

Worksheet Basics

Introduction

The overall appearance of the Excel screen has changed little in recent versions (from Excel 7 onwards) so I have kept the introductory parts of this first topic fairly brief; if you already have a working familiarity with Excel I suggest that you 'skim' the tasks in this topic. Create the workbook **Budget** along the lines suggested as we shall be using it in later topics.

Topic Objectives

- To review the components of the Excel window.
- To enter and amend worksheet data.
- To adjust the dimensions of columns and rows.
- To make simple calculations using formulae.
- To close and open a workbook.
- To copy data using Paste, Fill and AutoFill commands.
- To use Excel Help and Office Assistant.

The Excel Screen – an Overview

- 1 Before we begin take a few minutes to identify the following Excel features shown in Figure 1.1.

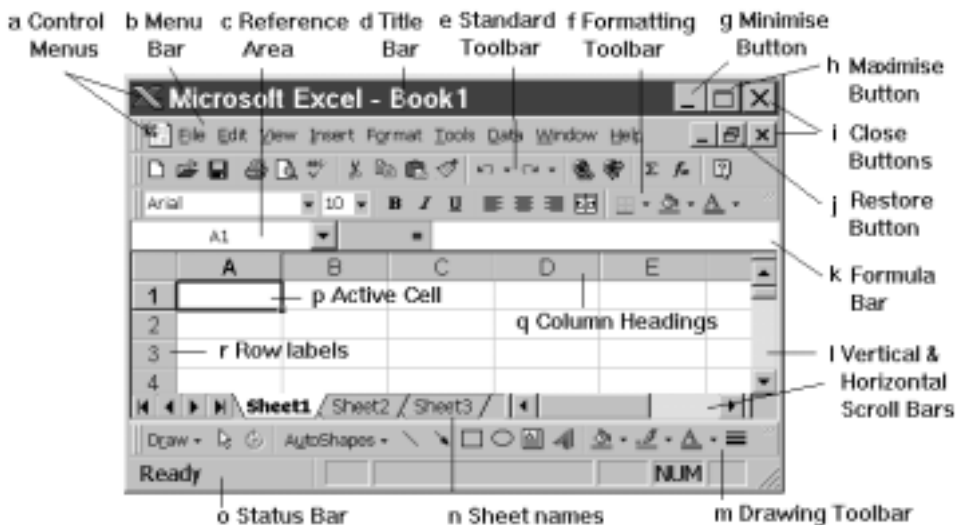


FIGURE 1.1

- 2
- (a) **The Control Menu Boxes** let you close or vary the size of the window.
 - (b) **The Menu Bar** offers the usual options – File, Edit, View etc.
 - (c) **The Reference Area** confirms which cell in the worksheet is active – see section p below.
 - (d) **The Title Bar** shows the name of the workbook currently in use; if it has not been saved yet it shows a default name, Book1, Book2 etc.
 - (e) and (f) **The Tool Bars.** The **Standard Toolbar** and the **Formatting Toolbar** offer alternative ways of issuing commands to the menus, eg opening and saving files, copying, printing, formatting etc. You can hide or display toolbars by using the **VIEW-TOOLBARS** menu options.
 - (g)–(j) To control the size of the window are buttons (g)–(j) – features of all Windows applications. You may see two sets, one to control the inner worksheet document, and one for the overall application.
 - (g) **The Minimise Button** (shown as a line).
 - (h) **The Maximise Button** (shown as a square).
 - (i) **The Close Button** (shown as an 'X').
 - (j) **The Restore Button** (shown as overlapping squares).
 - (k) **The Formula Bar** will display the contents of whatever cell is currently selected – the 'active' cell. Use the **TOOLS-VIEW** menu to display the Formula Bar if necessary.
 - (l) **The Horizontal and Vertical Scroll Bars.**
 - (m) **The Drawing Toolbar** may be displayed. You can use it to add standard shapes to your worksheet, as well as altering text style and colour effects.
 - (n) **Sheet Names.** The name tab of the active sheet is shown in bold – Sheet 1 at the moment.
 - (o) **The Status Bar** shows the progress of any commands, operations etc currently being executed; it displays a 'Ready' message when no commands etc are executing.
 - (p) **The Active Cell** is the cell currently in use, identified by a heavy border.
 - (q) **Column Headings** and (r) **Row Labels** combined give the cell reference or address.
- 3 The sections that follow try out some of these Excel components; skip them if you know them already.
- 4 **Minimising the Excel Window.** Click the topmost **MINIMISE** button and Excel shrinks to a button on the Windows Taskbar. Click this button to restore the Excel window.
- 5 **Note:** Remember that pressing the **ALT** and the **TAB** keys together will review all the applications that are running, so if you can't see the Excel button you can restore the Excel window this way.
- 6 **Maximising and Restoring the Excel Window.** Try this for both the inner worksheet document and for the outer application window.

- 7 **Changing the Window Size.** All windows can be re-sized by dragging them – try this, remembering that it will not work if the window is maximised.
- 8 **Moving an Excel Window.** Similarly drag the Title Bar of the inner and outer windows – they can be moved independently, provided again that they are not maximised.
- 9 **Using the Keyboard.** Try these keyboard shortcuts – they are quicker than using the scrollbars in many instances.
- Press the **CTRL** and **HOME** keys – you are taken to cell A1.
 - Press the **CTRL** and **DOWN ARROW** keys – you go to row 65536, the last row in the worksheet. If your worksheet contains data then you will go to the last row containing data.
 - Press the **CTRL** and the **RIGHT ARROW** key – you go to the last column in the worksheet.
 - Now experiment with **CTRL - LEFT ARROW** and **CTRL - RIGHT ARROW**. Try out the **PAGE UP** and **PAGE DOWN** keys too.
- 10 **Selecting Cell Ranges.** Try dragging the mouse to select the following ranges or groups of cells:
- Select cell range **A1 to D6**; 24 cells are selected or 'highlighted' but **A1** remains the active cell, even though all the column and row designators in the range change to bold – A-D and 1-6.
 - Clicking outside this range de-selects it; click the column designator for column A and the whole column is selected. Drag across several column designators to select several columns.
- 11 **Using Excel Help.** Each version of Excel adds extra features so try out the following options:
Open the **HELP** menu and select **MICROSOFT EXCEL HELP**; if the 'Office Assistant' logo – an animated paperclip – appears you can turn it off as explained below.
Three tabs are shown – **CONTENT**, **ANSWER WIZARD** and **INDEX**.
- Note: The Office Assistant.** This feature can be irritating to more advanced learners. To turn it off permanently click the **OPTIONS** button on the Office Assistant dialog box and de-select the **USE THE OFFICE ASSISTANT** check box.
- 12 **Help Contents.** Select the **CONTENTS** tab. In the left-hand side of the window the help topics are depicted as chapters in a book. Select the topic **GETTING HELP**. The book icon opens showing a series of subtopics. Read a few of these subtopics; the text on the right of the window changes with the topic.
- 13 **The Help Index.** Click the **INDEX** tab. Help topics are listed in the left-hand side of the window. Scroll down to the topic **MENU** and select it. Click the **SEARCH** button and a number of relevant Help topics are displayed.

- 14 **Keying in a Help Topic.** Instead of scrolling through the topic list you can type in the Help topic you want. First clear any keywords from the text box and enter the topic **worksheet**. Press the **ENTER** key and the topic is displayed.
- 15 **Answer Wizard.** Excel Help offers this third option by answering questions typed in ordinary English. Take some time to explore it.
- 16 **The ‘What’s This?’** option identifies and explains particular Excel features. Close Help then select this option from the main Help menu. Every time the screen pointer changes to a ‘?’ shape you can click on an Excel object and get help on it.
- 17 **Help on Tool Bars.** Rest the screen pointer on top of a button and its purpose is described.

Entering Worksheet Data

- 1 We are now ready to create our first worksheet, based around a student’s personal finances – see Figure 1.2. Later on I shall be asking you to modify it but at the moment create it exactly as shown. Make sure that you enter the number 0 and not the letter O (a common source of error). *Don’t calculate the worksheet totals yet.*

	A	B	C	D	E
1			Finances - Spring Term		
2					
3	INCOME		Week 1		
4	Starting Bals		80		
5	Loan		900		
6	Part-time job		55		
7	Total Income				
8					
9	OUTGOINGS				
10	Accomodation		65		
11	Food		40		
12	Books		60		
13	Social		30		
14	Total Outgoings				
15					

FIGURE 1.2

2 Cell Titles and Labels. Create the worksheet shown in Figure 1.2. Remember that although the data is shown in the Formula Bar as you type, the cell's contents are not finally entered until you click the 'tick' box in the Formula Bar or press the **ENTER** key. Selecting another cell in the workbook has the same effect. If you forget to complete a cell entry you may find that various Excel features no longer work, eg menu options. When you enter the word **Accomodation** be sure to spell it incorrectly as I have done – see next section!

3 Excel's Spell Checker. We will start checking from the beginning of the worksheet so select cell **A1**. Click the **SPELLING** button – on the Standard Toolbar, marked 'ABC'. A dialog box will identify 'Bals' as not in the dictionary – click the **IGNORE** button. **Accomodation** is identified as misspelt; use the **CHANGE** button to select the correct spelling.

Note: You can add valid words, eg names, acronyms etc, to the spell checker dictionary using the **ADD** button.

4 AutoCorrect. This feature will automatically correct misspelt words as you type. If you want to use it select it from the **TOOLS** menu. If the option appears to be missing then follow the instructions in the note below.

Note: Short and Full Menu options are a new Excel 2000 feature; we will be using Full menus so open the **TOOLS** menu and select **CUSTOMISE**. Click the **OPTIONS** tab and de-select the option **MENUS SHOW RECENTLY USED COMMANDS FIRST**.

5 Amending an Entry Using the Formula Bar. To alter the text in cell A5 from Loan to Student Loan first select the cell.

Now click in front of the first letter of **Loan** in the Formula Bar and the pointer shape becomes a flashing cursor marking the insertion point – see Figure 1.3.

You can now amend the cell.

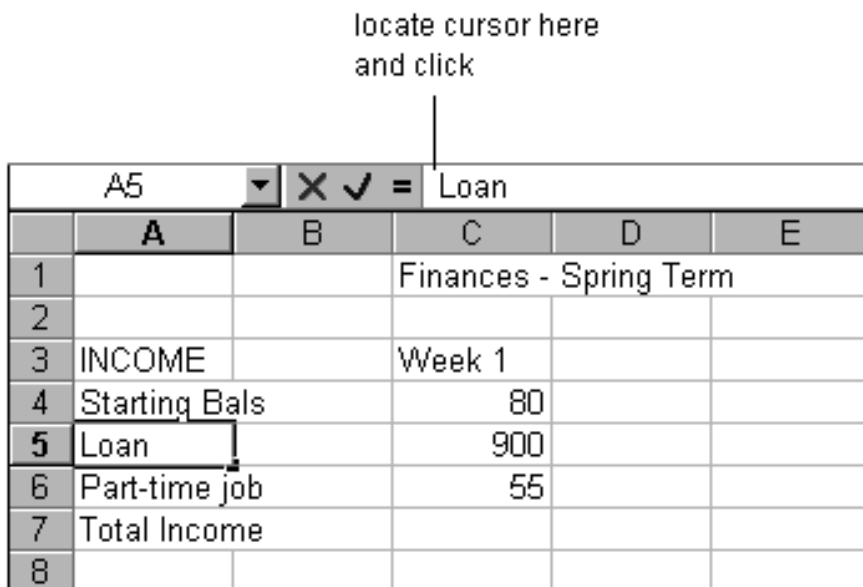


FIGURE 1.3

- 6 **In-Cell Editing.** Let's alter the label **Food** in cell A11 to **Food and Travel** directly without using the Formula Bar. Double click the space after the word **Food** and the flashing cursor marks the insertion point.
- Note:** Deleting and Overtyping. You can use the **DELETE** and **BACKSPACE** keys in the usual ways; remember that you can delete the contents of a cell directly by overtyping – there is no need to delete them first.
- 7 **Widening Columns.** Try out these three ways on column A:
- Dragging.** Place the screen pointer on column designator A; move it until it covers the vertical line separating it from column B – the pointer is now a double-headed arrow. Simply drag right until it is about 16.00 wide.
 - Select a cell in column A then take the menu options **FORMAT-COLUMN-WIDTH**. Set it to 15.00.
 - Repeat step (b) but this time select the options **FORMAT-COLUMN-AUTOFIT SELECTION**. The column is adjusted to fit the entry in the cell selected.
- 8 **Altering Row Height.** Use the same techniques to make row 1 higher – about 16.00.
- 9 **Optional – Saving the Workbook:** If you are not proceeding to the next task then save and close the workbook. Give it the name **Budget**. Saving involves the usual steps of selecting a suitable drive/folder for this and the rest of your Excel work.

Entering Formulae

All Excel calculations involve formulae which must begin with an = sign. Later in the book we will be using complex formulae involving functions and external references to other workbooks.

- 1 **Addition.** We need to total income and outgoings for the first week of the spring term – see Figure 1.2 above. Select cell **C7** and enter the formula **=SUM(C4:C6)** in upper or lower case. Total income is now displayed in the cell.
- Note that using the SUM function is quicker than using the '+' sign, eg **=C4+C5+C6**. Another big advantage of using the SUM function is expandability – the formula is automatically adjusted if another row is inserted into the column of cells.
- 2 **Adding Up Columns by Dragging.** To total up the Outgoings enter **=SUM()** in cell C14.
- Now use the screen pointer to select cell range **C10 to C13** – they are enclosed in a dotted box. The Formula Bar shows the range selected. If correct click the 'tick' box or press **ENTER** and the result of the formula is displayed in cell C14.
- 3 **Formula Error Messages.** Try out the following:

Select cell **C7** and then click the formula displayed in the Formula Bar – the Excel Range Finder feature highlights the relevant cells in colour. If you amend the formula to =SUM(C4:**C7**) an Excel error message tells you that the reference is 'circular' – as C7 is the destination cell for the formula it cannot also be one of the cells included in the formula. Click the **CANCEL** button and correct the formula to =SUM(C4:C6)

4 We'll look at one more of Excel's many error messages. Select cell **C14** and amend the spelling of SUM to SIM. The error message #NAME? alerts you to this.

Clear the contents of cell C14 using either the **DELETE** key or the menu options **EDIT-CLEAR-ALL**.

5 **Using AutoSum.** The AutoSum button is marked with the Greek character Sigma (Σ). Select cell **C14** then click the AutoSum button – it is on the Standard Toolbar.

The correct cell range should be selected; click the AutoSum button again.

Note: Use AutoSum with care – you cannot rely on it always to select the correct range of cells.

6 **AutoCalculate.** This feature will automatically display the sum of any group of numeric cells that you select at the bottom right of the window. It is for information, however, and will not execute without a formula being entered.

7 **Subtraction.** Figure 1.4 below shows where we have reached in our worksheet, with the exception of the balance figure which we will now calculate.

Enter the formula =**C7-C14** in cell **C16** to find the closing balance for week1.

	A	B	C	D	E
1			Finances - Spring Term		
2					
3	INCOME		Week 1		
4	Starting Bals		80		
5	Student Loan		900		
6	Part-time job		55		
7	Total Income		1035		
8					
9	OUTGOINGS				
10	Accommodation		65		
11	Food and Travel		40		
12	Books		60		
13	Social		30		
14	Total Outgoings		195		
15					
16	Closing Balance		840		
17					

FIGURE 1.4

Saving and Opening a Workbook (Optional)

At this point save the workbook; give it the name **Budget** if you have not saved it yet. Saving involves the usual steps of selecting a suitable drive/folder for this workbook and the rest of your Excel work. Refer to the notes below if you need to:

- 1 Use the menu options **FILE-SAVE AS** to save a new workbook for the first time. Use **FILE-SAVE** to save changes to an existing workbook.
- 2 New workbooks have the default name Book1, Book2 etc.
- 3 .XLS is the standard file extension assigned to Excel workbook files, normally you never need to change this.
- 4 A filename can be up to 218 characters long; it can consist of any combination of letters, numbers and certain special characters including spaces, dashes and underscores but not the following: \ / < > * ? " ; or :
- 5 **Closing and Exiting.** The **FILE-EXIT** option closes the whole Excel application; you will be prompted to save and close any open workbooks. The **FILE-CLOSE** option closes the workbook currently in use.
- 6 **Opening a Workbook.** In the **FILE-OPEN** dialog box you can simply type the name and folder in the **FILE NAME** box or you can open a workbook by choosing it from a list in the **LOOK IN:** box. Excel also remembers the last 4 workbooks that you (or another user of the application) have used. You can see them listed when you open the File menu.

Copying and Deleting

In this task we will review different ways to move, copy, and delete cells and extend our workbook to cover more weeks.

- 1 **Copying.** Select cell range **C3** to **C16** containing the items for week 1. Use the menu options **EDIT-COPY** – the area is selected.
- 2 **Pasting.** Select cell **D3** next – this is the cell where the copied cells are to be pasted; you only need to indicate where the pasting will start, not the complete range. Use the menu options **EDIT-PASTE** – the cells are now copied. Notice that the original cells are still selected with a dotted line and could be pasted as many times as you wish. Press the **ESC** key to remove the selection.

Note: Copied cells are placed in a temporary holding area called the Clipboard. They remain there until some other Copy or Cut command overwrites them. Excel lets you Undo up to 16 actions using the **EDIT-UNDO** command.
- 3 Check on the copied cells D7, D14 and D16 - the formulae as well as the cell values have been copied; the references have been automatically amended to reflect their new position in column D. Such formulae are therefore said to contain *relative references*.
- 4 **Cutting and Pasting.** Cutting is similar to copying except that the cells are

removed from their original position; we will try this:

Select cells **D3** to **D16** and issue the **EDIT-CUT** command.

Select cell **E3** then issue the **EDIT-PASTE** command – the column is moved from column D to column E.

Note: If you prefer use the Cut, Copy and Paste tools on the Tool Bar instead.

5 **Clearing Cells.** Re-select the cell range **E3** to **E16** if necessary then issue the command **EDIT-CLEAR-ALL**.

6 **Using Fill Right.** Filling right is often superior to Edit-Copy when copying columns. Select the cell range **C3** to **C16** and, keeping the mouse button pressed down, drag across to the next column. Compare the result to Figure 1.5 – the same range of cells should be selected in each column.

Week 1	

FIGURE 1.5

7 Issue the command **EDIT-FILL-RIGHT** and the cell range is copied into column D – you can use the **EDIT-UNDO** command to reverse it if it is incorrect.

Amend the label in cell **D3** to **Week 2**.

8 Delete the values from cells **D4** and **D5** – these items only apply to week 1. The column D totals are re-calculated. We now need to carry forward the closing balance from week 1 to the opening balance of week 2 to see the true financial position.

Select cell **D4** and enter the formula **=C16** – your closing balance for week 2 is now 700.

9 Now make the following changes to week 2:

Food and Travel 30
Books 10

The closing balance is now 760.

10 We can now complete weeks 3 to 5. Select the entries for week 2 – cells **D3** to **D16** – and drag across to columns E, F and G.

Cells **D3** to **G16** are now selected. Issue the command **EDIT-FILL-RIGHT** and your worksheet should resemble Figure 1.6. Remember to save your changes.

FIGURE 1.6

	A	B	C	D	E	F	G
1			Finances - Spring Term				
2							
3	INCOME		Week 1	Week 2	Week 2	Week 2	Week 2
4	Starting Bala		80	840	760	680	600
5	Student Loan		900				
6	Part-time job		55	55	55	55	55
7	Total Income		1035	895	815	735	655
8							
9	OUTGOINGS						
10	Accommodation		65	65	65	65	65
11	Food and Travel		40	30	30	30	30
12	Books		60	10	10	10	10
13	Social		30	30	30	30	30
14	Total Outgoings		195	135	135	135	135
15							
16	Closing Balance		840	760	680	600	520
17							

- 11** **Completing a Series using AutoFill.** Select cell **D3** and identify the small 'handle' at the bottom right-hand corner – see Figure 1.7. Carefully locate the mouse pointer on this handle – it becomes cross-shaped – and drag across to select cells **E3** to **G3**.

The cells should be labelled with the correct week numbers.



FIGURE 1.7

- 12** Save and close the workbook at this point if you are not carrying on with the next topic.