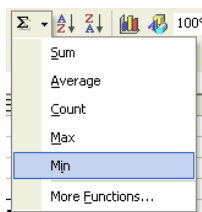


- Press the **Enter** key and the result is displayed, as illustrated.

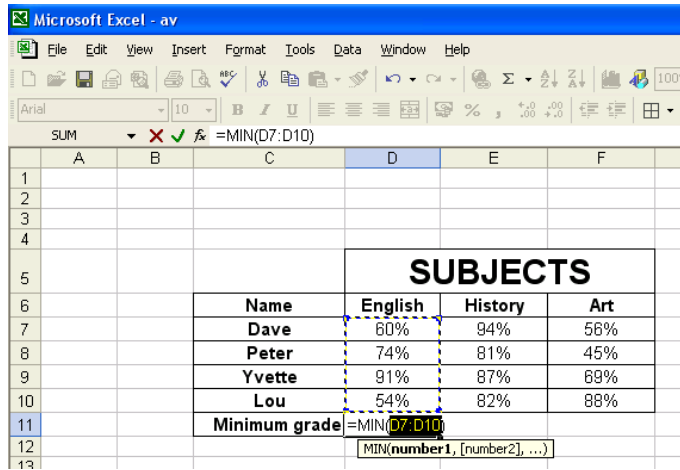


To use the MIN function

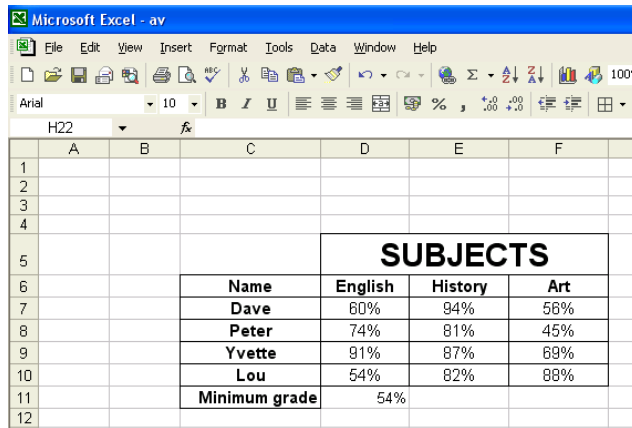
- The MIN function will display the minimum number within a range.
- Select the cell you want to contain the Min formula. This is normally just under a column of numbers, or just to the right of a row of numbers.
- Click on the **down arrow** next to the **AutoSum** icon and select the **Min** function.



- In the example illustrated, the function has automatically selected the range **D7:D10**, and will calculate the minimum value.

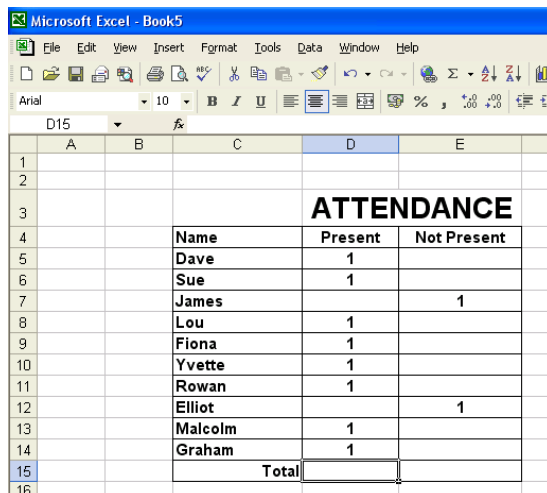


- Press the **Enter** key and the result is displayed, as illustrated.



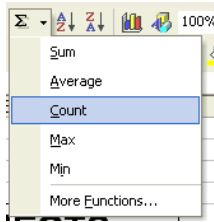
To use the COUNT function

- The COUNT function will count up the number of cells which contain numbers.
- In the example illustrated, we have an attendance register, where people are marked as present or absent.

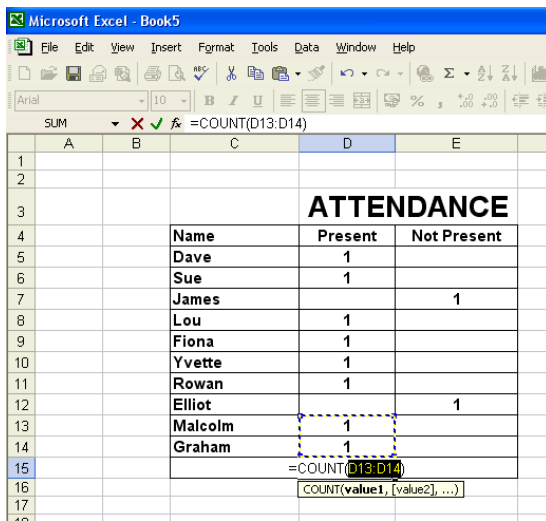


- To list the number of people present using the Count function, we first need to click on the cell you want to contain the Count formula, i.e. cell **D15**.

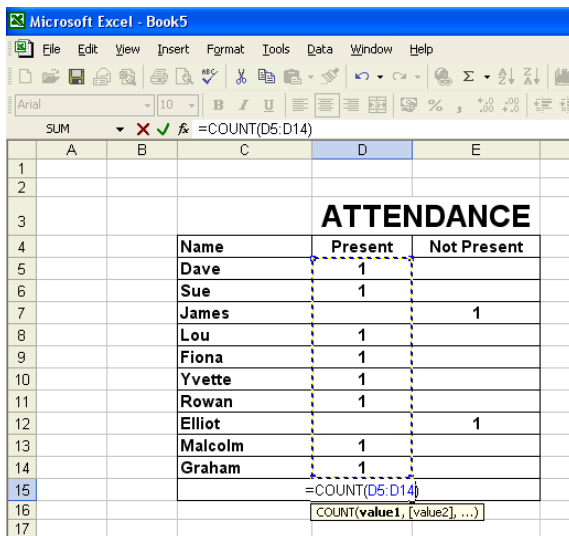
- Click on the **down arrow** next to the **AutoSum** icon and select the **Count** function.



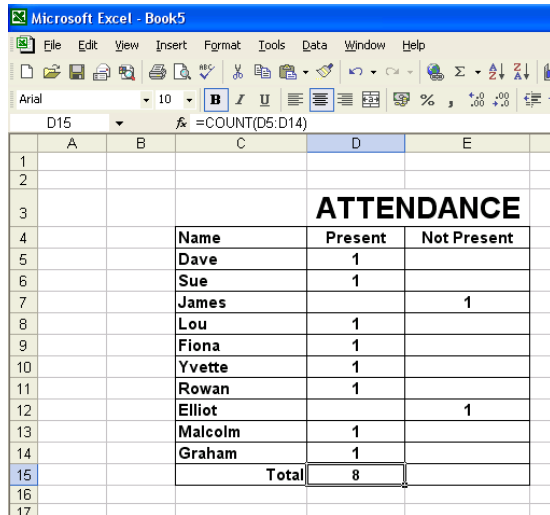
- As you will see in this case the function has not selected the range which includes all the names, but only the two names in the range **D13:D14**. The reason for this is the gap in the column of numbers in cell **D12**.



- We need to manually select the range **D5:D14**, as illustrated.



- Press the **Enter** key and the result is displayed, as illustrated.



NOTE: We can use the same technique to display the number of persons not present in cell E15.

4.4.3.2 Generate formulas using the logical function if (yielding one of two specified values)

The IF Function

- Excel has a number of functions which allow us to evaluate values and make decisions based on the result of the evaluation. The **IF() Function** is one of these.

IF() Syntax

The format (Syntax) of the IF() function is as follows:

IF(Logical_test, Action_if_true, Action_if_false)

Logical_test

The logical_test evaluates an expression to see if it passes the test, i.e. is TRUE or does not pass the test, i.e. is FALSE

Logical operators		Values for Evaluation		Result
		A=10 C=15	B=5 D=10	
= (Equal to)		A=B		FALSE
		A=D		TRUE
		A=C		FALSE
> (Greater than)		A>B		TRUE
		A>C		FALSE
		A>D		FALSE
< (Less than)		A<B		FALSE
		A<C		TRUE
		A<D		TRUE
>= (Greater than or Equal to)		A>=B		TRUE
		A>=D		TRUE
		A>=C		FALSE
<= (Less than or Equal to)		A<=B		FALSE
		A<=C		TRUE
		A<=D		TRUE

- Action_if_true**

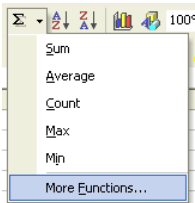
Action_if_true can be a value or an operation. Whichever, the result is placed in the cell which contains the IF() Function if the logical_test is true.

Action_if_false

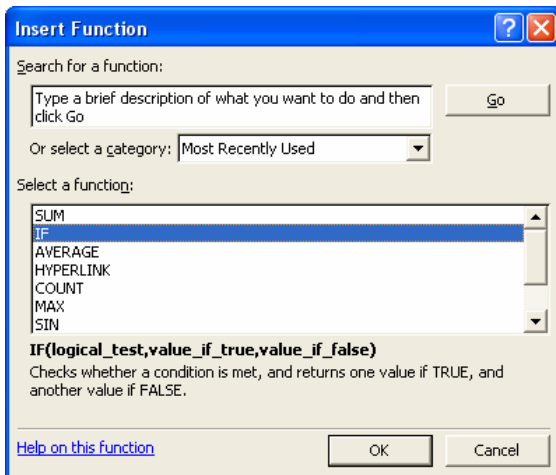
Action_if_false can be a value or an operation. Whichever, the result is placed in the cell which contains the IF() Function if the logical_test is false.

To enter an IF() function

- Click on the cell to contain the IF() function.
- Click on the **down arrow** next to the **AutoSum** icon, and from the menu displayed select **More Functions**, as illustrated.

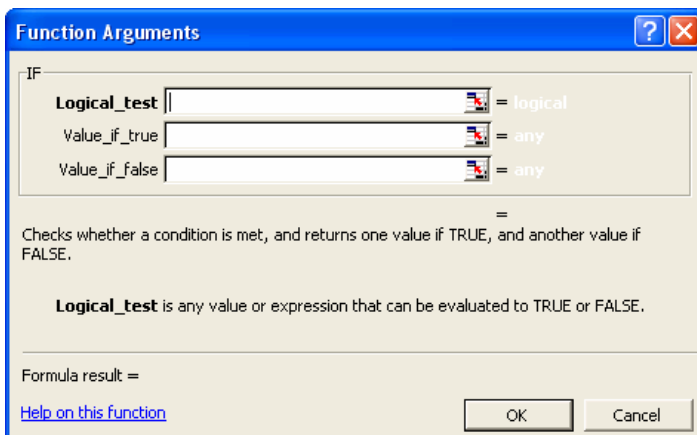


- This will display the Insert Function dialog box.



NOTE: To display the Insert Function dialog box you could have pressed the **Shift+F3** key combination.

- Select the **IF** function, and then click on the **OK** button, which will display the Functional Arguments dialog box for the IF function.



- Enter the required expression to be evaluated into the **logical_test** text area. Press the **Tab** key.
- Enter the required expression to be evaluated into the **value_if_true** text area. Press the **Tab** key.
- Enter the required expression to be evaluated into the **value_if_false** text area and then click **OK**.

Another example using the IF function

- Look at the example shown below. In order to pass the average student mark must be over 70%. The average grades are displayed in cell **H8:H13**

		SUBJECTS					
STUDENTS	Mathematics	English	History	Geography	Average grades	Passed?	
Dave	68	78	59	59	66		
Lou	69	69	69	67	69		
Elliot	76	78	79	87	80		
Rowan	67	86	58	65	69		
Malcolm	85	77	87	78	82		
Graham	59	68	78	89	74		

To pass a student needs an average grade of over 70%

In cells **I8:I13** we need to display the word **Pass** or **Fail**, depending on whether the average is over 70%. We first need to click on cell **I8**. Then we need to click on the **Insert Function** icon. Next select the IF function within the Insert Function dialog box and click on the **OK** button.

In the **Logical_test** section of the dialog box, we enter the logical test, i.e. **H8>70**

In the **Value_if_true** section of the dialog box, we enter the word **Pass**

In the **Value_if_false** section of the dialog box, we enter the word **Fail**

Click on the **OK** button to continue. Use the normal Excel drag techniques to extend this function to the cells **I9:I13**.

The results will be as illustrated.

		SUBJECTS					
STUDENTS	Mathematics	English	History	Geography	Average grades	Passed?	
Dave	68	78	59	59	66	Fail	
Lou	69	69	69	67	69	Fail	
Elliot	76	78	79	87	80	Pass	
Rowan	67	86	58	65	69	Fail	
Malcolm	85	77	87	78	82	Pass	
Graham	59	68	78	89	74	Pass	

4.5 Formatting

4.5.1 Numbers/Dates

To change number formatting

- You can quickly change the formatting of a cell or selected range by using the following icons on the **Formatting** toolbar:



Currency

23456 will become £23,456.00 (or your local currency equivalent)

NOTE: In the United States/Canada this icon may contain a \$ symbol.



Percent

.25 will become 25%



Comma

12345 will become 12,345.00



Increase Decimal

23,456.00 will become 23,456.000



Decrease Decimal

23,456.00 will become 23,456.0

4.5.1.1 Format cells to display numbers to a specific number of decimal places, to display numbers with, without commas to indicate thousands.

To establish a fixed number of decimal places for cell formats

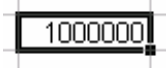
- Select the cell, or range, you wish to format with a fixed number of decimal places.
- To add a decimal point to the selection, click on the **Increase Decimal** icon on the **Formatting** toolbar. You can continue to click to add as many decimals as required.



- To remove a decimal point from the selection, click on the **Decrease Decimal** icon on the **Formatting** toolbar. Again, you can continue to click to remove as many decimals as required.

To apply comma formatting (to indicate thousands)

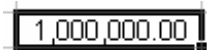
- Select the cell(s) containing the data which you wish to display with commas indicating thousands. In the example shown, we have the number 1000000.



- Click on the **Comma Style** icon



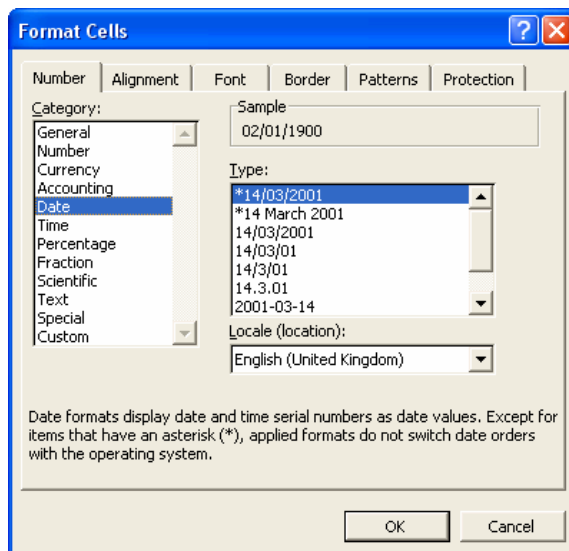
and the display will change as illustrated.



4.5.1.2 Format cells to display a date style.

To format date styles

- Enter a date in a cell.
- Right click to display a pop-up menu, and select **Format Cells**, to display the **Format Cells** dialog box. Select **Date** from the **Category** list and use the **Type** section of the dialog box to select the required date format.

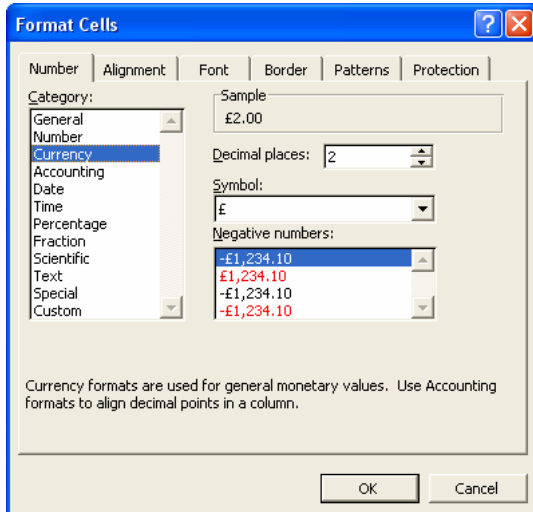


4.5.1.3 Format cells to display a currency symbol.

To format cells using currency symbols

- Enter a number in a cell.

- Right click to display a pop-up menu, and select **Format Cells**, to display the **Format Cells** dialog box.
- Select **Currency** from the **Category** list and use the **Symbol** section of the dialog box to select the required currency format. In the example shown, a EURO format has been selected.



- Select **OK**. An example is illustrated below.

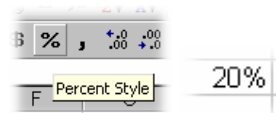


4.5.1.4 Format cells to display numbers as percentages.

To format numbers as percentages

- Click on a cell to select it and then click on the **Percent Style** icon on the Excel formatting toolbar.
- Enter the percentage value into the cell.

NOTE: Formatting a cell using the percentage style, multiplies the value by 100 and displays the results using a percentage symbol. Thus if you wished to use a value which would display as 20%, you would enter 0.2 into a cell formatted this way.

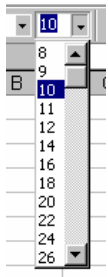


4.5.2 Contents

4.5.2.1 Change cell content appearance: font sizes, font types.

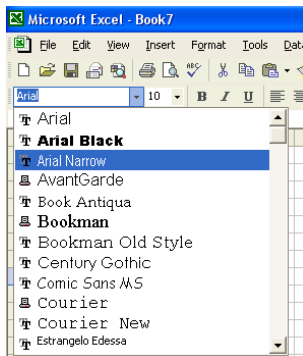
To change text size

- Select the cell or range of which you wish to change the text size.
- Click on the down arrow to the right of the **Font Size** icon located on the Excel formatting toolbar.
- Select the required font size.



To modify the font type used by text

- Select the cell or range to which you wish to apply text formatting.
- Click on the down arrow in the **Font** section of the Excel formatting toolbar. Select the required font.



4.5.2.2 Apply formatting to cell contents such as: bold, italic, underline, double underline.

To format text as bold

- Select the cell or range to which you wish to apply text formatting.
- Use the **Bold** icon located on the Excel formatting toolbar.



To format text as italic

- Select the cell or range to which you wish to apply text formatting.

- Use the **Italic** icon located on the Excel formatting toolbar.

I

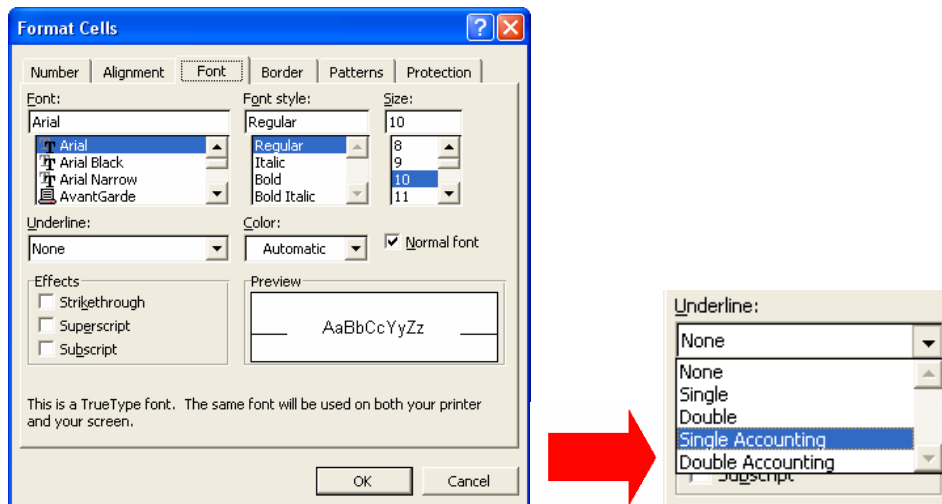
To format text as Underlined

- Select the cell or range to which you wish to apply text formatting.
- Use the **Underline** icon located on the Excel formatting toolbar.

U

To format text using double underlining

- Select the cell or range to which you wish to apply double underline formatting.
- To apply double underlining, then you must access the Font dialog box. To do this click on the **Format** drop down menu and then select the **Cells** command. This will display the Format Cells dialog box.
- Select the **Font** tab within the dialog box.
- Click on the down arrow to the right of the underline section of the dialog box, and then select the required type of underlining, such as **Double**.



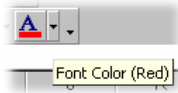
- Click on the **OK** button to close the dialog box. An example of this effect is illustrated below.

Tuesday

4.5.2.3 Apply different colours to cell content, cell background.

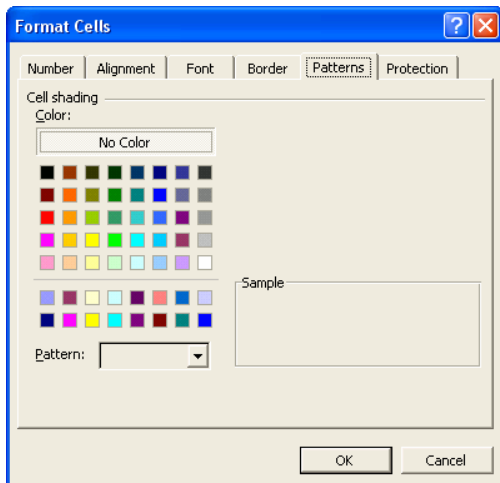
To change the colour used by the text

- Select the cell range which contains the contents of which you wish to change the colour.
- Use the **Font Color** icon located on the Excel formatting toolbar. Click in the down arrow to display a range of colour options.



To change the background colour of a cell range

- Select the cell or range to which you wish to apply a different background colour.
- Right click on the selected range and select **Format Cells**. This will display the Format Cell dialog box.
- Select the **Patterns** tab within the dialog box.



- Select the colour you wish to use for the cell background (be careful that you select a colour which will allow you to still see the cell contents, for instance, do not select a dark background, if you are using black as the cell contents colour!)
- Press the **OK** button when you have made your selections. An example is illustrated below.

	A	B
1		
2		Monday
3	Northern Sales	3
4	Eastern Sales	4
5	Western Sales	5
6	Southern Sales	6
7		

4.5.2.4 Copy the formatting from a cell, cell range to another cell, cell range.

To copy formatting using the Format Painter.

- Select some text which has been previously formatted.
- Click on the **Format Painter** icon. You will notice that the mouse pointer shape has changed to the shape of a small painting brush.

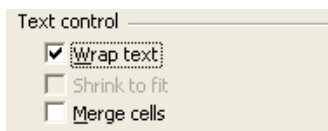


- Select the text to which you wish to copy the formatting, and when you release the mouse button you will see that the formatting applied to the first block of text has been copied to the newly selected text.

4.4.2.5 Apply text wrapping to contents within a cell.

To wrap text within selected cells

- Select the cell or range to which you wish to apply text wrapping.
- Right click and from the popup displayed select the **Format Cells** command.
- Click on the **Alignment** tab within the dialog box.
- Within the **Text control** part of this dialog box, select **Wrap text**, as illustrated.



- Click on the **OK** button to apply the text wrapping.

A 'before and after' example illustrates the effect.

Before

This line is just too long to fit into this little cell

After

This line is just too long to fit into this little cell

4.5.3 Alignment Border Effects

4.5.3.1 Align contents in a cell range: left, centre, right; top and, bottom.

To align data within a cell range, to the left, to the right or to centre data

- Select the cell(s) you wish to align.
- Click on the **Align Left** icon to align data to the left.



- Click on the **Align Right** icon to align data to the right.

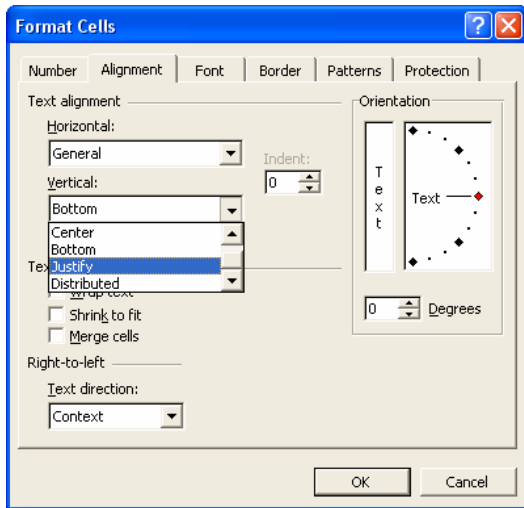


- Click on the **Centre** icon to centre the data.



To align data between the top and bottom of a cell

- Select the cell(s) you wish to align. From the **Format** menu, select **Cells** to display the **Format Cells** dialog box.
- To view the **Alignment** options, click on the **Alignment** tab at the top of the dialog box.
- Choose the **Top**, **Centre**, or **Bottom** option in the **Vertical** area to align the data in the cell.



- Click on **OK**.

4.5.3.2 Centre a title over a cell range.

To merge and centre over a range

- Lets say you had the following data within a worksheet.

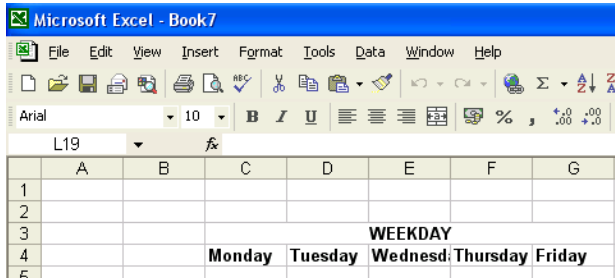
	A	B	C	D	E	F	G
1							
2							
3							
4			Monday	Tuesday	Wednesday	Thursday	Friday

- Now let's say that you wanted the word **WEEKDAY**, to be centred within the range C3 to G3.
- Enter the word **WEEKDAY** in cell **C3** and press **Return**.
- Select the range **C3** to **G3**.

- Click on the **Merge and Centre** icon, as illustrated.



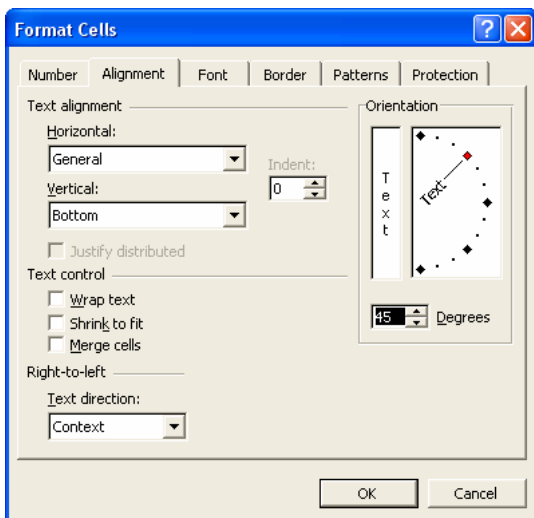
The result will be as illustrated



4.5.3.3 Adjust cell content orientation.

To rotate text to any angle

- First select the cell(s) to which you wish to apply the rotation formatting.
- Right click to display the pop-up box, and from the list displayed, select **Format Cells**. This will display the **Format Cells** dialog box. Select the **Alignment** tab.
- From the **Orientation** section either enter the exact amount of rotation required into the **Degrees** box, or drag the **Text** dial to give the desired level of rotation.
- Select **OK**.



The effect is illustrated below.

	A	B	C	D	E	F	G	H
1								
2								
3				WEEKDAY				
4			Monday	Tuesday	Wednesday	Thursday	Friday	
5								
6								

4.5.3.4 Add border effects to a cell, cell range.

To apply a border to a cell range (using the Border icon)

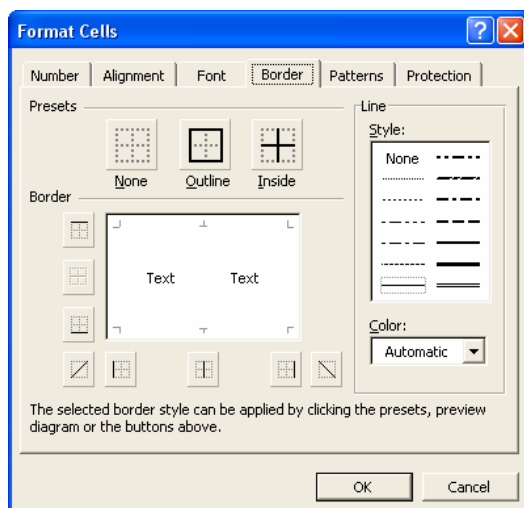
- Select the cell(s) to which you want to add a border.
- To view border options, click on the down arrow next to the **Borders** icon on the **Formatting** toolbar.



- Select the option you require. Once you have added a border using the **Borders** icon, the border you selected will appear on the **Borders** icon. You can add the same border simply by clicking on the icon after you have selected the cell(s) to which you wish to apply the border.

To apply a border to a cell range (using the Format Cells/Border dialog box)

- You could select a cell, or range of cells, and then click on the **Format** drop down menu, from which you can select the **Cells** command. This will display the **Format Cells** dialog box.
- Select the **Border** tab, as illustrated.



- You can use this dialog box to apply borders and also to vary the type of border applied.
- First choose a preset format to apply a border style.
- Then click on the **Border** icons within the dialog box.
- Finally use the **Style** and **Color** options to customise your borders.

- Click on the **OK** button to apply the border formatting and close the dialog box.

To remove a border from cells or ranges

- Select the cell(s) which contain the border you wish to remove. If you have a border which appears to be on the left side of a cell, but may actually be on the right side of the adjacent cell, select both of the cells.
- To reveal the border options, click the arrow next to the **Borders** icon on the **Formatting** toolbar.
- Click on the first border option. This contains no border selection and all highlighted borders will be removed.

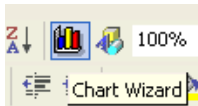
4.6 Charts / Graphs

4.6.1 Using Charts/Graphs

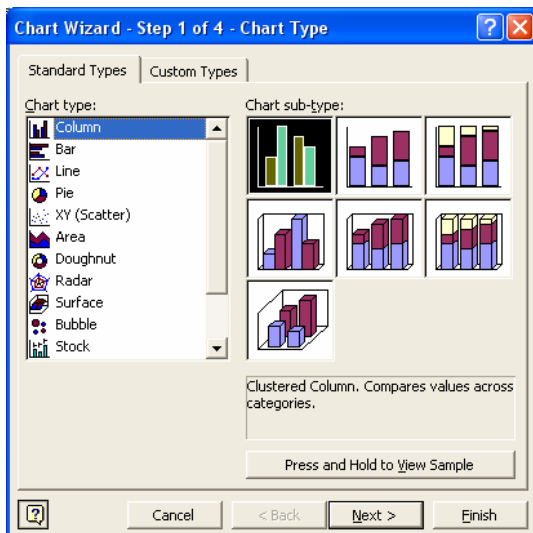
4.6.1.1 Create different types of charts/graphs from spreadsheet data: column chart, bar chart, line chart, pie chart.

To use the Chart Wizard to create a chart

- Select the cells you want to include in a chart. If you want to highlight a non-contiguous range, highlight the first range with the mouse, and hold down the **Ctrl** key and click on any other cells.
- On the **Standard** toolbar, click on the **Chart Wizard** icon.

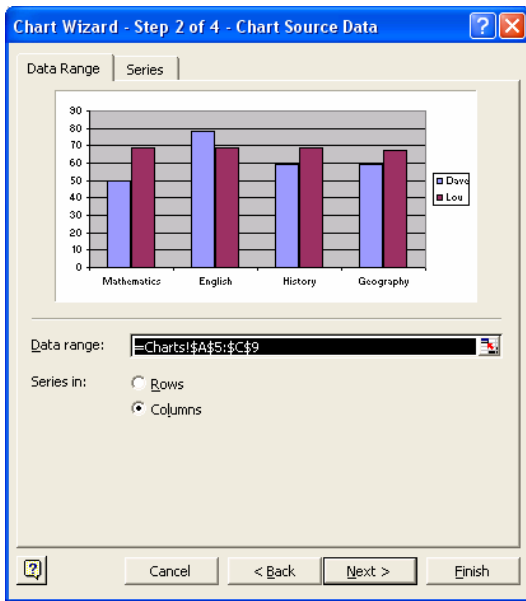


- Step 1 of the **Chart Wizard** dialog box is displayed.

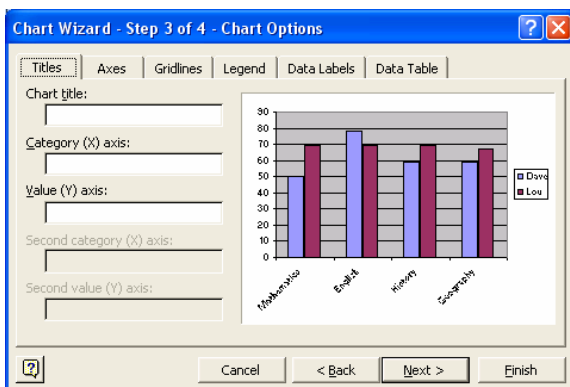


- From within the Chart Type section of the dialog box, select the required chart type, such as column chart, bar chart, line chart or pie chart. In this example we have selected the **Column**.
- Click on the **Next** button.

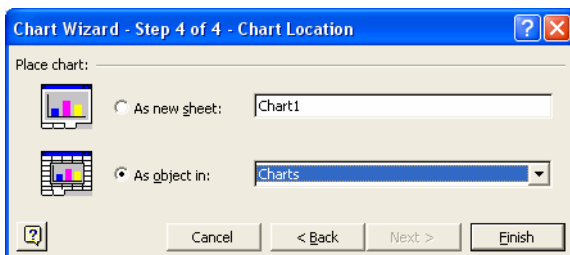
- The next page of the Chart Wizard is displayed. You can make changes if required.



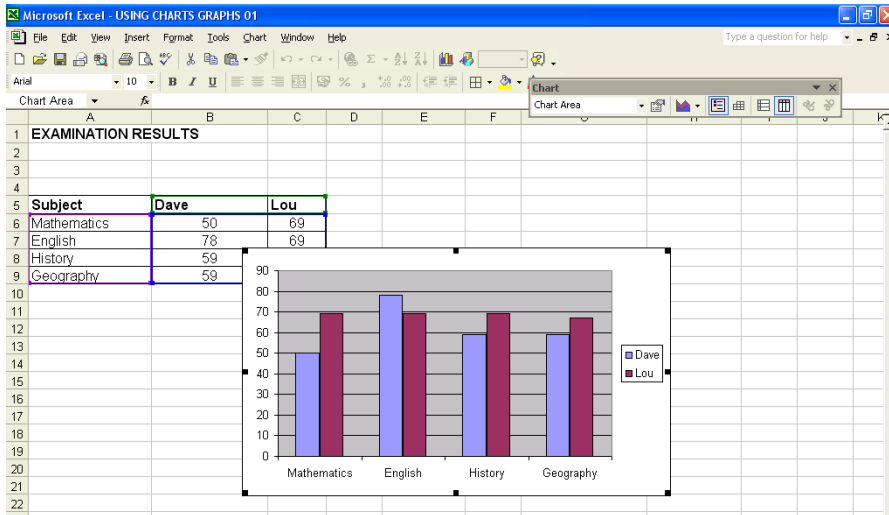
- Click on the **Next** button. The next page of the Chart Wizard allows you to add items such as chart titles, gridlines, etc.



- You can make changes as required, and then click on the **Next** button.
- The final page of the Chart Wizard is displayed. You would normally click on the **Finish** button at this point to insert the chart as an object into your worksheet.



- The chart is displayed, as illustrated.



4.6.1.2 Add a title or label to a chart/graph. Remove a title or label from a chart/graph.

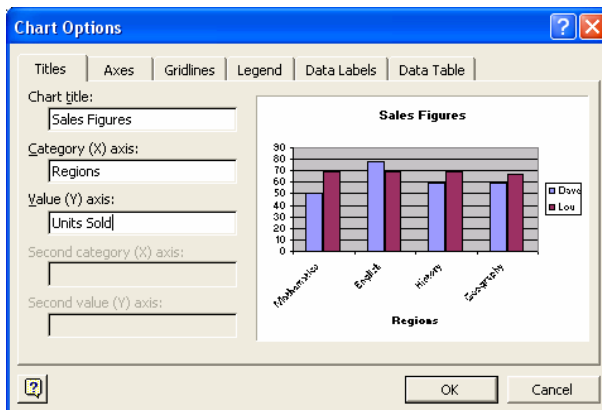
To add a title or label to a chart

- Click on the chart which you have created. You will notice that when the chart is selected the drop down menus change:



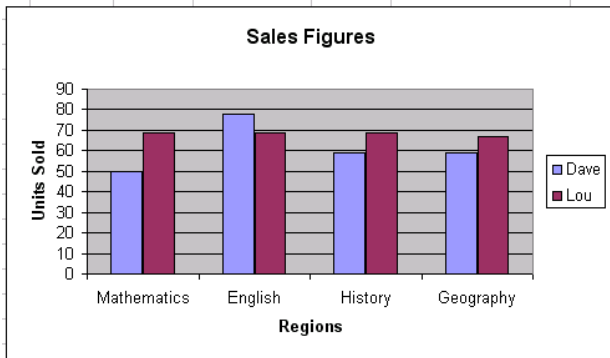
i.e. the **Data** drop down menu is replaced by a **Chart** drop down menu.

- Click on the **Chart** drop down menu, and select the **Chart Options** command. Make sure that the **Titles** tab is selected. Enter or modify a title as required.



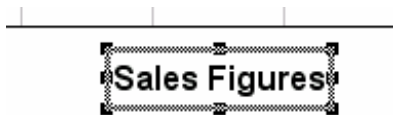
- In the example shown, we have added a title – **Sales Figures**
 In the example shown, we have added a label for the X axis - **Regions**
 In the example shown, we have added a label for the Y axis - **Units Sold**

- Click on the **OK** button when finished.



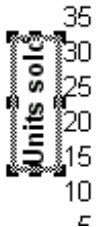
To remove a title or label from a chart

- Click on a chart containing a title or label which you wish to remove.
- Click on the item, within the chart, which you wish to remove. In the example shown, we clicked on the title.



- Press the **Delete** key to remove the title.

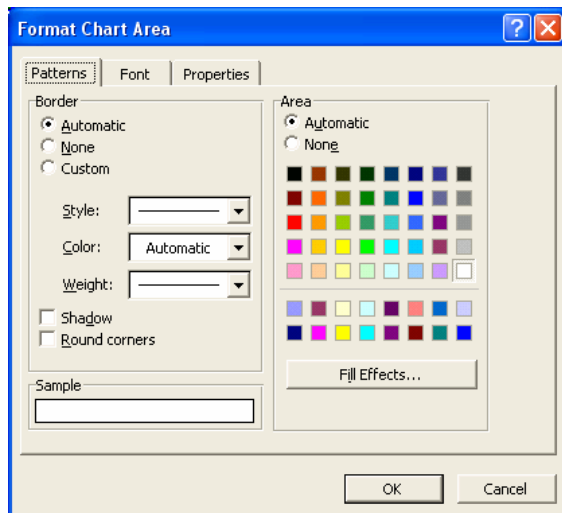
We could have used the same method to select and delete a label, for instance in the example shown, we have selected the Y axis label.



4.6.1.3 Change the background colour in a chart/graph.

To change the background colour of a chart

- Click once on a chart to select it.
- Double click over a portion of the background of which you wish to change the colour. This will display the Format Chart Area dialog box. If necessary select the **Patterns** tab of this dialog box.

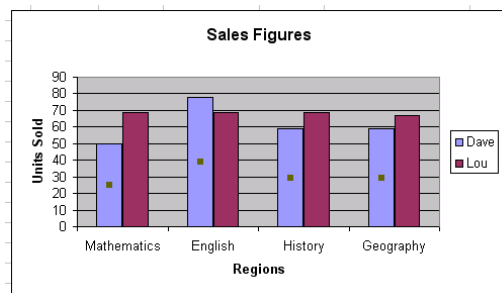


- Select the required background colour, and then click on the **OK** button.

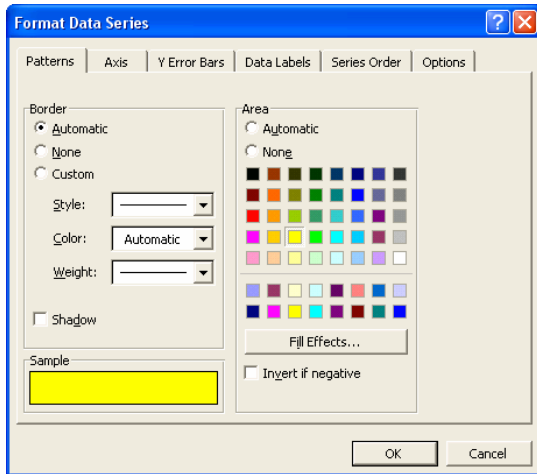
4.6.1.4 Change the column, bar, line, pie slice colours in a chart/graph.

To change the colour of a column, bar, line or pie slice within a chart

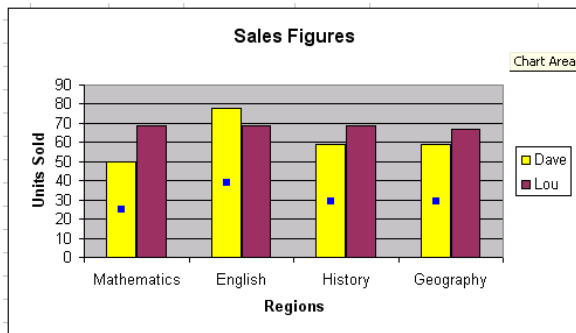
- Click on the chart to select it.
- Click on the chart column, bar, line or pie slice to select it.



- Double click over the selected item.
- From the dialog box displayed, select the **Patterns** tab, and then select the required colour.



- Click on the **OK** button to apply your changes.



4.6.1.5 Change the chart/graph type.

To use the Chart Type icon

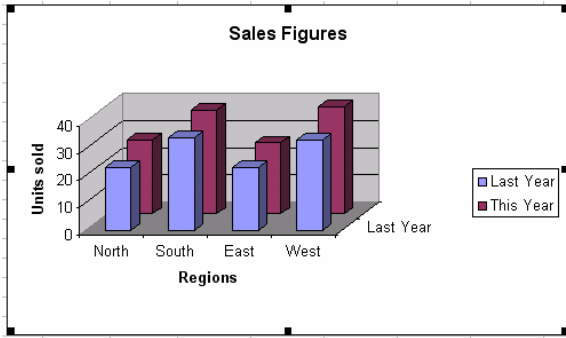
- Click on the chart to select it, and click on the drop down arrow next to the **Chart Type** icon on the **Chart** toolbar.



- Click on one of the chart types which are displayed within the drop down menu. **NOTE:** When wishing to convert to a Pie chart you have to use only one data series.



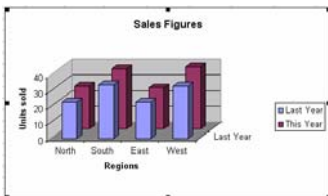
An example of the professional looking results which can be achieved is shown below.



4.6.1.6 Duplicate, move charts/graphs within a worksheet, between open spreadsheets.

To copy a chart within a worksheet

- Click on the chart which you wish to copy, so that small rectangular black selection handles are displayed around the border of the chart. This indicates that the chart is selected.



- Click on the **Edit** drop down menu and select the **Copy** command.
- Click elsewhere within the worksheet, click on the **Edit** drop down menu and select the **Paste** command. You may have to move the chart to the required position.

To copy a chart to a different worksheet within a workbook

- Click on the chart which you wish to copy.
- Click on the **Edit** drop down menu and select the **Copy** command.
- Click on the worksheet tab of the worksheet to which you wish to copy the chart.
- Click within the selected worksheet and then click on the **Edit** drop down menu and select the **Paste** command. You may have to move the chart to the required position.

To copy a chart to a worksheet within a different workbook

- Click on the chart which you wish to copy.
- Click on the **Edit** drop down menu and select the **Copy** command.
- Switch to, or open a second workbook to which you wish to copy the chart.
- If necessary select the required worksheet within this second workbook.
- Click on the **Edit** drop down menu and select the **Paste** command. You may have to move the chart to the required position.

To move a chart within a worksheet

- Click on the chart which you wish to move.
- Click on the **Edit** drop down menu and select the **Cut** command.
- Click elsewhere within the worksheet, click on the **Edit** drop down menu and select the **Paste** command. You may have to move the chart to the required position.

To move a chart to a different worksheet within a workbook

- Click on the chart which you wish to move.
- Click on the **Edit** drop down menu and select the **Cut** command.
- Click on the worksheet tab of the workbook to which you wish to move the chart.
- Click within the selected worksheet and then click on the **Edit** drop down menu and select the **Paste** command. You may have to move the chart to the required position.

To move a chart to a worksheet within a different workbook

- Click on the chart which you wish to move.
- Click on the **Edit** drop down menu and select the **Cut** command.
- Switch to, or open a second workbook to which you wish to move the chart.
- If necessary select the required worksheet within this second workbook.
- Click on the **Edit** drop down menu and select the **Paste** command. You may have to move the chart to the required position.

4.6.1.7 Resize, delete charts/graphs.

To re-size a chart

- Move the mouse to one of the corner selection handles (the small square black boxes) and drag and drop. The chart is re-sized in the same way that any graphic is re-sized within the Microsoft suite of applications.

To delete a chart

- Click on the chart you wish to delete to select it and press **Delete**. The chart will be deleted.

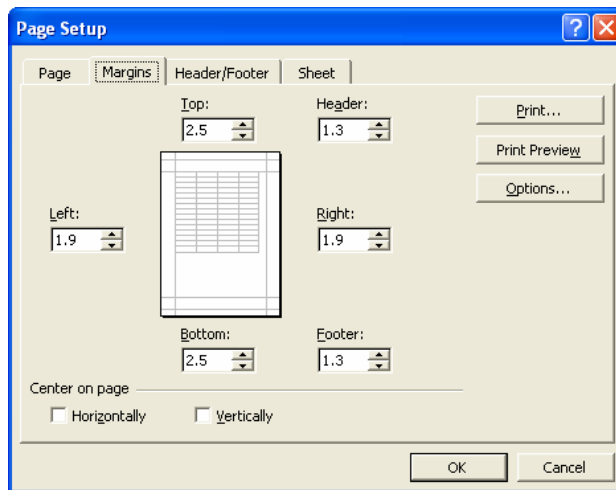
4.7 Prepare Outputs

4.7.1 Worksheet Setup

4.7.1.1 Change worksheet margins: top, bottom, left, right

To modify margin values

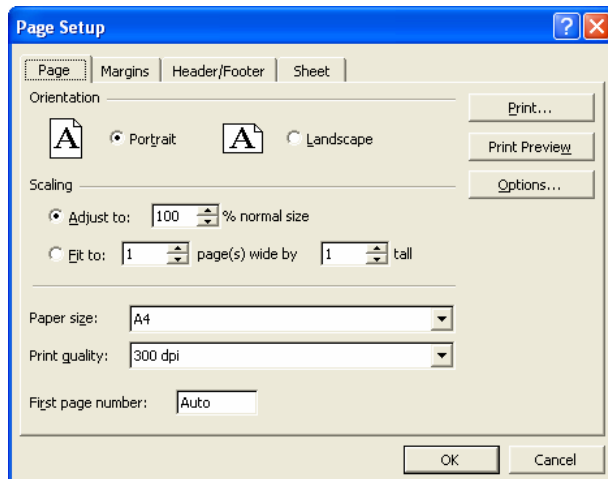
- Click on the **File** drop down menu and select the **Page Setup** command. This will display the **Page Setup** dialog box.
- Select the **Margins** tab and modify your margins as required.



4.7.1.2 Change worksheet orientation: portrait, landscape. Change paper size.

To set orientation and page size

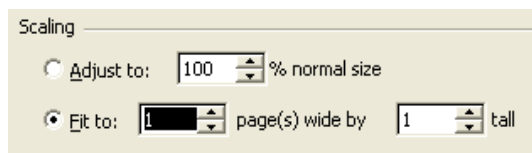
- Click on the **File** drop down menu and select the **Page Setup** command. This will display the **Page Setup** dialog box.
- Select the **Page** tab. Select **Portrait** or **Landscape** orientation, as well as the desired paper size.



4.7.1.3 Adjust page setup to fit worksheet contents on one page, on a specific number of pages.

To force a worksheet to print on a single page

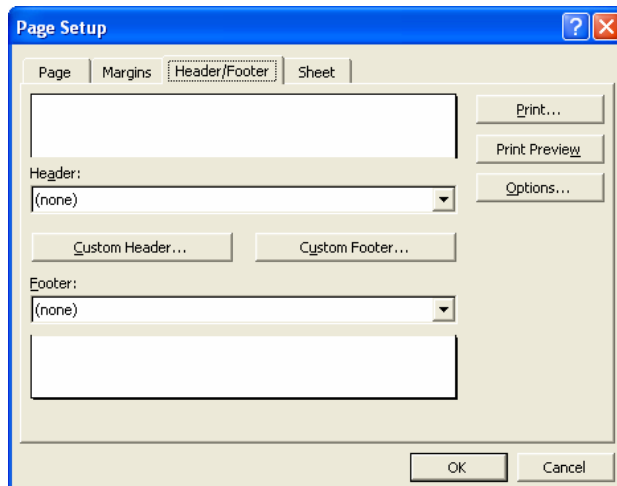
- Click on the **File** drop down menu and select the **Page Setup** command. This will display the **Page Setup** dialog box.
- Select the **Page** tab and modify the **Fit to** section of the dialog box to print on a single page.



4.7.1.4 Add, modify text in Headers, Footers in a worksheet.

To use standard headers and footers

- Excel provides standard header and footer options, which can be selected from the drop down menus in the **Page Setup** dialog box. From the **File** menu, select **Page Setup** to display the **Page Setup** dialog box. Make sure the **Header/Footer** tab is displayed.



- Click on the **down arrow** to the right of the **Header** list box to reveal a list of available headers.
- Click on the header required to select it.
- Click on the **down arrow** on the right of the **Footer** list box to reveal a list of available footers.
- Click on the footer required to select it.
- Click on **OK** to accept the header and footer and close the dialog box.

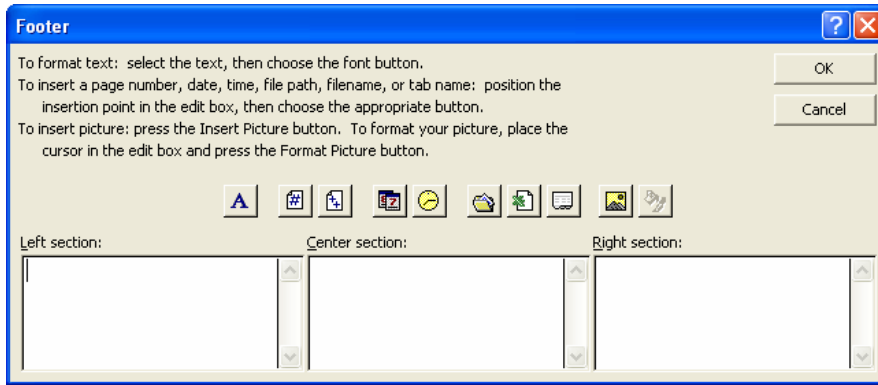
To create custom headers and footers

- From the **File** menu select **Page Setup** to display the **Page Setup** dialog box. Make sure the **Header/Footer** tab is displayed.
- Click on the **Custom Header** or **Custom Footer** button to display the **Header** (or **Footer**) dialog box. In the **Left section** box, enter any data you want to appear at the left margin of the header or footer. In the **Center section** box, enter any data you want to appear at the centre of the header or footer.
- In the **Right section** box, enter any data you want to appear at the right margin of the header or footer. You can also add the date and time to your header or footer using the **Date** and **Time** icons, include file and sheet names in the header or footer using the **File** and **Sheet name** icons, and determine which pages the header and footer will appear on using the **Page** buttons. When you have finished, click on **OK** to close the dialog box. Your new header (or footer) will be displayed in the **Page Setup** dialog box in the **Header** or **Footer** list box. Choose **OK** to close the **Page Setup** dialog box.

4.7.1.5 Insert fields: page numbering information, date, time, file name, worksheet name into headers

To add page numbering to a worksheet

- Click on the **File** drop down menu and select the **Page Setup** command.
- Select the **Header/Footer** tab within the dialog box.
- Click on either the **Custom Header** or **Custom Footer**, as required, and you will see another dialog box displayed, as illustrated.



- Click within the section of the header or footer where you wish the page number to be displayed, i.e. left, centre or right.
- Click on the **Page Numbering** icon.

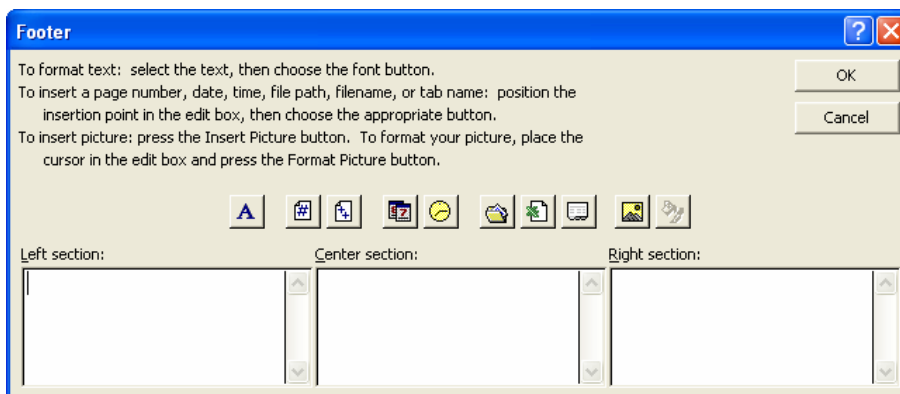


- Click on the **OK** button, and then click on the **OK** button of the Page Setup dialog box, so that all the dialog boxes are now closed.

TIP: To see your header/footer displayed on screen, click on the Print preview icon, to view the worksheet as it would print.

To insert fields into a header or footer

- Click on the **File** drop down menu and select the **Page Setup** command.
- Select the **Header/Footer** tab within the dialog box.
- Click on either the **Custom Header** or **Custom Footer**, as required, and you will see another dialog box displayed, as illustrated.



- Click within the section of the header or footer where you wish the field to be displayed, i.e. left, centre or right.
- Click on the required icon.



Font: Allows you to modify the font type and font attributes.



Page Number: Inserts automatic page numbering



Total Pages: Inserts the total number of pages into the footer/header. By using this in conjunction with Page Number you can have a header which would, for instance, display in the format **Page 7 of 20**.



Date: Inserts the current date.



Time: Inserts the current time.



File Name: Insert the name of the current workbook (i.e. file name).



Sheet Name: Inserts the name of the current worksheet.

- When you have made your selections, click on the **OK** button, and then click on the **OK** button of the Page Setup dialog box, so that all the dialog boxes are now closed.

4.7.2 Preparation

4.7.2.1 Understand the importance of checking spreadsheet calculations and text before distribution.

Always check your work prior to sending it to someone else!

- Do not assume that Excel knows what you mean. If you enter the wrong data, then Excel will use this data and produce incorrect information. You must ALWAYS check your spelling and do a rough check that the calculations performed by Excel are as you intended!

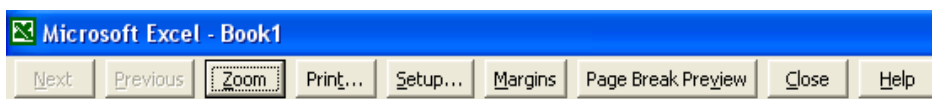
4.7.2.2 Preview a worksheet.

To preview a worksheet

- Click on the **Print Preview** icon within the Standard Excel toolbar.



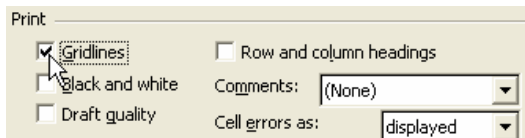
You will see a new toolbar displayed. Click on the **Close** button to return to the normal Excel view of your data.



4.7.2.3 Turn on, off display of gridlines, display of row and column headings for printing purposes.

To turn on (or off) the printing of gridlines

- From the **File** menu, choose **Page Setup** to display the **Page Setup** dialog box.
- Select the **Sheet** tab.
- To print gridlines make sure that the **Gridlines** check box (in the **Print** area of the dialog box) is ticked. To turn off the printing of gridlines make sure that this option is not ticked.

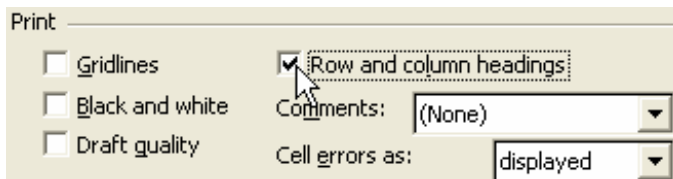


- Select **OK**.

4.7.2.4 Apply automatic title row(s) printing on every page of a printed worksheet.

To control the printing of row and column headings

- From the **File** menu, choose **Page Setup** to display the **Page Setup** dialog box.
- Select the **Sheet** tab.
- To print row and column headings make sure that the **Row and column headings** check box (in the **Print** area of the dialog box) is ticked. To turn off the printing of row and column heading make sure that this option is not ticked.



- Select **OK**.

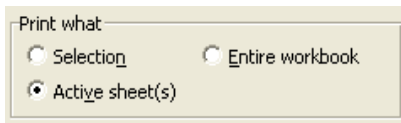
4.7.3 Printing

4.7.3.1 Print a cell range from a worksheet, an entire worksheet, number of copies of a worksheet, the entire spreadsheet, a selected chart.

To print a cell range from a worksheet

- Select the cell range which you want to print.

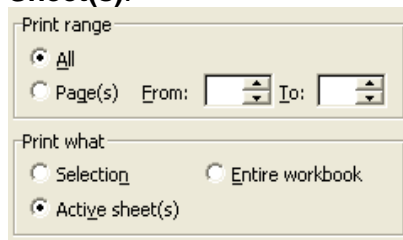
- Click on the **File** drop down and select the **Print** command.
- Within the **Print what** section of the dialog box, click on **Selection**.



- Click on the **OK** button.

To print the entire active worksheet

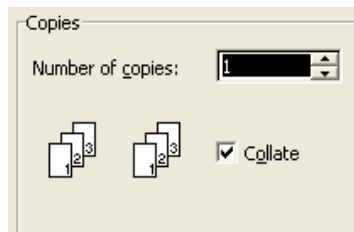
- Click on the **File** drop down and select the **Print** command.
- Within the **Print Range** select **All**, and in the **Print What** section, click on **Active Sheet(s)**.



- Click on the **OK** button.

To print a specified number of copies of a worksheet

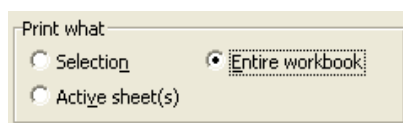
- Click on the **File** drop down and select the **Print** command.
- Within the **Copies** section of the dialog box, enter the required number of copies.



- Click on the **OK** button.

To print the entire workbook (including all the worksheets within it)

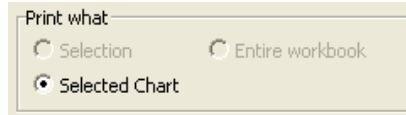
- Click on the **File** drop down and select the **Print** command.
- Within the **Print what** section of the dialog box, select the **Entire workbook** option.



- Click on the **OK** button.

To print a selected chart

- Click once on a chart to select it.
- Click on the **File** drop down and select the **Print** command. You will notice that within the **Print What** section of the dialog box, **Selected Chart** is active, as illustrated.



- Make any other changes as required from the dialog box, and then click on the **OK** button to print the chart.

To print a spreadsheet to a file

- Click on the **File** drop down menu and select the **Print** command.
- Within the dialog box displayed, select the **Print to file** option.

