Spreadsheet software Level 2 Notes for City & Guilds 7574 ITQ Unit 227

Written for Excel 2007®
for Windows™ XP

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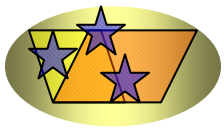

About the author: *Jackie Tench MSc, ACIB, Cert Ed*

Jackie started her working career in branch banking with the Midland Bank (now HSBC) and was transferred to their Computing Department after achieving 100% in their ability test for programmers. She then worked for more than a decade in this department and was one of the first women to achieve a junior management grade at the age of 21. She attended a significant number of IBM programming training courses during her time there.

Jackie was the first woman to pass the ACIB (Associate Chartered Institute of Bankers) examinations in the Midland Bank (HSBC) and the youngest person at 21 years of age.

Jackie then left to raise a family but still found time to teach part-time at a college in Sheffield and to obtain a MSc in Computing and a Cert Ed in teaching.

When her children were old enough Jackie returned to work full-time and was a Senior Lecturer in Software Engineering and Computer Studies at a college in Brighton for nearly 10 years teaching all levels up to and including HND.

Therefore, Jackie has considerable business knowledge and qualifications plus wide experience in practical computing and training – covering areas such as structured design, analysis, coding, testing and implementing software applications plus training students to fulfil an important role in the computer industry.

Jackie has worked as a consultant for several blue chip companies and examination boards using her software engineering and educational training skills and is now one of the foremost experts in computing with an extensive knowledge of programming languages and applications.

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Goal seek

Goal seek is used when you know the desired result of a formula but not the input value needed to determine the result. Excel varies the value in one specific cell until the formula that is dependent on that cell returns the required value.

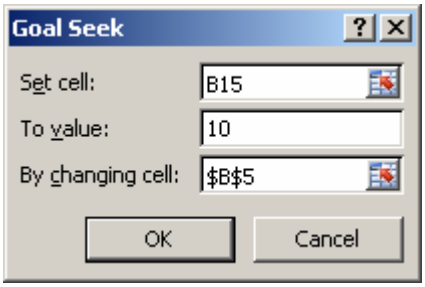
This can be used to find the input required to give a breakeven point because the desired result is known i.e. a profit.

- Create a new spreadsheet and save it with the filename **break1**.
- Enter the following data.

	A	B
1	COACH TRIP COSTS	
2	Driver	200
3	Courier	50
4	Fare	75
5	No of passengers	35
6		
7	Parking Fees	20
8	Maintenance	40
9	Staff costs	=SUM(B2:B3)
10	Fuel costs	250
11	Total cost	=SUM(B7:B10)
12		
13	Revenue	=B5*B4
14		
15	Profit/(loss)	=B13-B11

- Click in cell B15 which is the result cell for the profit and loss.
- Select the **Data** command tab and then click the **What-If Analysis** icon on the **Data Tools** command set and select **Goal Seek** on the dropdown list.

The Goal Seek dialog appears.

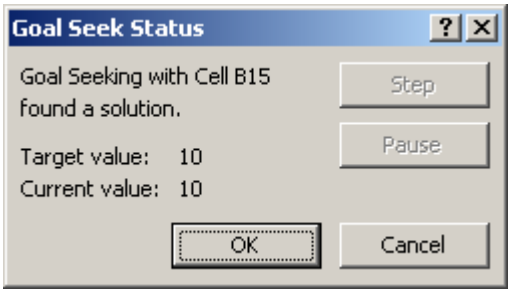


- Enter 10 in the **To value** box.
- Enter **B5** in the **By changing cell** box.

This means that you want the profit and loss cell to be set to 10 by changing the values in the cell B5 which is the number of passengers.

- Click OK.

If Goal Seek finds a solution the **Target value** is displayed as the same as the **Current value** on the dialog box that appears.



If you click the OK button the profit and loss cell will be changed to 10 and the number of passengers cell will be changed to the value found (7.6).

If you click the Cancel button the values for the profit and loss and number of passengers will be returned to the previous values i.e. before you did the Goal Seek.

- Click OK.

The number of passengers cell returns a fraction i.e. 7.6.

- Change the format of the cell to Number, 0 decimal places so that only whole numbers are displayed i.e. 8.

You can use Goal Seek to find other values. If you wanted to find out how many passengers are needed to make a profit of 100 then enter 100 as the value to be found by changing the number of passengers cell.

- Save and close the spreadsheet file.

Summarise totals

Excel can automatically summarize data by calculating subtotal and grand total values in a list. To use automatic subtotals, your list must contain labelled columns and the list must be sorted on the columns for which you want subtotals.

- Create a new spreadsheet and save it with the filename **summarise**.
- Enter the following data.

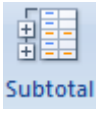
	A	B	C	D	E	F
1	**Salesperson**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Country**
2	Repetto	£25,000	£35,000	£18,000	£20,000	Spain
3	Jones	£15,000	£27,000	£28,000	£24,000	Wales
4	MacGregor	£21,000	£20,000	£32,000	£30,000	Scotland
5	Blanc	£30,000	£38,000	£31,000	£32,000	France
6	Johnson	£26,000	£27,000	£32,000	£33,000	England
7	Blong	£33,000	£36,000	£38,000	£42,000	Ireland
8	Clifford	£11,000	£15,000	£18,000	£16,000	Ireland
9	Griffiths	£28,000	£32,000	£35,000	£34,000	Wales
10	Rigorat	£9,000	£26,000	£30,000	£32,000	Spain
11	Diamond	£15,000	£16,000	£25,000	£30,000	England
12	Neve	£18,000	£24,000	£33,000	£33,000	France

Create subtotals

The data must be sorted in ascending order of the field on which subtotals are to be created.

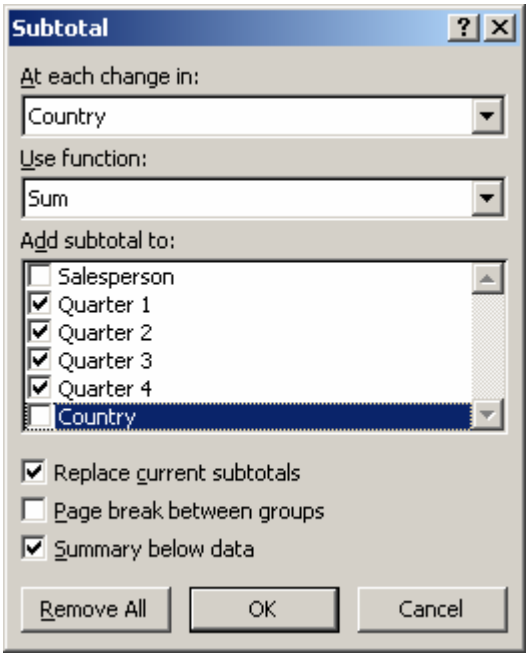
- Click on a cell in the **Country** column.
- Select the **Home** command tab then click on the **Sort & Filter** icon on the **Editing** command set and select **Sort A to Z** on the dropdown list.

You must select a cell in the table before doing the subtotals.

- Click on a cell in the table.
- Select the **Data** command tab then click on the **Subtotal** 

icon on the **Outline** command set.

The Subtotal dialog appears.



You have to decide what values the subtotals are to be created on. In this case the subtotals are to be created on the values for the quarterly sales for each different country.

- Select **Country** in the **At each change in** box

You have to decide what function is required for the subtotal. You can use any of the functions listed for a subtotal.

- Select **Sum** in the **Use function** box.

You have to decide where the subtotal is to be placed i.e. which column(s).

- Select the **Quarter 1**, **Quarter 2**, **Quarter 3** and **Quarter 4** checkboxes (to insert a tick) in the **Add subtotal to** box. (Make sure that no other boxes are ticked.)

Checking the **Replace current subtotals** check box means that any existing subtotals will be replaced.

Checking the **Summary below data** check box means that grand totals will be calculated.

- Click OK.

The subtotals and grand total should now be added to the spreadsheet.

		A	B	C	D	E	F
	1	**Salesperson**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Country**
	2	Johnson	£26,000	£27,000	£32,000	£33,000	England
	3	Diamond	£15,000	£16,000	£25,000	£30,000	England
−	4		£41,000	£43,000	£57,000	£63,000	**England Total**
	5	Blanc	£30,000	£38,000	£31,000	£32,000	France
	6	Neve	£18,000	£24,000	£33,000	£33,000	France
−	7		£48,000	£62,000	£64,000	£65,000	**France Total**
	8	Blong	£33,000	£36,000	£38,000	£42,000	Ireland
	9	Clifford	£11,000	£15,000	£18,000	£16,000	Ireland
−	10		£44,000	£51,000	£56,000	£58,000	**Ireland Total**
	11	MacGregor	£21,000	£20,000	£32,000	£30,000	Scotland
−	12		£21,000	£20,000	£32,000	£30,000	**Scotland Total**
	13	Repetto	£25,000	£35,000	£18,000	£20,000	Spain
	14	Rigorat	£9,000	£26,000	£30,000	£32,000	Spain
−	15		£34,000	£61,000	£48,000	£52,000	**Spain Total**
	16	Jones	£15,000	£27,000	£28,000	£24,000	Wales
	17	Griffiths	£28,000	£32,000	£35,000	£34,000	Wales
−	18		£43,000	£59,000	£63,000	£58,000	**Wales Total**
−	19		£231,000	£296,000	£320,000	£326,000	**Grand Total**

Notice the markers that have been added at the left to show the groupings for the subtotals and grand total.

To remove subtotals from a table click on a cell in the table select the **Data** command tab then click on the **Subtotal** 

icon on the **Outline** command set and click the **Remove All** button on the **Subtotal** dialog.

- Save the spreadsheet file.

Find and Replace

Find and replace can be used to find text, values, formulas or names in a spreadsheet and replace them with another value.

- Create the following spreadsheet and save it as **quarters**.

	A	B	C	D	E	F	G
1	**Sales Figures 2000**						
2							
3		**Qtr1**	**Qtr2**	**Qtr3**	**Qtr4**	**Total**	**Bonus**
4	**Name**						
5	Asif Abdul	£4,566	£4,120	£3,890	£4,358	**£16,934**	£846.70
6	Davies John	£4,987	£5,100	£4,875	£4,765	**£19,727**	£986.35
7	Maranti Luigi	£4,789	£3,500	£4,466	£4,945	**£17,700**	£885.00
8	Silvers Rosanna	£3,589	£3,786	£3,859	£3,766	**£15,000**	£0.00
9	**Total**	**£17,931**	**£16,506**	**£17,090**	**£17,834**	**£69,361**	**£2,718.05**
10							
11	**Sales Figures 2001**						
12							
13		**Qtr1**	**Qtr2**	**Qtr3**	**Qtr4**	**Total**	**Bonus**
14	**Name**						
15	Asif Abdul	£5,789	£5,890	£5,996	£5,689	**£23,364**	£1,168.20
16	Bradlaw Robert	£5,120	£5,367	£5,489	£5,530	**£21,506**	£1,075.30
17	Maranti Luigi	£4,892	£4,765	£4,883	£4,955	**£19,495**	£974.75
18	Silvers Rosanna	£3,874	£4,013	£3,987	£4,126	**£16,000**	£0.00
19	**Total**	**£19,675**	**£20,035**	**£20,355**	**£20,300**	**£80,365**	**£3,218.25**

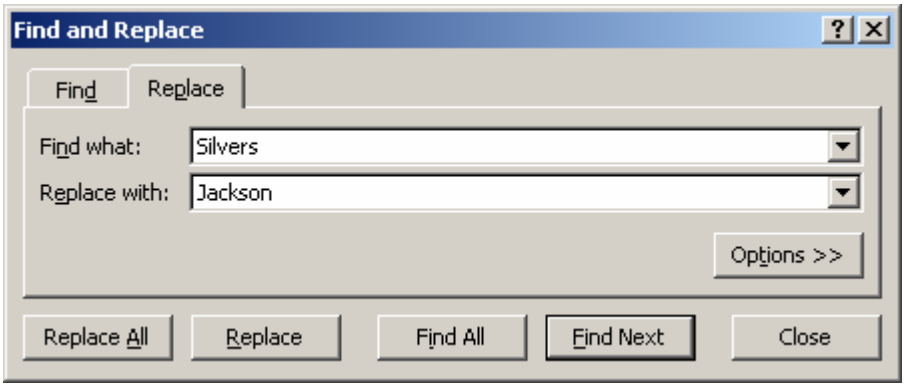
The Bonus formula for year 2000 in cell G5 is =IF(F5>15000,F5*5%,0)

The Bonus formula for year 2001 in cell G15 is =IF(F15>16000,F15*5%,0)

- Click in cell A1 (to start the search from the beginning of the worksheet).
- Select the **Home** command tab and click the **Find & Select** 

icon on the **Editing** command set and select **Replace** in the dropdown list.

The Find and Replace dialog appears:



The text Silvers is to be replaced with the text Jackson.

- Enter **Silvers** in the **Find what** box.
- Enter **Jackson** in the **Replace with** box.

- Click the **Find Next** button.

The cell containing Silvers Rosanna is highlighted.

- Click the **Replace** button.

Silvers is replaced with Jackson.

The next occurrence of Silvers Rosanna is highlighted.

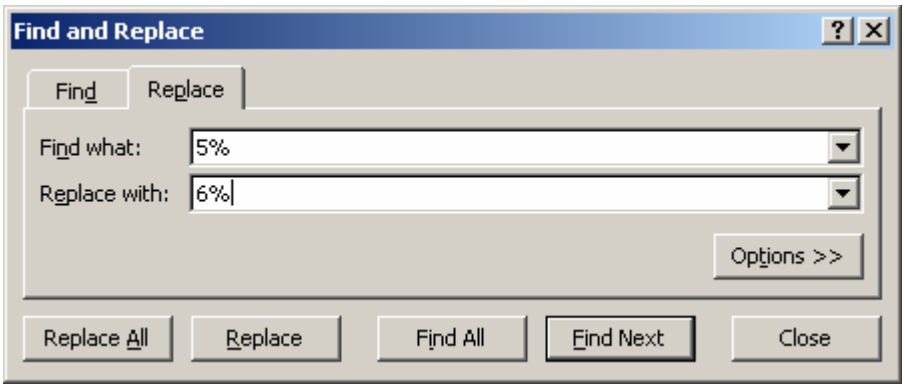
- Click the **Replace** button.
- Click the **Close** button.

It is safer to replace each occurrence separately but you can use the **Replace All** button to replace all the occurrences without checking each one.

- Click in cell A11 to start the search in year 2001.
- Select the **Home** command tab and click the **Find & Select** 

icon on the **Editing** command set and select **Replace** in the dropdown list.

The Find and Replace dialog appears.



- Enter **5%** in the **Find what** box.
- Enter **6%** in the **Replace with** box.
- Click the **Find Next** button.

The first occurrence of 5% in the year 2001 is highlighted. Note that the 5% is in a formula.

- Click the **Replace** button.

The 5% in the formula is replaced with 6%.

- Click the **Replace** button another three times to replace all the occurrences of 5% in the formulas for Sales Figures 2001.
- Click the **Close** button.
- Save and close the spreadsheet file.

Link data between spreadsheets

Data can be copied and linked between spreadsheet files. This means that if an amendment is made to the data in the original spreadsheet the data will be updated in the data in the linked spreadsheet.

- Create a new spreadsheet and save it as **consolid**.
- Enter the following data.

	A	B	C	D	E	F	G
1	CONSOLIDATED SALES FIGURES						
2							
3		Qtr1	Qtr2	Qtr3	Qtr4	Total	Bonus
4	2000						
5	2001						
6	2002						
7	2003						
8	2004						
9	Total						

- Format cells B4 to G9 as Currency to 0 decimal places.
- Open the **quarters** spreadsheet. (Do NOT close the **consolid** spreadsheet.)
- Select the cells B9 to G9.
- Select the **Home** command tab then click the **Copy** 

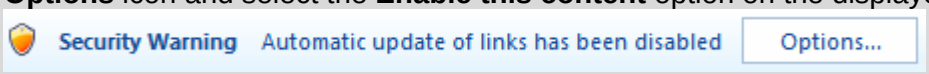
icon on the **Clipboard** command set ***OR*** press the **CTRL+C** keys.
- Select the **View** command tab and click the **Switch Windows** 

icon on the **Window** command set and select **consolid** on the dropdown list to switch to the **consolid** spreadsheet.
- Click in cell B4
- Select the **Home** command tab and click the down arrow on the **Paste** 

icon on the **Clipboard** command set and then select **Paste Link** on the dropdown list.

The data selected in the quarters worksheet has been copied to the consolid worksheet. The data in the consolid worksheet is linked to the quarters worksheet. This means that if the data for the year 2000 in the quarters worksheet is changed it will also be changed in the consolid worksheet. You can tell that the data is linked, by clicking on one of the data cells and looking in the formula bar. The spreadsheet name **quarters** appears in the formula bar.

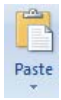
If the following warning message is displayed above the Formula Bar click on the **Options** icon and select the **Enable this content** option on the displayed dialog.



This will ensure that the linked data is updated.

- Select the **View** command tab and click the **Switch Windows** 

icon on the **Window** command set and select **quarters** on the dropdown list to switch to the **quarters** spreadsheet.
- Select cells B19 to G19.
- Select the **Home** command tab and click the **Copy** icon on the **Clipboard** command set ***OR*** press the keys **CTRL+C** keys.
- Select the **View** command tab and click the **Switch Windows** 

icon on the **Window** command set and select **consolid** on the dropdown list to switch to the **consolid** spreadsheet.
- Click in cell B5.
- Select the **Home** command tab and click the down arrow on the **Paste** 

icon on the **Clipboard** command set and then select **Paste Link** on the dropdown list.

The data selected in the quarters worksheet has been copied and linked to the consolid worksheet.

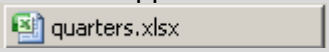
Note the value in cell B5 on the consolid worksheet is £19,675.

- Select the **View** command tab and click the **Switch Windows** icon on the **Window** command set and select **quarters** on the dropdown list to switch to the **quarters** spreadsheet.
- Click on cell B16
- Change the value in cell B16 to £5399.
- Select the **View** command tab and click the **Switch Windows** icon on the **Window** command set and select **consolid** on the dropdown list to switch to the **consolid** spreadsheet.

Note the value in cell B5 on the consolid worksheet has changed to £19,954. This is because the worksheet data is linked so a change in the original data (in quarters worksheet) causes the copied and linked data to be changed.

Spreadsheets should be linked if one worksheet is deriving data from another. This means that the data will stay consistent and you do not have to worry about keeping it up to date.

- Save and close both spreadsheet files.

You can also switch between application files by clicking on the minimised application icon e.g. 

on the Task Bar at the bottom of the screen.

Validation

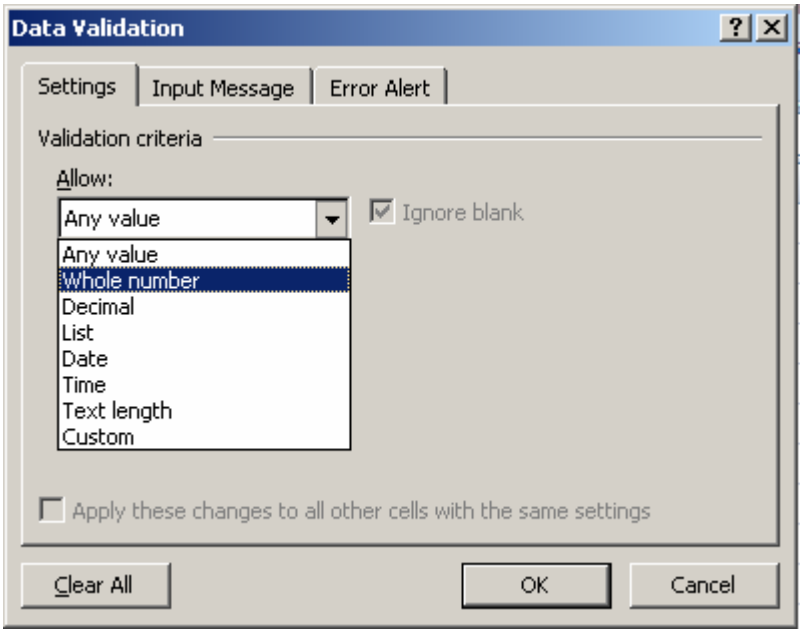
When data is entered into a spreadsheet it is important that the correct type of data is entered. Validation is used to check that incorrect data is not entered. In other words if a number is required in a cell, the user should not be allowed to enter text data. If a formula tries to do a calculation on a cell that contains text instead of a number then an error will occur.

Validation should be considered when a spreadsheet is being designed. You need to identify what cells need to be validated and what validation is to be done on them.

To validate a cell (or a range of cells), open a new worksheet:

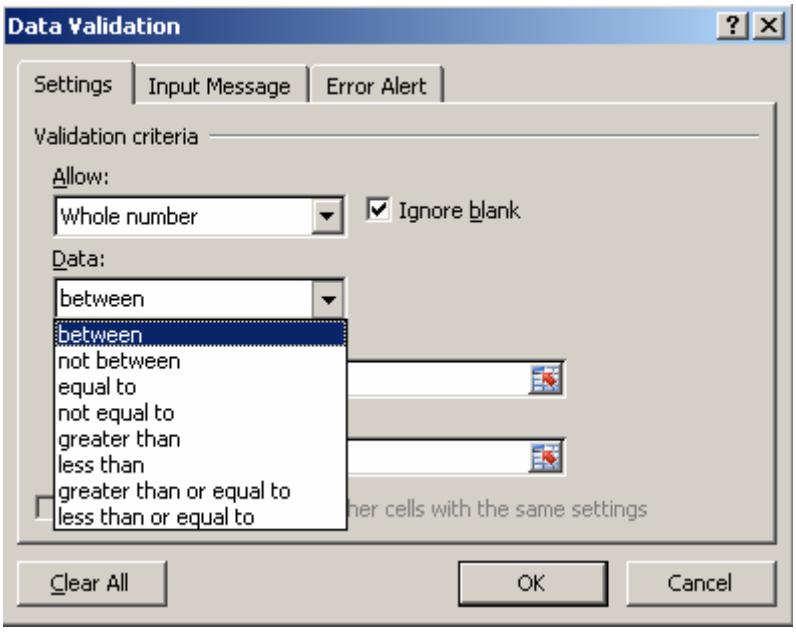
- Select the cells B4:B12.
- Select the **Data** command tab then click the top half of the **Data Validation**  icon on the **Data Tools** command set.

The Data Validation dialog appears:

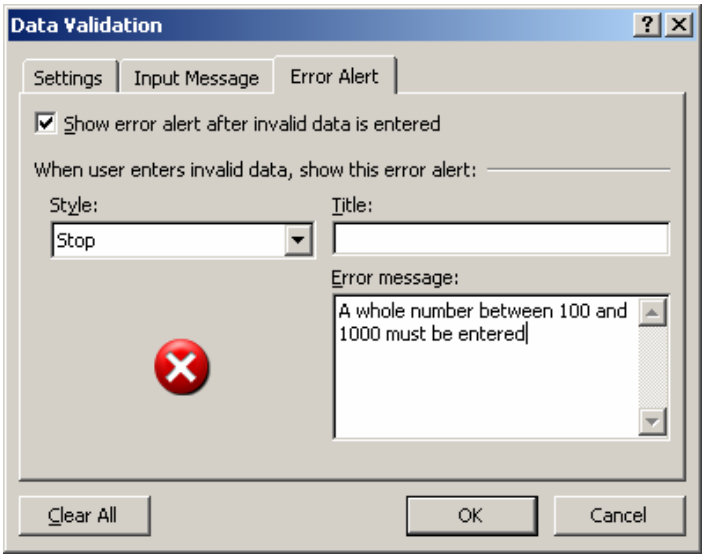


- Select the **Settings** tab.
- Click on the arrow at the right of the **Allow** box. This is where you specify what type of data can be input into the selected cell(s).
- Select **Whole number**.

More boxes become visible:



- Click the down arrow at the right of the **Data** box to leave **between** as the choice.
- Enter **100** in the **Minimum** box.
- Enter **1000** in the **Maximum** box.
- Select the **Input Message** tab.
- Type **Enter a whole number between 100 and 1000** into the **Input Message** box.
- Select the **Error Alert** tab.
- Type **A whole number between 100 and 1000 must be entered** into the **Error Message** box.

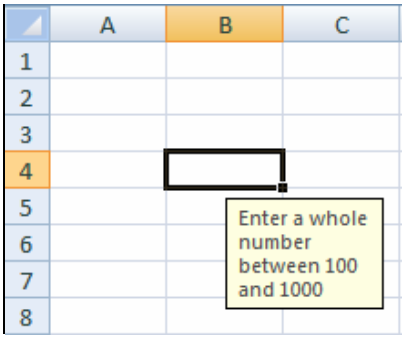


Notice the choice in the Style box. You can make this a Stop, Warning or Information message.

We will leave this as a Stop style because if the incorrect data is entered we do not want to continue.

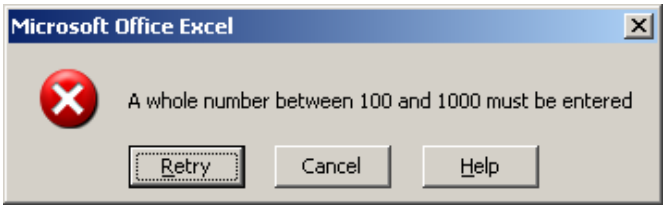
- Click OK.
- Select the cell B4.

The following message appears on the screen:



- Enter the number 99 into cell B4.

The following error message appears:



- Click the **Retry** button
- Enter the number 100 into cell B4.

The error message does not appear because the number is within the correct range.

This validation will work for all the selected cells B4:B12.

For text entries you can limit the length of the text by specifying a minimum and maximum length.

For Date entries you can specify a range for the date, a start and end date.

For Time entries you can specify a range for the time, a start and end time.

Sometimes a cell or range of cells can only contain certain values. For instance a range of cells are to contain the colours Red, Blue, Green or Yellow and no other values are allowed. The best way to ensure that only these values are entered is to use data validation with a list that the user can use to select a value.

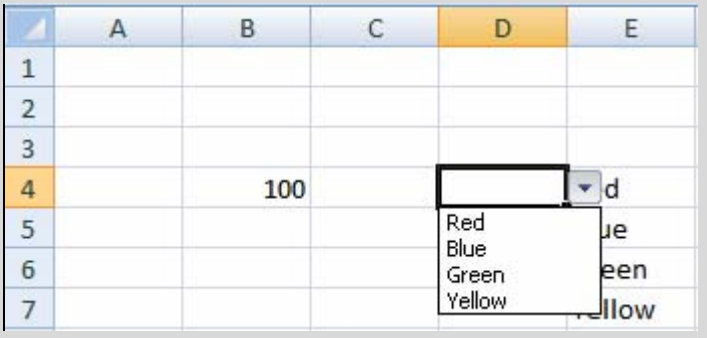
- Enter the text Red, Blue, Green and Yellow into the cells E4, E5, E6 and E7 respectively.
- Select cell D4.
- Select the **Data** command tab then click the top half of the **Data Validation**  icon on the **Data Tools** command set.

The Data Validation dialog appears.

- Select the **Settings** tab and in the **Allow** box select **List**.
- Click the **Collapse**  icon at the right of the **Source** box.
- Select cells E4 to E7.

This cell range should appear in the minimized Data Validation dialog.

- Click the **Expand** icon at the right of the **Data Validation** minimised dialog.
- Click OK on the Data Validation dialog.



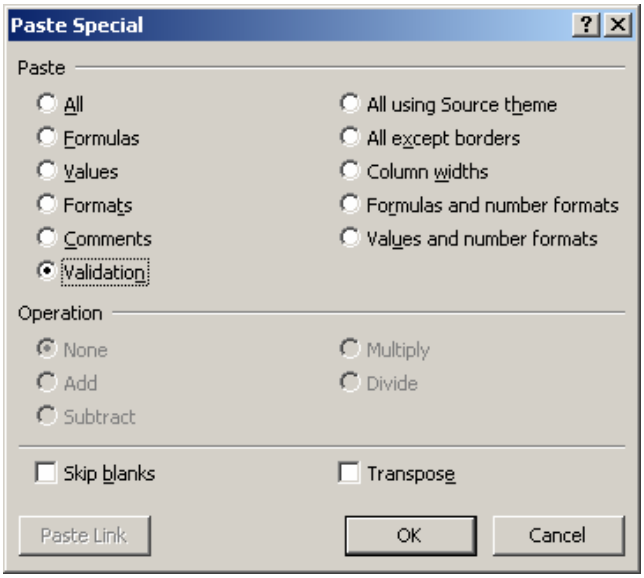
The list of colours for the validation would normally be placed in another part of the spreadsheet and hidden.

The colours allowed can now be selected for cell D4 from a list by clicking the down arrow at the right of the cell.

To copy the validation into other cells:

- Select cell D4.
- Select the **Home** command tab then click the **Copy** icon on the **Clipboard** command set ***OR*** press the **CTRL+C** keys.
- Select cells D5 to D12.
- Select the **Home** command tab then click the down arrow on the **Paste** icon on the **Clipboard** command set and then select **Paste Special** on the dropdown list.

The Paste Special dialog appears. This allows you to select what is to be pasted.



- Click the **Validation** option under **Paste** (to copy the validation only).
- Click OK.

All the cells D4 to D12 now only allow the colours in the list to be selected.

- Close the spreadsheet file.

Questions 9

1. Create a new spreadsheet and save it with the filename **break2**.

   - Enter the following data.

	A	B
1	**Flight costs**	
2		
3	Route	BRISTOL to PARIS
4	Distance	320
5	Fuel	1500
6	Fuel/passenger kilometre	0.1
7	Cockpit crew	950
8	Cabin crew	100
9	Fare	150
10	No of passengers	310
11		
12	Landing fee	800
13	Crew expenses	=B7+3*B8
14	Fuel expenses	=B5+B10*B4*B6
15	Total cost	=SUM(B12:B14)
16		
17	Income	=B10*B9
18		
19	Profit/(loss)	=B17-B15

   a) Use Goal Seek to find how many passengers are required before the flight makes a profit.

   b) Use Goal Seek to find how many passengers are required before the flight makes a profit of £10000.

2. Create a new spreadsheet and save it with the filename **summarise2**.

   - Enter the following data.

	A	B	C	D	E	F
1	**Name**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Region**
2	Johnson	£32,000	£18,000	£22,000	£20,000	Midlands
3	Rowan	£26,000	£28,000	£26,000	£25,000	Midlands
4	Patel	£19,000	£32,000	£22,000	£30,000	South East
5	Repetto	£29,000	£31,000	£31,000	£32,000	Wales
6	Lugano	£25,000	£30,000	£26,000	£33,000	South West
7	Powell	£28,000	£29,000	£38,000	£37,000	North West
8	Wilson	£14,000	£17,000	£18,000	£17,000	North West
9	Tusk	£27,000	£29,000	£29,000	£35,000	North East
10	Rowlands	£28,000	£30,000	£27,000	£33,000	South West
11	Bacon	£16,000	£18,000	£17,000	£19,000	North East
12	Mason	£23,000	£25,000	£26,000	£26,000	South East
13	Lewis	£15,000	£16,000	£17,000	£17,000	Wales
14	Davidson	£17,000	£15,000	£0	£0	South East

   - Summarise the totals by Region for Weeks 1, 2, 3 and 4.

3. **Scenario**

A company, Magazine Marketing, produce and sell magazines. They require a spreadsheet to provide statistics about the profits made each month.

The cost price for each magazine for each week must be input. The figures for the last four weeks are shown below.

	Cost Price			
Name	**Week 1**	**Week 2**	**Week 3**	**Week 4**
ECONOMIC WEEKLY	£2.39	£2.39	£2.39	£3.19
IT PRACTICAL	£1.59	£1.59	£1.80	£1.80
MOTOR CLASSIC	£1.20	£1.40	£1.40	£2.39
CRAFT DESIGN	£3.19	£3.19	£3.60	£3.60
DESIGN & LIVING	£1.80	£1.80	£1.80	£2.39
INTERNATIONAL TRAVEL	£2.00	£2.00	£2.00	£2.40

The spreadsheet must calculate the retail prices based on a profit margin. The profit margin figures should be held in a table so that the values can be looked up when required in a formula. The profit margin for each magazine is shown below:

CRAFT DESIGN	15%
DESIGN & LIVING	25%
ECONOMIC WEEKLY	20%
INTERNATIONAL TRAVEL	20%
IT PRACTICAL	25%
MOTOR CLASSIC	15%

Note that the lookup values (magazine names) must be in ascending order in the table otherwise the lookup will not work correctly.

The figures for the number sold for each magazine for each week must be input. The figures for the last four weeks are shown below. These figures must be totalled for each week and for each magazine.

	Number Sold			
Name	**Week 1**	**Week 2**	**Week 3**	**Week 4**
ECONOMIC WEEKLY	11625	11568	11679	11743
IT PRACTICAL	13198	13546	13462	14152
MOTOR CLASSIC	4124	4322	4255	4563
CRAFT DESIGN	14567	14478	14793	14699
DESIGN & LIVING	11980	11873	11756	11820
INTERNATIONAL TRAVEL	12156	12259	12458	12728

The spreadsheet must calculate the profit made on each magazine for each week. The profit figures must be totalled for each week and for each magazine.

A magazine is profitable if the total profit for four weeks is more than £25,000. An indication should be made on the spreadsheet that a magazine is profitable or unprofitable.

A chart is required to show the percentage profit for each magazine for the four weeks.

Three reports are required

Report 1 – This must contain the figures for the cost price, retail price and number sold for each week for each magazine.

Report 2 – This must contain the profit figures for each week for each magazine. The title and column headings for the weeks must be shown.

Report 3 – This must contain the chart for the percentage profit for each magazine for the four weeks.

All reports must contain a header and a footer. The footer must include your name.

Task A

In this task you are required to design the spreadsheet described in the scenario.

1. Produce a design specification to include
   - identification of the structure of the spreadsheet including data labels, titles, hidden or protected cells
   - identification of data input areas
   - identification of formulas and functions to be used including any rounding or absolute cell references that may be required
   - definition of the printouts required to include page size, orientation, multi-page or fit to page, headers, footers and any named ranges used.
   - identification of formatting for data including alignment, enhancements, borders, shading and number
   - identification of the cells to be used to produce the chart and chart type and title.

2. Design a data capture form for input data.

3. Calculate the expected results from the input data given.

Task B

In this task you are required to create the spreadsheet designed in Task A.

1. Access the spreadsheet application, open a new spreadsheet and save it with the name STATS.

2. Create a spreadsheet and chart according to your design from Task A.

3. Improve and adjust the design as necessary.

4. Print a copy of the spreadsheet to show the formulas used and include row and column headings and gridlines. Label this PRINTOUT1.

Task C

In this task you are required to test the spreadsheet created in Task B.

1. Enter the input data given in the scenario.

2. Check the results against the expected results. Correct any errors found. Save the file.

3. Print a copy of Report 1. Label this PRINTOUT2.

4. Print a copy of Report 2. Label this PRINTOUT3.

5. Print a copy of Report 3. Label this PRINTOUT4.

6. Change the profit margin figure for International Travel to 15%.

7. Print a copy of Report 2. Label this PRINTOUT5.

8. Open a new spreadsheet and save it with the name PROFIT.

9. Copy the profit figures with formulas from the STATS spreadsheet and paste and link the figures into the PROFIT spreadsheet.

10. In the STATS spreadsheet change the cost price for the fourth week for the IT PRACTICAL magazine to £2.00. Save the STATS spreadsheet.

11. Print a copy of Report 3 from the STATS spreadsheet. Label this PRINTOUT6.

12. Insert a footer in the PROFIT spreadsheet to include your name, the filename and PRINTOUT7. Save the PROFIT spreadsheet. Print a copy of the PROFIT spreadsheet.

13. Save and close the STATS and PROFIT spreadsheets and close the spreadsheet application.

Sample assignment

Before starting the sample assignment create the following files in Notepad.

```
Name,Membership No,Team,Location,Team fee per month,Training
Days,Training Hours Per Week
MacGregor David,101,Yellow,Radley,,,12
Smith James,102,Red,Willow Plaza,,,10
Parker John,103,Yellow,Radley,,,12
Villers Karen,104,Red,Willow Plaza,,,10
Bedlow Michael,105,Red,Willow Plaza,,,10
Damon Gary,106,Yellow,Radley,,,12
Tusk Joanna,107,Blue,Whirlow ,,,8
Castle Adam,108,Red,Willow Plaza,,,10
Drummond Ian,109,Blue,Whirlow ,,,8
Griffiths Brian,110,Yellow,Radley,,,12
Joiner Patrick,111,Blue,Whirlow ,,,8
```

Save the file as **Team.txt**. Change the filename in Windows Explorer to **Team.csv**. Note that the first 2 rows should actually be on one row in your file.

```
Team,Fees per month
Blue,10.55
Red,15.75
Yellow,20.99
```

Save the file as **Fees.txt**. Change the filename in Windows Explorer to **Fees.csv**.

```
Location,Annual Subscriptions
Radley,120
Whirlow,168
Willow Plaza,180
```

Save the file as **Annual Subscriptions.txt**. Change the filename in Windows Explorer to **Annual Subscriptions.csv**.

```
Team,Location,Training Days
Blue,Whirlow,"Wed,Sat"
Red,Willow Plaza,"Mon,Tues,Thurs"
Yellow,Radley,"Mon,Weds,Fri,Sat"
```

The quotes (") are used because commas are used in the field for Training Days e.g. Wed, Sat and these would be used by Excel as cell delimiters but for this exercise the days of the week are to be entered in one cell.

Save the file as **Days.txt**.

Scenario

You work as IT Assistant for a small athletics club. The manager has asked you to create and amend membership data and produce membership fees information.

Task A

1 Create a new folder and name it **Athletics Club**.

2. Open a new spreadsheet and import the file **Team.csv** starting at cell **A1**. This file is a comma delimited file and the first row contains headings.

3. Move column **E** between columns **B** and **C**.

4. Insert a column between columns **C** and **D** and enter the column heading **Membership fees per month**.

5 Insert a column between columns **F** and **G** and enter the column heading **Competitive Standard**.

6 Format the data in columns **C** and **D** to currency, 2 decimal places using the local currency symbol.

7 Format the data in column **I** to integer (0 decimal places)

8 Apply formatting to the column headings to make them stand out and wrap the text for column headings Membership No, Team fee per month, Membership fees per month, Competitive Standard, Training hours per week to display the column headings on 2 lines.

9 Make sure that all data is fully displayed in the columns.

10 Apply validation to the data in column **G** so that only the text **Yes** or **No** can be entered.

Add the following input message:

Please indicate if this athlete is of a competitive standard

Add the following error message:

Entry must be either Yes or No

11 Rename the first worksheet as **Members**.

12 Move to the second worksheet and rename this worksheet **Data**.

13 Import the file **Fees.csv** into the **Data** worksheet starting at cell **A1**.

14 Import the file **Annual Subscriptions.csv** into the **Data** worksheet starting at cell **D1**.

15 Import the file **Days.txt** into the **Data** worksheet starting at cell **D7**.

16 Save the spreadsheet file as **Teams** in the **Athletics Club** folder.

Task B

1 Name the range **A2:B4** on the **Data** worksheet as **FeesTable**.

2 Using the **Members** worksheet, enter a function in cell **C2** that uses the range named **FeesTable** from the **Data** worksheet to lookup the fees per month based on the **Team** column.

Replicate this function down the rest of the column.

3 Name the range **D2:E4** on the **Data** worksheet as **SubscriptionTable**.

4 Using the **Members** worksheet, enter a function in cell **D2** that uses the range named **SubscriptionTable** from the **Data** worksheet to lookup the annual subscription based on the **Location** column and then adjust the formula to display the Membership fees per month.

Replicate this function down the rest of the column.

5 Name the range **D8:F10** on the Data worksheet as **TrainingDays**.

6 Using the **Members** worksheet, enter a function in cell **H2** that uses the range named **TrainingDays** from the **Data** worksheet to lookup the training days based on the **Team** column.

Replicate this function down the rest of the column.

7 Enter the text **Total Members** in the cell **A14** and enter a function in cell **B14** to total the number of athletes in column **A**.

8 Enter the text **Total Monthly Team Income** in the cell **A15** and enter a function in cell **B15** to total the **Team fees per month**.

9 Enter the text **Total Monthly Membership Fees** in the cell **A16** and enter a function in cell **B16** to total the **Membership fees per month**.

10 Enter the text **Total Annual Income** in the cell **A17** and enter a function in cell **B17** to calculate the **Total Annual Income**.

11 Enter the text **Yellow Income**, **Red Income**, **Blue Income** in cells **A18:A20** respectively.

12 Make sure that all data is fully displayed. Save the file as **Teams1** in the **Athletics Club** folder.

Task C

1. New members have joined the club. Add the following members to the spreadsheet starting at cell **A13** inserting new rows as required.

Name	**Membership No**	**Team**	**Location**	**Training hours per week**
Watson Richard	112	Red	Willow Plaza	10
Walsh Brian	113	Blue	Whirlow	8
Clifford James	114	Red	Willow Plaza	10
Benbow Tyler	115	Yellow	Radley	12
Radnor Fiona	116	Blue	Whirlow	8

2 Replicate/copy all formulas and functions to complete the data.

Check all functions/formulas to ensure that they have been updated correctly and rectify any errors found.

3 Apply a conditional format of bold and a blue font to all the data in the **Training hours per week** column where the training hours are 10 or more per week.

4 All athletes with an even **Membership No** are to be entered as Competitive Standard and all athletes with an odd **Membership No** will not.

Enter a formula in column **G** to display **Yes** or **No** depending on whether an athlete has an even or odd Membership No.

5 Set up the spreadsheet in landscape orientation to fit on one page only.

Make sure all data is fully displayed showing gridlines.

Insert a footer to include *your name*, *today's date* and PRINTOUT1.

Print a copy of the spreadsheet.

6 Save the file as **Teams2** in the **Athletics Club** folder.

7 Sort the data in the table in ascending order on the **Team** name.

8 Insert a function to display the total yearly team fee income excluding membership fees for the Yellow, Red and Blue teams in the cell next to the relevant label.

9 Set up the spreadsheet in landscape orientation to fit on one page only.

Display formulas and make sure all data is fully displayed showing gridlines, row and column headings.

Insert a footer to include *your name*, *today's date* and PRINTOUT2.

Print a copy of the spreadsheet.

10 Save the file as **Teams3** in the **Athletics Club** folder.

Task D

1 Using the **Members** worksheet cell range **A23:B25** create a 3 dimensional pie chart to show the income from all three teams.

Add the title **Team Income from Monthly Fees**.

Display the value and percentage on the chart for each section and include a legend.

Create the chart on a new worksheet with the name **Team Income**.

Print one copy of the pie chart **only** in landscape orientation, inserting a footer to include *your name*, *today's date* and PRINTOUT3.

2. Using the **Members** worksheet cell range **A23:B25** create a 3D column chart to show the income from all three teams.

Add the title **Team Income from Monthly Fees**.

Add the label **Team** to the **x-axis** and the local currency to the **y-axis**.

Remove the legend.

Create the chart in a new worksheet with the name **Team Income 2**.

Save the file as **Teams4** in the **Athletics Club** folder.

Print one copy of the column chart **only** in landscape orientation, inserting a footer to include *your name*, *today's date* and PRINTOUT4.

3 Exit the application.