

# **ESSENTIAL EXCEL SKILLS FOR BUSINESS**

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**LEARN TO USE  
EXCEL  
DATA TABLES  
IN AN HOUR**

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**BY CARL NIXON**

# Learn to Use Excel Data Tables in an Hour.

An easy to follow, illustrated  
introduction to Excel Data Tables.

By Carl Nixon.

# Copyright.

## Learn to Use Excel Data Tables in an Hour.

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This edition first published in 2017 by Carl Nixon [carl@excel-expert.com](mailto:carl@excel-expert.com).

[www.excel-expert.com](http://www.excel-expert.com)

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# Introduction.

Welcome to the follow up to the bestselling book, “Learn to Use Pivot Tables in an Hour”. I have now added additional tutorials on how to use Excel data tables. This should give you all the analysis tools you would ever need.

This book is based Excel 2016 which is included in the Microsoft Office 365 package. The vast majority of this book will apply to earlier versions of Excel. The only differences will be cosmetic.

I have purposely designed this book to be a reference tool that you can dip in and out of as needed. There is no need to read it from cover to cover unless you want to learn about every aspect of data tables and pivot tables.

# Accompanying Spreadsheet

A spreadsheet containing the example data from the exercises in this book is available from;

[www.excel-expert.com/downloads/](http://www.excel-expert.com/downloads/)

It is free and no sign up is required.

While there, why not sign up for our newsletter and get free Kindle copies of my future books? We have a whole series of Excel books lined up and each of them will be available for free at launch – these offers only last for 5 days each so you have to be quick!

# About the Author.

For the 10 years prior to becoming a freelance Excel consultant, I was a systems and procedures analyst for one of the UK's largest motor Insurance companies, Admiral Insurance. It meant I lived and breathed spreadsheets, day in, day out. Which meant my Excel skills just grew and grew. And before I knew it, I had become the Excel go to guy in and outside of Admiral Insurance.

When I investigated what Excel services were available for local businesses, I was shocked to find that other than training services, there was nothing. Even on a national level there were very few options available. So, I decided to turn my Excel skills in to a career and set out to help businesses make the most of Excel.

I established Excel-Expert.com in 2009 and since then I have gained clients from all around the world including Pepsico, Walmart and General Mills. Since starting out, I have helped companies of all sizes make the most of Excel and in that process, I have helped them save thousands of hours a year.

## This Book is Dedicated To

My family Kaiiden, Leiland, Lawson, Debbie, Sophie & Ryan

# An Introduction to Data Tables.

A data table is a special range of cells that can be used for data analysis. You can experiment with the values in some of the cells and quickly come up with a completely new solution to your problem. This allows you to carry out some very quick “What if” analysis without impacting on your source data. If used correctly it can be one of the most powerful tools in your arsenal.

## Example Data for Our Data Table.

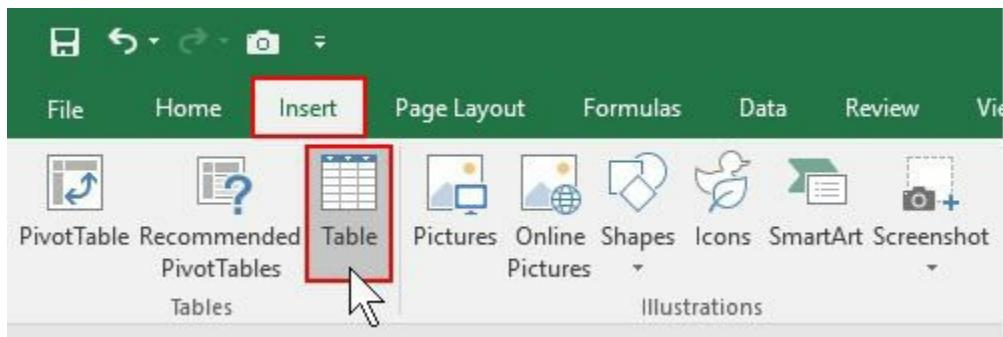
For the purposes of this exercise we will use the sales data from a fictitious sales team. They have 5 sales members spread over 3 offices and they report quarterly. The raw data can be found in the DT 1 tab of the [accompanying spreadsheet](#), and it looks like this;

	A	B	C	D
1	Surname	Office	Sales	Quarter
2	Gibson	Bristol	£88,705	Q3
3	Gibson	Bristol	£76,165	Q1
4	Griffiths	Cardiff	£26,576	Q3
5	James	Bristol	£14,487	Q1
6	Gibson	Bristol	£66,621	Q2
7	James	Bristol	£75,935	Q3
8	Hawkins	London	£106,870	Q2
9	Hawkins	London	£11,412	Q1
10	Griffiths	Cardiff	£27,357	Q1
11	Griffiths	Cardiff	£27,742	Q2
12	Andrews	Cardiff	£11,944	Q3
13	Andrews	Cardiff	£34,151	Q4
14	Andrews	Cardiff	£107,074	Q2
15	Hawkins	London	£44,268	Q3
16	Andrews	Cardiff	£44,495	Q1
17	James	Bristol	£28,858	Q4
18	Griffiths	Cardiff	£102,116	Q4
19	Hawkins	London	£86,343	Q4
20	Gibson	Bristol	£35,216	Q4
21	James	Bristol	£45,654	Q2

*Fig 1-1 – The data for our exercise.*

To create a data table from our data we follow these steps.

1. Click on any cell that contains data
2. On the **Insert** tab of the main ribbon click **Table**.



*Fig 1-2 – Inserting a data table.*

3. This will bring up the **Create Table** window which looks like this;



*Fig 1-3 – The Create Table window.*

Excel automatically detects the create range for you. Should Excel get it wrong edit the selection as required.

If your table has headers (our example does) ensure the **My table has headers** check box is ticked.

4. Click **OK**.

Our data table will now look like this;

	A	B	C	D
1	Surname	Office	Sales	Quarter
2	Gibson	Bristol	£88,705	Q3
3	Gibson	Bristol	£76,165	Q1
4	Griffiths	Cardiff	£26,576	Q3
5	James	Bristol	£14,487	Q1
6	Gibson	Bristol	£66,621	Q2
7	James	Bristol	£75,935	Q3
8	Hawkins	London	£106,870	Q2
9	Hawkins	London	£11,412	Q1
10	Griffiths	Cardiff	£27,357	Q1
11	Griffiths	Cardiff	£27,742	Q2
12	Andrews	Cardiff	£11,944	Q3
13	Andrews	Cardiff	£34,151	Q4
14	Andrews	Cardiff	£107,074	Q2
15	Hawkins	London	£44,268	Q3
16	Andrews	Cardiff	£44,495	Q1
17	James	Bristol	£28,858	Q4
18	Griffiths	Cardiff	£102,116	Q4
19	Hawkins	London	£86,343	Q4
20	Gibson	Bristol	£35,216	Q4
21	James	Bristol	£45,654	Q2

Fig 1-4 – Our new data table.

It is worth noting at this point, that while you have a cell in the data table selected you will have access to the **Table Tools** section of the Excel ribbon. If you click a cell outside of the data table, the **Table Tools** section of the Excel ribbon will vanish. To get it back simply click on the data table.

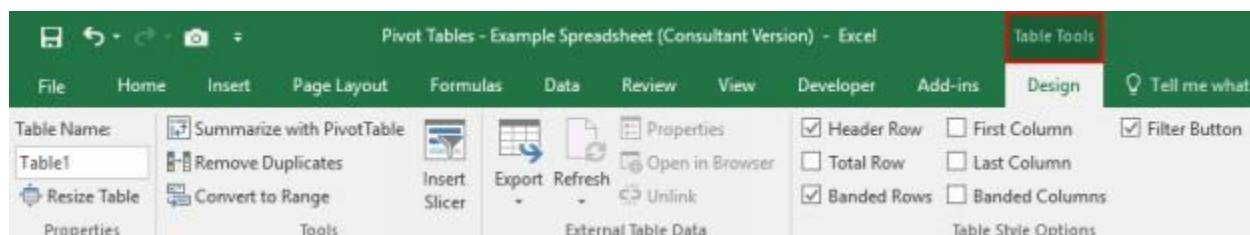


Fig 1-5 – The Table Tools section of the Excel ribbon.

# Sorting a Data Table.

Sorting a data table just takes a couple of clicks. In this exercise, we will sort our data by name and then sales. To ensure things get sorted in to the right order we must sort our data by sales and then by name.

1. Click on the down area next to the **Sales** heading.
2. Click on **Sort Largest to Smallest**.
3. Click on **OK**.

The screenshot shows a Microsoft Excel spreadsheet with four columns: Surname, Office, Sales, and Quarter. The 'Sales' column has a dropdown arrow icon. A context menu is open over the 'Sales' column, with the 'Sort Largest to Smallest' option highlighted and surrounded by a red box. Other options in the menu include 'Sort Smallest to Largest', 'Sort by Color', 'Clear Filter From "Sales"', 'Filter by Color', 'Number Filters', and a search bar. Below the menu, there is a list of sales values from £11,412 to £35,216, each preceded by a checkmark. At the bottom of the menu are 'OK' and 'Cancel' buttons, with 'OK' also being highlighted with a red box.

	A	B	C	D
1	Surname	Office	Sales	Quarter
2	Gibson	A	Z	Sort Smallest to Largest
3	Gibson	Z	A	Sort Largest to Smallest
4	Griffiths			
5	James			
6	Gibson			
7	James			
8	Hawkins			
9	Hawkins			
10	Griffiths			
11	Griffiths			
12	Andrews			
13	Andrews			
14	Andrews			
15	Hawkins			
16	Andrews			
17	James			
18	Griffiths			
19	Hawkins			
20	Gibson			
21	James			

Fig 2-1 – Sorting our data table by sales.

4. Click on the down arrow next to the **Surname** heading.
5. Click on **Sort A to Z**.
6. Click on **OK**.

	A	B	C	D
1	Surname	Office	Sales	Quarter
	A ↓ Sort A to Z		8,705	Q3
	Z ↓ Sort Z to A		6,165	Q1
	Sort by Color		6,576	Q3
	Clear Filter From "Surname"		4,487	Q1
	Filter by Color		6,621	Q2
	Text Filters		5,935	Q3
	Search <input type="text"/>	<input type="button" value="🔍"/>	6,870	Q2
	<input checked="" type="checkbox"/> (Select All)		1,412	Q1
	<input checked="" type="checkbox"/> Andrews		7,357	Q1
	<input checked="" type="checkbox"/> Gibson		7,742	Q2
	<input checked="" type="checkbox"/> Griffiths		1,944	Q3
	<input checked="" type="checkbox"/> Hawkins		4,151	Q4
	<input checked="" type="checkbox"/> James		07,074	Q2
		<input type="button" value="OK"/>	4,268	Q3
		<input type="button" value="Cancel"/>	4,495	Q1
			8,858	Q4
			02,116	Q4
			6,343	Q4
			5,216	Q4
			5,654	Q2

Fig 2-2 – Sorting our data table by surname.

Our resultant table will look like this;

	A	B	C	D
1	Surname	Office	Sales	Quarter
2	Andrews	Cardiff	£107,074	Q2
3	Andrews	Cardiff	£44,495	Q1
4	Andrews	Cardiff	£34,151	Q4
5	Andrews	Cardiff	£11,944	Q3
6	Gibson	Bristol	£88,705	Q3
7	Gibson	Bristol	£76,165	Q1
8	Gibson	Bristol	£66,621	Q2
9	Gibson	Bristol	£35,216	Q4
10	Griffiths	Cardiff	£102,116	Q4
11	Griffiths	Cardiff	£27,742	Q2
12	Griffiths	Cardiff	£27,357	Q1
13	Griffiths	Cardiff	£26,576	Q3
14	Hawkins	London	£106,870	Q2
15	Hawkins	London	£86,343	Q4
16	Hawkins	London	£44,268	Q3
17	Hawkins	London	£11,412	Q1
18	James	Bristol	£75,935	Q3
19	James	Bristol	£45,654	Q2
20	James	Bristol	£28,858	Q4
21	James	Bristol	£14,487	Q1

*Fig 2-3 – Our sorted data table.*

# Filtering a Data Table.

Filtering our data is equally easier. If we wanted to see our sales figures for Bristol during the quarter 2, we would follow these steps;

1. Click on the down arrow on the **Office** heading.
2. Click on the **(Select All)** tick box – this should deselect everything.
3. Click on the **Bristol** tick box.
4. Click on **OK**.

The screenshot shows a Microsoft Excel filter dialog box. The 'Office' column header has a dropdown arrow, which is highlighted with a red box. The filter menu is open, showing options like 'Sort A to Z', 'Sort Z to A', 'Sort by Color', 'Clear Filter From "Office"', 'Filter by Color', and 'Text Filters'. Under 'Text Filters', there is a search bar and a list of checkboxes. The checkbox for 'Bristol' is checked and highlighted with a red box. Other options like 'Select All', 'Cardiff', and 'London' are also listed. At the bottom of the dialog box are 'OK' and 'Cancel' buttons, with 'OK' also highlighted with a red box.

Surname	Office	Sales	Quarter
A	Sort A to Z	7,074	Q2
Z	Sort Z to A	4,495	Q1
A	Sort by Color	4,151	Q4
Z	Clear Filter From "Office"	1,944	Q3
	Filter by Color	8,705	Q3
	Text Filters	6,165	Q1
	Search	6,621	Q2
		5,216	Q4
		22,116	Q4
		7,742	Q2
		7,357	Q1
		6,576	Q3
		6,870	Q2
		6,343	Q4
		4,268	Q3
		1,412	Q1
		5,935	Q3
		5,654	Q2
		8,858	Q4
		4,487	Q1

Fig 3-1 – Filtering our data by the Bristol office.

5. Click on the down arrow on the **Quarter** heading.
6. Click on the **(Select All)** tick box – this should deselect everything.
7. Click on the **Q2** tick box.
8. Click on **OK**.

A screenshot of a Microsoft Excel spreadsheet. The data consists of four columns: Surname, Office, Sales, and Quarter. The Quarter column has a dropdown arrow indicating it is filtered. A context menu is open for the Quarter column, with 'Filter by Color' option selected. A sub-menu shows color swatches for Q1 (light blue), Q2 (orange), Q3 (green), and Q4 (red). The Q2 swatch is checked and highlighted with a red border. Other options in the menu include 'Sort A to Z', 'Sort Z to A', 'Sort by Color', 'Clear Filter From "Quarter"', 'Filter by Color', 'Text Filters', and a search bar.

*Fig 3-2 – Filtering our data by quarter.*

Our resultant table should look like this;

A screenshot of the same Excel spreadsheet after applying the filter. Only two rows remain visible: row 8 (Gibson, Bristol, £66,621, Q2) and row 19 (James, Bristol, £45,654, Q2). The other rows are hidden. The 'Office' and 'Quarter' column headers now have a small 'F' icon in their dropdown arrows, indicating they are filtered.

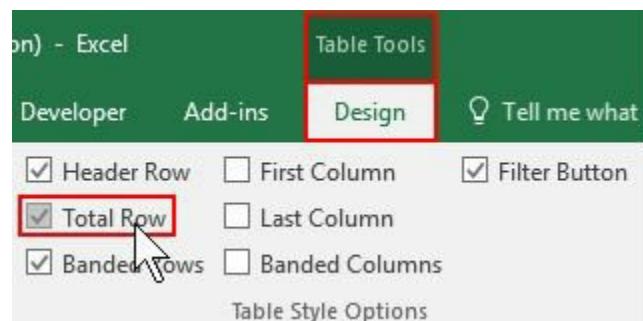
*Fig 3-3 – Our filtered table.*

Note that the **Office** and **Quarter** headings now have a filtered symbol to show they are filtered.

# Summarising a Data Table.

If we want to show a sales total at the bottom of our table or even the average sale, we follow these steps.

1. Click on one of the cells in the data table – this will ensure the **Table Tools** section of the ribbon is available.
2. Click on the **Design** sub area of the ribbon.
3. Click on the **Total Row** tick box.



*Fig 4-1 – Adding a total row.*

This updates our table to look like this;

	A	B	C	D
1	Surname	Office	Sales	Quarter
6	Gibson	Bristol	£66,621	Q2
21	James	Bristol	£45,654	Q2
22	Total			2

*Fig 4-2 – The first stage of adding a total row.*

This obviously only shows a count rather than a total. To get a sales total we carry out these further steps.

4. Click on the cell where the sales total should be – in this case that is cell C22.
5. Click on the down arrow that appears next to the cell.
6. Select **Sum** from the drop down that appears – if you want the average sales value select **Average** instead.

A	B	C	D	
1	Surname	Office	Sales	Quarter
6	Gibson	Bristol	£66,621	Q2
21	James	Bristol	£45,654	Q2
22	Total		2	
23			None	
24			Average	
25			Count	
26			Count Numbers	
27			Max	
28			Min	
29			Sum	
			StdDev	
			Var	
			More Functions...	

Fig 5-3 – Adding the sum of our sales to the total rows.

This will update our table to look like this;

A	B	C	D	
1	Surname	Office	Sales	Quarter
6	Gibson	Bristol	£66,621	Q2
21	James	Bristol	£45,654	Q2
22	Total		£112,275	2

Fig 5-4 – Our totaled sales value.

Note that the sales total is the total of the filtered table. If you un-filter or filter the table differently the total will automatically update its self.

# Structured References.

Structured references make formulas in your data table easier to understand and follow. In this exercise, we will add a column to calculate a 10% commission.

1. Remove the filters from our table, so the table looks like this;

	A	B	C	D
1	Surname	Office	Sales	Quarter
2	Gibson	Bristol	£88,705	Q3
3	Gibson	Bristol	£76,165	Q1
4	Griffiths	Cardiff	£26,576	Q3
5	James	Bristol	£14,487	Q1
6	Gibson	Bristol	£66,621	Q2
7	James	Bristol	£75,935	Q3
8	Hawkins	London	£106,870	Q2
9	Hawkins	London	£11,412	Q1
10	Griffiths	Cardiff	£27,357	Q1
11	Griffiths	Cardiff	£27,742	Q2
12	Andrews	Cardiff	£11,944	Q3
13	Andrews	Cardiff	£34,151	Q4
14	Andrews	Cardiff	£107,074	Q2
15	Hawkins	London	£44,268	Q3
16	Andrews	Cardiff	£44,495	Q1
17	James	Bristol	£28,858	Q4
18	Griffiths	Cardiff	£102,116	Q4
19	Hawkins	London	£86,343	Q4
20	Gibson	Bristol	£35,216	Q4
21	James	Bristol	£45,654	Q2
22	Total		£1,061,989	20

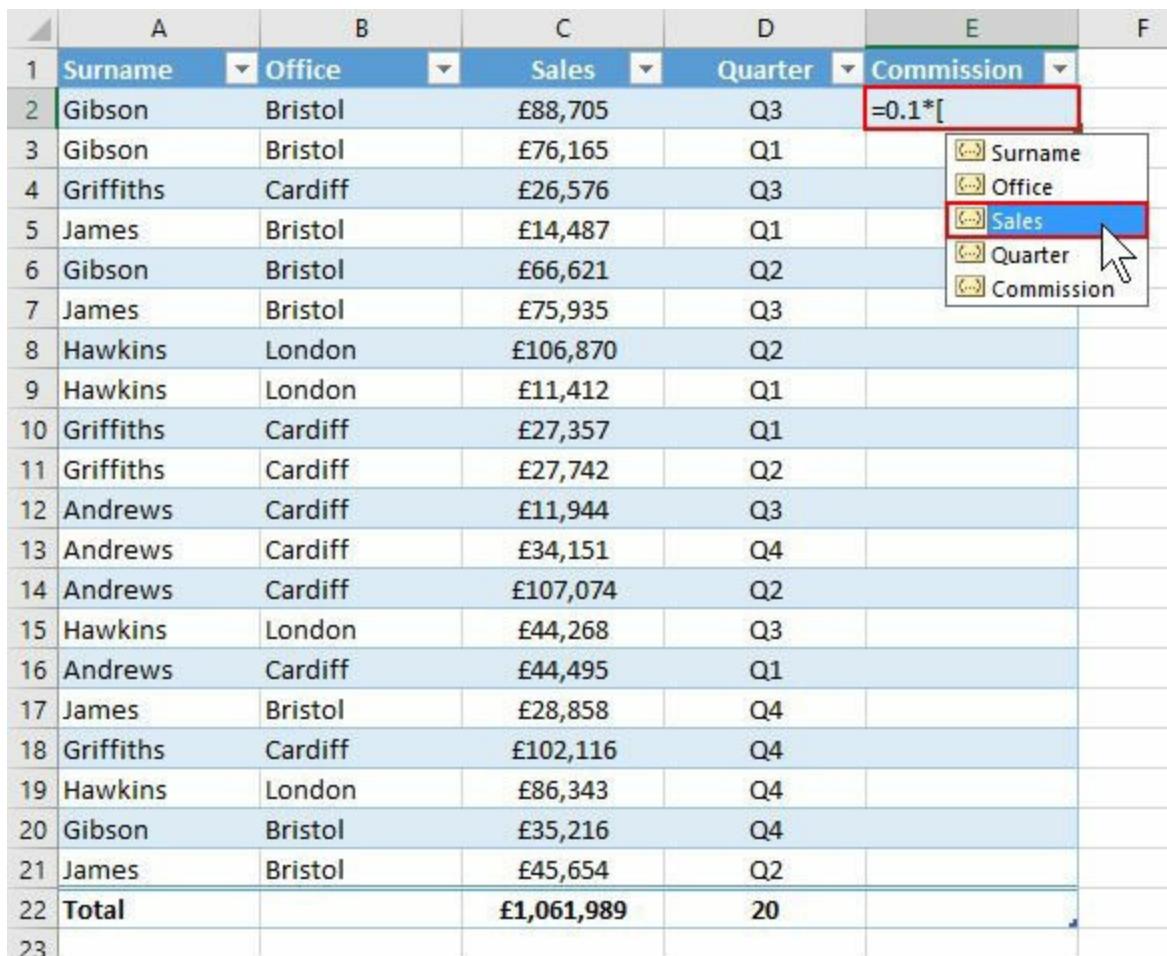
Fig 5-1 – Our unfiltered table.

2. Click on the cell immediately to the right of our headers. In our spreadsheet that is cell **E1**.
3. Type in the word **Commission**. This adds a new blank column to our table.
4. Click on the cell immediately below our new **Commission** header. In our table that is cell **E2**.
5. Type in the formula

=0.1\*[

6. The [ indicates to Excel that you want to insert a structured reference here, so it

displays a list of available *structured references* – from here select the **Sales** option.



	A	B	C	D	E	F
1	Surname	Office	Sales	Quarter	Commission	
2	Gibson	Bristol	£88,705	Q3	=0.1*[	
3	Gibson	Bristol	£76,165	Q1		
4	Griffiths	Cardiff	£26,576	Q3		
5	James	Bristol	£14,487	Q1		
6	Gibson	Bristol	£66,621	Q2		
7	James	Bristol	£75,935	Q3		
8	Hawkins	London	£106,870	Q2		
9	Hawkins	London	£11,412	Q1		
10	Griffiths	Cardiff	£27,357	Q1		
11	Griffiths	Cardiff	£27,742	Q2		
12	Andrews	Cardiff	£11,944	Q3		
13	Andrews	Cardiff	£34,151	Q4		
14	Andrews	Cardiff	£107,074	Q2		
15	Hawkins	London	£44,268	Q3		
16	Andrews	Cardiff	£44,495	Q1		
17	James	Bristol	£28,858	Q4		
18	Griffiths	Cardiff	£102,116	Q4		
19	Hawkins	London	£86,343	Q4		
20	Gibson	Bristol	£35,216	Q4		
21	James	Bristol	£45,654	Q2		
22	<b>Total</b>		<b>£1,061,989</b>	<b>20</b>		
23						

Fig 5-2 – Entering our formula using Structured References.

7. Complete the formula by adding a ] to the end and press enter. Your formula should now read;

$$=0.1*[Sales]$$

Excel will now auto complete the Commission column so it looks like this;

	A	B	C	D	E
1	Surname	Office	Sales	Quarter	Commission
2	Gibson	Bristol	£88,705	Q3	£8,871
3	Gibson	Bristol	£76,165	Q1	£7,617
4	Griffiths	Cardiff	£26,576	Q3	£2,658
5	James	Bristol	£14,487	Q1	£1,449
6	Gibson	Bristol	£66,621	Q2	£6,662
7	James	Bristol	£75,935	Q3	£7,594
8	Hawkins	London	£106,870	Q2	£10,687
9	Hawkins	London	£11,412	Q1	£1,141
10	Griffiths	Cardiff	£27,357	Q1	£2,736
11	Griffiths	Cardiff	£27,742	Q2	£2,774
12	Andrews	Cardiff	£11,944	Q3	£1,194
13	Andrews	Cardiff	£34,151	Q4	£3,415
14	Andrews	Cardiff	£107,074	Q2	£10,707
15	Hawkins	London	£44,268	Q3	£4,427
16	Andrews	Cardiff	£44,495	Q1	£4,450
17	James	Bristol	£28,858	Q4	£2,886
18	Griffiths	Cardiff	£102,116	Q4	£10,212
19	Hawkins	London	£86,343	Q4	£8,634
20	Gibson	Bristol	£35,216	Q4	£3,522
21	James	Bristol	£45,654	Q2	£4,565
22	Total		£1,061,989	20	

Fig 5-3 – Our completed Commission column.

## Referring to Structured References in Formulas.

We can also refer to these Structured References outside of our table. In this exercise, we will create a formula that totals the commission to be paid.

1. Click on a cell in the data table.
2. From the **Table Tools** ribbon select the **Design** sub ribbon.
3. In the **Table Name** field enter a name for the table. For this exercise, we will call it **Sales\_Data**.

The screenshot shows the Microsoft Excel ribbon with the 'Table Tools' tab selected. Under the 'Design' tab, the 'Table Name' dropdown is set to 'Sales\_Data'. The table itself is a Pivot Table with columns: Surname, Office, Sales, Quarter, and Commission. The data includes rows for Gibson, Griffiths, James, Hawkins, and Andrews across various offices and quarters. A formula bar at the top shows 'Gibson'. The table has a light blue header row and white body rows.

Surname	Office	Sales	Quarter	Commission
Gibson	Bristol	£88,705	Q3	£8,871
Gibson	Bristol	£76,165	Q1	£7,617
Griffiths	Cardiff	£26,576	Q3	£2,658
James	Bristol	£14,487	Q1	£1,449
Gibson	Bristol	£66,621	Q2	£6,662
James	Bristol	£75,935	Q3	£7,594
Hawkins	London	£106,870	Q2	£10,687
Hawkins	London	£11,412	Q1	£1,141
Griffiths	Cardiff	£27,357	Q1	£2,736
Griffiths	Cardiff	£27,742	Q2	£2,774
Andrews	Cardiff	£11,944	Q3	£1,194
Andrews	Cardiff	£34,151	Q4	£3,415
Andrews	Cardiff	£107,074	Q2	£10,707
Hawkins	London	£44,268	Q3	£4,427
Andrews	Cardiff	£44,495	Q1	£4,450
James	Bristol	£28,858	Q4	£2,886
Griffiths	Cardiff	£102,116	Q4	£10,212
Hawkins	London	£86,343	Q4	£8,634
Gibson	Bristol	£35,216	Q4	£3,522
James	Bristol	£45,654	Q2	£4,565
Total		£1,061,989	20	

Fig 5-4 – Renaming our data table.

- Click on any cell outside of the table and enter the formula;

**=SUM(Sales\_Data[Commission])**

- This will result in the total commission being calculated. In our example table this comes to £106,198.90.

# What If Analysis with Data Tables.

What-If analysis is a quick way of applying different values in your formulas. Applying different values is known as applying different scenarios. In this chapter, we will quickly take a look at how these are used in the real world.

For the purposes of this exercise we will use stock data from a computer shop. They have 100 computers sitting in the store room and the older they get, the greater their devaluation. They decide to sell a percentage of computers at a higher price (£500) and the remaining percentage at a lower price (£250). The raw data can be found in the DT 2 tab of the [accompanying spreadsheet](#), and it looks like this;

A	B	C	D	E
1				
2	Total number of computers in stock	% of Computers Sold at Higher Price		
3	100	75%		
4				
5		Number of Computers	Unit Price	Sub Totals
6	Higher Price	75	£500	£37,500
7	Lower Price	25	£250	£6,250
8			Total Sales	£43,750
9				

Fig 6-1 – Our What-If spreadsheet.

This is a rundown of what each cell does

- In cell **B3** we enter the number of computers we have in stock (100).
- In cell **C3** we enter the percentage of computers to be sold at the full price (75%).
- In cell **D6** we enter the unit cost of the higher price (£500).
- In cell **D7** we enter the unit cost of the lower price (£250).
- Cells **C6** and **C7** calculates how many computers are sold in each price band.
- Cells **E6** and **E7** calculates the values of the sales in each price band.
- Cell **E8** calculates the total value of all the sales.

By changing the values in the relevant cells, we can experiment with different percentage splits, initial stock levels and unit prices.

# Creating Different Scenarios.

The above solution is very manual and only produces one result at a time. How do we generate a table with all the required variations? In this exercise, we will generate results for 50%, 60%, 70%, 80%, 90% and 100% sales at the higher price band.

1. In the **Data** section of the Excel ribbon, select **What-If Analysis** and then **Scenario Manager....**

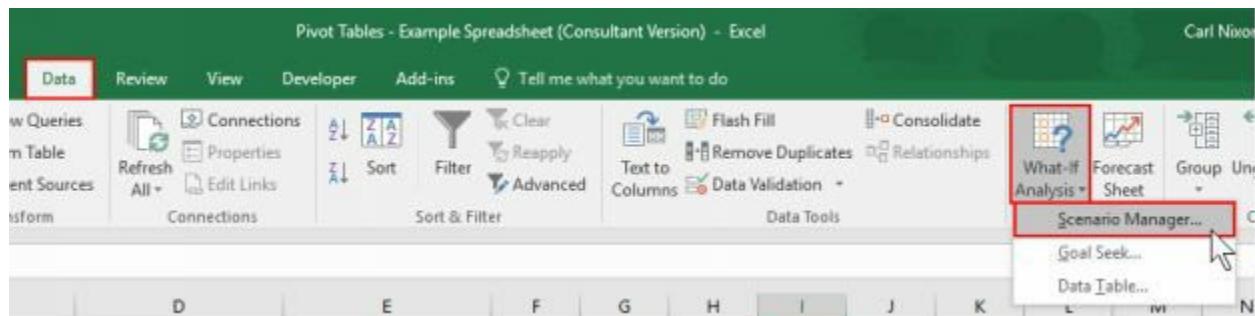


Fig 6-2 – Opening the Scenario Manager.

2. When the **Scenario Manager** window opens click on the **Add** button to add a scenario.

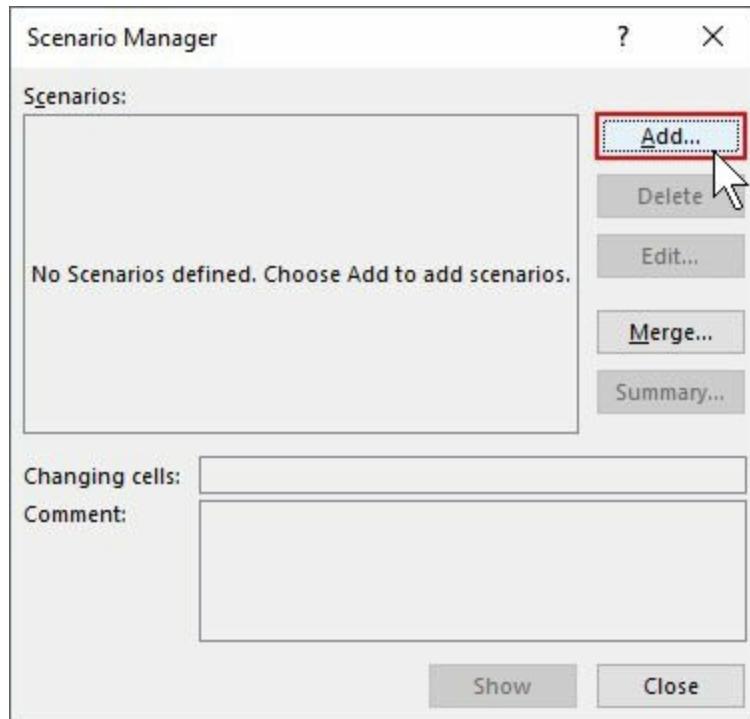
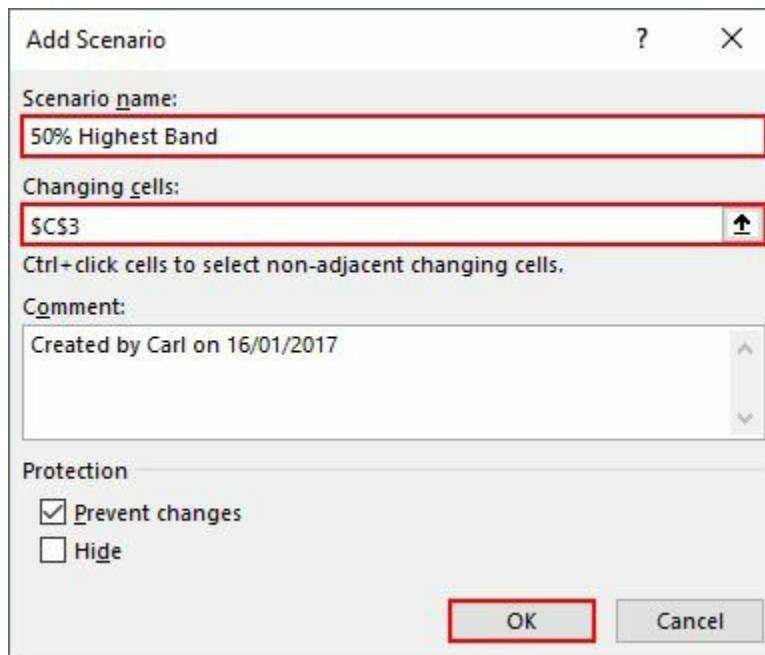


Fig 6-3 – The Scenario Manager.

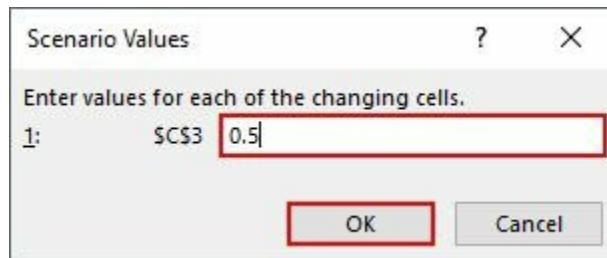
3. Enter “**50% Highest Band**” in the **Scenario Name** field.

4. Enter **\$C\$3** in the **Changing Cells** field.
5. If you want to record details of the scenario, enter it in the **Comments** field.
6. Click **OK**.



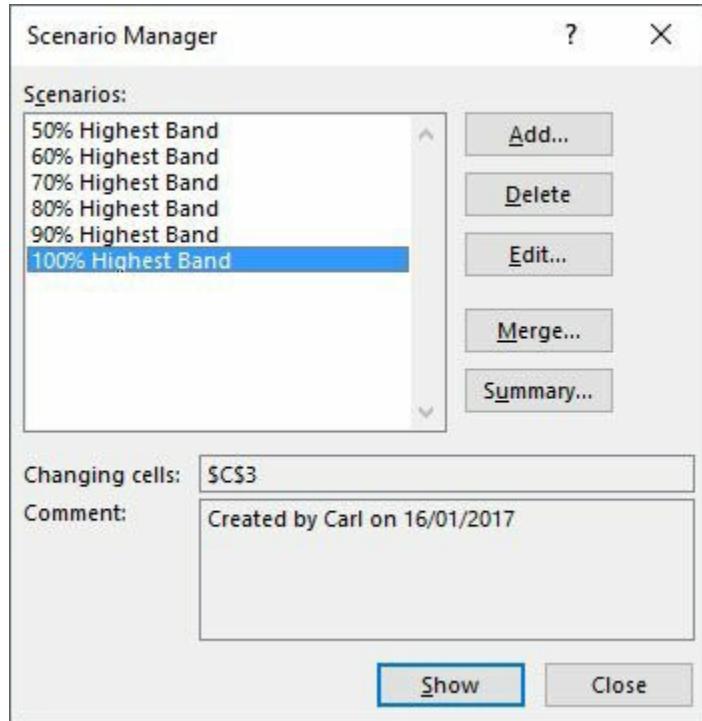
*Fig 6-4 – The Scenario Manager.*

7. When the **Scenario Values** window opens, enter **0.5** (for 50%) and click **OK**.



*Fig 6-5 – Scenario Values.*

8. Repeat these steps for each of the percentages (0.6, 0.7, 0.8, 0.9 and 1.0) until the **Scenario Manager** looks like this;



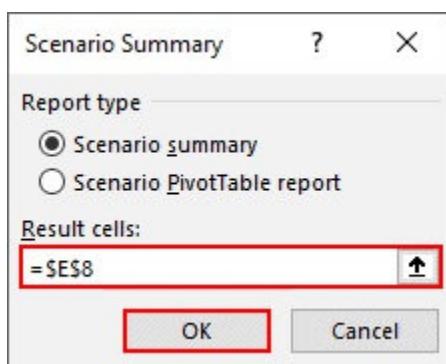
*Fig 6-6 – Our collection of scenarios.*

9. Click the **Close** button on the **Scenario Manager**.

## Creating a Scenario Summary.

The next stage is to create a summary of our results.

1. In the **Data** section of the Excel ribbon, select **What-If Analysis** and then **Scenario Manager**....
2. Click on the **Summary...** button.
3. When the **Scenario Summary** opens enter **=E\$8** in the Results Cells field. This is the cell that holds the overall total, which is the value we want to see how it is impacted upon by the changing percentages.
4. Click the **OK** button.



*Fig 7-7 – Defining our Scenario Summary.*

This will generate a new Scenario Summary sheet with a table that looks like this;

The screenshot shows a Microsoft Excel spreadsheet titled "Scenario Summary". The table has a header row with "Current Values:" followed by six columns labeled "50% Highest Band", "60% Highest Band", "70% Highest Band", "80% Highest Band", "90% Highest Band", and "100% Highest Band". Below this is a "Changing Cells:" row with values \$C\$3, 50%, 50%, 60%, 70%, 80%, 90%, and 100%. The next row is "Result Cells:" with values \$E\$8, £37,500, £37,500, £40,000, £42,500, £45,000, £47,500, and £50,000. A note at the bottom states: "Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray."

Scenario Summary							
Current Values:	50% Highest Band	60% Highest Band	70% Highest Band	80% Highest Band	90% Highest Band	100% Highest Band	
Changing Cells:	\$C\$3	50%	50%	60%	70%	80%	90%
Result Cells:	\$E\$8	£37,500	£37,500	£40,000	£42,500	£45,000	£47,500

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

*Fig 7-8 – Our Scenario Summary.*

# Using the Goal Seeker.

So, what happens if you know sales you want to generate, but don't know how many computers you would need to sell in the highest band to make that happen? In this exercise, we will work out how many full price computers we need to sell to generate £41,000 in sales.

Return to the DT 2 tab of the [accompanying spreadsheet](#) which looks like this;

A	B	C	D	E
1				
2	Total number of computers in stock	% of Computers Sold at Higher Price		
3	100	75%		
4				
5		Number of Computers	Unit Price	Sub Totals
6	Higher Price	75	£500	£37,500
7	Lower Price	25	£250	£6,250
8			Total Sales	£43,750
9				

Fig 8-1 – Our What-If spreadsheet.

1. In the **Data** section of the Excel ribbon, select **What-If Analysis** and then **Goal Seek....**

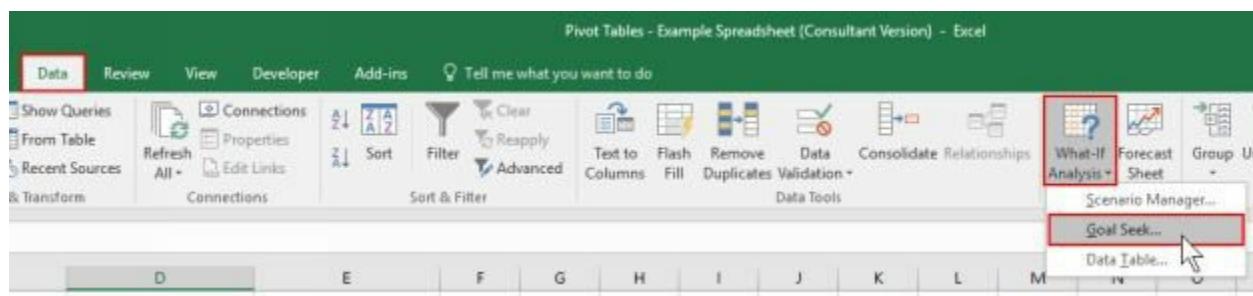


Fig 8-2 – Finding the Goal Seek option.

2. When the **Goal Seek** window opens enter **\$E\$8** in the **Set Cell** field. This is the cell we want to equal our target sales figure of £41,000.
3. Enter **41000** in the **To Value** field. This is the sales target we want to achieve.
4. In the **By Changing Cell** field enter **\$C\$3**. This is the percentage we want to find in order to achieve our £41,000 target.

## 5. Click **OK**.

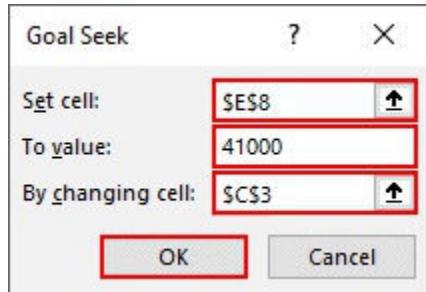


Fig 8-3 – Setting our Goal Seek parameters.

This will bring up a confirmation message like this;

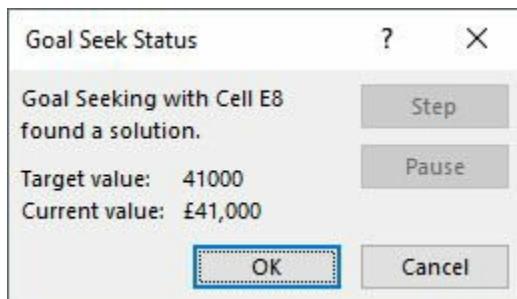


Fig 8-4 – Goal seek confirmation message.

When you click the **OK** button, Excel will insert **64%** into cell **C3**. This produces our desired result of **£41,000** in cell **E8**.

## What-If Data Tables.

Instead of manually inputting all of the various scenarios we can quickly and easily create a What-If data table. These data tables come in two flavors, a one-variable data table or a two-variable data table. We will look at each in this section.

### *One-Variable Data Table.*

Once again, we will return to the **DT 2** tab of the [accompanying spreadsheet](#). To create a one-variable data table, we take the following steps;

1. Select the cell **C10** and enter the formula;

$$=E8$$

2. In cells **B11** to **B16** enter the required percentages.
3. Select the range **B10:C16**.

A	B	C	D	E
1	Total number of computers in stock	% of Computers Sold at Higher Price		
2	100	75%		
3				
4				
5		Number of Computers	Unit Price	Sub Totals
6	Higher Price	75	£500	£37,500
7	Lower Price	25	£250	£6,250
8			Total Sales	£43,750
9				
10		£43,750		
11	50%			
12	60%			
13	70%			
14	80%			
15	90%			
16	100%			
17				

Fig 8-5 – Preparing to create a One-Variable Data Table.

4. In the **Data** section of the Excel ribbon, select **What-If Analysis** and then **Data Table**....

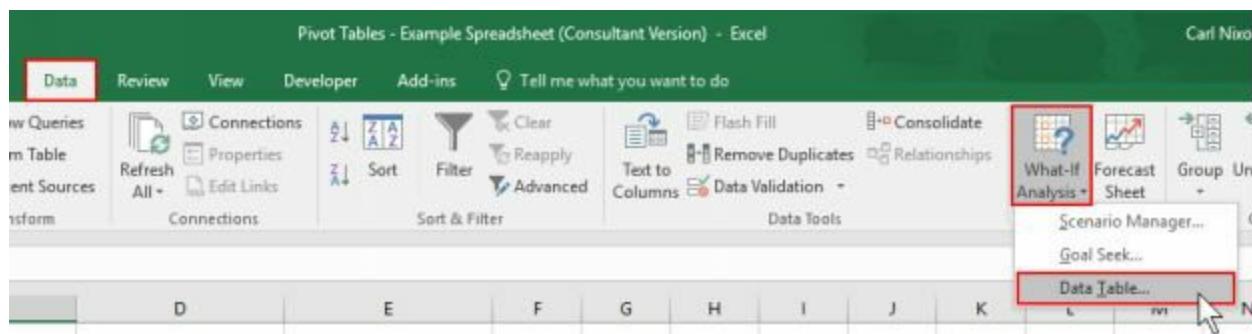


Fig 8-6 – Starting our One-Variable Data Table.

5. When the **Data Table** window opens, enter **\$C\$3** in the **Column Input Cell** field. This tells Excel to insert each of the values in the first of our selected columns, into cell **C3** so it can calculate all of the values.
6. Click the **OK** button.

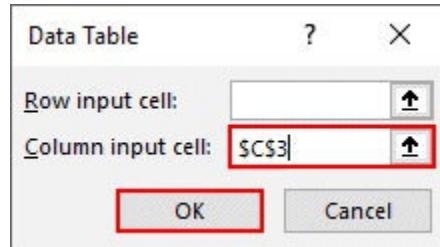


Fig 8-7 – The Data Table window.

This will update our selection to look like this;

A	B	C	D	E
1				
2	Total number of computers in stock	% of Computers Sold at Higher Price		
3	100	75%		
4				
5		Number of Computers	Unit Price	Sub Totals
6	Higher Price	75	£500	£37,500
7	Lower Price	25	£250	£6,250
8			Total Sales	£43,750
9				
10		£43,750		
11	50%	£37,500		
12	60%	£40,000		
13	70%	£42,500		
14	80%	£45,000		
15	90%	£47,500		
16	100%	£50,000		
17				

Fig 8-8 – Our completed One-Variable Data Table.

We now have a table that shows us the total sales for 7 different percentages.

So, what happens if we want to experiment with both percentages and the higher unit price? In this case, we use a two-variable data table.

## Two-Variable Data Table

Once again, we will return to the DT 2 tab of the [accompanying spreadsheet](#). To create a two-variable data table, we take the following steps;

1. Select the cell **B10** and enter the formula;

=E8

2. In cells **B11** to **B16** enter the required percentages.
3. In cells **C10** to **E10** enter the required unit prices.
4. Select the range **B10:E16**.

A	B	C	D	E
1	Total number of computers in stock	% of Computers Sold at Higher Price		
2	100	75%		
3				
4				
5		Number of Computers	Unit Price	Sub Totals
6	Higher Price	75	£500	£37,500
7	Lower Price	25	£250	£6,250
8			Total Sales	£43,750
9				
10	£43,750	£500	£600	£700
11	50%			
12	60%			
13	70%			
14	80%			
15	90%			
16	100%			
17				

Fig 8-9 – Setting up our Two-Variable Data Table.

5. In the **Data** section of the Excel ribbon, select **What-If Analysis** and then **Data Table....**

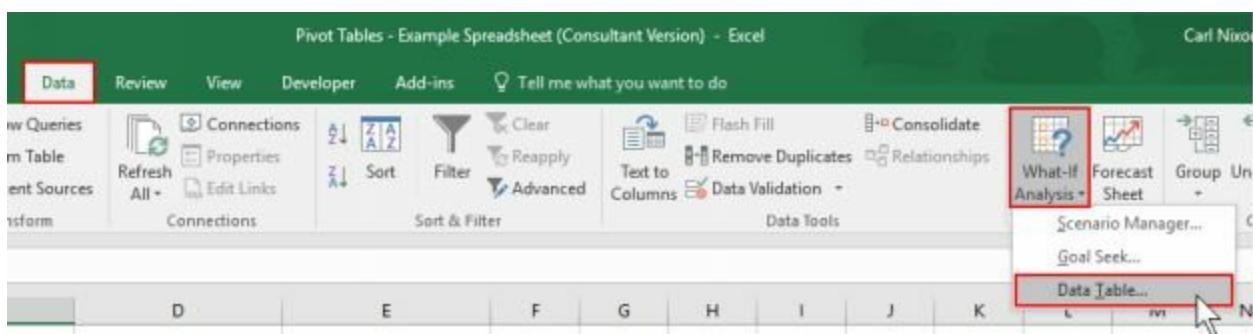
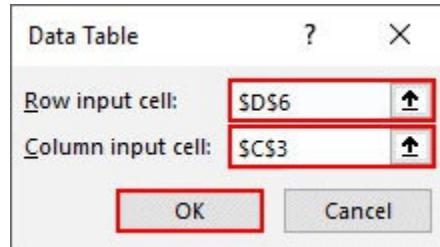


Fig 8-10 – Starting our Two-Variable Data Table.

6. When the **Data Table** window opens, enter **\$C\$3** in the **Column Input Cell** field. This tells Excel to insert each of the values in the first of our selected columns, in to cell **C3** so it can calculate all of the values.
7. Enter **\$D\$6** in the **Row Input Cell** field. This tells Excel to insert each of the values in the first of our selected rows, in to cell **D6** so it can calculate all of the values.
8. Click the **OK** button.



*Fig 8-11 – The Data Table window.*

This will update our selection to look like this;

A	B	C	D	E
1				
2	Total number of computers in stock	% of Computers Sold at Higher Price		
3	100	75%		
4				
5		Number of Computers	Unit Price	Sub Totals
6	Higher Price	75	£500	£37,500
7	Lower Price	25	£250	£6,250
8			Total Sales	£43,750
9				
10	£43,750	£500	£600	£700
11	50%	£37,500	£42,500	£47,500
12	60%	£40,000	£46,000	£52,000
13	70%	£42,500	£49,500	£56,500
14	80%	£45,000	£53,000	£61,000
15	90%	£47,500	£56,500	£65,500
16	100%	£50,000	£60,000	£70,000
17				

*Fig 8-12 – Our completed Two-Variable Data Table.*

Our table now shows every variation of percentage and higher price band.

# Adding a Bit of Style.

You are not stuck with the default blue layout that Excel automatically gives your table. You have a whole range of colour themes available to you, as well as the ability to create your own theme. Follow these steps to change your tables theme.

1. Click on any cell in your data table.
2. In the **Table Tools** ribbon select the **Design** sub ribbon.
3. In the **Table Styles** area pull down the selections available by clicking on the down arrow with the horizontal line above it. (Bottom right corner).
4. Click on the style that you want. In this example, we are choosing a green style.

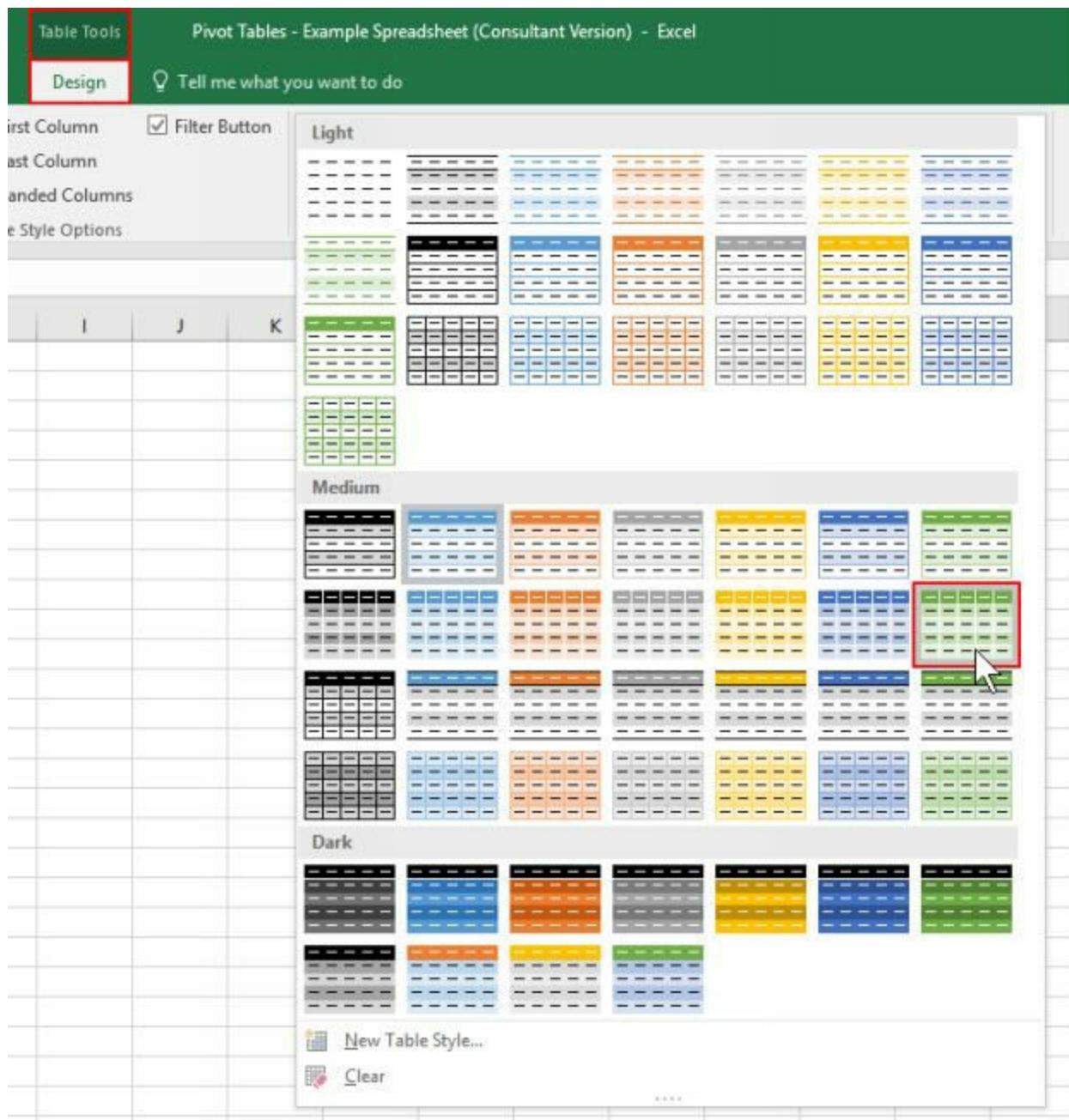


Fig 9-1 – Choosing our new style.

**Note** – If you wanted to create your own style you would click on **New Table Style...** rather than a readymade theme.

If you wanted to return the data table back to a range and keep the styling, do the following

1. Click on a cell in the data table.
2. In the **Table Tools** ribbon select the **Design** sub ribbon.
3. In the **Tools** section click on **Convert to Range**.

The screenshot shows the Microsoft Excel ribbon with the 'Table Tools' tab selected. In the 'Tools' group, the 'Convert to Range' button is highlighted with a red box and a cursor arrow pointing to it. The table below is a PivotTable named 'Table2'. The table has four rows and four columns. The columns are labeled 'Surname', 'Office', 'Sales', and 'Quarter'. The data is as follows:

	A	B	C	D
1	Surname	Office	Sales	Quarter
2	Gibson	Bristol	£88,705	Q3
3	Gibson	Bristol	£76,165	Q1
4	Griffiths	Cardiff	£26,576	Q3

Fig 9-2 – Converting our table to a range.

4. Excel will ask you to confirm that you want to convert the table to a normal range – click **Yes**.

Your data table has now been converted to an ordinary range.