



Microsoft Excel 2010 – Level 1

13 – Creating charts



CREATING CHARTS

InFocus

They say a picture is worth a thousand words. Well, a chart in a worksheet can be worth a thousand numbers! Charts are used to summarise data, reflecting proportions, trends, and anomalies in your data far more effectively.

The really neat feature of charting in Excel is just how easy it is to create a brand new chart.

In this booklet you will:

- ✓ gain an understanding of how charts are created and presented in **Excel**
- ✓ gain an overview of different chart types
- ✓ learn how to create a new chart in **Microsoft Excel**
- ✓ learn how to work with an embedded chart
- ✓ learn how to resize a chart
- ✓ learn how to drag a chart to another location
- ✓ learn how to print an embedded chart
- ✓ learn how to create a chart sheet
- ✓ learn how to change the chart type of an existing chart
- ✓ learn how to change the chart layout of an existing chart
- ✓ learn how to change the style of a chart
- ✓ learn how to print a chart sheet
- ✓ learn how to embed a chart into a worksheet

UNDERSTANDING THE CHARTING PROCESS

Charts provide a visual way of seeing trends in the data in your worksheet. The charting feature in Excel is extremely flexible and powerful and allows you to

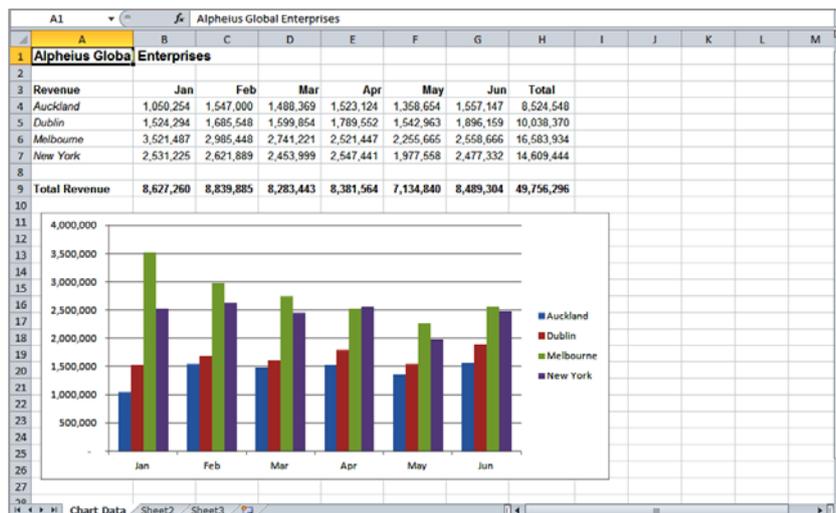
create a wide range of charts from the worksheet data. But the beauty of the **charting process** is that it is delightfully easy and simple – once you know how.

The Charting Process

There's no rocket science here – to create a new chart you simply select the data that you want to graph then, from the **Insert** tab of the **Ribbon**, choose the type of chart you want. As soon as you have clicked on the desired chart type a new chart will be embedded in the active worksheet.

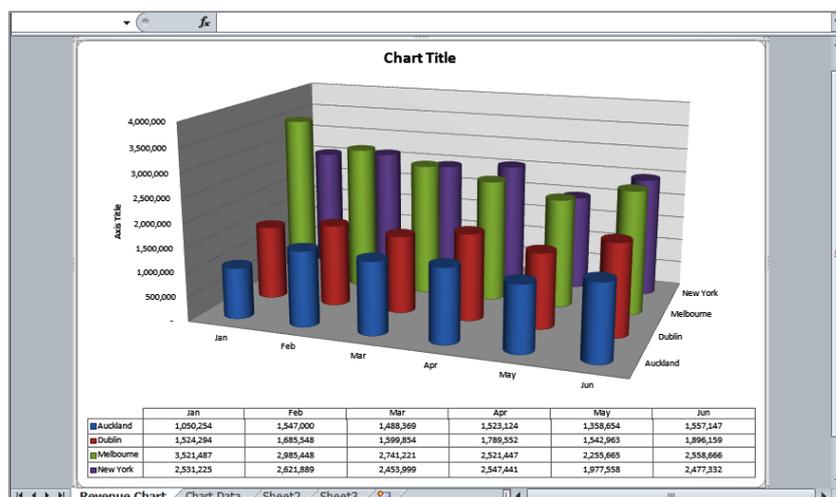
1 Embedded Charts

Charts that appear within a worksheet are known as embedded charts. A chart is really an object that sits on top of the worksheet – unlike numbers and letters, charts are not actually placed into worksheet cells.



2 Chart Sheets

If you want to keep your chart separate from the data you can move the chart to its own sheet. Chart sheets make it easier and more convenient to work with your chart because you'll see more of it on the screen – since the data is not there!



CHOOSING THE CHART TYPE

A chart is far more effective at communicating results, outcomes or trends than a table of figures displaying the same information. Different **chart types** have been created to communicate different

types of information. Some charts show simple relationships between values, while others are designed for quite technical purposes. Here is a summary of the use of different chart types.

Chart Type

Use

Column, Bar, Cylinder, Cone, Pyramid

These chart types, either in 2D or 3D, are used to compare values across categories. For example, they could compare the populations of different countries.

Line, Area

Lines in 2D or 3D are perfect for showing trends such as sales or employment figures. An area chart is basically a line chart with the area below the line filled in.

Surface

The surface chart plots trends in two dimensions. You could use this to plot departmental sales figures over time. The chart then shows you the trends between departments, as well as the sales trends over time.

Pie, Doughnut

If you want to show proportion, such as the sales figures from different departments that make up a total, then the pie and doughnut charts are for you. The doughnut chart varies only from the pie chart in that it can display more than one series of values.

Technical Chart Options

Stock

The stock chart type has been designed to show the stock figures for a day, and the trend over time. At its simplest, you can plot the high, low and close figures, and at its most complex, the volume, open, high, low, and close. It can be adapted to show the relationships between any 5 sets of values.

XY (Scatter)

Scatter diagrams are used to display the relationship between two variables. For example, you could research the age and price of a series of cars, and plot the values you find. You could also investigate the height and weight relationship of a group of people.

Bubble

The bubble chart is a scatter chart with a third set of values that determine the size of the bubble marker. For example, it could be used to show the concentrations of a particular metal at different times, sampled from different depths in a dam. The position on the graph would reflect the depth and time, and the size of the bubble would reflect the concentration of the metal.

Radar

A radar diagram is designed to show the change in values from a central point. For example, it can be used to show mobile telephone coverage, including multiple networks and multiple measurements.

CREATING A NEW CHART

Creating a chart is really easy in Excel. You simply select the data to chart then access the chart type you want on the **Insert** tab of the **Ribbon**. The only tricky part is selecting the correct data to chart.

Generally you should select only raw data – not the totals or subtotals. Headings at the left and at the top often present themselves as the legend or axis of the chart.

Try This Yourself:

Open File

Before starting this exercise you **MUST** open the file E817 Charting_1.xlsx...

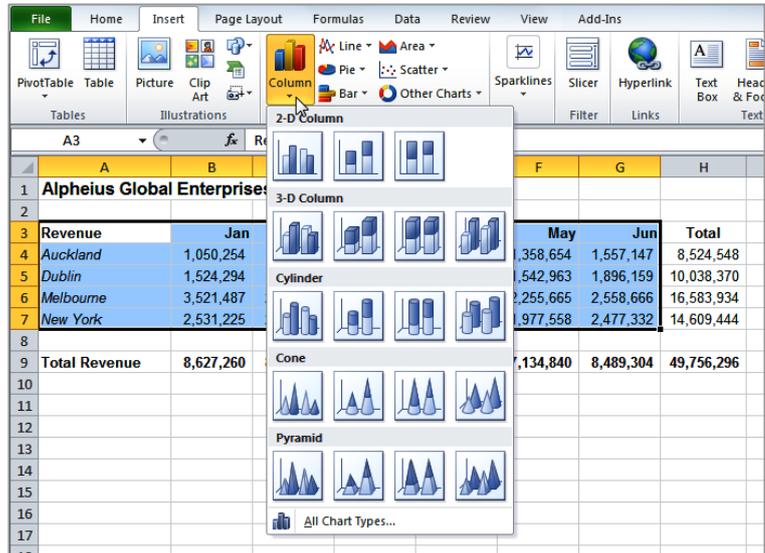
1 Click on **A3**, hold down **Shift** and click on **G7** to select the range **A3:G7**
We have selected only the raw data...

2 Click on the **Insert** tab of the **Ribbon**, and click on the **Column** tool in the **Charts** group to see a gallery of **Column** chart types

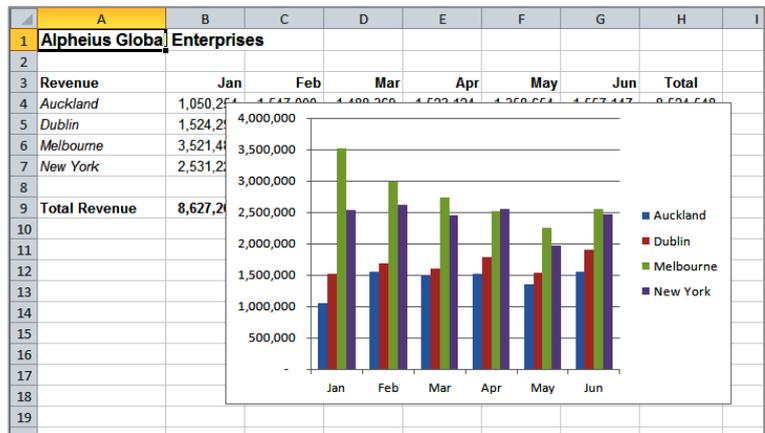
3 Click on the first option in **2-D Column** – the **Clustered Column** chart type

Excel will now create a chart and place it (i.e. embed it) in the worksheet for you...

4 Click on **A1** to deselect the chart



2



4

For Your Reference...

To **create a chart**:

1. Select the range to chart
2. Click on the **Insert** tab of the **Ribbon**, and click on the **Column** tool in the **Charts** group
3. Click on the desired chart type

Handy to Know...

- When a chart is active the **Ribbon** shows additional **Chart Tools** tabs with commands that are used when charting.

WORKING WITH AN EMBEDDED CHART

As a default, a new chart will be placed in the active worksheet, which is usually the one that contains the data. Charts are placed over the top of the worksheet, **embedded as objects**. When you want to

work with a chart you must select it – this can be done by clicking on the chart. The chart itself is made up of many objects and these too can be selected by clicking on them.

Try This Yourself:

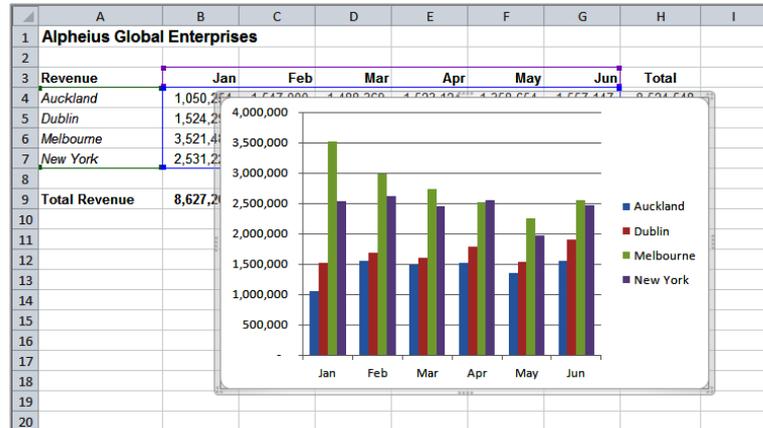
Same
File

Continue using the previous file with this exercise, or open the file *E817 Charting_2.xlsx*...

- 1 Move the mouse pointer to the border of the chart and click once to select the chart as an object

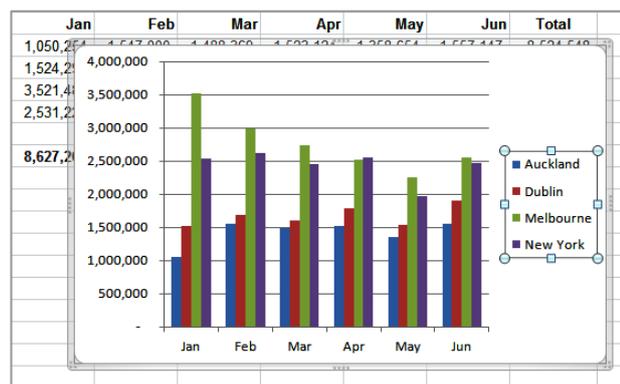
The border of the chart will thicken to indicate that the chart is selected. In addition, the range of data used for the chart will be enclosed in coloured lines. The Ribbon will show chart-specific tabs and commands...

- 2 Click on the chart legend to make it the active object in the chart
- 3 Click on the vertical axis to make it the active object
- 4 Click on the horizontal axis to make it the active object
- 5 Click on the border of the chart to make the overall chart the active object again – notice that the coloured lines have reappeared
- 6 Click in cell **A1** to deselect the chart

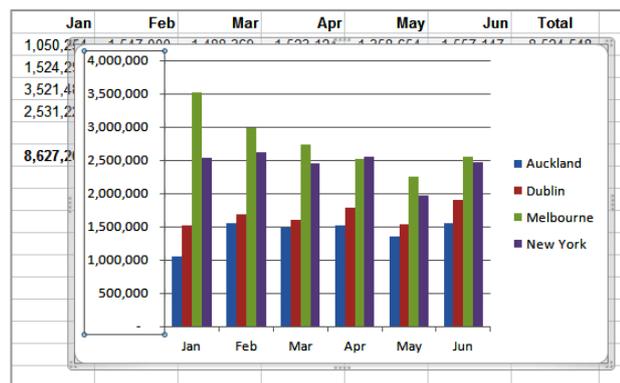


1

2



3



For Your Reference...

To **select a chart** and its **objects**:

1. Click on the border of the chart to select an embedded chart
2. Click on the various objects of a chart to select them

Handy to Know...

- Once an object is selected, be it a chart, a legend on the chart, or the like, you can right click on the object to see a shortcut menu specific to the selected object.

RESIZING A CHART

There are two main ways to resize a chart if you are not happy with its current size. A chart can be resized by dragging one of the sizing handles around the border of a selected chart. These handles appear with

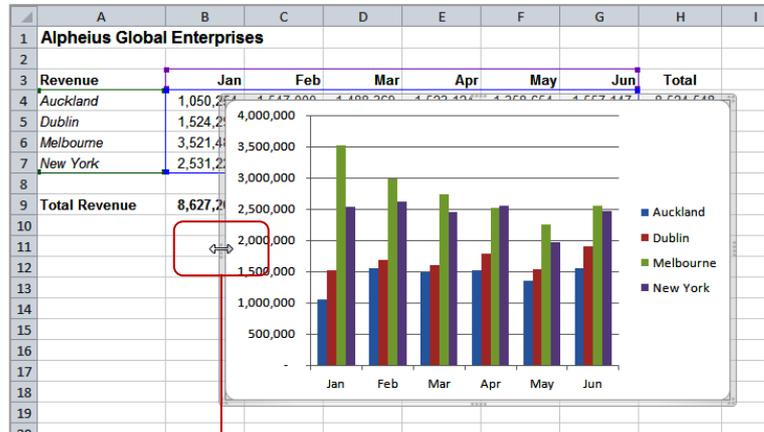
dots in them. You can also resize a chart using the commands that appear in the **Size** group on the **Format** tab of the **Ribbon** that appears when the chart is selected.

Try This Yourself:

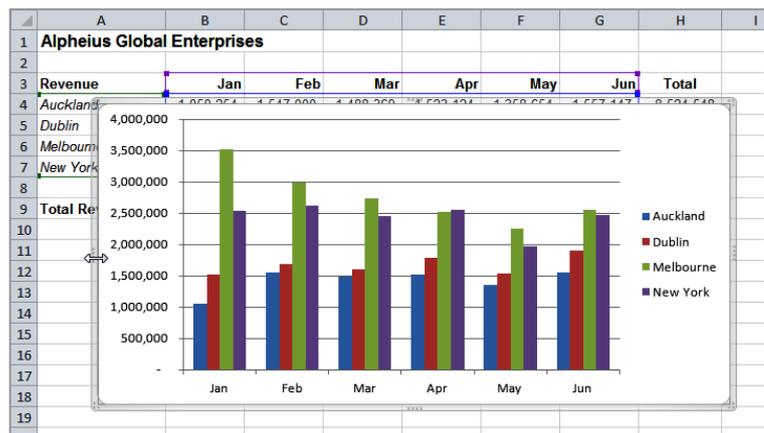
Same File

Continue using the previous file with this exercise, or open the file *E817 Charting_3.xlsx*...

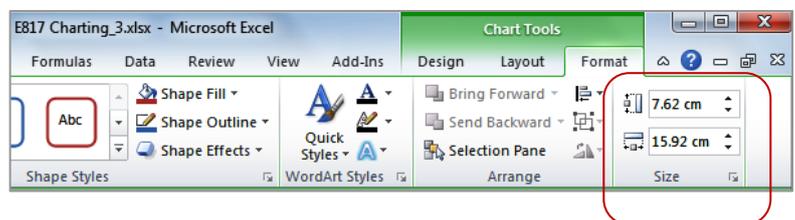
- 1 Click on the chart to select it
- 2 Move the mouse pointer to the sizing handle on the left border of the chart until the mouse pointer changes to a double arrow
- 3 Hold down the left mouse button and drag left until the chart is about 25% larger
You can also resize a chart from the Ribbon...
- 4 Click on the **Format** tab of the **Ribbon** and notice that there is a **Size** group
- 5 Click on the up spinner button  of the **Shape Height** tool until it shows **8.5 cm**
- 6 Click on the up spinner button  of the **Shape Width** tool until it shows **18 cm**
- 7 Click on **A1** to deselect the chart



2 The pointer changes to a double-headed arrow when positioned over the sizing handles



3



4

For Your Reference...

To **resize** a **chart**:

1. Drag one of the eight sizing handles on the border of a selected chart

OR:

1. Click on the up/down buttons of the **Shape Height** and **Shape Width** tools

Handy to Know...

- Generally you would drag the sizing handles when you are interested in getting an approximate size change and use the tools on the **Ribbon** when you need to size the chart precisely.

DRAGGING A CHART

It's unlikely that a chart embedded in the worksheet by Excel will be exactly where you would like it to be. You can easily relocate a chart to a more appropriate

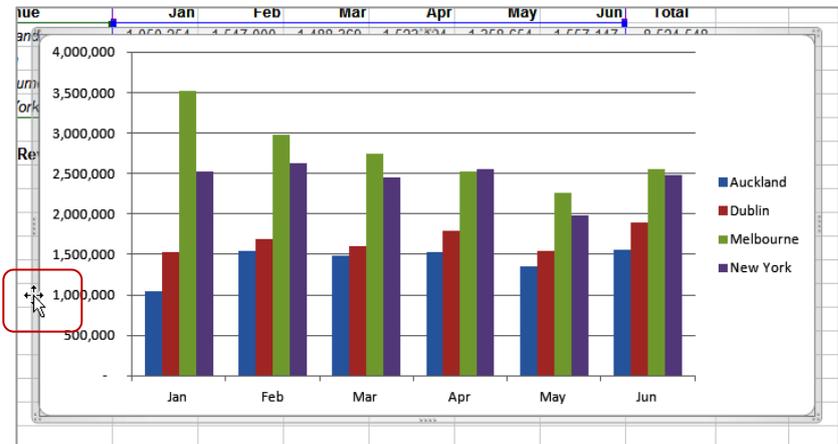
position by **dragging** the border of the chart to the desired location. The chart obviously must be selected before it can be dragged to a new position.

Try This Yourself:

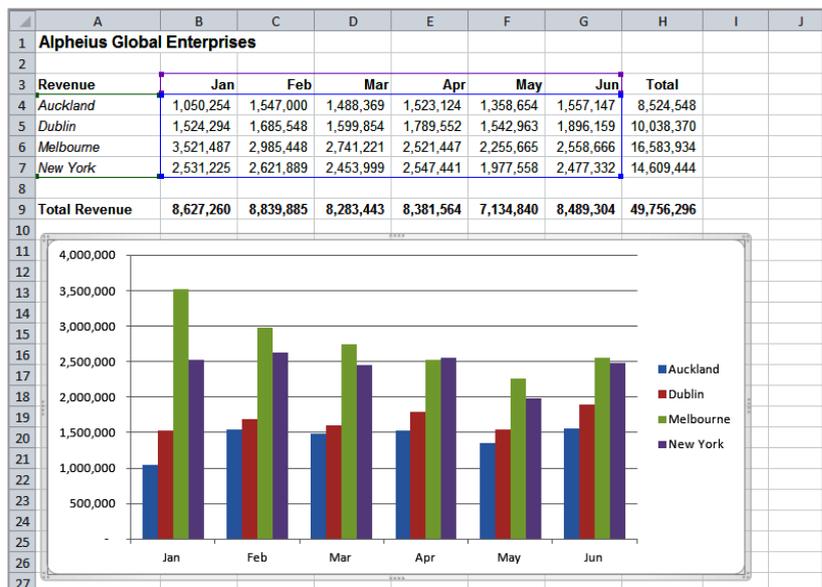
Same File

Continue using the previous file with this exercise, or open the file E817 Charting_4.xlsx...

- 1 Click on the chart to select it
- 2 Move the mouse pointer to the border of the chart until the mouse pointer changes to a four-headed arrow
- 3 Hold down the left mouse button and drag the chart below the data so that the **Totals** row in the worksheet is visible
- 4 Click on **A1** to deselect the chart



2



3

For Your Reference...

To **move** a **chart**:

1. Click on the chart to select it
2. Move the mouse pointer to the border of the chart until the mouse pointer changes to a four-headed arrow
3. Drag the chart to a new location

Handy to Know...

- You can also use the standard cut and paste commands to move a chart. Click on the chart to select it then use the **Cut** command to copy it to the clipboard. Click in a new location and use the **Paste** command to paste the chart there.

PRINTING AN EMBEDDED CHART

When you print a worksheet, Excel will print whatever is in or **embedded** in that worksheet including charts. This makes it easy and convenient to print both the chart

and its underlying data. All you basically need to do is to position the chart in the appropriate location then access the print commands in the normal way.

Try This Yourself:

1 Same File

Continue using the previous file with this exercise, or open the file E817 Charting_5.xlsx...

Click on the **File** tab on the **Ribbon**, then select **Print** to see a preview of the data and the chart

Not all of the chart or data may be visible so we'll change the orientation to landscape...

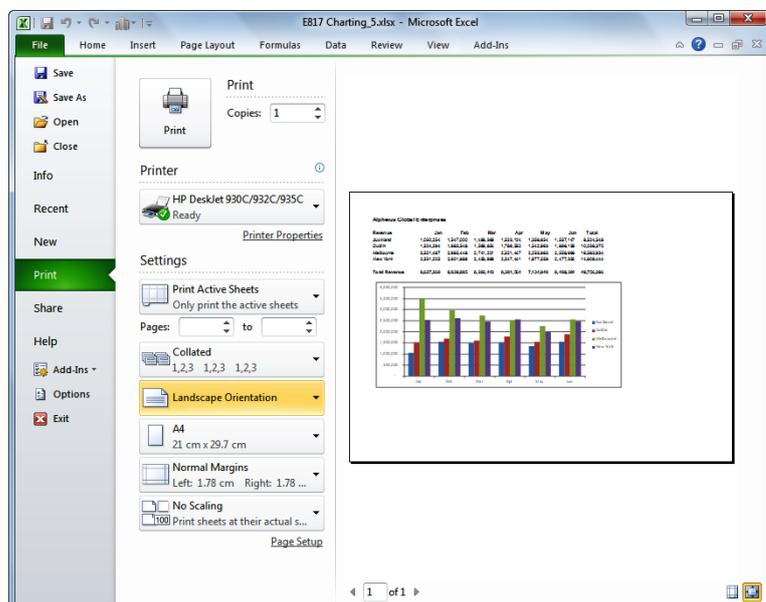
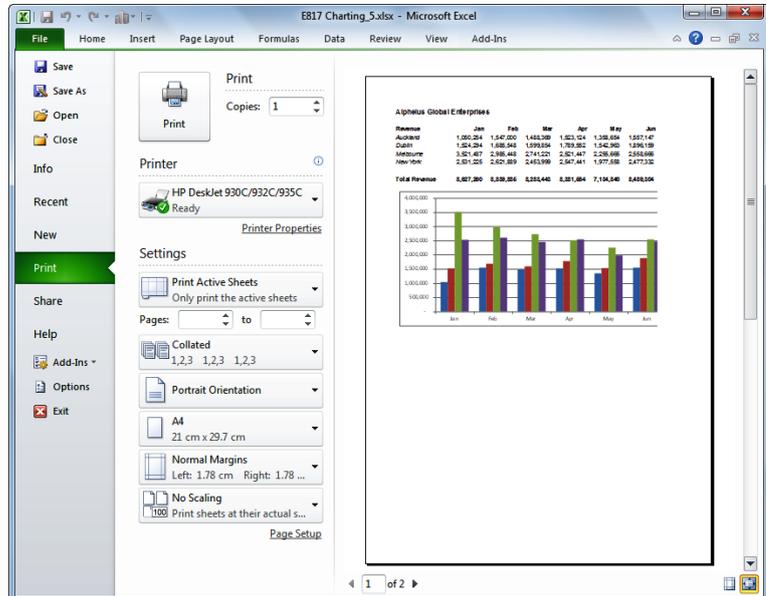
2

Click on the drop arrow for **Portrait Orientation** in **Settings** and click on **Landscape Orientation**

3

If you have a working printer click on **[Print]** to print the chart

If you don't have a printer connected, click on the **File** tab (or any other tab) on the **Ribbon** to display the workbook



For Your Reference...

To **print** an **embedded chart**:

1. Click on the **File** tab on the **Ribbon** then select **Print**
2. Click on **[Print]**

Handy to Know...

- It's great to be able to preview a chart before actually printing it. This way you can make any setup changes required to properly position and see the chart on the printed page, prior to printing.

CREATING A CHART SHEET

Charts can either be stored in a worksheet or in a separate sheet of their own known as a **chart sheet**. Chart sheets separate the chart from the underlying data and are

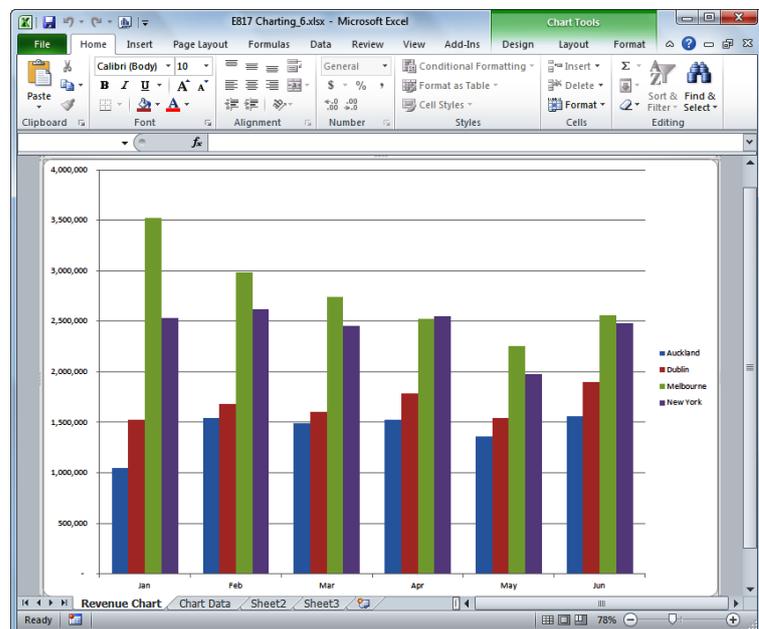
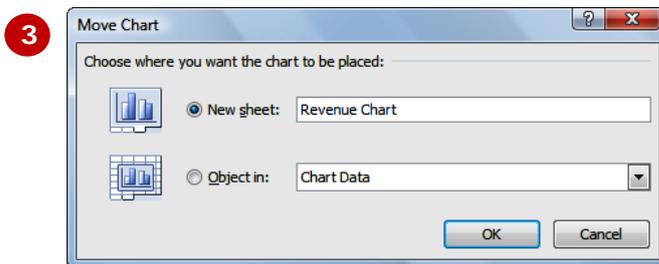
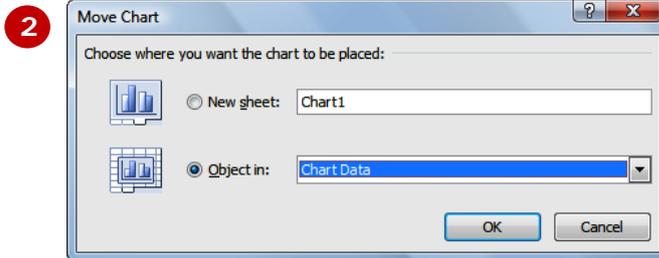
useful especially if you are interested in printing the chart on its own page. Charts can be shifted back and forth between a worksheet and a chart sheet.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E817 Charting_6.xlsx...

- 1 Click on the chart to select it and display the **Chart Tools** tabs in the **Ribbon**
- 2 Click on the **Design** tab in the **Ribbon**, then click on the **Move Chart** tool  in the **Location** group to display the **Move Chart** dialog box
- 3 Click on **New Sheet**, then type **Revenue Chart** – this will become the sheet name for the chart
- 4 Click on **[OK]** to move the embedded chart to its own sheet
- 5 Click on the **Chart Data** tab to see the data again
Notice that the chart is no longer embedded on this worksheet



For Your Reference...

To **create** a **chart sheet**:

1. Click on the **Design** tab on the **Ribbon**, then click on the **Move Chart** tool  in the **Location** group
2. Click on **New Sheet**, type a name for the sheet and click on **[OK]**

Handy to Know...

- Keeping charts on their own sheets makes them easier to work with. They are larger and there is not the confusing matrix of data lines.

CHANGING THE CHART TYPE

Creating a chart is easy. But what if the results were not what you wanted? Do you have to go back and start again? No! It is really quite easy to **alter the chart type** – all you need to do is to understand what

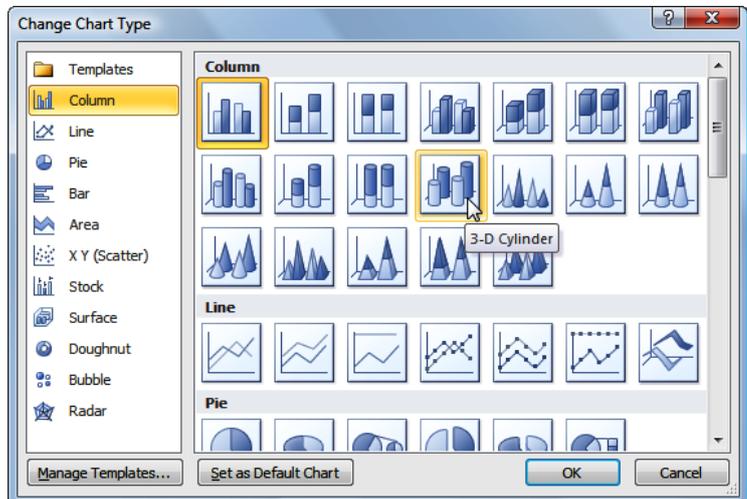
each chart type is designed for and to select the format that best suits your purpose. Just be aware that some chart types are designed for specialised applications.

Try This Yourself:

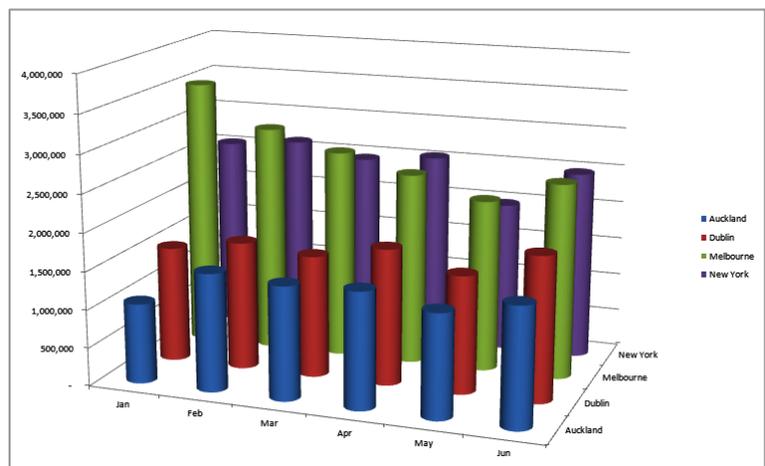
Same
File

Continue using the previous file with this exercise, or open the file *E817 Charting_7.xlsx...*

- 1 Click on the **Revenue Chart** worksheet tab to see the chart, then click anywhere on the chart to select it and see the chart commands on the **Ribbon**
- 2 Click on the **Design** tab on the **Ribbon** and click on the **Change Chart Type** tool  in the **Type** group to see the **Change Chart Type** dialog box
- 3 Click on **3-D Cylinder** to select it
- 4 Click on **[OK]** to apply the change to the chart
- 5 Click on the **Chart Data** tab to return to the worksheet



3



4

For Your Reference...

To **change** the **chart type**:

1. Ensure the chart or chart sheet is selected
2. Click on the **Design** tab on the **Ribbon** and click on the **Change Chart Type** tool  in the **Type** group
3. Click on the desired chart and click on **[OK]**

Handy to Know...

- You can use the **Change Chart Type** tool  in the **Type** group for either embedded charts or charts that have their own worksheet tabs.

CHANGING THE CHART LAYOUT

Excel has a gallery of **chart layouts** that can be applied at any time to an existing and selected chart either in its own worksheet or embedded into the data

worksheet. These layouts basically shift objects on the chart around to different locations on the chart giving you several design and layout options.

Try This Yourself:

1 Same File

Continue using the previous file with this exercise, or open the file E817 Charting_8.xlsx...

1

Click on the **Revenue Chart** worksheet tab to see the chart, then click anywhere on the chart to select it and see the **Chart Tools** tabs on the **Ribbon**

2

Click on the **Design** tab, then click on the **More** button  for the **Chart Layouts** group to see a gallery of possible layouts

3

Click on **Layout 3** to see the chart updated with this layout

4

Repeat steps 2 and 3 and experiment with some of the other layouts

5

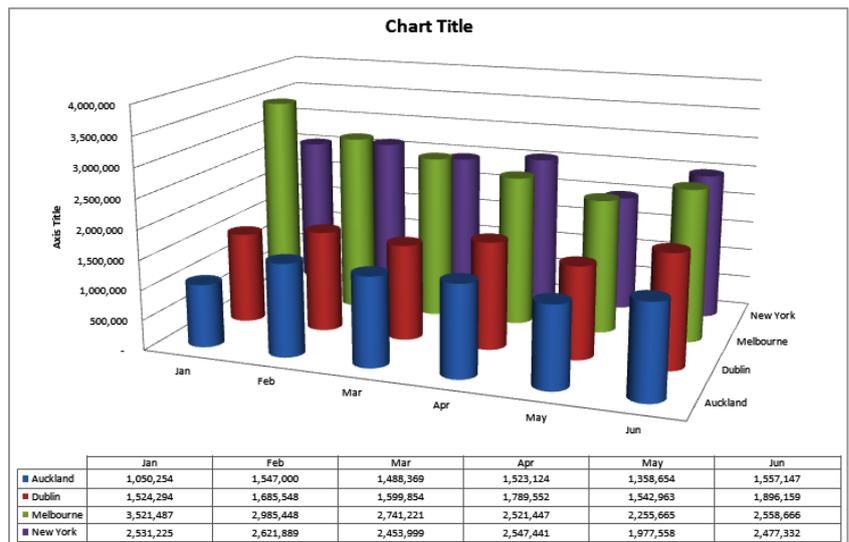
Click on the **More** button  for the **Chart Layouts** group and click on **Layout 5**

6

Click on the **Chart Data** tab



2



5

For Your Reference...

To **change** the **chart layout**:

1. Ensure the chart or chart sheet is selected
2. On the **Design** tab, click on the **More** button  for the **Chart Layouts** group
3. Click on the desired layout

Handy to Know...

- Layouts are like predefined *themes* created by someone at Microsoft. Even though you choose one of these layouts you can still make your own modifications to where the elements and objects are positioned and how they look.

CHANGING THE CHART STYLE

The **style of a chart** involves basically the colour scheme presented in the chart. Naturally you can manipulate the colours of the bars and lines and other elements as you please. However, unless you have a lot

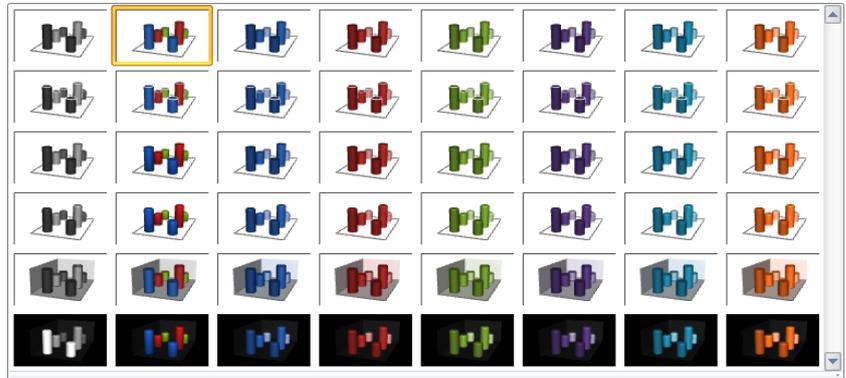
of time and great taste you may as well use one of the predefined styles built into Excel. You can choose and change styles in a chart at any time.

Try This Yourself:

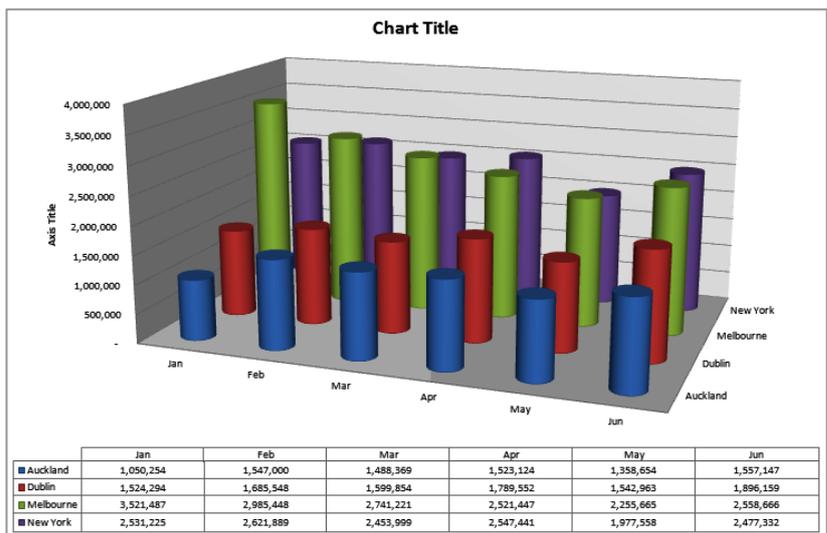
Same File

Continue using the previous file with this exercise, or open the file E817 Charting_9.xlsx...

- 1 Click on the **Revenue Chart** worksheet tab to see the chart, then click anywhere on the chart to select it and see the **Chart Tools** tabs on the **Ribbon**
- 2 Click on the **Design** tab, then click on the **More** button  for the **Chart Styles** group to see a gallery of possible styles
- 3 Click on **Style 14** to see this applied to your chart
- 4 Click on the **More** button  for the **Chart Styles** group and click on **Style 34**
- 5 Click on the **Chart Data** worksheet tab



2



4

For Your Reference...

To **change** the **chart style**:

1. Ensure the chart or chart sheet is selected
2. On the **Design** tab click on the **More** button  for the **Chart Styles** group
3. Click on the desired style

Handy to Know...

- If you can't find the style you want simply select the one that is the closest and then modify those elements that you want.

PRINTING A CHART SHEET

You can print an embedded chart simply by printing the worksheet as if it is a standard worksheet. And guess what, you can **print a chart sheet** in exactly the same way. To

print a chart sheet all you need to do is to make sure that the chart sheet is active and then just print through the **Print** command on the **File** tab on the ribbon.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *E817 Charting_10.xlsx...*

1

Click on the **Revenue Chart** worksheet tab

2

Click on **Chart Title**, type **Revenue Chart** and press **Enter** to provide a more meaningful title

3

Click on **Axis Title**, type **Euros** and press **Enter**

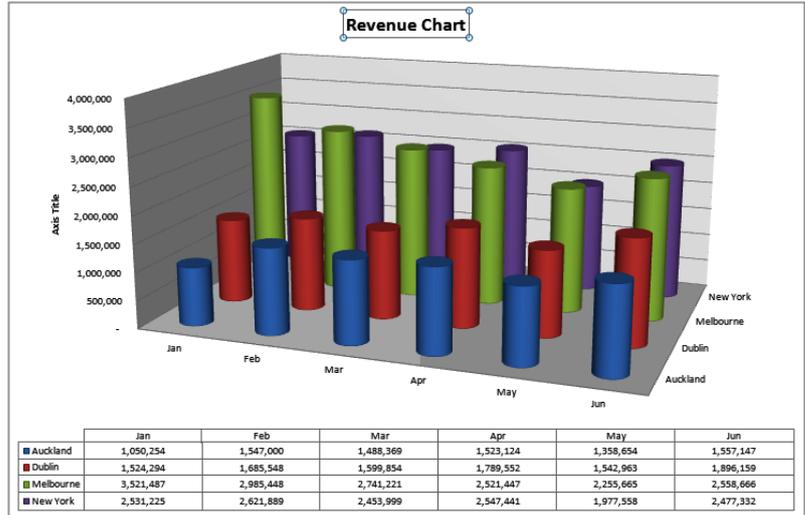
4

Click on the **File** tab then click on **Print** to see the print options and a preview of the chart

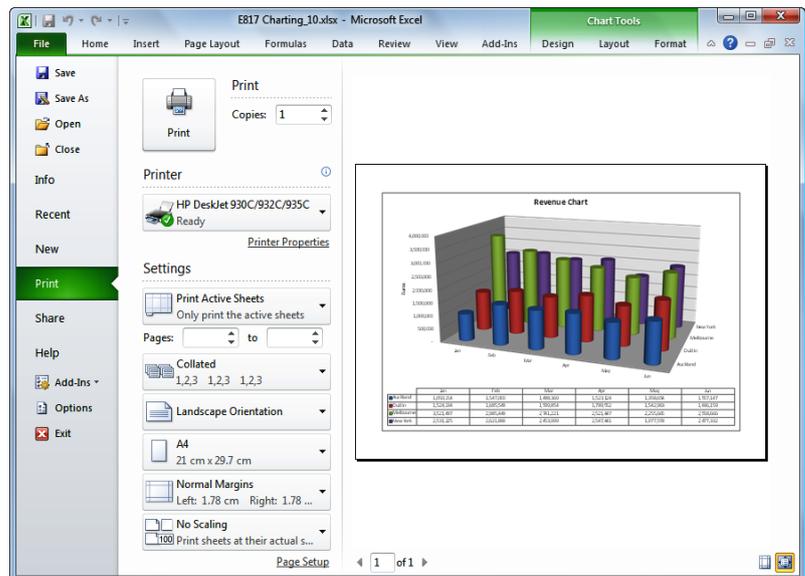
No further adjustment is required here so we can go ahead and print it...

5

If you have a working printer click on **[Print]** If you don't have a printer connected, click on the **File** tab (or any other tab) to return to the worksheet



2



4

For Your Reference...

To **print a chart sheet**:

1. Click on the chart sheet tab
2. Click on the **File** tab and click on **Print**
3. Click on **[Print]**

Handy to Know...

- When you preview a chart prior to printing the screen rendition may not be as clear as when the chart is actually printed. If your chart appears fuzzy in print preview it will still probably print satisfactorily.

EMBEDDING A CHART INTO A WORKSHEET

Charts can either be presented in their own sheets or they can be embedded into a worksheet that contains data. In fact you can move a chart back and forth between its own sheet and a worksheet as often as

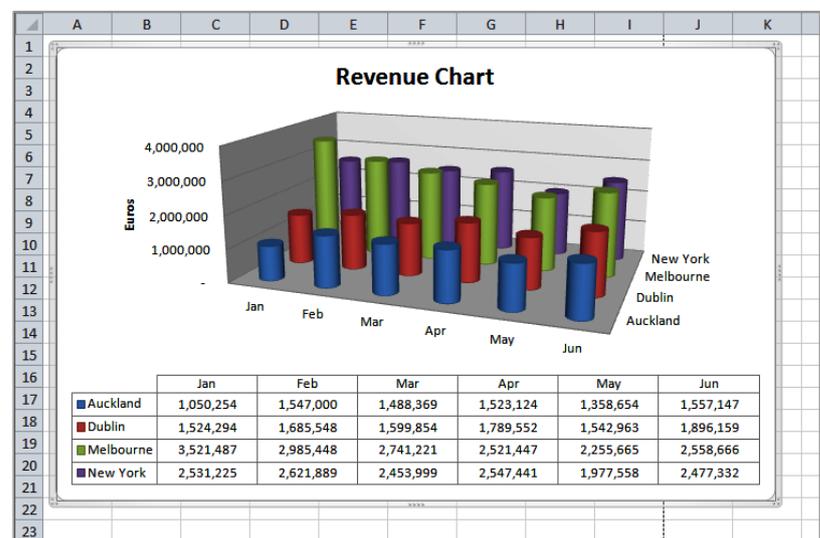
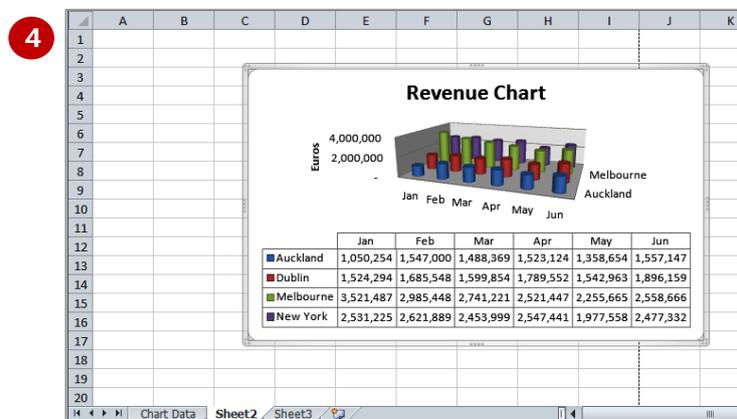
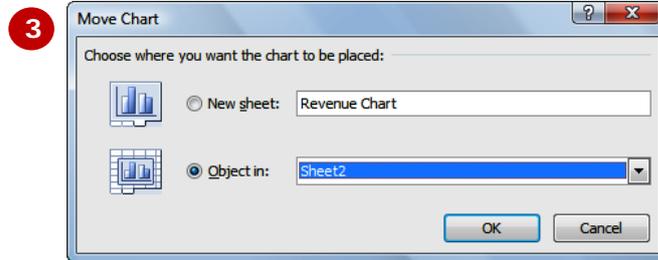
you wish without impacting at all on the chart. Sometimes it is easier to work with a chart in its own sheet, but may be necessary to print it with its data.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E817 Charting_11.xlsx...

- 1 Click on the **Revenue Chart** worksheet tab
- 2 Click on the **Design** tab on the **Ribbon**, then click on the **Move Chart** tool  in the **Location** group to display the **Move Chart** dialog box
- 3 Click on **Object in**, then click on the drop arrow  and click on **Sheet 2**
- 4 Click on **[OK]** to move the chart to the worksheet
- 5 Reposition the chart by dragging it to the top left of the sheet, then drag the resizing handles to resize it as shown
- 6 Click on the **Chart Data** worksheet tab



For Your Reference...

To **embed** a **chart** in a worksheet:

1. Click on the **Design** tab on the **Ribbon**, then click on the **Move Chart** tool  in the **Location** group
2. Click on the drop arrow  and select the sheet to embed it into, then click on **[OK]**

Handy to Know...

- Embedding is normally only done when it is necessary to print the worksheet and the data together.

CONCLUDING REMARKS

Congratulations!

You have now completed the **Creating charts** booklet. This booklet was designed to get you to the point where you can competently perform a variety of operations as listed in the objectives on page 2.

We have tried to build up your skills and knowledge by having you work through specific tasks. The step by step approach will serve as a reference for you when you need to repeat a task.

Where To From Here...

The following is a little advice about what to do next:

- Spend some time playing with what you have learnt. You should reinforce the skills that you have acquired and use some of the application's commands. This will test just how much of the concepts and features have stuck! Don't try a big task just yet if you can avoid it - small is a good way to start.
- Some aspects of the course may now be a little vague. Go over some of the points that you may be unclear about. Use the examples and exercises in these notes and have another go - these step-by-step notes were designed to help you in the classroom and in the work place!

Here are a few techniques and strategies that we've found handy for learning more about technology:

- visit CLD's e-learning zone on the Intranet
- read computer magazines - there are often useful articles about specific techniques
- if you have the skills and facilities, browse the Internet, specifically the technical pages of the application that you have just learnt
- take an interest in what your work colleagues have done and how they did it - we don't suggest that you plagiarise but you can certainly learn from the techniques of others
- if your software came with a manual (which is rare nowadays) spend a bit of time each day reading a few pages. Then try the techniques out straight away - over a period of time you'll learn a lot this way
- and of course, there are also more courses and booklets for you to work through
- finally, don't forget to contact CLD's IT Training Helpdesk on **01243-752100**