

"Microsoft Excel: Knowing the Screen Elements, Entering and Saving Your Spreadsheet Data"

Microsoft Excel is an advanced computer-based spreadsheet, which is used to store data in columns and rows which can then be organized and/or processed. Spreadsheet is simply a sheet that contains many columns and rows.

To get started, follow the guides below:

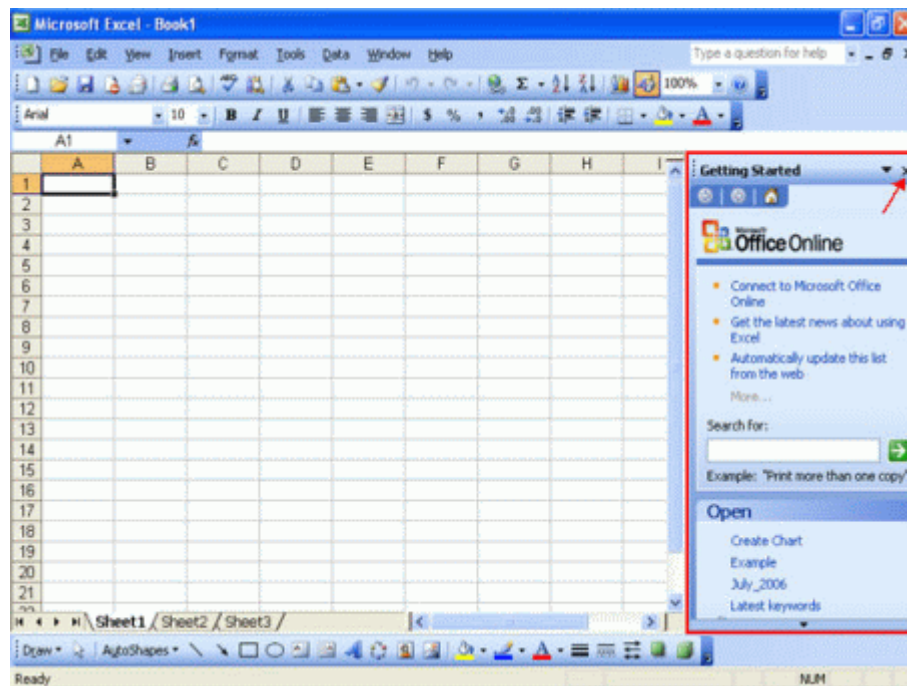


To start Excel using the Windows Start menu

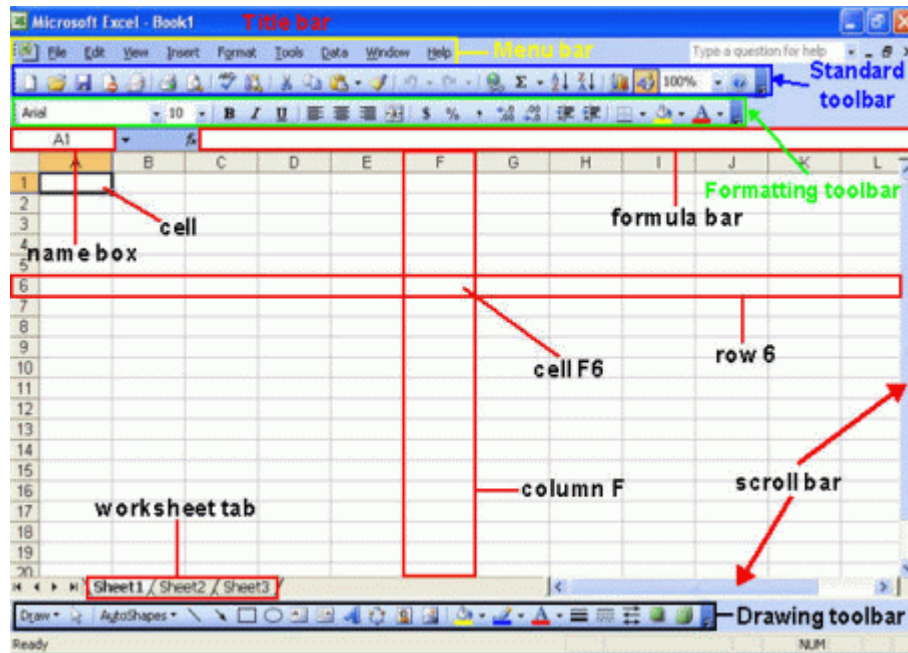
- Click on the **Start** button, point to **Programs**, following by **Microsoft Office** and click on **Microsoft Office Excel 2003**.

Note: For previous version of Office - Click on the **Start** button, point to **Programs** and click on **Microsoft Excel**.

- Immediately you will see the screen shown below. In the right hand side of the screen, the **Getting Started** task pane provides help to you.



- If you are not using it at the moment, click on the **Close** icon to close it.
 - The Microsoft Office Excel 2003 screen elements:



By default, Microsoft Excel workbook contains 3 blank worksheets, which are identified by tabs displaying along the bottom of the screen.

To enter text into a worksheet

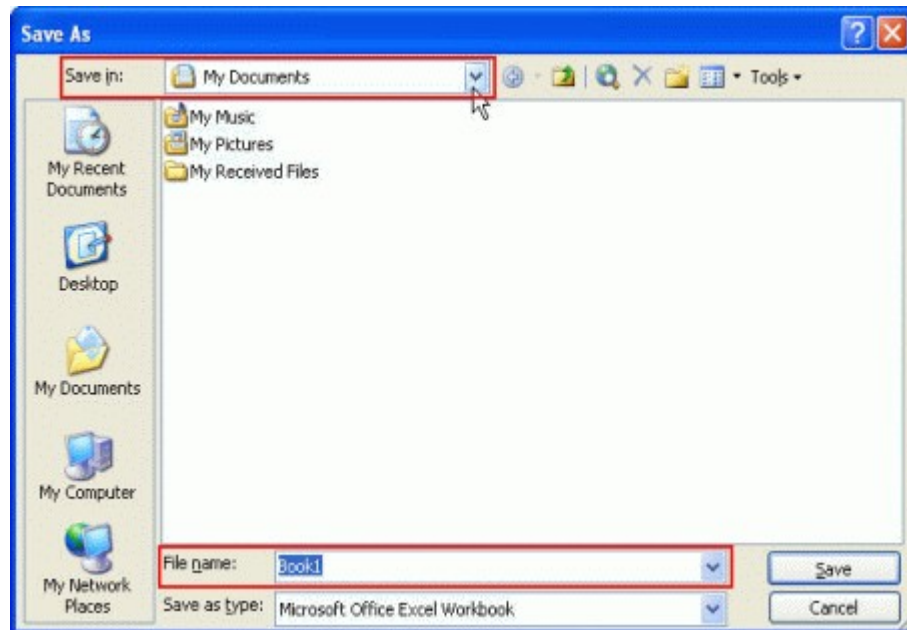
- Select the cell in which you want to enter the text and then type in the text.
 - Text entries are left aligned by default.

To enter numbers into a worksheet

- Select the cell in which you want to enter a number and type in the number.
- If you want to enter a negative number, type a minus sign in front of it or enclose it in parentheses (bracket), e.g. -15 or (15).
 - To indicate decimal places, you type a full stop such as 125.89.
 - The numbers will be right aligned by default.

To save a workbook

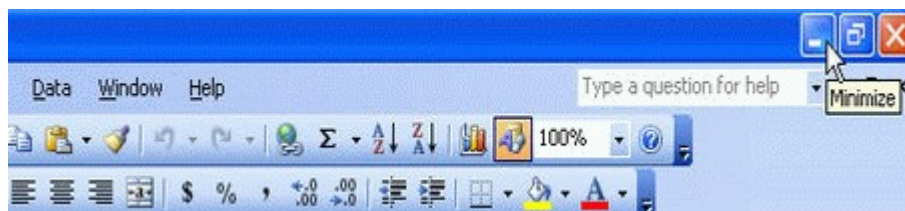
- From **File** menu, click **Save**.



- If it is a new file, the **Save As** dialog box will appear. If necessary select a different folder that you may wish to save the file in.
 - Enter a name in the **File name:** text box.
 - Click on the **Save** button.

To minimize a workbook window

- Click on the **Minimize** button in the top right-hand corner of the workbook window.



Note: If you minimize the window, the file is not close yet. To re-open the program, just click on the 'minimized program icon' on the window taskbar.

To close a file

- From the **File** menu, click **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 display. In the **File name** text box, enter a name and click on the **Save** button.

To exit Microsoft Excel

- From the **File** menu, click **Exit**.
- If you have saved all the changes made in the active workbook files, Microsoft Excel will close.
- If you have not saved all the changes, the **Save** confirmation box will be displayed.
 - To save the current workbook file before exiting, select **Yes**.
 - To exit without saving the file, select **No**.
 - To cancel the exit command, select **Cancel** or press **Esc**.

Start Exploring Microsoft Excel 2003

Once the [Microsoft](#) Excel is launch, you can directly use it by entering data or you can choose to open the existing Excel file. Below are the step-by-step guides:



[Creating and Opening Workbooks](#)

[To start using Microsoft Excel, you can start with a new blank workbook or open the existing Excel file.](#)

[To create a new default workbook](#)

- [Click on the **New** icon located on the **Standard** toolbar](#)
- OR** [press **Ctrl+N**](#)

[To open a file](#)

- [From the **File** menu, click **Open**.](#)
 - [From the **Open** dialog box as displayed, use the **Look in:** drop down menu to select the drive or folder that contains the file you want.](#)
 - [To open the file you can either double-click on the file name](#)
- OR** [select the file name by clicking on it, and then click on the **Open** button.](#)

[Microsoft Excel - Data Entry Techniques](#)

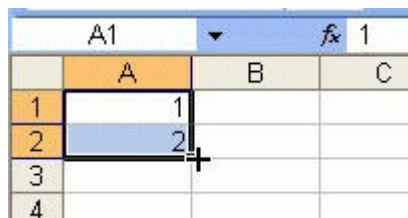
[Here is the guide that shows the easy ways that you can use to enter data into the worksheet.](#)

[To fill a range of cells with the same data](#)

- [Highlight the cells you wish to fill.](#)
- [Enter the information that you wish to fill the selected range with.](#)
- [Press **Ctrl+Shift+Enter** and the range will be filled.](#)

[To fill a range of cells with the 'automatic' data](#)

- [Highlight the cells you wish to fill.](#)
- [Enter the data into the cells as follow: A1: 1; A2: 2](#)
- [Use the mouse to drag from cell A1 to A2.](#)
- [Place your mouse in the bottom right corner of the selected cells until you see the "+" sign appear as follow:](#)



- [Click and drag the mouse down the cells as you wish. You will see the selected range will fill with continuous numbers 3, 4, 5, 6,...](#)

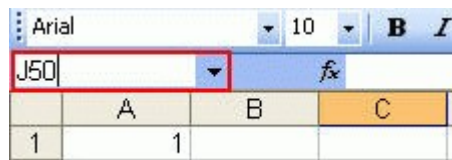
Note: [You also can replace the above A1 and A2 cells with days of week such as Monday, Tuesday,... and months like January, February,...](#)

[Microsoft Excel - Navigating in the Worksheet](#)

[How you can move from one place to another in Microsoft Excel? Here is the ways:](#)

[To move to a particular cell \(quick way\)](#)

- Enter the cell that you wish to jump to into the **Name Box** (at the top, left of the screen). In the example shown the cell reference J50 has been entered. When you press the **Enter** key you will jump to the cell you entered.



[To move from cell to cell using the keyboard](#)

- [To move from cell to cell, use one of the following key or combination keys:](#)

Icon	Function
→	One cell to the right.
←	One cell to the left.
↓	One cell down.
↑	One cell up.
Ctrl + →	To the right-hand edge of the current region.
Ctrl + ←	To the left-hand edge of the current region.
Ctrl + ↓	To the bottom edge of the current region.
Ctrl + ↑	To the top edge of the current region.
Home	To the first cell in the row.
Ctrl + Home	To the first cell in the worksheet.
Ctrl + End	To the lowest right-hand cell in the worksheet that contains a data entry .
Page Down	One screen down.
Page Up	One screen up.
Alt + Page Down	One screen to the right.
Alt + Page Up	One screen to the left.

[Microsoft Excel - Selection Techniques](#)

[The selection techniques in Microsoft Excel allow you to select or highlight the cell\(s\) quickly so that you can perform the tasks such as deleting, copying, etc.](#)

[To select a cell](#)

- [Click on the cell you wish to select.](#)

[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 cells \(making up a rectangular block\)](#)

- [Click on the first cell of the rectangular block that you wish to select \(i.e. the left top-](#)

left hand corner)

- Move down to the cell that 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 and release the **Shift** key.

To select a non-contiguous range

- Select the first cell or range.
- While holding down the **Ctrl** key, select the next range of cells.

To select a row

- Click on the row heading number.

To select a column

- Click on the column heading letter.

To select an entire worksheet

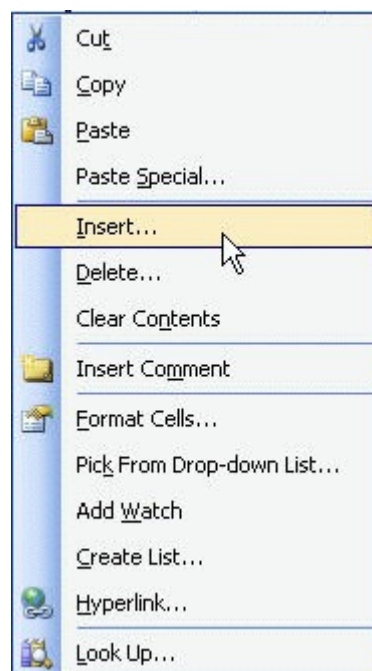
- Press **Ctrl+A**

Microsoft Excel - Inserting and Deleting

Microsoft Excel offers a convenient way for you to either insert or delete cell(s), column(s), row(s), or entire worksheet.

To insert a row(s) 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.
- Right-click on the selected row(s) to display a pop-up menu.
- Select **Insert**. Any existing data will move down to accommodate the new cells.



To insert column(s) into a worksheet

- [Select the column you want to move to the right when the new column is inserted.](#)
- [To select more than one column, drag the mouse pointer across the required column headings.](#)
- [Right-click on the selected column\(s\) to display a pop-up menu.](#)
- [Select **Insert**. Any existing data will move down to accommodate the new cells.](#)

To delete a row or column

- [Use the same techniques outlined above, but select the **Delete** command from the pop-up menu.](#)

To insert cells or range of cells

- [Select the cell where you want to insert a new cell.](#)
- [From the **Insert** menu, click **Cells**.](#)
- [From the **Insert** dialog box, select one of the following options:](#)

Entire column	Moves all cells in the column to the right and inserts a new column.
Entire row	Moves all cells in the row down and inserts a new row.
Shift cells down	Moves existing cells down and inserts one cell.
Shift cells right	Moves existing cells to the right and inserts one cell.

- [Click on the **OK**.](#)

To delete cells or ranges of cells

- [Select the cell\(s\) you want to delete.](#)
- [From the **Edit** menu, click **Delete**.](#)
- [From the **Delete** dialog box displayed, select one of the options.](#)
- [Click on the **OK** button.](#)

To insert a worksheet

- [Click the sheet tab to select the worksheet where you want to insert a new one. The new worksheet will be inserted before this worksheet.](#)
- [From the **Insert** menu, click **Worksheet**.](#)

To delete a worksheet

- [Click on the sheet tab to select the worksheet you wish to delete.](#)
- [From the **Edit** menu, click **Delete Sheet**.](#)
- [Select **OK** to permanently delete the selected sheet.](#)

COPY and PASTE

What is the Mystery Concept behind the Copy and Paste?

Yes, it's **clipboard**.

and...What is the relationship between **clipboard** and **copy and paste**?

The clipboard is an area of memory in which you can store text, graphics or any other items in it.

When you perform copy in the Excel spreadsheet, actually the copied item is store in the clipboard temporarily, and then when you paste the item, it is from the clipboard and paste the item to the intended location.

Cut, Copy and Paste Data or Objects

To use the clipboard to copy data to other program

- Select the cell or range you wish to copy.
- From the **Edit** menu, click **Copy**.

OR click on the **Copy icon** on the **Standard** toolbar.

- Switch to the required destination program (e.g. [Microsoft Word](#)).
- Place the cursor where you want the data to appear.
- From the **Edit** menu, click **Paste**.

OR click on the **Paste** icon on the **Standard** toolbar.

To use the clipboard to cut data to other program

- Select the cell or range you wish to cut.
- From the **Edit** menu, click Cut.

OR click on the **Cut** icon on the **Standard** toolbar.

- Switch to the required destination program (e.g. Microsoft Word).
- Place the cursor where you want the data to appear.
- From the **Edit** menu, click **Paste**.

OR click on the **Paste** icon on the **Standard** toolbar.

Note: You noticed that cut and paste is different from copy and paste. Cut and paste will let the original data disappear when you paste it to the destination program/location.

To use the clipboard to copy an object between worksheet or workbook

- Click on the object (e.g. oval) to select it.
- From the **Edit** menu, click **Copy**.
- Move to a new worksheet or workbook.
- Select a location for the top left-hand corner of the object.
- From the **Edit** menu, click **Paste**.

To use the clipboard to cut an object between worksheet or workbook

- Click on the object (e.g. arrow) to select it.
- From the **Edit** menu, click **Cut**.
- Move to a new worksheet or workbook.
- Select a location for the top left-hand corner of the object.
- From the **Edit** menu, click **Paste**.

To copy a numeric value down a column

- In the first cell of the column, enter the first numeric value.
- Select the second cell in the same column and press **Ctrl+Shift+' (Apostrophe)**.
- Press **Enter** to insert the value into the selected cell.

To copy a column of text into a row

- Select the range of data you wish to copy and transpose.
- From the **Edit** menu, click **Copy**.
- Highlight the cell where you want to place the range.
- From the **Edit** menu, click **Paste Special**.
- From the **Paste Special** [dialog box](#) displayed, tick the **Transpose** check box.
- Select **OK**.

EXCEL FORMATTING

There is So Many Things to do With Excel Formatting?

The Excel Formatting Toolbar

Excel **formatting toolbar** normally located near to the top of your screen as shown here. The toolbar icons have a specific purpose that can change the outlook of your spreadsheet when you apply formatting to it.



The formatting toolbar icons and functions:

- **Font** – to select fonts from a drop-down list.
- **Font Size** – to select a font size from a drop-down list.
- **Bold** – to apply bold to a selected range.
- **Italic** – to apply italic to a selected range.
- **Underline** – to underline a selected range.
- **Align Left** – to align a selected range to the left.
- **Center** – to center a selected range.
- **Align Right** – to align a selected range to the right.
- **Merge and Center** – to merge cells and center text across a selected range.
- **Currency Style** – to apply currency style to a selected range.
- **Percent Style** – to apply percentage style to a selected range.
- **Comma Style** – to apply comma style to a selected range.
- **Increase Decimal** – to decrease the number of decimal points displayed in a selected range.
- **Decrease Decimal** – to increase the number of decimal points displayed in a selected range.
- **Decrease Indent** – to decrease the level of indentation in a selected range.
- **Increase Indent** – to increase the level of indentation in a selected range.
- **Borders** – to select and apply borders to a selected range.
- **Fill Color** – to select and apply color to a selected range.
- **Font Color** – to select and apply color to text in a selected range.

The Excel Formatting - Fonts

To change the font used in a cell or range of cells

- Select the cell or range of cells you wish to change.
- On the Excel **Formatting toolbar** choose a font from the **Font** drop down list.

To change other font characteristics

- Select the cell or range you wish to change.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, select the Font tab to change the **Font**, **font style**, or **size**.
- Select the **Underline:** drop down list box to select a style of underline or None to remove the underlining.
- Select the **Color:** drop down list box to choose a font color.
- In the **Effects** section, you can tick **Strikethrough**, **Superscript**, or **Subscript**.
- To change all the settings in the dialog box back to the Normal style which is set in the **Style** dialog box, tick the **Normal font** check box.

- Select **OK** to close the **Format Cells** dialog box.

The Excel Formatting - Alignment

To align data between the left and right sides of a cell

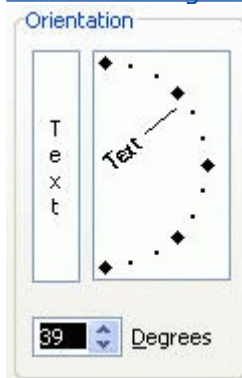
- Select the cell, or cells, you wish to align.
- On the Excel **Formatting toolbar**, click on the **Align Left** icon to align data with the left edge of the cell.
- Click on the **Align Right** icon to align data with the right edge of the cell.
- Click on the **Center** icon to center data in the cell.

To align data between the top and bottom of a cell

- Select the cell, or cells, you wish to align.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, click on the **Alignment** tab.
- In the **Text alignment** section, choose the Top, Center, or Bottom option in the **Vertical** area to align the data in the cell.
- To make the lines of data fit evenly within the height of a cell, tick the **Justify distributed** option and click on **OK**.

To change the orientation of data cells

- Select the cell, or cells, you wish to change.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, click on the **Alignment** tab.
- In the **Orientation** section, you can change the **Degrees** of the text or use the mouse to drag the 'red small diamond' up or down. When satisfied, click on **OK**.



To wrap multiple lines of data in a cell

- Type the data you require into the cell and press **Enter**. The entry will appear as one long line and select the cell, or cells, you wish to format.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, click on the **Alignment** tab.
- In the **Text control** section, tick the **Wrap text** check box and click on **OK**.

To shrink the text into one cell

- Type the data you require into the cell and press **Enter**.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, click on the **Alignment** tab.
- In the **Text control** section, tick the **Shrink to fit** check box and click on **OK**.

To merge several cells

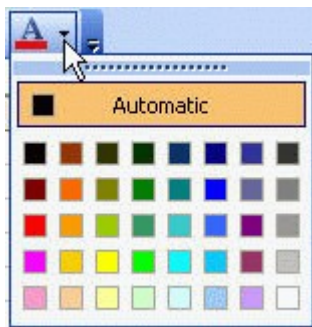
- Select the cells that you wish to merge to become one cell.
- Right-click on the selected cells, click **Format Cells**.
- From the **Format Cells** dialog box displayed, click on the **Alignment** tab.
- In the **Text control** section, tick the **Merge cells** check box and click on **OK**.

Note: You also can use the **Merge and Center** icon on the Excel **Formatting** toolbar.

The Excel Formatting - Colors

To change the color of text

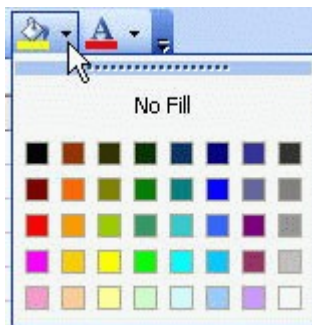
- Select the cells containing the data you want to change the color.
- On the Excel **Formatting** toolbar, click the down arrow next to the **Font Color** icon.



- Choose a color from the **Font Color** palette.
- The color you selected from the **Font Color** palette will be displayed on the new icon face. Click on the icon face to apply the new color to the cell.

To apply colors to cell(s)

- Select the cell or range of cells you wish to color.
- On the Excel **Formatting** toolbar, click the down arrow next to the **Fill Color** icon.
- Choose a color from the **Fill Color** palette.



To turn off the cell(s) color

- Select the cell or range of cells you wish to color.
- On the Excel **Formatting** toolbar, click the down arrow next to the **Fill Color** icon.
- Choose **No fill**.

The Excel Formatting - Numbers

To change number formatting using the formatting icons

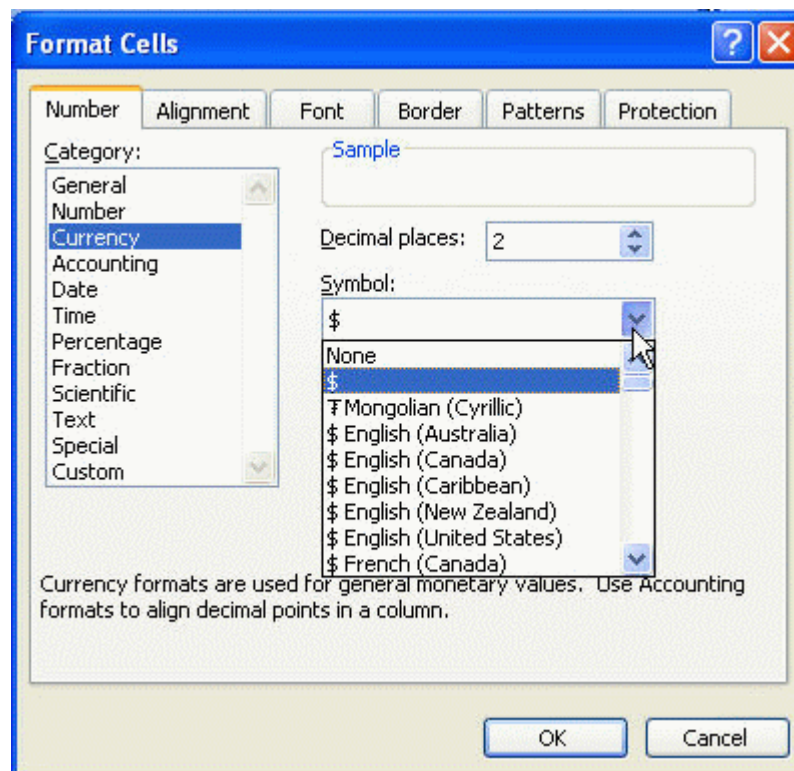
- You can quickly change the formatting of a cell or selected range by using the following icons on the **Formatting** toolbar.



Currency	12345 will become \$12,345.00
Percent	.25 will become 25%
Comma	98765 will become 98,765.00
Increase Decimal	12,345.00 will become 12,345.000
Decrease Decimal	98,765.00 will become 98,765.0

To format a number as a currency

- Select the cell or range of cells you want to format.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, select the **Number** tab.
- In the **Category:** section, select **Currency**.



- Select the number of decimal places you require by using the **Decimal places:** spin box arrows.
- In the **Symbol:** section drop down list, select the type of currency.
- Click **OK**.

To format a number as a percentage

- Select the cell or range of cells you wish to format.
- From the **Format** menu, click **Cells**.
- From the **Format Cells** dialog box displayed, select the **Number** tab.
- In the **Category:** section, select **Percentage**.
- Select the number of decimal places you require by using the **Decimal places:** spin box arrows.

| [Click OK.](#)

Excel Formula and Function

Excel Formula

A **formula** is an equation that performs operations on worksheet data. [Excel](#) formula can perform mathematical operations, such as addition and multiplication, or they can compare worksheet values or join text.

To enter a formula

- Place the cursor in the cell where the formula will appear.
- Enter an = sign.
- Enter the expression that will produce the result you want, e.g. A5+E5. This will add the value in A5 with the value in E5.
 - When the formula is [complete](#), press **Enter**. The result of the formula will be calculated and displayed in the cell.
 - If there is an error in an Excel formula, an [error message](#) which begin with a # sign will display.

To enter a cell or range reference by pointing

- Place the cursor in the cell where the formula will appear.
- Enter the formula up to the point of the cell or range reference, e.g. to enter the formula =E2+E5, only enter the = sign.
 - Using the arrow keys, move the cell pointer to the first cell reference, in this case E2. The formula will track your progress and enter the current address into the formula.
 - Enter the operand, + sign.
 - Using the arrow keys, move the cell pointer to the second cell reference, in this case E5. If you are calculating a range of cells, hold down the **Shift** key while using the arrow keys to move to the intended cells.
- Press **Enter** to complete the formula when you have reached the cell you require.

Excel Function

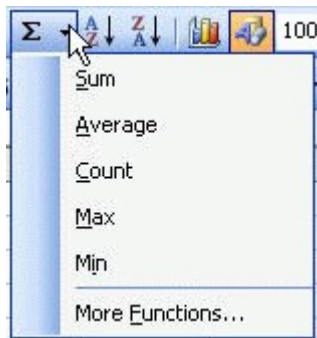
Functions are special commands used in formulas to perform mathematical processes.

To enter functions directly into the worksheet cell

- Select the cell into which the formula will be entered.
- Insert an equal (=) sign to begin the formula. The formula [toolbar](#) buttons will appear.
 - Enter the name of the function [e.g. SUM], followed by an opening parenthesis [()], any arguments required for the function [e.g. E2:E5], and closing parenthesis[]].
 - Press **Enter**. If there are no errors in the formula, the result of the function will be entered in the cell. If you activate the cell again, the function will be displayed in the formula bar.

To use the AutoSum function

- The functions can be accessed through the **AutoSum** icon on the **Standard** toolbar.
- The functions included in the AutoSum drop-down menu will insert the function and predict the arguments.
 - For example, if the active cell is positioned at the bottom of the list of values, AutoSum will display a sum function with the list of the arguments.



- Sum -- add the contents of the list of arguments.
- Average -- determine the average value of the list of arguments.
- Count -- count the number of values in the list of arguments.
- Max -- return the maximum number in the list of arguments.
- Min -- return the minimum number in the list of arguments

Example: Using the Average function

- Enter the values as shown below from B1 to B5 and select the cell B6 which the formula will be entered.

	A	B	C	D
1		35.6		
2		107.5		
3		69.3		
4		331.3		
5		276.1		
6				
7				

- Click the down arrow beside the **AutoSum** icon on the **Standard** toolbar and choose **Average** from the drop-down menu.
- If the predicted range is correct, press the **Enter** key. If it is incorrect, select (click and drag) the range you want with the mouse and press the **Enter** key.
- The result will show in cell B6. You can use the same method to do other functions such as SUM, Max, etc.

Note: Excel formula and function is one of the most powerful feature in [Microsoft Excel](#). It is important for you to [master](#) it.

Create an Excel Chart: The 4 Easy Steps!

Here is the step-by-step guides to create an outstanding **Excel chart**:

Key in the data illustrated below accordingly as we will use it to demonstrate how to create a chart in [Microsoft Office](#) Excel.

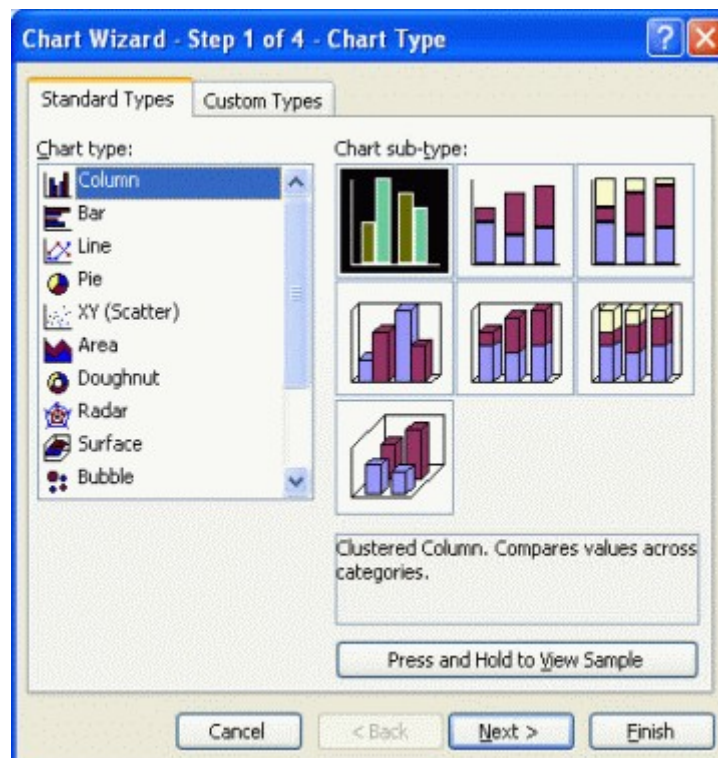
Note:

We will use the step-by-step Excel **Chart Wizard** to create a chart that related to the Student exam results for the subject English, Science and Mathematics.

	A	B	C	D
1	Exam result - Subject score marks			
2	Student Name	English	Science	Mathematics
3	Carol	70	75	58
4	John	52	65	79
5	Samantha	26	88	42
6	Edward	82	59	76
7				

Step 1: The Chart Wizard (1) – Chart Type

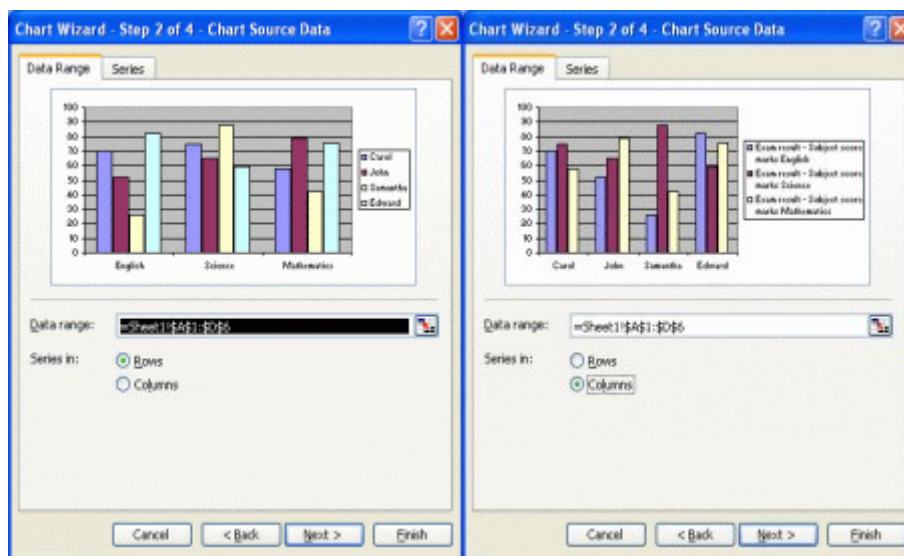
- Click on any cell within the data containing the information that you wish to display as a chart, or highlight the exact data that you wish to display as a chart.
- Click the **Chart Wizard** [icon](#) on the **Standard** toolbar. This will display the Excel Chart Wizard as show below:



- From the **Chart type:** section you can select the type of chart that you wish to create.
- Then from the **Chart sub-type:** section you can select the exact format that you required for the selected chart type.
- To see how the selected chart will look, use the **Press and Hold to View Sample** button within the [dialog box](#). In our example, we accept the default selection.
- Click the **Next** button to see the next page of the dialog box - **Chart Source Data**.

Step 2: The Excel Chart Wizard (2) – Data Source

- The **Data Range** tab allows you to specify the exact data that you wish to display within your chart.
- You can choose to display **Series in Rows** or **Columns**. In the case of the example data used, the two effects will be as illustrated. Choose the Series in **Rows**.



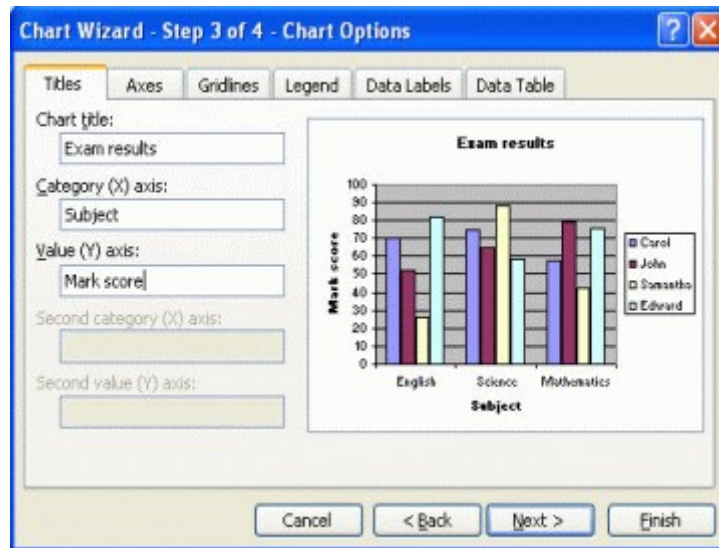
- When you click on the **Next** button, this will display the **Chart Options** dialog box.

Step 3: The Excel Chart Wizard (3) – Chart Options

From the chart options dialog box displayed, you can select **Titles, Axes, Gridlines, Legend, Data Labels** and **Data Table** tabs and make the necessary changes.

To add title to a chart

- In the **Chart title:** text box, enter the name for the chart, i.e. Exam results.
- In the **Category (X) axis:** text box, enter a title for the X axis, i.e. Subject.
- In the **Category (Y) axis:** text box, enter a title for the Y axis, i.e. Mark score.
- In the example used, the screen will be as illustrated.



To customize the chart axis

- From the **Chart Option** dialog box displayed, click on the **Axes** tab.
- It allows you to control the way the axes are displayed, you can tick or un-tick the check box to see the effects on the chart.

To customize chart gridlines

- From the **Chart Option** dialog box displayed, click on the **Gridlines** tab.
- You can choose to display the major and minor X and Y gridlines for the axis by clicking on the particular check box.

To customize chart legend

- From the **Chart Option** dialog box displayed, click on the **Legend** tab.
- You can choose to display or not the chart legend and the placement of the legend in the chart by clicking on the radio button.

To customize data labels

- From the **Chart Option** dialog box displayed, click on the **Data Labels** tab.
- You can choose to display or not the chart data labels by clicking on the radio button.

To display a data table

- From the **Chart Option** dialog box displayed, click on the **Data Table** tab.
- You can choose to display or not the chart data table by ticking on the check box.
- Click on the **Next** button to continue and this will display the final page of the Chart Wizard – Chart Location.

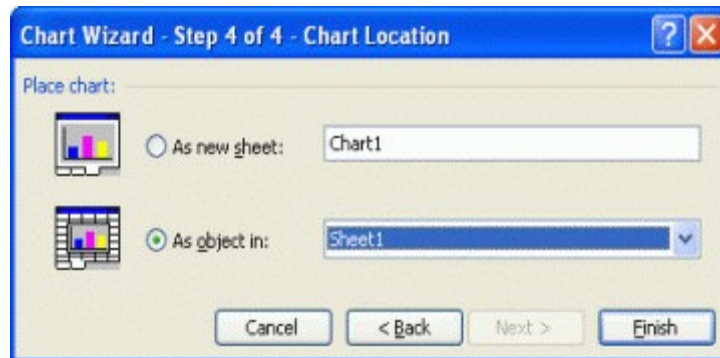
Step 4: The Excel Chart Wizard (4) – Chart Location

To define the chart location

- You can choose to place the chart on an existing worksheet as an object, or you can place it on a new worksheet. Two options for you to choose:

As new sheet: – It will place the chart in the new worksheet.

As object in: – It will place the chart in the existing worksheet.



- Click on the **Finish** button and the chart will be created as you have specified during the **Chart Wizard** creation process.

Create an Excel Chart: The 4 Easy Steps!

Here is the [step-by-step guides](#) to create an outstanding **Excel chart**:

Key in the data illustrated below accordingly as we will use it to demonstrate how to create a chart in [Microsoft Office](#) Excel.

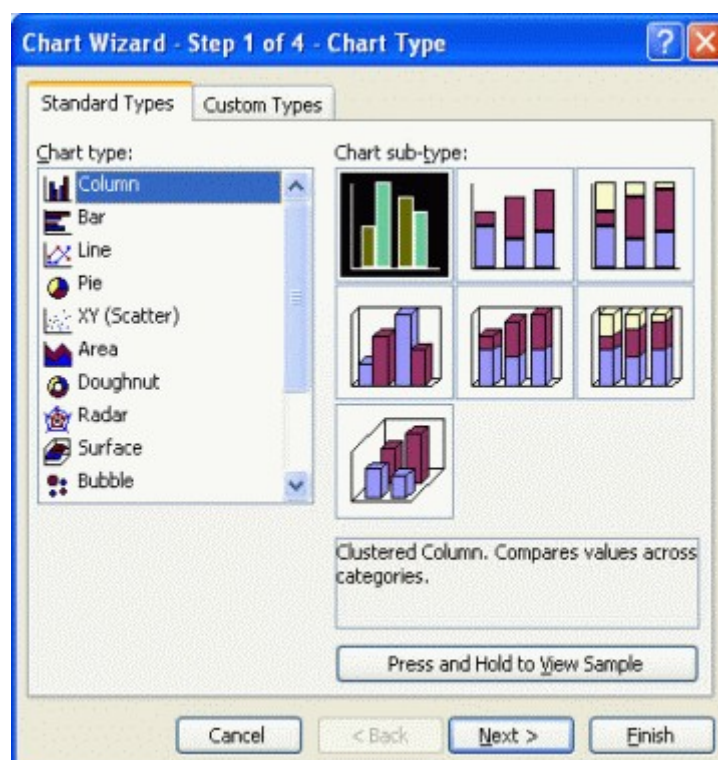
Note:

We will use the step-by-step Excel **Chart Wizard** to create a chart that related to the Student exam results for the subject English, Science and Mathematics.

	A	B	C	D
1	Exam result - Subject score marks			
2	Student Name	English	Science	Mathematics
3	Carol	70	75	58
4	John	52	65	79
5	Samantha	26	88	42
6	Edward	82	59	76
7				

Step 1: The Chart Wizard (1) – Chart Type

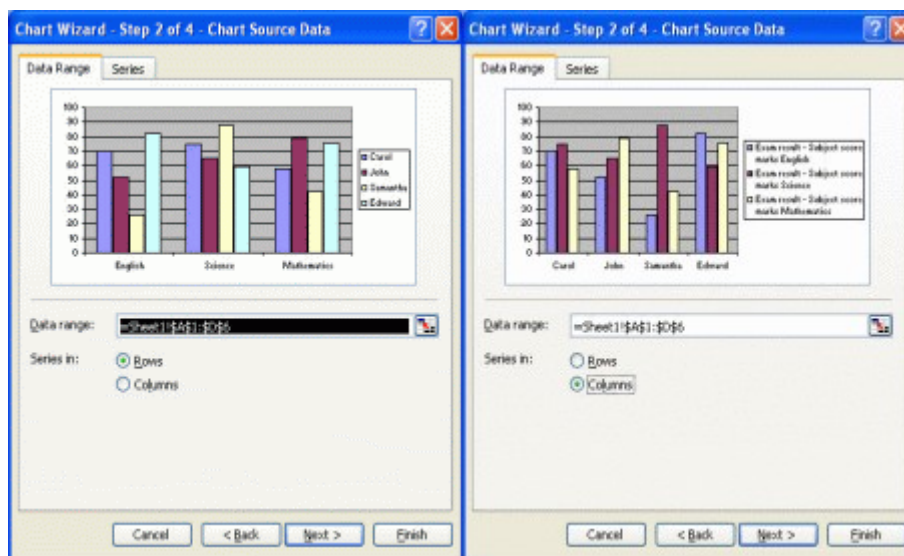
- Click on any cell within the data containing the information that you wish to display as a chart, or highlight the exact data that you wish to display as a chart.
- Click the **Chart Wizard** icon on the **Standard toolbar**. This will display the Excel Chart Wizard as show below:



- From the **Chart type:** section you can select the type of chart that you wish to create.
- Then from the **Chart sub-type:** section you can select the exact format that you required for the selected chart type.
- To see how the selected chart will look, use the **Press and Hold to View Sample** button within the [dialog box](#). In our example, we accept the default selection.
- Click the **Next** button to see the next page of the dialog box - **Chart Source Data**.

Step 2: The Excel Chart Wizard (2) – Data Source

- The **Data Range** tab allows you to specify the exact data that you wish to display within your chart.
- You can choose to display **Series in Rows** or **Columns**. In the case of the example data used, the two effects will be as illustrated. Choose the Series in **Rows**.



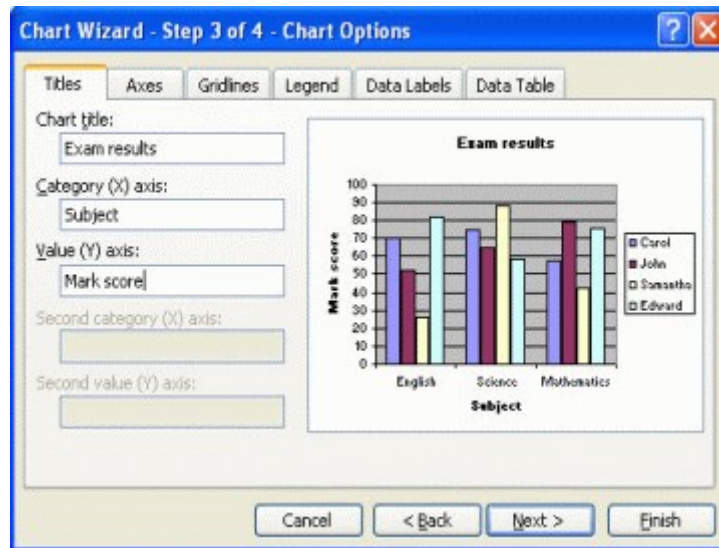
- When you click on the **Next** button, this will display the **Chart Options** dialog box.

Step 3: The Excel Chart Wizard (3) – Chart Options

From the chart options dialog box displayed, you can select **Titles, Axes, Gridlines, Legend, Data Labels** and **Data Table** tabs and make the necessary changes.

To add title to a chart

- In the **Chart title:** [text box](#), enter the name for the chart, i.e. Exam results.
- In the **Category (X) axis:** text box, enter a title for the X axis, i.e. Subject.
- In the **Category (Y) axis:** text box, enter a title for the Y axis, i.e. Mark score.
- In the example used, the screen will be as illustrated.



To customize the chart axis

- From the **Chart Option** dialog box displayed, click on the **Axes** tab.
- It allows you to control the way the axes are displayed, you can tick or un-tick the check box to see the effects on the chart.

To customize chart gridlines

- From the **Chart Option** dialog box displayed, click on the **Gridlines** tab.
- You can choose to display the major and minor X and Y gridlines for the axis by clicking on the particular check box.

To customize chart legend

- From the **Chart Option** dialog box displayed, click on the **Legend** tab.
- You can choose to display or not the chart legend and the placement of the legend in the chart by clicking on the radio button.

To customize data labels

- From the **Chart Option** dialog box displayed, click on the **Data Labels** tab.
- You can choose to display or not the chart data labels by clicking on the radio button.

To display a data table

- From the **Chart Option** dialog box displayed, click on the **Data Table** tab.
- You can choose to display or not the chart data table by ticking on the check box.
- Click on the **Next** button to continue and this will display the final page of the Chart Wizard – Chart Location.

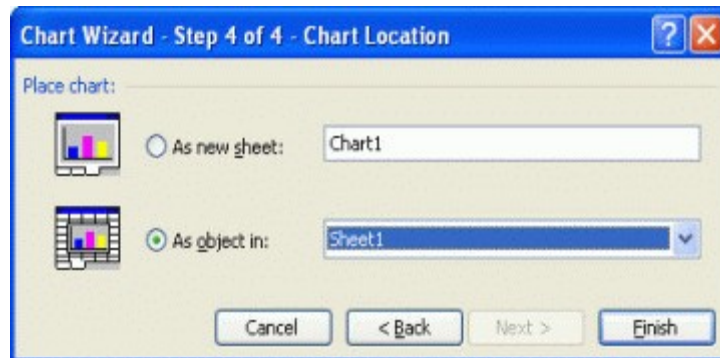
Step 4: The Excel Chart Wizard (4) – Chart Location

To define the chart location

- You can choose to place the chart on an existing worksheet as an object, or you can place it on a new worksheet. Two options for you to choose:

As new sheet: – It will place the chart in the new worksheet.

As object in: – It will place the chart in the existing worksheet.



- Click on the **Finish** button and the chart will be created as you have specified during the **Chart Wizard** creation process.

Excel Template – How to Create and Use it?

Here is your **definite solution** for your Excel template questions!!

When working with spreadsheets you may 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 **template**.

Yes, it's Excel template...

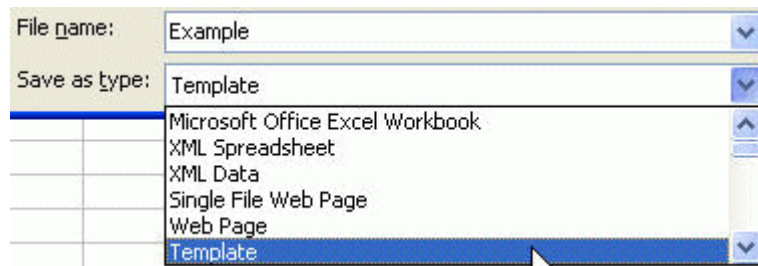
You can create templates for workbooks and worksheets. The default template for workbooks is called Book.xlt. The default template for worksheets is called Sheet.xlt.

Creating templates can include the following elements:

- Text and graphics
- Layouts and styles formatting
- Headers and Footers
- Formulas
- Macros

To create a template

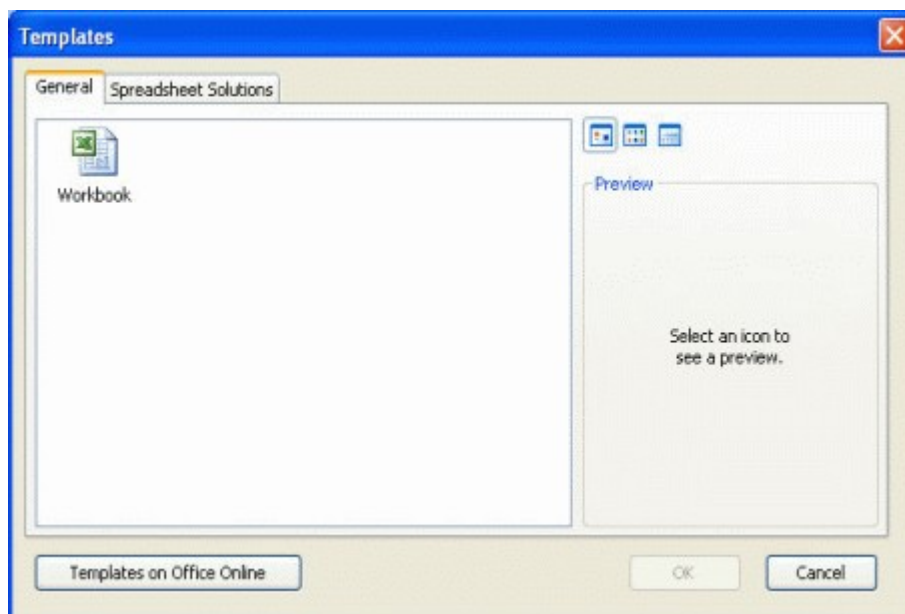
- Create the workbook that contains all layout and formatting elements you wish to save as a template.
- From the **File** menu, click **Save As**.
- Type the name for the template in the **File name:** text box.
- From the **Save as type:** drop down list box, select **Template**.



- Select **Save**. The extension **.XLT** is added to the file name and the template is saved in the **Templates** folder.

To use a template

- From the **File** menu, click **New** to display the **New Workbook** pane.
- From the **Template** section of the **New Workbook** pane, click on the blue **On my computer...** link display the **Templates** dialog box:



- Click on the **General** or the **Spreadsheet Solutions** tab to locate the template you want. For default template, click on the **General** tab and select the **Workbook** [icon](#).

Note: In the **Spreadsheet Solutions** tab, you can see 5 templates available. Most of the times you need to use the [Microsoft Office](#) CD in order to install the features and use it.

- Click **OK** to open a copy of the template.

Note: Excel 2003 allows you to access additional templates on the Microsoft Office website (required [Internet](#) connection). Just click on the **Templates on Office Online** link in the **New Workbook** pane, and you will be directed to the website and [search](#) for the template that you need.

To [download](#) different types of free excel templates, [click here](#).

Template vs Style

What is the different between *Excel template* and *Excel style*?

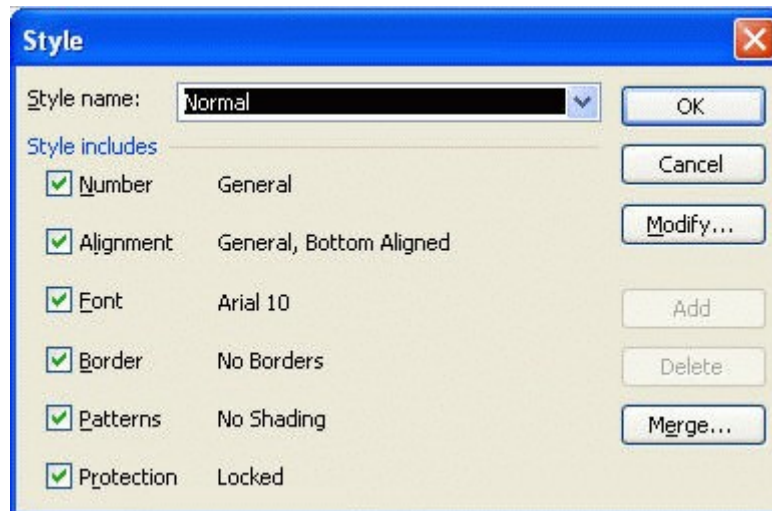
Style is a collection of cell formatting information such as font size, patterns, alignment, etc that you can define and save as a group.

If formatting information is assigned to cells using styles it is possible to easily update the appearance of a sheet by modifying the styles.

Excel comes with a number of styles pre-defined, by default all cells have the **Normal** style assigned to them. It is possible to copy styles from one Workbook to another.

To create a style

- Select a cell formatted with the attributes you required.
- From the **Format** menu, click **Style**.



- From the **Style** dialog box displayed, type the style name in the **Style name:** drop down list.
- Select the **Modify** button to change any of the attributes. The **Format Cells** dialog box will be displayed.
- Click on the **Number, Alignment, Font, Border, Patterns** and **Protection** tabs and make any changes required. Click **OK** to return to the **Style** dialog box.
- Click **OK**.

To apply a style

- Select the range of cells that you wish to format.
- From the **Format** menu, click **Style**.
- Select the style from the **Style name:** drop down list box.
- Select **OK**.

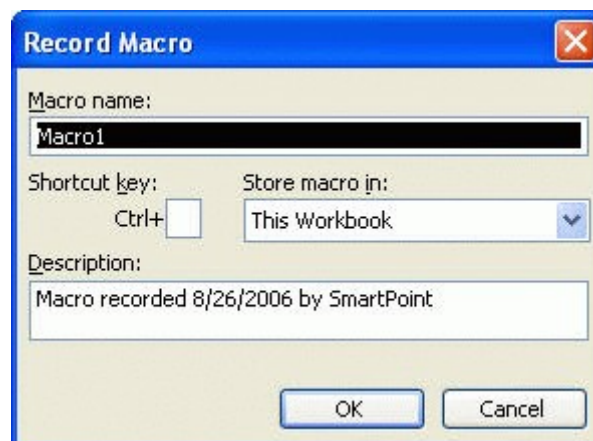
Excel Macro – Make Your Complex Tasks Automated

The Excel Macro...What is that?

- A macro is a *series of commands and functions* that can be run whenever you need to perform the task.
- Macros can automate complex tasks and reduce the number of steps required to complete tasks that you perform frequently.
- The easiest way to create an Excel macro is to have Excel records the actions and then store these actions as a macro.
- Macros can be played back or modified at any time.

To record a macro

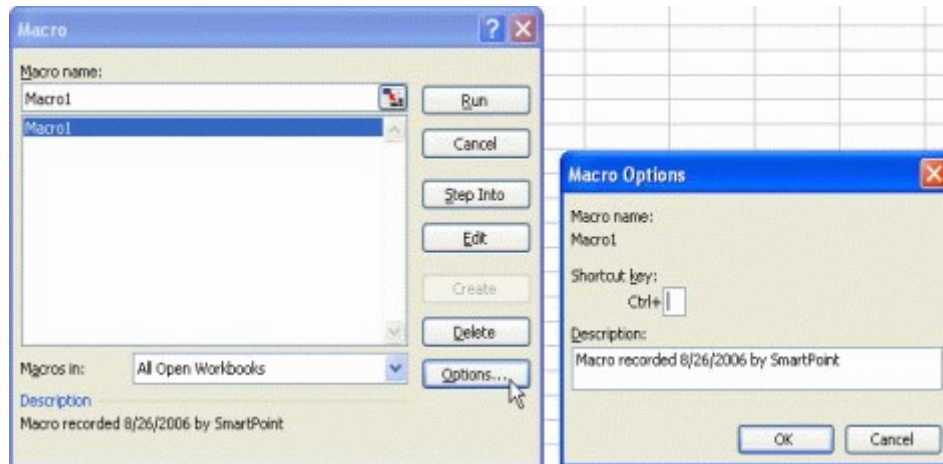
- From the **Tools** menu, point to **Macro** and click on **Record New Macro**.
- From the **Record Macro** dialog box displayed, enter a name for the macro in the **Macro name:** text box.



- The default description is displayed in the **Description:** text box, and contains the date and user name. If required, change it.
- To begin recording, click **OK**.
- Perform the actions you want the macro to record. Actions can be any combinations of Excel commands.
- To stop recording, from the **Tools** menu, point to **Macro** and click on **Stop Recording**.

To assign a shortcut key to the macro

- From the **Tools** menu, point to **Macro** and click on **Macros**.
- From the **Macro** dialog box displayed, select the macro name (if recorded before) to which you want to assign a shortcut key.



- Click the **Options** button to display the **Macro Options** dialog box.
- Type a letter into the **Ctrl+** text box. This combination key will be used to invoke the macro.
- Click **OK** to return to the **Macro** dialog box.
- Click on the **Cancel** button to close.

To run a macro using the Tools Macro command

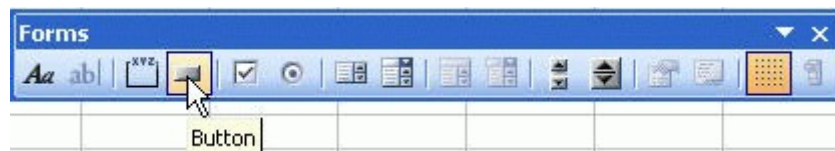
- From the **Tools** menu, point to **Macro** and click on **Macros**.
- From the **Macro** dialog box displayed, click on the name of the macro you wish to run in the **Macro name:** list box.
- Click the **Run** button. Note: If you wish to edit or delete a macro, just click on the particular button.

To run a macro using the assigned shortcut key

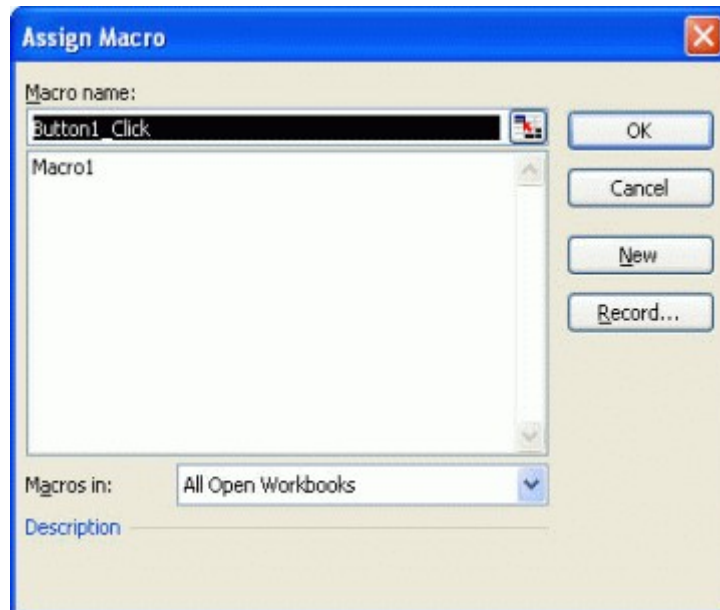
- Press **Ctrl+?**, with ? is the letter which you assigned.

To create a button and assign an Excel macro to it

- If the **Forms** toolbar is not display, right click on any toolbar that is visible and from the pop-up menu that is displayed select **Forms**.
- To create a button, click the **Button** icon on the **Forms** toolbar.



- Then, click and drag the mouse to the intended button size.
- When release the mouse button, the **Assign Macro** dialog box will be displayed.



- Click on the **Record** button and the **Record Macro** dialog box will be displayed.
- Enter a name for the macro in the **Macro name:** text box.
- Click on the **OK** button.
- Record your macro in the normal way, and click on the button and select **Edit Text** from the pop-up menu.
- To run the macro, simply click on the button.

To change a button name

- Double click on the button to highlight the button name.
- Type in a new name and click on any worksheet cell to deselect the button.

To delete a button

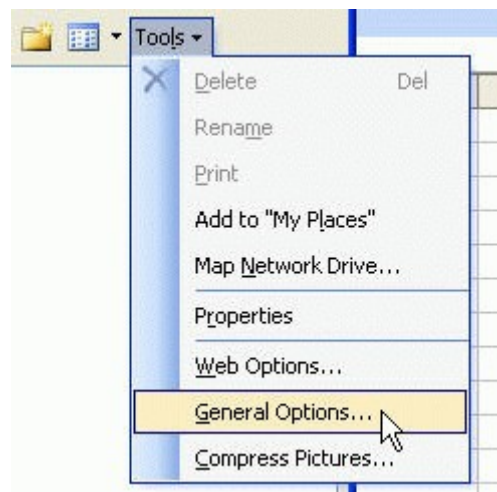
- Click on button and press the **Delete** key.

Excel 2003 Worksheet and Workbook Protection

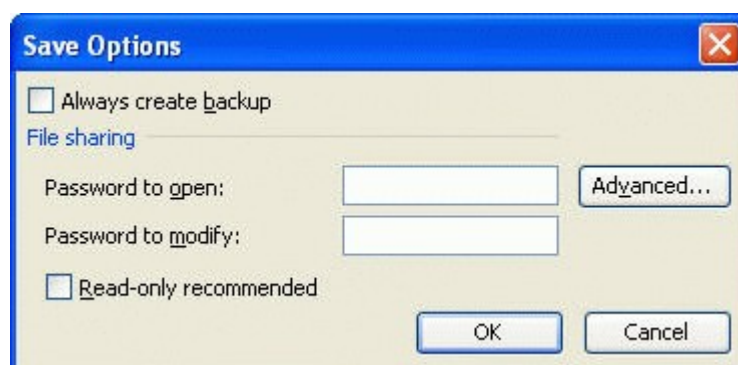
Excel worksheet and **workbook protection** feature allows you to protect your file being open by unauthorised person. You can set the password so that anyone that intend to open the file required the password to open it.

To specify a password for opening and modifying a workbook

- From the **File** menu, click **Save As**.
- From the **Save As** dialog box displayed, click on the **Tools** icon and from the drop down list displayed, select **General Options**.



- From the **Save Options** dialog box displayed, enter a password into the **Password to open:** text box. In future you will be required to enter this password in order to open the file.



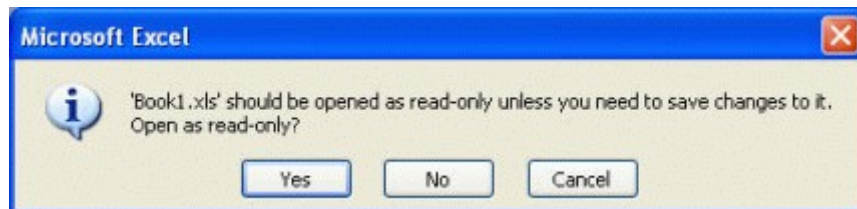
- If you enter a password into the **Password to modify:** text box, this gives others the ability to open, view and edit a workbook, but not to save it with the same name. They must save a modified version of the workbook with a different name.
- Click on the **OK** button. You will be asked to re-type the password to ensure that it is consistent.

Note:

- (1) The check box "Always create backup" forces Excel to create a backup copy of the

file every time a worksheet file is saved. The file extension **BAK** is used, and the backup file is saved in the same folder as the original file.

(2) If the "Read-only recommended" check box is ticked, the following dialog box is displayed when the file is re-opened.



- Click **Yes**.
- The file is reopened but with the feature 'read-only'.
- If you needed to make changes on the worksheet, you cannot save the file with the same file name. So, changing the file name allows you to save the file.

To remove a password from a workbook

- Open the workbook containing the password you wish to remove (by entering the password when prompted).
- From the **File** menu, click **Save As**.
- From the **Save As** dialog box displayed, click on the **Tools** icon, and from the drop-down list displayed select **General Options**.
- From the **Save Options** dialog box displayed, clear either or both passwords text box.
- Click on the **OK** button to close the **Save Options** dialog box.
- Click on the **Save** button to save the file, which will display a dialog box.
- Click on the **Yes** button.

To protect a workbook

- From the **Tools** menu, point to **Protection** and click on **Protect Workbook**.
- This will display the **Protect Workbook** dialog box.



- From the **Protect Workbook** dialog box displayed, you have two options:

Structure	Prevents any changes to the structure of the workbook if checked. i.e. you will be unable to edit, insert, delete, rename, copy, move or hide sheets.
-----------	---

Windows	Prevents changes to the workbooks size. The windows re-sizing controls (close, maximize, minimize and restore) are hidden.
---------	--

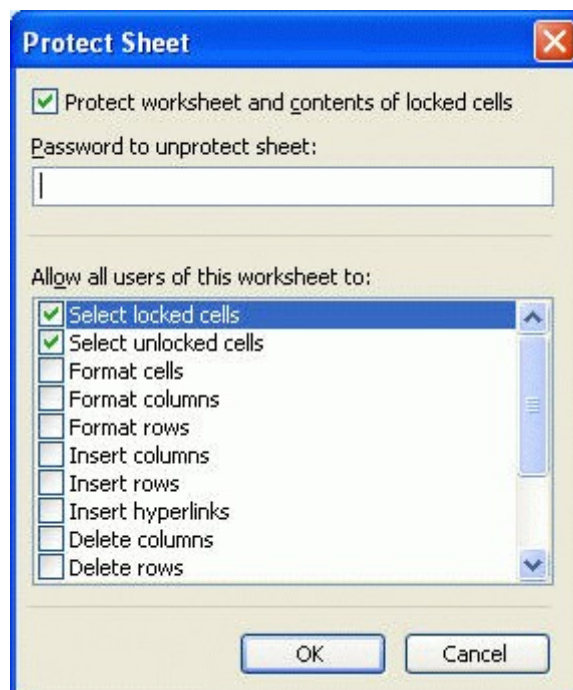
- In the **Password** column, you can enter a password (case sensitive). Click **OK**.
- You will be asked to re-type the password to ensure that it is consistent.
- Click **OK**.

To unprotect a workbook

- From the **Tools** menu, point to **Protection** and click on **Unprotect Workbook**.
- Enter the required password and click on **OK**.

To protect a worksheet

- From the **Tools** menu, point to **Protection** and click on **Protect Sheet**.
- This will displays the **Protect Sheet** dialog box.



- From the **Protect Sheet** dialog box displayed, you can choose any option from the lists if you **ALLOW** other users to modify the checked option in the worksheet.
- In the **Password to unprotect sheet:** column, you can enter a password (case sensitive). Click **OK**.
- You will be asked to re-type the password to ensure that it is consistent.
- Click **OK**.

To unprotect a worksheet

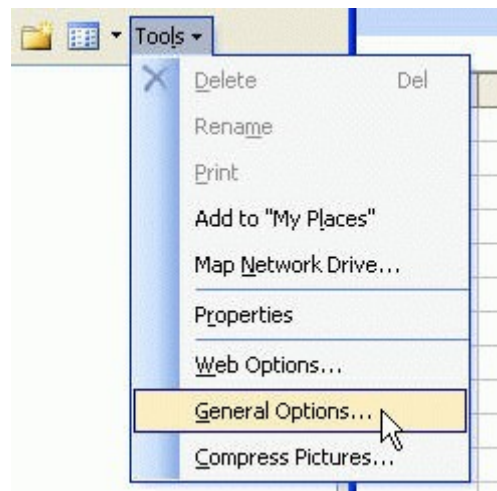
- From the **Tools** menu, point to **Protection** and click on **Unprotect Worksheet**.
- Enter the required password and click on **OK**.

Excel 2003 Worksheet and Workbook Protection

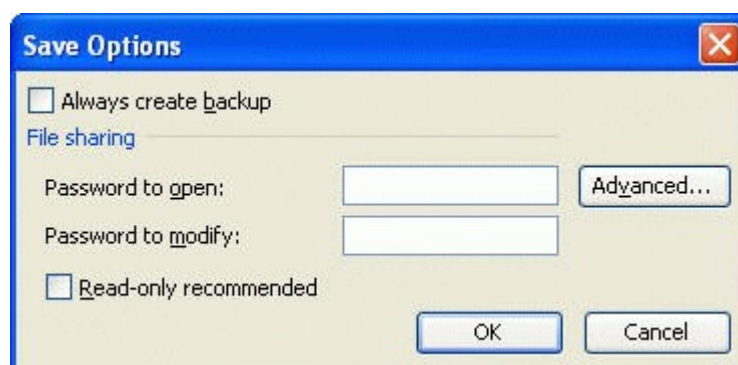
Excel worksheet and **workbook protection** feature allows you to protect your file being open by unauthorised person. You can set the password so that anyone that intend to open the file required the password to open it.

To specify a password for opening and modifying a workbook

- From the **File** menu, click **Save As**.
- From the **Save As** dialog box displayed, click on the **Tools** icon and from the drop down list displayed, select **General Options**.



- From the **Save Options** dialog box displayed, enter a password into the **Password to open:** text box. In future you will be required to enter this password in order to open the file.



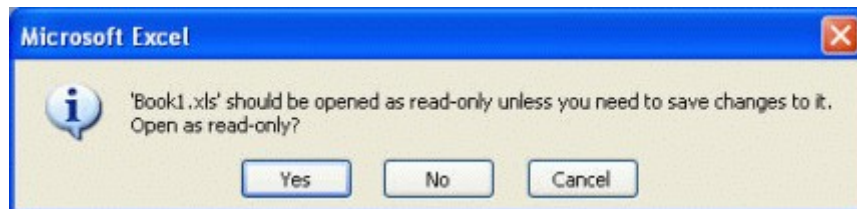
- If you enter a password into the **Password to modify:** text box, this gives others the ability to open, view and edit a workbook, but not to save it with the same name. They must save a modified version of the workbook with a different name.
- Click on the **OK** button. You will be asked to re-type the password to ensure that it is consistent.

Note:

(1) The check box "Always create backup" forces Excel to create a backup copy of the

file every time a worksheet file is saved. The file extension **BAK** is used, and the backup file is saved in the same folder as the original file.

(2) If the "Read-only recommended" check box is ticked, the following dialog box is displayed when the file is re-opened.



- Click **Yes**.
- The file is reopened but with the feature 'read-only'.
- If you needed to make changes on the worksheet, you cannot save the file with the same file name. So, changing the file name allows you to save the file.

To remove a password from a workbook

- Open the workbook containing the password you wish to remove (by entering the password when prompted).
- From the **File** menu, click **Save As**.
- From the **Save As** dialog box displayed, click on the **Tools** icon, and from the drop-down list displayed select **General Options**.
- From the **Save Options** dialog box displayed, clear either or both passwords text box.
- Click on the **OK** button to close the **Save Options** dialog box.
- Click on the **Save** button to save the file, which will display a dialog box.
- Click on the **Yes** button.

To protect a workbook

- From the **Tools** menu, point to **Protection** and click on **Protect Workbook**.
- This will display the **Protect Workbook** dialog box.



- From the **Protect Workbook** dialog box displayed, you have two options:

Structure	Prevents any changes to the structure of the workbook if checked. i.e. you will be unable to edit, insert, delete, rename, copy, move or hide sheets.
-----------	---

Windows	Prevents changes to the workbooks size. The windows re-sizing controls (close, maximize, minimize and restore) are hidden.
---------	--

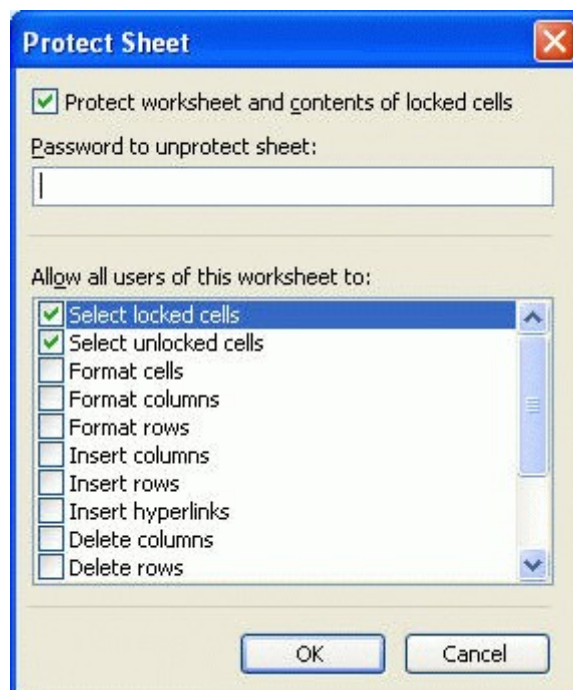
- In the **Password** column, you can enter a password (case sensitive). Click **OK**.
- You will be asked to re-type the password to ensure that it is consistent.
- Click **OK**.

To unprotect a workbook

- From the **Tools** menu, point to **Protection** and click on **Unprotect Workbook**.
- Enter the required password and click on **OK**.

To protect a worksheet

- From the **Tools** menu, point to **Protection** and click on **Protect Sheet**.
- This will displays the **Protect Sheet** dialog box.



- From the **Protect Sheet** dialog box displayed, you can choose any option from the lists if you ALLOW other users to modify the checked option in the worksheet.
- In the **Password to unprotect sheet:** column, you can enter a password (case sensitive). Click **OK**.
- You will be asked to re-type the password to ensure that it is consistent.
- Click **OK**.

To unprotect a worksheet

- From the **Tools** menu, point to **Protection** and click on **Unprotect Worksheet**.
- Enter the required password and click on **OK**.

Step-by-step Guides to Excel Printing!

Excel Printing... or how to print the Excel spreadsheet?

In order to print, Microsoft Excel requires that a printer driver has been installed that matches the printer you are currently attached to your computer.

If you are sure on that, then ON the printer and load some plain papers to the printer tray.

Then, follow the step-by-step instructions below to print.

Excel Printing - Page Settings

The options that can change here includes the paper orientation, set the page scale and size, and print quality.

To change Page Setup options

- From the **File** menu, click **Page Setup**.
- From the **Page Setup** dialog box displayed, click on the **Page** tab.



To set the printing paper orientation

- In the **Orientation** section, select Portrait or Landscape by clicking the option button.

To set the scale of the page

- In the **Scaling** section, choose the **Adjust to:** option button and enter a percentage to scale (in conjunction with normal size) in the **Adjust to** spin box.
- Choose the **Fit to:** option and enter the dimensions of the pages in the wide and tall spin boxes.

To set other printing options

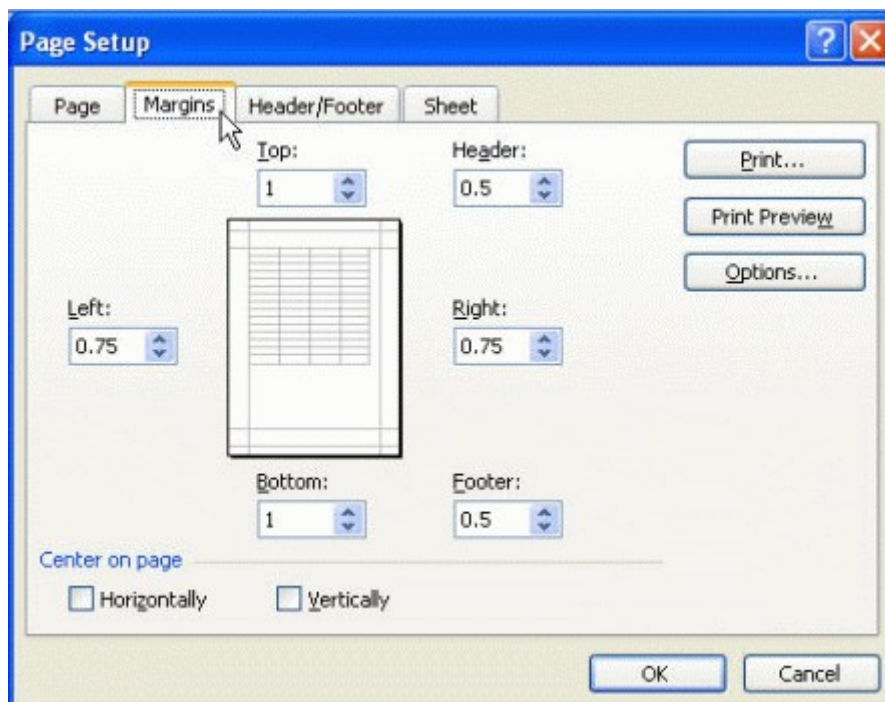
Paper size	In the Paper size: drop-down list box, select the size you require.
Print quality	In the Print quality: drop-down list box, choose the quality you require (higher dpi – better quality).
Page numbering	To begin page numbering with a different number, select the First page number: text box and enter the number you want to use.

Excel Printing - Margins Settings

Proper Microsoft Excel printing that involves margins is to set the top, bottom, left and right margins of the page. You also can choose to center the data of a page.

To change the page margins

- From the **Page Setup** dialog box displayed, select the **Margins** tab.



- Click on the **Top, Bottom, Left, or Right** margin spin box to change the settings.
- To change header and footer margins, click on the **Header:** or **Footer:** spin box.
- Click **OK**. **Note:** At the bottom **Center on page** section, you can choose Horizontally or Vertically to reflect the best position of your data in a page.

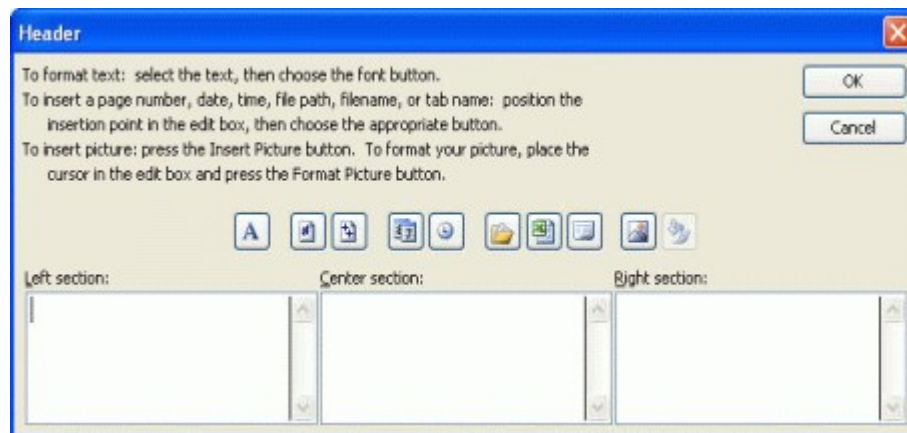
Excel Printing - Header/Footer Settings

Proper settings of page header and footer are important as it will affect the overall look of a page in Excel printing.

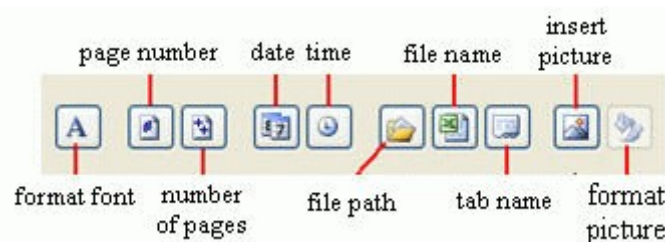
To change headers and footers

- From the **Page Setup** dialog box displayed, select the **Header/Footer** tab.
- 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 **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 center 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 also offered the following options:



Format font	Click this button after highlighting the text to change the font, size, and style.
Page number	Insert the page number of each page.
Number of pages	Use this feature along with the page number to create strings such as "page 1 of 15".
Date	Add the current date.
Time	Add the current time.
File path	Add the file path name (location of the file)
File name	Add the name of the workbook file.
Tab name	Add the name of the worksheet's tab.
Insert picture	Bring up insert picture window and you can choose a location to insert picture.
Format picture	Format the inserted picture.

- When you have finished, click on **OK**.
- Your new Header (or footer) will be displayed in the **Page Setup** dialog box in the **Header** or **Footer** list box.

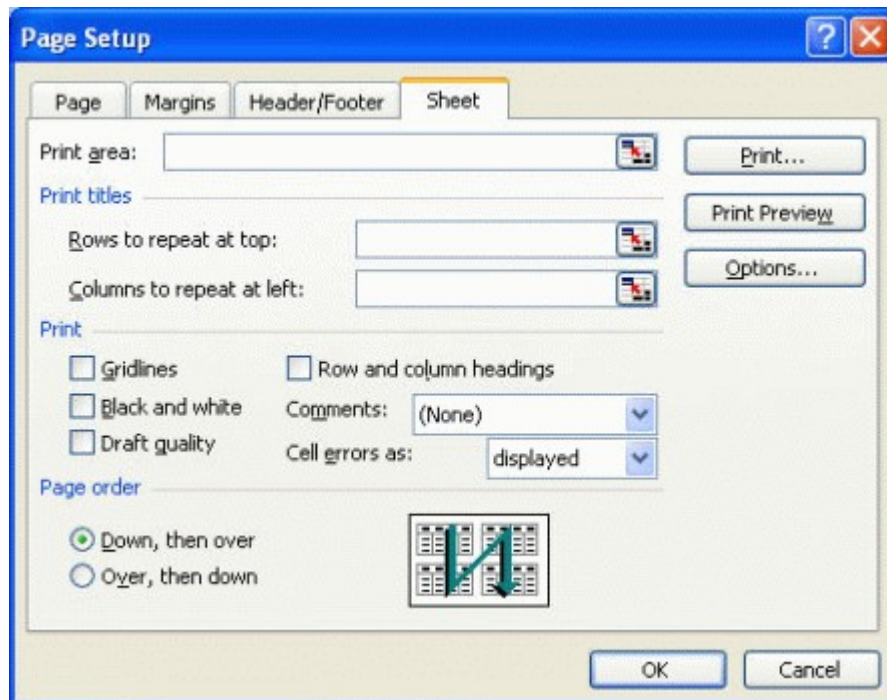
- Click **OK** to close the **Page Setup** dialog box.

Excel Printing - Sheet Settings

In Excel printing, sheet settings is very important as it will control what and where to print of a page. So make sure you follow the steps here closely.

To change sheet options

- From the **File** menu, click **Page Setup**.
- From the **Page Setup** dialog box displayed, select the **Sheet** tab.



- Make changes to any of the following:

Print area	Enter the worksheet range you want to print, or click on the icon in the right of the text box and drag through the worksheet areas you wish to print.
Rows to repeat at top	Click on the icon in the right of the text box and drag over the rows you wish to repeat at the top of the page. It enables you to print the selected top row appear on every printing sheet.
Columns to repeat at left	Click on the icon in the right of the text box and drag over the columns you wish to repeat at the left of the page. It enables you to print the selected left columns appear on every printing sheet.
Elements that will print	Tick on the element you wish to print, i.e. Gridlines, Black and White, Draft Quality, Row and Column Headings (see below).
Page order	Select Down, then over, or Over, then down. You only can see the effect if you have data across a sheet that cannot fit into one printing page.

- More on printing elements (when you tick on the following option):

Gridlines	Will print the Excel gridlines.
Black and white	Will print the data in blank and white without color.
Draft quality	The printing will be in draft quality, not the normal quality.

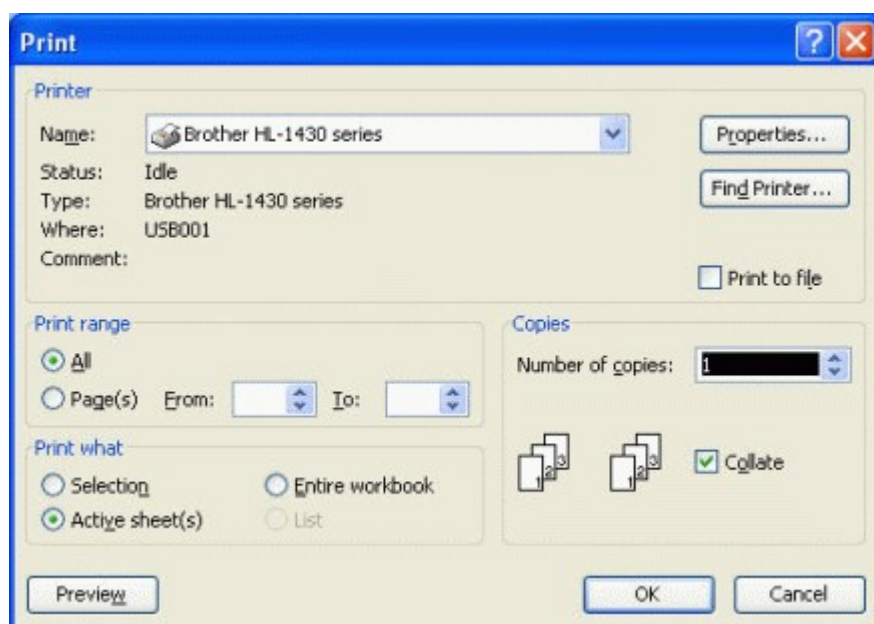
Row and column headings	Will print the worksheet including the row and column headings.
--------------------------------	---

- In the right hand side, there are three buttons:

Options	Do necessary adjustment with the printer settings.
Print Preview	Preview your worksheet before printing.
Print	Print the worksheet.

To change the Excel printing settings

- From the **File** menu, click **Print**.
- From the **Print** dialog box displayed, do the necessary changes as follow:



- From the **Printer** section, the **Name:** list box, choose the printer you wish to use.
- In the **Page range** section, select whether you want to print **All** pages in a range, or enter the starting and ending page numbers in the **From:** and **To:** spin boxes.
- Select what you want to print in the **Print what** section, i.e. Selection, Active sheet(s), or Entire workbook.
- Specify the number of copies you want to print in the **Number of copies:** spin box.
- Click the **Properties** button to display the **Properties** dialog box for the printer.
- Change the options required. The options will vary depending on what type of printer you have.
- Click **OK** to close the printer properties dialog box.
- Click **OK** again to start printing the worksheet.

Note: Before hit the **OK** button, ensure that you have put the plain papers to the printer tray.

"How to Solve Your Problem with Excel Help Feature?"

Having trouble using Excel? Try the [Microsoft](#) Excel Help feature!

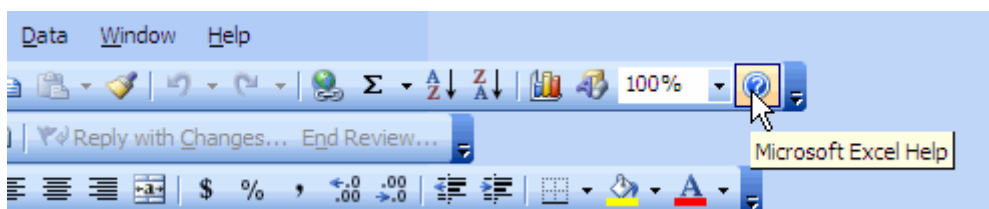
With this feature, you can almost solve all Excel related problem. It is also one of the most important features whereby you can discover the Excel rich features from the basic to advance.

So, just follow the step-by-step guide here.

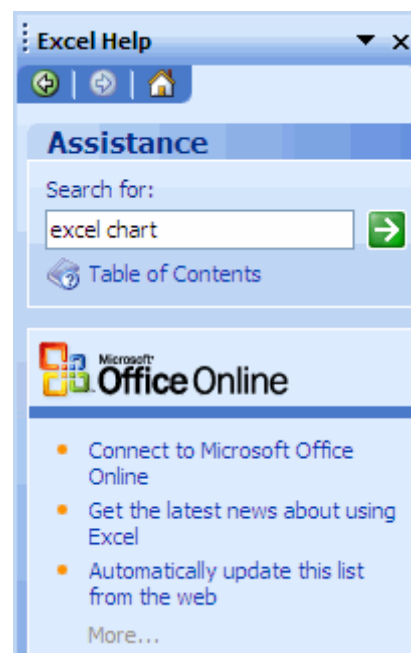
Note: It's recommended that you connect to the Internet to use the Microsoft Excel 2003 Help feature.

To start the Microsoft Excel Help

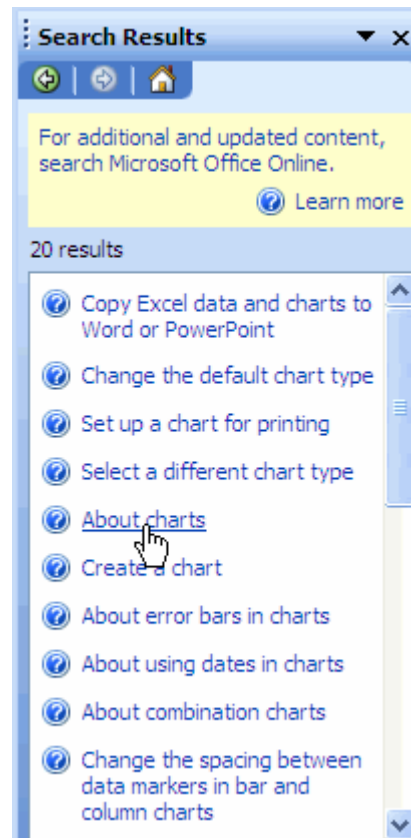
- Click on the **Microsoft Excel Help** icon located on the **Standard** toolbar.



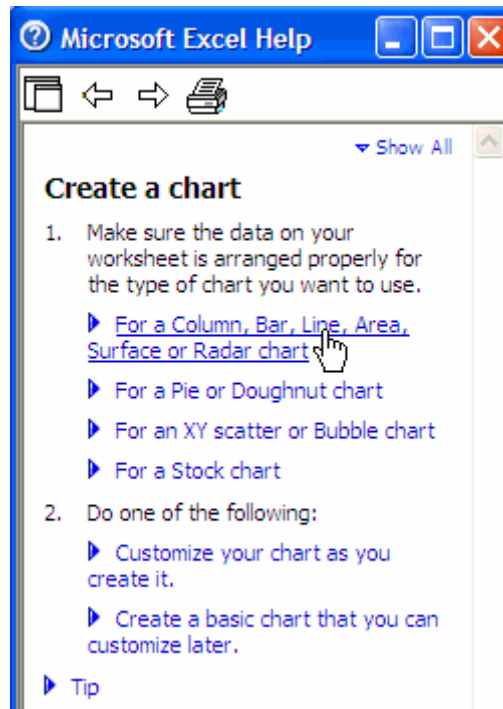
- Then you will see the **Excel Help** task pane display at the right hand side of your Excel screen.
- Type in the relevant text that you would like to get help in the **Search for:** text box.



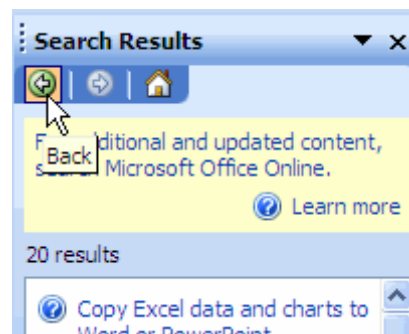
- For example, we type in 'excel chart' and press **Enter**. Then, the [search](#) results are displayed, normally with 20 results as shown here.



- Click on the particular topic, let say we would like to learn how to create a chart in Excel, then click on the Create a chart.
- This will bring you to another window that guides you to create a chart. There are 2 steps to create a chart.



- You can click on the blue color link to get more information. When finish, click on the **Close** button. This will bring you back to the **Search Results** pane.
- To go back search for other topic, just click on the **Back** button from the **Search Results** pane. You also can use the **Forward** button.



How to Solve Your Problem with Microsoft Office Assistant?



Yes, it's actually the Microsoft **Office Assistant** feature in Excel.

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

Occasionally the [Office Assistant](#) will display information on the screen. If you are unsure about how to use this feature you should always read the help offered.

Note: You are required to connect to the [internet](#) when you use the Office Assistant feature.

To show the Office Assistant

- From the Excel **Help** menu, click on the **Show the Office Assistant**.

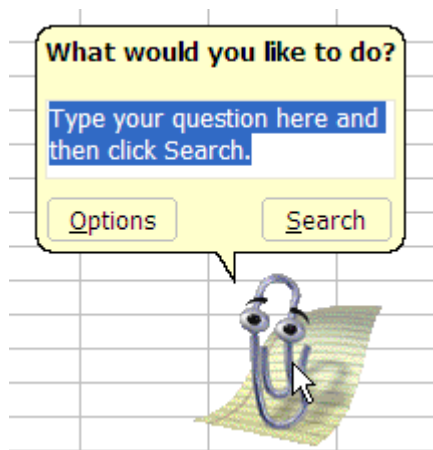
Note: The **Office Assistant** feature required you to put in the Microsoft Office 2003 installation CD to install it first only that you can use it.

- This will display the **Office Assistant** on the screen and you can move it to any place by clicking and drag to the intended location.



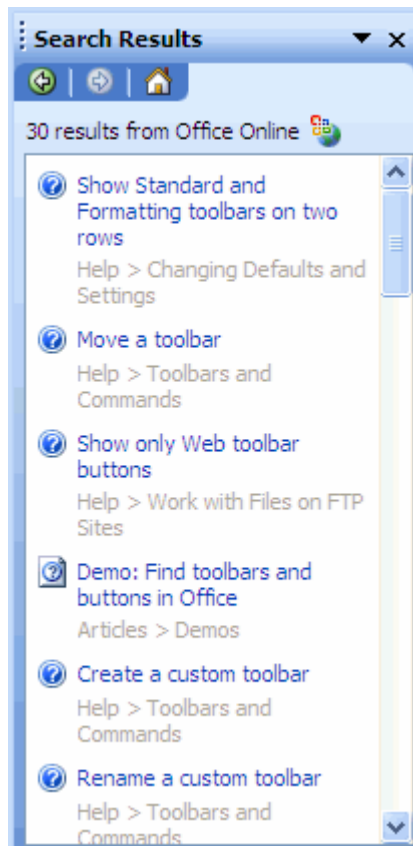
To use the Office Assistant

- Once you click on the **Office Assistant**, it will show something like this:



- You see the highlighted texts that say 'Type your question here and then click Search'.
- Type in any question or term that you wish to search such as 'toolbar'. It can be one word or combination of few words. Click the **Search** button.
- You will see something like the screen below. Click on the link title that you would like

to know. When finish, just close it.



To hide the Office Assistant

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

Using The Excel Conditional Formatting



Excel conditional formatting allows you to apply different formatting options, such as color, to a cell or cells based on the data in the cell(s).

Here are the 2 easy steps to implement the conditional formatting:

1. Create a set of conditions that control formatting changes in the target cells.
2. Enter your data. If the conditions you set are met by the data, then the formatting is applied.

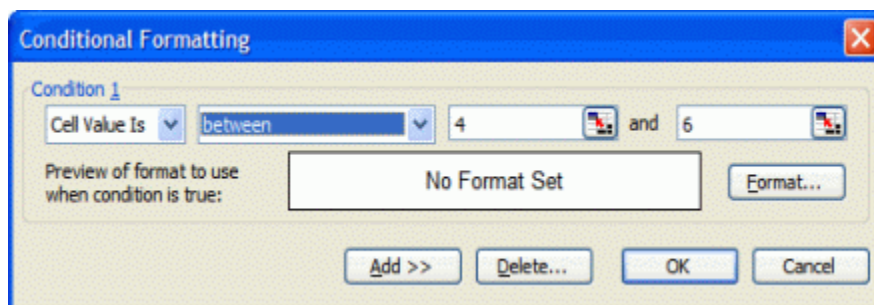
Note: Up to three conditions can be set for a cell, so it is possible to vary the formatting as the contents of a cell changes.

To format cells using conditional formatting

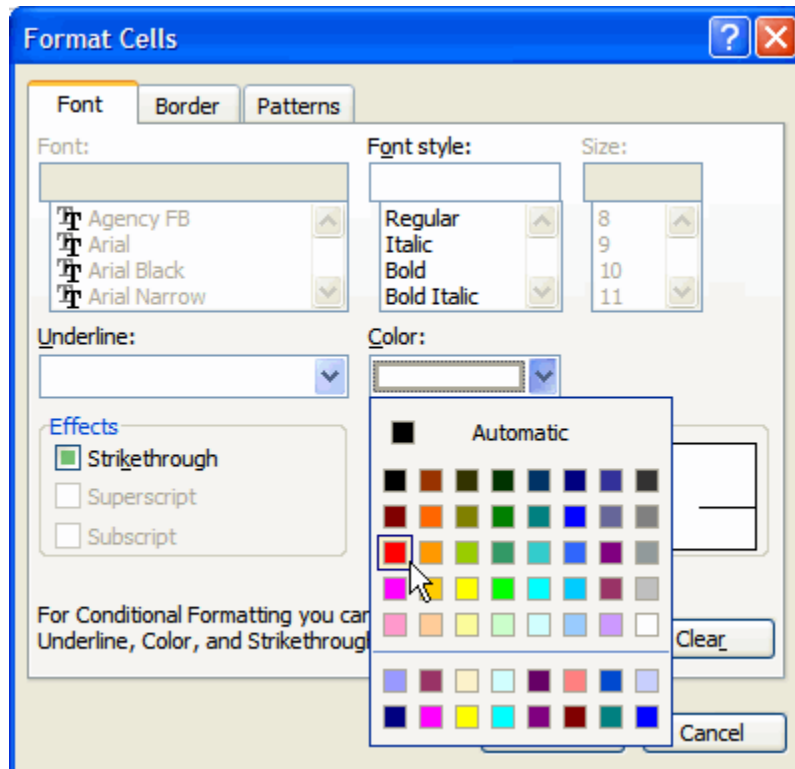
- If we enter the data as illustrated, we can then apply conditional formatting to it.

	A	B	C
1	3	5	2
2	5	3	6
3	3	4	3
4	6	2	4
5	7	9	4

- Select the range of cells which you wish to apply conditional formatting. In this example the range would be **A1:C5**.
- From the **Format** menu, click **Conditional Formatting**.



- Lets say we wish to highlight all values between 4 and 6, then we would enter the numbers in the correct fields, as illustrated above.
- If we click on the **OK** button, then no special formatting would be applied to these values, so next we need to click on the **Format** button within this [dialog box](#).



- From the normal **Format Cells** dialog box is displayed, from which we can specify how data that meets the specified criteria will be displayed.
- Select a color for the conditional formatting; choose red, for this example.
- When finished click on the **OK** button to close this dialog box, which will return to the **Conditional Formatting** dialog box.
- To add the other conditional formats, click the **Add** button. Otherwise, click on **OK** button to close this dialog box.

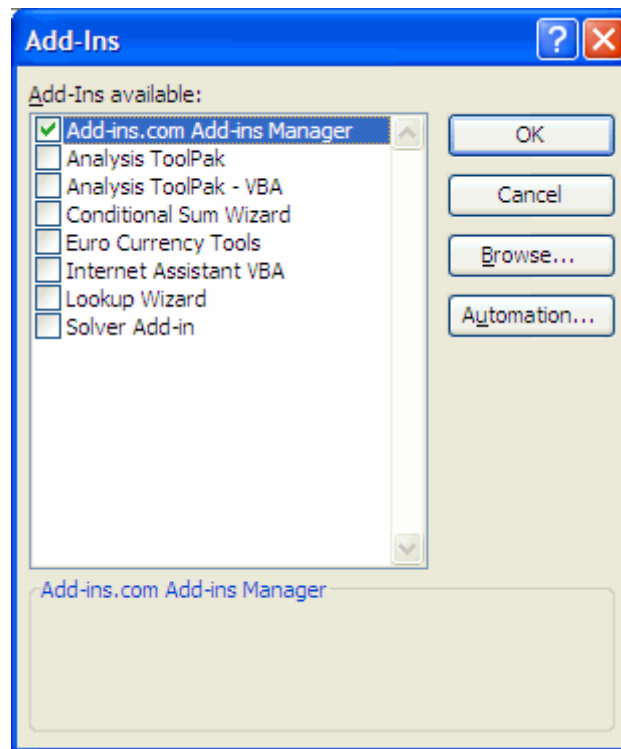
How to Install, Remove and Get Free Excel Add-in?

Excel add-in is the 'extension' of the [Excel program](#). It's a small application that when you install it, the will add an extra function to the Excel that can ease the complex tasks.

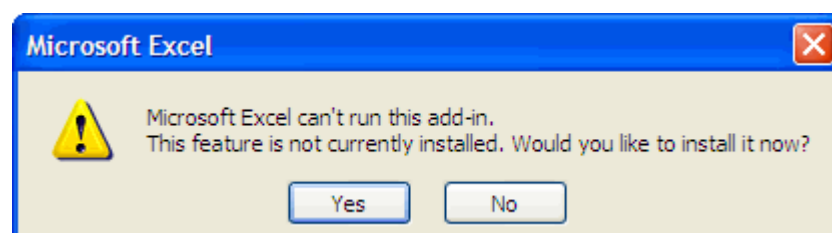


To install Excel Add-ins

- From the **Tools** menu, click **Add-ins** to display the Add-ins dialog box.



- If the add-in you want to install is already in the list then tick the corresponding check box. Click **OK** button.
- You will prompt another dialog box asking you to install the add-in as follow:



- Click **Yes** to continue. It will take some time and you may need the Office 2003 installation CD to proceed.
- If the add-in you want to install is not in the list then click the **Browse** button will displays a dialog box allowing you to browse for an additional Excel add-in.
- The **Automation** button will displays another dialog box that lists all registered COM automation servers available on the system.

Note: If you install an additional add-in the changes are not saved until you actually

close Excel completely.

To uninstall Excel Add-ins

- From the **Tools** menu, click **Add-ins** to display the Add-ins dialog box.
- If the add-in you want to uninstall is in the list then uncheck the corresponding check box. Click **OK** button to uninstall the add-in.

To get free Excel Add-ins

- **Save As PDF** - Allows you to export and save to the PDF format from your Office applications.
- **Excess Formatting Cleaner** - Helps to remove any excess formatting in your workbooks.
- **Password Remover** - Removes password protected workbook or worksheet.

Discover the Full Potential of Excel IF Function!



The **Excel IF Function** checks a condition that must be either true or false. If the condition is true, the function returns one value; if the condition is false, the function returns another value.

The function has three arguments: the condition you want to check, the value to return if the condition is true, and the value to return if the condition is false.

Here is the **Excel IF()** Syntax:

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 A = 10 B = 5 C = 15 D = 10	Result
= (Equal to)	A=B	FALSE
	A=D	TRUE
> (Greater than)	A>B	TRUE
	A>C	FALSE
< (Less than)	A<B	FALSE
	A<C	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 that 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 that contains the IF () Function if the logical_test is false.

To demonstrate the Excel IF function

Lets look at an example for calculating a bonuses based on total sales. A [company](#) offers its salesman a 5% bonus if the value of the total sales is below \$5,000 per month. If the total sales exceed \$5,000 per month, the bonus will be 10%.

When translated into the IF () function it looks like the following:

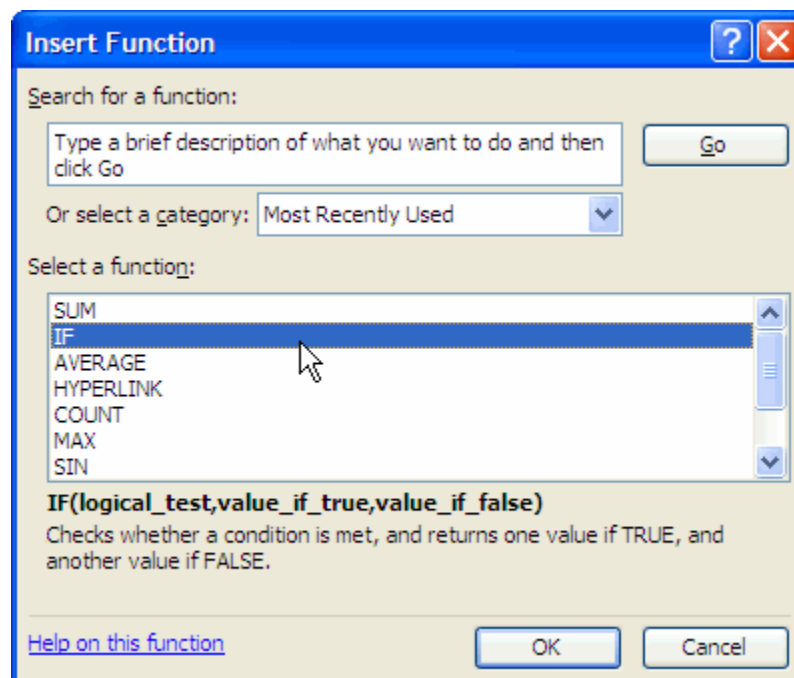
IF(TotalSales>5000,TotalSales * 10%, TotalSales * 5%)

- Enter the following data for column A and column B accordingly.

	C2		
	A	B	C
1	Salesman	TotalSales	Bonus
2	Smith	\$3,200.00	
3	John	\$5,400.00	
4	Brian	\$7,150.00	
5	Richard	\$4,790.00	
6	Anderson	\$5,100.00	
7			

- Click on the cell to contain the IF() function. In this case, cells C2.
- From the **Insert** menu, click on **Function...** to display the **Insert Function dialog box**.

OR press the **Shift+F3**



- From the **Insert Function** dialog box displayed, select the **IF** option and then click **OK** button. The following dialog box will be displayed.

The image shows the 'Function Arguments' dialog box for the IF function in Microsoft Excel. The dialog has a blue title bar with the text 'Function Arguments' and a close button (X) in the top right corner. Inside the dialog, the function name 'IF' is displayed in the top left. Below it, there are three input fields: 'Logical_test', 'Value_if_true', and 'Value_if_false'. Each field has a small icon to its right, and to the right of each icon is a data type label: '= logical' for Logical_test, '= any' for Value_if_true, and '= any' for Value_if_false. Below these fields, there is a description: 'Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.' followed by a line stating 'Logical_test is any value or expression that can be evaluated to TRUE or FALSE.' At the bottom left, it says 'Formula result =' followed by a blue hyperlink 'Help on this function'. At the bottom right, there are two buttons: 'OK' and 'Cancel'.

- Enter **B2 > 5000** into the **Logical_test** text area. Press the **Tab** key.
- Enter **10%** into the **Value_if_true** text area. Press the **Tab** key.
- Enter **5%** into the **Value_if_false** text area. Click **OK**.
- Follow the same procedure for the cells C3 to C6.

Note: Every time, you just need to change the data from B2 to B6, then the bonus will be automatically calculated.

Discover the Full Potential of Excel IF Function!



The **Excel IF Function** checks a condition that must be either true or false. If the condition is true, the function returns one value; if the condition is false, the function returns another value.

The function has three arguments: the condition you want to check, the value to return if the condition is true, and the value to return if the condition is false.

Here is the **Excel IF()** Syntax:

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 A = 10 B = 5 C = 15 D = 10	Result
= (Equal to)	A=B	FALSE
	A=D	TRUE
> (Greater than)	A>B	TRUE
	A>C	FALSE
< (Less than)	A<B	FALSE
	A<C	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 that 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 that contains the IF () Function if the logical_test is false.

To demonstrate the Excel IF function

Lets look at an example for calculating a bonuses based on total sales. A [company](#) offers its salesman a 5% bonus if the value of the total sales is below \$5,000 per month. If the total sales exceed \$5,000 per month, the bonus will be 10%.

When translated into the IF () function it looks like the following:

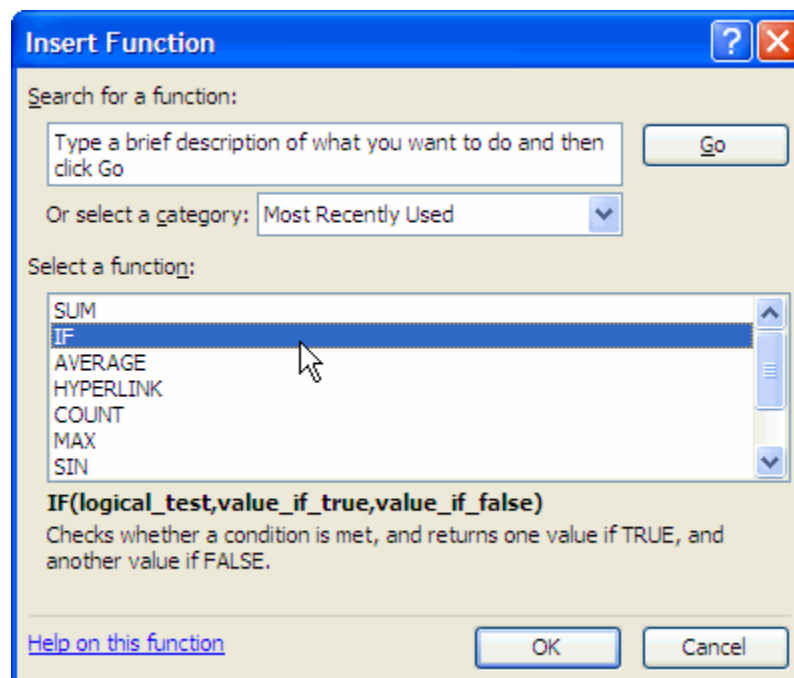
IF(TotalSales>5000,TotalSales * 10%, TotalSales * 5%)

- Enter the following data for column A and column B accordingly.

	C2		
	A	B	C
1	Salesman	TotalSales	Bonus
2	Smith	\$3,200.00	
3	John	\$5,400.00	
4	Brian	\$7,150.00	
5	Richard	\$4,790.00	
6	Anderson	\$5,100.00	
7			

- Click on the cell to contain the IF() function. In this case, cells C2.
- From the **Insert** menu, click on **Function...** to display the **Insert Function dialog box**.

OR press the **Shift+F3**



- From the **Insert Function** dialog box displayed, select the **IF** option and then click **OK** button. The following dialog box will be displayed.

The image shows the 'Function Arguments' dialog box for the IF function in Microsoft Excel. The dialog has a blue title bar with the text 'Function Arguments' and a close button (X) in the top right corner. Inside the dialog, the function name 'IF' is displayed in the top left. Below it, there are three input fields: 'Logical_test', 'Value_if_true', and 'Value_if_false'. Each field has a small icon to its right, and to the right of each icon is a data type label: '= logical' for Logical_test, '= any' for Value_if_true, and '= any' for Value_if_false. Below these fields, there is a description: 'Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.' followed by a line stating 'Logical_test is any value or expression that can be evaluated to TRUE or FALSE.' At the bottom left, it says 'Formula result =' followed by a blue hyperlink 'Help on this function'. At the bottom right, there are two buttons: 'OK' and 'Cancel'.

- Enter **B2 > 5000** into the **Logical_test** text area. Press the **Tab** key.
- Enter **10%** into the **Value_if_true** text area. Press the **Tab** key.
- Enter **5%** into the **Value_if_false** text area. Click **OK**.
- Follow the same procedure for the cells C3 to C6.

Note: Every time, you just need to change the data from B2 to B6, then the bonus will be automatically calculated.

Excel CHOOSE Function



to 29 items.

The **Excel Choose function** allows you to select a value from a list of up

It uses index_num to return a value from the list of value arguments.

For example, if value1 through value7 are the days of the week, CHOOSE() returns one of the days when a number between 1 and 7 is used as index_num.

Here is the **Excel CHOOSE() Syntax:**

CHOOSE(Index_num, Value1, Value2, Value3, ...)

Index_num

This specifies which of the set of values is returned by this function. It must be a number between 1 and 29, or a formula or reference to a cell containing a number between 1 and 29.

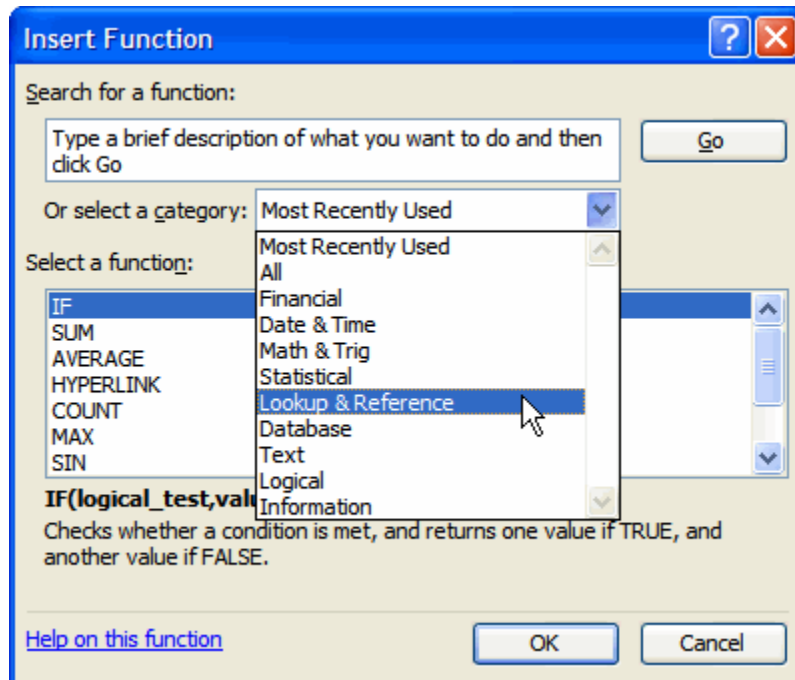
- If index_num is 1, CHOOSE returns value1; if it is 2, CHOOSE returns value2; and so on.
- If index_num is less than 1 or greater than the number of the last value in the list, CHOOSE returns the #VALUE! error value.
- If index_num is a fraction, it is truncated to the lowest integer before being used.

Value1, Value2, Value3...

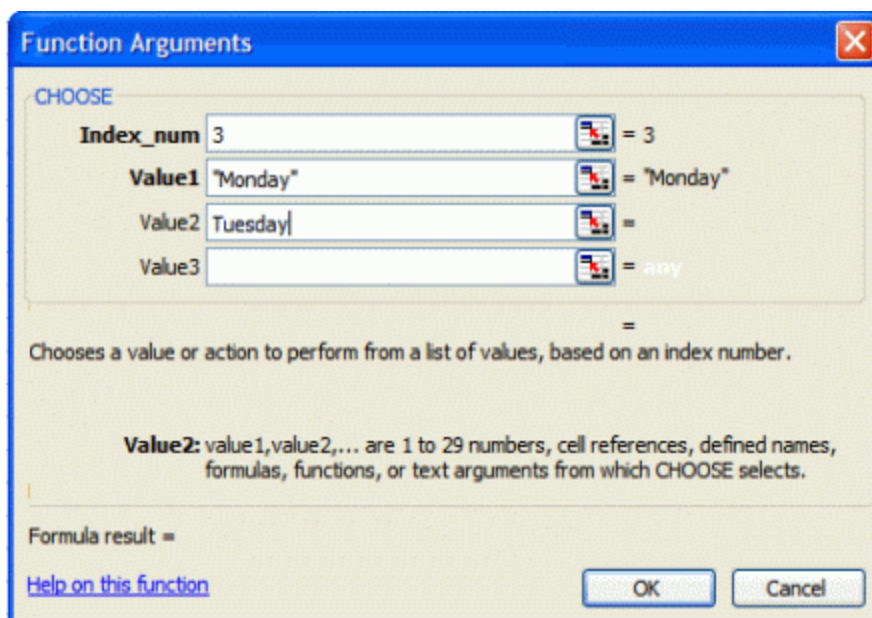
A set of values from which the result is returned.

To use the Excel CHOOSE function (an example)

- Click on the cell where the function is to go.
- From the **Insert** menu, click on **Function...** to display the **Insert Function dialog box**.



- From the **Insert Function** dialog box displayed, under the **Or select a category:** box, select the **Lookup & Reference**.
- In the **Select a function:** section, select the **CHOOSE** and click **OK** to display the **CHOOSE** dialog box.



- Enter either a cell reference or value into the **Index_num** text entry box. In our case, enter the word 3.
- Press the **Tab** key and enter the first value to be chosen from into the **Value1** text entry box. Enter the word Monday.

- Press the **Tab** key again and enter the second value to be chosen from into the **Value2** text entry box. Enter the word Tuesday.
- Repeat the above step until finish i.e. from Monday to Sunday.
- Click **OK** when complete. You will see the result display Wednesday.

Note: If we enter the 5 in the **Index_num** text entry box, then it will return the Friday.

The Excel Date Function



Here is the guide to the **Excel Date function**:

Excel stores dates as a serial number giving each day of each year a unique number. The numbering system starts with 'day 1' being the 1st January 1900, 'day 2' being the 2nd January 1900, and so on.

Here is the **Excel DATE Function Syntax**:

DATE(year,month,day)

Year

The year argument can be one to four digits.

- If year is between 0 (zero) and 1899 (inclusive), Excel adds that value to 1900 to calculate the year. For example, DATE(100,1,2) returns January 2, 2000 (1900+100).
- If year is between 1900 and 9999 (inclusive), Excel uses that value as the year. For example, DATE(2000,1,2) returns January 2, 2000.
- If year is less than 0 or is 10000 or greater, Excel returns the #NUM! error value.

Month

Month is a number representing the month of the year. If month is greater than 12, month adds that number of months to the first month in the year specified. Example: DATE(1996,14,2) returns the serial number representing February 2, 1997.

Day

Day is a number representing the day of the month. If day is greater than the number of days in the month specified, day adds that number of days to the first day in the month. Example: DATE(1996,1,35) returns the serial number representing February 4, 1996.

Mathematical Date Functions

To calculate the difference between two dates in days or weeks

- In the cell A1 enter the first date. In the cell A2 enter the second date.
- In the cell A3 enter the formula =A2-A1 to calculate the difference between the second date and the first date.
- This formula calculates the difference between the two dates in days.
- To calculate the difference in weeks use the formula =(A2-A1)/7.

To add days or weeks to a date

- Enter a date in cell A1.
- In cell A2 enter the following formula: =A1+120. This adds 120 days to the date.
- To add weeks to a date, multiply the number of weeks by seven to calculate the number of days, i.e. =A1+(10*7) adds ten weeks to the date.

To add months to a date

- Enter a date in cell A1.
- In cell A2 enter the following formula: =DATE(Year(A1), MONTH(A1)+1, DAY(A1))
- If you change the +1 value to +2 or +3, you will add two months or three months on respectively.

To find out the last day of the month

- Enter a date in cell A1.
- In cell A2 enter the following formula: =DATE(Year(A1), MONTH(A1)+1, 1)-1
- This will give you a date that represents the last day of the month found in cell A1.

How to Create an Excel Pie Chart?

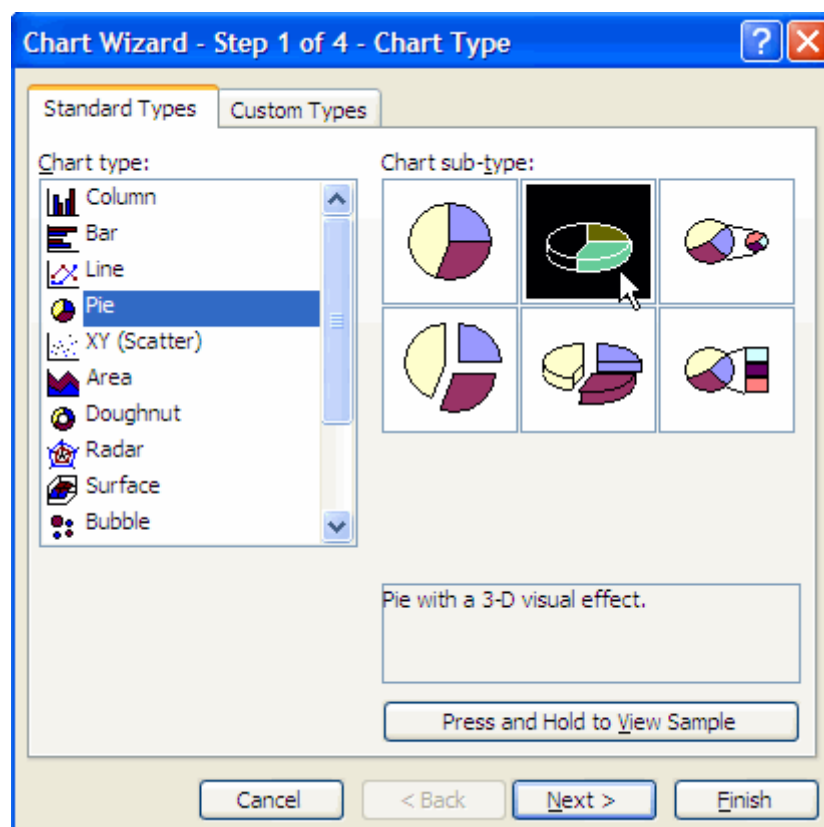
Here is the step-by-step guide to create an outstanding **Excel pie chart**:

Key in the data illustrated below accordingly as we will use it as our example to create chart.

	A	B
1		
2	Student name	Score Marks
3	Carol	70
4	John	52
5	Samantha	26
6	Edward	82
7		

Step 1: The Chart Wizard (1) – Chart Type

- Click on any cell within the data containing the information that you wish to display as a chart, or highlight the exact data that you wish to display as a chart.
- Click the **Chart Wizard** [icon](#) on the **Standard** toolbar.



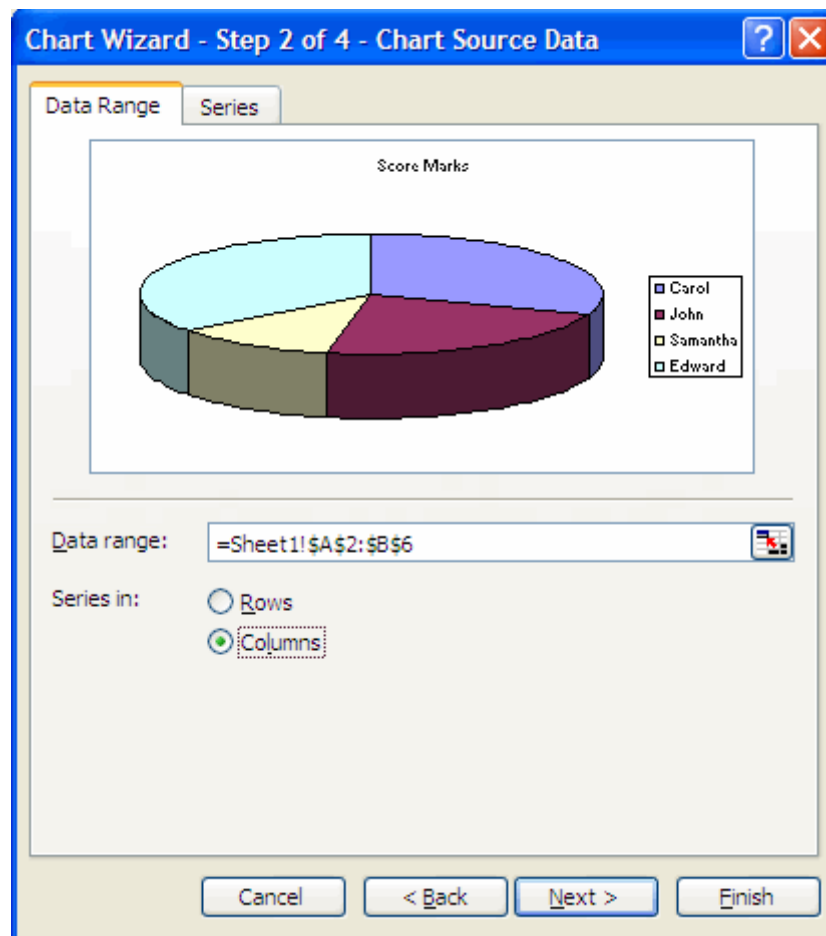
- From the **Chart type**: section you can select the chart type: Pie.
- Then from the **Chart sub-type**: section you can select the exact format that you

required for the selected chart type.

- To see how the selected chart will look, use the **Press and Hold to View Sample** button within the [dialog box](#). In our example, we accept the default selection.
- Click the **Next** button to see the next page of the dialog box - **Chart Source Data**.

Step 2: The Chart Wizard (2) – Data Source

- The **Data Range** tab allows you to specify the exact data that you wish to display within your chart.
- You can choose to display **Series in Rows** or **Columns**. In our case here, choose the Series in **Columns** will be more appropriate.



- When you click on the **Next** button, this will display the **Chart Options** dialog box.

Step 3: The Chart Wizard (3) – Chart Options

From the chart options dialog box displayed, you can select **Titles**, **Legend**, and **Data Labels** tabs and make the necessary changes.

To add title to a chart

- In the **Chart title:** [text box](#), enter the name for the chart, i.e. Score Marks.
- In the example used, the screen will be as illustrated.

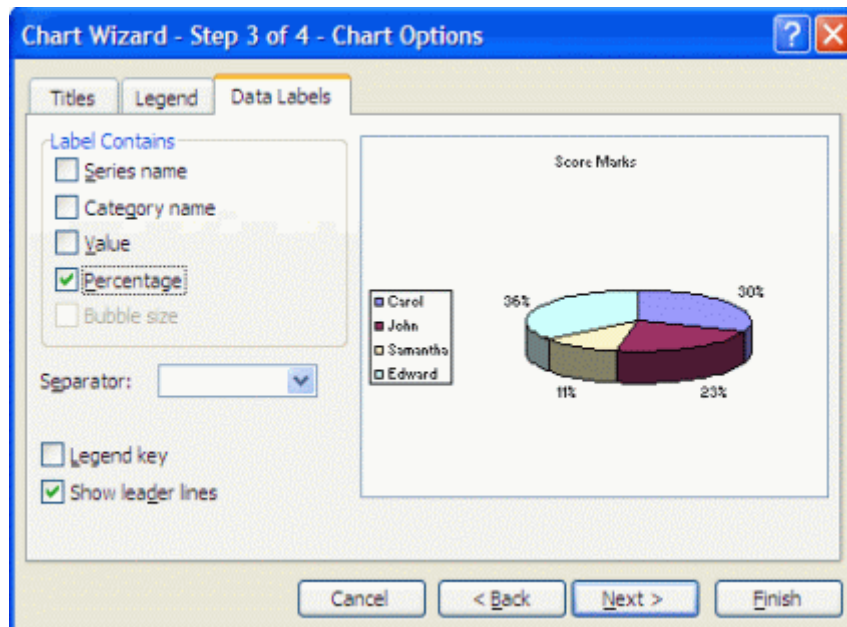
To customize chart legend

- From the **Chart Option** dialog box displayed, click on the **Legend** tab.

- You can choose to display or not the chart legend and the placement of the legend in the chart by clicking [on the radio](#) button.

To customize data labels

- From the **Chart Option** dialog box displayed, click on the **Data Labels** tab.
 - You can choose to display or not the chart data labels by clicking on the radio button.
- In our example, tick the **Percentage** check box to display the percentage info.



- When you click on the **Next** button, this will display the **Chart Location** dialog box.

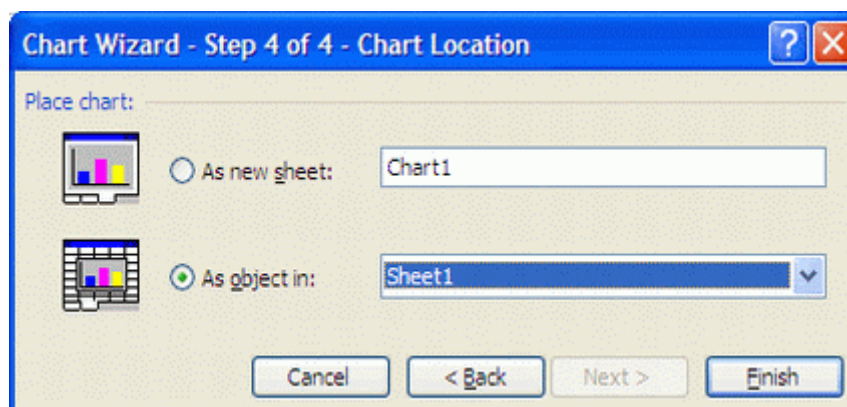
Step 4: The Chart Wizard (4) – Chart Location

To define the chart location

- You can choose to place the Excel pie chart on an existing worksheet as an object, or you can place it on a new worksheet. Two options for you to choose:

As new sheet: – It will place the chart in the new worksheet.

As object in: - It will place the chart in the existing worksheet.



- Click on the **Finish** button and the Excel pie chart will be created as you have specified during the **Chart Wizard** creation process.

Use the Excel Paste Special Feature

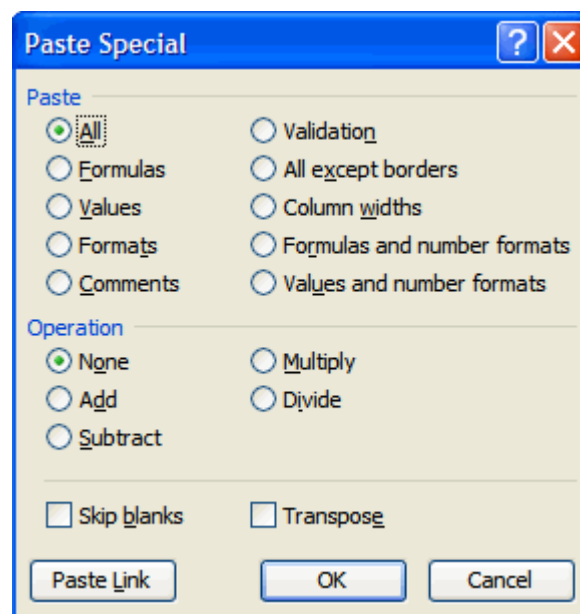


After copying data, you can use the [Excel](#) **Paste Special** command to paste specific cell contents such as formulas, formats, or comments from the clipboard into an Excel worksheet.

You can also use **Paste Special** to paste a link to Excel data or data from another [program](#), such as [Microsoft Word](#).

To use Paste Special to link to Excel data

- Select the range of data that contain the items or attributes you wish to copy.
- From the **Edit** menu, click **Copy**. **OR** press **Ctrl+C**
- Highlight the cell where you want to place the range.
- From the **Edit** menu, click **Paste Special**.



- From the **Paste Special** dialog box displayed, under the **Paste** section, choose **All** or **All except borders** option. Other options included:

Choose this option	To
All	Paste all cell contents and formatting.
Formulas	Paste only the formulas as entered in the formula bar.
Values	Paste only the values as displayed in the cells.
Formats	Paste only cell formatting.
Comments	Paste only comments attached to the cell.
Validation	Paste data validation rules for the copied cells to the paste area.
All except borders	Paste all cell contents and formatting applied to the copied cells except borders.
Column widths	Paste the width of one column or range of columns to another column or range of columns.
Formulas and number formats	Paste only formulas and number formatting options from the selected cells.
Values and number formats	Paste only values and number formatting options from the selected cells.

- Under **Operation** section, specify which mathematical operation, if any, you want to apply to the copied data.

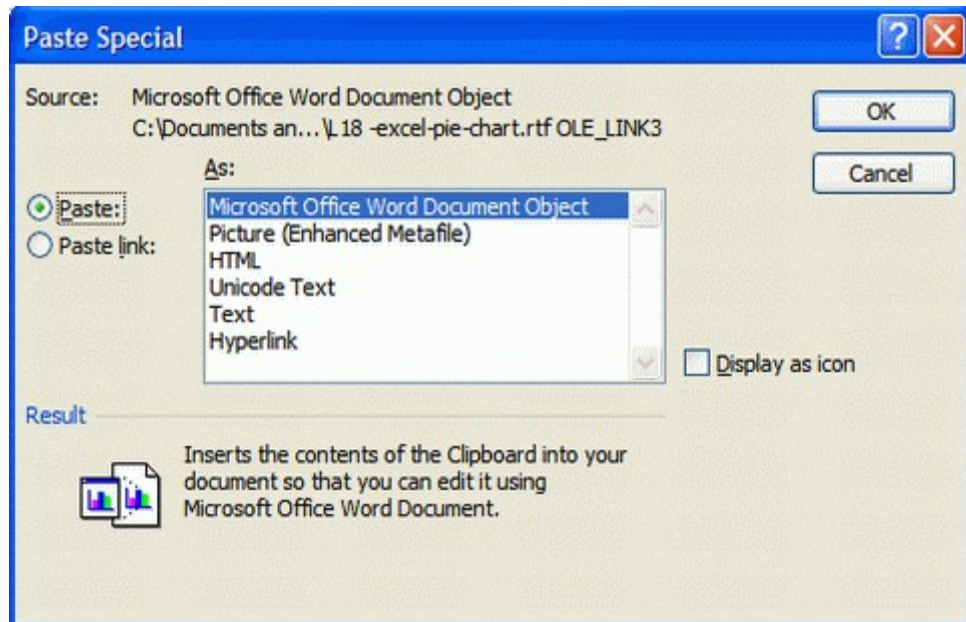
Choose this option	To
None	Paste the contents of the copy area without a mathematical operation.
Add	Add the values in the copy area to the values in the paste area.
Subtract	Subtract the values in the copy area to the values in the paste area.
Multiply	Multiply the values in the copy area to the values in the paste area.
Divide	Divide the values in the copy area to the values in the paste area.

Note: Mathematical operations can be applied only to values. To use an option other than **None**, you must choose **All**, **Values**, **All except border**, or **Values and number formats** under **Paste** section.

- To avoid replacing values in your paste area when blank cells occur in the copy area, select **Skip blanks** check box.
- To change columns of copied data to rows, or vice versa, select **Transpose** check box.
- Click **OK** button when finish.

To use Paste Special to link data from another program (MS Word)

- In Microsoft Word, highlight the range of text that you wish to copy.
- From the **Edit** menu, click **Copy**.OR press **Ctrl+C**
- Highlight the cell where you want to place the range in Excel.
- From the **Edit** menu, click **Paste Special** to display the dialog box.



- In the **As** box, click the **Microsoft Office Word Document Object**.
- Choose the **Paste link:** option to link the pasted data to its source document. To paste and embed the information without creating a link, choose **Paste:** option.
- Click **OK** button.

Excel AND Function



The **Excel AND function** returns TRUE if all conditions are TRUE. It returns

FALSE if any of the conditions are FALSE.

To determine whether the return will be TRUE or FALSE, the function evaluates at least one mathematical expression located in another cell in the spreadsheet.

The syntax for the **AND** function is:

=AND (Condition1, Condition2, ...)

condition is something that you want to test that can either be TRUE or FALSE.

Note: In Excel 2007, the **AND** function can contain a maximum of 255 conditions. For earlier versions of Excel, the limit is 30 conditions.

To use the AND() function (an example)

- Type in the text in Excel A1 and A2 as follow:

	A	B	C
1	88		
2	Microsoft Excel		
3			
4			
5			

- Click on any cell that you wish the result to appears. Type the functions below, the **AND** function will return the following results:

=AND(A1>10, A1<100) would return TRUE.

=AND(A1=88, A2="Microsoft") would return FALSE.

=AND(A1>=50, A1<=88, A2="Microsoft Excel") would return TRUE.

To combine the AND function with IF function

- Let's look at the following example that shows nesting the **AND** function inside the **IF** function.

- In the spreadsheet, type-in the following values accordingly:

Cell C1: 75

Cell C2: 95

Cell C3: 85

- Click on the cell C5 and enter the function below.

=IF(AND(B1>80,B2>80,B3>80),"Good","Not Good")

- If all three of these cells (C1,C2 and C3) contains a value greater than 80, the **IF** function will show the statement *Good* in cell C5.

- If any of these three cells contain a number less than or equal to 80, the **IF** function shows the statement *Not Good* in cell C5.

- So, the result in cell C5 will be *Not Good* since the cell C1 contains value that is less

that 80.

Excel MIN Function

The **Excel MIN function** is used to find the smallest value in the selected range of cells or a given list of arguments. Text and blank entries are not included in the calculations of the **MIN** function.

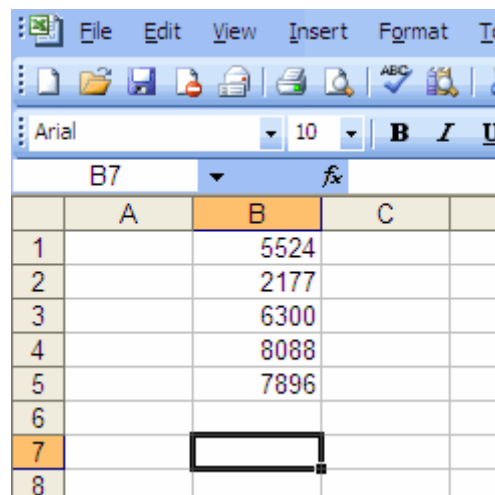
The syntax for the **MIN** function is:

=MIN (Argument1, Argument2, ... Argument30)

Argument1, Argument2, ... Argument30 can be numbers, named ranges, arrays, or cell references. Up to 30 arguments can be entered in Excel 2003.

To use the MIN function (an example)

- Enter the following data into cells B1 to B5:



The screenshot shows the Microsoft Excel 2003 interface. The menu bar includes File, Edit, View, Insert, Format, and Tools. The toolbar contains icons for opening, saving, printing, and other functions. The formula bar shows 'B7' and a function icon. The worksheet has columns A, B, and C, and rows 1 through 8. Column B contains the values 5524, 2177, 6300, 8088, and 7896 in rows 1 through 5 respectively. Cell B7 is selected and highlighted with a black border, indicating it is the active cell for the formula.

	A	B	C
1		5524	
2		2177	
3		6300	
4		8088	
5		7896	
6			
7			
8			

- Click on cell B7 where the results will be displayed.
- Type **=MIN(B1:B5)** in cell B7.
- Once finish, press the **Enter** key on the keyboard.
- The answer 2177 appears in cell B7 which is the smallest number in the list.

Excel MAX Function



The **Excel MAX function** is used to find the largest value in the selected range of cells or a given list of arguments. Text and blank entries are not included in the calculations of the **MAX** function.

The syntax for the **MAX** function is:

=MAX(Argument1, Argument2, ... Argument30)

Argument1, Argument2, ... Argument30 can be numbers, named ranges, arrays, or cell references. Up to 30 arguments can be entered in Excel 2003.

To use the MAX function (an example)

- Enter the following data into cells C1 to C5:

The screenshot shows the Microsoft Excel 2003 interface. The menu bar includes File, Edit, View, Insert, Format, Tools, Data, and Window. The toolbar contains various icons for file operations and formatting. The status bar at the bottom shows 'Times New Roman' font, size 12, and bold (B) formatting. The spreadsheet has columns A through E and rows 1 through 8. Column C is highlighted in orange. The data in column C is as follows:

	A	B	C	D	E
1			561		
2			719		
3			637.8		
4			288		
5			953.5		
6					
7					
8					

- Click on cell C7 where the results will be displayed.
- Type **=MAX(C1:C5)** in cell C7.
- Once finish, press the **Enter** key on the keyboard.
- The answer 953.5 appears in cell C7 which is the largest number in the list.

Excel COUNT Function

Excel COUNT function will return the number of entries (actually counts each cell that contains number data) in the selected range of cells.

Text and blank entries are not counted. If number data is later added to an empty cell in the range, the count total is automatically updated.

The syntax for the function is:

=COUNT(argument)

Argument is the range of cells to be totaled.

To use the COUNT function (an example)

- Enter the following data into cells B1 to C6:

	A	B	C	D	E
1		56	97		
2		23	38		
3		71	64		
4		82	52		
5		59	12		
6		45	88		
7					
8					

- Click on cell C7 where the results will be displayed.
- Type **=COUNT(B1:C6)** in cell C7.
- Once finish, press the **Enter** key on the keyboard.
- The answer 12 appears in cell C7.

Note: Since dates, times, and formulas are stored as numbers in Excel, the COUNT function will include any cells containing these types of data in the total.

Excel AVERAGE function

The **Excel AVERAGE function** can be used to calculate the average, or arithmetic mean, of values in a selected range of cells.

The syntax of this function is written as follows:

= AVERAGE (argument)

The argument for this function is data contained in the selected range of cells.

To use the AVERAGE function (an example)

- Enter the following data into cells C1 to C6.

	A	B	C	D	E
1			562		
2			128		
3			726		
4			417		
5			659		
6			333		
7					
8					

- Click on cell C7 where the results will be displayed.
- Type **"=AVERAGE("** in cell C7 (without the quote).
- Click and drag to select cells from C1 to C6 with the mouse.
- Type the closing bracket **") "** after the cell range in cell C7 (without the quote).
- Once finish, press the **Enter** key on the keyboard.
- The answer 470.83 should be displayed in cell C7.
- The complete function **=AVERAGE(C1:C6)** appears in the formula bar.



Excel OR Function

The **Excel OR function** returns TRUE if one condition are TRUE. It returns FALSE if all of the conditions are FALSE.

To determine whether the output will be TRUE or FALSE, the function evaluates at least one mathematical expression located in another cell in the spreadsheet.

The syntax for the **OR** function is:

=OR (Condition1, Condition2, ...)

condition is something that you want to test that can either be TRUE or FALSE.

To use the OR() function (an example)

- Type in the number in cells C1 and C3 as follow:

	C5				
	A	B	C	D	E
1			480		
2			255		
3			961		
4					
5					
6					

- Click on cell C5 where the results will be displayed.
- Type **=OR(C1>500, C2>500, C3>500)** in cell C5
- Once finish, press the **Enter** key on the keyboard.
- The answer TRUE appears in cell C5.

Note: If any of these three cells (C1,C2, or C3) contains a value greater than 500, the output for the OR function in cell C5 will be TRUE. If all three cells have numbers less than or equal to 500, the output will be FALSE.

The Excel RAND function

The **Excel RAND function** will generate a random number in [Excel](#) that is greater than or equal to 0 and less than 1.

The syntax for the **RAND** function is:

=RAND()

To use the RAND() function (examples)

- To generate a random number between 0 and 100, use **=RAND() *100**
- To generate a random number and return only whole numbers use **=INT(RAND()*100)**
- To generate a random number between 100 and 200, use **=RAND() *(200-100)+100**

Note: If you want to use **RAND** function to generate a random number but don't want the numbers to change every time the cell is calculated, you can enter **=RAND()** in the formula bar, and then press **F9** key to change the formula to a random number.

Discover the Excel Automatic Calculation Capability!



Microsoft Excel Automatic Calculation

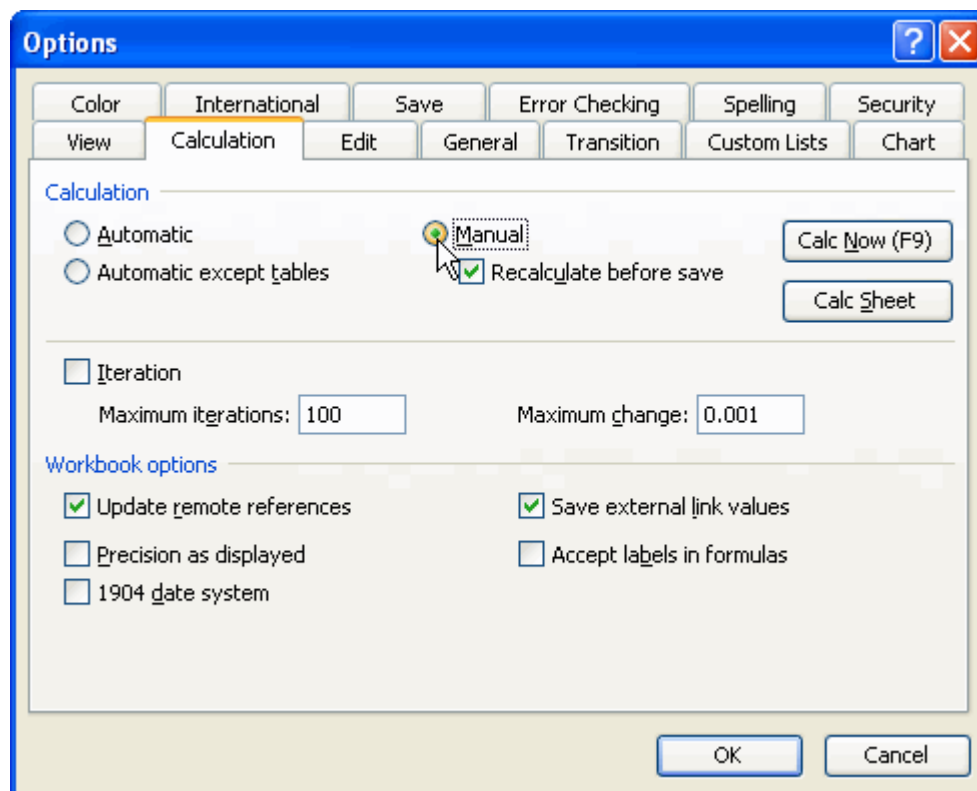
feature is an extremely dynamic capability that by default automatically recalculates any changes you make to your Microsoft Excel worksheets.

Sometimes though you may find that due to the complexity and the size of your worksheet, you may want to control when the Microsoft Excel application recalculates your workbook or you may find that you just want a single worksheet to be recalculated.

To control the **Excel 2003 Automatic calculation** the worksheet, you must first turn the default automatic calculation function to manual.

To turn off the automatic calculation

- From the **Tools** menu and select the **Options** command.
- From the **Options dialog box** will displayed, select the **Calculation** tab.



- Under the **Calculation** section, select the **Manual** radio button.
- Click the **OK** button.

Once you are in manual calculation mode, there are two ways you can force the Microsoft Excel to recalculate.

To use the automatic calculation feature

- From the **Tools** menu and select the **Options** command.

- From the **Options** dialog box will displayed, select the **Calculation** tab and then use either the **Calc Now (F9)** or **Calc Sheet** buttons.

- To recalculate the entire workbook, click on the **Calc Now (F9)** button

OR press **F9** key.

- Click on the **Calc Sheet** button will only update your current worksheet

OR press **Shift + F9**.

Copy Excel Worksheet from one Workbook to Another

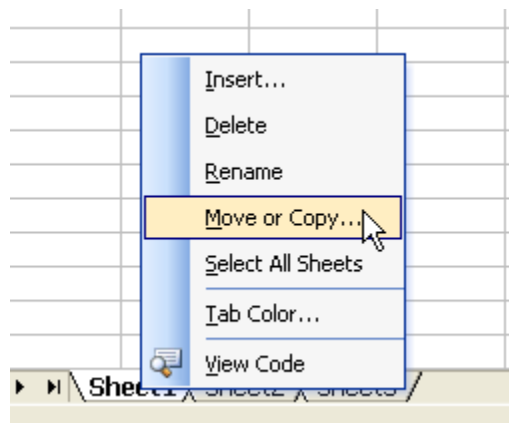
Do you need to *copy Excel worksheet*?



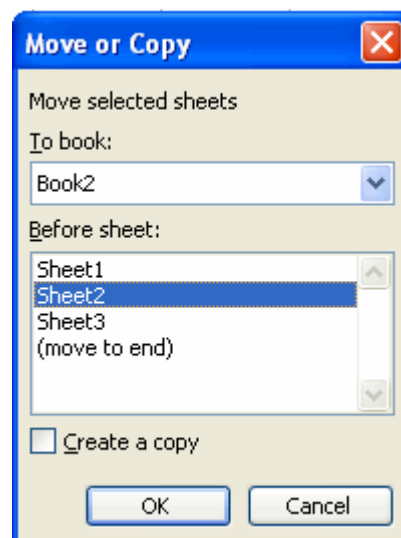
If you use [Microsoft Excel](#), then you've run into the situation where the information in a worksheet is needed in another workbook. You could go through and copy and paste the cells from one worksheet to another, but if you are working with a large spreadsheet, this is way too painful. Excel makes it easy to copy (and even easier to move) worksheets from one workbook to another.

To copy a worksheet to another workbook

- Open the workbook that you intend to copy the worksheet. (Ex: Book1)
- Open another workbook that you want the worksheet copied to. (Ex: Book2)
- Go to the workbook with the desired worksheet that you wish to copy. Right-click on the tab of the target worksheet.



- Select **Move or Copy...** from the menu.



- From the **Move or Copy** window appears, use the **To book:** dropdown list to select the workbook that you want to copy the worksheet to. (Ex: Book2)
- Then select the existing sheet that you want the copy to be placed in front of. For example, if you select the Sheet2, the copied worksheet will be placed before the Sheet2.
- Check the **Create a copy** check box.
- Click **OK**. You will now have the same worksheet in both workbooks.

Note: To move a worksheet to another workbook, just follow the above steps and simply exclude checking the **Create a copy** check box.

The Excel Shared Workbook - How to Setup?

Do you know the **Excel Shared Workbook** function?



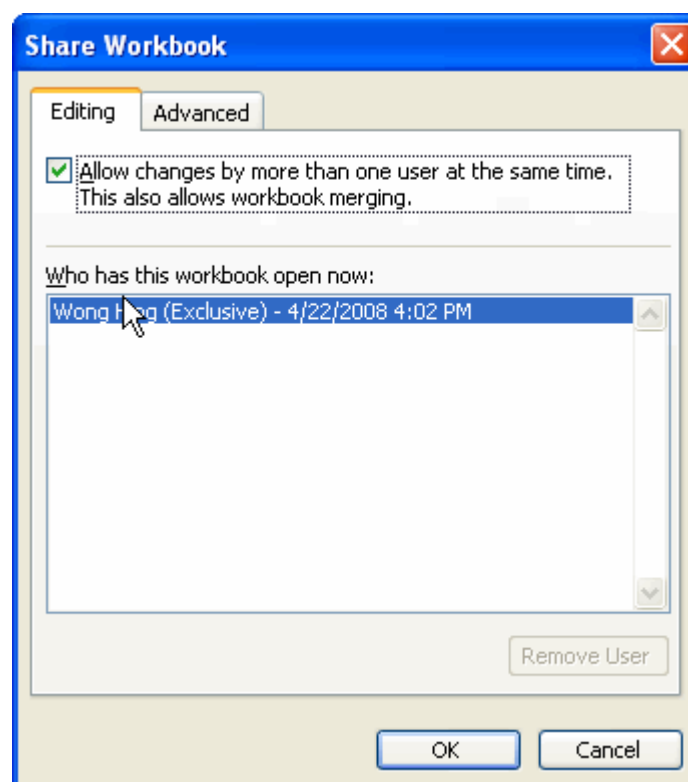
Yes, Microsoft Excel 2003 allows multiple people entering information into the same spreadsheet at the same time. This function in Microsoft Excel is called Shared Workbooks. It's also one of the clear advantages of using Excel over other spreadsheet programs.

If a user tries to open a Workbook that is already open, then they normally get a message saying that the File is locked by a certain user and would you like to open the file in Read only mode. However, you can open a workbook in shared mode by following these steps.

Note: To utilize this feature, make sure your computer is running in the network environment.

To share an Excel file

- Open the Excel file that you want to share.
- From the **Tools** menu and choose **Share Workbook**.



- From the **Share Workbook** dialog box displayed, in the **Editing** tab, check the **Allow changes by...** check box.
- Click **OK**. This allows other people to use your Excel workbook whilst you are working on it.

To know the advanced share workbook features

- Open the Excel file that you want to share.
- From the **Tools** menu and choose **Share Workbook**.
- From the Share Workbook dialog box displayed, click the **Advanced** tab.

There are three areas that you can change:

1. Track Changes.

Microsoft Excel allows you to store over 32000 days worth of changes to your Excel file, however, there is a catch. All of that information is stored in your file and consequently your file will grow exponentially. Most organisations generally work on a maximum of 30 days (the default). However the value entered simply depends on your workbooks requirements. You can choose the second option - Don't keep change history. This simply ensures no changes are maintained.

2. Update Changes.

This function simply allows you to define how often the spreadsheet changes are updated. The most common element users use is the Update Every 15 minutes. What this does is to force a save and filter through the data to all the users. One point to consider is that if your workbook is relatively large and you are working on a slow computer you may want to increase that time to 30 minutes.

3. Save Changes.

This defines whose changes will override who's. There are two options available:

- Ask me which changes win
- The changes being saved win

Which option you choose really depends on the type of workbook you have created.

Another critical issue you need to consider is if somebody disables the **Excel Shared Workbook** function. If this occurs, when you try to save your workbook you will be required to save it somewhere else or lose your work. This is one of the downsides to the Share Workbook function

The Excel Drop Down List - How to Create It?



[Microsoft](#) Excel 2003 allows you to build your own **Excel drop down list**!

Well, this feature is really cool.

Have you ever been in a situation where you were building a template in Microsoft Excel 2003 and it would have been really useful to actually have a drop down list so that your users could choose from a preset list, rather than them simply typing in their own values?

This tutorial show you how to create the drop down list in Excel.

To create an Excel drop down list

- Open a new Excel workbook. On the first worksheet (Sheet1) enter the following data.

Cell A1 - Title

Cell B1 - Full Name

- Click on the second worksheet (Sheet2) in your workbook. Enter the following data.

Cell A1 - Title

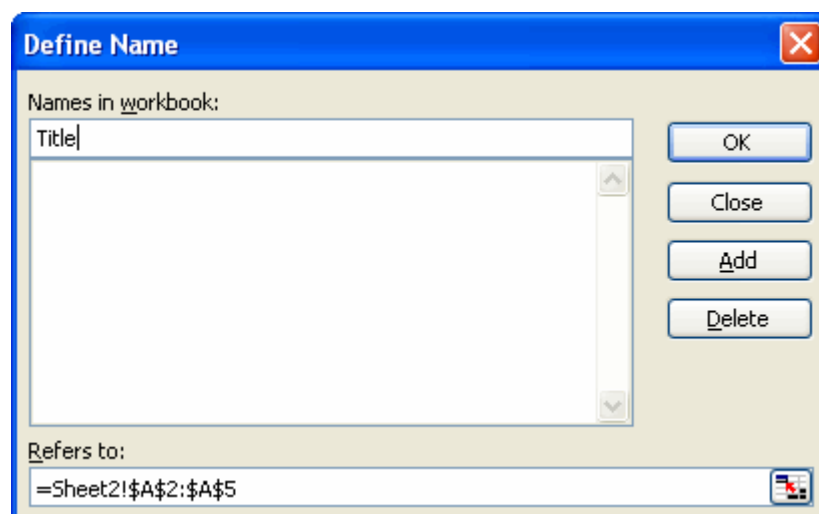
Cell A2 - Mr

Cell A3 - Miss

Cell A4 - Mrs

Cell A5 - Ms

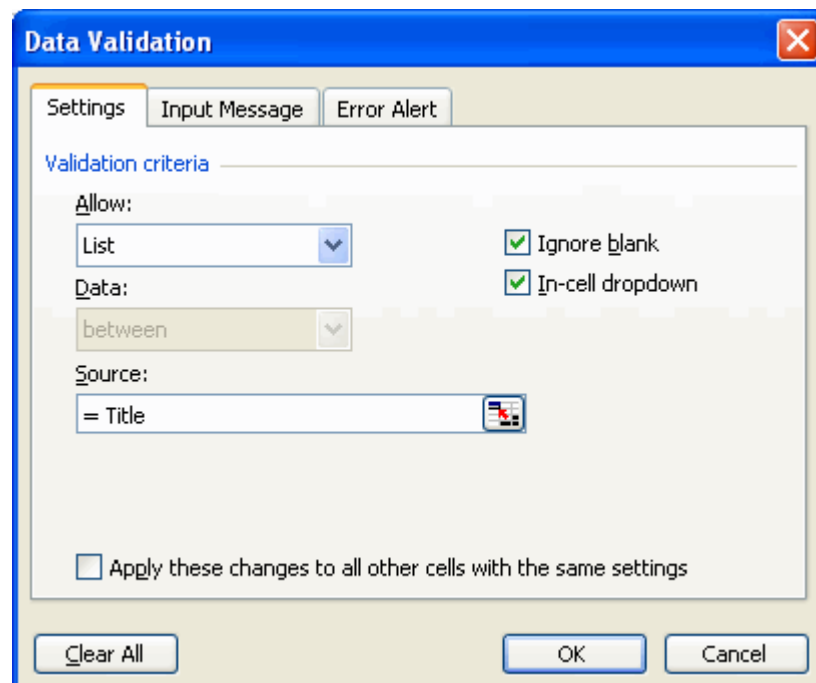
- Then select the cell range A2 to A5. We are going to give a name for this range of cell.
- From the **Insert** menu choose the **Name** option from the menu and click **Define**.



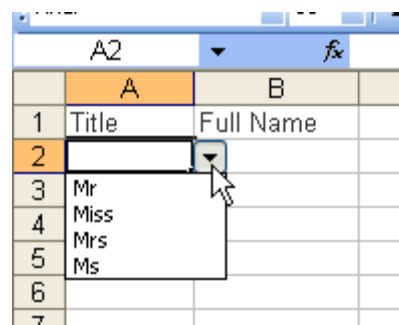
- From the **Define Name** dialog box displayed, in the **Names in workbook:** [text box](#)

simply type in the name Title and click the **OK** button.

- Now, return to the first worksheet (Sheet1). We will create a drop down list in cell A2 so click on cell A2.
- From the **Data** menu, click on **Validation**. This will open the **Data Validation** dialog box.



- Under the **Settings** tab, in the **Allow:** drop down list, choose the **List** option.
- In the **Source:** text box, typing in **= Title** (This is to define the name Title as the range).
- To complete the process, click the **OK** button.
- Return to the cell A2 and you will now see a drop down box. If you click on the arrow you will see the results from your second sheet.



Note: If you do not want your range for your list to be on the same worksheet, then you must name the range.

The Excel Time Function

The **Excel Time Function** – What its use for? The **Excel Time function** is to display the time in a cell.

[Excel](#) allows you to manipulate dates and times and perform calculations on them. If you type a date or time (e.g. 13/3/08 or 9:28) directly into a cell Excel should recognise it as such. The [program](#) will normally align it to the right of the cell and display it in the formula bar in a standard format (e.g. 13/03/2008 or 9:28:00 AM).

The **TIME Function** Syntax:
TIME (Hour, Minute, Second)

Hour is a number from 0 (zero) to 23 representing the hour. Minute is a number from 0 to 59 representing the minute. Second is a number from 0 to 59 representing the second.

Examples:

TIME(12, 0, 0) is equivalent to 12:00:00 p.m.

TIME(16, 48, 10) is equivalent to 4:48:10 p.m.

To add and subtract times

- To add 1 hour, 35 minutes, 10 seconds to a time in A1, use the function **=A1 + TIME(1,35,10)**
- To subtract 1 hour, 35 minutes, 10 seconds from a time in A1, use the function **=A1 - TIME(1,35,10)**

Note: You can add times using the **=SUM** worksheet function. Just enter all of your times as HH:MM:SS, and then use **SUM** function to add them up.

The Excel Date Function

In Excel, the Date Function is to display the date in a cell.

To display the current time or date in a cell, use the **NOW()** function. Just type **=NOW()** in the cell and it will display the current data and time.

The **DATE Function** Syntax:
DATE (Year, Month, Day)

To add and subtract dates

- In the cell A1, type a date such as 1/2/08.
- In cell A2, if you wish to add 8 days to cell A1, use =A1+9, which gives 9/2/08.
- In cell A3, if you wish to subtract 5 days to cell A1, use =A1-5, which gives 4/1/08.

Excel Comment – Why and how to add and manipulate it in Excel spreadsheets?



Excel Comment is basically short notes that can be inserted into any cell in Excel. You cannot see it if you do not click on the comment. It's useful for reminders, notes for others, or for cross-referencing other workbooks.

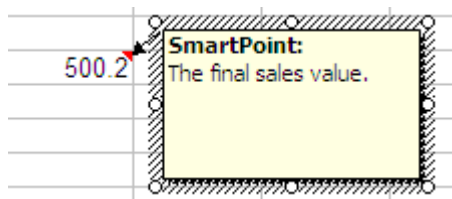
Adding comment to worksheets cells are a great way to explain the cell contents, formulas, offer tips to users or other data in the spreadsheet.

Basically there are three ways to add a comment:

- 1) Using Menu bar
- 2) Using mouse right-click
- 3) Using Reviewing toolbar (not explain here)

To insert a Comment using menu bar method

- Select the cell in which you want the comment.
- From the **Insert** menu, click on **Comment**. You can see something like this:



- Type your comment where the cursor is flashing.
- Text will wrap automatically. If you want to start a new line, press the **Enter** key.
- When finished, click any cell outside the comment box.

To insert a Comment using right-click method

- Point to the cell in which you want the comment.
- Right-click on the cell and click **Insert Comment**.
- Type your comment where the cursor is flashing.
- When finished, click any cell outside the comment box.

To display a specific Comment

- Right-click the cell which contains the comment.
- Choose **Show/Hide Comment**.

To hide the Comment

- Right-click the cell which contains the comment.
- Choose **Hide Comment**.

To edit the Comment

- Right-click the cell which contains the comment.
- Choose **Edit Comment**.
- Retype your comment.

To delete the Comment

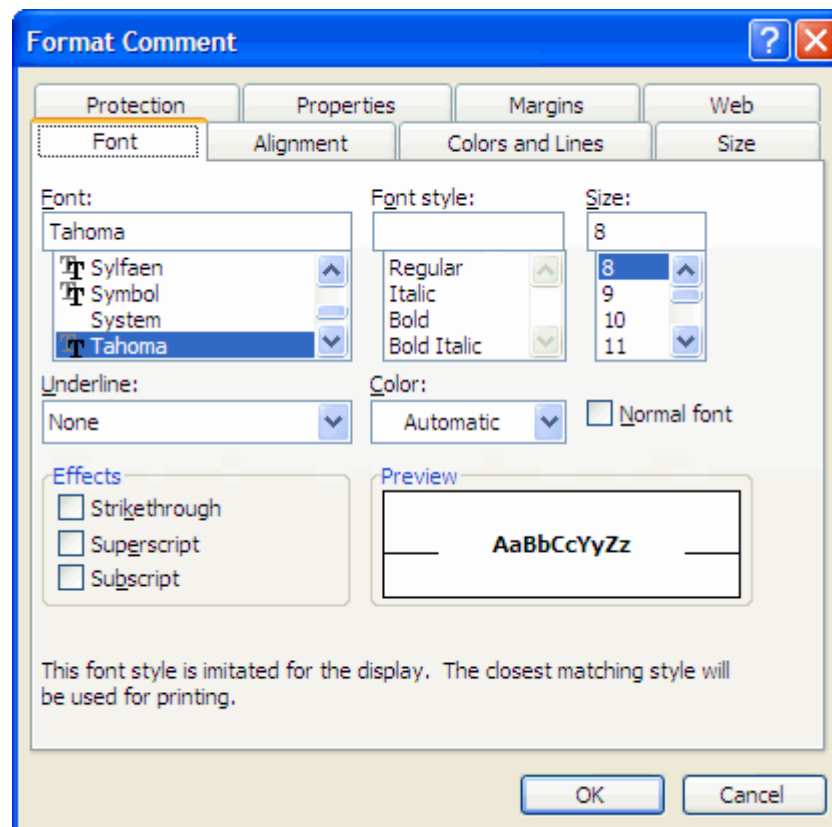
- Right-click the cell which contains the comment.
- Choose **Delete Comment**.

To change the Comment Shape

- Right-click the cell which contains the comment.
- Choose **Edit Comment**.
- Click on the border of the comment, to select it.
- On the **Drawing** toolbar, click the **Draw** icon, point to **Change AutoShape**, and choose a category.
- Click on a shape to select it.
- When finished, click outside the comment.

To change the others Comment attribute

- Right-click the cell which contains the comment.
- Choose **Edit Comment**.
- Click on the border of the comment, to select it.
- From the **Format menu**, click **Comment**.



- From the **Format Comment** [dialog box](#) displayed, click on the specific tab to change the necessary settings.
- You can change the comment font and background color, font size and effects, alignment, margin, etc.
- When finish, click **OK**.

Excel 2003 Data Analysis Tools: Sort Data, Subtotals, Pivot Tables and What-If Analysis

This tutorial shows some of the [Excel 2003 data analysis tools](#), including:



Sorting and filtering lists: With the information you have in a list, you can sort and display data that meet certain criteria, insert formulas to calculate subtotals, and create summary tables.

Subtotals: Excel can quickly go through the whole table and insert rows and add totals for the column that you specify.

PivotTable: It is a quick way to analyze data such as summing up data in a rectangular table shape when you have more than one category to summarize upon.

What-If Analysis: The ability to assist in decision making with dynamic models. A *dynamic model* uses formulas that instantly recalculate when you change values in cells that are used by the formulas.

You can either view or download the pdf report by clicking [here](#).

Excel Styles and Custom Formatting



This article let you understand the different between **Excel styles** and **Excel custom formatting**.

When you format a cell in a worksheet, you can define cell shading, font color, font, font size, borders, and much, much more. In short, there are many definitions that can be set for a single cell.

You save all the formatting you have customized. The main limitation is that all custom formatting is only saved in the current workbook. Without defining a name for the format, it will be difficult for you to find and reuse it.

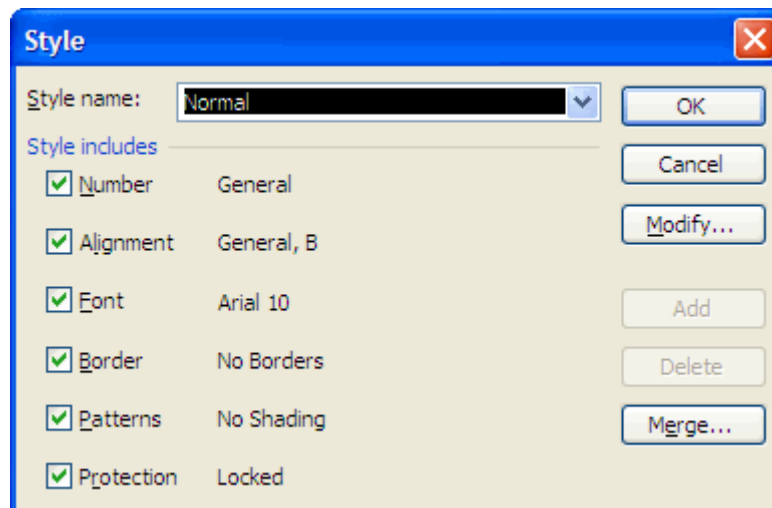
Furthermore, when using this method, you cannot save definitions such as font, [patterns](#), borders and any of the wide variety of formatting options in the **Format Cells dialog box**.

Then the Excel **Styles** are different!

Changing the definitions of the style will modify the default format of text or numbers in the workbook.

To change the default Style in a workbook

- From the **Format** menu, click **Style**.



- From the **Style** dialog box displayed, in the **Style name** box, select **Normal**.
- Click **Modify** button.
- From the **Format Cells** dialog box displayed, do the necessary adjustments.

Number tab: Set the number format that appears in the cells.

Alignment tab: Change the vertical and horizontal alignments of the text/number in the cells.

Font tab: Change the font pattern, style, color of the text/number in the cells.

Border tab: Add or remove the border of the cells.

- Click **OK**.

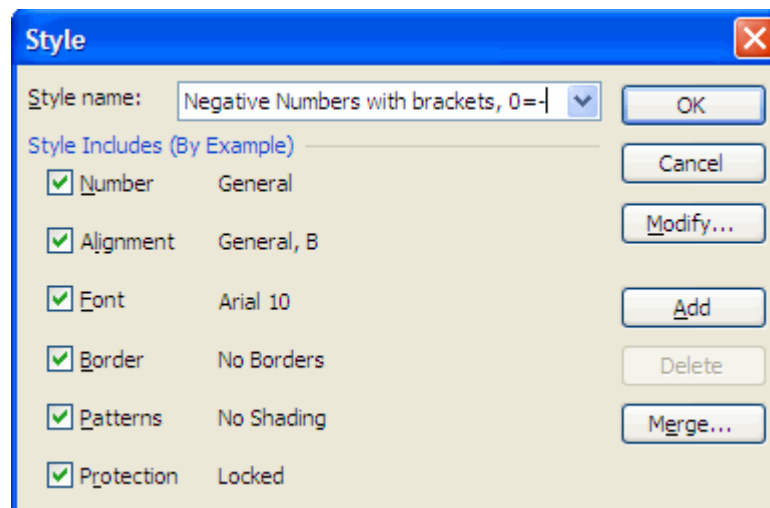
The formatting suggested by default in the workbook allows you to enter both text and numbers into cells. Formatting a cell for text only by selecting the **Text** format from the list of standard formats appearing in the **Category** box in the **Number** tab of the **Format Cells** dialog box will allow only text and not numbers to be displayed in the cell. The opposite is also true. If you format a cell for numbers only, you will not be able to display text in the cell.

Actually, in the **Style** dialog box, you can create a wide range of complex styles and save each one separately with a unique name. These styles can then be applied repeatedly.

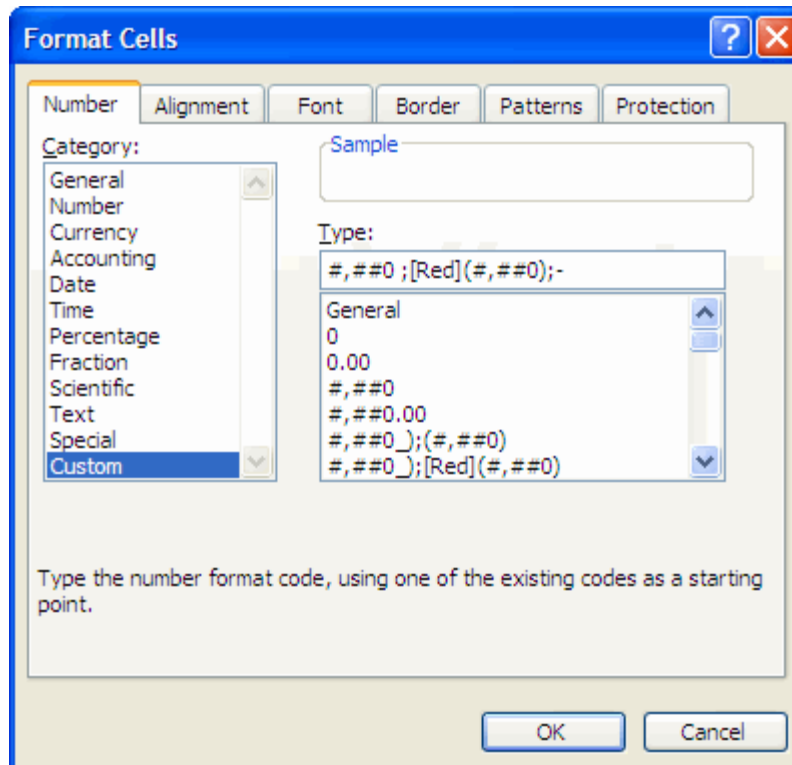
The example below shows you how to format a number so that a negative number displayed in brackets and zero (0) is replaced with a dash (-). Choose the font and font size.

To create and save custom styles

- From the **Format** menu, click **Style**.
- OR** press **Alt+F**.



- From the **Style** dialog box displayed, in the **Style name** box, enter **Negative Numbers with brackets, 0=-**.
- Click **Modify** button.
- From the **Format Cells** dialog box displayed, select the **Number** tab, and in the **Category:** box, select **Custom**. In the **Type:** box, change and type in the following number format **#,##0 ;[Red](#,##0);- ;**



- Select the **Font** tab.
- In the **Font:** box, select Arial. In the **Font style:** box, select Regular, and in the **Size:** box, select 10.
- Click **OK**.
- In the **Style** dialog box, click **OK**.

Use the SUMIF Function Correctly!



In [Excel](#) 2003, the **SUMIF** function adds all numbers in a range of cells, based on a given criteria.

Sometimes you may need to use only certain values inside a range in a summation, based on a defined condition. Using Microsoft Excel 2003, this can be calculated with the **SUMIF** function.

The **SUMIF** function can also use another range of cells to determine whether or not the condition is met.

The syntax for the **SUMIF** function is:
=SUMIF(range,criteria,sum_range)

range is the range of cells you want to evaluate (apply the *criteria* against).

criteria is the criterion you want to meet to evaluate the number.

sum_range are the numbers you want to actually sum.

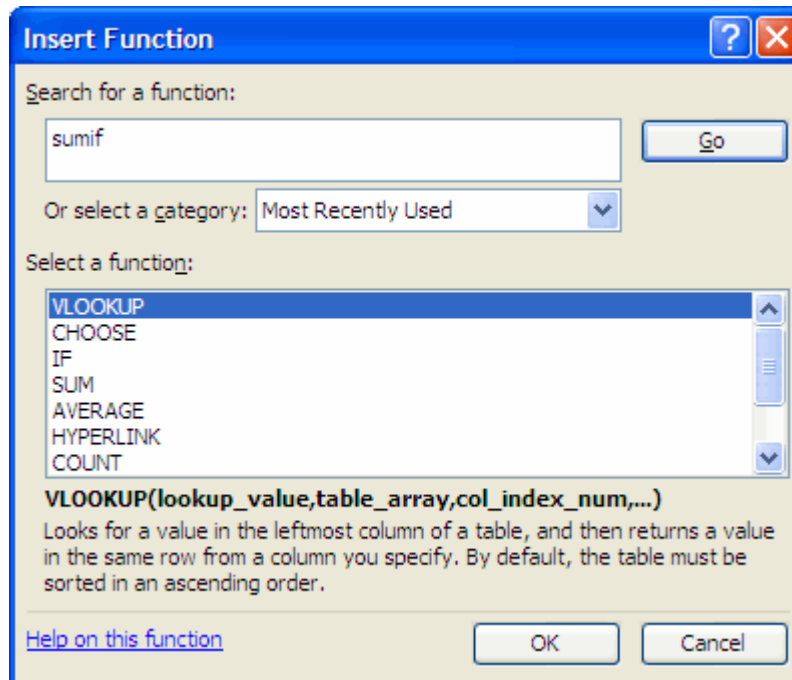
To use the SUMIF function (example)

- Create a worksheet as shown below:

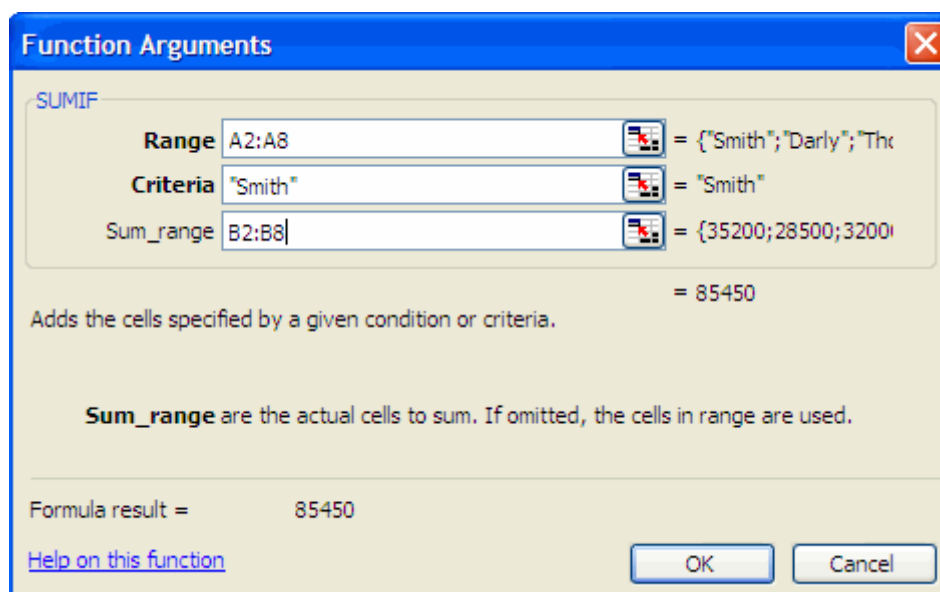
	A	B	C
1	Salespeople	Sales Volume	
2	Smith	35200	
3	Darby	28500	
4	Thomas	32000	
5	Darby	17950	
6	Smith	22100	
7	Thomas	33500	
8	Smith	28150	
9			
10	Smith's total sales:		
11	Total sales > 30000:		
12			
13			

Now, we will use this worksheet to calculate the Smith's total sales.

- Click on the cell B10, the cell that will display the result.
- From the **Insert** menu, click on **Function**.

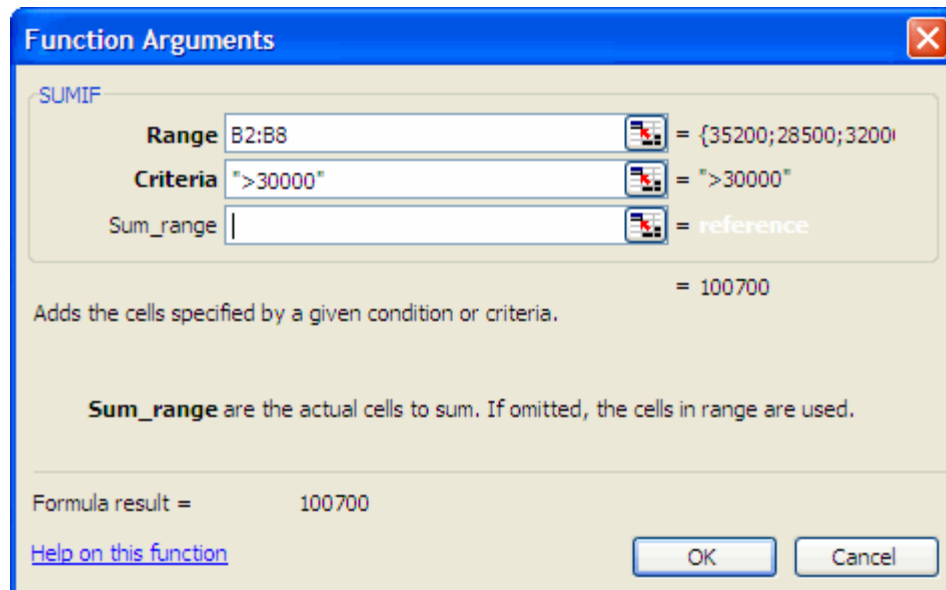


- From the **Insert Function** dialog box displayed, under the **Search for a function:** box, type in sumif and click the **Go** button.
- In the **Select a function:** box, make sure you select the **SUMIF** and click **OK**.
- From the **Function Arguments** dialog box displayed, do the followings:
Range: Select or type in A2:A8 as we want to evaluate within this ranges that contains the name Smith's.
Criteria: Type in Smith.
Sum_range: Select or type in B2: B8 as this is the ranges that we want to add up the total sales by Smith's.



- Click **OK**. This produces the result 85450. That is 35200+22100+28150.

Note: To find the sum of the sales that exceed 30000, use this function:
=SUMIF(B8:B8,>30000)



The image shows the 'Function Arguments' dialog box for the SUMIF function in Microsoft Excel. The dialog has a blue title bar with the text 'Function Arguments' and a close button (X) in the top right corner. Inside the dialog, the function name 'SUMIF' is displayed in the top left. There are three input fields: 'Range' with the value 'B2:B8', 'Criteria' with the value '>30000', and 'Sum_range' which is empty. To the right of each field is a small icon with a red 'X' and a text label: '{35200;28500;3200}' for Range, '>30000' for Criteria, and 'reference' for Sum_range. Below these fields, the text '= 100700' is displayed. A descriptive sentence reads: 'Adds the cells specified by a given condition or criteria.' Below this, a note states: 'Sum_range are the actual cells to sum. If omitted, the cells in range are used.' At the bottom, the 'Formula result =' is shown as '100700'. There is a blue hyperlink 'Help on this function' and two buttons, 'OK' and 'Cancel', at the bottom right.

Function Arguments

SUMIF

Range B2:B8 = {35200;28500;3200}

Criteria ">30000" = ">30000"

Sum_range = reference

= 100700

Adds the cells specified by a given condition or criteria.

Sum_range are the actual cells to sum. If omitted, the cells in range are used.

Formula result = 100700

[Help on this function](#) OK Cancel

This produces the result 100700 (35200+22100+28150).

"Excel Text Concatenation: How to Join Multiple Cells Together?"

Do you know that the **Excel text concatenation** feature can combine various cells together into one single cell in Microsoft Excel 2003?



For example, you may have three columns named, Title, First name and Last name and you maybe asked to combine those three values together. To achieve this capability we use the Text Concatenation Function. This article will look at the process of combining these cells together.

To use the Excel text concatenation feature

- Open Microsoft Excel 2003 and create the worksheet as shown below:

	A	B	C	D	E
1	Title	First Name	Last name	Date of Birth	Result
2	Mr	John	Harvest	10/12/1980	
3	Ms	Lina	Kenn	2/10/1956	
4	Miss	Christina	Wong	21/06/1990	
5					

- Go to cell E1 and type in the word **Result**, then select the cell E2. We are going to combine cell A2, B2, C2, D2 using the text concatenation function which is the ampersand (&) symbol.
- However, we cannot automatically just combine Dates and Numbers with Text cells. We need to use the TEXT function.
- " Let us focus first on adding the Title, First name and Last Name together. First select cell E2 and type the following formula:
= A2 & " " & B2 & " " & C2

Note: There is a space between the double quotes. This is to ensure that the text in the fields do not combine together without spacing.

To add a date to the text

- To add a date to the text we must first convert it to text using the TEXT function. The TEXT function also can be use to format the date in a specific format.
- For example if I wanted a date in the format - 09/12/2008, I would enter the Text function as - TEXT(Cell Address, "dd/mm/yyyy")
- To incorporate the Date into the cell, simply type the formula as follows - = A2 & " " & B2 & " " & C2 & " was born on " & Text(D2,"dddd, dd mmmm yyyy")
- The result will be - Mr John Harvest was born on Sunday, 12 October 1980..

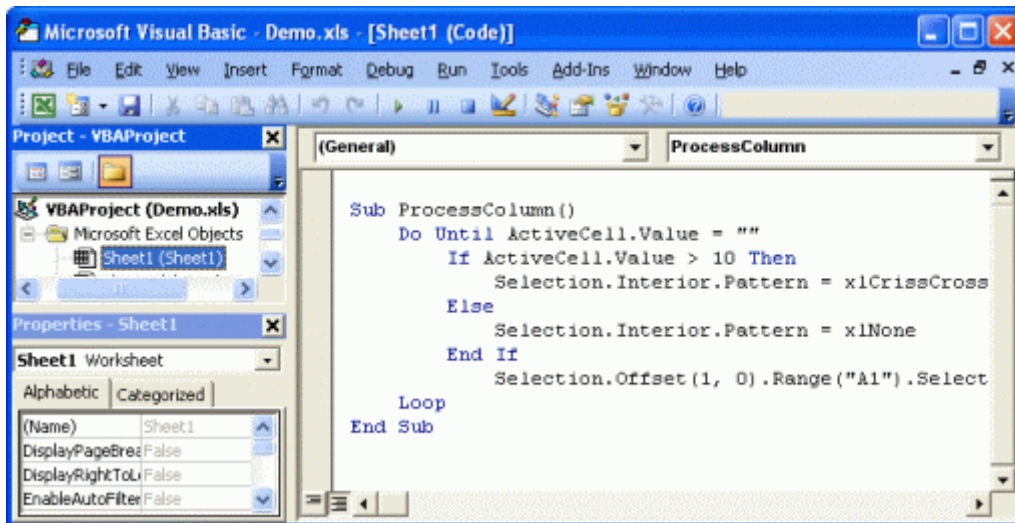
The good part about Excel Text concatenation is that you can use it with Excel Database lists and combine multiple cells together and then use the data in the list with programs like Microsoft Word to do a mail merge.

"An Introduction to Visual Basic Editor in Excel 2003"

Excel 2003 is supplied with the **Visual Basic Editor** for modifying and creating macros and for creating user defined forms.



To start the editor, open an Excel file that contains macros. Then, click the **Tools** menu, point to **Macro** and click on **Visual Basic Editor**.



The Editor contains two important windows: the Project Explorer and the Code window.

1) The Project Explorer

The Project Explorer located at the left hand side of the editor screen. It displays a hierarchical list of the projects and all of the items contained in and referenced by each of the projects. From the Project Explorer, it contains several elements:

- VBAPROJECT - the name of an open workbook.
- **Microsoft Excel Objects:** The worksheets and chartsheets contained in the VBAPROJECT. The event procedures for each sheet and the workbook are stored here.
 - **Forms:** any user defined forms.
 - **Modules:** recorded and written procedures.

2) The Code Window

Use the Code window located at the right hand side of the editor screen enables you to write, display and edit Visual Basic code.

To open a Code window from the Project Explorer window, just double-click on a form or module in the Project Explorer. You can highlight and drag the selected text to a different location in the current Code window or to another Code window.

Here are the components on the code window:

- **Procedures/Events Box**

Lists all the events recognised by [Visual Basic](#) for a form or control displayed in the Object box. When an event is selected, the event procedure associated with that event name is displayed in the Code window.

If (General) is displayed in the Object box, the Procedure box lists any declarations and all of the general procedures that have been created for the form. If editing module code, the Procedure box lists all of the general procedures in the module.

- **Object Box**

Displays the name of the selected object. Click the arrow to the right of the list box to display a list of all objects associated with the form.

- **Split Bar**

Dragging the Split bar down, splits the Code window into two horizontal panes, each of which scrolls separately. View different parts of code at the same time. Dragging the bar to the top or the bottom of the window or double-clicking the bar closes a pane.

- **Margin Indicator Bar**

A grey area on the left side of the Code window where margin indicators are displayed. Margin indicators provide visual cues during code editing.

"Goal Seek: Using Goal Seek with Real-Life Example Demonstrations"

When you know the desired result of a single formula but not the input value the formula needs to determine the result, you can use the **Goal Seek** feature. So, it allows you to find the correct input to produce the desired output.



Goal Seek (Text) - An Example

Say you wish to purchase a car, your current vehicle is worth \$4,000 in part exchange. This part exchange value plus your cash down payment of \$1000 makes up the 20% deposit required towards the cost of the new car. A spreadsheet to show this is illustrated and shows that you can afford a new car costing \$25,000. The only formula in the spreadsheet is in cell E4:

$$=(E2+E3)*5$$

Suppose that you have seen a car costing \$ 30,000 your question would likely be. What will my cash down payment now need to be? You could experiment by entering various values into the Down Payment cell or you could use Goal Seek.

- Make cell **E4** (i.e. the total car price that you can afford) your active cell by clicking on this cell.
- Start **Goal Seek** by opening the **Tools** menu and click **Goal Seek**.
- Enter **30000** in the **To value** text dialog box and then press the **Tab** key to move to the field in the **Goal Seek** dialog box called **By changing cell**:

	A	B	C	D	E
1					\$
2					1,000.00
3					4,000.00
4					25,000.00
5					
6					

Goal Seek
Set cell: E4
To value: 30000
By changing cell: \$E\$2
OK Cancel

- Use the mouse to click on the cell **E2**. This means that when click on the **OK** button, the contents of this cell will change to fit in with our desired result.
- Click **OK**. The **Goal Seek Status** dialog box is displayed and the value of your Down Payment has changed to \$2000. This is the new amount you should have pay to obtain this car.

	A	B	C	D	E
1					\$
2					2,000.00
3					4,000.00
4					30,000.00
5					
6					
7					

Goal Seek Status
Goal Seeking with Cell E4 found a solution.
Target value: 30000
Current value: 30,000.00
OK Cancel Step Pause

- If you click **OK** these changes are accepted or if you click **Cancel** these changes are not accepted.

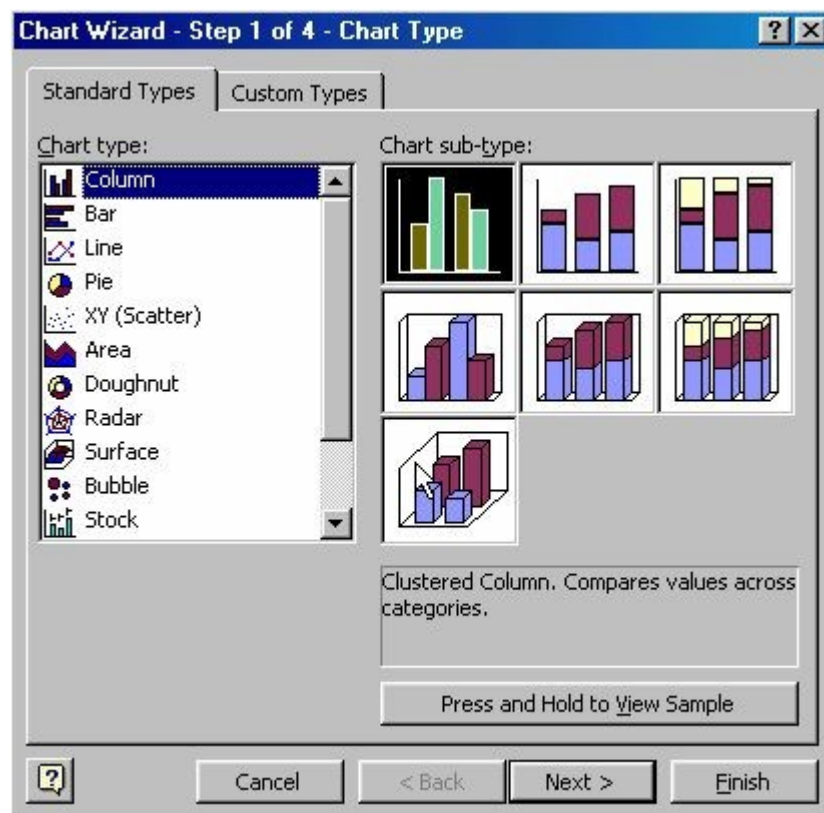
Goal Seek (Graphical) - An Example

If we suppose that you have seen a car costing \$14,000 your question would likely be. What will my cash down payment now need to be?

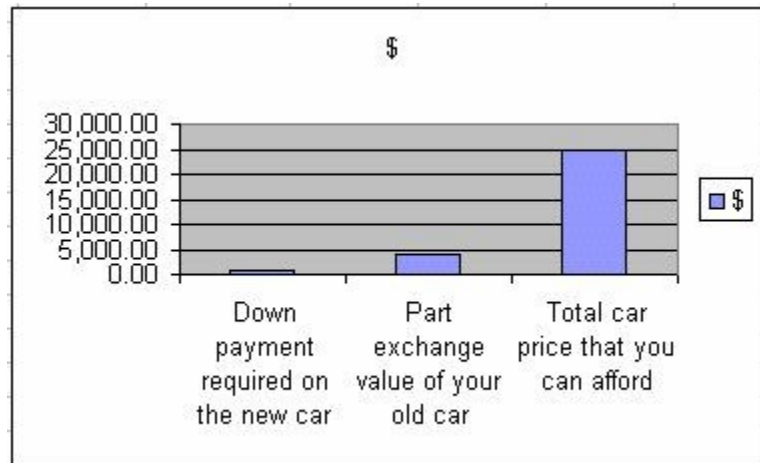
- First select the data as illustrated.

	A	B	C	D	E
1					\$
2	Down payment required on the new car				1,000.00
3	Part exchange value of your old car				4,000.00
4	Total car price that you can afford				25,000.00

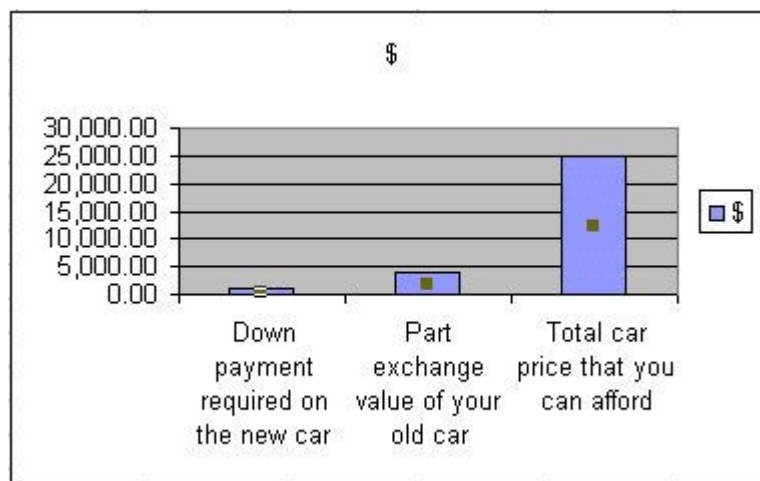
- Click on the **Chart Wizard** icon on the **Standard** toolbar and when the **Chart Wizard** dialog box is displayed, click on the **Finish** button to create a bar chart using default formats.



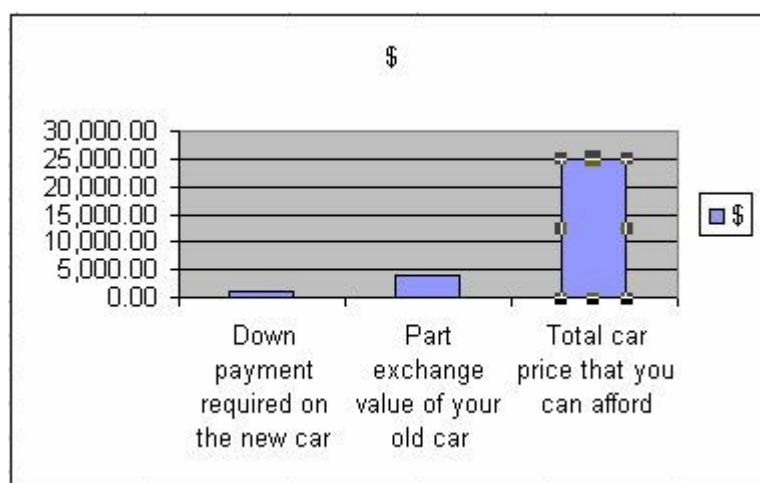
- The bar chart produced should resemble that shown below.



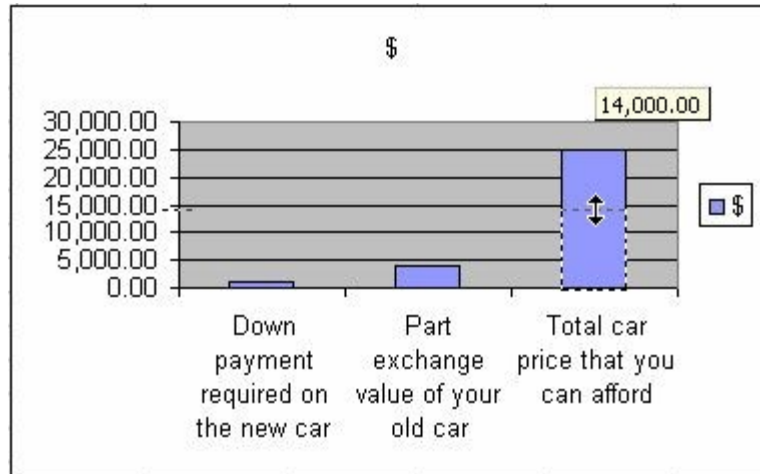
- Click **once** on the column representing the **Total car price that you can afford**. You will see a small rectangular square in the center of each column as illustrated.



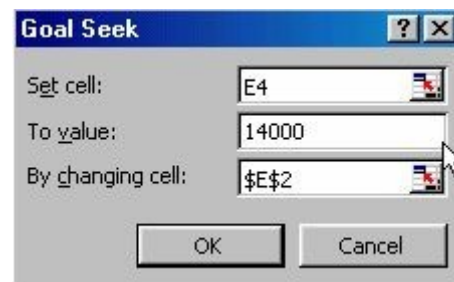
- Click **once** on this column again, and the display will change as illustrated.



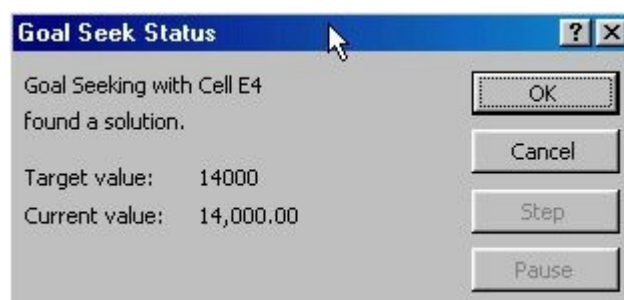
- Move the mouse pointer to the top of this column and then click and drag the column up or down as required. You will see a small rectangular box is displayed, which indicates the value that you have dragged to. In our example, we dragged to \$ 14,000.00 only that release the mouse.



- [The **Goal Seek** dialog box appears ready for you to enter a cell reference into the **By changing cell:** text box.](#)
- [Click on the cell **E2**, to place this value into the **By changing cell:** text box.](#)




- [Click on the **OK** button to display the **Goal Seek Status** dialog box.](#)



- [Click on the **OK** button to accept these changes and exit from the **Goal Seek Status** dialog box.](#)

"Using Scenario Manager with Example Demonstrations"

The **Scenario Manager** is similar to [Goal Seek](#) in [Microsoft Excel](#).

 However it allows you to change multiple cells in order to see changes (not just one as is the case with Goal Seek). One of the advantages of scenarios is that they are kept for later reference and can be printed in summary form.

Scenario Manager - An Example

[Look at the illustration below. We will use it to illustrate the Scenario Manager.](#)

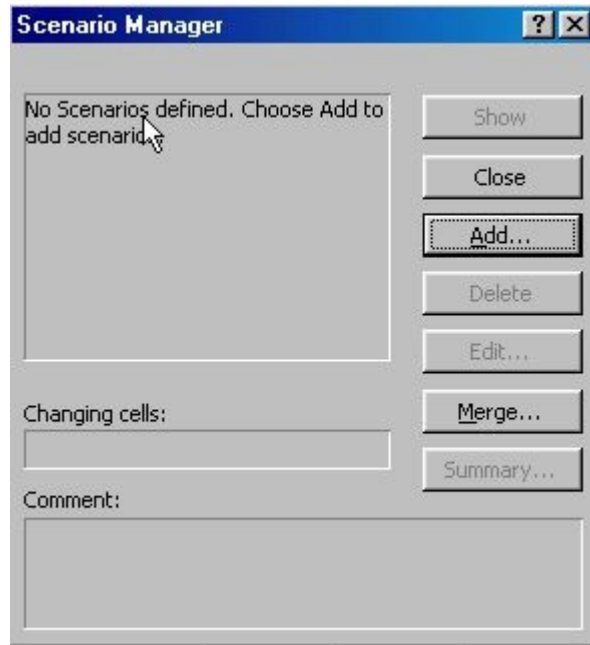
	A	B	C	D	E
1					
2			This year cost (\$)	Expected percentage increase	Additional cost caused by this percentage increase (\$)
3		Rent	30,000	10	3,000
4		Staff	95,000	10	9,500
5		Energy	20,000	20	4,000
6		Other	55,000	5	2,750
7		Totals	200,000		19,250

[It shows a sheet that is calculating yearly payments on specific items this year and details expected percentage increase in these costs. You may be interested in knowing how the figures are effected if we make a range of assumptions about how each item might increase.](#)

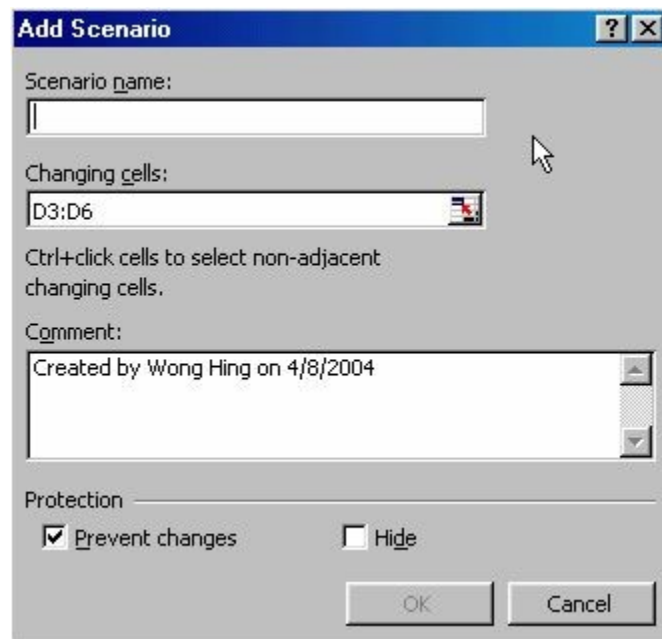
[The cell E3 contain the formula =C3*D3%](#)
[The cell E4 contain the formula =C4*D4%](#)
[The cell E5 contain the formula =C5*D5%](#)
[The cell E6 contain the formula =C6*D6%](#)
[The cell E7 contain the formula =SUM\(E3:E6\)](#)
[The cell C7 contain the formula =SUM\(C3:C6\)](#)

[We are going to create scenarios for the following situations:](#)

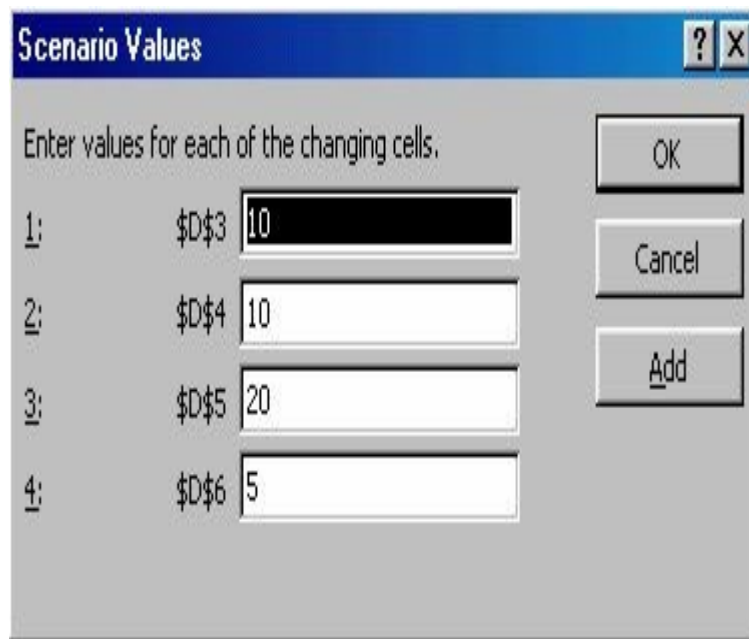
- [Staff Low - 2.5%](#)
 - [Staff Low, Energy High - 2.5%, 35%](#)
- [Once the above data and formulas have been created, select the changing cells, **D3:D6**.](#)
 - [From the **Tools** menu, click **Scenarios**.](#)
- [If no previous scenarios have been created you will see the following dialog box.](#)



- [Click on the **Add** button and the **Add Scenario** dialog box is displayed.](#)



- [Enter a name for the scenario you are about to create. In this case enter the name **Staff Low** into the **Scenario name** text box and then click on the **OK** button. The **Scenario Values** dialog box will be displayed as illustrated below.](#)



The 'Scenario Values' dialog box is shown. It has a title bar with a question mark and a close button. The main area contains the text 'Enter values for each of the changing cells.' followed by four rows of input fields. The first row is labeled '1:' and contains '\$D\$3' and a text box with '10'. The second row is labeled '2:' and contains '\$D\$4' and a text box with '10'. The third row is labeled '3:' and contains '\$D\$5' and a text box with '20'. The fourth row is labeled '4:' and contains '\$D\$6' and a text box with '5'. To the right of these fields are three buttons: 'OK', 'Cancel', and 'Add'.

Label	Cell Reference	Value
1:	\$D\$3	10
2:	\$D\$4	10
3:	\$D\$5	20
4:	\$D\$6	5

- [The percentage rise in staff costs are located in cell D4 and we need to change the contents of this cell. In the dialog box enter a low value, i.e. **2.5** in the text box, next to **\\$D\\$4**.](#)
- [Click on the **OK** button and you will be returned to the main **Scenario Manager** dialog box, as illustrated below.](#)



The 'Scenario Manager' dialog box is shown. It has a title bar with a question mark and a close button. The main area contains a list box labeled 'Scenarios:' with 'Staff Low' selected. To the right of the list box are buttons: 'Show', 'Close', 'Add...', 'Delete', 'Edit...', 'Merge...', and 'Summary...'. Below the list box is a text box labeled 'Changing cells:' containing '\$D\$3:\$D\$6'. At the bottom is a text box labeled 'Comment:' containing 'Created by Wong Hing on 4/8/2004'.

- [Next we will add a second scenario where staff cost increases are low, but energy costs increases are high. Click on the **Add** button and enter the name for the next scenario, in this case **Staff Low Energy High**.](#)
- [Click on the **OK** button, and change the two cells as below. In the \\$D\\$4 text box, enter **2.5**. In the \\$D\\$5 text box, enter **35**.](#)

Scenario Values ? X

Enter values for each of the changing cells.

1:	\$D\$3	10
2:	\$D\$4	2.5
3:	\$D\$5	35
4:	\$D\$6	5

OK Cancel Add

- Click on the **OK** button.
- You will be returned to the main **Scenario Manager** dialog box. You can go on adding different scenarios in the way outlined above. In this case we will content ourselves with just these two scenarios.

To show a scenario

- We have set up two scenarios. To see the effect of one of these scenarios, select the scenarios from the main **Scenario Manager** dialog box.
 - In this case we have selected **Staff Low Energy High**.
 - Click on the **Show** button.

To view an alternative scenario


- In this case select the **Staff Low** scenario from the **Scenario Manager** and click on the **Show** button. The data will change as illustrated below.

	A	B	C	D	E
1					
2			This year cost (RM)	Expected percentage increase	Additional cost caused by this percentage increase (RM)
3		Rent	30,000	10	3,000
4		Staff	95,000	2.5	2,375
5		Energy	20,000	35	7,000
6		Other	55,000	5	2,750
7		Totals	200,000		15,125
8					

- Click on the **Close** button to close the **Scenario Manager** dialog box.

"Excel Solver: Example Demonstration on Using Solver in Excel 2003"

Excel Solver is the most versatile "what if" tool. It can handle many different variables and where possible, Solver will produce the optimum answer.

 **Note:** Solver is an add-ins tool in Microsoft Excel 2003. If you are unable to view the Solver, just go to the **Tools** and click on **Add-Ins**. From the **Add-Ins** dialog box appear, tick on **Solver Add-in** and click **OK**.

Excel Solver Terminology

Target Cell

The cell that will be set to a value, maximum or minimum. Often this cell is where you specify the maximum cost of a project.

Changing Cell

The cells that Solver will change the contents of to achieve the desired objective.

Constraints

Contains the changes that Excel will make.

Excel Solver - An Example

In this example we have a budget to purchase as many new car as possible for the new company car fleet. We need a mix of small, medium and large cars.

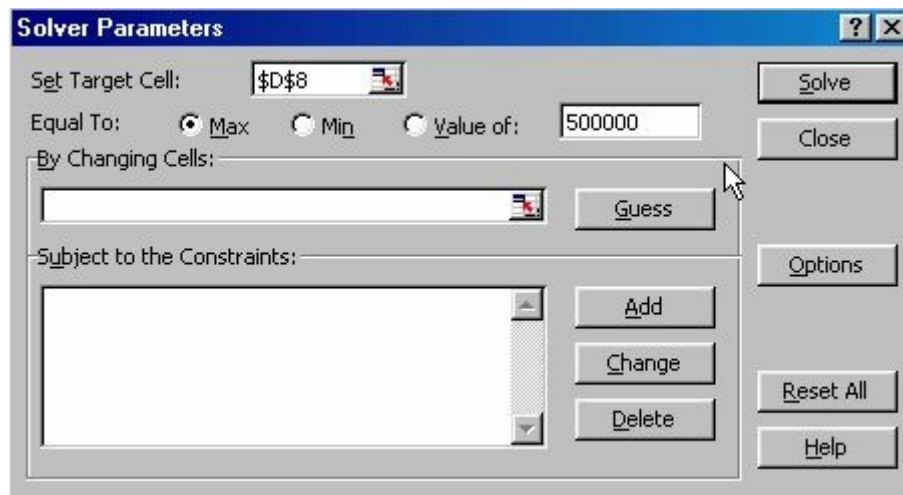
We have a number of constraints however:

- The total budget is limited to \$ 500,000
- We need at least 4 small sized cars
- We need at least 3 medium sized cars
- We need at least 2 large sized cars
- Also if we are going to let the computer calculate a mix of the different number of cars to meet our requirements and budget, then we will have to specify to Excel that buying part of a car is no use, i.e. the numbers of each type of car bought must be whole numbers (integers)!

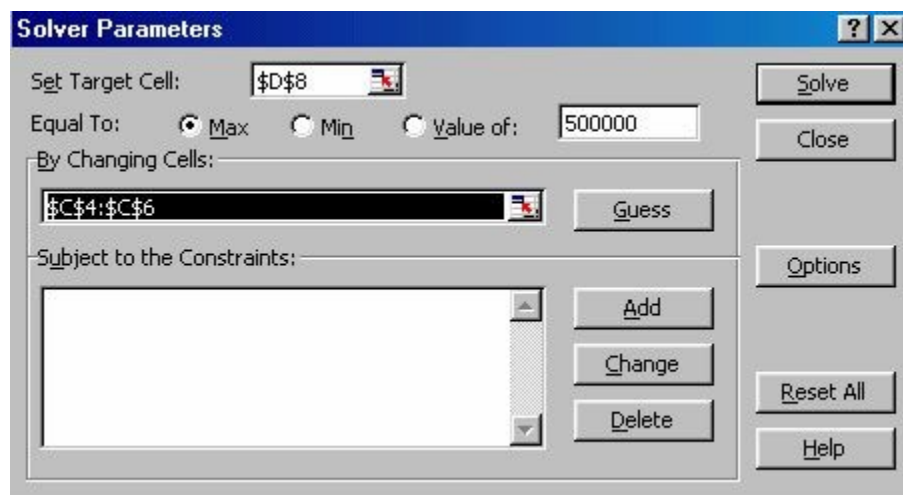
Construct your Spreadsheet and Use the Excel Solver

- We have constructed the following data.
 - Formulas and functions used:
- In cell E4 we have used the formula =B4*C4
- In cell E5 we have used the formula =B5*C5

- [In cell E6 we have used the formula =B6*C6](#)
 - [In cell E8 we have used the function =SUM\(D4:D7\)](#)
- [When you have entered all the data, formulas and functions as outlined above, click on the cell D8.](#)
 - [From the Tools menu, click on Solver...](#)
- [Make sure that the text box, Set Target Cell contains \\$D\\$8. If you selected this cell prior to starting Solver this cell reference should be entered here automatically.](#)
- [Click on the **Value of** button and in the text box to the side of it enter the number 500,000 \(this is setting the maximum size of our budget\). The dialog should appear as illustrated below.](#)

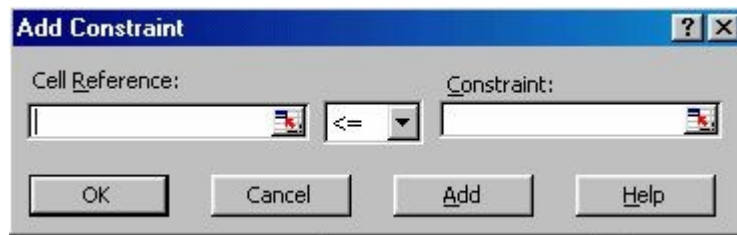


- [Next we need to decide which values need to change in order to fit our requirements. In this case the values to be changed are the numbers of each class of car that we can afford.](#)
 - [Click in the **By Changing Cells** part of the dialog box.](#)
 - [Either enter the information required by typing in \\$C\\$4:\\$C\\$6 OR use the mouse to drag across these cells C4 to C6 and the cell reference will be entered automatically.](#)

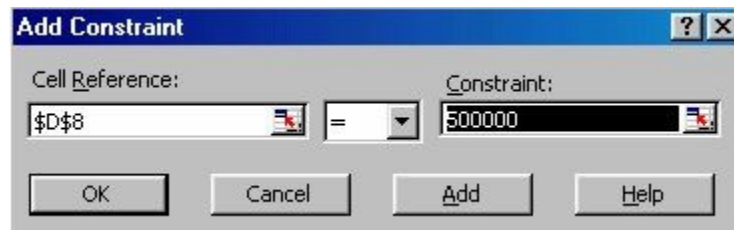


- [Next we need to tell Excel that constraints we have, such as limited budget etc.](#)

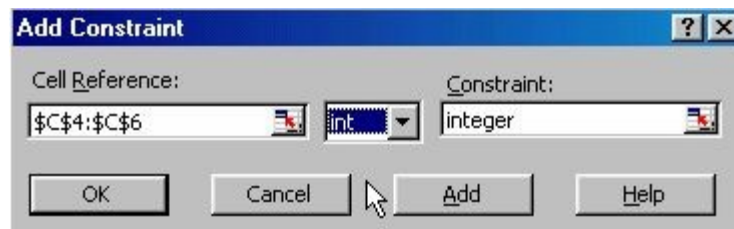
- Click on the **Add** button and you will see the **Add Constraints** dialog box, as illustrated below.



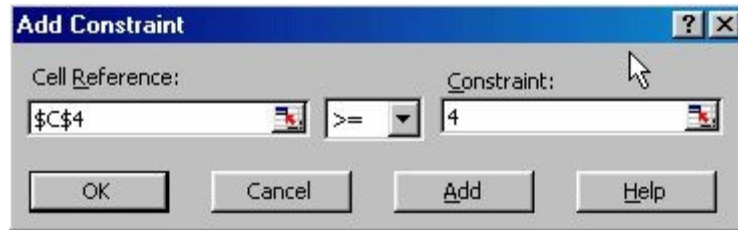
- To enter the restraint that we have a budget limited to \$ 500,000, in the **Cell Reference** text box enter the cell **\$E\$8**.
- Then click on the down arrow in the center part of the dialog box, and select the = symbol.
 - In the **Constraint** part of the dialog box, enter the number 500000.
 - The dialog box will resemble that shown below.



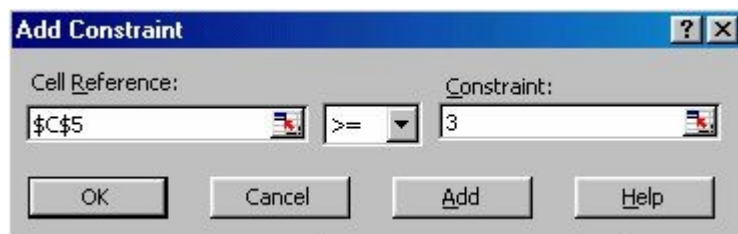
- To force Excel to realize that we cannot buy part of a car just whole numbers of cars we need to add another constraint.
 - Click on the **Add** button (**NOT THE OK BUTTON**).
 - In the **Cell Reference** text box either enter the information **\$C\$4:\$C\$6** OR use the mouse to drag across these cells C4 to C6 and the **Cell Reference** will be entered automatically.
 - In the center part of the dialog box, click on the down arrow and select int which will force Excel to only use integer (i.e. whole) numbers in the selected range. The dialog box will look as below.



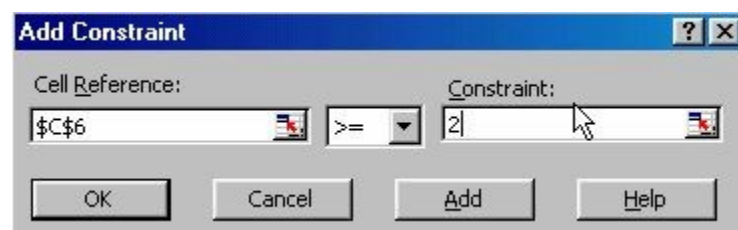
- Next we need to tell Excel that we must have a minimum of four small cars.
 - Click on the **Add** button.
 - In the **Cell Reference** text box either enter the reference **\$C\$4** OR use the mouse to click on the cell **C4** and the cell reference will be entered automatically.
 - Select **>=** from the center part of the dialog box.
 - In the **Constraint** box, enter the value 4. The dialog box will be as illustrated below.



- [Next we need to tell Excel that we must have a minimum of three medium sized cars.](#)
 - [Click on the **Add** button.](#)
 - [In the **Cell Reference** text box either enter the reference **\\$C\\$5** OR use the mouse to click on the cell **C5** and the cell reference will be entered automatically.](#)
 - [Select **>=** from the center part of the dialog box.](#)
- [In the **Constraint** box, enter the value 3. The dialog will be as illustrated below.](#)




- [Next we need to tell Excel that we must have a minimum of two large cars.](#)
 - [Click on the **Add** button.](#)
 - [In the **Cell Reference** text box either enter the reference **\\$C\\$6**. OR use the mouse to click on the cell **C6** and the cell reference will be entered automatically.](#)
 - [Select **>=** from the center part of the dialog box.](#)
- [In the **Constraint** box, enter the value 2. The dialog will be as illustrated below.](#)




- [We are now ready to solve the purchasing problem.](#)
- [Click on the **OK** button and you will see the dialog box below.](#)

Solver Parameters

Set Target Cell: 

Equal To: ☒ Max ☐ Min ☐ Value of:

By Changing Cells: 

Subject to the Constraints:

\$C\$4 >= 4	<input type="button" value="Add"/>
\$C\$4:\$C\$6 = integer	<input type="button" value="Change"/>
\$C\$5 >= 3	<input type="button" value="Delete"/>
\$C\$6 >= 2	
\$D\$8 = 500000	

- Click on the **Solve** button. After a short time you will see the following dialog box.

Solver Results

Solver found a solution. All constraints and optimality conditions are satisfied.

☒ Keep Solver Solution ☐ Restore Original Values

Reports

Answer
Sensitivity
Limits

- Click on the **OK** button to accept the solution.
- The data in your workbook will now be as illustrated below.

	A	B	C	D
1	The New Car Fleet			
2				
3	Class of Car	Cost per Car (RM)	No of car in class	Total price/class (RM)
4	Small	14,000	10	140,000
5	Medium	20,000	6	120,000
6	Large	40,000	6	240,000
7				0
8			Total cost of the car fleet	500,000
9				

I hope that you already see the true value of Excel Solver. It's a good tool if you apply it correctly.

MS Excel Topics: Formulas/Functions (Alphabetical)

[View Formulas/Functions by Category](#)

Alphabetical Listing of Formulas/Functions:

Abs	Exact	Or
ACos	Exp	Percentile
ACosh	Fact	PercentRank
Address	False	Permut
And	FileDateTime (VBA)	Pi
Areas	FileLen (VBA)	Pmt
Asc (VBA)	Find	Power
ASin	Fix (VBA)	PPmt
ASinh	Fixed	Product
ATan	Floor	Proper
ATan2	Forecast	PV
ATanh	Format Dates (VBA)	Quartile
Atn (VBA)	Format Numbers (VBA)	Radians
AveDev	Format Strings (VBA)	Rand
Average	FV	Rank
AverageA	GetAttr (VBA)	Rate
BetaDist	GetPivotData (Ex #1)	Replace
BetaInv	GetPivotData (Ex #2)	Rept
BinomDist	Growth	Right
Case (VBA)	HLookup	Rnd (VBA)
CBool (VBA)	Hour	Roman
CByte (VBA)	Hyperlink	Round
CCur (VBA)	If	RoundDown
CDate (VBA)	Nested Ifs (up to 7)	RoundUp
CDBl (VBA)	Nested Ifs (more than 7)	Row
CDec (VBA)	IF-THEN-ELSE (VBA)	Rows
Ceiling	Index	RTrim (VBA)
Cell	Indirect	Search
Char	Info	Second
ChDir (VBA)	InStr (VBA)	SetAttr (VBA)
ChDrive (VBA)	InStrRev (VBA)	Sgn (VBA)
Choose	Int	Sign
Chr (VBA)	Intercept	Sin
CInt (VBA)	IPmt	Sinh
Clean	Irr	SLn
CLng (VBA)	IsBlank	Small
Code	IsDate (VBA)	Space (VBA)
Column	IsErr	Sqrt
Columns	IsError	StDev
Combin	IsLogical	StDevA
Concatenate	IsNA	StDevP
Concatenate with &	IsNonText	StDevPA
Cos	IsNull (VBA)	Str (VBA)
Cosh	IsNumber	StrConv (VBA)
Count	IsNumeric (VBA)	Substitute
CountA	ISPmt	Subtotal
CountBlank	IsRef	Sum
CountIf	IsText	SumIf
Covar	Large	SumProduct

[CSng](#) (VBA)
[CStr](#) (VBA)
[CurDir](#) (VBA)
[CVar](#) (VBA)
[Date](#)
[Date](#) (VBA)
[DateAdd](#) (VBA)
[DateDif](#)
[DateDiff](#) (VBA)
[DatePart](#) (VBA)
[DateSerial](#) (VBA)
[DateValue](#)
[DAverage](#)
[Day](#)
[Days360](#)
[Db](#)
[DCount](#)
[DCountA](#)
[DDb](#)
[Degrees](#)
[DGet](#)
[Dir](#) (VBA)
[DMax](#)
[DMin](#)
[Dollar](#)
[DProduct](#)
[DStDev](#)
[DStDevP](#)
[DSum](#)
[DVar](#)
[DVarP](#)
[Error.Type](#)
[Even](#)

[LCase](#) (VBA)
[Left](#)
[Len](#)
[Ln](#)
[Log](#)
[Log10](#)
[Lookup](#)
[Lower](#)
[LTrim](#) (VBA)
[Match](#)
[Max](#)
[MaxA](#)
[Mdeterm](#)
[Median](#)
[Mid](#)
[Min](#)
[MinA](#)
[Minute](#)
[Minverse](#)
[MkDir](#) (VBA)
[Mmult](#)
[Mirr](#)
[Mod](#)
[Month](#)
[MonthName](#) (VBA)
[N](#)
[NA](#)
[Not](#)
[Now](#)
[NPer](#)
[Npv](#)
[Odd](#)
[Offset](#)

[SumSq](#)
[SumX2mY2](#)
[SumX2pY2](#)
[SumXmY2](#)
[Switch](#) (VBA)
[Syd](#)
[T](#)
[Tan](#)
[Tanh](#)
[Text](#)
[Time](#)
[TimeSerial](#) (VBA)
[TimeValue](#)
[Today](#)
[Transpose](#)
[Trim](#)
[True](#)
[Trunc](#)
[Type](#)
[UCase](#) (VBA)
[Upper](#)
[Val](#) (VBA)
[Value](#)
[Var](#)
[VarA](#)
[VarP](#)
[VarPA](#)
[Vdb](#)
[VLookup](#)
[Weekday](#)
[WeekdayName](#) (VBA)
[Year](#)

Examples:

Miscellaneous Functions:

[Two-Dimensional Lookup \(Example #1\)](#)

[Two-Dimensional Lookup \(Example #2\)](#)

[Two-Dimensional Lookup \(Example #3\)](#)

[Two-Dimensional Lookup \(Example #4\)](#)

[Test a string for an alphanumeric value](#)

[Convert currency into words](#)

[How to Autonumber in Excel](#)

[Delimit values with Ascii 29 character](#)

[Creating a custom round function](#)

[Creating a custom average function \(that excludes outliers from the calculation\)](#)

http://www.techonthenet.com/excel/formulas/2d_lookup.php

MS Excel Topics: Formulas/Functions (By Category)

[View an Alphabetical Listing of Formulas/Functions](#)

String Functions:

Asc (VBA)	Find	Mid	Substitute
Char	Fixed	Proper	T
Chr (VBA)	Format (VBA)	Replace	Text
Clean	InStr (VBA)	Rept	Trim
Code	InStrRev (VBA)	Right	UCase (VBA)
Concatenate	LCase (VBA)	RTrim (VBA)	Upper
Concatenate with &	Left	Search	Value
CurDir (VBA)	Len	Space (VBA)	
Dollar	Lower	Str (VBA)	
Exact	LTrim (VBA)	StrConv (VBA)	

Numeric / Mathematical Functions:

Abs	CountIf	Minverse	Small
ACos	Degrees	Mmult	Sqrt
ACosh	Even	Mod	Subtotal
ASin	Exp	Odd	Sum
ASinh	Fact	Pi	SumIf
ATan	Fix (VBA)	Power	SumProduct
ATan2	Floor	Product	SumSq
ATanh	Format (VBA)	Radians	SumX2mY2
Atn (VBA)	Int	Rand	SumX2pY2
Average	Large	Rnd (VBA)	SumXmY2
AverageA	Ln	Roman	Tan
Ceiling	Log	Round	Tanh
Combin	Log10	RoundDown	Trunc
Cos	Max	RoundUp	Val (VBA)
Cosh	MaxA	Sgn (VBA)	Var
Count	Mdeterm	Sign	VarA
CountA	Min	Sin	VarP
CountBlank	MinA	Sinh	VarPA

Statistical Functions:

AveDev	Growth	Percentile	StDevP
Average	Intercept	PercentRank	StDevPA
AverageA	Large	Permut	Var
BetaDist	Max	Quartile	VarA
BetaInv	MaxA	Rank	VarP
BinomDist	Median	Small	VarPA
Covar	Min	StDev	
Forecast	MinA	StDevA	

Logical Functions:

And	If	IF-THEN-ELSE (VBA)	True
Case (VBA)	Nested Ifs (up to 7)	Not	
False	Nested Ifs (more than 7)	Or	

Information Functions:

Cell	IsErr	IsNull (VBA)	N
Error.Type	IsError	IsNumber	NA
Info	IsLogical	IsNumeric (VBA)	Type

[IsBlank](#)
[IsDate](#) (VBA)

[IsNA](#)
[IsNonText](#)

[IsRef](#)
[IsText](#)

Date & Time Functions:

[Date](#)
[Date](#) (VBA)
[DateAdd](#) (VBA)
[DateDif](#)
[DateDiff](#) (VBA)
[DatePart](#) (VBA)

[DateSerial](#) (VBA)
[DateValue](#)
[Day](#)
[Days360](#)
[Format](#) (VBA)
[Hour](#)

[Minute](#)
[Month](#)
[MonthName](#) (VBA)
[Now](#)
[Second](#)
[Time](#)

[TimeSerial](#) (VBA)
[TimeValue](#)
[Today](#)
[Weekday](#)
[WeekdayName](#) (VBA)
[Year](#)

Database Functions:

[DAverage](#)
[DCount](#)
[DCountA](#)

[DGet](#)
[DMax](#)
[DMin](#)

[DProduct](#)
[DStDev](#)
[DStDevP](#)

[DSum](#)
[DVar](#)
[DVarP](#)

Lookup / Reference Functions:

[Address](#)
[Areas](#)
[Choose](#)
[Column](#)
[Columns](#)

[GetPivotData](#) (Ex #1)
[GetPivotData](#) (Ex #2)
[HLookup](#)
[Hyperlink](#)
[Index](#)

[Indirect](#)
[Lookup](#)
[Match](#)
[Offset](#)
[Row](#)

[Rows](#)
[Switch](#) (VBA)
[Transpose](#)
[VLookup](#)

More Lookup Functions:

[Two-Dimensional Lookup \(Example #1\)](#)
[Two-Dimensional Lookup \(Example #2\)](#)
[Two-Dimensional Lookup \(Example #3\)](#)
[Two-Dimensional Lookup \(Example #4\)](#)

Data Type Conversion Functions:

[CBool](#) (VBA)
[CByte](#) (VBA)
[CCur](#) (VBA)

[CDate](#) (VBA)
[CDBl](#) (VBA)
[CDec](#) (VBA)

[CInt](#) (VBA)
[CLng](#) (VBA)
[CSng](#) (VBA)

[CStr](#) (VBA)
[CVar](#) (VBA)

Financial Functions:

[Db](#)
[DDB](#)
[FV](#)
[IPmt](#)

[Irr](#)
[ISPmt](#)
[Mirr](#)
[NPer](#)

[Npv](#)
[Pmt](#)
[PPmt](#)
[PV](#)

[Rate](#)
[SLn](#)
[Syd](#)
[Vdb](#)

File/Directory Functions:

[ChDir](#) (VBA)
[ChDrive](#) (VBA)

[Dir](#) (VBA)
[FileDateTime](#) (VBA)

[FileLen](#) (VBA)
[GetAttr](#) (VBA)

[MkDir](#) (VBA)
[SetAttr](#) (VBA)

Miscellaneous Functions:

[Test a string for an alphanumeric value](#)
[Convert currency into words](#)
[How to Autonumber in Excel](#)
[Delimit values with Ascii 29 character](#)
[Creating a custom round function](#)
[Creating a custom average function \(that excludes outliers from the calculation\)](#)