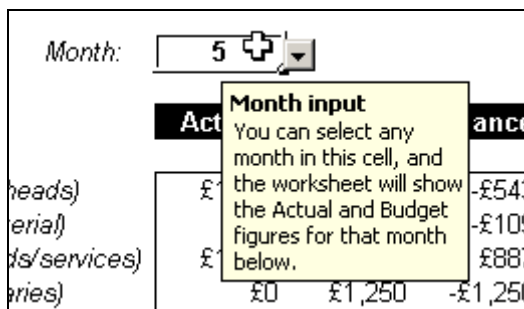


Exercise 1

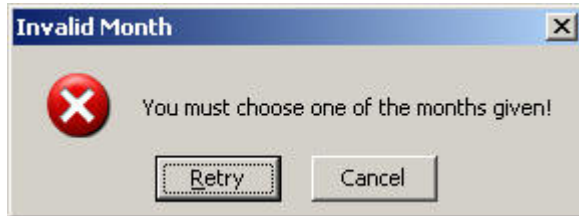
Download the exercise files from <http://www.peter-lo.com/Teaching/I154-1-A/Exercise1.zip>, you will use these files to finish the following exercises.

1. Open the Excel file “Question 1-1.xls”.

A) Apply validation to cell B2 so that when you click on the cell you see an input message telling you what you can do. The value of this cell “B4” is come from Sheet “Figure”, cell “E4” to “P4”



B) Extend your validation so that when a user chooses a month which doesn't exist, they see this message.



2. Open the Excel file “Question 1-2.xls” which contains the data for the record sales of the East Store and West Store. You are required to create a summary report by consolidating the sales from both East Store and West Store, the expected result is as followed:

Record Sales: Combined Sales

	Q1	Q2	Q3	Q4	Annual
Pop	408	457	340	599	1,804
Soul	319	308	379	554	1,560
R&B	477	415	641	778	2,311
Country	546	571	600	936	2,653
Classical	57	73	30	152	312
Soundtrack	117	159	222	287	785
Children	46	35	35	101	217
TOTAL	1,970	2,018	2,247	3,407	9,642

3. Open the Excel file "Question 1-3.xls". This exercise will test both your skill on Data Table and Scenario Manager.
 - A) Enter the formulas required to complete this spreadsheet model. Your result should be the same as the figure shown below:

Cell	Formula
Fixed Expense per Copier (B7)	<i>Monthly Lease Cost + Copier Service Cost + Other Fixed Costs</i>
Revenue (B12)	<i>No. of Copiers Leased × Copies/Month/Copier × Price Charged per Copy</i>
Cost of Goods Sold (B13)	<i>No. of Copiers Leased × Copies/Month/Copier × Variable Cost per Copy</i>
Contribution Margin (B14)	<i>Revenue – Cost of Goods Sold</i>
General & Admin. Costs (B15)	<i>No. of Copiers Leased × (Fixed Expense per Copier + Space Rental Rate)</i>
Net Income (B16)	<i>Contribution Margin – General & Admin. Costs</i>

	A	B	C	D	E	F
1	ABC Co. Ltd.					
2						
3	<u>Average Monthly Expense per Copier</u>		<u>No. of Copiers Leased</u>		40	
4	Monthly Lease Cost	\$250.00				
5	Copier Service Cost	\$35.00		Price Charged per Copy	\$0.05	
6	Other Fixed Costs	\$50.00		Variable Cost per Copy	\$0.03	
7	Fixed Expense per Copier	\$335.00		Margin per Copy	\$0.02	
8	Space Rental Rate	\$150.00				
9						
10	<u>Monthly</u>					
11	Copies/Month/Copier	30,000				
12	Revenue	\$60,000				
13	Cost of Goods Sold	\$36,000				
14	Contribution Margin	\$24,000				
15	General & Admin. Costs	\$19,400				
16	Net Income	\$4,600				
17						

- B) Start in a blank area of your worksheet, enter values down that column for copy volumes (*Copies/Month/Copier*) ranging from 22,000 to 32,000. You need to track how changes in copy volumes affect *Net Income*. The values under the Net Income formula (shown as \$4,600) are the values the Data Table generated during its iterations of the model.

	\$4,600
22000	(\$1,800)
23000	(\$1,000)
24000	(\$200)
25000	\$600
26000	\$1,400
27000	\$2,200
28000	\$3,000
29000	\$3,800
30000	\$4,600
31000	\$5,400
32000	\$6,200

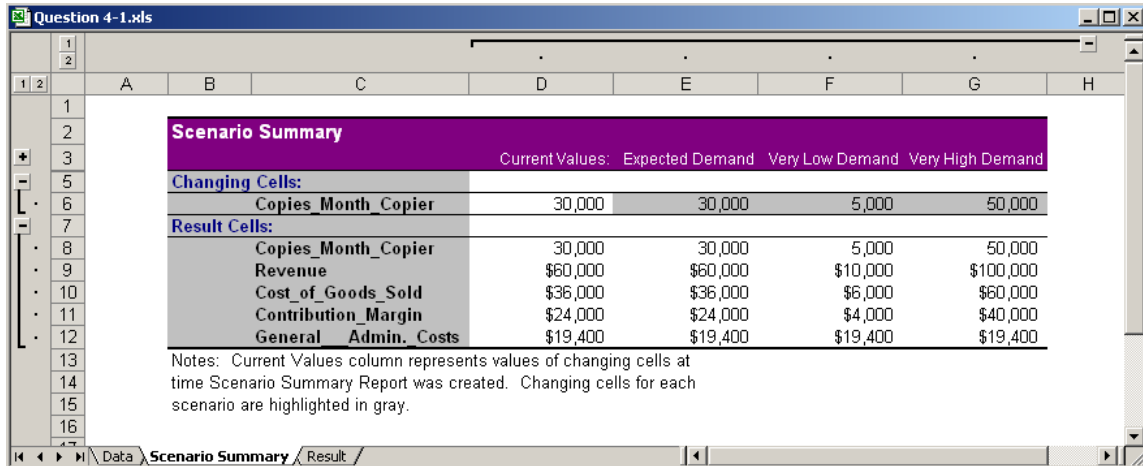
- C) Extend your Data Table to include a sensitivity analysis for the effects of *Copies/Month/Copier* on *Revenue*, *Cost of Goods Sold*, *Contribution Margin*, and *General & Admin. Costs*. Then reformat your layout as follow:

Copy Volume	Net Income	Revenue	COGS	Contrib. Margin	Gen/Admin Costs
22,000	(\$1,800)	\$44,000	\$26,400	\$17,600	\$19,400
23,000	(\$1,000)	\$46,000	\$27,600	\$18,400	\$19,400
24,000	(\$200)	\$48,000	\$28,800	\$19,200	\$19,400
25,000	\$600	\$50,000	\$30,000	\$20,000	\$19,400
26,000	\$1,400	\$52,000	\$31,200	\$20,800	\$19,400
27,000	\$2,200	\$54,000	\$32,400	\$21,600	\$19,400
28,000	\$3,000	\$56,000	\$33,600	\$22,400	\$19,400
29,000	\$3,800	\$58,000	\$34,800	\$23,200	\$19,400
30,000	\$4,600	\$60,000	\$36,000	\$24,000	\$19,400
31,000	\$5,400	\$62,000	\$37,200	\$24,800	\$19,400
32,000	\$6,200	\$64,000	\$38,400	\$25,600	\$19,400

- D) Perhaps you're giving a pitch to a manager or boss or there are a few key scenarios you want to be able to return to by looking at them as part of in your model and not by finding them in your Data Table results matrix? Use Scenario Manager to create the following three scenario.

Scenario Name	Copy Volume
Expected Demand	30,000
Very Low Demand	5,000
Very High Demand	50,000

- E) Use the Scenario Manager to generate a summary of the above Scenarios. In our model, likely values to have the Scenario Manager track might be *Revenue*, *Cost of Goods Sold*, *Contribution Margin*, and *General & Admin. Costs*.



4. Open the Excel file “Question 1-4.xls”. The business is making a loss of £620 for the year (cell E21). That can be altered by changing the price charged in September. The question is “How much do we need to charge in September to break even at the end of the year”? The final answer found for the cost of goods in September is £6.23. Can you find this result successfully?

	August	September	Total
Sales	0	4500	4500
Price	£6.00	£6.23	
Turnover	£0	£28,033	£28,033
No of Workers	22	22	
Salary	£0	£150	
Wages	£0	£3,300	£3,300
Costs	£0	£11,400	£11,400
Overheads	£5,000	£5,000	£10,000
Spending	£5,000	£19,700	£24,700
Profit	-£5,000	£8,333	£3,333
Taxrate	40%	40%	
Tax	£0	£3,333	£3,333
Net Profit	-£5,000	£5,000	£0

5. Open the Excel file “Question 1-5.xls”.

A) Ensure the data satisfies the definition of a list. Create a pivot table showing the highest chart positions by channel and timeslot

	A	B	C	D	E	F
1	Day of Week	(All)				
2	Genre	(All)				
3						
4	Min of Chart Position	Timeslot				
5	Channel	Daytime	Late Evening	Peak Evening	Teatime	Grand Total
6	BBC1	11	17	2	12	2
7	BBC2		52	13	50	13
8	ITV1			1	19	1
9	Channel 4		37	41	36	36
10	Channel 5		49	34	63	34
11	Grand Total	11	17	1	12	1
12						
13						

B) Use this pivot table to show that:

- i. Channel 4's best performing teatime show made number 36 on the weekly chart with 3.58 million viewers
- ii. Two BBC1 dramas shown on Saturday in the peak evening timeslot made the weekly chart with an average of 8.45 million viewers

C) Create a Pivot Chart showing, in 3D column chart format, the average viewing figures by genre for each channel on Monday

