

# IT Skills - Excel 2

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# 1. AutoCalculate - Notes

This chapter covers the following topics:

- About AutoCalculate
- Choosing the AutoCalculate Function
- Using AutoCalculate

## About AutoCalculate

The **AutoCalculate** feature provides a quick way of checking the result of a calculation without entering a formula. AutoCalculate can be used with the following functions:

- **Average** — finds the average of the numbers in the selected range.
- **Count** — counts how many cells in the selected range contain any sort of value, either text or numbers.
- **Count Nums** — counts how many cells in the selected range contain numbers.
- **Max** — finds the largest value in the selected range.
- **Min** — finds the smallest value in the selected range.
- **Sum** — adds together the numbers in the selected range.

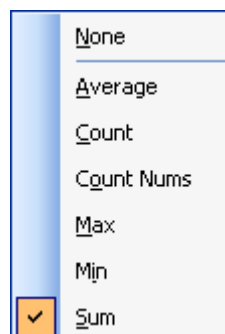
### Important Point

- You may be familiar with the **Count** option provided by the AutoSum button. Rather confusingly, the **Count** option provided by the AutoSum button is equivalent to the **Count Nums** option in the AutoCalculate feature.

## Choosing the AutoCalculate Function

To choose the AutoCalculate function:

- Right-click the Status bar to open the AutoCalculate menu.
- Choose the function you want.

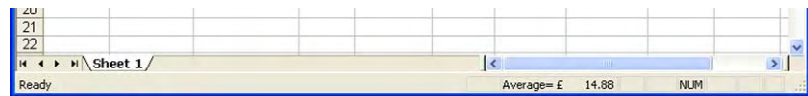


## Using AutoCalculate

AutoCalculate is active whenever you have more than one cell selected.

### To use AutoCalculate:

- Make sure the correct AutoCalculate function is chosen.
- Select the cells that you want AutoCalculate to work on.
- Read the result in the Status bar at the bottom of the Excel window.



The AutoCalculate result

### Important Point

- Excel automatically shows the result of the auto-calculation in the Status bar — it does not enter the result anywhere in the worksheet.

## 2. Introduction to Functions - Notes

This chapter covers the following topics:

- Functions and Arguments
- Arguments
- Nesting Functions
- AutoSum
- Inserting Functions
- Displaying the Insert Function Dialog Box
- Using the Insert Function Dialog Box
- The Function Arguments Dialog Box
- Entering Arguments in the Function Arguments Dialog Box

### Functions and Arguments

You will have already used functions, even if you don't understand the terminology! A **function** is a name given to a predecided way of doing a calculation.

- **Squared** is a function — for example  $3^2$  means  $3 \times 3$ ,  $15^2$  means  $15 \times 15$ .
- **Average** is a function — it means find the average value of a set of numbers.
- **Cos( $\theta$ )** is a function — it means find the cosine of the angle  $\theta$ .

## Arguments

Some functions need one or more values to work. For example, if you want to work out the product of two numbers, you need two numbers to multiply together! These values are called **arguments** and in Excel are written inside brackets.

- For example:

**=PRODUCT(6,9)** = 6×9, which equals 54

**=PRODUCT(C1,B4)** = product of cells **C1** and **B4**

- A few functions don't need any arguments at all in which case the brackets are empty. For example:

**=TODAY()** is a function — it means today's date.

- Some functions have just one argument. For example:

**=SQRT(36)** = square root of 36, which equals 6.

- Some functions have an exact number of arguments. For example:

**=PMT(rate,nper,pv,fv,type)** is a function for working out loan payments

- Some functions can have any number of arguments. For example:

**=MAX(1,2,4,5,7,0,3,6)** = find the maximum value

**=MAX(C1:B4)** = find the maximum value in the cell range **C1** to **B4**

- When you write functions, don't forget the equals sign to let Excel know that you are entering a formula.

## Nesting Functions

Nesting functions means having functions inside functions.

- For example, the square root of the sum of three numbers would be:

**=SQRT(SUM(19,12,5))** which is **SQRT(36)**, or 6

- In practical terms it is likely that you would have a range of cells included:

**=SQRT(SUM(B9:B11))**

- A most important consideration is to get the brackets in the right place!

## AutoSum



You should already be familiar with AutoSum and the AutoSum button. What AutoSum does is to automatically insert and calculate a few of the most basic functions for you.

**=SUM(number1, number2, etc...)**

**=AVG(number1, number2, etc...)**

**=COUNT(number1, number2, etc...)**

**=MAX(number1, number2, etc...)**

**=MIN(number1, number2, etc...)**

### Important Point

- These functions are not covered further in this chapter.

## Inserting Functions

There are three ways of inserting functions:

- Use toolbar buttons — you may already have used the AutoSum button to insert the SUM function; only a very few functions are available through toolbar buttons.
- Type the function name and arguments in a formula — you may already have done this with SUM function; typing the function name can be slow, and with over 200 functions to select from, it can be difficult to remember the name of the one you want.
- Use the Insert Function and Function Arguments dialog boxes — these dialog boxes help you find the right function for the task in hand, and help you enter the arguments for complex functions in the correct order.

## Displaying the Insert Function Dialog Box

As there are many functions in Excel, it would be difficult to remember them all accurately. The Insert Function dialog box helps you to find the function you want.

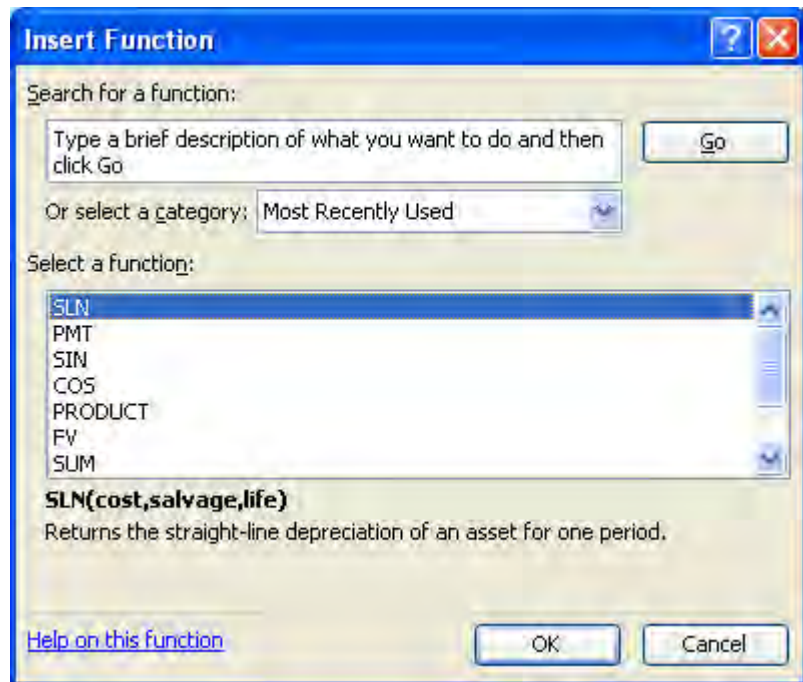
To display the Insert Function dialog box:



- First make sure that you have selected the cell for the function.
- Open the AutoSum button list and select **More Functions**, or click the Insert Function button on the Formula bar, or choose the **Insert | Function** command.

## Using the Insert Function Dialog Box

The Insert Function dialog box has various options to help you find a function.



**To find a function in a particular category:**

- Open the **Or select a category** list box and select a category.

**To search for a function:**

- In the **Search for a function** box, type keywords related to the function you are looking for and click **Go** — Excel will suggest a list of suitable functions.

**To get help on a function:**

- In the **Select a function** list, select the function on which you want help and then click the **Help on this function** link.

**To insert a function:**

- In the **Select a function** list, select the function that you want to insert.
- Click **OK**, or press **[Enter]**.

**Important Point**

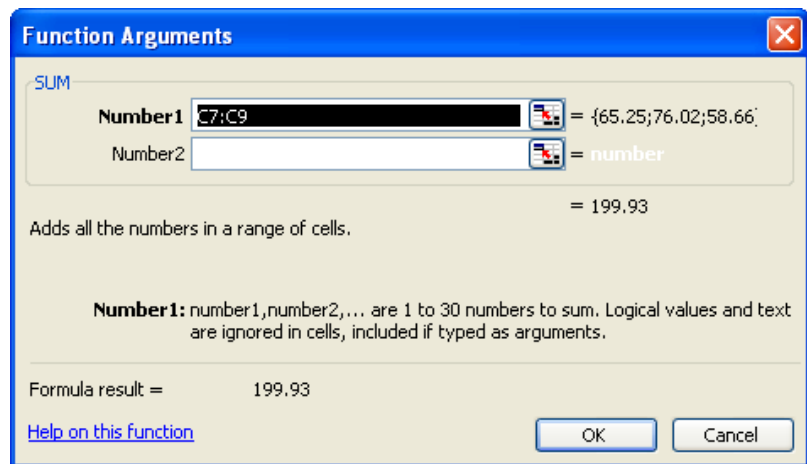
- When you use the Insert Function dialog box to insert a function which requires one or more arguments, Excel displays the Function Arguments dialog box.

## The Function Arguments Dialog Box

When you use the Insert Function dialog box to insert a function which requires one or more arguments, the Function Arguments dialog box is automatically displayed.

The Function Arguments dialog box has several uses:

- It tells you what the arguments are for your selected function.
- It provides an easy way of entering the arguments, either by typing the cell references, or selecting them from the worksheet.
- Once you have selected the arguments it tells you what the result of the function will be.
- It provides simple information on what the function does, and provides a link to more detailed help.



### Useful Tip



- You can also display the Function Arguments dialog box by selecting a cell that contains a function and then clicking the Insert Function button in the Formula bar.

## Entering Arguments in the Function Arguments Dialog Box

To enter arguments in the Function Arguments dialog box:

- Just type what you want in the appropriate argument box.
- or:
- Click in the worksheet, then select the required cell or cell range using the mouse, or the **←→↓↑** keys and **[Shift]+←→↓↑** keys.
- or:
- If the dialog box is hiding the cells you want to select, collapse the dialog box and select the required cell or cell range as above.

### To collapse the dialog box and select cells:



- Click the Collapse Dialog button at the end of the argument box to reduce its size.

- Select the required cell or cell range.



- Click the Expand Dialog button at the end of the argument box or press **[Enter]** or **[Esc]** to return to the dialog box.

## 3. Financial Functions - Notes

This chapter covers the following topics:

- About Financial Functions
- Arguments
- Example Financial Functions
- Warning About Positive and Negative Values

### About Financial Functions

Financial functions are often used to calculate loans and savings, interest rates and payments and depreciation of assets.

### Arguments

There are several arguments that are used in many of the financial functions — some are listed below.

- **rate** — the interest rate per period.
- **per** — the specified period.
- **nper** — the number of periods.
- **pv** — the present value.
- **fv** — the future value.
- **pmt** — the payment made each period.
- **type** — 0 or 1 to note whether a payment is paid at the beginning or end of a period.

#### Important Point

- You have to be careful when dealing with rates and periods. If the period is months, i.e. monthly payments, the interest rate has to be given as a monthly interest rate.

## Example Financial Functions

Examples of financial functions that you will use in this chapter are:

- **FV(rate,nper,pmt,[pv],[type])** — calculates the future value of an investment.
- **PMT(rate,per,nper,[fv],[type])** — calculates the payments on a loan.
- **RATE(nper,pmt,pv,[fv],[type])** — calculates the interest rate.

### Important Point

- Arguments shown in square brackets are optional.

## Warning About Positive and Negative Values

Financial functions often produce strange results if you don't get the positive and negative values right. Try to stick to a rule, e.g. everything that is paid out by you is a negative value. If you are calculating a savings plan and you pay out £100 per month, use the value -£100. If you have already put £5000 into a plan then the present value is -£5000 as it is your money that has gone out.

### Useful Tip

- Always check to see that you are getting a reasonable result from your calculations. If not, check the positive and negative values.

## 4. Conditional Functions - Notes

This chapter covers the following topics:

- The IF Function
- Comparison Operators
- IFs and Text
- Nested Functions with IF

### The IF Function

Sometimes you may wish to assign a value to a cell which is dependent on the value in another cell. This can be done using the IF function.

- For example:

If the value in cell C9=0, then C10=B4\*B5 otherwise C10=B4\*A5

- This can be translated into an Excel formula. Assuming that cell **C10** is selected so that the formula and result are placed in **C10**, the formula is:

**IF(C9=0,B4\*B5,B4\*A5)**

- The IF function allows you to say, “if cell X fulfils these conditions do this, otherwise do that”. It has a definite form:

**=IF(Logical\_test, Value\_if\_true, Value\_if\_false)**

### Comparison Operators

Comparison operators are used in the IF function to compare two values. They are described in the following table.

| Operator | Description                                        |
|----------|----------------------------------------------------|
| =        | Equals                                             |
| >        | Is greater than                                    |
| <        | Is less than                                       |
| >=       | Is greater than or equal to                        |
| <=       | Is less than or equal to                           |
| <>       | Does not equal (i.e. is greater than or less than) |

- For example, **A>=B** means, “A is greater than or equal to B”.

## IFs and Text

You can also use a conditional function to give a text answer. However, beware of placing a text result in a cell, which is used in another formula such as SUM. To be safe, text results should be enclosed in speech marks.

## Nested Functions with IF

It is possible to nest an IF function, or any other function, within an IF function.

- For example: If **B5** is bigger than **B6**, calculate the sum of the range of cells **C1:C10**, otherwise calculate the square root of **D7** would be:

**=IF(B5>B6,SUM(C1:C10),SQRT(D7))**

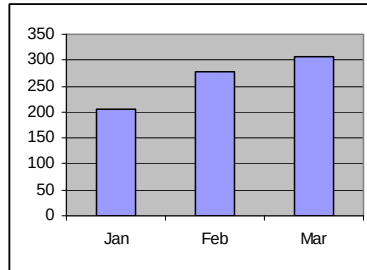
## 5. Introduction to Charts - Notes

This chapter covers the following topics:

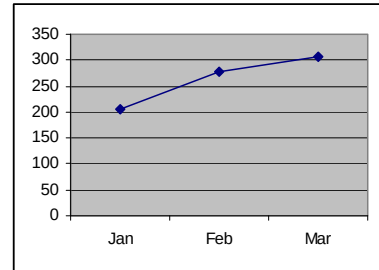
- Chart Types
- 2-D and 3-D Charts
- Chart Components
- Colours

## Chart Types

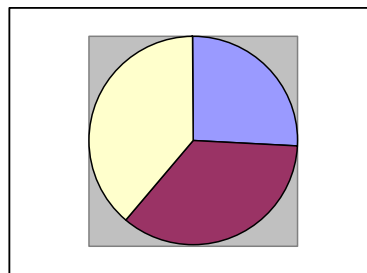
A chart is a graphical representation of figures in a worksheet. It is often far quicker and easier to read and understand a chart than a group of figures. There are several well-known types of chart:



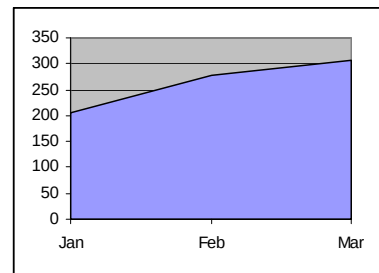
Column chart



Line chart



Pie chart



Area chart

- A list of all charts available in Microsoft Excel, together with their corresponding toolbar buttons is shown below:



Area Chart



3-D Area Chart



3-D Surface Chart



Bar Chart



3-D Bar Chart



Radar Chart



Column Chart



3-D Column Chart



Bubble Chart



Line Chart



3-D Line Chart



Scatter Chart



Pie Chart



3-D Pie Chart



Doughnut Chart



3-D Cylinder Chart



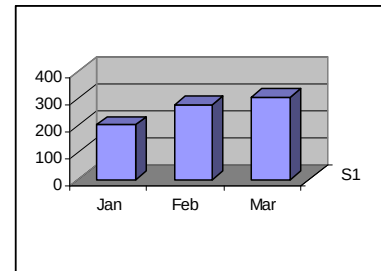
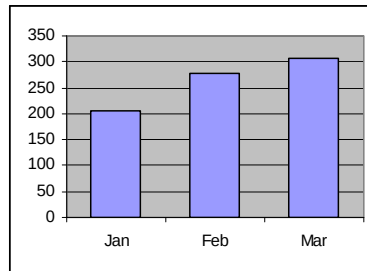
3-D Cone Chart



3-D Pyramid Chart

## 2-D and 3-D Charts

As you can see from the list of chart types, many charts can be displayed as 2-D (2 dimensional) or 3-D (3 dimensional) charts. Although 3-D charts often look more impressive, it is sometimes simpler and clearer to use a 2-D chart.



## Chart Components

It would be useful to read through the terminology used for chart components as they are referred to in later chapters.

### Source Data

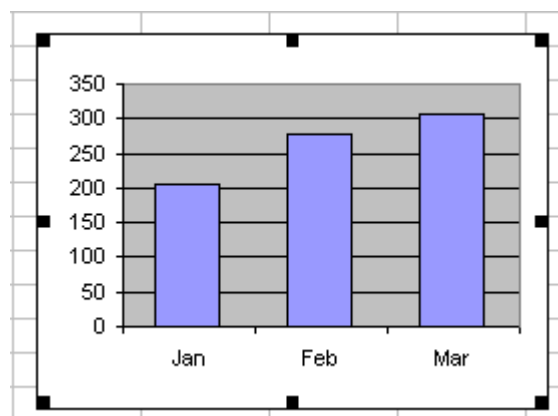
- The source data is the table of figures used to create a chart. In the example shown in this chapter the following simple table has been used:

|    | A | B | C   | D   | E |
|----|---|---|-----|-----|---|
| 1  |   |   |     |     |   |
| 2  |   |   |     |     |   |
| 3  |   |   |     |     |   |
| 4  |   |   |     |     |   |
| 5  |   |   |     |     |   |
| 6  |   |   |     |     |   |
| 7  |   |   | Jan | 204 |   |
| 8  |   |   | Feb | 278 |   |
| 9  |   |   | Mar | 306 |   |
| 10 |   |   |     |     |   |

- In Microsoft Excel the range of data is often referred to; in this case **C7:D9**.

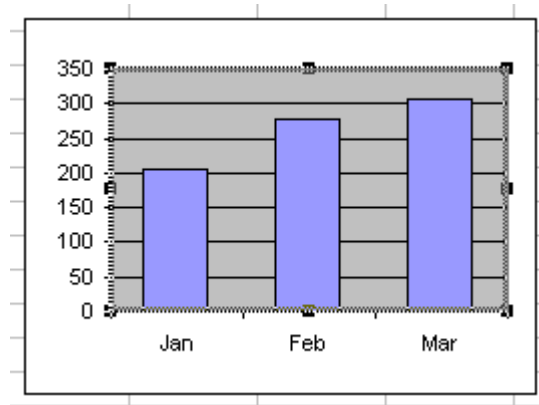
### Chart Area

- The chart area is the whole area of the chart — the **frame handles** are displayed.



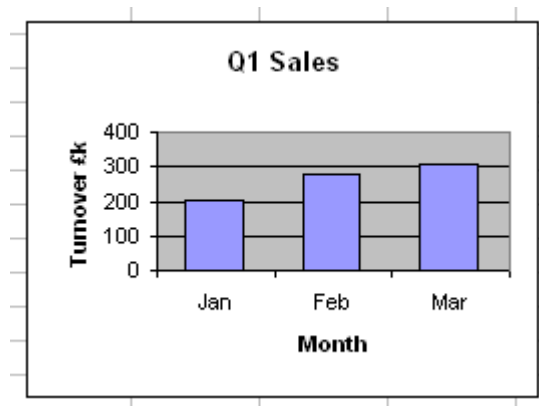
## Plot Area

- The plot area is the area where the diagram is drawn.



## Titles

- Titles are the names given to the chart as a whole and to each individual axis. You can see that they have been added in the next picture.

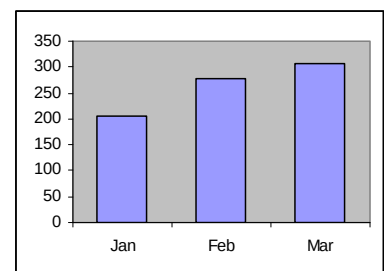
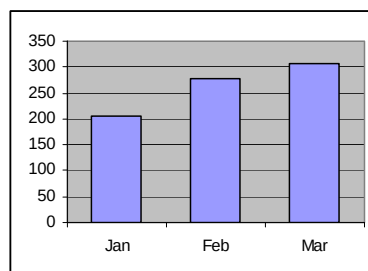


## Category and Values Axes

- The x-axis is referred to as the **category axis** — Jan, Feb, Mar in the previous picture. The y-axis is referred to as the **value axis** — 0, 100, 200, etc., in the previous picture.

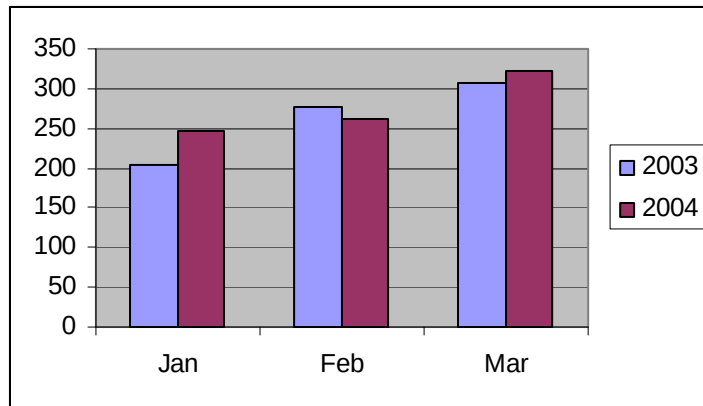
## Gridlines

- Gridlines are the lines shown to help you read values across the plot area. Compare the two pictures with and without gridlines.



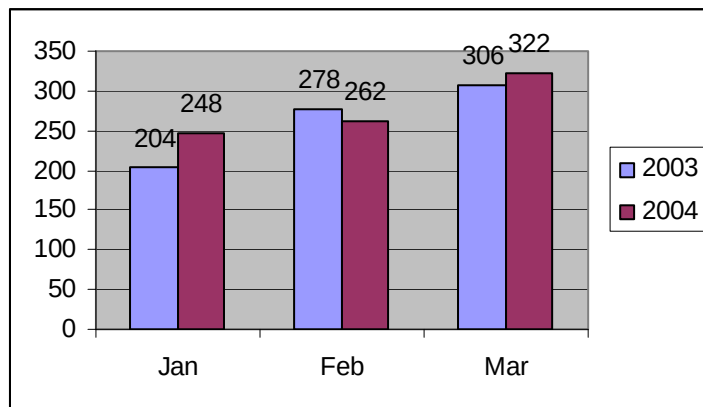
## Legend

- The legend is the key to the different bars and lines plotted. A different chart is shown to illustrate this.



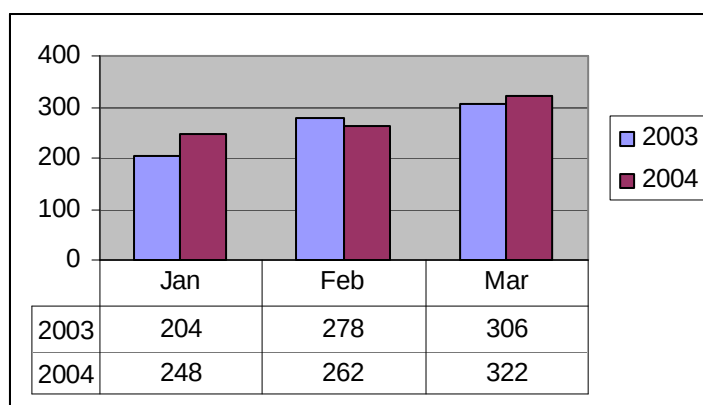
## Data Labels

- Data labels can be added for clarity on or near to plotted lines and bars. This is useful if you want to be able to see the exact values on the chart.



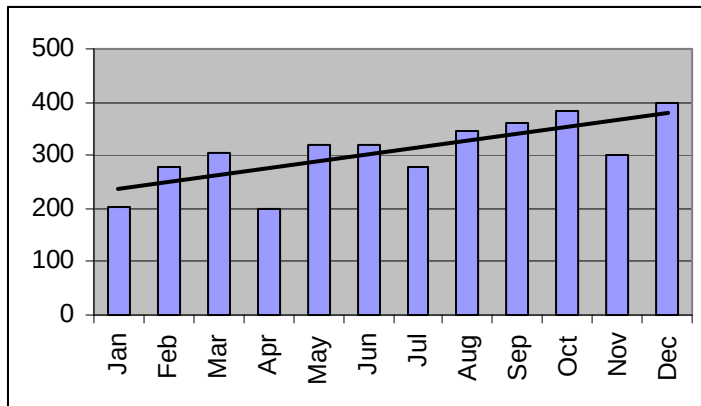
## Data Tables

- Data tables allow you to show the actual data used as part of the chart. These are very useful if you are going to copy the chart into another document.



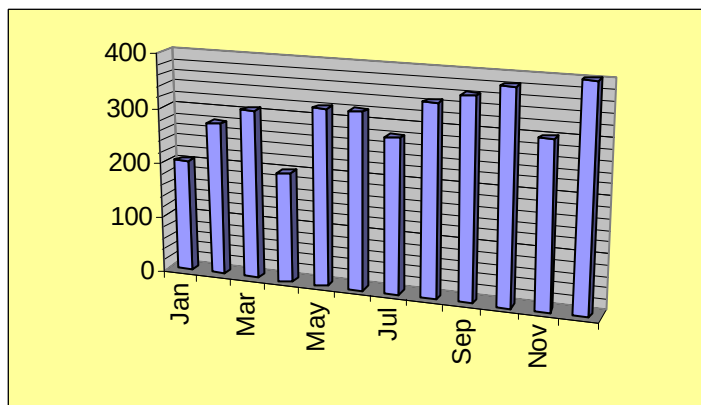
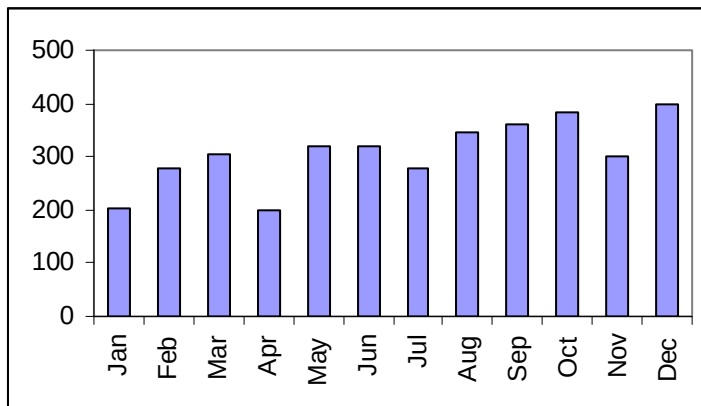
## Trendlines

- Trendlines are a feature that can look for a trend in the chart and add a line for you to see.



## Colours

You can change the colours used in your charts for virtually all components. Sometimes it is easier to see and understand charts with no background colours and more or fewer gridlines. Often the best look for a chart will depend on how it is presented — on-screen, printed in colour, or in black and white etc. A chart printed in black and white only can look very messy if it was formatted using a variety of colours, but formatted carefully, your charts can be made to look very professional.



## 6. Using the Chart Wizard - Notes

This chapter covers the following topics:

- Creating a Chart Using the Chart Wizard

### Creating a Chart Using the Chart Wizard

To create a chart using the Chart Wizard:



- In the worksheet, select the data for the chart.
- Choose the **Insert | Chart** command, or click the Chart Wizard button.
- Work through the four stages of the Chart Wizard — use the **Back** and **Next** buttons to move backwards and forwards through the stages.

#### The Four Steps of the Chart Wizard

- **Chart Type** — Excel offers many chart types and sub-types, including bar, line and 3-D charts.
- **Chart Source Data** — the data range; for simple charts, it's easiest to do this before starting the Chart Wizard.
- **Chart Options** — these are various features that affect the appearance of the chart, such as **titles**, **axes**, **gridlines**, and **legends**.
- **Chart Location**, which can be a new separate sheet or an object on the current worksheet.

## 7. Creating Charts of Different Types - Notes

This chapter covers the following topics:

- Creating Charts Using the Default Chart Type
- Using the Chart Toolbar
- Changing the Chart Type
- Data Series by Row or Column

### Creating Charts Using the Default Chart Type

To create a simple chart using the default chart type:

- Select the cells you want to chart.
- Press the **[F11]** key.

#### Important Point

- The chart will be inserted in the workbook as a new chart sheet. You can edit the chart to change its appearance. If you want more control over the appearance of your chart without having to edit it afterwards, you should use the Chart Wizard.

### Using the Chart Toolbar

If you want to create or change a chart, you can use the Chart toolbar.

To display the Chart toolbar:

- Right-click anywhere on the current toolbar and choose **Chart**. The Chart toolbar will be displayed — it may be docked along one of the edges of the program window, or floating. If you haven't created a chart yet, most of the buttons won't be available.



To create a new chart using the Chart toolbar:

- Make sure the Chart toolbar is displayed.
- Select the data you want to chart.
- Open the Chart Type list box and select your chart type.

#### Important Point

- The chart is inserted in the current worksheet.



## Changing the Chart Type

To change the chart type using the **Chart toolbar**:

- Make sure that the chart you want to change is selected — click on the chart somewhere near the edge of it.
- In the Chart toolbar, open the Chart Type list box and select a new chart type.

To change the chart type using the **Chart menu**:

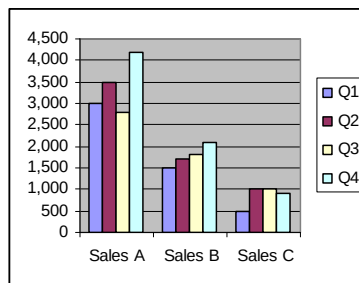
- Make sure that the chart you want to change is selected — click on the chart somewhere near the edge of it.
- Choose the **Chart | Chart Type** command — the Chart Type dialog box is displayed.
- Select one of the Standard Types or Custom Types.
- Click **OK**.

## Data Series by Row or Column

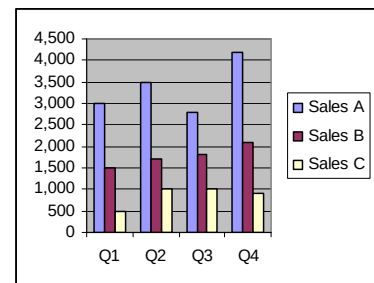
An important choice is whether to show your data series by row or by column. The best way to explain is to look at an example. Consider the following data series:

| Sales   | Q1    | Q2    | Q3    | Q4    |
|---------|-------|-------|-------|-------|
| Sales A | 3,000 | 3,500 | 2,800 | 4,200 |
| Sales B | 1,500 | 1,700 | 1,800 | 2,100 |
| Sales C | 500   | 1,000 | 1,000 | 900   |

- There are two ways of displaying the data in a chart:



By Column



By Row

- In this example, viewing the data by column compares the sales of each product by the quarterly sales columns. Viewing the data by row compares the sales each quarter for each of the product rows.

### **To view the data series by column:**



- In the Chart toolbar, click the By Column button.

### **To view the data series by row:**



- In the Chart toolbar, click the By Row button.

### **Important Point**

- Swapping between by column and by row can produce unexpected results, but it is easy to swap back if you don't like what you see.

## 8. Resizing and Moving Charts and Components - Notes

This chapter covers the following topics:

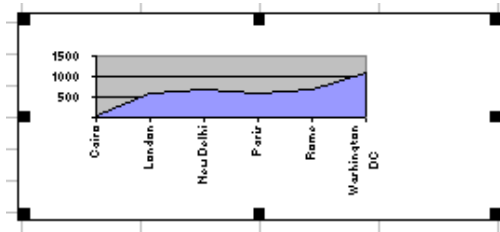
- Selecting a Chart for Moving or Resizing
- Resizing Charts
- Moving and Resizing Chart Components
- Moving Charts

### Selecting a Chart for Moving or Resizing

To select the chart to be resized or moved:



- Click the Chart Area to select the chart — you will see **frame handles** at the corners and middles of the selected chart.



### Resizing Charts

To resize a chart:

- Click the Chart Area to select the chart — you will see **frame handles** at the corners and middles of the selected chart.
- Drag any of the frame handles in or out.

### Moving and Resizing Chart Components

The Plot Area and Legend can be moved around and resized within the overall size of the Chart Area.

To move or resize a chart component:

- Click the component to be moved or resized to select it and then drag it to its new position or use the frame handles to resize it.

## Moving Charts

Charts can be moved within the same worksheet, to another worksheet in the same workbook, or in a different workbook, or to another application altogether.

### To move a chart in the same worksheet:

- Point to the Chart Area, not on a component of the chart, hold down the left-hand mouse button and drag the chart to its new position.

### To move a chart to a new location:

- If you are moving the chart to another worksheet, workbook or applications, press **[Ctrl]+X** to cut the chart, or **[Ctrl]+C** to copy it.
- Click the new location for the chart — in a different worksheet, workbook or other document, and press **[Ctrl]+V** to paste the chart.

### Important Points

- When you move a chart to another worksheet or workbook, the chart still refers to the original data values — if you change the values, the chart will change.
- When you move a chart to another application this doesn't normally apply. A chart copied into a Microsoft Word document is inserted as a picture, which won't change if you change the original data values in the worksheet.

## 9. Chart Options - Notes

This chapter covers the following topics:

- The Chart Options Dialog Box
- Options on the Chart Toolbar

### The Chart Options Dialog Box

Having created a chart, Microsoft Excel offers a high level of flexibility allowing you to adjust the chart to your needs. There are several sets of options available to you as described in the following table:

| Tab         | Option            | Meaning                                                                     |
|-------------|-------------------|-----------------------------------------------------------------------------|
| Titles      | Chart title       | Overall title for the chart                                                 |
|             | Category (X) axis | Title for the X (horizontal) axis                                           |
|             | Value (Y) axis    | Title for the Y (vertical) axis                                             |
| Axes        | Category (X) axis | Select whether horizontal and vertical axes are displayed                   |
|             | Value (Y) axis    |                                                                             |
| Gridlines   | Category (X) axis | Select whether horizontal and vertical gridlines are displayed              |
|             | Value (Y) axis    |                                                                             |
| Legend      | Show legend       | Select whether a legend is displayed                                        |
|             | Placement         | Select the position of the legend                                           |
| Data Labels | Label Contains    | Select whether points are labelled with series name, category name or value |
| Data Table  | Show data table   | Select whether a data table is displayed                                    |

#### Important Points

- The options are accessed via the Chart Options dialog box.
- To display the Chart Options dialog box, select the chart, then choose the **Chart | Chart Options** command, or right-click the chart and choose **Chart Options**.
- If you use the Chart Wizard to create a chart, the Chart Options dialog box is displayed at step 3.

## Options on the Chart Toolbar

Two options are available via the Chart toolbar:



- Click the Legend button to hide and show the legend.



- Click the Data Table button to hide and show the data table.

## 10. Chart Colours and Other Formatting - Notes

This chapter covers the following topics:

- Formatting Chart Components
- Changing Colours
- Other Formatting

### Formatting Chart Components

Most components of a chart can be formatted in different ways to improve the overall presentation of the chart. In particular, the use of colours can have a dramatic effect.

In this chapter you will learn how to change the colour of chart components.

### Changing Colours

There are two easy methods to change colours of chart components:

- Select the chart component and then use the Fill button in the Formatting toolbar (not the Chart toolbar) to select a colour.
- Double-click a chart component, or click it and then click the Format button in the Chart toolbar — both of these methods display the Format dialog box.



#### Important Point

- The exact name of the Format button and Format dialog box changes according to which chart component is selected.

### Other Formatting

Other formatting is also available, but not covered here. You can, for example, select text in a title and change the font and font size, and apply bold, underlining and italic styles etc. You should already be familiar with these editing features.

## 11. Cell Alignment - Notes

This chapter covers the following topics:

- Changing Alignment Within a Cell
- Vertical Alignment
- Removing Cell Alignment
- Indenting Cell Contents
- Merging Cells
- Splitting Cells
- The Format Cells Dialog Box
- Horizontal and Vertical Text Alignment
- Indentation
- Orientation
- Wrapping Text
- Shrink to Fit
- Merging and Splitting (Demerging) Cells

### Changing Alignment Within a Cell

Cell contents can be **left aligned**, **centred**, or **right aligned**.

You can set any of these alignments using the appropriate buttons:



- For left alignment, click the Align Left button.



- For centre alignment, click the Center button.



- For right alignment, click the Align Right button.

#### Important Point

- You can also align cell contents using the **Alignment** tab of the Format Cells dialog box. This is described later.

### Vertical Alignment

The **Alignment** tab of the Format Cells dialog box can be used to set vertical alignment to **top**, **center**, **bottom** or **justify**. This is described later.

### Removing Cell Alignment

You should note that the default cell alignment is called **General**. This means left alignment for cells containing text, but right alignment for cells containing numbers. If you want to remove cell alignment, you should apply general alignment using the **Alignment** tab of the Format Cells dialog box. This is described later.

## Indenting Cell Contents

You can indent text and values from either side of a cell:



- To increase left indentation, click the Increase Indent button.
- To decrease left indentation, click the Decrease Indent button.

### Important Point

- You can use the **Alignment** tab of the Format Cells dialog box to set both left and right indentation.

## Merging Cells

You may want a single heading to span a number of columns or rows. You can do this by **merging** cells. The resulting merged cell behaves as a single cell.

To merge the selected cells:



- Click the Merge and Center button.
- or:
- Use the **Alignment** tab of the Format Cells dialog box.

### Important Point

- If there are values in more than one of the cells to be merged, Excel will use the upper-left most value for the cell value. Values from other cells in the range will be lost.

## Splitting Cells

To split the selected merged cells:



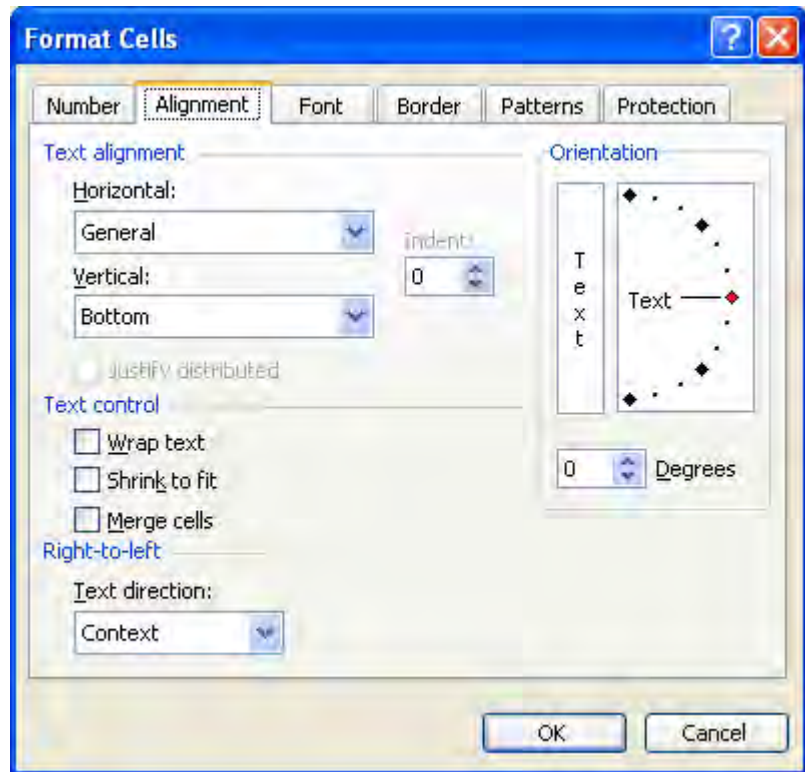
- Click the Merge and Center button.
- or:
- Use the **Alignment** tab of the Format Cells dialog box.

### Important Point

- The value of the merged cell will be placed in the upper-left most cell of the split cell range.

## The Format Cells Dialog Box

Using the Format Cells dialog box to change alignment or merge cells isn't as quick as using the toolbar buttons, but it's sometimes useful to do it this way if you want to change other font formatting — such as the font and font size — at the same time. The dialog box also offers other options that are not available using toolbar buttons.



To display the Format Cells dialog box:

- Choose the **Format | Cells** command.
- or:
- Right-click the selection and choose **Format Cells**.
- or:
- Press **[Ctrl]+1**.

**Important Point**

- The alignment, merging and splitting settings are on the **Alignment** tab of the dialog box.

## Horizontal and Vertical Text Alignment

To change horizontal or vertical alignment:

- Display the Format Cells dialog box (**Alignment** tab).
- Open the **Horizontal** or **Vertical** list box and select the required alignment.

## Indentation

To change indentation:

- Display the Format Cells dialog box (**Alignment** tab).
- Open the **Horizontal** list box and select the **Left (Indent)** or **Right (Indent)**.
- Set the **Indent** box to the required value.

## Orientation

To select vertical orientation:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Orientation** group of options, click the vertical **Text** box.

To select sloping orientation:

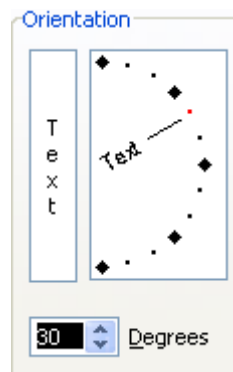
- Display the Format Cells dialog box (**Alignment** tab), then drag the example text to the required angle.

or:

- Display the Format Cells dialog box (**Alignment** tab), then set the **Degrees** box to the required value.

**Important Point**

- An example of the orientation set to 30 degrees is shown in the next picture.



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## Wrapping Text

Wrapping text is used when the cell contents are too wide to fit the cell. The text is displayed on several lines, and the row height is increased to accommodate this.

### To wrap text:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Text control** group of options, click **Wrap text** so that it is ticked.

### To stop text being wrapped:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Text control** group of options, click **Wrap text** so that it is not ticked.

## Shrink to Fit

Shrink to fit is an alternative to wrapping text when the cell contents are too wide to fit the cell. The cell contents are displayed in a reduced font size, so that they fit within the column width. The displayed font size is automatically adjusted if you change the column width.

### To select shrink to fit:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Text control** group of options, click **Shrink to fit** so that it is ticked.

### To cancel shrink to fit:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Text control** group of options, click **Shrink to fit** so that it is not ticked.

## Merging and Splitting (Demerging) Cells

### To merge selected cells:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Text control** group of options, click **Merge cells** so that it is ticked.

### To split a merged cell into separate cells:

- Display the Format Cells dialog box (**Alignment** tab).
- In the **Text control** group of options, click **Merge cells** so that it is not ticked.

## 12. Cell Borders - Notes

This chapter covers the following topics:

- About Borders
- Border Colours and Line Styles
- The Borders Toolbar
- Drawing a Line or Outline Border
- Drawing a Grid
- Removing Borders
- Using the Border Tab of the Format Cells Dialog Box

### About Borders

Borders can be used in a variety of ways to enhance the appearance of your worksheets. You can use them to frame cells or small tables, or to break up large tables.

To apply borders to selected cells:



- If the Borders button is displaying the border you want, just click it.

or:

- Click the arrow button of the Borders button and then select the border you want.

or:



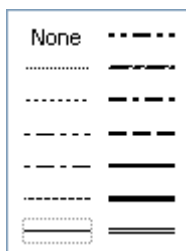
- In the Borders toolbar, click the Draw Border button, and use the mouse to draw where you want the border.

or:

- Use the **Border** tab of the Format Cells dialog box.

## Border Colours and Line Styles

In addition to the default thin black line, borders can be drawn in a range of colours and line styles. The next picture shows the choice of line styles.



- The Borders button always applies a solid black border which can be thin or thick. To select other colours and line styles, you must use the Borders toolbar or the **Border** tab of the Format Cells dialog box.
- Borders are usually aligned with the gridlines of the worksheet, but diagonal borders are also possible.

## The Borders Toolbar

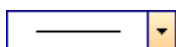
The Borders toolbar provides an easy way of adding and removing borders.

To display the Borders toolbar:

- Choose the **View | Toolbars | Borders** command.
- or:
- Right-click any toolbar and choose **Borders**.
- or:
- Click the arrow on the Borders button and choose **Draw Borders**.

### Important Points

- There are four buttons in the Borders toolbar.



- The first button can be either the Draw Border button or the Draw Border Grid button; click the arrow on the button to switch between them.
- The Erase Border button is used to remove borders.
- Click the arrow on the Line Style list box to select a line style.
- Click the Line Color button to select a line colour.

## Drawing a Line or Outline Border

To draw a line or outline border:



- Select a line style and line colour.
- Click the Draw Border button — the mouse pointer will change to a pencil.
- Drag the pencil mouse pointer along a gridline to draw a line, or select a range of cells to draw an outline.
- When you have finished drawing, click the Draw Border button again or press **[Esc]**.

## Drawing a Grid

To draw a grid:



- Select a line style and line colour.
- Click the Draw Border Grid button — the mouse pointer will change to a pencil with a small grid next to it.
- Select the range of cells for which you want the grid.
- When you have finished drawing, click the Draw Border Grid button again or press **[Esc]**.

## Removing Borders

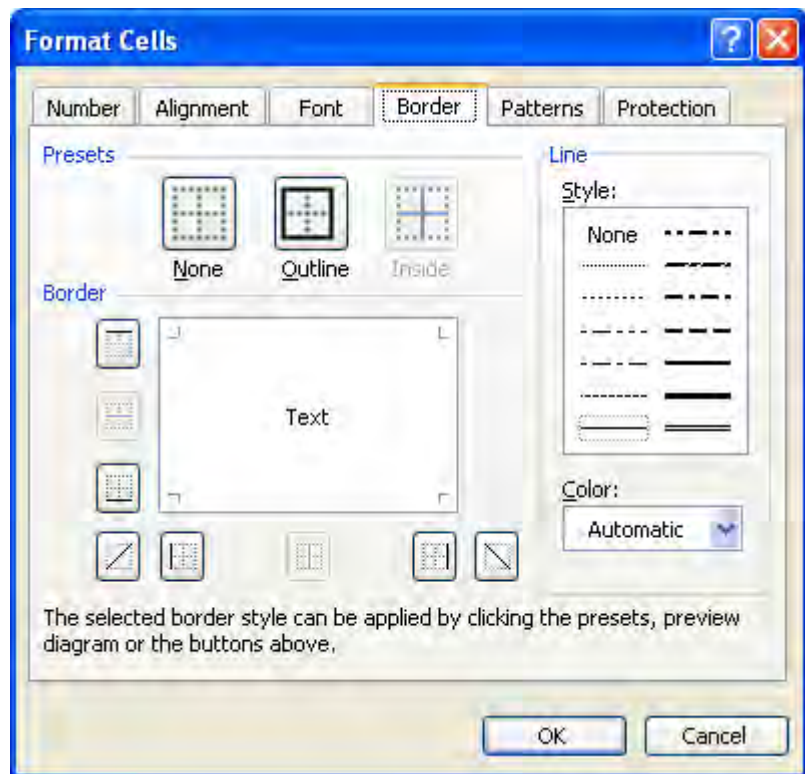
To remove borders:



- Click the Erase Border button — the mouse pointer will change to an eraser.
- Drag the eraser over individual lines to remove them, or over a cell range to remove all borders from the selection.
- When you have finished drawing, click the Erase Border button again or press **[Esc]**.

## Using the Border Tab of the Format Cells Dialog Box

The **Border** tab of the Format Cells dialog box provides you with another way of setting cell borders.



To display the Border tab of the Format Cells dialog box:

- Choose the **Format | Cells** command, or right-click the selection and choose **Format Cells**, or press **[Ctrl]+1**.
- If necessary, click the **Border** tab.

To select a line style and colour:

- To select a line style, select any of the line styles in the **Style** palette.
- To select a line colour, open the **Color** list box in the **Line** group of options and select a colour.

To use the Presets group of options:

- Click the **None**, **Outline** or **Inside** button as required.

To use the Border group of options:

- Click in the white box in the position where you want a border.
- or:
- Click any of the buttons round the outside of the white box — the selected border will be applied, and displayed in the white box.

### Important Points

- You should always select the line style and colour first as the border will be applied using these settings.
- Selecting a line style or colour does not affect existing lines. Your choices will only apply to new lines added using the **Presets** or **Border** groups of options. You can use this feature to apply different coloured lines — for instance, you could select green vertical lines and red horizontal lines.

## 13. Sorting Data - Notes

This chapter covers the following topics:

- About Sorting
- Using the Sort Buttons
- The Sort Dialog Box
- Sorting Using the Sort Dialog Box
- Header Rows
- Sort Options
- Sort Order
- Case Sensitive Sorts
- Orientation - Sorting by Rows
- Sorting Part of a List

## About Sorting

Sorting allows you to rearrange the order of tables in your worksheets — sorting according to smallest values first, largest values first and reverse alphabetical order are just a few simple examples of what you can do.

- When you sort data in a table, you tell Excel which **fields** you want to sort. A field is a row or column of cells containing information of a common type. In the table shown in the next picture, the fields are **Country**, **Area**, **Population**, and **Density**.

| Country    | Area    | Population | Density |
|------------|---------|------------|---------|
| Albania    | 28,750  | 3,300,000  | 114.8   |
| Andorra    | 486     | 58,000     | 119.3   |
| Austria    | 83,850  | 7,800,000  | 93.0    |
| Belgium    | 33,100  | 10,000,000 | 302.1   |
| Belorussia | 207,600 | 10,300,000 | 49.6    |
| Bulgaria   | 110,900 | 9,000,000  | 81.2    |

- A **record** is a set of each of the fields in the table — the first row of the table in the picture contains the record for **Albania**.
- Excel refers to the whole table as a **list** — a list is a set of records, separated from other values in the worksheet by blank cells.
- The quicker methods of sorting assume that — as in the above picture — your fields are in columns and your records are in rows. You can sort lists which are the other way round, but you have to use the Sort dialog box.
- When you sort a list, you select which field you want to be used to sort the records — Excel sometimes calls this field the **sort key**. You also select whether you want the records to be sorted into ascending or descending order. In the above picture, the records are in ascending alphabetical order of country. You could sort them so that they are in ascending order of **Area**, or descending order of **Population**.

## Using the Sort Buttons

If the fields of your list are in columns, the Sort Ascending and Sort Descending buttons are a quick way of sorting a list based on the values in a single field.

**To use the Sort Ascending and Sort Descending:**

- Select a cell in the field you want to be the sort key.
- To sort the list into ascending order, click the Sort Ascending button.
- To sort the list into descending order, click the Sort Descending button.



### Important Point

- If you select a cell range before using the sort buttons, only the records in the selected range will be sorted.

## The Sort Dialog Box

The Sort dialog box provides additional sort options. You can:

- Sort on more than one field — for instance, you could sort a list of names into alphabetical order of last name and then alphabetical order of first name.
- Specify whether or not your table has a header row.
- Select additional options such as whether the sort is case sensitive, or specify that the records in your list are in rows and not columns.



## Sorting Using the Sort Dialog Box

To sort using the Sort dialog box:

- Select a cell in the list you want to sort.
- Choose the **Data | Sort** command.
- Open the **Sort by** list box and select the first field on which you want to sort — note that if you select a cell from this field before opening the Sort dialog box, Excel will automatically put this in the **Sort by** box for you.
- In the **Sort by** group of options, select **Ascending** or **Descending**.
- If you want to sort on additional fields, select them in the first and second **Then by** groups of options.

## Header Rows

A **header row** is a row containing the field names in the list. In the next picture, the first row is a header row.

| Country | Area   | Population | Density |
|---------|--------|------------|---------|
| Albania | 28,750 | 3,300,000  | 114.8   |
| Andorra | 486    | 58,000     | 119.3   |
| Austria | 83,850 | 7,800,000  | 93.0    |

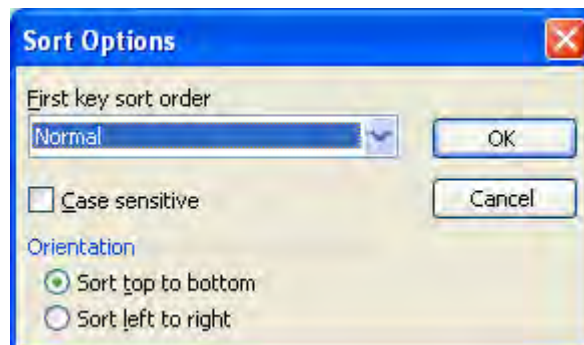
- You obviously don't want the header row to be included in the sort, otherwise if you were sorting a list of European countries, the header row would be moved down to appear between **Bulgaria** and **Croatia**. Excel generally assumes that your list has a header row, and so does not include the first row of the list in the sort.

To sort a list that does not have a header row:

- In the Sort dialog box, click **No header row** so that it is selected.

## Sort Options

The Sort Options dialog box offers some additional sort options.



To display the Sort Options dialog box:

- In the Sort dialog box, click **Options**.

## Sort Order

Normally Excel will sort cells containing text into alphabetical order. If a field contains days of the week or months of the year, this is not what you want — **Monday, Tuesday, Wednesday, Thursday, Friday** will be sorted to **Friday, Monday, Thursday, Tuesday, Wednesday**. To get round this problem, Excel offers special sort orders for days and months in short or long form.

To select a different sort order:

- In the Sort Options dialog box, open the **First key sort order** list box and select the required sort order.

### Important Point

- You can also create your own **custom lists** for sorting unusual data. This can be useful if you want to sort values such as **High**, **Medium** and **Low**. Custom lists are not described in this chapter.

## Case Sensitive Sorts

Normally Excel ignores the case of letters when sorting text — **SMITH** is considered to be the same as **smith**. You can select to make the sort case sensitive, in which case all upper case text will appear before lower case text in an ascending sort.

### To make a sort case sensitive:

- In the Sort Options dialog box, click **Case sensitive** so that it is ticked.

## Orientation — Sorting by Rows

Excel assumes that the fields in your list are in columns.

### To sort a list in which the fields are in rows:

- In the Sort Options dialog box, in the **Orientation** group of options, click **Sort left to right** so that it is selected.

## Sorting Part of a List

You may sometimes want to sort part of a list. In particular, if you have a list with a row containing totals at the bottom, Excel will treat this row as part of the list, and move it within the table. As an example, look at the end of the table of European countries shown in the next picture — you can see that it contains a **Totals** row adding up the numbers in the columns.

|                |                    |                    |               |
|----------------|--------------------|--------------------|---------------|
| Switzerland    | 41,300             | 6,800,000          | 164.6         |
| Turkey         | 779,450            | 58,400,000         | 74.9          |
| Ukraine        | 603,700            | 51,900,000         | 86.0          |
| United Kingdom | 244,046            | 56,700,000         | 232.3         |
| Yugoslavia     | 25,720             | 10,400,000         | 404.4         |
| <b>Totals</b>  | <b>180,458,587</b> | <b>790,003,000</b> | <b>21,270</b> |

- If you sort the whole of this table into alphabetical order of country, Excel will move the **Totals** row to between **Switzerland** and **Turkey**.

### To sort part of a list using the sort buttons:

- Select the records that you want to sort.
- Click the Sort Ascending or Sort Descending button.



## 14. AutoFill - Notes

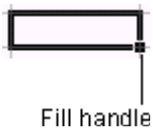
This chapter covers the following topics:

- Using AutoFill to Copy Cells
- Turning On Drag and Drop Editing
- Using AutoFill to Create Series
- Shortening a Series
- AutoFill Options

### Using AutoFill to Copy Cells

AutoFill is a quick way of copying a cell (or cell range) to other adjacent cells.

To use AutoFill:



- Select the cell or cell range to be copied.
- Drag the fill handle to extend the selection — the fill handle is the black rectangle at the bottom right-hand corner of the selection highlight.

Important Points

- AutoFill will copy both the format and the value to the selected cells.
- If you want to copy dates in this way, hold down the **[Ctrl]** key while dragging, otherwise Excel will create a date series instead of copying the date.

### Turning On Drag and Drop Editing

To use AutoFill, drag and drop editing must be turned on. This is normally the default setting, but it may have been turned off on your computer.

To turn on drag and drop editing:

- Choose the **Tools | Options** command.
- If necessary, click the **Edit** tab.
- Click **Allow cell drag and drop** so that it is ticked.

## Using AutoFill to Create Series

AutoFill is very useful for creating series such as 1, 2, 3, 4 or 2, 4, 6, 8, etc.

### To generate a series:

- Enter the first two values in the series — such as 1, 2 or 2, 4.
- Select the first two values in the series.
- Drag the fill handle to extend the series.

+

### To generate a series going up in steps of 1:

- Enter the first number in the series.
- Hold down the **[Ctrl]** key as you drag the fill handle — the Fill mouse pointer will gain a plus sign.
- Release the mouse button before releasing the **[Ctrl]** key.

+<sup>+</sup>

### Important Point

- AutoFill can also be used to create series with text and numbers, such as **A1, A2, A3**, etc.

## Shortening a Series

If you accidentally extend the selection further than you intended, you can just drag the fill handle back — the extra values will be removed.

## AutoFill Options

AutoFill offers a range of additional options.

### To access the AutoFill options:

- Drag the fill handle with the right-hand mouse button held down — when you release the button, Excel displays a shortcut menu with additional options.

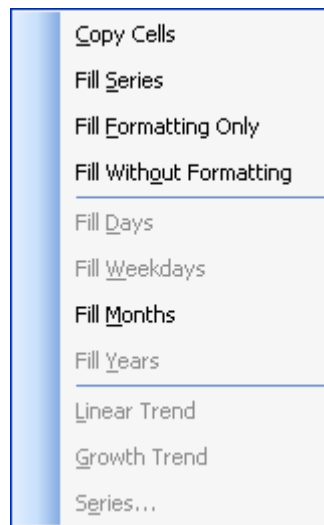
or:

- Drag the fill handle in the normal way with the left-hand mouse button, then click the AutoFill Options button that is displayed — the AutoFill options menu is displayed, which has slightly fewer options than the shortcut menu.



### Important Points

- The menu options that are available will depend on what type of values you are using AutoFill with.



- The meanings of the first four options are given in the next table.

| Option                         | Meaning                                                                  |
|--------------------------------|--------------------------------------------------------------------------|
| <b>Copy Cells</b>              | Simple copy of the first cell.                                           |
| <b>Fill Series</b>             | Creates a series.                                                        |
| <b>Fill Formatting Only</b>    | Copies the format of the first cell to the selection, but not the value. |
| <b>Fill Without Formatting</b> | Copies the value of the first cell to the selection, but not the format. |

- The next options on the menu apply to date series. The remaining options in the shortcut menu relate to linear and growth series.

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