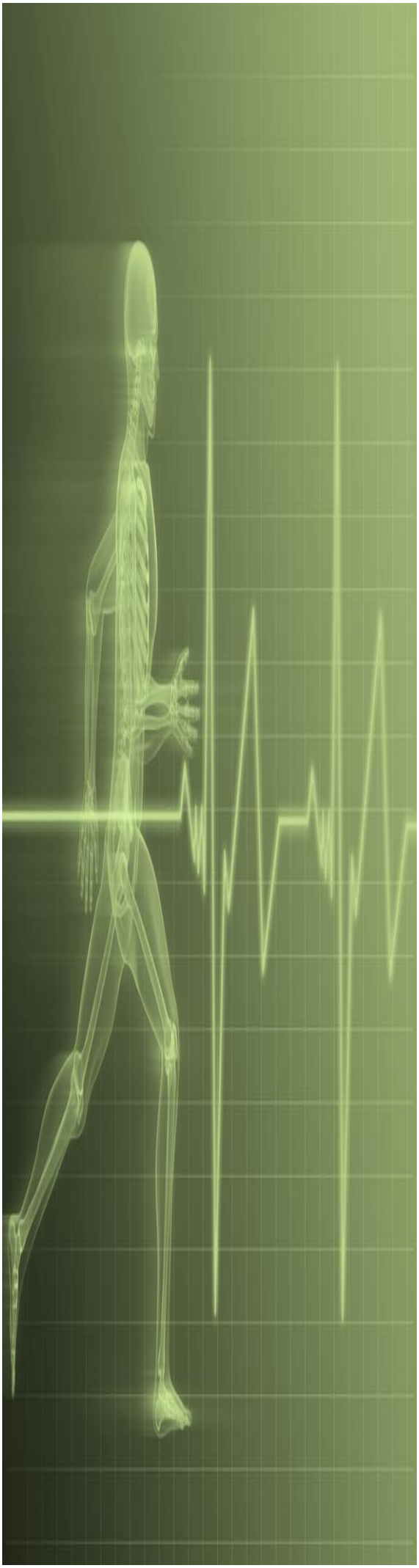


St George's
University of London

Excel PivotTables

IT Training
St. George's, University of London

Contents

Understanding Tables **2**

Creating A Table From Data 3
Inserting Table Columns 4
Removing Table Columns 5
Working With Table Styles 6
Inserting Or Deleting Table Records 7
Removing Duplicates 8
Filtering Tables 9
Renaming A Table 10
Deleting A Table 11

Understanding PivotTables **12**

Recommended Pivot Tables 13
Creating Your Own PivotTable 14
Defining The PivotTable Structure 15
Switching PivotTable Fields 16
Filtering A PivotTable 17
Formatting A PivotTable 18

PivotTable Features **19**

Using Compound Fields 20
Counting In A PivotTable 21
Formatting PivotTable Values 22
Working With PivotTable Grand Totals 23
Working With PivotTable Subtotals 24
Finding The Percentage Of Total 25
Finding The Difference From 26
Grouping In PivotTable Reports 27
Creating Running Totals 28
Creating Calculated Fields 29
Providing Custom Names 30
Creating Calculated Items 31
PivotTable Options 32
Sorting In A PivotTable 33

PivotCharts **34**

Inserting A PivotChart 35
Defining The PivotChart Structure 36
Changing The PivotChart Type 37
Using The PivotChart Filter Field Buttons 38
Moving PivotCharts To Chart Sheets 39

UNDERSTANDING TABLES

Most spreadsheets provide three functions: calculating, graphing, and some limited database functionality. Excel continues on in this tradition. In Excel, formulas and functions make complex calculations much simpler and accessible; the charting tools allow users to create graphs; and databases can be constructed using tables.

What Is A Table?

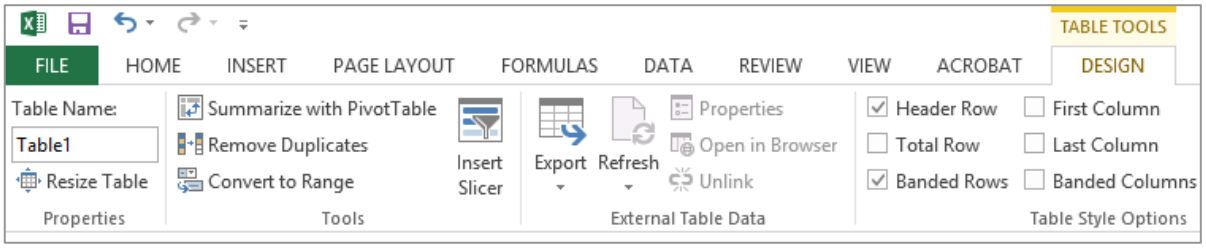
A table is made up of columns and rows and can be used to store many different kinds of information. In applications such as Microsoft Word, a table can be used to create page layouts and lists as well as perform many other tasks with the main purpose of formatting information. However in Excel the primary use for a table is to store data. A table that stores data is sometimes known as a database. Once the data is stored in a table it can then be processed.

In Microsoft Excel a table appears with quite a specific structure. Database tables are organised into records (rows) and fields (columns) so that the data can easily be sorted and queried. The first row is normally reserved for the headings – known as *field names*.

One of the normal database operations you can complete in Excel using a table is sorting the data. For instance, you can query the data either through the use of filters, or through more advanced techniques involving criteria (querying by example).

Database Features On The Ribbon

In Excel, the commands for working with a database can be found on various tabs on the ribbon. If you want to work mainly with the appearance of a table then you can use the commands on the contextual ***TABLE TOOLS: DESIGN*** tab which appears when the table is active (see below).



If you are looking for ways to work with data then you may want to use the commands in the ***Editing*** group on the ***HOME*** tab; for example, the ***Sort & Filter*** command which allows you to sort and filter data in a worksheet as well as in a table. The ***DATA*** tab also contains a ***Sort & Filter*** group that contains a number of commands for sorting data and creating filters.

Creating A Table From Data

A table can be created from data that is presented logically and continuously in rows and columns. Data you will be converting into a table should contain column headings and be organised as a list. Generally, anything you can put in a list (names and addresses, inventory items, etc.) can be set up as a table in Excel.

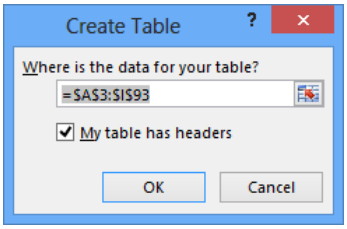
Try This Yourself:

Open File *Before starting this exercise you MUST open the file E1356 Worksheet Tables_6.xlsx...*

1. Click in any cell that contains data
2. Click on the ***INSERT*** tab, then click on ***Table*** in the ***Tables*** group to display the ***Create Table*** dialog box

   Excel calculates the tables range by extending in all directions until empty rows or columns are reached…
3. Click on **[OK]** to create the table
4. Click in any cell in the table to remove the selection highlighting
5. Click on the ***TABLE TOOLS: DESIGN*** tab, then click on the **More** arrow for the ***Quick Styles*** gallery in the ***Table Styles*** group to display a gallery of options
6. Point to an option to see it applied to the table in Live Preview
7. Click on ***Table Style Medium 4*** to apply this style to the table

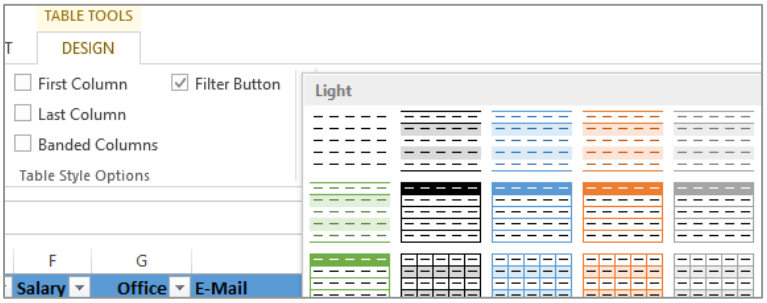
2



3

	A	B	C	D
3	No	First Name	Last Name	Position
4	NZ0000001	Peter	Reynolds	Enterprise Leader
5	NZ0000002	Mary	Campbell	Effective People Leader
6	NZ0000003	Helen	Kai	Monies Leader
7	NZ0000004	Norris	Maunga	Forward Thinking Leader
8	NZ0000005	Vivian	Smith	Enterprise Opportunities Leader
9	NZ0000006	Grace	Goodson	Communications Service Leader
10	NZ0000007	Kate	Rualowy	Insurance Service Leader
11	NZ0000008	Brian	Houson	Banking and Finance Service Leader
12	NZ0000009	Tara	Kinelly	Legal Service Leader

5



7

	A	B	C	D
3	No	First Name	Last Name	Position
4	NZ0000001	Peter	Reynolds	Enterprise Leader
5	NZ0000002	Mary	Campbell	Effective People Leader
6	NZ0000003	Helen	Kai	Monies Leader
7	NZ0000004	Norris	Maunga	Forward Thinking Leader
8	NZ0000005	Vivian	Smith	Enterprise Opportunities Leader
9	NZ0000006	Grace	Goodson	Communications Service Leader
10	NZ0000007	Kate	Rualowy	Insurance Service Leader
11	NZ0000008	Brian	Houson	Banking and Finance Service Leader
12	NZ0000009	Tara	Kinelly	Legal Service Leader

For Your Reference…

To ***create*** a ***table*** in ***Excel***:

1. Click anywhere in the list that will become the table
2. Click on the ***INSERT*** tab, then click on ***Table*** in the ***Tables*** group
3. Click on **[OK]** to create the table

Handy to Know…

- By advising Excel that the table has ***headers***, the *column headings* in the first row become field names and appear with sort and filter arrows. If the table doesn't have headings, Excel will add its own as ***Column 1***, ***Column 2*** and so on.

Inserting Table Columns

A ***table*** is a defined area in an Excel worksheet. When a table is created, its range must be specified so that Excel can determine where the *fields* (columns) and *records* (rows) begin and end. However, you can add more fields if required. When you choose the appropriate command, Excel will automatically adjust the size of the table.

Try This Yourself:

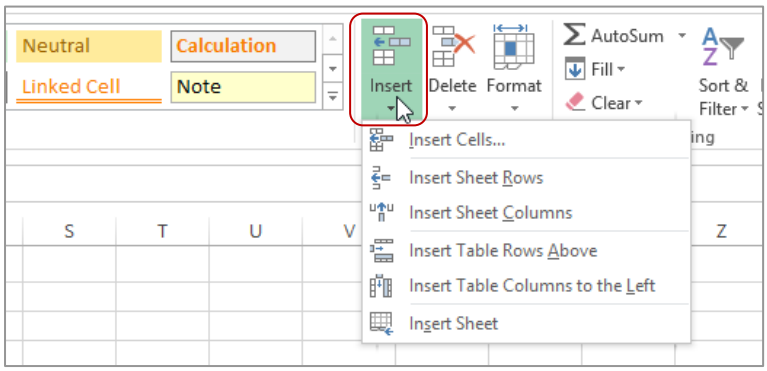
Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_3.xlsx...

1. Click in cell ***B4***
2. Click on the ***HOME*** tab, then click on the drop arrow for ***Insert*** in the ***Cells*** group
3. Select **Insert Table Columns to the Left** to insert a new column
4. Click in cell ***B3*** (the new column heading), type **Colour**, then press Enter
5. Ensure that cell ***B4*** is selected, type **Green**, then press Enter
6. Click in cell ***E5***

   This cell is in the Type column…
7. Repeat step ***2*** to select **Insert Table Columns to the Right** to insert a new column
8. Click in cell ***F3*** (the new column heading), type **Year**, then press Enter

2



4

	A	B	C	D	E	F	G
1	Vehicle Fleet						
2							
3	Reg No	Colour	Make	Model	Type		
4	DWE998		Vauxhall	Victor	Sedan		
5	D22 R4		Ford	Anglia	Estate		
6	S233 G4		Morris	Mini	Sedan		
7	MEAN 1		Jaguar	E-Type	Convertible		
8	FRG334		Hillman	Imp	Sedan		
9	CXA422		Humber	SuperSnipe	Sedan		
10	Total				6		
11							

8

	A	B	C	D	E	F	G
1	Vehicle Fleet						
2							
3	Reg No	Colour	Make	Model	Type	Year	
4	DWE998	Green	Vauxhall	Victor	Sedan		
5	D22 R4		Ford	Anglia	Estate		
6	S233 G4		Morris	Mini	Sedan		
7	MEAN 1		Jaguar	E-Type	Convertible		
8	FRG334		Hillman	Imp	Sedan		
9	CXA422		Humber	SuperSnipe	Sedan		
10	Total				6		
11							

For Your Reference…

To ***add*** a ***new column*** to a ***table***:

1. Click in the location for the new column
2. Click on the ***HOME*** tab, then click on the drop arrow for ***Insert*** in the ***Cells*** group
3. Select **Insert Table Columns to the Left**, or **Insert Table Columns to the Right**

Handy to Know…

- If you have duplicate headings in a table, Excel automatically numbers them sequentially from left to right. For instance, if you have two headings titled ***Age***, the one closest to the left edge of the table will remain ***Age***, while the one closest to the right will become ***Age2***.

Removing Table Columns

In a proper database application, removing a column (*field*) from a table can be a complex process. This is mostly to protect the integrity of the data. However, it is relatively easy to remove existing columns from a table in Excel. You can simply use the options provided in the ***cells*** group on the ***HOME*** tab.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_4.xlsx...

1. Click in cell ***B4***

   This is the Colour column of the table…

2. Click on the ***HOME*** tab, then click on the drop arrow for ***Delete*** in the ***Cells*** group

3. Select **Delete Table Columns** to delete the selected columns

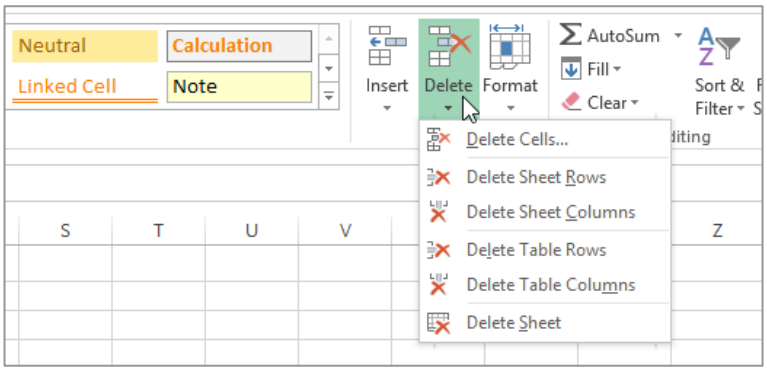
   Only one column will be deleted.

   Notice that the column and its data have now been removed…

4. Click in cell ***E4***

5. Repeat step ***2***, then select **Delete Table Columns** to delete the ***Year*** column

2



3

	A	B	C	D	E	F	G
1	Vehicle Fleet						
2							
3	Reg No	Make	Model	Type	Year		
4	DWE998	Vauxhall	Victor	Sedan			
5	D22 R4	Ford	Anglia	Estate			
6	S233 G4	Morris	Mini	Sedan			
7	MEAN 1	Jaguar	E-Type	Convertible			
8	FRG334	Hillman	Imp	Sedan			
9	CXA422	Humber	SuperSnipe	Sedan			
10	Total			6			
11							

5

	A	B	C	D	E	F	G
1	Vehicle Fleet						
2							
3	Reg No	Make	Model	Type			
4	DWE998	Vauxhall	Victor	Sedan			
5	D22 R4	Ford	Anglia	Estate			
6	S233 G4	Morris	Mini	Sedan			
7	MEAN 1	Jaguar	E-Type	Convertible			
8	FRG334	Hillman	Imp	Sedan			
9	CXA422	Humber	SuperSnipe	Sedan			
10	Total			6			
11							

For Your Reference…

To ***remove*** a ***column*** from a ***table***:

1. Click in the column you want to remove
2. Click on the ***HOME*** tab, then click on the bottom half of ***Delete*** in the ***Cells*** group
3. Select **Delete Table Columns**

Handy to Know…

- You can delete a column using either the ***Delete Table Columns*** command (preferred) or the ***Delete Sheet Columns*** command which deletes the entire worksheet column. If you make a mistake and delete by accident simply click on ***Undo*** in the ***QAT***.

Working With Table Styles

Choosing the appropriate ***table style*** can improve the appearance of the data contained in the table and therefore make the data easier to understand. The available style options change not only the appearance of the table but also some of the features available within it.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_2.xlsx...

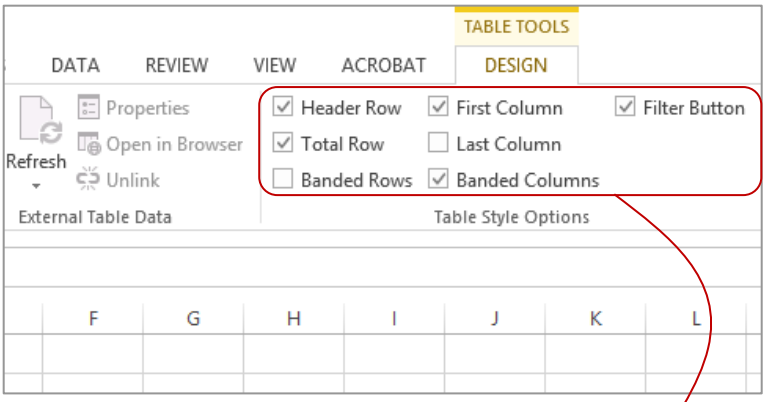
1. Click in cell ***A4*** to make the table active
2. Click on the ***TABLE TOOLS: DESIGN*** tab, then spend a few moments studying the options in the ***Table Style Options*** group
3. Click on ***Header Row*** in the ***Table Style Options*** group so that it appears unticked

   When the Header Row is unticked the header row does not appear in the table…
4. Experiment with the other options in the ***Table Style Options*** group to see how both the format and structure of the table can be changed
5. When you have finished experimenting, ensure that the settings in the ***Table Style Options*** group are selected as shown

3

	A	B	C	D
1	Vehicle Fleet			
2				
3				
4	DWE998	Vauxhall	Victor	Sedan
5	D22 R4	Ford	Anglia	Estate
6	S233 G4	Morris	Mini	Sedan
7	MEAN 1	Jaguar	E-Type	Convertible
8	FRG334	Hillman	Imp	Sedan
9	CXA422	Humber	Super Snipe	Sedan
10				
11				

5



	A	B	C	D
1	Vehicle Fleet			
2				
3	Reg No	Make	Model	Type
4	DWE998	Vauxhall	Victor	Sedan
5	D22 R4	Ford	Anglia	Estate
6	S233 G4	Morris	Mini	Sedan
7	MEAN 1	Jaguar	E-Type	Convertible
8	FRG334	Hillman	Imp	Sedan
9	CXA422	Humber	Super Snipe	Sedan
10	Total			6
11				

For Your Reference…

To ***change styles*** in a ***table***:

1. Click on the table
2. Click on the ***TABLE TOOLS: DESIGN*** tab
3. Click on the various ***Table Style Options*** to enable or disable them

Handy to Know…

- The ***Total Row*** option on the ***TABLE TOOLS: DESIGN*** tab inserts a ***=SUBTOTAL*** function using a ***COUNTA*** setting to count the number of records. You can modify this formula simply by clicking on it as you would with any other formula in a worksheet.

Inserting Or Deleting Table Records

In a database table, each row is known as a record. Obviously, removing or adding records in a table will determine the overall size of the table. Since a table in Excel is simply a range in a worksheet, it is critical that Excel knows the extent of the table at all times. There are specific commands in Excel that should be used for inserting and deleting rows (*records*) in a table.

Try This Yourself:

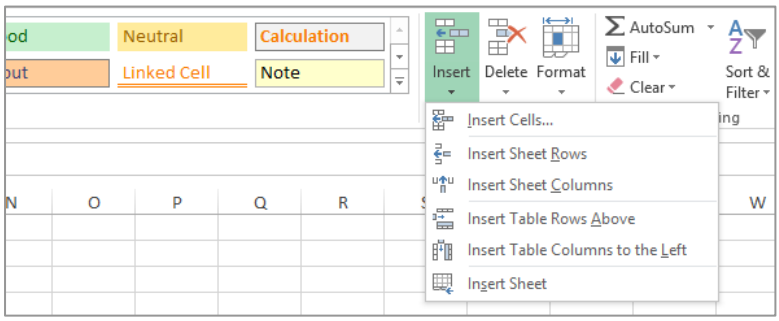
Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_7.xlsx...

1. Click anywhere in row ***7*** in the table
2. Click on the ***HOME*** tab, then click on the bottom half of ***Insert*** in the ***Cells*** group
3. Select **Insert Table Rows Above** to insert a new row at row ***7***
4. Select the range ***A10:I10***, then copy and paste it into the range ***A7:I7***

   This will effectively duplicate this record – we'll deal with this a little later…
5. Click in the last cell in the ***Telephone*** column (this will be cell ***I94***)
6. Press Tab

   Notice that a new row is inserted into the table…
7. Ensure that the new row is active, click on the ***HOME*** tab, click on the drop arrow for ***Delete*** in the ***Cells*** group, then select on **Delete Table Rows**



2

	A	B	C	D
3	No	First Name	Last Name	Position
4	NZ0000001	Peter	Reynolds	Enterprise Leader
5	NZ0000002	Mary	Campbell	Effective People Leader
6	NZ0000003	Helen	Kai	Monies Leader
7				
8	NZ0000004	Norris	Maunga	Forward Thinking Leader
9	NZ0000005	Vivian	Smith	Enterprise Opportunities Leader
10	NZ0000006	Grace	Goodson	Communications Service Leader
11	NZ0000007	Kate	Rualowy	Insurance Service Leader

3

	A	B	C	D
3	No	First Name	Last Name	Position
4	NZ0000001	Peter	Reynolds	Enterprise Leader
5	NZ0000002	Mary	Campbell	Effective People Leader
6	NZ0000003	Helen	Kai	Monies Leader
7	NZ0000006	Grace	Goodson	Communications Service Leader
8	NZ0000004	Norris	Maunga	Forward Thinking Leader
9	NZ0000005	Vivian	Smith	Enterprise Opportunities Leader
10	NZ0000006	Grace	Goodson	Communications Service Leader
11	NZ0000007	Kate	Rualowy	Insurance Service Leader

4

For Your Reference…

To ***insert*** or ***delete rows*** within a ***table***:

1. Click in the row where you want to insert or delete table records
2. Click on the ***HOME*** tab
3. In the ***Cells*** group, click on the bottom half of ***Insert*** or ***Delete***, then select the required option

Handy to Know…

- You can insert or delete ***sheet rows*** and/or ***table rows***. The difference is that if you choose the ***table*** option, the row is only inserted or deleted within the table area and not across the entire worksheet.
- You can also insert or delete ***table columns*** and/or ***sheet columns***.

REMOVING DUPLICATES

Duplicate entries are an issue when using Excel as a database. Most database systems have *primary keys* to identify unique records. Because tables in Excel are simply normal rows and columns, you don't have the same checks and balances. Fortunately, there is a command available that will check for duplication in a table.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_8.xlsx...

1. Click in a cell within the table to make it active

   If you look closely you'll see that row 7 is duplicated at row 10…

2. Click on the ***TABLE TOOLS: DESIGN*** tab, then click on ***Remove Duplicates*** in the ***Tools*** group to display the ***Remove Duplicates*** dialog box

3. Click on **[Unselect All]** to remove the ticks from all of the columns

   This table has a unique identifier (the employee number) which can be used to check for duplicates…

4. Under ***Columns***, click on ***No*** so it appears ticked

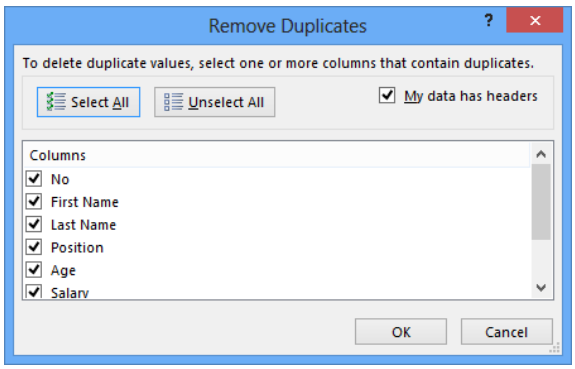
5. Click on **[OK]**

   A message will appear advising the number of duplicates that have been removed…

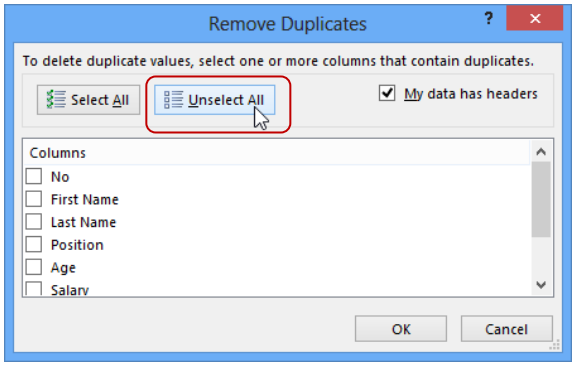
6. Click on **[OK]**

   Notice that the duplicate at row 10 has now gone

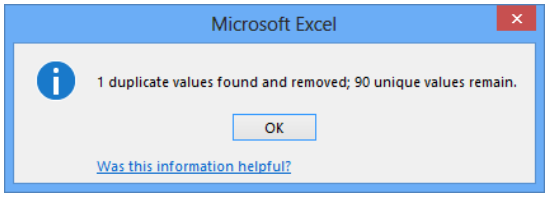
2



3



5



6

	A	B	C	D
1	Alpheius Leader Listing			
2				
3	No	First Name	Last Name	Position
4	NZ0000001	Peter	Reynolds	Enterprise Leader
5	NZ0000002	Mary	Campbell	Effective People Leader
6	NZ0000003	Helen	Kai	Monies Leader
7	NZ0000006	Grace	Goodson	Communications Service Leader
8	NZ0000004	Norris	Maunga	Forward Thinking Leader
9	NZ0000005	Vivian	Smith	Enterprise Opportunities Leader
10	NZ0000007	Kate	Rualowy	Insurance Service Leader
11	NZ0000008	Brian	Houson	Banking and Finance Service Leader

For Your Reference…

To ***remove duplicates*** from a ***table***:

1. Click in the table
2. Click on the ***TABLE TOOLS: DESIGN*** tab, then click on ***Remove Duplicates*** in the ***Tools*** group
3. Specify the columns to check for duplicates, then click on **[OK]**

Handy to Know…

- If you are looking for a duplicated record and don't have a unique field (such as an employee number) in your table, select all of the columns. If two records have the same details in each column then they must be duplicated.

FILTERING TABLES

Filtering, which allows you to display specific records that match a certain criteria provides you with a great opportunity for displaying and hiding records. You can display up to 1,000 items in a filtered list. You can easily specify more advanced ways of filtering and can turn the filter results on or off with the click of a button.

Try This Yourself:

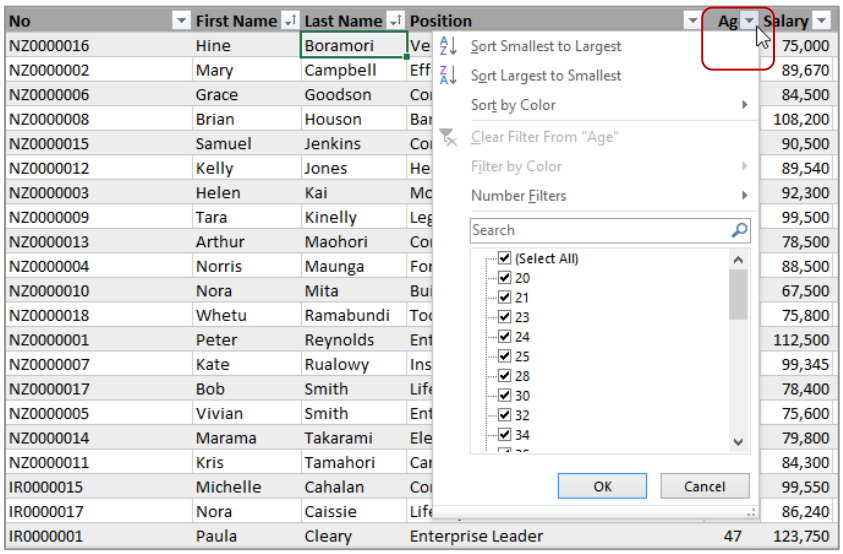
Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_10.xlsx...

1. Click on the ***filter*** drop arrow for the ***Age*** column, as shown
2. Click on ***Select All*** to remove all of the ticks, then scroll down and click on ***65***

   This specifies that only employees aged 65 will be displayed…
3. Click on **[OK]** to display the employees aged ***65***
4. Click on the ***filter*** drop arrow for the ***Office*** column, click on ***Select All*** to remove all of the ticks, click on ***New York***, then click on **[OK]**

   This will show all 65 year old employees in New York…
5. Click on the ***DATA*** tab, then click on ***Clear*** in the ***Sort & Filter*** group to clear all of the filters and see all of the records again



1

3	No	First Name	Last Name	Position	Ag
50	AU000005	Mark	Jones	Enterprise Opportunities Leader	65
57	AU000018	Lance	Williams	Tools Product Leader	65
68	US000012	Zak	Mauriceson	Health Services Service Leader	65
94					
95					
96					
97					

3

	First Name	Last Name	Position	Ag	Salary	Office
	Zak	Mauriceson	Health Services Service Leader	65	88,645	New York

4

For Your Reference…

To ***filter data*** in a ***table***:

1. Click anywhere in the table area
2. Use the filter arrows to select the data you wish to view
3. Click on **[Clear]** to remove the filter

Handy to Know…

- When you create a filter in a table, Excel simply hides the rows that don't match the filter. That's why you'll see some row numbers missing.

RENAMING A TABLE

In Excel you can have more than one table in a worksheet or workbook. Since a table is actually part of a range in a worksheet, each table is assigned its own unique ***range name***. Tables are named *Table1*, *Table2* etc. by default; however, you can assign more meaningful names if you prefer.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_11.xlsx...

1. Click anywhere in the table to make it active, then click on the ***TABLE TOOLS:DESIGN*** tab

   Notice that the name of the table (Table1) appears in Table Name setting in the Properties group…

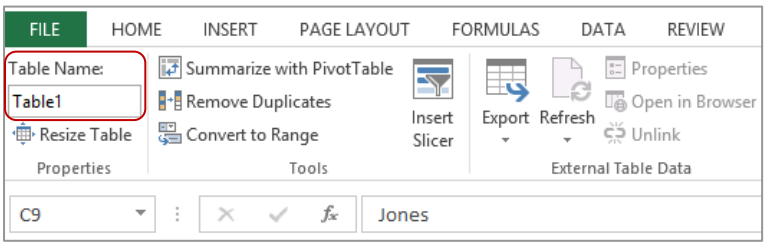
2. Click on ***Table1*** in ***Table Name*** to select it
3. Type **Employee Table**, then press Enter

   Spaces are not allowed in range names…

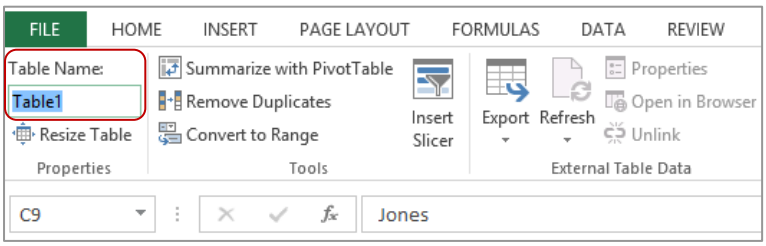
4. Click on **[OK]**
5. Click on ***Table1*** which has reappeared in ***Table Name***, type **Employees**, then press Enter

   The table will be renamed

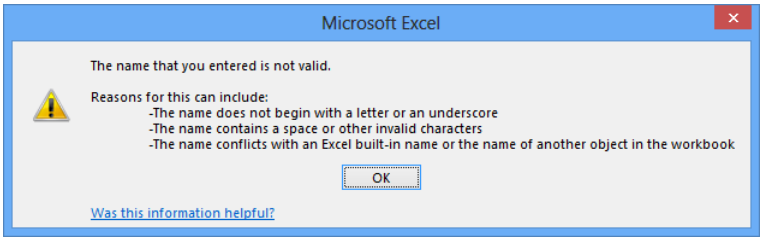
1



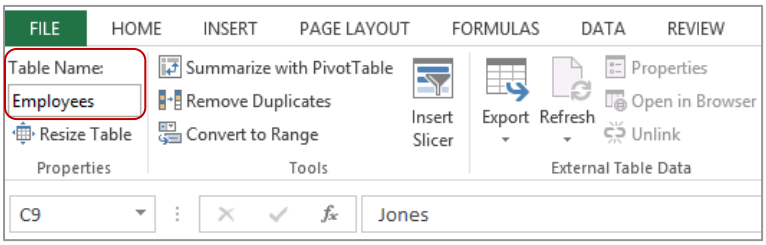
2



3



5



For Your Reference…

To ***rename*** a ***table***:

1. Click in the table, then click on the ***TABLE TOOLS: DESIGN*** tab
2. Click on the existing table name, type the new name, then press Enter

Handy to Know…

- Table names are ***range names*** and are therefore subject to the same naming conventions. While spaces are not permitted in range names, an underscore may be used instead (e.g. ***Employee_Table***).

Deleting A Table

There may come a time when a table is no longer required. Deleting a table is quite simple, providing the entire defined range of the table is selected first. If you attempt to delete parts of the table the table itself will remain in place but some of its data, headings, or structure may change depending upon the cell or range you have deleted.

Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file E1356 Worksheet Tables_13.xlsx...*

1. Click in cell ***C3***, then press Del

   The text of the heading is deleted but immediately replaced by the text Column1…

2. Select the range ***C3:D9***, then press Del

   The data will be deleted….

3. Select the range ***A3:I21***, then press Del

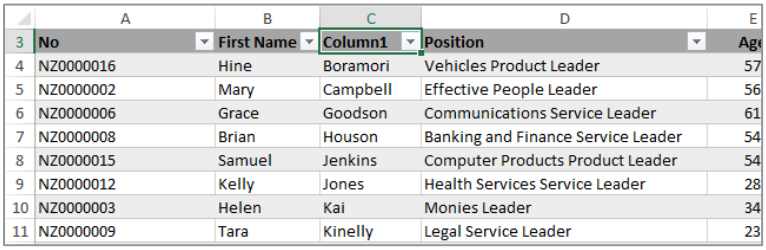
   The entire table, including its formatting will be removed…

4. Select the range ***A23:I95***, then press Del to delete this table

5. Click on the ***FORMULAS*** tab, then click on ***Name Manager*** in the ***Defined Names*** group to display the ***Name Manager*** dialog box

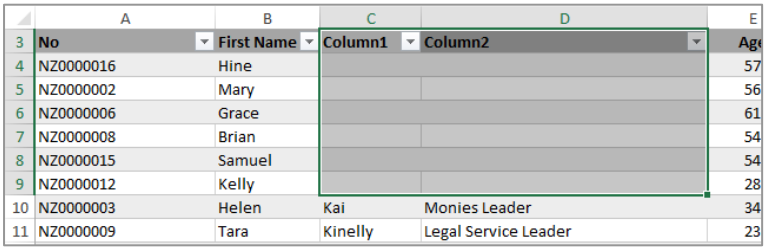
   Since there are no names listed here we can safely assume that the table has been deleted…

6. Click on **[Close]**



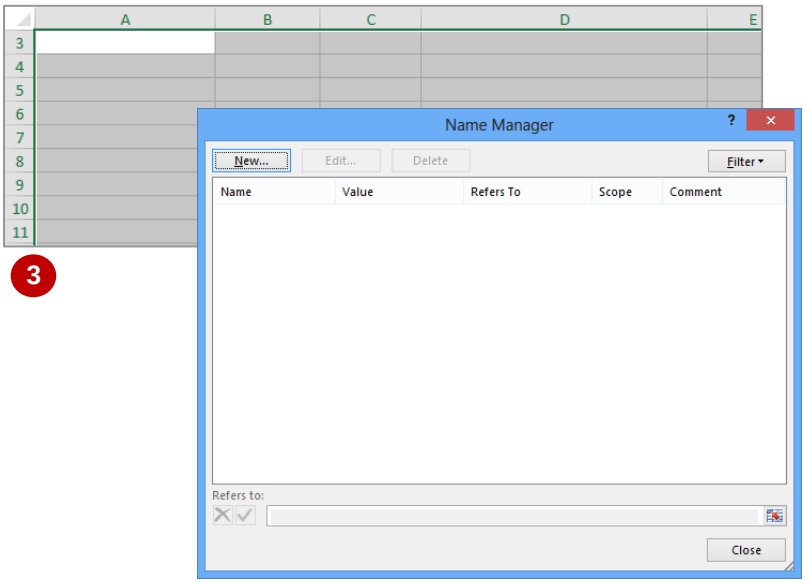
	A	B	C	D	E
3	No	First Name	Column1	Position	Age
4	NZ0000016	Hine	Boramori	Vehicles Product Leader	57
5	NZ0000002	Mary	Campbell	Effective People Leader	56
6	NZ0000006	Grace	Goodson	Communications Service Leader	61
7	NZ0000008	Brian	Houson	Banking and Finance Service Leader	54
8	NZ0000015	Samuel	Jenkins	Computer Products Product Leader	54
9	NZ0000012	Kelly	Jones	Health Services Service Leader	28
10	NZ0000003	Helen	Kai	Monies Leader	34
11	NZ0000009	Tara	Kinelly	Legal Service Leader	23

1



	A	B	C	D	E
3	No	First Name	Column1	Column2	Age
4	NZ0000016	Hine			57
5	NZ0000002	Mary			56
6	NZ0000006	Grace			61
7	NZ0000008	Brian			54
8	NZ0000015	Samuel			54
9	NZ0000012	Kelly			28
10	NZ0000003	Helen	Kai	Monies Leader	34
11	NZ0000009	Tara	Kinelly	Legal Service Leader	23

2



3

5

For Your Reference…

To ***delete*** a ***table*** from a ***worksheet***:

1. Select the entire range of the table
2. Press Del

Handy to Know…

- The ***Name Manager*** dialog box is a useful way of finding out what tables, if any, you have in a worksheet. If you click on the ***[Filter]*** button you can filter the names to show only table names.

UNDERSTANDING PIVOTTABLES

If you have organised your data into columns and rows in Excel you have what is known as a database or a *list*. The first row in the list is normally used for column headings while each row contains a separate *record* of data. In Excel ***PivotTables*** can be used to analyse lists and ask two-dimensional questions where one column of data can be compared against another.

The List

The following list shows the column or ***field*** headings across the top of the list. Each row in the list is equivalent to one record. Our example actually holds 102 records – although you couldn't easily tell without scrolling down.

Also, the list can't include any blank rows (records) or columns. The first blank row or column to be encountered is deemed to be the end of the list.

No	Month	Salesperson	Make	Price	Age Grouping	Payment Method
1	Jan	Mary O'Dwyer	Toyota	3,500	26-35	Cash
2	Jan	Justin Callaghan	BMW	15,900	46-55	Credit Card
3	Jan	Hector Smith	Toyota	12,500	36-45	Credit Card
4	Jan	Mary O'Dwyer	Ford	43,211	46-55	Bank Cheque
5	Jan	Mary O'Dwyer	Hyundai	15,600	26-35	Personal Cheque
6	Jan	Justin Callaghan	Ford	2,050	25 or less	Cash
7	Jan	Hector Smith	BMW	11,000	36-45	Credit Card
8	Jan	Hector Smith	Toyota	2,300	25 or less	Bank Cheque
9	Jan	Mary O'Dwyer	Toyota	3,900	26-35	Cash
10	Jan	Mary O'Dwyer	KIA	12,300	Over 55	Bank Cheque
11	Jan	Mary O'Dwyer	Volkswagen	43,200	46-55	Credit Card
12	Jan	Justin Callaghan	Mitsubishi	3,500	25 or less	Bank Cheque
13	Jan	Hector Smith	GMH	8,500	26-35	Bank Cheque
14	Jan	Hector Smith	KIA	500	25 or less	Cash
15	Jan	Mary O'Dwyer	Ford	15,000	36-45	Credit Card
16	Jan	Justin Callaghan	BMW	12,400	Over 55	Personal Cheque
17	Jan	Justin Callaghan	Renault	5,670	25 or less	Bank Cheque

Asking The Question

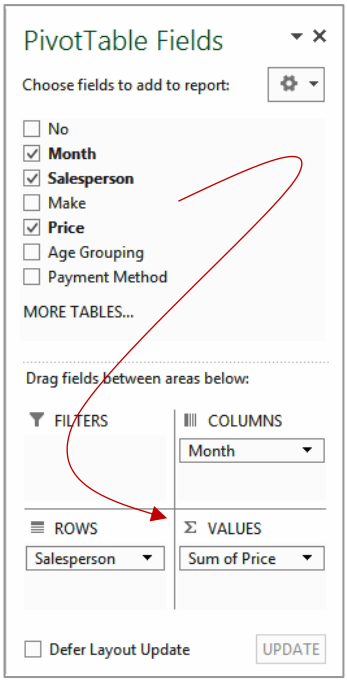
PivotTables are used to interrogate (ask questions of) the data in the list. For example, from the list above you may want to know how much has been made in sales by each salesperson over the three months of data in the list.

The question is phrased by using the ***PivotTable Fields*** pane.

The PivotTable Fields pane

The ***PivotTable Fields*** pane displays by default when you create a ***PivotTable*** or when an existing PivotTable is selected. It contains a list of all fields within the selected data as well as four areas – ***FILTERS***, ***COLUMNS***, ***ROWS*** and ***VALUES***. By dragging the relevant ***fields*** into these special areas you can define how you want your data sorted and analysed.

In the example to the right, the ***Salesperson*** field has been dragged to the ***ROWS*** area, and the ***Month*** field has been dragged to the ***COLUMNS*** area. Since we want to know how much has been made by each salesperson in sales, the ***Price*** field has been dragged to the ***VALUES*** area where it is summed by default (since it is a numeric field).



Obtaining The Answer

As you drag fields into the relevant area, Excel will start analysing the data.

When the ***Price*** field was dragged to the ***VALUES*** area, the ***PivotTable*** created the table as shown. We now know that Hector Smith made 61,358 in the month of February.

Sum of Price	Column Labels			
Row Labels	Jan	Feb	Mar	Grand Total
Hector Smith	109355	61358	159960	330673
Justin Callaghan	44020	21080	125810	190910
Mary O'Dwyer	167031	120840	182753	470624
Grand Total	**320406**	**203278**	**468523**	**992207**

Recommended Pivot Tables

The ***Recommended PivotTables*** feature is very handy as it can save you valuable time and provides you with useful suggestions for times when you may not be sure of what fields you want to use to summarise your data. It provides you with several different options and shows you a preview of what the different ***PivotTables*** will look like and the kind of data they will supply you with.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1339 PivotTables_1.xlsx…

1. Click anywhere in the list of sales

   Excel will generate the list dimensions based on where you've clicked…

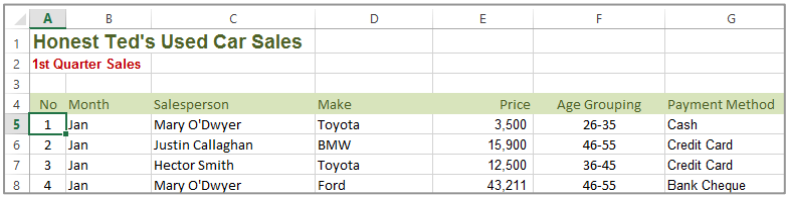
2. Click on the ***INSERT*** tab, then click on ***Recommended PivotTables*** in the ***Tables*** group to display the ***Recommended PivotTables*** dialog box

   Notice the left pane displays previews of various PivotTable options based on sorting your data by different factors…

3. Click on the previews in the left pane to view a larger preview in the right pane

4. Scroll down, then click on ***Sum of Price by Make and Age Grouping*** in the left pane and click on **[OK]**

   A new sheet will be created with the PivotTable inserted. The PivotTable Fields pane will display to the right of the screen



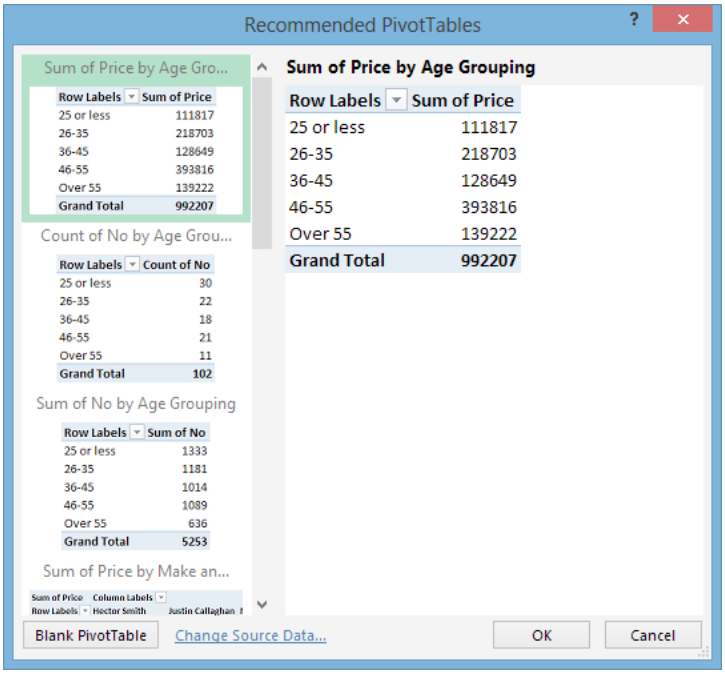
Honest Ted's Used Car Sales

1st Quarter Sales

No	Month	Salesperson	Make	Price	Age Grouping	Payment Method
1	Jan	Mary O'Dwyer	Toyota	3,500	26-35	Cash
2	Jan	Justin Callaghan	BMW	15,900	46-55	Credit Card
3	Jan	Hector Smith	Toyota	12,500	36-45	Credit Card
4	Jan	Mary O'Dwyer	Ford	43,211	46-55	Bank Cheque

1

2



For Your Reference…

To ***create*** a ***quick PivotTable***:

1. Click anywhere in a valid list
2. Click on the ***INSERT*** tab, then click on ***Recommended PivotTables*** in the ***Tables*** group
3. Click on the desired option, then click on **[OK]**

Handy to Know…

- Using the ***Recommended PivotTables*** dialog box, you can select to create a blank PivotTable by clicking on **[Blank PivotTable]**. You can also choose to change the data source by clicking on ***Change Source Data*** which will then display the ***Choose Data Source*** dialog box.

Creating Your Own PivotTable

Creating a ***PivotTable*** from scratch provides you with greater control. The ***PivotTable*** structure can be placed either in the current worksheet or in a new sheet in the workbook. When the structure, which we'll refer to as a *shell*, is selected, the ***PivotTable Fields*** pane will display showing the fields that can be used – these fields are based on the headings in the data list.

Try This Yourself:

Open File

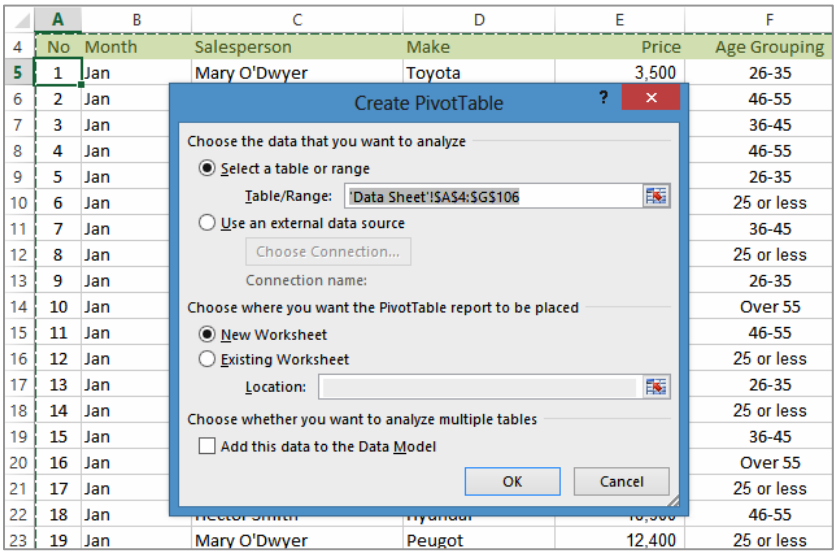
Before starting this exercise you MUST open the file E1339 PivotTables_2.xlsx...

1. Click on the ***Data Sheet*** worksheet tab to see the data list
2. Click anywhere in the list

   Excel will work out the list dimensions based on where you've clicked…
3. Click on the ***INSERT*** tab, then click on ***PivotTable*** in the ***Tables*** group to display the ***Create PivotTable*** dialog box

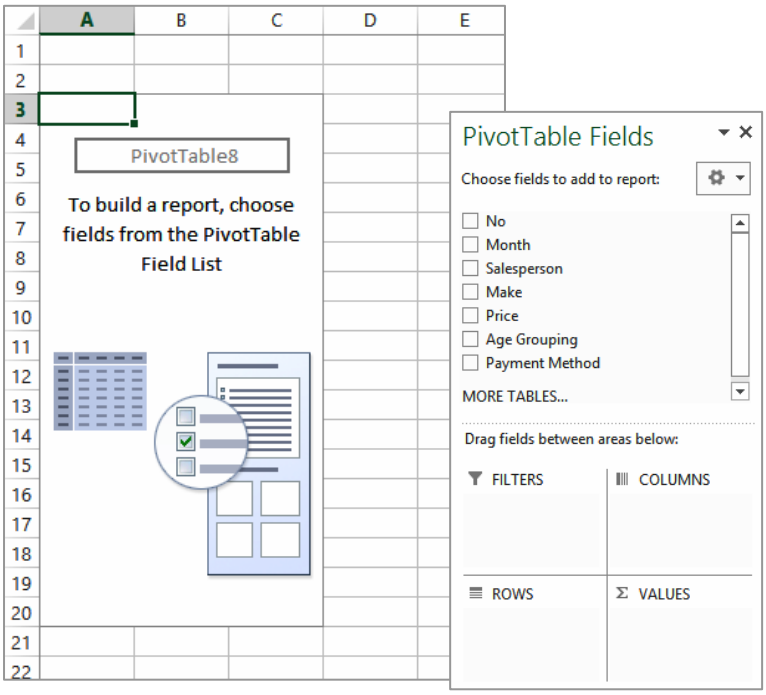
   This dialog box is used to specify the data list (which is already done) and also where to place the PivotTable…
4. Ensure that ***Select a table or range*** and ***New Worksheet*** are both selected, then click on **[OK]** to create a new sheet with a ***PivotTable*** shell

   Notice the PivotTable Fields pane displays by default at the right of the screen



3

4



For Your Reference…

To ***create*** your ***own PivotTable***:

1. Click anywhere in a valid list
2. Click on the ***INSERT*** tab, then click on ***PivotTable*** in the ***Tables*** group
3. Ensure the table range is correct, choose the location then click on **[OK]**

Handy to Know…

- It is usually best to place the PivotTable in a separate worksheet away from the main data list. It's far too easy to accidentally delete list data or PivotTable settings when the two are in the same sheet.

Defining The PivotTable Structure

The structure of the ***PivotTable*** is made up of ***fields***. The fields available for use are presented to you in the ***PivotTable Fields*** pane which appears when a ***PivotTable*** is created. The structure of the PivotTable is created by dragging the fields you want to use into special *areas* located at the bottom of the ***PivotTable Fields*** pane.

Try This Yourself:

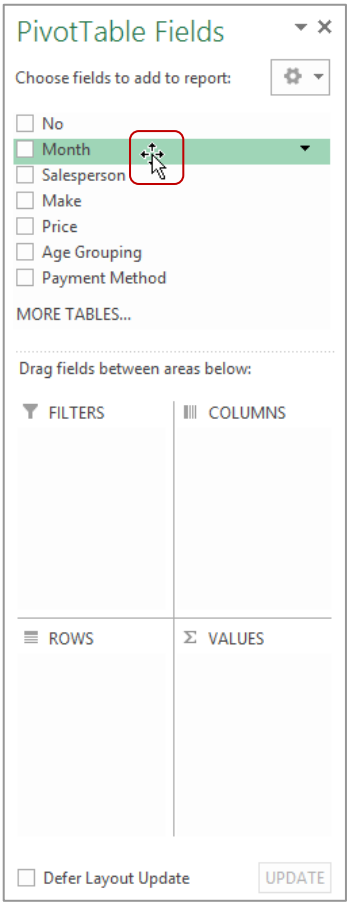
Same File *Continue using the previous file with this exercise, or open the file E1339 PivotTables_3.xlsx...*

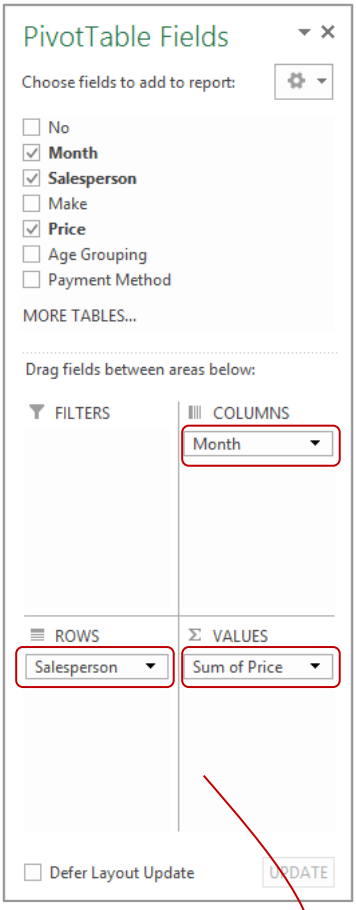
1. In the ***PivotTable Fields*** pane, point to ***Month*** so the cursor changes to a four-headed arrow, as shown
2. Click and hold down the left mouse button, drag the ***Month*** field to the ***COLUMNS*** area of the pane, then release the mouse button

   The months will now appear as columns in the PivotTable structure…
3. Repeat step ***2*** to position the ***Salesperson*** field in the ***ROWS*** area of the pane

   The Salesperson names will now appear in rows in the left column of the PivotTable structure…
4. Repeat step ***2*** to position the ***Price*** field in the ***VALUES*** area of the pane

   Excel will sum the price (sales) by month and by salesperson





	A	B	C	D	E	F	G	H
1								
2								
3	Sum of Price	Column Labels						
4	Row Labels	Jan	Feb	Mar	Grand Total			
5	Hector Smith	109355	61358	159960	330673			
6	Justin Callaghan	44020	21080	125810	190910			
7	Mary O'Dwyer	167031	120840	182753	470624			
8	Grand Total	320406	203278	468523	992207			
9								

For Your Reference…

To ***define*** the ***PivotTable structure***:

1. Point to the desired field in the ***PivotTable*** pane
2. Click and drag the field into the ***COLUMNS***, ***ROWS***, or ***VALUES*** area of the pane as required

Handy to Know…

- The ***VALUES*** area is almost always used for some form of numeric value (often currency) as it is here that data is *summed*, *counted*, *averaged*, and the like.

Switching PivotTable Fields

At any time, once you have created a PivotTable, you can modify the ***ROWS*** or ***COLUMNS*** and essentially ask a brand new question of the existing ***PivotTable*** report. When you add or remove fields, the ***PivotTable*** will automatically analyse the data based on the new settings.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1339 PivotTables_6.xlsx...

1. In the ***PivotTable Fields*** pane point to ***Salesperson*** in the ***ROWS*** area, then click and drag the field outside of the ***ROWS*** area to remove it

   Notice now how only the Column totals are left in the table…

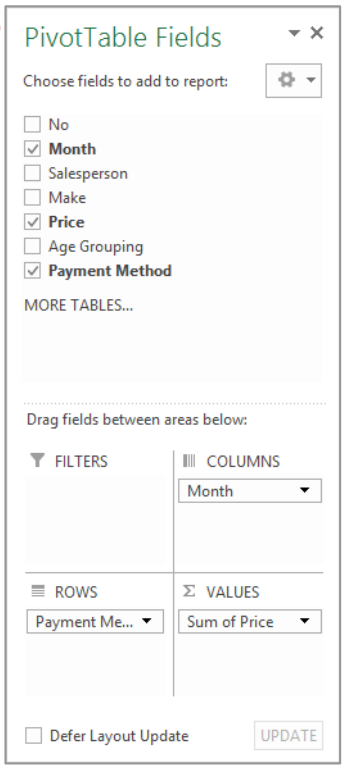
2. In the ***PivotTable Fields*** pane, click and drag the ***Payment Method*** field to the ***ROWS*** area

   You should now see sales by Payment Method over the three months…

3. Repeat step ***1*** to remove the ***Payment Method*** field from the ***ROWS*** field, then click and drag the ***Make*** field to the ***ROWS*** area

   You should now see the sales by Make of vehicle over the three months

2



	A	B	C	D	E	F	G
1							
2							
3	Sum of Price	Column Labels					
4	Row Labels	Jan	Feb	Mar	Grand Total		
5	BMW	43800	34499	142340	220639		
6	Ford	92361	12680	25220	130261		
7	GMH	12400	18900	22800	54100		
8	Hyundai	34500			34500		
9	KIA	12800	10500	19700	43000		
10	Mitsubishi	3500	8600	30700	42800		
11	Nissan		27600	100020	127620		
12	Peugot	12400	19900	8532	40832		
13	Renault	21090	30599	5600	57289		
14	Toyota	41855	22100	43489	107444		
15	Volkswagen	45700	17900	70122	133722		
16	Grand Total	320406	203278	468523	992207		
17							

3

For Your Reference…

To ***modify*** the ***structure*** of a ***PivotTable***:

1. Click on a field in either the ***ROWS*** or ***COLUMNS*** area
2. Click and drag it to a different location in the ***PivotTable Fields*** pane

Handy to Know…

- Wondering what ***Defer Layout Update*** on the ***PivotTable Fields*** pane does? If this option is ticked, changes made to the structure of the table aren't seen in the worksheet until **[Update]** is clicked. This can be used on large lists which may take a while to recalculate.

FILTERING A PIVOTTABLE

Unless you specify otherwise, all of the data in a list will be analysed when you create or modify a ***PivotTable***. However, you can set up your ***PivotTable*** to work with specific data by applying a ***filter***. This can be done by dragging an additional variable (field) to the ***FILTERS*** area in the ***PivotTable Fields*** pane.

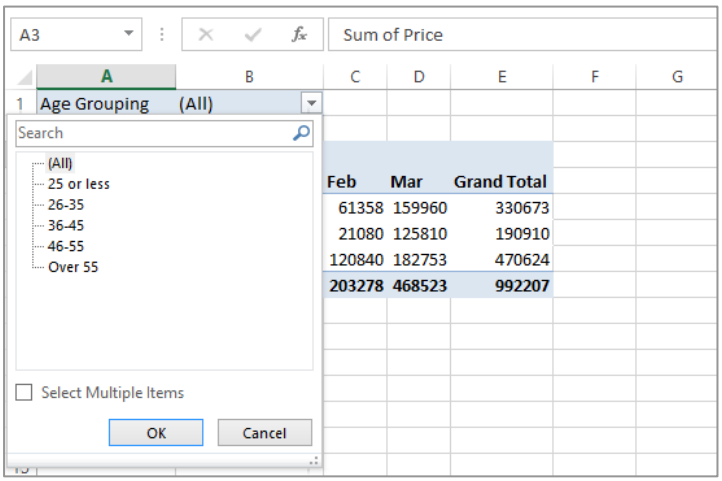
Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file E1339 PivotTables_4.xlsx...*

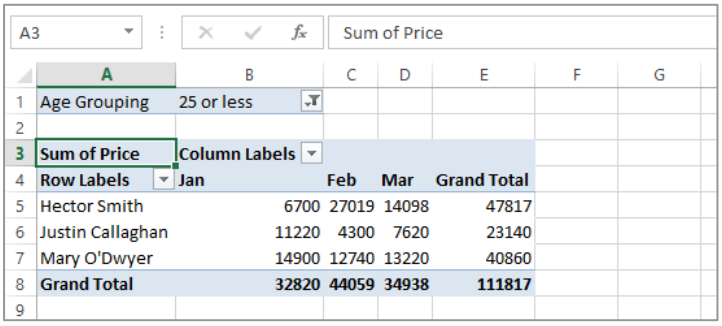
1. In the ***PivotTable Fields*** pane, point to the ***Age Grouping*** field, then click and drag the field to the ***FILTERS*** area of the pane
2. In the worksheet, click on the drop arrow that has appeared to the right of the heading ***Age Grouping (All)*** to display a list of all of the values in the field
3. Click on ***25 or less*** to select this option, then click on **[OK]** to see the summed sales for customers aged 25 or under

   Notice in the worksheet and in the PivotTable Fields pane a filter icon has appeared on the drop arrow for the Age Grouping field…
4. Repeat step ***3*** for some of the other age grouping options
5. Repeat step ***2***, then click on ***Select Multiple Items*** so it appears with a tick
6. Ensure no other options are selected, click on ***46 – 55*** and ***Over 55*** so that they both appear with a tick, then click on **[OK]**

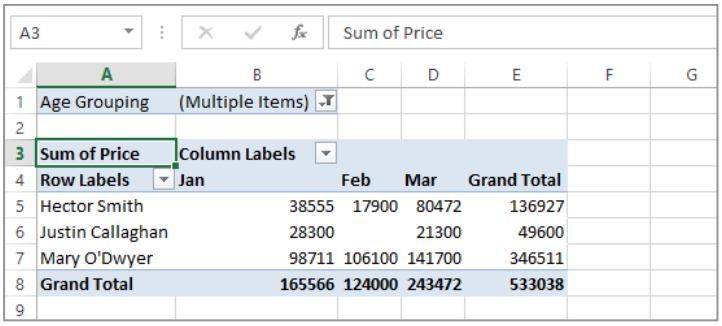
2



3



6



For Your Reference…

To ***filter*** a ***PivotTable***:

1. Drag the field you wish to use as a filter criteria to the ***FILTERS*** area
2. Click on the filter drop arrow in the ***PivotTable***
3. Click on the filter criteria and click on **[OK]**

Handy to Know…

- There are also filter drop arrows for ***Column Labels*** and ***Row Labels***.

FORMATTING A PIVOTTABLE

PivotTables can be cryptic at the best of times, especially with the jargon and terminology used. The comprehension of a ***PivotTable*** is not always helped by the standard formatting applied by Excel. Fortunately, using the options on the ***PIVITTABLE TOOLS: DESIGN*** tab of the ribbon you can format a ***PivotTable***, thus making the PivotTable easier to understandable.

Try This Yourself:

Same File

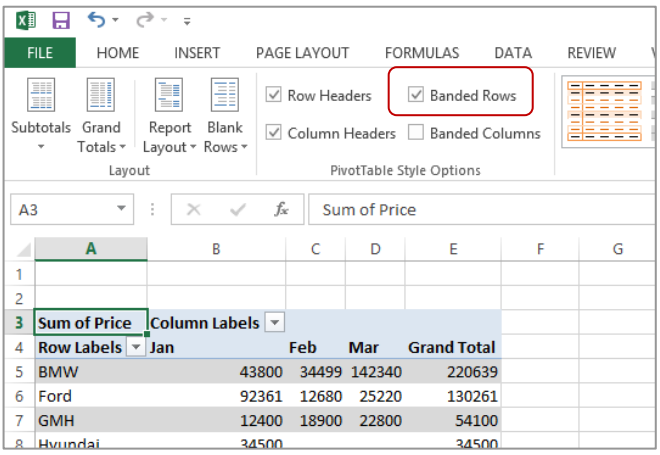
Continue using the previous file with this exercise, or open the file E1339 PivotTables_7.xlsx...

1. Click on the ***PIVOTTABLE TOOLS: DESIGN*** tab, then click on ***Banded Rows*** in the ***PivotTable Style Options*** group so it appears ticked

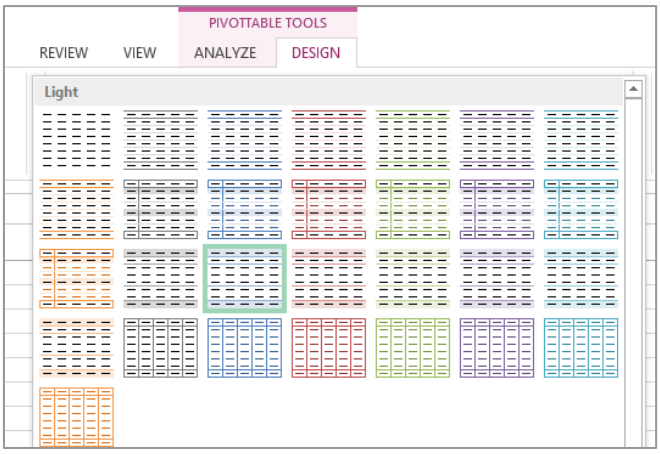
   Coloured bands will appear in the PivotTable…

2. Click on ***Banded Columns*** in the ***PivotTable Style Options*** group so it appears ticked to apply column bands in the ***PivotTable***
3. Remove the tick from both ***Banded Rows*** and ***Banded Columns*** in the ***PivotTable Style Options*** group to remove the banding
4. Click on the ***More*** arrow for the ***PivotTable Styles*** gallery in the ***PivotTable Styles*** group, then point to the various options to view a Live Preview of the styles
5. Click on ***Pivot Style Light 24*** to apply it to the ***PivotTable***

1



2



PivotTable Features

InFocus

PivotTables provide a very easy and convenient way of analysing data in lists and external databases. Once you have mastered the basics of how they work and how they are created, you are ready to begin a journey into some of the more intricate and advanced aspects of PivotTable design, operation, and even formatting.

Using Sub-group Fields

Simple PivotTables use only one field for ***Column Labels*** or ***Row Labels***. In an Excel PivotTable you can use more than one field for either the ***Column Labels*** or ***Row Labels*** to create more complex analysis of the data. Once you have chosen a second field for analysis that field in effect becomes a ***sub-group*** of the field above it in the area.

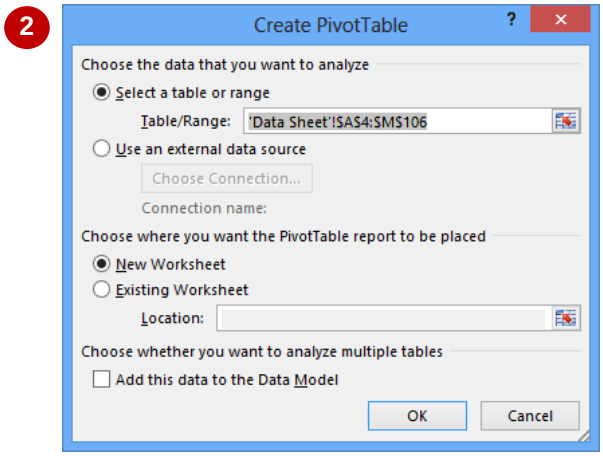
Try This Yourself:

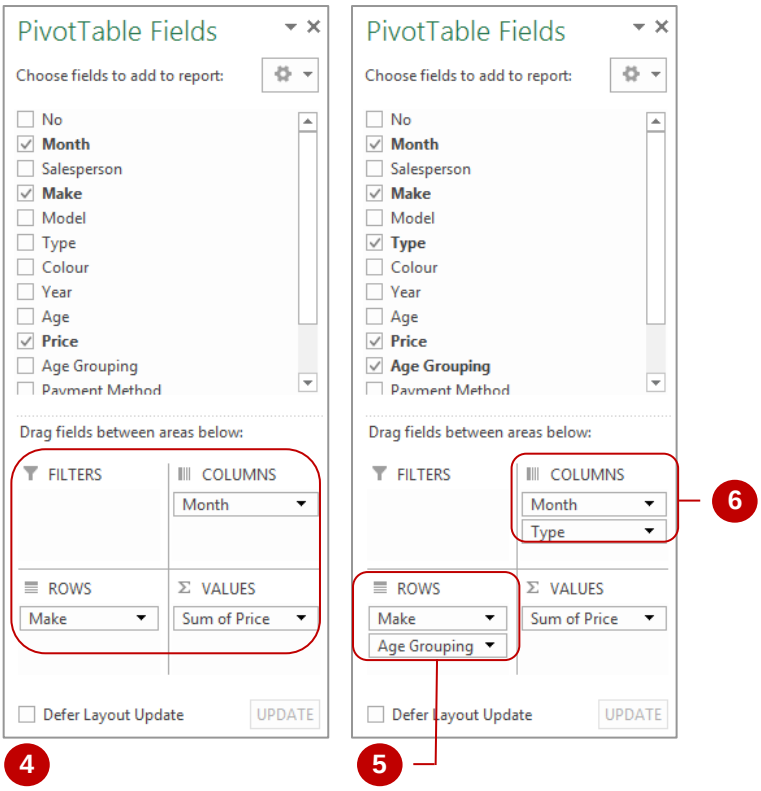
Open File — *Before starting this exercise you MUST open the file E1340 PivotTable Features_1.xlsx…*

1. Click anywhere in the list of car sales
2. Click on the ***INSERT*** tab, then click on ***PivotTable*** in the ***Tables*** group to display the ***Create PivotTable*** dialog box
3. Ensure that ***Select a table or range*** and ***New Worksheet*** are both selected, then click on **[OK]** to create a PivotTable

   Notice the PivotTable Fields pane displays automatically…
4. In the ***PivotTable Fields*** pane, click on and drag the ***Month***, ***Make*** and ***Price*** fields into the ***COLUMNS***, ***ROWS*** and ***VALUES*** areas, as shown
5. Repeat step ***4*** to position the ***Age Grouping*** field below ***Make*** in the ***ROWS*** area

   This will create an Age Grouping sub-total for each vehicle Make in the table…
6. Repeat step ***4*** to position the ***Type*** field below ***Month*** in the ***COLUMNS*** area to see monthly sales by ***Make*** and ***Age Grouping*** for vehicle ***Types***





For Your Reference…

To ***use compound fields***:

1. Construct a PivotTable and insert fields in the normal way
2. In the ***PivotTable Fields*** pane, click on and drag additional fields to the areas under ***Drag fields between areas below***

Handy to Know…

- You can change how the fields are displayed in the ***PivotTable Fields*** pane by clicking on ***Tools*** and selecting an option. For instance, if you select **Fields Section and Areas Section Side-By-Side**, the pane will display the areas section to the right of the fields list rather than below it.

COUNTING IN A PIVOTTABLE

As a default Excel assumes that you will be using your PivotTable report to ***summarise*** (total) data from your list. However, you can actually choose from a number of different analytical operations to perform on the data in a PivotTable. Apart from summing data, another often-used operation is to ***count*** the data.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1340 PivotTable Features_2.xlsx...

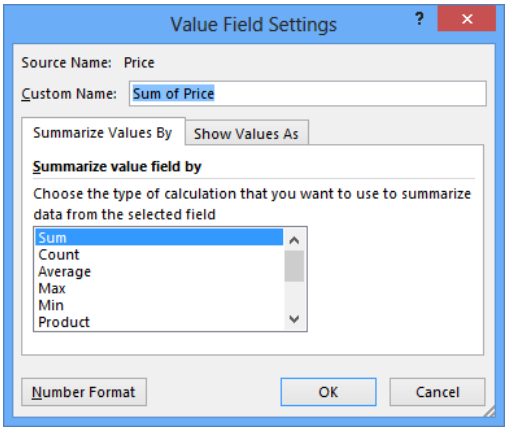
1. In the PivotTable, click in cell ***A3*** (the ***Sum of Price*** heading)
2. On the ***PIVOTTABLE TOOLS: ANALYSE*** tab, click on ***Field Settings*** in the ***Active Field*** group

   The Value Field Settings dialog box will display…
3. Click on ***Count***, then click on **[OK]** to see a count of the values rather than a summation
4. Right-click in cell ***A3***, point to ***Summarise Values By***, then select **Average** to see average sales
5. Point to cell ***C6*** to see a description of the cell calculation
6. Repeat step ***4*** and try some other options
7. Right-click on cell ***A3*** and select **Summarise Values By** > **Sum** to see total sales again

	A	B	C	D	E	F	G	H	I
1									
2									
3	Sum of Price	Column Labels							
4		Jan				Jan Total	Feb		
5	Row Labels	Coupe	Sedan	SUV	Wagon		Coupe	Sedan	SUV	Wa
6	BMW	23400	20400			43800	6539	9160	18800	
7	26-35		4500			4500	2540	2540		
8	36-45	11000				11000	3999			
9	46-55		15900			15900			15400	
10	Over 55	12400				12400				
11	Under 25							6620	3400	
12	Ford	47100	2050	43211		92361	2540	5940		

1

2



	A	B	C	D	E	F	G
1							
2							
3	Average of Price	Column Labels					
4		Jan				Jan Total	Feb
5	Row Labels	Coupe	Sedan	SUV	Wagon		Coupe
6	BMW	11700	10200			10950	3269
7	26-35		4500			4500	25
8	36-45	11000				11000	39
9	46-55		15900			15900	
10	Over 55	12400				12400	
11	Under 25						
12	Ford	23550	2050	43211		23090.25	25

4

For Your Reference…

To ***change*** the ***summation operation***:

1. Select the summation values cell
2. Click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group
3. Click on the desired ***Summarise Value*** and click on **[OK]**

Handy to Know…

- You can display the ***Value Field Settings*** dialog box by right-clicking on a value in a PivotTable pointing to **Summarise Values By**, then selecting **More Options**.

Formatting PivotTable Values

Unless you specify otherwise, the calculated values in a PivotTable will appear unformatted. This may be satisfactory while performing analysis, however, should you wish to print the data for others to see it would be far better if the values could be formatted so they are readable, presentable and understandable.

Try This Yourself:

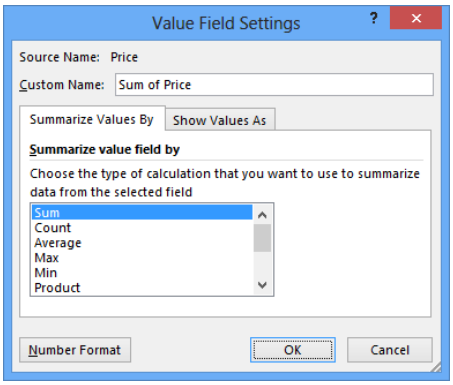
Open File

Before starting this exercise you MUST open the file E1340 PivotTable Features_3.xlsx…

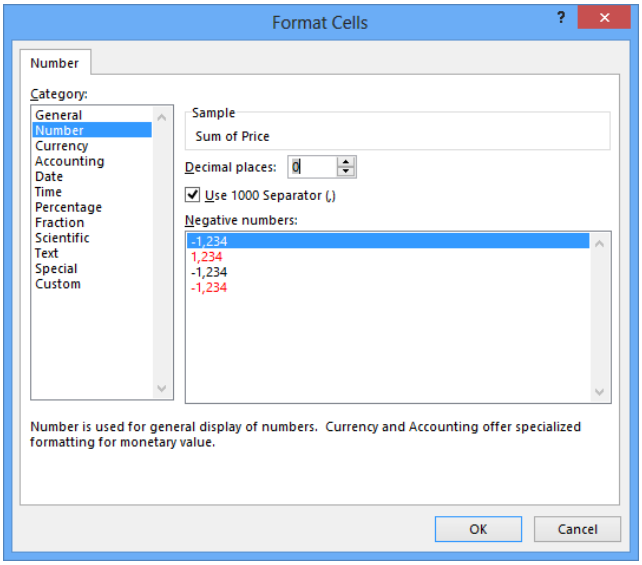
1. In the PivotTable, click in cell ***A3*** (the ***Sum of Price*** heading)
2. On the ***PIVOTTABLE TOOLS: ANALYSE*** tab, click on ***Field Settings*** in the ***Active Field*** group to display the ***Value Field Settings*** dialog box
3. Click on **[Number Format]** in the bottom left corner of the dialog box to display the ***Format Cells*** dialog box
4. Click on ***Number*** under ***Category***, then adjust the settings as shown
5. Click on **[OK]** twice to return to the formatted data

Notice that commas have been inserted in the numbers where appropriate...

2



4



5

	A	B	C	D	E	F	G
1							
2							
3	Sum of Price	Column Labels					
4		Jan				Jan Total	Feb
5	Row Labels	Coupe	Sedan	SUV	Wagon		Coupe
6	BMW	23,400	20,400			43,800	6,539
7	26-35		4,500			4,500	2,540
8	36-45	11,000				11,000	3,999
9	46-55		15,900			15,900	
10	Over 55	12,400				12,400	
11	Under 25						
12	Ford	47,100	2,050	43,211		92,361	2,540

For Your Reference…

To ***format values*** in a ***PivotTable report***:

1. Click on the values cells, click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group
2. Click on **[Number Format],** Choose the desired format, then click on **[OK]**

Handy to Know…

- Each time the PivotTable is recalculated, the number formats are set to those shown in the ***Field Settings*** command.

WORKING WITH PIVOTTABLE GRAND TOTALS

As a default, Excel's PivotTable reports will appear with ***grand totals*** at the end of the rows and at the end of the columns. These can be switched off and on as required. There may be times, for example, when you are interested only in the data values themselves and not in the grand totals.

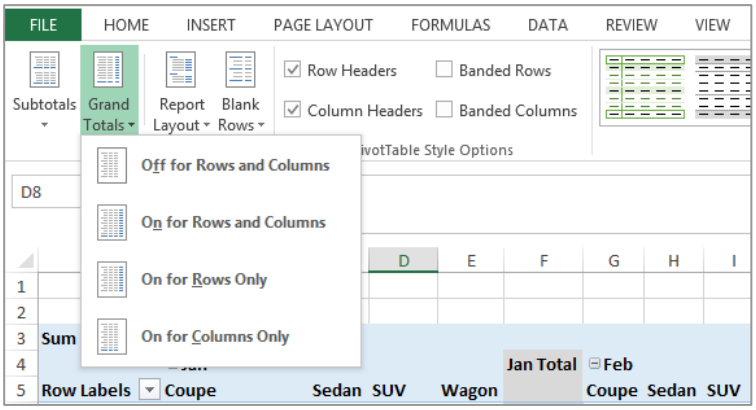
Try This Yourself:

Same File

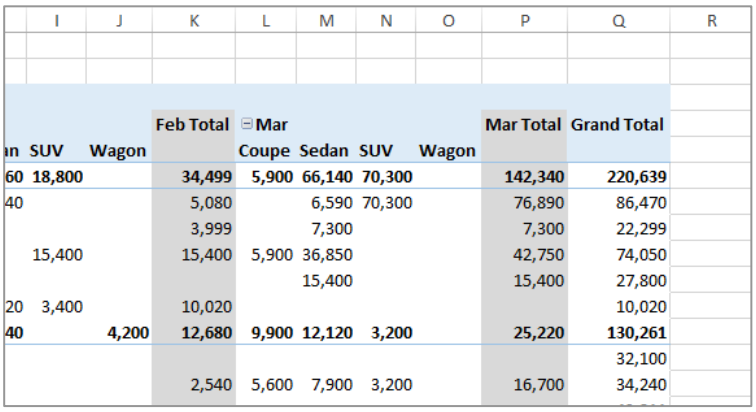
Continue using the previous file with this exercise, or open the file E1340 PivotTable Features_4.xlsx...

1. Click anywhere in the PivotTable
2. Click on the ***PIVOTTABLE TOOLS: DESIGN*** tab, then click on ***Grand Totals*** in the ***Layout*** group to display a list of options
3. Select **Off for Rows and Columns** to turn the grand totals off for rows and columns
4. Repeat steps ***2*** and ***3*** to select **On for Rows Only** to display the grand totals for rows only
5. Repeat step ***2*** and ***3*** to hide the grand totals again

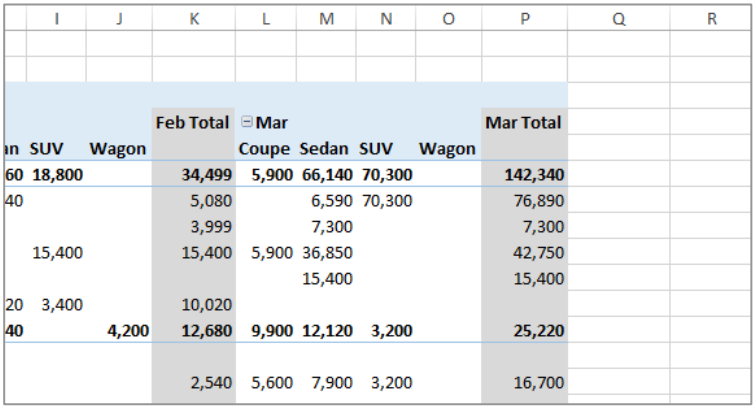
3



4



5



For Your Reference…

To ***remove*** the ***grand totals*** from a ***PivotTable***:

1. Click on the ***PIVOTTABLE TOOLS: DESIGN*** tab
2. Click on ***Grand Totals*** in the ***Layout*** group
3. Select the desired option

Handy to Know…

- You can show and hide ***Grand Totals*** by clicking on the ***PIVOTTABLE TOOLS: ANALYSE*** tab and clicking on ***Options*** in the ***PivotTable*** group to display the ***PivotTable Options*** dialog box. Using the ***Totals & Filters*** tab, you can then switch the grand totals on or off.

WORKING WITH PIVOTTABLE SUBTOTALS

When you add fields to the ***Column Labels*** or ***Row Labels*** area of the ***PivotTable Fields*** pane, Excel assumes that you also wish to ***subtotal*** the values for these fields. As a result ***subtotals*** will appear at the end of each field value, both column and row, in the PivotTable. These can be switched off if not required.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1340 PivotTable Features_5.xlsx...

1. In the PivotTable click in cell ***B4*** (***Jan***)
2. Click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group to display the ***Field Settings*** dialog box
3. Ensure the ***Subtotals & Filters*** tab is selected then click on ***None*** in ***Subtotals*** to select this option
4. Click on **[OK]** to remove the monthly subtotals and close the dialog box
5. Click in cell ***A6*** (***BMW***)
6. Repeat steps ***2*** and ***3*** to remove the subtotals for ***Make***

1

	A	B	C	D	E	F	G	H
1								
2								
3	Sum of Price	Column Labels						
4		Jan				Jan Total	Feb	
5	Row Labels	Coupe	Sedan	SUV	Wagon		Coupe	Sedan
6	BMW	23,400	20,400			43,800	6,539	9,16
7	26-35		4,500			4,500	2,540	2,54
8	36-45	11,000				11,000	3,999	
9	46-55		15,900			15,900		
10	Over 55	12,400				12,400		
11	Under 25							6,62
12	Ford	47,100	2,050	43,211		92,361	2,540	5,94

4

	A	B	C	D	E	F	G	H
1								
2								
3	Sum of Price	Column Labels						
4		Jan				Feb		
5	Row Labels	Coupe	Sedan	SUV	Wagon	Coupe	Sedan	SUV
6	BMW	23,400	20,400			6,539	9,160	18,800
7	26-35		4,500			2,540	2,540	
8	36-45	11,000				3,999		
9	46-55		15,900					15,400
10	Over 55	12,400						
11	Under 25						6,620	3,400
12	Ford	47,100	2,050	43,211		2,540	5,940	

6

	A	B	C	D	E	F	G	H
1								
2								
3	Sum of Price	Column Labels						
4		Jan				Feb		
5	Row Labels	Coupe	Sedan	SUV	Wagon	Coupe	Sedan	SUV
6	BMW							
7	26-35		4,500			2,540	2,540	
8	36-45	11,000				3,999		
9	46-55		15,900					15,400
10	Over 55	12,400						
11	Under 25						6,620	3,400
12	Ford							

For Your Reference…

To ***show*** or ***hide subtotals*** in a ***PivotTable***:

1. Click in the first row or column value cell
2. Click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group
3. Click on the ***Subtotals & Filters*** tab, click on ***None*** in ***Subtotals***, then click on **[OK]**

Handy to Know…

- You can turn off all subtotals in a PivotTable simultaneously by clicking on the ***PIVOTTABLE TOOLS: DESIGN*** tab, clicking on ***Subtotals*** in the ***Layout*** group and selecting **Do Not Show Subtotals**.

Finding The Percentage Of Total

PivotTables provide their analysis results as tables. During the process, grand totals and subtotals are calculated and presented. To assist in further analysis of the data it is possible to have the PivotTable report calculate the ***percentage*** of each value against the row total, the column total, and even the grand total. This is handy for comparative purposes.

Try This Yourself:

Open File

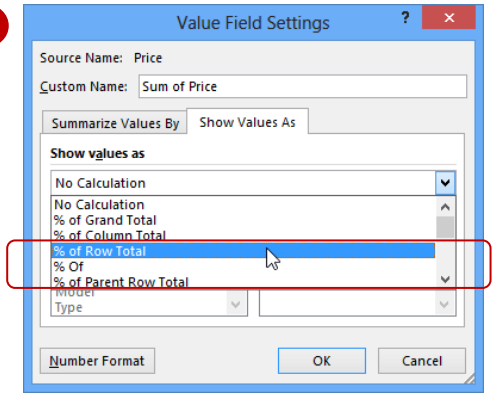
Before starting this exercise you MUST open the file E1340 PivotTable Features_6.xlsx...

1. Click in cell ***B5*** to activate the PivotTable then click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab
2. Click on ***Field Settings*** in the ***Active Field*** group to display the ***Field Settings*** dialog box, then click on the ***Show Values As*** tab
3. Click on the drop arrow for ***Show values as***, then select **% of Row Total**
4. Click on **[OK]** to see each month represented as a percentage of the total
5. Repeat step ***2*** to display the ***Show Values As*** tab in the ***Field Settings*** dialog box
6. Click on the drop arrow for ***Show values as***, select **% of Column Total**, then click on **[OK]**

1

	A	B	C	D	E	F
1						
2						
3	Sum of Price	Column Labels				
4	Row Labels	Jan	Feb	Mar	Grand Total	
5	BMW	43,800	34,499	142,340	220,639	
6	Ford	92,361	12,680	25,220	130,261	
7	GMH	12,400	18,900	22,800	54,100	
8	Hyundai	34,500			34,500	
9	KIA	12,800	10,500	19,700	43,000	
10	Mitsubishi	3,500	8,600	30,700	42,800	
11	Nissan		27,600	100,020	127,620	
12	Peugot	12,400	19,900	8,532	40,832	
13	Renault	21,090	30,599	5,600	57,289	
14	Toyota	41,855	22,100	43,489	107,444	
15	Volkswagen	45,700	17,900	70,122	133,722	
16	**Grand Total**	**320,406**	**203,278**	**468,523**	**992,207**	
17						

3



6

	A	B	C	D	E	F	G	H	I
1									
2									
3	Sum of Price	Column Labels							
4	Row Labels	Jan	Feb	Mar	Grand Total				
5	BMW	13.67%	16.97%	30.38%	22.24%				
6	Ford	28.83%	6.24%	5.38%	13.13%				
7	GMH	3.87%	9.30%	4.87%	5.45%				
8	Hyundai	10.77%	0.00%	0.00%	3.48%				
9	KIA	3.99%	5.17%	4.20%	4.33%				
10	Mitsubishi	1.09%	4.23%	6.55%	4.31%				
11	Nissan	0.00%	13.58%	21.35%	12.86%				
12	Peugot	3.87%	9.79%	1.82%	4.12%				
13	Renault	6.58%	15.05%	1.20%	5.77%				
14	Toyota	13.06%	10.87%	9.28%	10.83%				
15	Volkswagen	14.26%	8.81%	14.97%	13.48%				
16	**Grand Total**	**100.00%**	**100.00%**	**100.00%**	**100.00%**				
17									

For Your Reference…

To ***find*** the ***percentage of total***:

1. Click in a data value cell
2. Click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group
3. Click on the ***Show Values As*** tab, click on ***% of row*** or ***% of column***, then click on **[OK]**

Handy to Know…

- You can select to show a set of values as a percentage by right-clicking on a value in the PivotTable and pointing to **Show Values As** to display a list of options. Select an option to apply it to the set of values.

Finding The Difference From

If you need to compare field values from columns in a table you can use the ***Difference From*** option. In our case study we have three months of data. Using *Jan* as the base month, we can use the ***Difference From*** option to compare the values for the months of *Feb* and *Mar* against the values of *Jan*.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1340 PivotTable Features_7.xlsx...

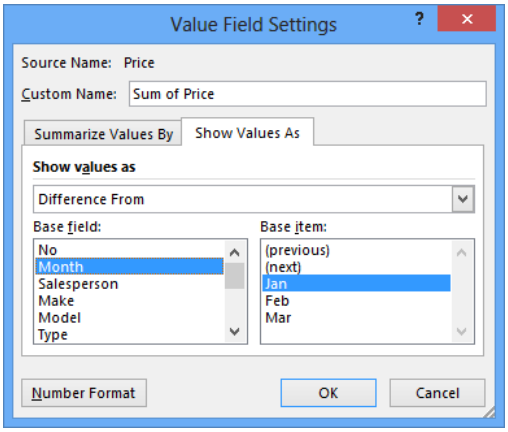
1. Click in cell ***B5*** to activate the PivotTable, then click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab
2. Click on ***Field Settings*** in the ***Active Field*** group to display the ***Field Settings*** dialog box, then click on the ***Show Values As*** tab
3. Click on the drop arrow for ***Show values as***, then scroll down to and click on ***Difference From***
4. Click on ***Month*** in ***Base field*** and ensure ***Jan*** is selected in ***Base item***

   The Base field is the field used to compare all other values to, while Jan is the "base item" in the base field against which comparisons are made…
5. Click on **[OK]** to see how the values in ***Feb*** and ***Mar*** differ from the corresponding base values in ***Jan***

1

Sum of Price	Column Labels			
Row Labels	Jan	Feb	Mar	Grand Total
BMW	43,800	34,499	142,340	220,639
Ford	92,361	12,680	25,220	130,261
GMH	12,400	18,900	22,800	54,100
Hyundai	34,500			34,500
KIA	12,800	10,500	19,700	43,000
Mitsubishi	3,500	8,600	30,700	42,800
Nissan		27,600	100,020	127,620
Peugot	12,400	19,900	8,532	40,832
Renault	21,090	30,599	5,600	57,289
Toyota	41,855	22,100	43,489	107,444
Volkswagen	45,700	17,900	70,122	133,722
Grand Total	**320,406**	**203,278**	**468,523**	**992,207**

4



5

Sum of Price	Column Labels		
Row Labels	Jan	Feb	Mar	Grand Total
BMW		-9,301	98,540	
Ford		-79,681	-67,141	
GMH		6,500	10,400	
Hyundai		-34,500	-34,500	
KIA		-2,300	6,900	
Mitsubishi		5,100	27,200	
Nissan		27,600	100,020	
Peugot		7,500	-3,868	
Renault		9,509	-15,490	
Toyota		-19,755	1,634	
Volkswagen		-27,800	24,422	
Grand Total		**-117,128**	**148,117**	

For Your Reference…

To ***find*** the ***difference from***:

1. Click in a data value cell, then click on ***PIVOTTABLE TOOLS: ANALYSE*** > ***Field Settings***
2. Click on the ***Show Values As*** tab, then click on ***Difference From***, specify the ***Base field*** and ***Base item***, then click on **[OK]**

Handy to Know…

- Using the ***Show Values As*** tab in the ***Value Field Settings*** dialog box you can select ***% Difference From*** which, as the name suggests, shows the *difference from* a base item but expressed as a percentage rather than as a value.

GROUPING IN PIVOTTABLE REPORTS

Sometimes the results of a PivotTable still aren't enough to provide a comprehensive analysis of the data. Further analysis of the data can be completed by grouping within a PivotTable. A typical use for grouping occurs when dates have been used as one of the PivotTable variables. These dates can be further grouped into months to provide a better analysis of the data.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1340 PivotTable Features_8.xlsx...

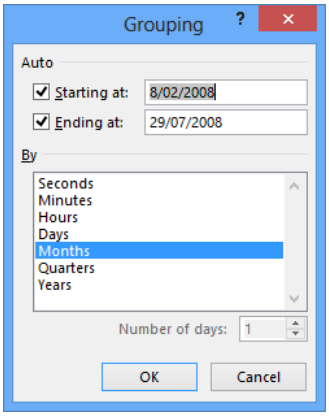
This PivotTable report is derived from a list of petty cash transactions found in the Petty Cash Receipts worksheet. The table sums the transactions by Date (rows) and Description (columns)…

1. Click on cell ***A3*** – this is the first cell with a date in it
2. On the ***PIVOTTABLE TOOLS: ANALYSE*** tab click on ***Group Selection*** in the ***Group*** group to display the ***Grouping*** dialog box
3. Ensure that ***Months*** is selected in ***By***
4. Click on **[OK]** to group the table according to months, based on the dates in the first column

	A	B	C	D	E	F	G
1	Sum of Amount	Column Labels					
2	Row Labels	Entertainment	Kitchen Supplies	Postage	Stationery	Grand Total	
3	8/02/2008		34.50			34.50	
4	11/02/2008			4.50		4.50	
5	14/02/2008	55.99				55.99	
6	17/02/2008				22.50	22.50	
7	20/02/2008				17.50	17.50	
8	23/02/2008	76.00				76.00	
9	26/02/2008		32.98			32.98	
10	29/02/2008			5.70		5.70	

1

3



	A	B	C	D	E	F	G
1	Sum of Amount	Column Labels					
2	Row Labels	Entertainment	Kitchen Supplies	Postage	Stationery	Grand Total	
3	Feb	131.99	67.48	10.20	40.00	249.67	
4	Mar	171.25	37.20	28.43	39.30	276.18	
5	Apr	59.80	74.25	32.05	12.90	179.00	
6	May	101.30	49.40	23.70	38.40	212.80	
7	Jun	114.90	118.80	21.50	25.31	280.51	
8	Jul	67.50	23.40	38.50	66.10	195.50	
9	**Grand Total**	**646.74**	**370.53**	**154.38**	**222.01**	**1,393.66**	
10							

4

For Your Reference…

To ***group a field*** in a ***PivotTable report***:

1. Click on the field to group
2. On the ***PIVOTTABLE TOOLS: ANALYSE*** tab click on ***Group Selection*** in the ***Group*** group
3. Select an option in ***By*** and click on **[OK]**

Handy to Know…

- Not all fields in a PivotTable report can be grouped. The ***Group Selection*** command will be greyed out when a selected field can't be used for grouping.

Creating Running Totals

A really useful analysis tool within PivotTable reports is the ability to create ***running totals*** from the PivotTable data. As the name suggests, running totals are cumulatively summed together and provide a path as to how the grand total is ultimately derived.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1340 PivotTable Features_9.xlsx…

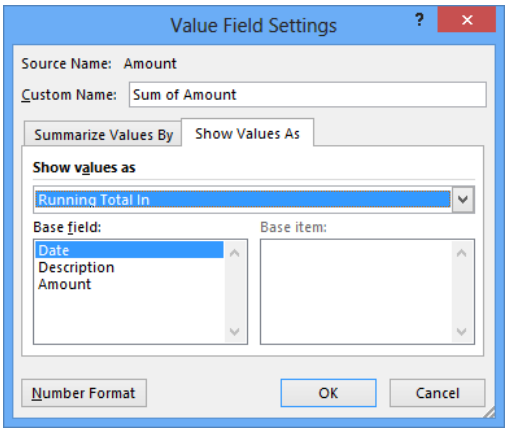
1. Click in cell ***B5*** – the first value cell for the ***Entertainment*** field
2. Click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group to display the ***Value Field Settings*** dialog box
3. Click on the ***Show Values As*** tab then click on the drop arrow for ***Show values as*** and click on ***Running Total In***
4. Ensure that ***Date*** is selected in ***Base field*** and click on **[OK]**

Notice how each value is now cumulatively summed until the value for Jul is equal to what the previous grand total showed

	A	B	C	D	E	F
1						
2						
3	Sum of Amount	Column Labels				
4	Row Labels	Entertainment	Kitchen Supplies	Postage	Stationery	Grand Total
5	Feb	131.99	67.48	10.20	40.00	249.67
6	Mar	171.25	37.20	28.43	39.30	276.18
7	Apr	59.80	74.25	32.05	12.90	179.00
8	May	101.30	49.40	23.70	38.40	212.80
9	Jun	114.90	118.80	21.50	25.31	280.51
10	Jul	67.50	23.40	38.50	66.10	195.50
11	Grand Total	646.74	370.53	154.38	222.01	1,393.66

1

3



	A	B	C	D	E	F
1						
2						
3	Sum of Amount	Column Labels				
4	Row Labels	Entertainment	Kitchen Supplies	Postage	Stationery	Grand Total
5	Feb	131.99	67.48	10.20	40.00	249.67
6	Mar	303.24	104.68	38.63	79.30	525.85
7	Apr	363.04	178.93	70.68	92.20	704.85
8	May	464.34	228.33	94.38	130.60	917.65
9	Jun	579.24	347.13	115.88	155.91	1,198.16
10	Jul	646.74	370.53	154.38	222.01	1,393.66
11	Grand Total					

4

For Your Reference…

To ***create running totals*** in a ***PivotTable***:

1. Click on the first value field to select it
2. Click on ***PIVOTTABLE TOOLS: ANALYSE*** > ***Field Settings*** in the ***Active Field*** group
3. Click on the ***Show Values As*** tab, click on ***Running Total in***, specify the ***Base field***, then click on **[OK]**

Handy to Know…

- If your PivotTable contains a grand total row and you then apply a running total, the grand total row will no longer display any values. In order to avoid confusing those viewing your PivotTable, it is recommended that you hide the grand total row.

Creating Calculated Fields

The fields that appear in a PivotTable are normally the column headings in the data list. However, you can create ***calculated fields*** which are *derived* from the column headings in the data list. For example, if you have a field called *Sales*, and you know that tax is always *10%* of *Sales*, you can create a new field called *Sales Tax* which calculates values based on the *Sales* field.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1340 PivotTable Features_10.xlsx...

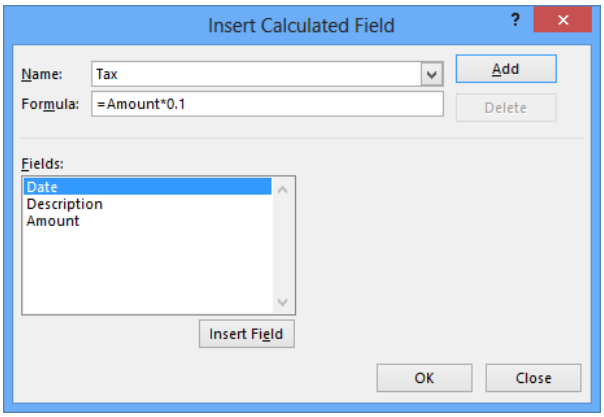
1. Click in cell ***A5*** (***Feb***), then click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab
2. Click on ***Fields, Items & Sets*** in the ***Calculations*** group and select **Calculated Field** to display the ***Insert Calculated Field*** dialog box
3. Type **Tax** in ***Name***
4. Press Tab to select the value in ***Formula*** and type **=Amount*0.1**

   This tells Excel to create a new calculated field that takes the value currently in the Amount field and multiply it by 0.1 (10%)…
5. Click on **[OK]**

	A	B	C	D	E	F
3	Sum of Amount	Column Labels				
4	Row Labels	Entertainment	Kitchen Supplies	Postage	Stationery	Grand Total
5	Feb	131.99	67.48	10.20	40.00	249.67
6	Mar	171.25	37.20	28.43	39.30	276.18
7	Apr	59.80	74.25	32.05	12.90	179.00
8	May	101.30	49.40	23.70	38.40	212.80
9	Jun	114.90	118.80	21.50	25.31	280.51
10	Jul	67.50	23.40	38.50	66.10	195.50
11	Grand Total	646.74	370.53	154.38	222.01	1,393.66

1

4



	A	B	C	D	E	F	G
3		Column Labels					
4		Entertainment		Kitchen Supplies		Postage	
5	Row Labels	Sum of Amount	Sum of Tax	Sum of Amount	Sum of Tax	Sum of Amount	Sum of Tax
6	Feb	131.99	13.20	67.48	6.75	10.20	1.02
7	Mar	171.25	17.13	37.20	3.72	28.43	2.84
8	Apr	59.80	5.98	74.25	7.43	32.05	3.21
9	May	101.30	10.13	49.40	4.94	23.70	2.37
10	Jun	114.90	11.49	118.80	11.88	21.50	2.15
11	Jul	67.50	6.75	23.40	2.34	38.50	3.85
12	Grand Total	646.74	64.67	370.53	37.05	154.38	15.44

5

For Your Reference…

To ***create*** a ***calculated field***:

1. On the ***PIVOTTABLE TOOLS: ANALYSE*** tab click on ***Fields, Items & Sets*** in the ***Calculations*** group, then select **Calculated Field**
2. Type a ***Name*** for the field and the ***Formula*** then click on **[OK]**

Handy to Know…

- To edit or delete a calculated field after it has been created, simply use ***Fields, Items & Sets*** > ***Calculated Field*** to display the dialog box again. Choose the calculated field that you want to change from the drop arrow and either make the changes or click on **[Delete]** to delete the field.

Providing Custom Names

When PivotTables are created they use default names for their calculated fields and values. As a result you end up with descriptive, but not very elegant, names such as *Sum of Amount*.

Fortunately you can customise these names so that they are more in tune with your requirements and possibly make more sense to those viewing your workbook.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1340 PivotTable Features_11.xlsx...

1. Click in cell ***B5*** (***Sum of Amount***), then click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab
2. Click on ***Field Settings*** in the ***Active Field*** group to display the ***Value Field Settings*** dialog box
3. Type **Total** in ***Custom Name*** and click on **[OK]** to rename all ***Sum of Amount*** columns to ***Total***
4. Click in cell ***C5*** (***Sum of Tax***)
5. Click on ***Field Settings*** in the ***Active Field*** group
6. Type **Sales Tax** in ***Custom Name*** and click on **[OK]**

	A	B	C	D	E	F
1						
2						
3		Column Labels				
4		Entertainment		Kitchen Supplies		Postage
5	Row Labels	Sum of Amount	Sum of Tax	Sum of Amount	Sum of Tax	Sum of Amount
6	Feb	131.99	13.20	67.48	6.75	10.20
7	Mar	303.24	17.13	104.68	3.72	38.63
8	Apr	363.04	5.98	178.93	7.43	70.68
9	May	464.34	10.13	228.33	4.94	94.38
10	Jun	579.24	11.49	347.13	11.88	115.88
11	Jul	646.74	6.75	370.53	2.34	154.38
12	Grand Total		64.67		37.05	

1

	A	B	C	D	E	F	G
1							
2							
3		Column Labels					
4		Entertainment		Kitchen Supplies		Postage	
5	Row Labels	Total	Sum of Tax	Total	Sum of Tax	Total	Sum of
6	Feb	131.99	13.20	67.48	6.75	10.20	
7	Mar	303.24	17.13	104.68	3.72	38.63	
8	Apr	363.04	5.98	178.93	7.43	70.68	
9	May	464.34	10.13	228.33	4.94	94.38	
10	Jun	579.24	11.49	347.13	11.88	115.88	
11	Jul	646.74	6.75	370.53	2.34	154.38	
12	Grand Total		64.67		37.05		1

3

	A	B	C	D	E	F	G
1							
2							
3		Column Labels					
4		Entertainment		Kitchen Supplies		Postage	
5	Row Labels	Total	Sales Tax	Total	Sales Tax	Total	Sales Tax
6	Feb	131.99	13.20	67.48	6.75	10.20	1.02
7	Mar	303.24	17.13	104.68	3.72	38.63	2.84
8	Apr	363.04	5.98	178.93	7.43	70.68	3.21
9	May	464.34	10.13	228.33	4.94	94.38	2.37
10	Jun	579.24	11.49	347.13	11.88	115.88	2.15
11	Jul	646.74	6.75	370.53	2.34	154.38	3.85
12	Grand Total		64.67		37.05		15.44

6

For Your Reference…

To ***create*** a ***custom field name***:

1. Click in the field to change
2. Click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Field Settings*** in the ***Active Field*** group
3. Type a new name in ***Custom Name*** and click on **[OK]**

Handy to Know…

- You cannot use a custom name that is the same as the name of an existing field – duplicate names are not permitted by PivotTable reports.

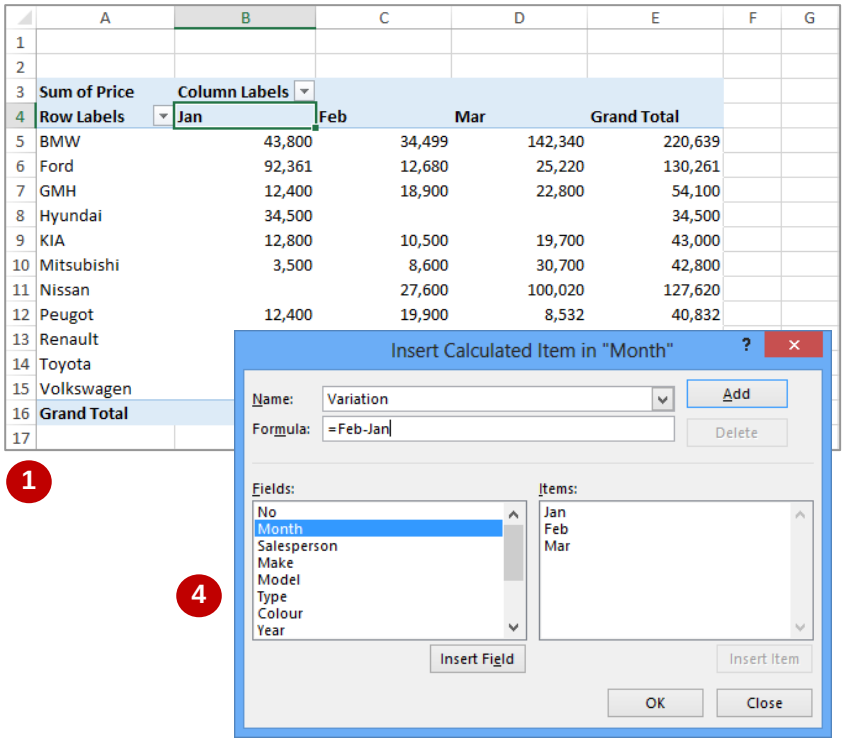
Creating Calculated Items

When a field is used as a variable in a PivotTable the resultant groupings are known as ***items***. For example, if you have a field called *Months*, the values stored in that field (*Jan*, *Feb*, etc) are ***items*** of that field. In PivotTables you can actually create ***calculated items*** based on existing items in a field. For example, you could add two months together, or subtract them from one another, etc.

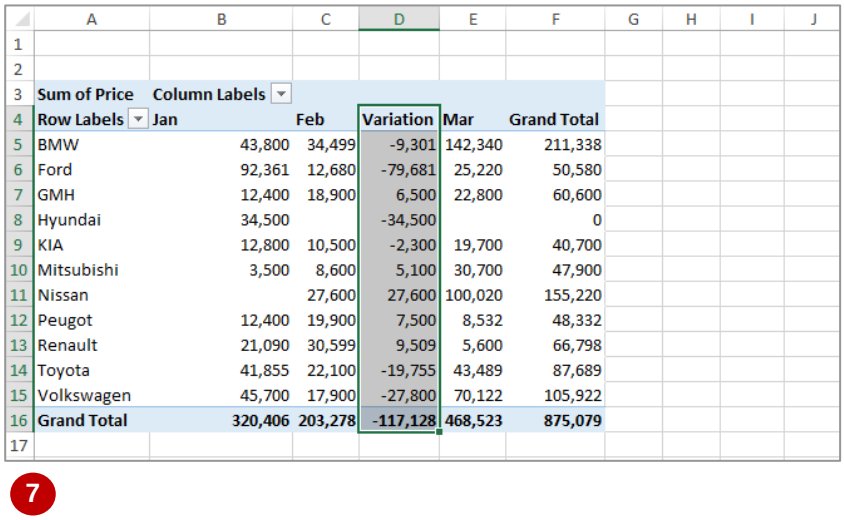
Try This Yourself:

Open File *Before starting this exercise you MUST open the file E1340 PivotTable Features_12.xlsx...*

1. Click in cell ***B4*** (***Jan***), then click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab
2. Click on ***Fields, Items & Sets*** in the ***Calculations*** group and select **Calculated Item** to display the ***Insert Calculated Item*** dialog box
3. Type **Variation** in ***Name***
4. Press Tab to move to ***Formula***, then type **=Feb-Jan**
5. Click on **[OK]** to create the calculated item
6. Point above the heading ***Variation*** in cell ***E4*** until the pointer changes to a black arrow, then click once to select the column (or item)
7. Point to the border of the selected area so that the pointer changes to a four-headed arrow, then click and drag the ***Variation*** column left to position it between ***Feb*** and ***Mar***, then release the mouse button



Sum of Price	Column Labels			
Row Labels	Jan	Feb	Mar	Grand Total
BMW	43,800	34,499	142,340	220,639
Ford	92,361	12,680	25,220	130,261
GMH	12,400	18,900	22,800	54,100
Hyundai	34,500			34,500
KIA	12,800	10,500	19,700	43,000
Mitsubishi	3,500	8,600	30,700	42,800
Nissan		27,600	100,020	127,620
Peugot	12,400	19,900	8,532	40,832
Renault				
Toyota				
Volkswagen				
Grand Total				



Sum of Price	Column Labels				
Row Labels	Jan	Feb	Variation	Mar	Grand Total
BMW	43,800	34,499	-9,301	142,340	211,338
Ford	92,361	12,680	-79,681	25,220	50,580
GMH	12,400	18,900	6,500	22,800	60,600
Hyundai	34,500		-34,500		0
KIA	12,800	10,500	-2,300	19,700	40,700
Mitsubishi	3,500	8,600	5,100	30,700	47,900
Nissan		27,600	27,600	100,020	155,220
Peugot	12,400	19,900	7,500	8,532	48,332
Renault	21,090	30,599	9,509	5,600	66,798
Toyota	41,855	22,100	-19,755	43,489	87,689
Volkswagen	45,700	17,900	-27,800	70,122	105,922
Grand Total	320,406	203,278	-117,128	468,523	875,079

For Your Reference…

To ***create*** a ***calculated item***:

1. Click in the table, click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab, then click on ***Fields, Items & Sets*** in the ***Calculations*** group
2. Select **Calculated Item,** type a ***Name*** and a ***Formula***, then click on **[OK]**

Handy to Know…

- ***Calculated items*** are much harder to get your head around than ***calculated fields***. Just remember that a calculated item is one created using items *within* a specific field, while calculated fields are created *across* one or more fields.

PIVOTTABLE OPTIONS

While there are many techniques and tools available for working with and creating data and values in a PivotTable, there are also a number of options available which allow you to tweak the PivotTable report and enhance its operation and appearance. Most of these are grouped together in the ***PivotTable Options*** dialog box.

Try This Yourself:

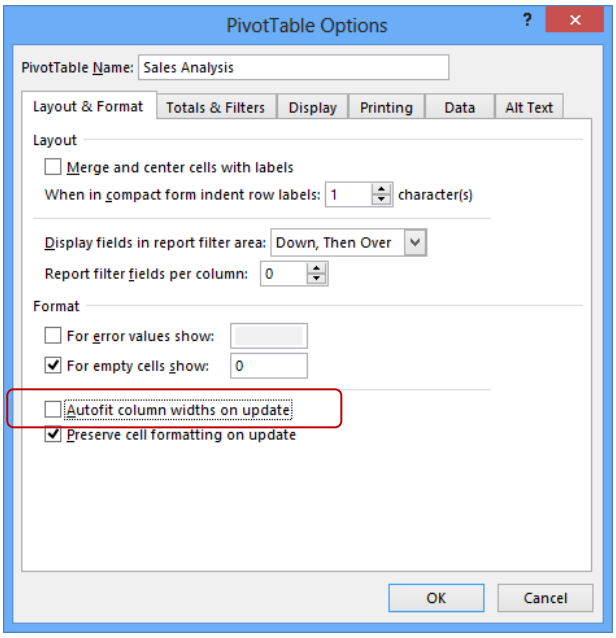
Open File *Before starting this exercise you MUST open the file E1340 PivotTable Features_13.xlsx...*

1. Click in cell ***B4*** (***Jan***), then click on the ***PIVOTTABLE TOOLS: ANALYSE*** tab
2. Click on ***Options*** in the ***PivotTable*** group to display the ***PivotTable Options*** dialog box
3. Type **Sales Analysis** in ***Name*** to rename the table
4. On the ***Layout & Format*** tab, click in ***For empty cells show***, then type **0**
5. Click on ***Autofit column widths on update*** so it appears unticked (this will stop column widths from changing each time the table is updated)
6. Click on **[OK]** to make the changes

   Notice how zeros have appeared in the previously empty cells…
7. In the ***PivotTable Fields*** pane, drag the ***Make*** field from the ***ROWS*** area, then drag it back again to force an update – notice that the column widths no longer change

   If the PivotTable Fields pane is not displayed, click on the PIVOTABLE TOOLS: ANALYSE tab, then click on Field List in the Show group

5



	A	B	C	D	E
1					
2					
3	Sum of Price	Column Labels			
4	Row Labels	Jan	Feb	Mar	Grand Total
5	BMW	43,800	34,499	142,340	220,639
6	Ford	92,361	12,680	25,220	130,261
7	GMH	12,400	18,900	22,800	54,100
8	Hyundai	34,500	0	0	34,500
9	KIA	12,800	10,500	19,700	43,000
10	Mitsubishi	3,500	8,600	30,700	42,800
11	Nissan	0	27,600	100,020	127,620
12	Peugot	12,400	19,900	8,532	40,832
13	Renault	21,090	30,599	5,600	57,289
14	Toyota	41,855	22,100	43,489	107,444
15	Volkswagen	45,700	17,900	70,122	133,722
16	**Grand Total**	**320,406**	**203,278**	**468,523**	**992,207**

6

For Your Reference…

To ***change options*** in a ***PivotTable***:

1. Click in the PivotTable to select it
2. Click on ***Options*** in the ***PivotTable*** group to display the ***PivotTable Options*** dialog box
3. Make changes as appropriate and click on **[OK]**

Handy to Know…

- You can access the PivotTable ***Options*** by right-clicking on the table and selecting **PivotTable Options**.

SORTING IN A PIVOTTABLE

When a PivotTable report is created, the ***Row Labels*** and ***Columns Label***s are alphanumerically ***sorted*** for you. You can change this sort order if you wish, or even sort according to the ***data values*** rather than the row or column labels.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1340 PivotTable Features_14.xlsx...

1. Click in cell ***E5*** (the first ***Grand Total*** value), then click on the ***HOME*** tab
2. Click on ***Sort & Filter*** in the ***Editing*** group
3. Select **Sort Smallest to Largest** to sort the table according to the values in the ***Grand Total***
4. Repeat step ***2*** then select **Sort Largest to Smallest** to reverse the order

1

	A	B	C	D	E
1					
2					
3	Sum of Price	Column Labels			
4	Row Labels	Jan	Feb	Mar	Grand Total
5	BMW	43,800	34,499	142,340	220,639
6	Ford	92,361	12,680	25,220	130,261
7	GMH	12,400	18,900	22,800	54,100
8	Hyundai	34,500	0	0	34,500
9	KIA	12,800	10,500	19,700	43,000
10	Mitsubishi	3,500	8,600	30,700	42,800
11	Nissan	0	27,600	100,020	127,620
12	Peugot	12,400	19,900	8,532	40,832
13	Renault	21,090	30,599	5,600	57,289
14	Toyota	41,855	22,100	43,489	107,444
15	Volkswagen	45,700	17,900	70,122	133,722
16	**Grand Total**	**320,406**	**203,278**	**468,523**	**992,207**
17					

3

	A	B	C	D	E
1					
2					
3	Sum of Price	Column Labels			
4	Row Labels	Jan	Feb	Mar	Grand Total
5	Hyundai	34,500	0	0	34,500
6	Peugot	12,400	19,900	8,532	40,832
7	Mitsubishi	3,500	8,600	30,700	42,800
8	KIA	12,800	10,500	19,700	43,000
9	GMH	12,400	18,900	22,800	54,100
10	Renault	21,090	30,599	5,600	57,289
11	Toyota	41,855	22,100	43,489	107,444
12	Nissan	0	27,600	100,020	127,620
13	Ford	92,361	12,680	25,220	130,261
14	Volkswagen	45,700	17,900	70,122	133,722
15	BMW	43,800	34,499	142,340	220,639
16	**Grand Total**	**320,406**	**203,278**	**468,523**	**992,207**
17					

4

	A	B	C	D	E
1					
2					
3	Sum of Price	Column Labels			
4	Row Labels	Jan	Feb	Mar	Grand Total
5	BMW	43,800	34,499	142,340	220,639
6	Volkswagen	45,700	17,900	70,122	133,722
7	Ford	92,361	12,680	25,220	130,261
8	Nissan	0	27,600	100,020	127,620
9	Toyota	41,855	22,100	43,489	107,444
10	Renault	21,090	30,599	5,600	57,289
11	GMH	12,400	18,900	22,800	54,100
12	KIA	12,800	10,500	19,700	43,000
13	Mitsubishi	3,500	8,600	30,700	42,800
14	Peugot	12,400	19,900	8,532	40,832
15	Hyundai	34,500	0	0	34,500
16	**Grand Total**	**320,406**	**203,278**	**468,523**	**992,207**
17					

For Your Reference…

To ***sort*** the ***values*** in a ***PivotTable***:

1. Click on the column to sort
2. Click on the ***HOME*** tab
3. Click on ***Sort & Filter*** in the ***Editing*** group
4. Select **Sort Smallest to Largest** or **Sort Largest to Smallest**

Handy to Know…

- More complex and multiple sorts can be done using the ***Sort*** dialog box which can be accessed using the ***Sort*** command on the ***DATA*** tab.

PIVOTCHARTS

INFOCUS

PivotTables create a very convenient and efficient way of analysing and interpreting data from internal lists and external databases. However, the data is presented in a tabular format. If the table is very large and complex it may be difficult to spot trends and patterns. As a consequence Excel combines the ease and convenience of ***PivotTables*** with its charting operations to provide you with ***PivotCharts***.

INSERTING A PIVOTCHART

PivotTables can sometimes become quite complex and large, making the data they contain difficult to understand. It can therefore be useful to have a way of representing the data in a simpler format. This is where ***PivotCharts*** are useful. They can be used in conjunction with a PivotTable or even on their own and are created in a similar way to PivotTables.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file E1341 PivotCharts_1.xlsx...

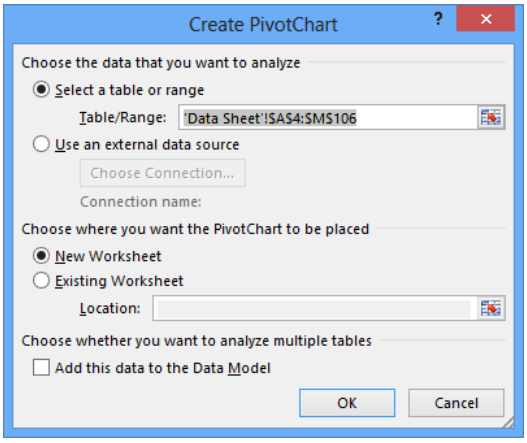
1. Click anywhere in the list of sales

   This will enable Excel to determine the fields and records to be used in the PivotChart…

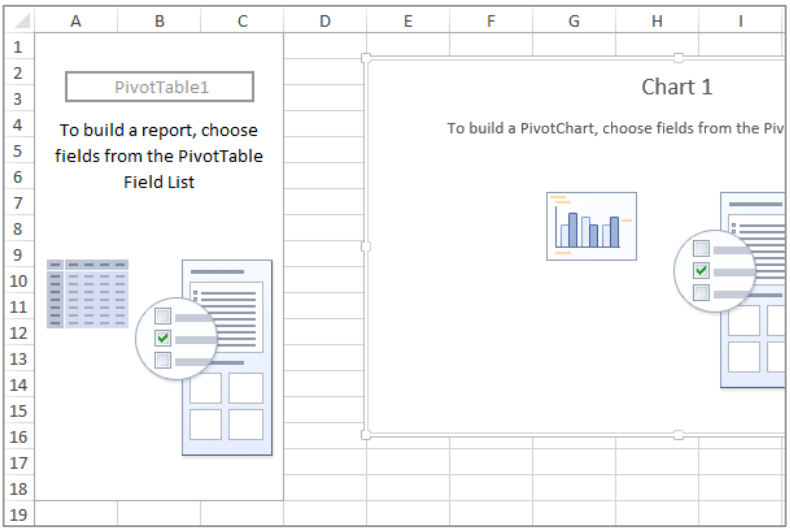
2. Click on the ***INSERT*** tab, then click on the top half of ***PivotChart*** in the ***Charts*** group to display the ***Create PivotChart*** dialog box

3. Ensure that ***Select a table or range*** and ***New Worksheet*** are both selected, then click on **[OK]**

   A PivotTable structure and a PivotChart structure will appear in a new worksheet together with the PivotChart Fields pane



2



3

For Your Reference…

To ***insert*** a ***PivotChart***:

1. Click anywhere in the list, click on the ***INSERT*** tab, then click on the upper half of ***PivotChart*** in the ***Charts*** group
2. Nominate the location for the table, then click on **[OK]**

Handy to Know…

- The chart appears embedded in the worksheet with the ***PivotTable*** as a default. It can later be moved to its own chart sheet if required.

Defining The PivotChart Structure

When you create a PivotTable, the ***PivotTable Fields*** pane displays automatically and it is by using this pane that you can create the structure of a PivotTable. In the same way when you create a PivotChart, the ***PivotChart Fields*** pane displays. You can use this pane in the same way as the ***PivotTable Fields*** pane to create the structure of a PivotChart.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E1341 PivotCharts_2.xlsx...

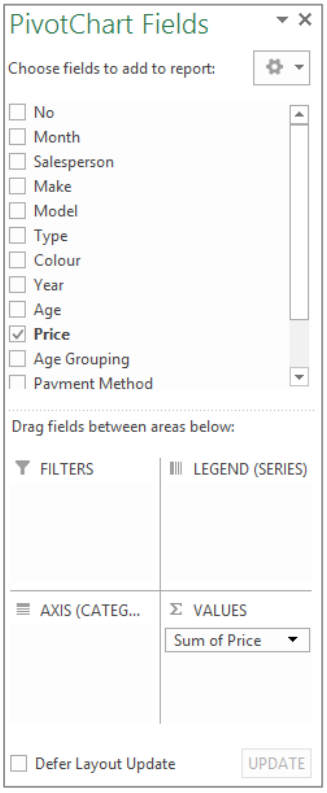
1. In the ***PivotChart Fields*** pane click on and drag the ***Price*** field to the ***Values*** area in the ***PivotChart Fields*** pane

   The PivotChart and PivotTable will now display the price values…

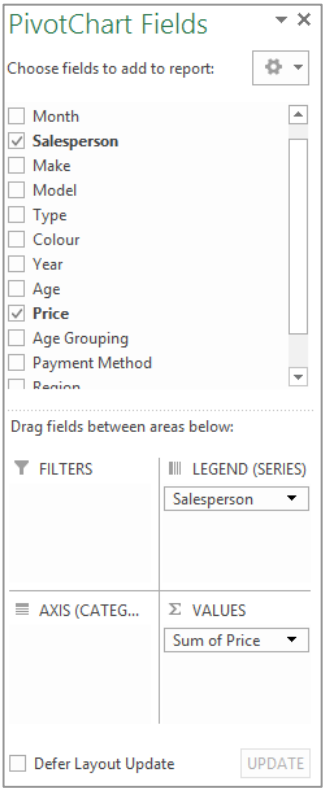
2. Repeat step ***1*** to position the ***Salesperson*** field in the ***LEGEND (SERIES)*** area

3. Repeat step ***1*** to drag the ***Month*** field to the ***AXIS (CATEGORIES)*** area

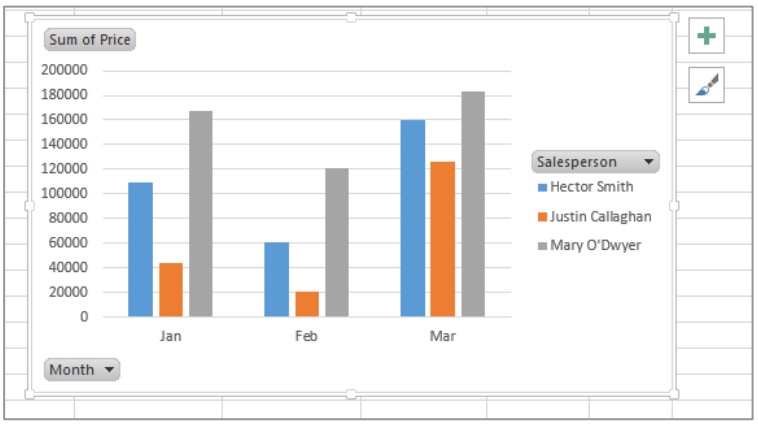
1



2



3



For Your Reference…

To ***define*** the ***PivotChart structure***:

1. In the ***PivotChart Fields*** pane click on the desired field
2. Drag the field into the ***COLUMNS***, ***ROWS*** or ***VALUES*** area of the pane as required

Handy to Know…

- The ***PivotChart Fields*** pane, though similar to the ***PivotTable Fields*** pane, has one main difference – the areas are named differently. For instance, ***Column Labels*** becomes ***Legend Fields***, while ***Row Labels*** become ***Axis Fields***.

CHANGING THE PIVOTCHART TYPE

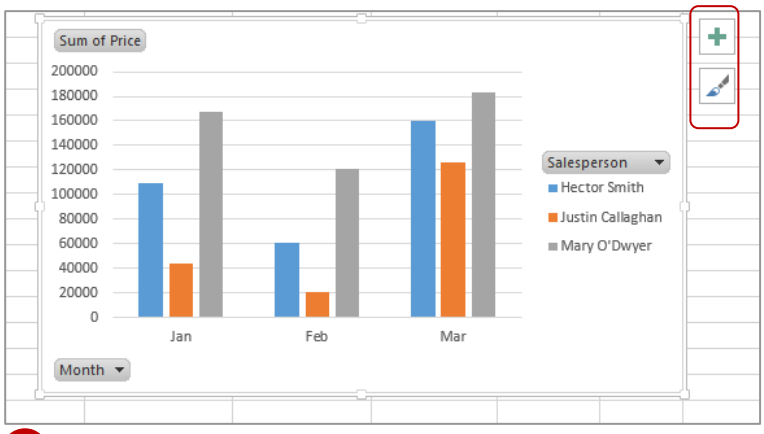
Sometimes you may use different types of charts to represent the same data. Or you may decide, for example, that your data would be better displayed in a pie chart rather than a column chart. You can easily convert an existing chart to a different chart type. You can also use this feature to test different chart types until you find the one that will best represent your data.

Try This Yourself:

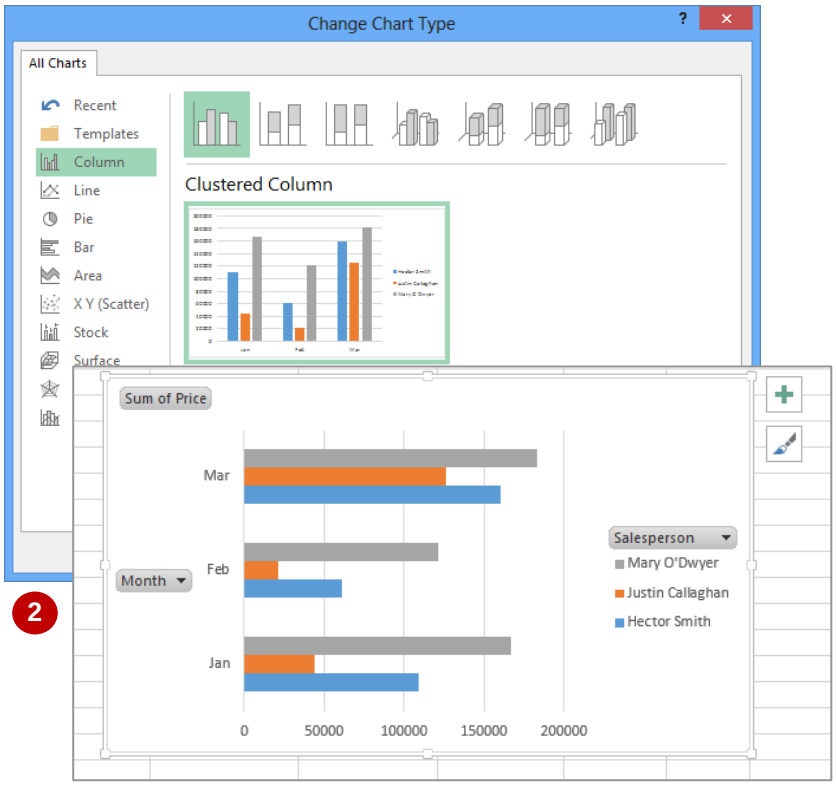
Open File

Before starting this exercise you MUST open the file E1341 PivotCharts_3.xlsx…

1. Click on the ***PivotChart*** to ensure it is selected and to display the ***Chart Elements*** and ***Chart Styles*** buttons to the top right of the chart
2. Click on the ***PIVOTCHART TOOLS: DESIGN*** tab, then click on ***Change Chart Type*** in the ***Type*** group to display the ***Change Chart Type*** dialog box
3. Click on ***Bar*** in the list on the left, then click on **[OK]** to change the PivotChart to a horizontal bar chart



1



2

3

For Your Reference…

To ***change*** the ***chart type***:

1. Click on the chart to select it
2. Click on the ***PIVOTCHART TOOLS: DESIGN*** tab, then click on ***Change Chart Type*** in the ***Type*** group
3. Click on the desired type, then click on **[OK]**

Handy to Know…

- If you want to change the colour of your chart or the way it appears you can click on the ***Chart Styles*** button which appears to the right of a chart when it is selected. Clicking on the ***Chart Styles*** button displays a gallery of style options you can choose from.

Using The PivotChart Filter Field Buttons

The PivotChart Filter field buttons appear on a PivotChart. These buttons appear next to the axis and legend fields on the actual PivotChart. It allows you to perform both sorting and filtering operations on the fields that have been specifically chosen for the ***axis*** and ***legend*** fields.

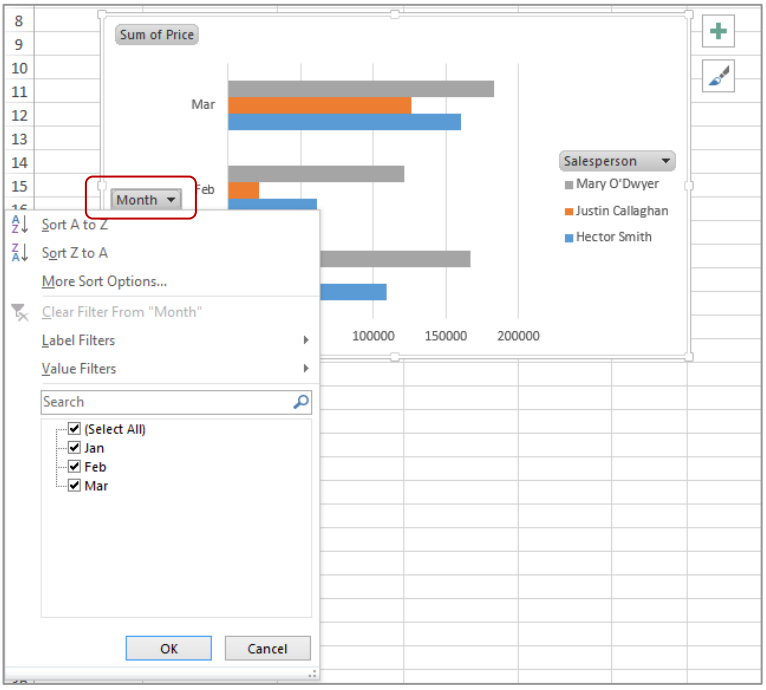
Try This Yourself:

Same File

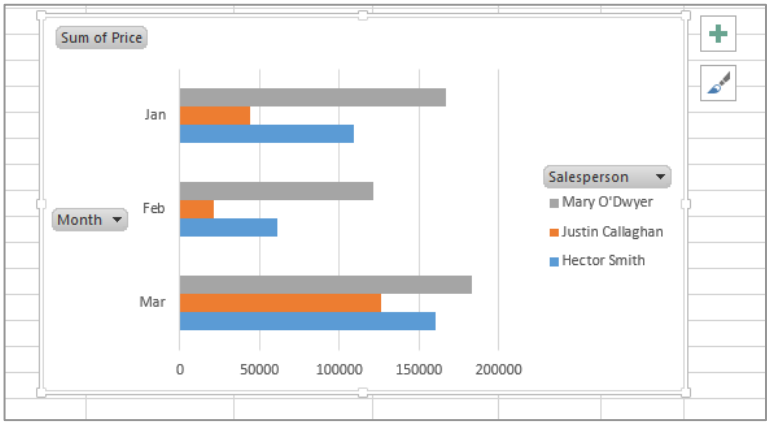
Continue using the previous file with this exercise, or open the file E1341 PivotCharts_4.xlsx...

1. Click on the ***Month*** filter field button to see a menu of options, as shown
2. Click on ***Sort Z to A*** to see the months so that ***Jan*** is displayed at the top

1



2



For Your Reference…

To ***use*** a ***PivotChart filter field button***:

1. Click on the appropriate filter field button on the PivotChart
2. Select an option

Handy to Know…

- In addition to performing a sort, you can also use the menus that appear in the ***PivotChart Filter field buttons*** to perform filtering operations. It's worth spending a few moments playing around with the filters.

Moving PivotCharts To Chart Sheets

While it is convenient to see both the ***PivotTable*** and the ***PivotChart*** in the one sheet, when it comes to printing the chart or adding more detail, it is often better to have the chart in its own sheet. PivotCharts are just like any other charts (except that their data source comes from a table) and can therefore be moved to and from a worksheet and a chart sheet.

Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file E1341 PivotCharts_5.xlsx...*

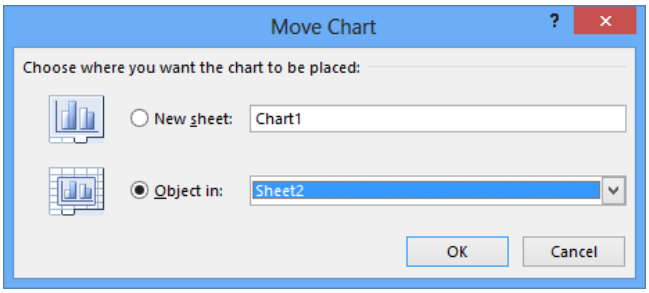
1. Right-click on the PivotChart to display the shortcut menu
2. Select **Move Chart** to display the ***Move Chart*** dialog box
3. Select the text in ***New sheet*** and type **Sales Chart**

   This will become the name of the new chart sheet…
4. Click on **[OK]** to move the chart to its own worksheet

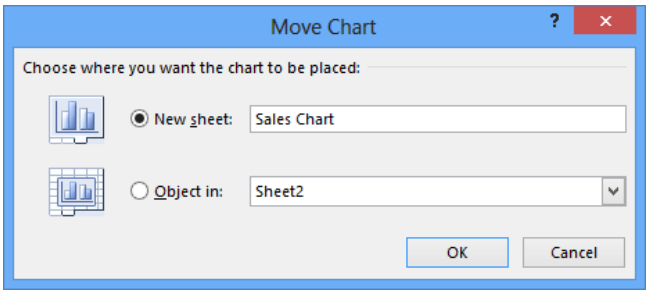
   Notice that the PivotTable Fields pane is still visible…
5. Click on the ***Sheet 2*** worksheet tab to see the PivotTable and the ***PivotChart Fields*** pane

   The PivotTable acts as the data source for the chart

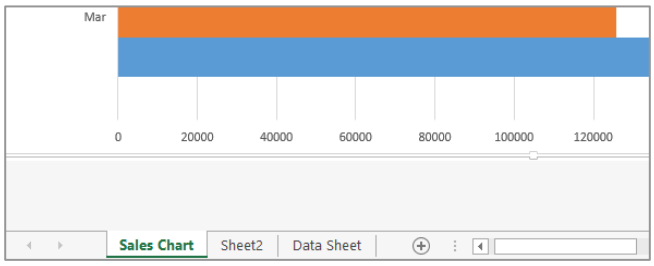
2



3



4



For Your Reference…

To ***move*** a ***PivotChart*** to its ***own sheet***:

1. Right-click on the PivotChart, then select **Move Chart**
2. Provide a new chart sheet name, then click on **[OK]**

Handy to Know…

- Even when a PivotChart is moved to its own chart sheet, it still retains the same functionality as when it was embedded in the same worksheet as the PivotTable.