ITS Information Technology Service

An Introduction to Microsoft Excel 2003

This document is a hands-on beginner's guide to working with spreadsheets using Excel. The package is a very powerful one and only some of its capabilities are covered here.

A sample file used in the later sections of the tutorial is provided on the Networked PC service. Users of stand-alone PCs can copy the file from the ITS Web pages.

	A	B	C	D	E	F	G
1							
2			Charity Barbecue				
3							
4		Allocation:	Adult	Child		Costs:	
5		Burger and bun	2	1	Burger and bun	£0.50	
6		Salad	1	1	Salad	£0.70	
7		Trifle	1	1	Trifle	£0.55	
8							
9		Cost per person:	£4.00	£3.00			
10		Ticket price	£6.00	£2.50			
11							
12							
13		Party	Adults (18+)	Children	Cost of tickets		
14		Shaw, Rick	2	4	£22.00		
15		King, Joe	2	1	£14.50		
16		Astikoff, Ivan	1		£6.00		
17		Ding, Bill	2	1	£14.50		
18		O'Shea, Rick	1	3	£13.50		
19		Over, Eileen	2		£12.00		
20							
21							
22							
23							
24							
25		Total numbers	10	9			
26							
27							
28		Cost of food					
29		Burgers and buns	£14.50				
30		Salads	£13.30				
31		Trifles	£10.45				
32		Total food bill is	£38.25				
33							
34		Income from tickets	£82.50				
35							
36		Profit	£44.25				
37							

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Conventions:

In this document, the following conventions are used:

- A **bold typewriter font** is used to represent the actual characters you type at the keyboard.

- A ***slanted typewriter font*** is used for items such as filenames which you should replace with particular instances.

- A typewriter font is used for what you see on the screen.

- A **bold font** is used to indicate named keys on the keyboard, for example, Esc and Enter, represent the keys marked **Esc** and **Enter**, respectively.

- Where two keys are separated by a forward slash (as in **Ctrl/B**, for example), press and hold down the first key (**Ctrl**), tap the second (**B**), and then release the first key.

- A **bold font** is also used where a technical term or command name is used in the text.

Contents

1 Introduction

A spreadsheet is a table of values arranged in rows and columns. These values can take many forms such as text, dates and times, and numbers (including currency and percentages). Each value is stored in a cell. You can define what type of data is in each cell and how different cells depend on each other. The relationships between cells are called formulae. If you change the value in a cell, the contents of any cells that depend on that value will change automatically. This enables you to study what-if scenarios.

Excel can create and manipulate spreadsheets (which it calls worksheets). It can also produce graphs (known as charts) from your data and can link one worksheet to another.

This guide describes Excel 2003, which is part of the Microsoft Office 2003 suite of programs. Features that are new or significantly updated in this version are listed in section 14.

It is assumed that you are familiar with Microsoft Windows and know how to perform tasks such as accessing commands from the menus on the menu bar, selecting items and entering information into dialog boxes.

2 Starting the Excel tutorial

2.1 Accessing Excel

First, activate the Excel software.

1 Login to the Networked PC service if you are not using a stand-alone PC.

2 Click the **Start** button on the Windows taskbar.

3 Select **Microsoft Office Excel 2003**. (If you are using a stand-alone PC, you may need to select **Programs** first.)

Excel opens and displays an empty workbook. Precisely what you see on the screen depends on the type of monitor you are using.

2.2 The Excel screen

In Excel, the normal file type is referred to as a **workbook**, which can be thought of as the electronic equivalent of a ring binder. The first blank workbook displayed by Excel is called **Book1**. Each workbook contains **sheets** that are referred to as **worksheets** if they contain a spreadsheet and as **chart sheets** if they contain just a graph. A new workbook usually has three worksheets but more can be added if required.

Only *part* of an Excel worksheet is visible on the screen at any one time. This is because of the restrictions due to the size of the computer monitor. What you have at the moment is a *window* showing the top left corner of the worksheet.

The bulk of the screen display is made up of the worksheet which is divided into rows (with headings **1**, **2**, **3**, …) and columns (with headings **A**, **B**, **C**, …, **AA**, **AB**, …, **IV**). Although you cannot see them all at the same time, there are 256 columns and 65,536 rows. This means that there are more than 16 million individual cells in one worksheet. However, the number you can use at any time is limited by the amount of memory in your computer.

At the top of the Excel workspace is the title bar displaying **Microsoft Excel** followed by the name of the current workbook (**Book1** in this case). Below that is the menu bar and toolbars. Then, just above the row of column headings, is the Name box containing the address of the active cell (**A1** at the moment) and the Formula Bar displaying the contents of the active cell (blank at the moment).

2.3   Task panes

The task pane is a new feature in this version of Excel. On the **View** menu, there is now a **Task Pane** option. When this is ticked, a pane appears on the right-hand side of your screen as shown below.
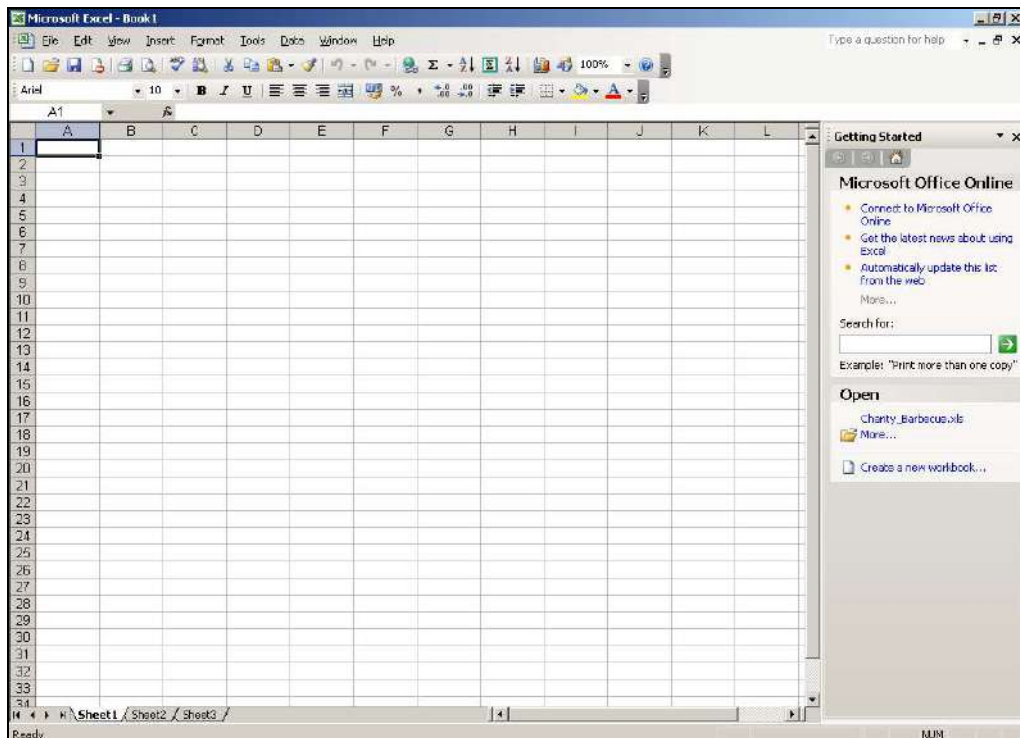
The **Getting Started** task pane provides easy ways of accessing Office information, creating new workbooks, and opening recently used workbooks.

Next to the **Close** button of the **New Workbook** task pane is the **Other Task Panes** down-arrow. This gives access to facilities for online help, inserting clip art, searching for files and copying multiple items.

To close a task pane, either click on its **Close** button or de-select **Task Pane** in the **View** menu option.

Before working through the rest of this document,

1   Make sure that **Task Pane** is ticked on the **View** menu.

2.4   Cell references

On the worksheet, the rectangular area where a row and column intersect is known as a **cell.** Each cell has a **reference** identified by its column and row headings. For example:

> **A1** represents the cell in column **A**, on row **1**

> **F10** represents the cell in column **F**, on row **10**

The cell that is currently active, **A1,** has a bold outline.

2.5   Using the mouse and the arrow keys

You can change the active cell by using the mouse or the arrow keys.

A particular cell can be made active by pointing to it with the mouse and then clicking on it with the left mouse button.

When using the arrow keys, the display scrolls if the boundary of the current window is reached.

To the right of the worksheet is the normal scroll bar, familiar to Windows users, which is used to move vertically through the worksheet, beyond the current screen display. Notice, however, that the scroll bar below the worksheet is divided into three areas.

On the right hand side there is a smaller, conventional scroll bar used to move horizontally beyond the current screen display. **Sheet tabs** in the middle of the scroll bar indicate the other sheets in the workbook. When a sheet tab is clicked, that sheet becomes the active sheet. **Tab scrolling buttons,** to the left of the sheet tabs, are used to navigate through the sheets of the workbook.

These introductory notes will not use Excel's three-dimensional capability but will concentrate on basic worksheet techniques.

Try the following:

1   Make cell **D4** active.

2   Move around the worksheet using the arrow keys.

3   Notice what happens when you reach the edge of the screen.

4   Use the mouse and scroll bars to become familiar with moving around the worksheet.

2.6   Using the toolbars and quick keys

Many tasks in Excel can be carried out using more than one method. For example, you can choose a command from a menu of commands, or click on a button on a toolbar. These buttons all have pictures on them to indicate their purpose, but if you are not sure which one to use, just place

the mouse pointer over the button (don't click the mouse button). The name of the toolbar button will appear in a small box beside the pointer arrow.

To choose a command from a menu, click on an option on the menu bar and select a command from the new menu that appears.

Some commands can also be issued by using particular keystrokes. These will not be introduced during this tutorial, but if you wish to learn what they are, you will find them alongside the commands in the menus. To see a full list of available keystrokes, type **keyboard shortcuts** as the words you are looking for when the **Index** tab is selected in **Microsoft Excel Help** (see Section 3).

3   Help

Excel has a comprehensive, easy-to-use help system.

The Office Assistant that popped up in earlier versions of Excel is less visible now. On the Networked PC service, the default is to have the Assistant off.

If you are using a stand-alone PC, and the Assistant is on, you can easily turn it off. Just click the Assistant, click **Options**, clear the **Use the Office Assistant** check box and then click **OK**.

3.1   Ask a question

On the menu bar, in the top-right hand corner of the Excel window, you will find the Ask A Question box.
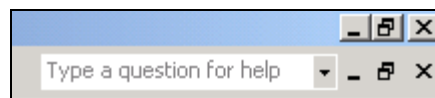
When you need help with something, just type your question, or some keywords, into that box and press **Enter**.

You will be shown a list of relevant topics. If there are more than five, you will have to click on the **See more** arrow at the bottom of the list. Click on the most useful looking topic and the Help window will appear with that one displayed.

3.2   Main help

There is another way of accessing this online help.

1   Select **Microsoft Excel Help** from the **Help** menu, or from the list of task panes.
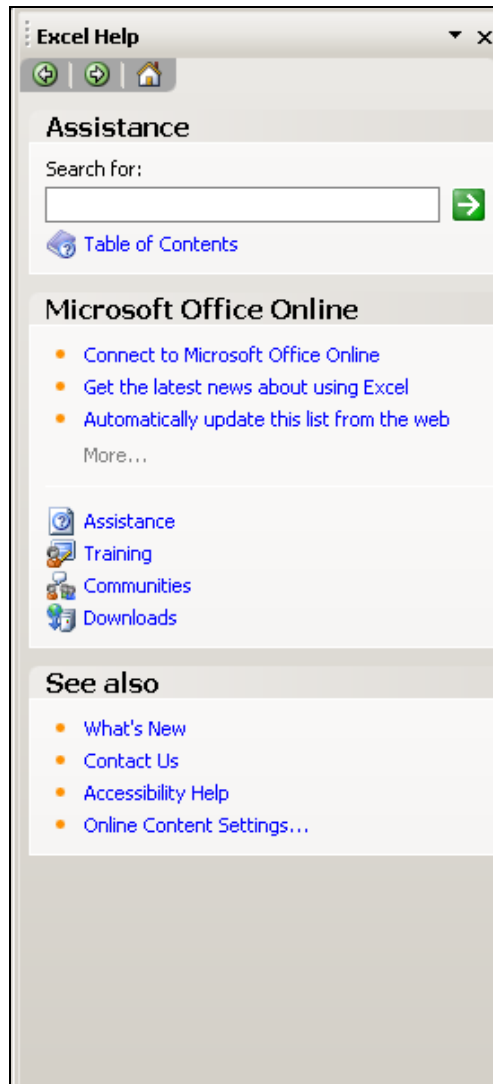
To view a table of contents for Help:

1 Click on the **Table of Contents** text.

2 Navigate to the topic of interest by clicking on the small book icons (use the small scroll bar at the bottom if you can't see these).

3 Click on that topic.

To type a question:

1 Go back to the **Getting Started** task pane by clicking on the home button next to the back and forward arrows.

2 In the **Search for:** box, type a question such as

How do I make text bold?

3 Click on the green **Start Searching** button.

4 When the results are returned, click on the topic of interest to you.

To search for specific words or phrases:

1 Go back to the **Getting Started** task pane by clicking on the home button ![home] next to the back and forward arrows.

2 In the **Search for:** box, type a keyword for your query, such as

  bold

3 Click on the green **Start Searching** button.

4 When the results are returned, click on the topic of interest to you.

4   Entering data

Data is entered into the worksheet by moving the cursor to the appropriate position on the screen, clicking the left mouse button to select that cell, and then typing the information required. The characters you type will appear in the active cell and on the formula bar.

When you have finished typing data into a cell you should signal the end of that data in one of the following ways:

- press the **Enter** key (the cell below becomes the active cell).
- press one of the arrow keys (the active cell moves one place in the direction of the arrow).
- click on the **Enter** box (marked by a green tick) on the formula bar (the original cell is still the active cell).

There are two basic types of information that can be entered into a worksheet: **constants** and **formulae**.

The constants are of three types: **numeric values**, **text values**, and **date and time values**. Two special types of constants, called **logical values** and **error values**, are also recognised by Excel but are not discussed in this document.

Numeric values include only the digits 0–9 and some special characters such as **+ - E e ( ) . , £ % /**

A numeric cell entry can maintain precision up to 15 digits. If you enter a number that is too long, Excel converts it to scientific notation. For example, if you type 12345678901234567, it will be stored as 12345678901234500, and displayed as 1.23457E16. Sometimes, although the number is stored correctly in the cell, the cell is not wide enough to display it properly. In those cases, Excel might show a rounded number or even a string of **#** signs — just increase the width of the column (see Section 5.5).

Be careful if you are entering a 16-digit (or more) credit card or account number. Format the cell as Text before entering the number to prevent the last digit being turned into a zero (follow section 5.6 but select Text instead of Currency).

A text entry can contain up to 32,767 characters (only 1024 will display in the cell but all will show on the formula bar). If the text you enter will not fit in the particular width of your cell, Excel lets it overlap the adjacent cell

unless that cell already contains an entry, in which case the extra text can be thought of as being tucked behind the adjacent cell.

By default, text is left-justified in a cell whereas numbers are right-justified.

The best way to become familiar with different types of data is to set up a simple example. This will be a worksheet to help with the organisation of a Charity Barbecue.

5   Creating a simple worksheet

Instructions are given for creating the worksheet shown below. The first stage is to get the correct values in the cells. Later you can make the worksheet more attractive by the use of bold text, different alignment and colour.
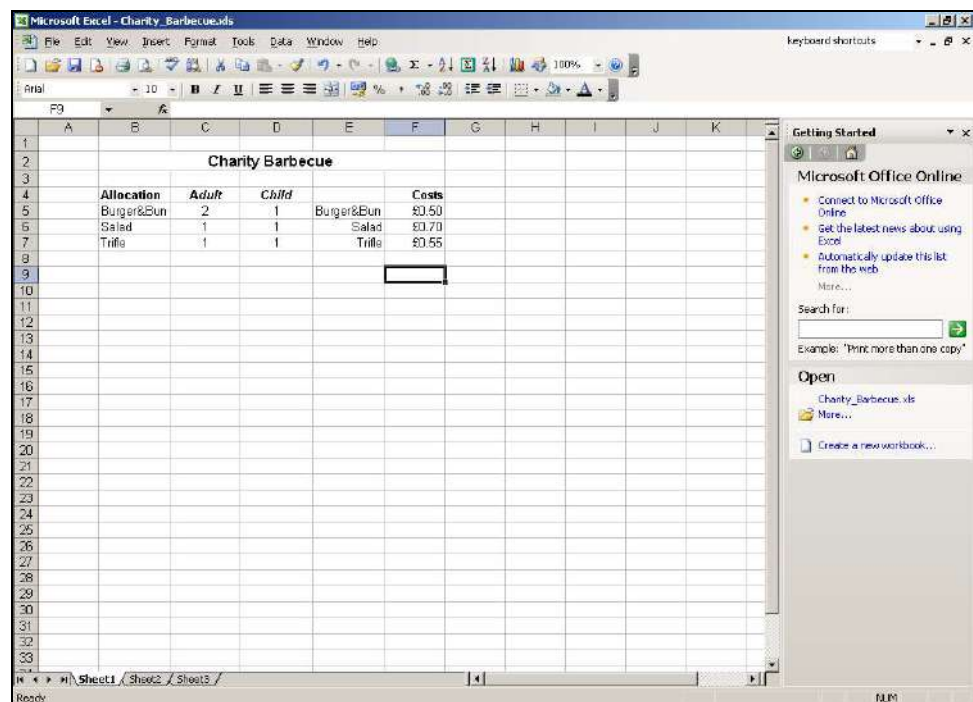
5.1   Entering the data

1   Click in cell **B2** and type

   Charity Barbecue

2   Press the **Enter** key (or one of the arrow keys).

3   Click in cell **B4** and type

   Allocation

4   Press the down-arrow key to move to cell **B5**.

5   Type

   Burger&Bun

6   Press the down-arrow key and then complete column **B** as shown above.

7   Enter the data in columns **C** and **D** (but *not* **E** and **F**).

5.2   Amending data

If you are in the process of entering data in a cell and you notice that you have made a mistake, it is easy to correct it. Press the **Backspace** (←) key to delete a character to the *left* of the cursor or the **Delete** key to delete a character to the *right* of the cursor.

If you want to edit the contents of a cell you dealt with earlier, you should double-click in that cell and make the alterations either in the cell itself or on the formula bar.

If you want to clear a cell of its *contents* (formula and data), *formats*, *comments*, or all three, you can select that cell with a single click of the left mouse button, select **Clear** from the **Edit** menu and then click on **Contents**, **Formats**, **Comments**, or **All**.

There are a couple of quick ways of clearing the contents of a cell. The first is to use the right mouse button to click in the cell and then select **Clear Contents** from the menu that appears. The second is to select the cell by clicking the left mouse button and then press the **Delete** key on the keyboard.

Do not confuse using the **Delete** key with selecting **Delete** from the **Edit** menu. That command carries out the more drastic action of removing the entire cell from the worksheet and shifting the surrounding cells to fill in the resulting space.

5.3   Ranges

In Excel, any rectangular area of cells is known as a **range**. The range is defined by the top-left and bottom-right corner cell references separated by a colon (**:**).

So, **B4:D7** represents the range of cells cornered by **B4** and **D7**.

5.4   Copying and pasting

The text in cells **E5:E7** (in other words E5, E6 and E7) is the same as in the range **B5:B7** so you can copy that.

1   Point to cell **B5** and hold down the mouse button.

2   Keeping the button held down, drag the pointer to **B7** and then release the mouse button. The range **B5:B7** will be highlighted.

3   Click on the **Copy** button on the toolbar (or select **Copy** from the **Edit** menu).

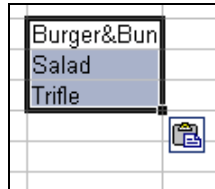4   Click in **E5** (where you want the copy to be placed).

5 Click the **Paste** button on the toolbar (or select **Paste** from the **Edit** menu).

The text in column **E** should now be filled in correctly.

In addition, there is a smart tag (the **Paste Options** one) near the bottom right-hand corner of the pasted data.

A **smart tag** can be:

- ignored—it will disappear when you carry out some other action
- removed—by pressing the **Esc** key
- used—point to it and click on the down arrow to display several options; select one and press the **Enter** key

For now, just ignore the **Paste Options** smart tag and finish the process of entering the data.

1 Click in any cell to remove the highlighting.

2 Press the **Esc** key to remove the flashing dotted line (marquee) round the cells you copied.

Note: selecting non-contiguous ranges

If you need to select cells that are not contiguous, (i.e., ranges that are not necessarily next to each other), proceed as follows:

1 Select the first area of cells.

2 Hold down the **Ctrl** key while selecting the other areas.

5.5 Adjusting the width of columns

If the **Burger&Bun** text is too wide for columns **B** and **E**, try widening those columns.

1 Move the cursor to the division between the areas containing the column names **E** and **F**. Note how the shape of the cursor has changed to a vertical black line with arrows pointing right and left.

2 Double-click the left mouse button.

The column will be widened (if necessary) automatically.

If you wish to have control over the sizing of the column, it can be done manually.

1 Move the cursor to the division between the areas containing the column names **B** and **C**.

2   Hold down the left-hand mouse button and drag that column divider the required distance to the right.

3   Release the mouse button.

4   Repeat the process if you want to make fine adjustments.

5.6   Entering currency values

Column **F** is interesting since it has three cells containing amounts of money. You do not have to type the **£** sign, instead you can enter the numbers and format the cells as currency later.

First enter the values.

1   Click in **F5** and type

> **.5**

The decimal point is the same character as the full stop (period).

2   Press the down-arrow key.

3   Enter **.7** in cell **F6** and **.55** in **F7**.

Now format the cells as follows:

4   Highlight the cells **F5** to **F7**. (Point to **F5**, press the mouse button; while keeping the button held down, drag the pointer to **F7**; release the button.)

5   Point to the highlighted area and click the right mouse button.

6   Choose **Format Cells** from the menu that appears.

7   In the **Format Cells** window, click on the **Number** tab (unless it is already selected).

8   In the **Category**: box select **Currency** by clicking on it.

9   Make sure that **Decimal places**: is set to **2**; **Symbol**: shows **£**, and that the first option in the **Negative numbers**: box is highlighted. **Sample**: shows you what the result of the formatting will be (£0.50).

10   Click on **OK**.

Alternatively, you could have formatted the cells first and then entered the values.

If you begin a numerical entry with a £ sign, Excel assigns Currency format to that cell. Similarly, if you end a numerical entry with a % sign, Excel assigns Percentage format to that cell.

Note: Excel 2003 includes the Euro symbol € for currency.

5.7   Formatting a cell before entering a value

Now try formatting a cell *before* entering its value.
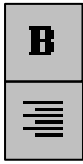
1 Click in **F4**.

2 Click on the **Bold** and **Align Right** buttons. The cell will not look any different until you enter a value.

3 Type

    Costs

and press the **Enter** key**.**

The text should be in a bold font and right-aligned in the cell.

5.8 Formatting text

You have entered all the data you need but you might like to make the worksheet easier to read by formatting some of the text.

First make the word **Allocation** bold.

1 Click in **B4**.

2 Click on the **Bold** button on the toolbar.

Next apply a bold italic font to **Adult** in **C4** and **Child** in **D4** and centre the text in the cells as follows:

1 Highlight cells **C4:D4**.

2 On the toolbar, click on the **Bold**, **Italic** and **Center** buttons. If you can't remember which those are, try pointing to each button in turn — a small pointer message will appear showing its name.
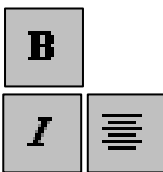
5.9 Using different sizes and colours

The Charity Barbecue heading of this worksheet can be made more interesting by changing its size and colour.

1 Click in **B2**.

2 Click on the down-arrow of the **Font Size** button.

3 Select another size, for example, **12**.

Your text in **B2** will increase in size.

4 Click on the down-arrow of the **Font Color** button.

5 Select a suitable colour for your text.

It is possible to colour the background of cells and to centre a heading across a range of cells.

1 Highlight the cells **B2:F2**.

2 Click on the down-arrow of the **Fill Color** button.

3 Select a suitable colour for your background. Be sure to make it different from the colour of your text or you will not be able to see the heading!

4 Make sure that the range **B2:F2** is still selected and click on the **Merge and Center** button. Your heading will be centred in that range of cells**.**

5 Click in any cell away from the heading.

Note: In Excel 2002, the **Merge and Center** button is now a toggle. Merged cells can be unmerged by clicking the button again.

5.10 Naming a sheet

The information on **Sheet1** might refer to a barbecue to be held in the summer. It would make sense to name the sheet accordingly.

1 Right-click on the tab **Sheet1**.

2 Select **Rename** from the menu that appears.

3 Type

Summer

and press the **Enter** key (or click in a cell).

5.11 Colour-coding a sheet tab

In Excel 2002, sheet tabs can be colour-coded (a coloured line is drawn under the sheet name).

1 Right-click on the **Summer** sheet tab.

2 Select **Tab Color**…

3 Click on one of the colours offered (green, for example).

4 Click **OK**.

5.12 Adding a border

Sometimes a worksheet can be made more attractive by adding borders around cells.

1 Select the rectangle of cells starting with **B2** in the top left-hand corner across to **F7** in the bottom right-hand corner.

2 Click on the down-arrow to the right of the **Borders** button on the toolbar.

3 Click on the second example in the third row (**All Borders**). This shows borders around all the cells.

4 Click on a cell not currently selected (to remove the highlighting).

Another way of adding borders is to select **Cells** from the **Format** menu and click on the **Border** tab. First select a style for a line, then apply it by clicking the presets, preview diagram or buttons on that **Border** tab in the **Format Cells** window. This approach gives you more options.

If you would prefer to draw the borders around cells yourself, click on the down-arrow to the right of the **Borders** button on the toolbar and select **Draw Borders**. On the **Borders** toolbar that appears, select a colour and style for the line, and choose to draw either a grid or just a border. Then, just draw on your worksheet. An eraser is also available.

5.13   Inserting and deleting rows and columns

Extra rows and columns can be inserted whenever you wish. As an example, insert a row between rows **4** and **5**.

1   Click, with the right mouse button, on the row name **5.**

2   Select **Insert** (and ignore the **Insert Options** smart tag).

Try inserting an extra column before column **A**.

1   Click, with the right mouse button, on the column name **A**.

2   Select **Insert**.

To delete a row or column, right-click on its name and select **Delete** from the menu which appears.

5.14   Spell-checking

Excel allows you to check the spelling of your work. You have probably already used this technique in Word.

1   Select a cell near the top of your worksheet.

2   Click on the **Spelling** button on the toolbar (or select **Spelling** from the **Tools** menu).

If a spelling mistake is found (or something that Excel thinks is a mistake but isn't), you will be given the opportunity to correct or ignore it.

Excel will object to **Burger&bun**. If you wish, change it to **Burger and bun** by editing the text in the **Not in Dictionary:** box and clicking on the **Change All** button.
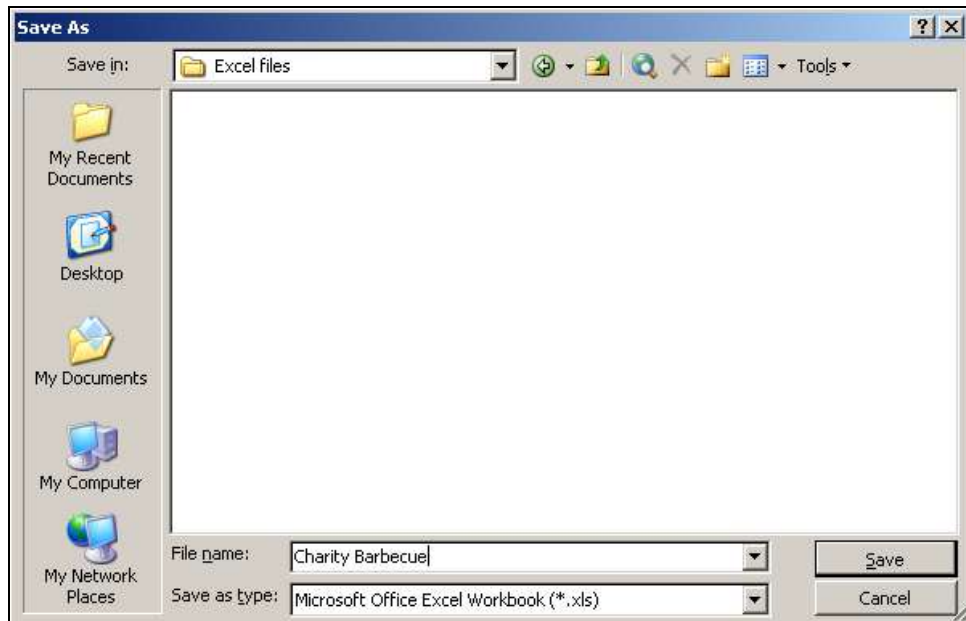
When the end of the sheet is reached, the checking can be continued from the beginning of the sheet down to the cell you selected.

5.15   Saving your workbook

Your workbook can now be stored in a file on a floppy disk (the **A**: drive) or on the Networked PC service (the **J**: drive).

1   From the **File** menu select **Save As** (or **Save**).

A **Save As** window appears.

Choose a name for your file

1. In the **File name**: box, type a suitable name (such as **Charity Barbecue**) for your file. Later, Excel will add the **.xls** extension automatically.

Excel filenames can have up to 218 characters including alphanumeric characters, spaces and the special characters except for /, \, **>**, **<**, *****, **?**, ", |, **;** and **:** Remember that Excel does not distinguish between upper and lower case letters.

Decide which drive to use

If you are using the Networked PC service, Excel will offer to save your file on your **J:** drive.

If you want to save the file to another drive (such as **A:)**

1. Click on the down-arrow to the right of the **Save in**: box.

2. Select the drive of your choice (**3½ Floppy (A:)**)**.**

Note: On the Networked PC service, a quicker way of selecting the **A:** drive is to click the **Floppy Disk** icon at the left-hand edge of the **Save As** window.

Decide which folder to use

If you want to choose a folder in which to save your file,

1   Double-click on a folder already displayed in the list box *or* click the **Up One Level** button (to move up one folder level) and navigate until you can select the folder you want.

On your own PC, you can click on the **History** button (at the left-hand edge of the **Save As** window) to see documents and folders you have worked with recently.

Different file format

It is possible to save the file in a different file format by changing the setting in the **Save as <u>t</u>ype:** box.

Finally

1   Click on the **<u>S</u>ave** button.

After you save the file, the workbook window remains open and Excel displays the new name in the title bar.

Note: Once a file has been saved for the first time, subsequent changes can be saved by selecting **<u>S</u>ave** from the **<u>F</u>ile** menu, or by clicking the **Save** button on the Standard toolbar.

5.16   Closing your workbook

You can close your workbook at any time.

1   From the **<u>F</u>ile** menu, select **<u>C</u>lose**.

If you have made any changes to the workbook since it was last saved, you will be asked whether you wish to save those changes.

2   Click **<u>Y</u>es** to keep the changes or **<u>N</u>o** to discard them (and leave the workbook as it was when you last saved it).

Note: To open the workbook later, select **<u>O</u>pen** from the **<u>F</u>ile** menu, navigate to the location of the file, select it and click **OK**. You can have several workbooks open at the same time.

6   Calculations

You can now try doing some simple calculations using a worksheet that was prepared earlier.

If you are *not* using the ITS Networked PC service, you may like to get a copy of this file from the ITS Web pages before working through the rest of the document.

The file is called **Charity_Barbecue.xls** and can be found in the **Information | Guides** section of the ITS website. **http://www.dur.ac.uk/its/info/guides/files/excel**/).

6.1 Opening a worksheet

1 From the **File** menu select **Open**.

2 Change the **Look in**: setting to **workfile on 'dudley'(T:).**

3 In the box of folders, double-click on **its**, and then on **Excel**.

4 Click on **Charity_Barbecue.xls**.

5 Click on **Open**.

6.2 Entering formulae

In cell **C9** you have to enter the cost of feeding an adult at the barbecue. This depends upon the allocation of burgers, salad and trifle for an adult (determined by values in cells **C5:C7**) and the cost of these items (as entered in **F5:F7**).

Instead of calculating this yourself, you can enter a formula in **C9** so that Excel will do the work for you. Using a formula has the added advantage that if any of the individual figures are changed at a later stage, Excel will automatically recalculate the cost.

All formulae begin with an equals (**=**) sign. If you forget to type the =, the rest of the line could be entered into the cell as a piece of text. Formulae can contain values, cell addresses, mathematical operators and functions.

Some of the mathematical operators that can be used are:

%	Percent
^	Exponentiation
*** and /**	Multiplication and division
+ and -	Addition and subtraction
&	Text joining
= < > <= >= <>	Comparison

They are listed here in decreasing order of priority starting with Percent, which has the highest priority (done first), and ending with Comparison, which has the lowest (done last). If a formula contains operators with the same priority, they are evaluated from left to right.

If you want to alter the order of evaluation, use parentheses (brackets) to group expressions. Any parts of a formula that are in parentheses are done first. For example:

7+3/2   will be evaluated as   **8.5** (not **5.0**)

(7+3)/2   will be evaluated as   **5.0**

Entering a formula for 'Cost per person'

In this case the calculation is "the number of burgers and buns allocated to an adult multiplied by the cost of a burger and bun, plus the number of salads allocated to an adult multiplied by the cost of a salad, plus the number of trifles allocated to an adult multiplied by the cost of a trifle".

1   Click in **C9**.

2   Type

   =C5*F5+C6*F6+C7*F7

Note that you have entered the *cell references* in the formula, not the *values* in the cells since those particular values might be changed later.

3   Press the **Enter** key.

Have a critical look at the value now displayed in **C9**. Make sure that it is correct (£2.25). If it isn't, click in **C9** and look at the formula displayed on the formula bar. If you find an error in your typing, correct it.

Next, enter a formula in **D9** that will calculate the cost of feeding a child. When entering the formula above, you typed the cell names. Usually it is easier to click in a cell rather than type its name. Try that now.

1   Click in **D9** and type

   =

2   Click in **D5**.

3   Type

   *

4   Click in **F5**.

5   Type

   +

6   Click in **D6**.

7   Type

   *

8   Click in **F6**.

9   Type

   +

10   Click in **D7**.

11   Type

   *

12   Click in **F7** and then press the **Enter** key.

Again, check that the resulting value is correct (£1.75).

Entering a formula for 'Cost of tickets'

Now calculate the cost of tickets for each group attending the barbecue. This is "the number of adults in the party multiplied by the cost of an adult's ticket, plus, the number of children in the party multiplied by the cost of a child's ticket".

For Rick Shaw, the first person in the list:

1   Click in **E14**.

2   Type

   =C14*C10+D14*D10

3   Press the **Enter** key.

The cost of his tickets should be £22.00.

6.3   Copying a formula to another cell

A formula can be copied to another cell in the same way as text or numbers.

1   Click in **E14**.

2   Click the **Copy** button (or select **Edit** | **Copy**).

3   Click in **E15**.

4   Click the **Paste** button (or select **Edit** | **Paste**).

5   Press the **Esc** key to remove the flashing border round cell **E14,** and the smart tag.

The resulting value in **E15** (£0.00) is clearly not correct. It is necessary to investigate what Excel has done.

6.4   Use of absolute cell references

When you entered the formula in **E14**, Excel thought of it as:

- take the contents of the cell two columns to the left of the current position
- *and multiply that by* the contents of the cell two columns left and four rows up from the current position;
- *then add* the contents of the cell one column to the left of the current position
- *multiplied by* the contents of the cell one column left and four rows up from the current position.

In other words, Excel, unless instructed otherwise, works with *relative* cell references. It thinks about where cells are in relation to the cell in which the formula is entered.

When the formula in **E14** is copied down to **E15**, you *do* want to refer to the cell two columns to the left and the cell one column to the left (King instead of Shaw) — *relative* cell references. But, the ticket prices are in fixed positions in **C10** and **D10** and you want to refer to these with *absolute* cell references — references that will not change when the formula is copied to other cells. A dollar symbol ($) is used to fix a reference. When placed in front of a column name it fixes the column and in front of a row number it fixes the row.

So, for example, **$C$10** means *always* column **C** and *always* row **10.** Similarly, **$D$10** means *always* **D10**.

Note: If you click anywhere within a cell reference in a formula, and press the **F4** button, dollar symbols will be inserted for you automatically. You can have mixed references such as **$Z34** (column fixed, row can change) and **Z$34** (column can change, row fixed). Keep pressing **F4** if you wish to have mixed references.

1 Double-click in **E14**.

2 Edit the formula to read

   =C14*$C$10+D14*$D$10

3 Press **Enter**.

The cost of the tickets should still be £22.00.

That formula has now to be copied down to cell **E19**. The easy way of doing that is as follows:

4 Select cell **E14**.

5 Move the cursor to the bottom right-hand corner of cell **E14**. The cursor shape will change to a small black plus (+) sign.

6 Hold down the mouse button, drag to cell **E19** and then release the button.

Remember: Relative references adjust automatically when you copy them, absolute references don't.

6.5   Adding a column of numbers

It is easy to add up a column of numbers.

Using the AutoSum button

First add up the number of adults attending the barbecue.

1 Click in **C25**.

2 Click on the Σ (AutoSum) button on the toolbar.

Σ

The AutoSum suggests a range that is to be summed, in this case **C14:C24**. (If you need to change this, just select the cells you want to be summed.)

3 Press the **Enter** key.

You could use the same technique to add up the numbers of children who plan to come to the barbecue. Because of the blank cell **D16**, Excel would suggest **=SUM(D17:D24)** and you would have to edit the **D17** to be **D14**.

Try using the **Insert Function** button instead, as described below.

Using the Insert Function button

1   Click in **D25**.

2   Click the **Insert Function** button to the left of the Formula Bar. An **Insert Function** window will open. (If the Office Assistant appears, just close it.)

3   In the **Or select a category**: box, select **Math & Trig**.

4   In the **Select a function:** box, scroll until you can select **SUM**.

5   Click on **OK**.

The **Function Arguments** window appears.

6   If necessary, move the **Function Arguments** window so that you can see cells **D14:D24** (just drag it).

7   Select cells **D14:D24** and note how Excel fills in that information in the **Number1** box.

Note: If you prefer, you can type in the range description yourself rather than use the selection technique.

8   Click on the **OK** button and check that the resulting total is correct.

The whole worksheet should now make sense. You might like to have a look at the formulae in cells **C29**, **C32**, **C34** and **C36** to make sure that you understand them.

6.6   Experimenting

It may be that you wish to make more profit at your barbecue. One possible way of achieving this would be to buy cheaper salads. The real value of getting Excel to calculate your finances can now be demonstrated.

1   First make a note of your predicted profit.

2   Change the value in **F6** to **£0.50** (instead of **£0.70**).

3   Look at the profit now.

Excel has *automatically* recalculated the worksheet.

4   Allocate two burgers and buns for each child and look at the profit.

6.7   Further information about formulae

There is a more detailed discussion of formulae in *Guide 35: Using formulae and functions in Microsoft Excel 2003.*

7   Charts

A chart is a graphical representation of the data in your worksheet. You can create an *embedded chart,* which appears on the worksheet beside the data, or, you can create a *chart sheet* as a separate sheet in the workbook so that it can be displayed apart from its associated data.

Whichever method you choose, your chart data is automatically linked to the worksheet from which it was created. If you change the data on the worksheet, the chart will change accordingly.

Excel offers many different chart types, each of which has several subtypes or variations.

7.1   Creating a column chart

A column chart can be created comparing the numbers of adults and children attending the Summer Barbecue in the last few years.

1   In the **Charity_Barbecue** workbook on the **T:** drive, click on the **Attendances** tab.

This is the data to be charted.

	A	B	C	D	E	F	G
1							
2		*Number of tickets sold for Summer Barbecue*					
3							
4			1997	1998	1999	2000	
5		Adults	120	250	310	277	
6		Children	16	40	60	116	
7							

The chart to be created is shown below.

Summer Barbecues
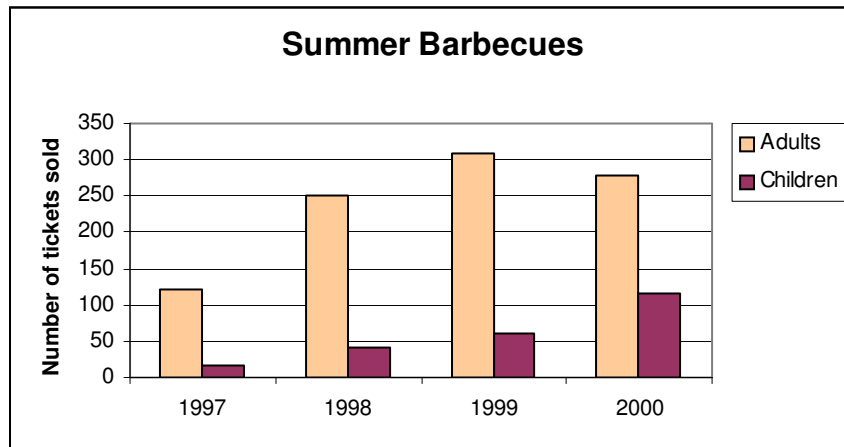
1   Select the data in **B4:F6** on the **Attendances** sheet.

2   Click on the **Chart Wizard** button on the toolbar.

3   In the **Chart Wizard – Step 1 of 4 – Chart Type** window that opens, click on the **Standard Types** tab (if it is not already selected).

4   In the **Chart type:** window, click on **Column**.

5   In the **Chart Sub-type:** area, make sure that the first type, in the first row, is selected.

6   To see what your chart is going to look like, hold down the mouse button on the **Press and Hold to View Sample** button.

7   Release the button and click on **Next>.**

8   Check that your Data range: is set to =Attendances!$B$4:$F$6.

9   Check that the **Rows** radio button is selected.

10   Click on **Next>.**

11   Click in the **Chart title:** box and type

      Summer Barbecue

12   Click in the **Value (Y) axis:** box and type

      Number of tickets sold

Note how your text is now included on the chart preview.

13   Click on **Next>.**

14   In the **Place chart:** box, make sure that the **As object in:** radio button is selected.

15   Click on **Finish.**

Your chart will be displayed with eight small black squares called *handles* on the frame around the chart. These indicate that your chart is currently selected.

The Chart toolbar, shown below, is also displayed. You can move the toolbar by dragging its title bar, or close it by clicking on its close button.
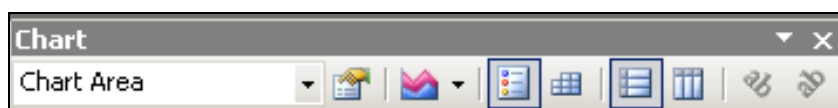
16   Click on the worksheet somewhere outside the chart area. This will de-select your chart and the handles will disappear.

The Chart toolbar also disappears when your chart is de-selected. It will re-appear if you select the chart again.

7.2   Resizing and moving the chart

1   To select the chart, single-click inside the chart area (note the re-appearance of the handles).

2   Point to a blank area of your chart, then click and drag to move the chart to a new position on the worksheet.

3   Point to one of the chart's corners and drag it to resize the chart.

You will have noticed that as you resized the chart area, the text in the chart automatically changed size as well. The size of the text in your chart can be set as follows:

4 In the **Font Size** box on the formatting toolbar, click on the ▾ and select **8**.

5 Click outside the chart area to de-select the chart.

7.3 Editing the chart

1 Make sure that your chart is selected (handles displayed).

Change the appearance of titles

1 Click on the chart title **Summer Barbecue**.

2 Change its font size to **12** and make the text bold by clicking on the **Bold** button.

3 Make the **Number of tickets sold** title bold.

Move the legend

The legend is the key for the chart — it indicates which colours are used for Adults and Children.

1 Point to the legend and, with the mouse button down, drag it to a new position.

Change the colour of the Adults columns

1 Single-click on one of the Adults columns (handles appear on *all* Adults columns; they are *all* selected).

2 Click on the ▾ of the **Fill Color** button and choose a different colour for those columns.

Note how the legend changes automatically to refer to the new colour.

3 Click on a blank region inside the chart's frame to de-select the columns.

Clear the background of the chart

1 Point to the grey background of your chart. When you have a pointer message **Plot Area**, click the right mouse button.

2 From the shortcut menu that appears, select **Format Plot Area**.

3 In the **Area** box, click on **None**.

4 Click on **OK**.

5 Click away from the **Plot Area** to de-select it.

**Note**: Another approach is to click on the Plot Area and, from the **Format** menu, select **Selected Plot Area**.

De-select the chart

1   Click outside the Chart area.

7.4   Further help with charts

It is essential that you choose an appropriate type of chart for your particular data. For scientific data it is highly likely that you should choose one of the types of scatter plot (markers/no markers; straight lines/curves)
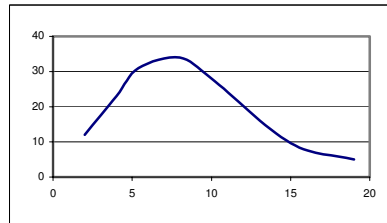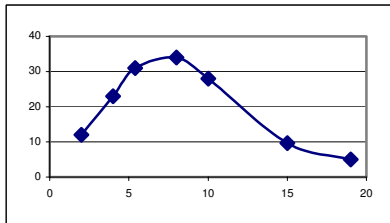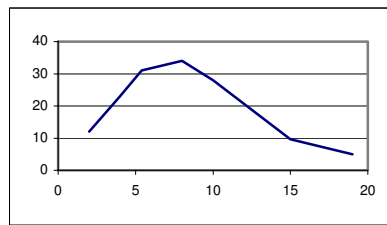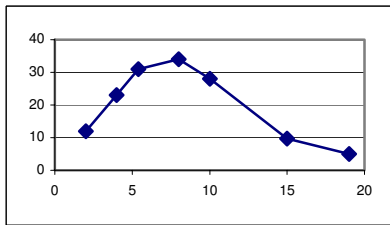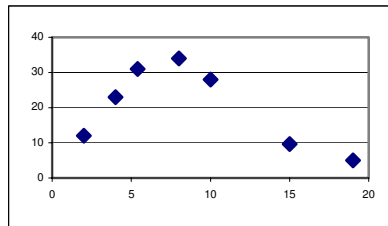
For more details about creating and editing charts, see *Guide 34: Creating charts in Microsoft Excel 2003*.

8   Sorting

If you have a rectangular block of data surrounded by blank cells, then Excel recognises this as a **list**. Data in a list can be sorted alphabetically, numerically or chronologically. Excel rearranges the rows according to the contents of one or more columns.

If you select a single cell in the list, Excel will automatically select the whole list for you. If there are labels in the first row, Excel excludes them from the sort. Alternatively, *you* can select the area of data that is to be sorted. Be careful though, sorting data selected by you does not move any non-selected data in adjacent columns or rows.

On the **Summer** worksheet of the **Charity_Barbecue** workbook, you have a list in cells **B13:E19**. (If you added extra people, the range will be different.) It can easily be sorted by surname.

1   Click on the **Summer** tab.

2   Click on any name in the **Party** column.

3   Click the **Sort Ascending** button on the toolbar.

The list will be sorted in ascending order by name.

4   Immediately click the **Undo** button if you want to restore the list to its original order.

The **Sort Descending** button can be used to sort a list in descending order.

If you wish to sort by *more* than one column, select **Sort** from the **Data** menu**.**

For further information about lists, including sorting, see *Guide 36: Lists and data management in Microsoft Excel 2003*.

9 Printing

There are various stages to getting your information printed.

9.1 Setting up the page

1 From the **File** menu, select **Page Setup**.

By changing the options in the **Page Setup** window, you can control the appearance of your printed sheets. This includes choice of margins, headers/footers, page orientation (portrait/landscape), scaling, and precisely *what* will be printed (grid lines for example).

2 Click on **OK** in the **Page Setup** window.

9.2 Previewing what will be printed

1 From the **File** menu, select **Print Preview** (or click on the **Print Preview** button on the toolbar).

In this mode you can, if you wish, view the next/previous page, zoom, use a magnifying glass, adjust margins, and change the page breaks.

2 Click the **Close** button to return to your worksheet.

Dotted lines will now be displayed on your worksheet indicating page boundaries.

9.3 Selecting a printer and printing your work

1 From the **File** menu, select **Print**.

2 If you are working on the Networked PC service, by default, the printout should be directed to the printer in the room in which you are working. Check that this is the case.

If you want a different printer:

3 Click on the ▼ beside the Printer **Name:** box.

4 Select the printer you want to use.

You can specify what is to be printed, which pages are to be printed, and the number of copies.

5 You will probably not want to print at this stage so click on **Cancel**. (To print your work, click on **OK**.)

10 Transferring information from Excel to a Word document

Once you have entered data into Excel and created a chart it is possible that you may wish to include that information in a Word document.

10.1 Transferring data

1 On your Excel worksheet, select the cells containing your data.

2 Press the **Copy** button (or select <u>**Copy**</u> from the <u>**Edit**</u> menu).

3 Move to your Word document and click where you want the data to be inserted.

4 Click on the **Paste** button (or select <u>**Paste**</u> from the <u>**Edit**</u> menu).

The data in the cells will be copied to your Word document in the form of a table that can be edited. The information in the table has no connection with the data in Excel from which it came.

Lots of non-printing characters will be showing. To see the final effect, you could press the **Show**/**Hide** button to turn these off but be sure to put them on again before the next stage.

The gridlines around the cells of the table will not print (click the **Print Preview** button to confirm this). It is, of course, possible to put borders around cells if you wish.

Note: If you would prefer to have your copied data in the form of a *picture* rather than a table, at step 2 above, hold down the **Shift** key while selecting **Edit** so that you can choose **Copy Picture** from the menu.

10.2 Transferring a chart

1 Move to your Excel worksheet and click on the chart to select it.

2 From the <u>**Edit**</u> menu, select <u>**Copy**</u> (or click the **Copy** button on the toolbar).

3 Move to your Word document and position the insertion point where the chart is to be placed.

You now have to decide whether to insert the chart as a picture or as an Excel Chart Object.

As a picture

1 From the <u>**Edit**</u> menu, select **Paste <u>S</u>pecial**.

2 In the **Paste Special** dialog box, select **Picture (Enhanced Metafile)** in the **As:** box.

3 Make sure that the <u>**Paste**</u>: option is *on* (selected).

4 Click **OK**.

A copy of the chart will appear in your Word document. You can choose whether or not the chart floats over the text (floating means that you could drag the chart to any position on the page).

1 Right-click on the chart in your Word document.

2 Select **Format P<u>i</u>cture** from the shortcut menu.

3   Click on the **Layout** tab.

4   Select <u>**I**n line with text</u> (the chart will then stay with the text to which it belongs, even when the document is edited) or one of the other options.

5   Click **OK**.

6   Click away from the chart to de-select it.

The resulting chart is not connected in any way with Excel or with an Excel file.

As an Excel Chart Object

1   From the <u>**Edit**</u> menu, select <u>**Paste**</u> (or <u>**Paste Cells**</u>).

Your chart will be inserted as a chart object. This means that if you double-click on the chart in Word, Excel will be activated and you can change the chart or the associated data. Although this sounds very useful, it can sometimes be difficult to get the end result you require.

11 More about copying and pasting

11.1.1 Keyboard shortcuts

It is useful to learn the keyboard shortcuts for the basic editing commands.

Press	To
Ctrl/C	Copy
Ctrl/X	Cut
Ctrl/V	Paste
Ctrl/Z	Undo
Ctrl/Y	Redo

11.1.2 Clipboard task pane

When you copy something, Excel saves it using a temporary storage area called the Clipboard, which can hold up to 24 items. To see this in action,

1   Activate the **Clipboard** task pane using *one* of the following methods:
   - Select **Office Clipboard** from the **Edit** menu.
   - Press **Ctrl/C** twice, quickly.
   - Click on the **Other Task Panes** button and select **Clipboard**.
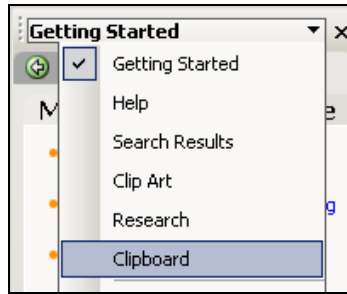
2   Copy some non-blank cells and note how a small picture of the region you copied can be seen in the Clipboard task pane.

3   Copy something else and see its representation in the Clipboard task pane.

To paste an item from the Clipboard task pane, select the place where the item is to go and then click the item in the task pane.

To clear out all the items in the task pane (so that you can start a new collection), click the **Clear All** button.

To remove a particular item, point to it on the Clipboard, click the down-arrow beside it and select **Delete**.

To paste all the items in the task pane, click the **Paste All** button.

Precisely how the Clipboard task pane collects copied information depends on the current settings. To see these, click on the **Options** button at the bottom of the task pane.

11.1.3   Moving and copying with the mouse

The mouse can be used to quickly move the contents of a cell or range of cells to a new location:

1   Select a cell or range of cells.

2   Point to the border of the selection—an arrow pointer should appear.

3   Click the border and drag your selection to its new location.

This approach can be combined with different key presses as shown below:

To achieve this result	Hold down this key while dragging the selection
Copied	Ctrl
Inserted	Shift (release mouse button before Shift)
Copied and inserted	Ctrl and Shift

Note: If this doesn't seem to work, select **Tools** | **Options** and check that **Allow Cell Drag and Drop** is ticked on the **Edit** tab.

12 Dealing with a crash and corrupted files

12.1.1 Document recovery

If Excel encounters a problem, it tries to save any open files before they are damaged by the program crash. When Excel is restarted, these files are listed in a **Document Recovery** task pane on the left side of the screen. If a file is listed twice, once as **Recovered** and once as **Original**, compare them and decide which to save.

12.1.2 AutoRecover

The **AutoRecover** feature gives you extra protection and you should make sure that it is turned on.

1 Select **Tools** | **Options**.

2 Click on the **Save** tab and check that there is a tick in the **Save AutoRecover info every**: box.

3 Note how often this is scheduled to occur (10 minutes on the NPCS) and where the saved files are to be stored (**c:\temp\application data\Microsoft\Excel** on the NPCS).

12.1.3 Open and repair

The **Open and Repair** command can sometimes either repair a corrupted file or get the data from it.

1 Select **File|Open**.

2 Select the file to be repaired.

3 Click on the down-arrow to the right of the **Open** button and select **Open and Repair.**

4 First try clicking the **Repair** button. If that doesn't work, go back and try the **Extract Data** button.

12.1.4 Change source

If Open and Repair fails, try the following.

1 Open two new workbooks.

2 Select cell **A1** in one of them and press **Ctrl/C** (to copy).

3 Activate the other workbook and right-click in cell **A1**.

4 From the shortcut menu, select **Paste Special** and then **Paste Link**.

5 Select **Edit** | **Links**, click **Change Source,** select the corrupted workbook and click **OK**.

6 In the **Edit Links** window, click **Close**.

If this approach is going to work, data from **A1** in the corrupted workbook will appear in **A1** in your new workbook. If it does,

7 Press the **F2** function key to activate **Edit** mode.

8 Press **F4** three times to change the absolute cell reference **$A$1** to its relative form **A1** and then press **Enter**.

9 Copy the formula in **A1** down and across until all your data has been retrieved.

10 Repeat this process for any other sheets in your workbook.

13 Extras

13.1 AutoFill

Excel has an AutoFill facility that is very useful. You can read all about this in the built-in Help.

For now, try the following.

1 On the **Summer** worksheet, click in **B80** (well away from your barbecue data).

2 Type

Jan

3 Point precisely to the fill handle (small black +) in the bottom right-hand corner of the cell.

4 Drag this down to **B91** and then release the button.

Excel should have filled in the months of the year.

Now try days of the week (type **Mon** or **Monday**).

Fill two adjacent cells with **0** and **5**; select both cells and drag the fill handle to generate **10**, **15**, **20, …**

Experiment with dragging the fill handle using the *right* mouse button. You will be given a menu of options as you release the button.

13.2 Filling cells with the same data

There is a quick way of entering the same data into a range of cells.

1 Highlight an area of cells (for example, **C100:F110**).

2 Type some characters or a number.

3 Press the **Ctrl** and **Enter** keys at the same time.

4 Remove the highlighting by clicking in any cell.

13.3 Comments

Comments can be attached to cells in a worksheet. They can be used, for example, to explain a particular calculation or to remind you about something.

When using the Networked PC Service, you should arrange for *your* name to appear at the top of each comment instead of the default name **ITS**.
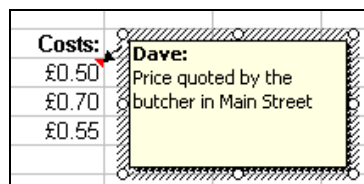
1 From the **Tools** menu, select **Options**.

2 Click on the **General** tab.

3 In the **User name**: edit box, type your name (or any other text that is to appear at the beginning of your comments).

4 Click on **OK**.

Now insert a comment:

1 Click in **F5**.

2 From the **Insert** menu, select **Comment**.

3 In the **Comment** box that appears, type

Price quoted by the butcher in Main Street

4 Drag the handles of the **Comment** box so that it is just large enough to hold the text.

5 Click away from the **Comment** box.

You should now have a small red triangle in the top right-hand corner of cell **F5** indicating the presence of a comment.

6 Move your cursor to point at cell **F5** so that the comment pops up.

Comments can be:

edited — right-click on the cell containing the comment and choose **Edit Comment**

deleted — right-click on the cell containing the comment and choose **Delete Comment**

displayed all the time — from the **Tools** menu select **Options**; click on the **View** tab; click the **Comment & indicator** radio button and then click **OK**

not displayed — from the **Tools** menu select **Options**; click on the **View** tab; click the **None** radio button and then click **OK**

worked with using the Reviewing toolbar — from the **View** menu, select **Toolbars** and then **Reviewing**

printed — from the **File** menu, select **Page Setup**; click on the **Sheet** tab and select one of the options in the **Comments:** drop-down list

13.4 Word wrap

A long string of text can be made to wrap onto several lines within a cell using this facility.

1   Click in a cell and then select **Cells** from the **Format** menu.

2   Click on the **Alignment** tab.

3   Click in the **Wrap text** box, so that it is ticked.

4   Click **OK**.

5   Type some text and note how it wraps.

6   Press the **Enter** key.

13.5 Merging cells

Sometimes you may want a particular effect that can best be achieved by merging cells, as in the example below.

Students in Class B					
Males			Females		
Name	Colour of		Name	Colour of	
	eyes	hair		eyes	hair

To merge cells:

1   Select the cells that are to be merged.

2   From the **Format** menu, select **Cells**.

3   Click on the **Alignment** tab.

4   Tick the **Merge cells** box.

5   If the upper left cell of those selected contains a lot of text, you may wish to click the **Wrap text** box as well.

6   Click **OK**.

To unmerge cells:

1   Select the cells to be unmerged.

2   From the **Format** menu, select **Cells**.

3   Click on the **Alignment** tab.

4   De-select the **Merge cells** box.

5   Click **OK**.

Note: In Excel 2002, you can click on the **Merge and Center** button to unmerge cells.

13.6   Alignment prefix characters

If you need to create a text entry consisting entirely of numbers, precede the entry with a text alignment prefix character such as an apostrophe (') which left-aligns data in a cell.

1   Click in a blank cell and type
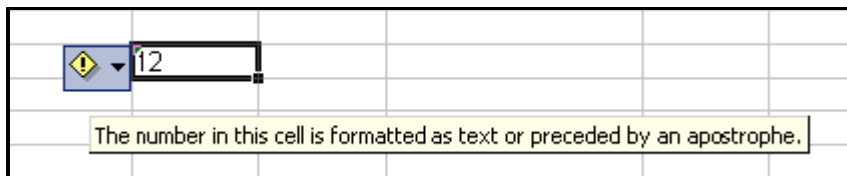
'123

2   Press the **Enter** key.

A small green flag will appear in the top-left corner of the cell.

3   Click in the cell.

An error type smart tag will appear.
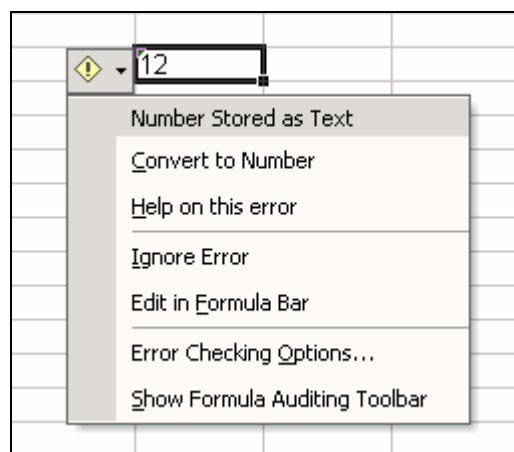
4   Point to the tag.

A message will appear.

5   Click on the smart tag.

A menu of specific commands will appear.

6   Since the apostrophe was deliberate, rather than an error, click **Ignore Error**.

The green flag will disappear.

Note: If you have a range of cells with the same problem, select the whole range before using the smart tag menu.

To make alignment prefix characters work for text entries as well as numeric entries,

1 Select **Tools** | **Options**, click the **Transition** tab, tick the **Transition navigation keys** box and click **OK**.

2 Experiment by entering

   "a12   (right-aligns)

   ^a12   (centres)

   \a12   (repeats characters across the cell)

   in three different cells.

14 New and missing features

Anyone who is already familiar with an earlier (pre-2002) version of Excel may like to see the following quick summaries of *some* of the new or significantly updated features in Excel XP (2002) and 2003. To see a full list, select **What's new** in Excel's **Help taskpane**.

Some of the improvements apply to all applications in Microsoft Office:

- task pane — see section 2.3
- smart tags — see section 5.4
- Help—the new **Ask A Question** box (see section 3.1)
- collecting multiple items on the Clipboard (see section 11.1.2)
- inserting diagrams — **Insert**|**Diagram** opens the Diagram Gallery dialog box offering organisation charts, and cycle, radial, pyramid, Venn and target diagrams
- using clip art — **Insert**|**Picture**|**Clip Art** displays Insert Clip Art task pane; there is a new Media Gallery
- crash recovery — if Excel encounters a problem, it tries to save any open files before they are damaged by the program crashing and makes them available when you restart (see section 12)
- **Open** and **Save As** dialog boxes can be resized by dragging the resize handle in the bottom right-hand corner of the dialog box
- FTP sites frequently used for saving/retrieving files can be added to the **My Places** bar
- searching for files — Search feature has a new interface and a new Basic Text Search option (**File**|**Open**, click **Tools** and select **Search**)
- voice recognition — can use a microphone to dictate text, issue commands, select toolbar buttons, and control items in dialog boxes and task panes (not available on the NPCS)

- handwriting recognition — can use a drawing pad and stylus, or a mouse, to enter text using your own handwriting (not available on the NPCS)
- language bar — a special toolbar that includes commands and buttons for speech and handwriting recognition (not available on the NPCS)

Some improvements are specific to Excel and include:

- coloured sheet tabs — see section 5.11
- cell formatting — the **Alignment** tab now offers the possibility of displaying text right-to-left; there are also **Right Indent** and **Distributed** (for even distribution of text within a cell) options
- cell formatting — in the **Format Cells** dialog box, select the **Number** tab and the **Special** category; different settings in the **Locale (location)** box offer various formats for postcodes, phone numbers and social security numbers
- drawing borders — on the **Formatting** toolbar, the **Borders** palette includes a useful **Draw Borders** command (see section 5.12)
- **Merge and Center** button on the **Formatting** toolbar is now a toggle (see section 5.9)
- picture formatting — **Format|Picture**, with the **Picture** tab selected, now offers a **Compress** button to reduce the disk space taken up by images
- AutoShape rotation — all 2-D objects now have a handle that can be dragged to rotate the object
- Excel now looks at the contents of a worksheet before sending it to the printer and eliminates any blank pages
- graphics can be added to headers and footers
- error checking — select **Tools|Error Checking** to find any errors on the worksheet and display the **Error Checking** dialog box
- finding and replacing formatting — using **Edit|Find**, you can now find formatting and choose to search the active sheet or the whole workbook
- inserting symbols — **Insert|Symbol** now gives access to the complete character set of all the fonts on your computer
- **AutoSum** button — clicking the arrow next to this button now enables you to enter the **Average**, **Count**, **Max** or **Min** functions; the **More Functions** option opens the **Insert Function** dialog box
- the **Function Wizard** button has been replaced by the **Insert Function** button that offers you a chance to describe what you are trying to do (see section 6.5)
- Excel can "read" the contents of cells — display the **Text To Speech** toolbar, select the cells and click the **Speak cells** button (**Speech Recognition** is not available on the NPCS)
- password access to specific ranges of cells — in addition to protecting a workbook or particular worksheets you can now give editing access to specified areas of a protected worksheet by selecting **Tools|Protection|Allow Users To Edit Ranges**

Things that are no longer available in Excel XP (2002) or 2003 include:

- data mapping (the Map button)
- sound notes
- XLM macros
- Report Manager (can still get it from the Office Update Web site **officeupdate.microsoft.com**)
- **New** dialog box (the **New** command on the **File** menu displays the **New Workbook** task pane rather than a dialog box)

15 Finally

If you wish to keep the changes you have made to your worksheet, save it now.

1 Select **Save As** from the **File** menu.

2 Open the folder in which the file is to be stored.

3 Click on the **Save** button.

Then close down Excel and log out from the ITS Networked PC service.

1 Select **Exit** from the **File** menu of Excel.

2 Click the **Start** button on the Windows taskbar.

3 Select **Logout**.

4 Confirm your logout by clicking the **OK** button.

16 Other Excel documentation

Other ITS documentation about Excel includes:

Guide 34: Creating charts in Microsoft Excel 2003

Guide 35: Using formulae and functions in Microsoft Excel 2003

Guide 36: Lists and data management in Microsoft Excel 2003

Guide 39: Introduction to using macros in Microsoft Excel 2003