CHAPTER 1 POWER VIEW

INFOCUS

Power View is a data exploration, visualisation and presentation tool that provides you with the ability to create interactive tables, charts and maps from your workbook data through an easy-to-use interface.

With ***Power View*** you can create dashboards that provide alternate and complementary views of your workbook data, as well as drilling down into that data with filtering and tile grouping. You can see the data in tables and charts and switch effortlessly from one to the other.

Power View is an *add-in* (only available in the *Office Professional Plus* and *Office 365 Professional* versions of Office 2016).

In this session you will:

- ✓ gain an understanding of how ***Power View*** works
- ✓ learn how to enable the ***Power View*** add-in
- ✓ learn how to enable the ***Power View*** add-in
- ✓ learn how to create a ***Power View*** sheet
- ✓ learn how to work with visualisation objects in a ***Power View*** sheet
- ✓ learn how to manipulate the fields in a ***Power View*** report
- ✓ learn how to rearrange and sort fields in a ***Power View*** sheet
- ✓ learn how to work with measure fields in ***Power View***
- ✓ learn how to format ***Power View*** data
- ✓ learn how to tile data
- ✓ learn how to filter data in ***Power View***
- ✓ learn how to switch data visualisations
- ✓ learn how to add more views to a ***Power View*** sheet
- ✓ learn how to add titles and a background image
- ✓ learn how to refresh a ***Power View*** report.

UNDERSTANDING POWER VIEW

Power View provides a visual and interactive way of seeing data that is either currently in a workbook or is external to it. A ***Power View*** report is created in a new sheet. This sheet can hold several ***visualisation objects*** that interpret and analyse the data attached to them. These objects can take the form of a table (a bit like a ***PivotTable***), a chart or a map.

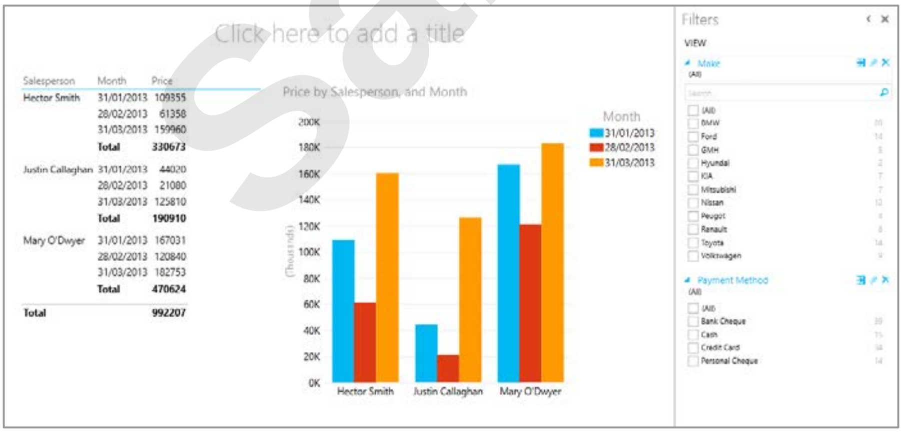
The Data

Generally, the data used for a ***Power View*** report will come from some sort of list, either one that has been created within the workbook or from an external data source such as a database application like Microsoft Access. List data has historically been difficult to analyse without complex data manipulation tools.

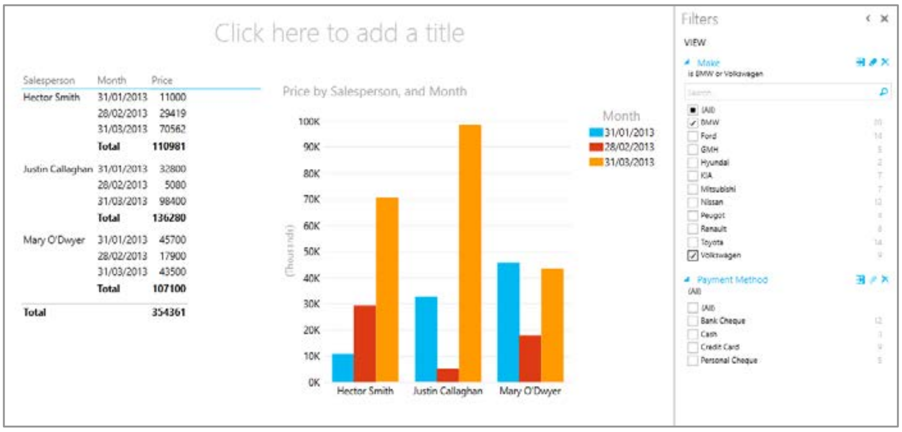
	A	B	C	D	E	F	G
1	Honest Ted's Used Car Sales						
2	1st Quarter Sales						
3							
4	No	Month	Salesperson	Make	Model	Type	Colour
5	1	31-Jan	Mary O'Dwyer	Toyota	Corolla	Sedan	Red
6	2	31-Jan	Justin Callaghan	BMW	3 Series	Sedan	Silver
7	3	31-Jan	Hector Smith	Toyota	Celica	Coupe	Yellow
8	4	31-Jan	Mary O'Dwyer	Ford	Explorer	SUV	Silver
9	5	31-Jan	Mary O'Dwyer	Hyundai	Elantra	Sedan	White
10	6	31-Jan	Justin Callaghan	Ford	Fiesta	Sedan	Green
11	7	31-Jan	Hector Smith	BMW	Z3	Coupe	Silver
12	8	31-Jan	Hector Smith	Toyota	Corolla	Sedan	White
13	9	31-Jan	Mary O'Dwyer	Toyota	Activa	Wagon	Yellow
14	10	31-Jan	Mary O'Dwyer	KIA	Mini	Sedan	Red
15	11	31-Jan	Mary O'Dwyer	Volkswagen	Toureg	SUV	Silver

The Power View Report

Using data such as that above a ***Power View*** report can be created. The report below contains 2 objects – one in tabular format and another in a chart visualisation. Basically, they show the total sales at *Honest Ted's Used Cars* over three months. There are ***filter*** settings at the right which allow even further drilling down into the data.



Since there are no ticks in any of the filter boxes here we are seeing an analysis of all of the data from the data source.



In this view only sales for BMW and Volkswagen vehicles are shown – these are the two vehicle makes that have been ticked in the filters pane.

ENABLING POWER VIEW

Power View is an *add-in* for Excel 2016 that is normally installed when Office and Excel are installed. However, it still may need to be enabled before it will appear as a tab in the ribbon.

Add-ins are generally enabled from the ***Add-Ins*** tab on the ***Excel Options*** dialog box. This dialog box is accessed through the ***File*** tab on the ribbon.

Try This Yourself:

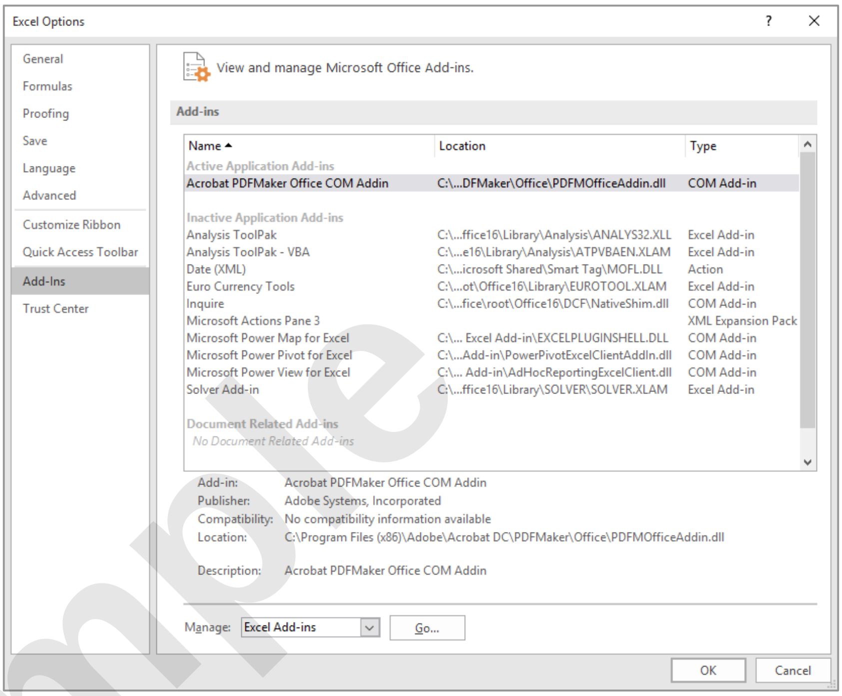
Open File

Before starting this exercise you MUST ensure that Excel has started…

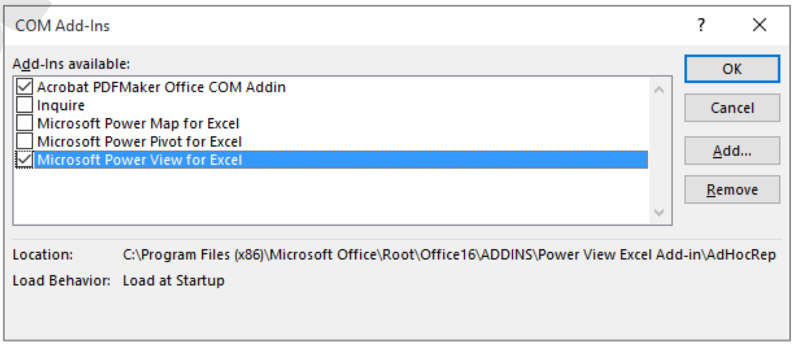
1. Click on the ***File*** tab, then click on ***Options*** to display the ***Excel Options*** dialog box
2. Click on ***Add-ins*** to display a list of add-ins currently installed in Excel
3. Click on the ***Manage*** drop arrow (at the bottom of the window), select **COM Add-ins**, then click on **[Go]** to display a list of *COM Add-ins* available to you

   There are different types of add-ins for Excel. COM Add-ins are ones that can be used by other Office applications…
4. Ensure the checkbox for ***Microsoft Power View for Excel*** appears ticked
5. Click on **[OK]**

   There's no indication at this stage that the changes have been made successfully. We could return to the Add-Ins settings but for the purpose of this exercise we will assume the changes were successful



2



4

For Your Reference…

To ***enable*** the ***Power View add-in***:

1. Click on the ***File*** tab, click on ***Options***, then click on ***Add-ins***
2. Click in the checkbox left of ***Microsoft Power View for Excel*** to enable it
3. Click on **[OK]**

Handy to Know…

- The ***Power View*** add-in is only available to you if you are using ***Office Professional Plus*** or ***Office 365 Professional Plus***.

Adding Power View To The Ribbon

Power View is an *add-in* for Excel 2016 that is normally installed when Office and Excel are installed. However, it still may need to be added to the ribbon as it does not appear by default.

You can add commands to the ribbon from the ***Customise Ribbon*** tab in the ***Excel Options*** dialog box. This dialog box is accessed through the ***File*** tab.

Try This Yourself:

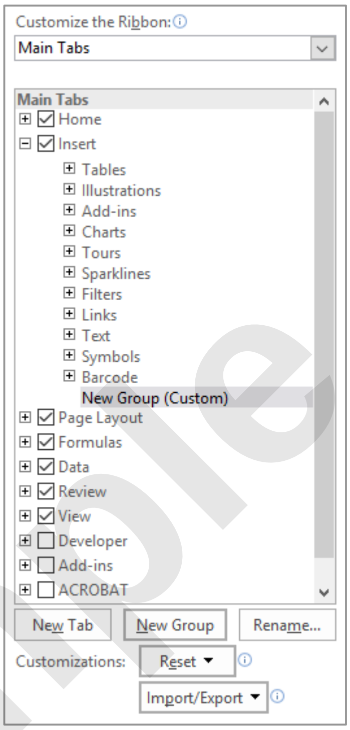
Open File

Before starting this exercise you MUST ensure that Excel has started…

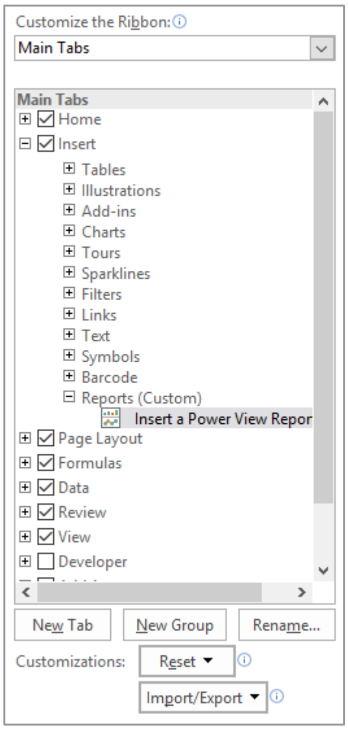
1. Click on the ***File*** tab, then click on ***Options*** to display the ***Excel Options*** dialog box
2. Click on ***Customise Ribbon*** to display options for customising the ribbon
3. In the right pane, click on ***Insert*** to select it, then click on **[New Group]**

   We will add the command to a new group on the Insert tab…
4. In the right pane, right-click on ***New Group (Custom)*** and select **Rename** to display the ***Rename*** dialog box
5. Type **Reports**, then click on **[OK]** to apply this name to the new group
6. Click on the drop arrow under ***Choose commands from***, then select **Commands Not in the Ribbon** to display commands in the left pane that are not already on the ribbon
7. In the left pane, scroll down and click on ***Insert a Power View Report***, then click on **[Add]** to add it to the new group on the ***Insert*** tab
8. Click on **[OK]** to return to the workbook, then click on the ***Insert*** tab

   The Power View command appears in the new Reports group at the right end of the ribbon

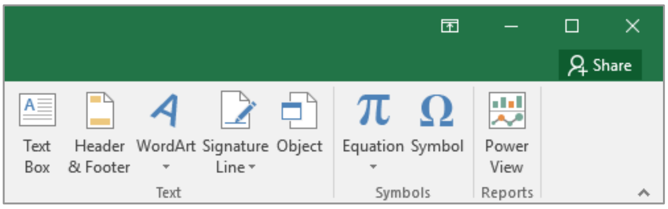


3



7

8



For Your Reference…

To ***add Power View*** to the ***ribbon***:

1. Click on the ***File*** tab, click on ***Options***, then click on ***Customise Ribbon***
2. Click on the required tab and group in the right pane
3. Click on ***Insert a Power View Report*** in the left pane, click on **[Add]**, then click on **[OK]**

Handy to Know…

- The ***Power View*** add-in is only available to you if you are using ***Office Professional Plus*** or ***Office 365 Professional Plus***.

CREATING A POWER VIEW SHEET

A ***Power View*** report is created on a special ***Power View*** sheet – it's a bit like having a chart on a chart sheet. When you insert a ***Power View*** report using the ***Insert*** tab, a new sheet will be created with a new ***Power View*** visualisation *object* on it. A ***Power View Fields*** pane will appear with the *fields* (columns) shown from the data listing you have selected for the view.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file Power View_1.xlsx…

1 Click in cell ***A4***

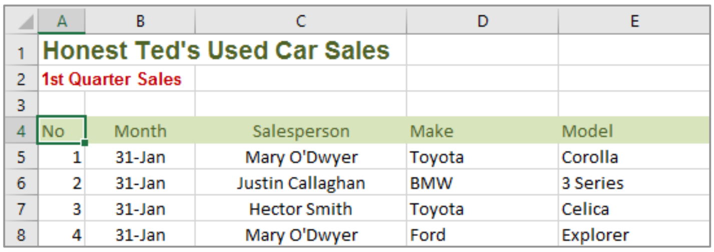
This is the first cell in the list of data. You can actually click anywhere in the list to create a Power View report…

2 Click on the ***Insert*** tab, then click on ***Power View*** in the ***Reports*** group

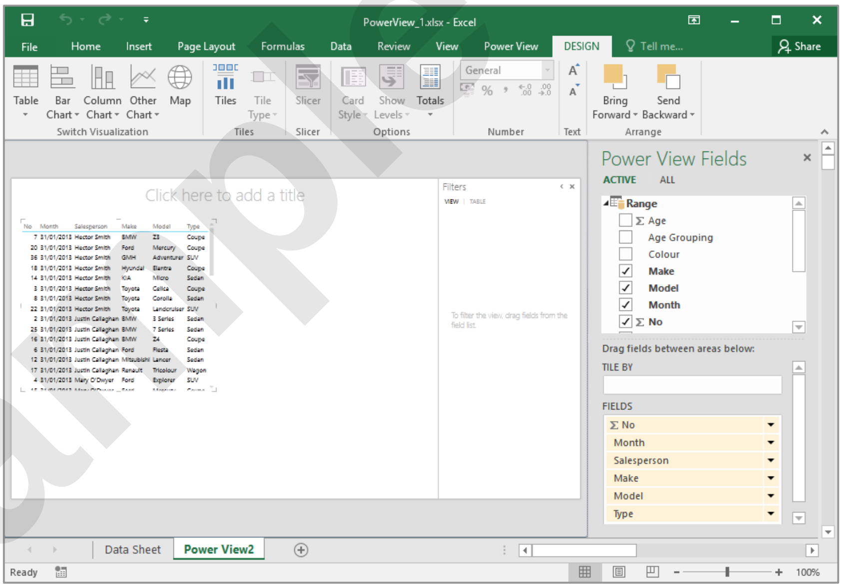
After a few moments a new Power View sheet will appear with its initial interpretation of a visualisation based on the data from the selected list.

If a message is displayed notifying you that Power View requires a current version of Silverlight, follow the prompts to install or update Silverlight, then click Reload to try again

1



	A	B	C	D	E
1	Honest Ted's Used Car Sales				
2	1st Quarter Sales				
3					
4	No	Month	Salesperson	Make	Model
5	1	31-Jan	Mary O'Dwyer	Toyota	Corolla
6	2	31-Jan	Justin Callaghan	BMW	3 Series
7	3	31-Jan	Hector Smith	Toyota	Celica
8	4	31-Jan	Mary O'Dwyer	Ford	Explorer



2 *The table that appears in the Power View sheet above is known as a visualisation object. Selection handles (that allow you to resize the object) appear around it when it is selected. Also, when it is selected additional commands appear on a DESIGN tab. At the right you'll see the Power View Fields pane – the fields that are ticked are the ones currently in use in the select visualisation object at the left.*

For Your Reference…

To ***create*** a ***new Power View sheet***:

1. Click in any cell of a list
2. Click on the ***Insert*** tab, then click on ***Power View*** in the ***Reports*** group

Handy to Know…

- To connect to an external source, you can use the ***Power Pivot*** add-in to create a ***Data Model*** within the workbook. When you create a ***Power View*** report in a workbook that has a ***Data Model*** the report will automatically connect up with the ***Data Model***.

WORKING WITH A POWER VIEW OBJECT

Power View reports are made up of ***visualisations*** that appear in the ***Power View*** sheet. These visualisations are ***objects*** and you can have multiple visualisation objects on a ***Power View*** sheet, which can enable you to make complex dashboards. When a visualisation object is selected, *handles* will appear around it and appropriate commands will appear on the ribbon.

Try This Yourself:

Same File

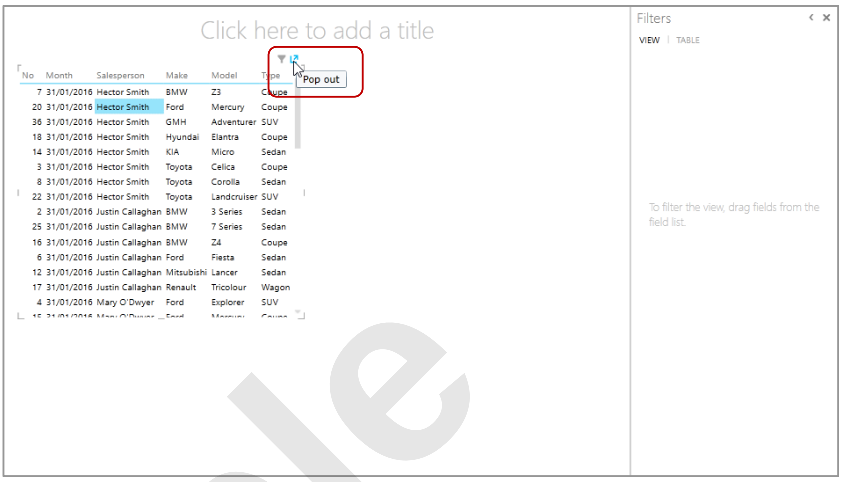
Continue using the previous file with this exercise, or open the file Power View_2.xlsx...

1. Click to the right of the table in the ***Power View*** report to deselect it

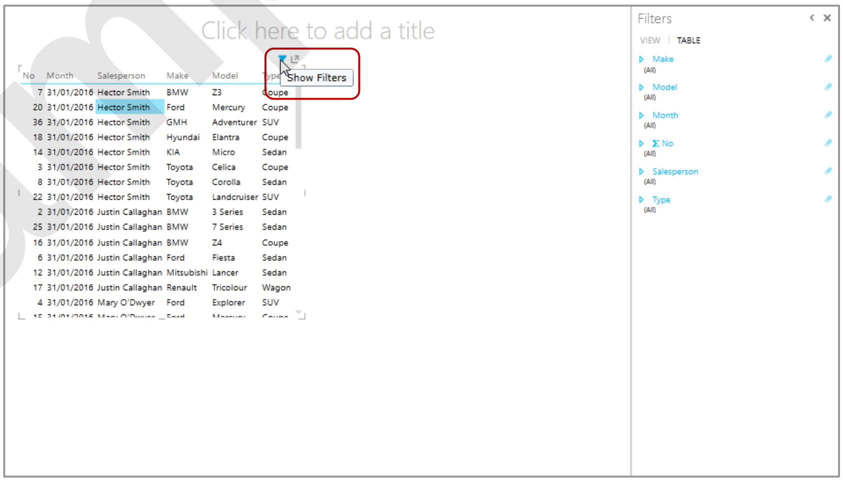
   The selection handles around the table object will disappear and the DESIGN tab will no longer be available…

2. Click anywhere on the table to select it again
3. Point to the table, then click on ***Pop out*** as shown to expand the table into the available space
4. Point to the table, then click on ***Pop in*** to shrink the table again
5. Point to the table, then click on ***Show Filters*** to see how the data is filtered
6. Click on ***VIEW*** directly under ***Filters*** to show filters for the view rather than for the table

   There are no filters currently applied to the view



3



5

For Your Reference…

To ***work*** with a ***Power View object***:

1. Select the ***Power View*** object
2. Point to a selected object to see the ***Pop out*** tool and the ***Show Filters*** tool

Handy to Know…

- You can resize a visualisation object by dragging its handles. This will enable you to see more of the records (*rows*) or the fields (*columns*).

Working With Power View Fields

The selection of ***Power View*** fields at the right of the sheet determine what will appear in the visualisation object at the left. Unlike ***PivotTables*** however, the fields do not form a rows and columns structure. The fields are more like a ***stack***, and each item placed into the stack will appear in the object in the order in which it is stacked.

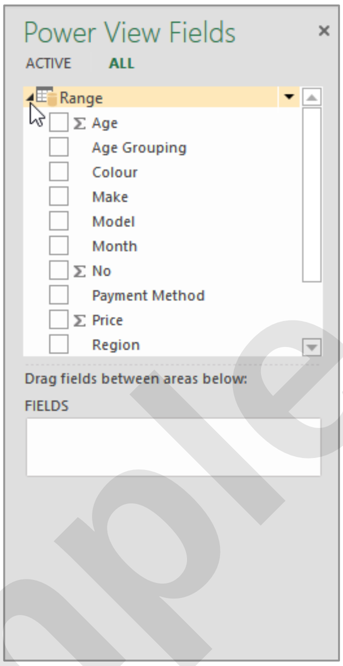
Try This Yourself:

Same File

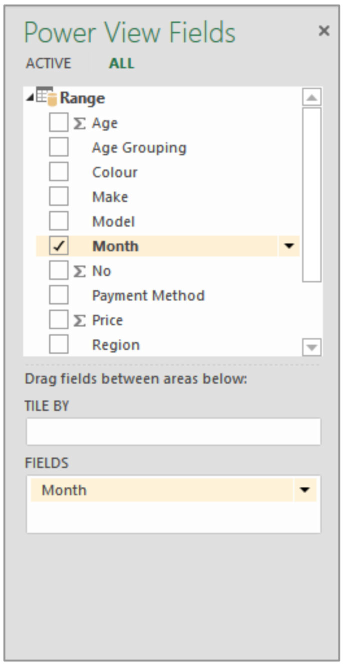
Continue using the previous file with this exercise, or open the file Power View_3.xlsx...

1. If necessary, click in the table to select it and display the fields in the ***Power View Fields*** pane
2. Click in the checkbox for each of the ticked fields to remove the ticks in order to remove all of the fields from the ***Power View*** object
3. If necessary, click on the white arrow at the left of ***Range*** in the fields pane to expand the field list again
4. Click on the checkbox for ***Month*** to display each month (end) included in the table
5. Click on the checkbox for ***Salesperson*** to display each salesperson for each month
6. Click on the checkbox for ***Price*** to see a sum of sales for each salesperson for each month
7. Remove the ticks then try each of the following:

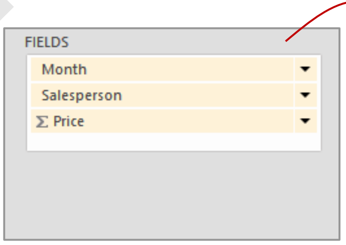
Salesperson, Month, Price
Make, Price
Price, Make
Type, Price
Payment Method, Price
Age Grouping, Price



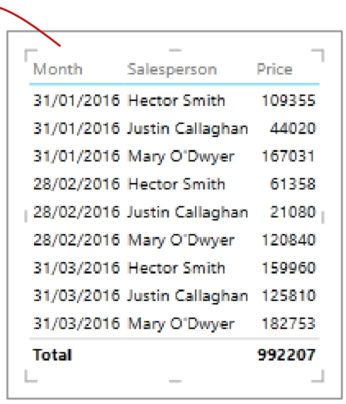
3



4



6 *The order of the stack shown in FIELDS above determines the column order of the table*



Month	Salesperson	Price
31/01/2016	Hector Smith	109355
31/01/2016	Justin Callaghan	44020
31/01/2016	Mary O'Dwyer	167031
28/02/2016	Hector Smith	61358
28/02/2016	Justin Callaghan	21080
28/02/2016	Mary O'Dwyer	120840
31/03/2016	Hector Smith	159960
31/03/2016	Justin Callaghan	125810
31/03/2016	Mary O'Dwyer	182753
Total		992207

For Your Reference…

To ***use fields*** in the ***Power View report***:

1. Click on the checkbox next to the desired field in the field pane so it is ticked, or
2. Drag the field from the list to the desired position in the stack

Handy to Know…

- The order in which the fields are used determines the sorting order in the table.
- You can also drag the fields from the field list into the stack. This is handy when you want to insert a field in the middle of the stack.

REARRANGING AND SORTING FIELDS

You can add or remove fields from the ***Power View*** sheet by ticking or unticking the field in the field pane. You can also drag the fields on or off the field stack shown in the ***FIELDS*** area on the pane. Normally, the order in which fields appear in the stack determines the sort order in the view, but you can override this by clicking on the field headings in the table view.

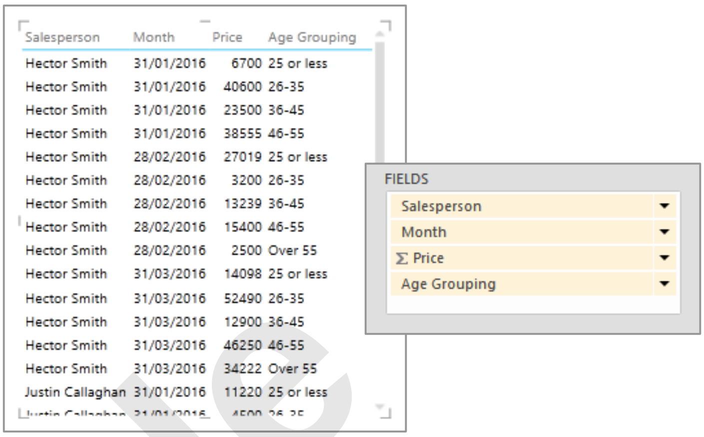
Try This Yourself:

Same File

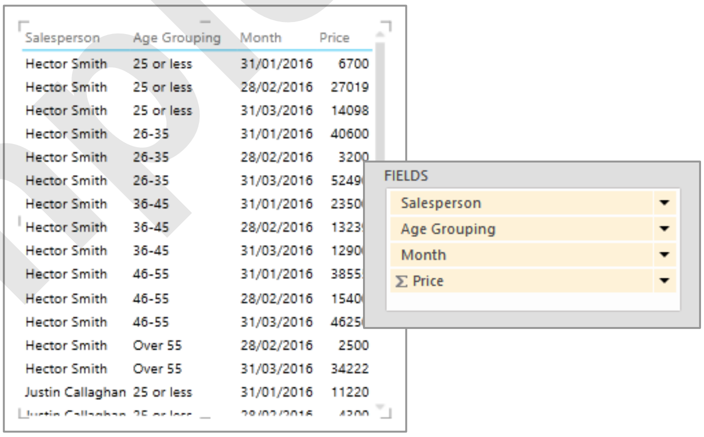
Continue using the previous file with this exercise, or open the file Power View_4.xlsx...

1. Select the table, remove all of the ticks in ***Power View Fields***, then tick the following (in this order): ***Salesperson***, ***Month***, ***Price***
2. Place a tick in ***Age Grouping*** to add this field to the selections
3. Click on ***Age Grouping*** in the ***FIELDS*** stack, then drag it up to below ***Salesperson***
4. Click on ***Month***, then drag it up to below ***Salesperson***
5. Point to the ***Age Grouping*** field heading in the table, then click once to sort it
6. Click the heading again to sort in descending order
7. Click on the ***Month*** heading to sort by month
8. Click on the ***Salesperson*** heading to sort by salesperson

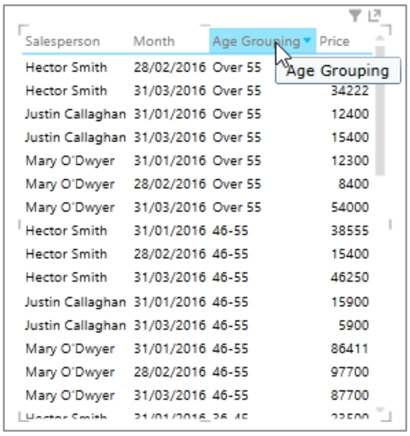
2



3



5



For Your Reference…

To ***rearrange*** and ***sort fields***:

- Tick the checkbox next to the fields in the ***Power View Fields*** pane to add them to the table
- Click and drag the fields on or off the ***FIELDS*** stack
- Click on the heading in the table to sort it

Handy to Know…

- A small triangle appears next to a field name in the visualisation table to indicate the direction of the sort. An up triangle indicates an ascending sort, while a down triangle indicates a descending sort.

Working With Measure Fields

Fields in ***Power View*** are either *measure* or *non-measure* fields. Numeric fields are usually, but not always, measure fields. A ***measure*** field is a special type of field used to aggregate with operations such as *SUM*, *COUNT*, or *AVERAGE*. In ***Power View,*** fields that are measure fields have a special character (e.g. sigma ∑ is used for *SUM* operations) to the left of the field name.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Power View_5.xlsx...

1. Remove all of the ticks in the ***Power View Fields*** pane, then tick the following: ***Month***, ***Payment Method***, ***Price***, ***No***

   The No field really just identifies the transaction number and has nothing to do with values as such. Yet it has been summed because it is a measure field…

2. Click on the drop arrow to the right of the ***No*** field in the ***FIELDS*** pane

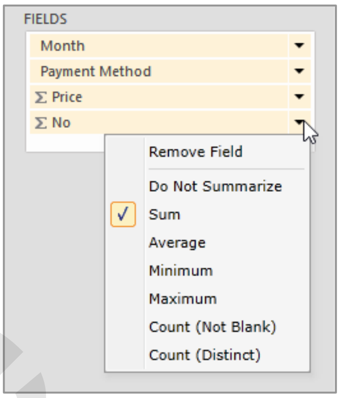
3. Select **Count (Not Blank)** to *count* the transactions rather than *sum* them

4. Click on the drop arrow next to ***Price*** and select **Average** to see the *average* prices rather than the *sum*

1

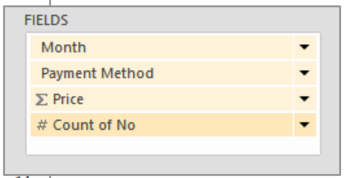
Month	Payment Method	Price	No
31/01/2016	Bank Cheque	125456	150
31/01/2016	Cash	13850	53
31/01/2016	Credit Card	153100	101
31/01/2016	Personal Cheque	28000	21
28/02/2016	Bank Cheque	97000	454
28/02/2016	Cash	14120	263
28/02/2016	Credit Card	81918	493
28/02/2016	Personal Cheque	10240	118
31/03/2016	Bank Cheque	167073	1417
31/03/2016	Cash	10100	341
31/03/2016	Credit Card	199540	1107
31/03/2016	Personal Cheque	91810	735
Total		992207	5253

2



3

Month	Payment Method	Price	Count of No
31/01/2016	Bank Cheque	125456	10
31/01/2016	Cash	13850	5
31/01/2016	Credit Card	153100	8
31/01/2016	Personal Cheque	28000	
28/02/2016	Bank Cheque	97000	
28/02/2016	Cash	14120	
28/02/2016	Credit Card	81918	
28/02/2016	Personal Cheque	10240	
31/03/2016	Bank Cheque	167073	
31/03/2016	Cash	10100	
31/03/2016	Credit Card	199540	14
31/03/2016	Personal Cheque	91810	9
Total		992207	102



4

Month	Payment Method	Average of Price	Count of No
31/01/2016	Bank Cheque	12545.6	10
31/01/2016	Cash	2770	5
31/01/2016	Credit Card	19137.5	8
31/01/2016	Personal Cheque	14000	2
28/02/2016	Bank Cheque	8818.18181818182	11
28/02/2016	Cash	2353.33333333333	6
28/02/2016	Credit Card	6826.5	12
28/02/2016	Personal Cheque	3413.33333333333	3
31/03/2016	Bank Cheque	9281.83333333333	18
31/03/2016	Cash	2525	4
31/03/2016	Credit Card	14252.8571428571	14
31/03/2016	Personal Cheque	10201.1111111111	9
Total		9727.51960784314	102

For Your Reference…

To ***work*** with ***measure fields***:

1. Click on the drop arrow next to the field name in the ***FIELDS*** stack
2. Choose the appropriate setting for the field

Handy to Know…

- You can make a field a non-measure field by using the ***Do Not Summarise*** option in the drop list.
- The ***Count (Distinct)*** setting will count only the first instance of duplicate data in a field. For example if there are 5 people called *Smith*, only 1 will be returned in the count.

FORMATTING POWER VIEW DATA

Power View fields appear unformatted even though their data source originals may have formatting applied to them. Basic ***formatting*** commands are available on the ***DESIGN*** tab when a visualisation object is selected. These formatting commands allow you to change the formatting of numbers and the overall appearance of the text – but they are limited.

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file Power View_6.xlsx...

1. Click on the first value in the ***Average of Price*** column in the table
2. Click on the ***DESIGN*** tab and click on ***Comma Style*** in the ***Number*** group to format the numbers
3. Click on the drop arrow that has appeared next to ***Accounting*** in the ***Number*** group and select **Currency** to display a currency sign next to the numbers
4. Click on the first value in ***Month***, click on the drop arrow that has appeared next to ***Short Date*** in the ***Number*** group and select **Long Date**
5. Click once on ***Increase Font Size*** in the ***Text*** group to increase the overall font size

2

Month	Payment Method	Average of Price	Count of No
31/01/2016	Bank Cheque	12,545.60	10
31/01/2016	Cash	2,770.00	5
31/01/2016	Credit Card	19,137.50	8
31/01/2016	Personal Cheque	14,000.00	2
28/02/2016	Bank Cheque	8,818.18	11
28/02/2016	Cash	2,353.33	6
28/02/2016	Credit Card	6,826.50	12
28/02/2016	Personal Cheque	3,413.33	3
31/03/2016	Bank Cheque	9,281.83	18
31/03/2016	Cash	2,525.00	4
31/03/2016	Credit Card	14,252.86	14
31/03/2016	Personal Cheque	10,201.11	9
Total		**9,727.52**	**102**

3

Month	Payment Method	Average of Price	Count of No
31/01/2016	Bank Cheque	$12,545.60	10
31/01/2016	Cash	$2,770.00	5
31/01/2016	Credit Card	$19,137.50	8
31/01/2016	Personal Cheque	$14,000.00	2
28/02/2016	Bank Cheque	$8,818.18	11
28/02/2016	Cash	$2,353.33	6
28/02/2016	Credit Card	$6,826.50	12
28/02/2016	Personal Cheque	$3,413.33	3
31/03/2016	Bank Cheque	$9,281.83	18
31/03/2016	Cash	$2,525.00	4
31/03/2016	Credit Card	$14,252.86	14
31/03/2016	Personal Cheque	$10,201.11	9
Total		**$9,727.52**	**102**

4

Month	Payment Method	Average of Price	Count of No
Sunday,...	Bank Cheque	$12,545.60	10
Sunday,...	Cash	$2,770.00	5
Sunday,...	Credit Card	$19,137.50	8
Sunday,...	Personal Cheque	$14,000.00	2
Sunday,...	Bank Cheque	$8,818.18	11
Sunday,...	Cash	$2,353.33	6
Sunday,...	Credit Card	$6,826.50	12
Sunday,...	Personal Cheque	$3,413.33	3
Thursday,...	Bank Cheque	$9,281.83	18
Thursday,...	Cash	$2,525.00	4
Thursday,...	Credit Card	$14,252.86	14
Thursday,...	Personal Cheque	$10,201.11	9
Total		**$9,727.52**	**102**

For Your Reference…

To ***format Power View table data***:

1. Click on a value in the field to be formatted
2. Choose the appropriate formatting option from the ***DESIGN*** tab

Handy to Know…

- ***Power View*** is an add-in to Excel – it is not actually part of Excel and has been developed in isolation to Excel. Don't expect the same level of rich formatting features in ***Power View*** as you have in Excel.

TILING DATA IN POWER VIEW

Tiling in ***Power View*** is a useful way of viewing data that has been categorised, by grouping data on a particular field. When a field has been tiled each of its unique data records appears in a scrolling list. As you select each record, other data relating to that record is grouped and presented on screen for you.

Try This Yourself:

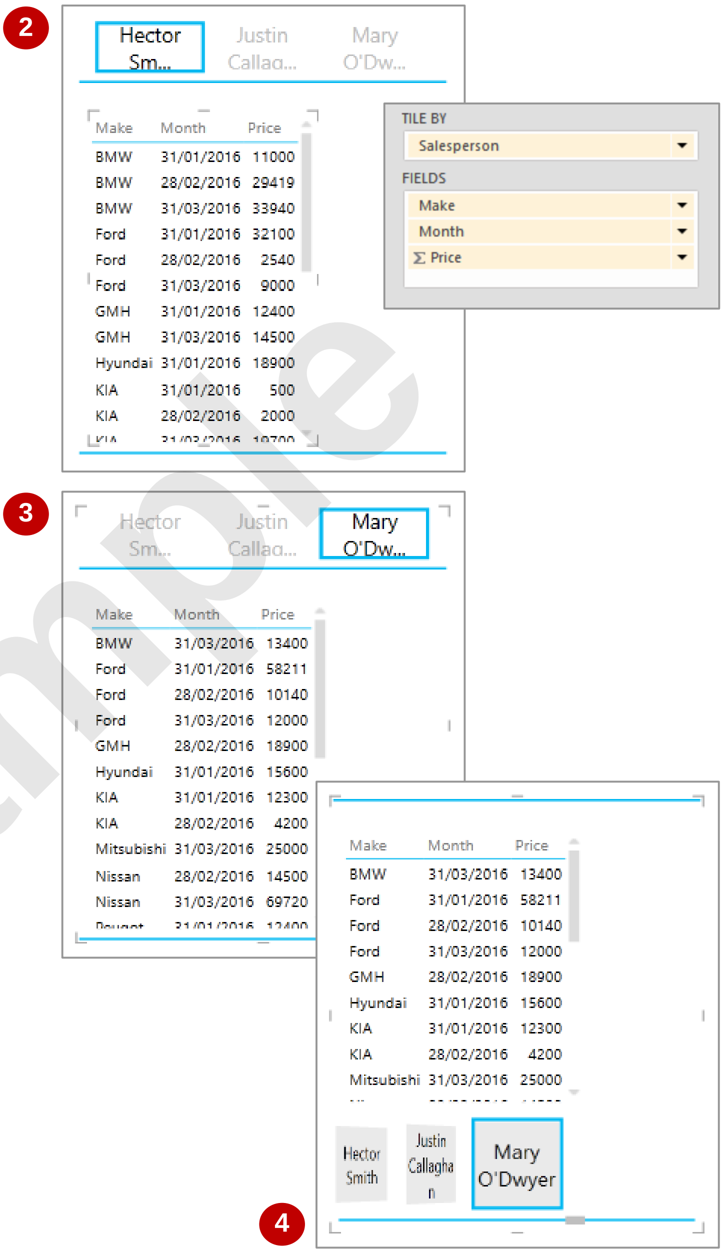
Same File

Continue using the previous file with this exercise, or open the file Power View_7.xlsx...

1. Remove all of the ticks in ***Power View Fields***, then tick the following: ***Salesperson***, ***Make***, ***Month***, ***Price***
2. Click on ***Salesperson*** in ***FIELDS*** and drag it up to the ***TILE BY*** box

   The names of the 3 salespeople will now appear as tiles at the top of the report…
3. Click on each of the names in turn to see the sales that each have made

   You may want to drag the edge of the object down to see the totals better…
4. Click on the ***DESIGN*** tab, click on ***Tile Type*** in the ***Tiles*** group and click on ***Tile Flow*** to see the tiles arranged at the bottom of the report
5. Click on the drop arrow to the right of ***Salesperson*** in ***TILE BY*** and click on ***Remove Field***



For Your Reference…

To ***tile data*** in ***Power View***:

1. Drag the desired tiling field into the ***TILE BY*** area in the ***Power View Fields*** pane
2. Click on the various tiles to see the data for that tile record

Handy to Know…

- You can only tile one field in a visualisation object at a time. However, there is nothing stopping you creating another visualisation object and tiling that too.

FILTERING IN POWER VIEW

The ***Power View*** sheet provides access to a very useful ***filtering*** pane. This pane allows you to select specific data to show. The process is relatively simple and straightforward as each unique example of data that can be filtered is displayed with a tick box. Ticking a box applies a filter on that data. The default shows no ticks meaning that all data will be seen.

Try This Yourself:

Same File

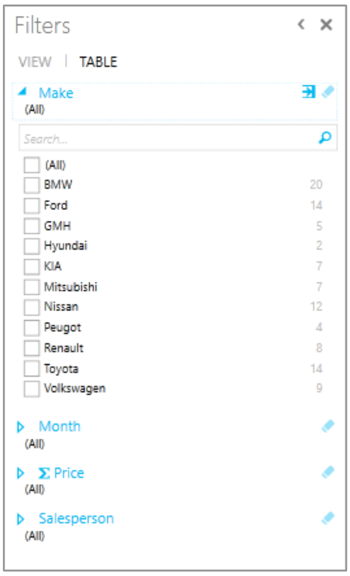
Continue using the previous file with this exercise, or open the file Power View_8.xlsx...

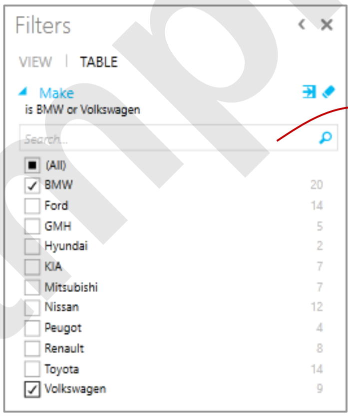
1. Remove all of the ticks in the ***Power View Fields***, then tick the following: ***Salesperson***, ***Make***, ***Month***, ***Price***
2. Drag ***Salesperson*** from ***FIELDS*** up to ***TILE BY***
3. Point to the table, then click on the ***Show Filters*** icon to see the ***Filters*** pane
4. Click on the arrow to the left of ***Make*** to see a list of filter options
5. Click in the tick box for ***BMW***, then ***Volkswagen*** to work with only these makes
6. Click on the tile for ***Justin Callaghan***, then ***Mary O'Dwyer*** to see their sales of these vehicles

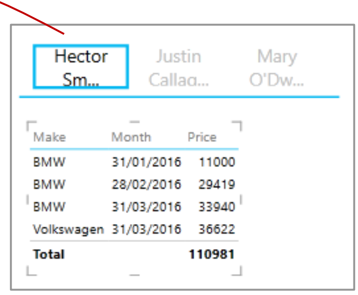
   You'll notice that the view of the filter settings has disappeared…
7. Click in the data, then click on ***TABLE*** in the ***Filters*** pane
8. Click on the arrow to the left of ***Make***, then click in the box next to ***All*** until it is empty to clear all filters

3

4

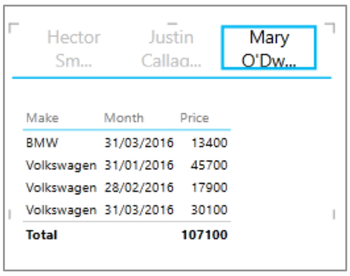






5

6



For Your Reference…

To ***filter*** the ***data*** in ***Power View***:

1. Point to the table, then click on the ***Show Filters*** icon
2. Click on the arrow to the left of the field to filter
3. Tick the options to filter with

Handy to Know…

- You can also see the ***Filters*** pane by clicking on the ***Filters Area*** command in the ***View*** group on the ***Power View*** tab on the ribbon.