Advanced PBI Reports

Sample manual - first two chapters



Manual 1226 - 173 pages -

TABLE OF CONTENTS (1 of 5)

ADVANCED TABLES	Page
Showing Images in Tables	7
URLs in Tables	8
Designating Columns as URLs Displaying Other Fields as Links	8 9
Sorting by Multiple Columns	10
Preventing Data Aggregation	11
Preventing Summarising for Single Fields Changing the Default Summarisation Options	11 11
	ADVANCED TABLES Showing Images in Tables URLs in Tables Designating Columns as URLs Displaying Other Fields as Links Sorting by Multiple Columns Preventing Data Aggregation Preventing Summarising for Single Fields Changing the Default Summarisation Options

2	ADVANCED SLICERS	Page
2.1	Sync Slicers	12
	What are Sync Slicers?	12
	Viewing Sync Slicers	12
	What the Symbols Mean	13
	Grouping Slicers	13
2.2	Applying/Clearing All Slicers	14
	How Applying/Clearing Slicers Works	14
	Adding the Buttons	14
	Showing a Pending Icon	15
2.3	Tricks with Slicers	16
	Changing Date and Numeric Slicers	16
	Slicer Interactions	16

3	FIELD PARAMETERS	Page
3.1	Our Example	17
3.2	Creating Field Parameters	18
3.3	Using Field Parameters	19
	Viewing and Editing the Parameter	19
	Improving your Slicer Referencing Field Parameters in Visuals	19 20
	Referencing the Field Parameter in a Visual Title	20

4	NUMERIC RANGE PARAMETERS	Page
4.1	Our Example	21
	The Steps to Follow	21
4.2	Creating and Using Numeric Range Parameters	22
	Step 1 – Create the Numeric Range Parameter	22
	Step 2 – Customise the Slicer	22
	Step 3 – Create a Quick Measure to Show your Data	24
	Step 4 – Display your Measure in a Visual	25

5	CONDITIONAL FORMATTING	Page
5.1	Conditional Formatting	26
5.2	Applying Conditional Formatting	27
	Setting Conditional Formatting Changing Conditional Formatting	27 27
5.3	Gradient Effects	28
	Adding a Middle Colour	28
5.4	Rules-Based Conditional Formatting	29
5.5	Formatting Using Field Values	30
5.6	Data Bars	31
5.7	Displaying Icons	32

6	DYNAMIC FORMATTING	Page
6.1	Our Example	33
6.2	Creating our Example	34
	Creating our Card Applying Title Dynamically Formatting Applying Other Dynamic Formatting Copying our Visual	34 35 36 36



TABLE OF CONTENTS (2 of 5)

7	TOOLTIPS	Page
7.1	Overview	37
7.2	Legacy vs Modern Tooltips	38
7.3	Basic Tooltips	39
	Applying Basic Tooltips Formatting Tooltips Standardising Tooltip Formatting Adding Fields to Tooltips	39 39 40 41
7.4	Static Report Page Tooltips	42
	Step 1 – Create the Tooltip Page Step 2 – Setting the Page Size Step 3 – Hiding your Report Step 4 – Creating the Tooltip Report Step 5 – Assigning a Report Page to a Tooltip	42 43 43 43 43 44
7.5	Dynamic Report Page Tooltips	45
	Step 1 – Creating the Tooltip Page Step 2 – Adding Content to the Tooltip Page	45 45
	Step 3 – Assigning Fields to the Tooltip Report Page	46
	Step 4 – Choosing By Category or Summarized	46
	Step 5 – Choosing whether to Keep Filters	47
	Step 6 – Assigning your Tooltip Report Page to a Visual	47
	Step 7 – Customising the Title	48
7.6	Visual Header (Help) Tooltips	49
	Step 1 – Creating the Tooltip Page Step 2 – Creating the Report Page for the Tooltin	49 49
	Step 3 – Assigning your Page to the Visual Header	50

STATISTICAL CHARTS	Page
Types of Statistical Chart	51
Trend Lines	52
The Combine Series Option	52
Showing Forecasts	53
Reference Lines	54
Adding a Reference Line Formatting a Reference Line Deleting Reference Lines	54 55 55 55
Anomalies and Expected Ranges	56
Showing the Expected Range Showing Anomalies Explanatory Fields	56 57 57
	STATISTICAL CHARTS Types of Statistical Chart Trend Lines The Combine Series Option Showing Forecasts Reference Lines Adding a Reference Line Formatting a Reference Line Deleting Reference Lines Anomalies and Expected Ranges Showing the Expected Range Showing Anomalies Explanatory Fields

9	DECOMPOSITION TREE	Page
9.1	Overview	58
9.2	Creating and Using	59
	Creating a Decomposition Tree Using a Decomposition Tree Removing Unwanted Levels Expand and Collapse Options Locking Levels	59 59 60 60 60
9.3	Formatting Decomposition Trees	62
	Title and Subtitle Tree Density Changing the Connectors Formatting the Data Bars	62 62 63
9.4	AI Splits	64
	Turning AI Splits Off Absolute Splits Relative Splits	64 64 65

10	KEY INFLUENCERS	Page
10.1	Creating a Key Influencers Visual	66
	Using Multiple Explanation Fields	67
	Changing the Analysis Type	67
	Binning Values	68
	Displaying a Count of Values	69
	The Expand By Option	70
10.2	Top Segments	70
	Viewing Top Segments	71
	Drilling into a Segment	71

11	ADVANCED CHARTS	Page
11.1	Ribbon Charts	72
11.2	Funnel Charts	72
11.3	Waterfall Charts	73
	Parts of a Waterfall Chart	74
	Creating a Basic Waterfall Chart	75
	Showing Breakdowns	75

TABLE OF CONTENTS (3 of 5)

12	QUICK MEASURES	Page
12.1	What are Measures?	76
	Ways to Create Measures	76
12.2	Creating Normal Measures	76
	Step 1 - Creating a Measures Table Step 2 – Adding a Measure	77 77
12.3	Creating Quick Measures	78
	Step 1 – Adding a Quick Measure Step 2 - Choosing the Calculation Type and Base Value	78 78
	Step 3 - Specify any Filtered Value	79
	Step 4 - Viewing and Tidying Up your Quick Measure	79
12.4	Quick Measures using Copilot	80
	Problems with Copilot Quick Measures	80
12.5	Example 1: Listing Selected Items	81
	Creating the Slicer Selection Quick Measure	81
	Displaying the Slicer Selection	82
	Creating a Measure to Show the Visual Title	82
	Showing a Dynamic Title	82
12.6	Example 2: Line Chart Averages	83
	Creating the Base Measures	83
	Reviewing the DAX	84
	The Final Chart	04 84
12.7	Example 3: Running Totals	85

13	Q&A VISUALS	Page
13.1	The Q&A Visual	86
	Creating a Q&A Visual	86
	Using a Q&A Visual	86
	Ambiguous Terms	87
	Making the Suggested Visual Permanent	87
13.2	Formatting Q&A Visuals	88
13.3	Improving the Q&A Experience	89
	Q&A Setup	89
	Adding Synonyms Directly	90
	Adding Synonyms by Teaching Q&A	91
	Adding Suggested Questions	92

14	NARRATIVES AND EXPLANATIONS	Page
14.1	Smart Narratives	93
	What are Smart Narratives? Creating a Smart Narrative Formatting Values Generated	93 93 94
14.2	Explaining Changes	94 95

15	BUTTONS AND SHAPES	Page
15.1	Overview	96
	Types of Clickable Objects Types of Action	96 96
15.2	Adding Clickable Shapes	97
15.3	Adding Clickable Images	97
15.4	Adding Clickable Buttons	99
	Adding the Button	99
	Setting Default, Hover, Selection and Disabled Effects	99
	Formatting Buttons	100

16	BOOKMARKS	Page
16.1	Examples of Bookmarks	101
16.2	Our Case Study	102
	Planning the Bookmarks Needed	102
16.3	Creating Bookmarks	103
	Step 1 - Naming your Visuals Step 2 - Displaying the Bookmarks Pane Step 3 - Creating Bookmarks	103 104 104
16.4	Configuring your Bookmarks	105
	Step 1 – Data Settings Step 2 – Display Settings Step 3 – Update the Bookmark Step 4 - Linking to your Bookmarks	105 105 106 106
16.5	Linking to Pages using Bookmarks	107
	Creating the Home Bookmark	107
16.6	Bookmark Navigators	108
	Assigning Bookmarks to Groups Adding a Bookmark Navigator Formatting the Selected Bookmark Controlling Deselection Behaviour	108 109 109 110



TABLE OF CONTENTS (4 of 5)

Page

17 IDEAS FOR BOOKMARKS

17.1	Idea 1 - Default Slicer Values	111
	Creating the Slicers and Action Button Setting your Default Slicers Creating and Customising your Bookmark Attaching the Bookmark to your Action Button	111 112 112 112
17.2	Idea 2 - Pictures to Filter Charts	113
	Setting the Scene Setting the Bookmarks to Filter Attaching the Bookmarks to the Images	113 114 114
17.3	ldea 3 - Sort Icons	115
	Creating the Buttons Creating the Bookmarks Configuring the Bookmarks	115 116 116
17.4	Idea 4 - Pop-Up Buttons	117
	Creating Each Help Message Creating the Bookmarks Assigning Actions to the Bookmarks	117 118 118
17.5	ldea 5 - Slide-out Filters	119
	The Source for this Idea Creating the Visuals Creating the Bookmarks Creating the Action Buttons	119 120 120 120

18 PAGE NAVIGATION Page 18.1 121 Overview 18.2 122 **Page Navigators** 122 Creating Page Navigators Formatting Page Navigators 123 Displaying Page Navigators as Grids 123 18.3 Simple Custom Page Navigators 124 18.4 **Dynamic Page Navigation** 125 Step 1 – Creating (and Editing) the Table 125 Step 2 – Creating the Slicer 126 Step 3 – Creating the Button 126 Step 4 – Setting the Button's Action and 126 Tooltip Step 5 – Showing your Menu on All 127 Pages

19	ADVANCED DRILL-THROUGH	
19.1	19.1 Our Example	
19.2	0.2 Creating the Basic Drill-Through	
	Creating the Required Pages and Visuals Setting the Drill-Through Field(s) Controlling Filtering Hiding Drill-through Filters	129 129 129 130
	Creating a Back Button	131
19.3	Three Ways to Drill Through	132
	Method 1 - Delayed Tooltips Method 2 – Right-Mouse Menu Method 3 – Enabling Drill-Through	132 132 132
19.4	Creating a Drill-Through Button	133
	Creating the Buttons Configuring each Button's Disabled Appearance	133 134
	Creating a Measure for Each Enabled Button's Text	134
	Showing this Measure's Text on Each Button	135
19.5	Conditionally Disabling Buttons	136
19.6	Categorised versus Summarised	136
19.7	Cross-Report Drill-through	137
	Step 1 – Enable Cross-Report Drill- through	138
	Step 2 – Create a Drill-through Target Report	138
	Step 3 – Publish the Reports	139
	Step 4 – Test the Drill-through Feature	139

20 **CUSTOM VISUALS** Page 20.1 **Examples of Custom Visuals** 140 20.2 Adding Custom Visuals 141 20.3 142 Possible Disadvantages of Custom Visuals Some Formatting Features not Supported 142 Difficulty of Use 142 Cost and Reliability 142 20.4 Example 1 - Word Cloud 143 20.5 144 Example 2 – Play Axis How it Works 144 Setting the Play Axis Slicer Field 144 Animation Settings 145 Formatting the Caption 145 20.6 Example 3 - Aquarium 145 20.7 Example 4 – Cylindrical Gauge 147

TABLE OF CONTENTS (5 of 5)

21	INFOGRAPHICS	Page
21.1	Assembling what you Need	148
21.2	Creating a Picture Chart 1	
	Step 1 – Creating the Chart	149
	Step 2 – Editing the Chart	149
	Step 3 – Adding your Images	150
	Step 4 – Assigning Pictures to Data Series	151
	Step 5 - Stacking your Pictures	151
	Step 6 – Set your Picture Unit Size	152
	Step 7 - Adding Text Labels	153

22	SYNOPTIC PANELS	Page
22.1	Overview	154
22.2	Creating the Image Map	155
	Adding an Image Filling In your Picture (Colour Dropper) Filling in your Picture (Drawing Shapes) Naming the Areas Saving your Image	155 156 156 157 157
22.3	Creating Synoptic Panels	157
22.4	Formatting Synoptic Panels	159
	The Toolbar Colours Data Labels Using States to Show Colours	159 159 160 161

23	MOBILE VIEW	Page
23.1	Avoiding Mobile View	162
	The Power BI App Changing your Canvas Size	162 162
23.2	Using Mobile View	163

24	THEMES	Page
24.1	Changing Themes	164
	Choosing an Existing Theme Importing a Theme	164 165
24.2	Creating a Corporate Theme (Easy Way)	166
	Step 1 – Getting a Starting Point	166
	Step 2 – Tweaking your Theme	166
	Step 3 - Saving your Theme	167
24.3	Creating a Corporate Theme (Hard Way)	168
	Step 1 – Understand the Main Theme Parts	168
	Step 2 – Loading your Theme in a JSON Editor	169
	Step 3 – Saving your Changes	169
	Step 4 – Making Themes More Specific	170



CHAPTER 1 - ADVANCED TABLES

1.1 Showing Images in Tables

It's easy to show images in tables like this one, provided you remember to choose the right data type:

Each picture is displayed using a link to the Wise Owl website – for example: <u>https://www.wiseowl.co.uk/images/icons/pbi/new/amphibian.png</u>.



To get this to work, follow the steps below:



Note that it's often a good idea to reduce the height of each image:





1.2 URLs in Tables

Designating Columns as URLs

These work in a similar way to images. The first thing you need is to create a table containing one or more different types of links:

Urlld 💌	Url	Notes 💌
1	https://www.wiseowl.co.uk/	The Wise Owl website
2	https://www.lorryspotting.com/	For lorry spotters everywhere
3	mailto:sales@wiseowl.co.uk	Email Wise Owl
4	ftp://completely-invented.com	A made up FTP address

This table contains two website addresses, an email link and an FTP site address.

You can then designate one of the columns as a URL:

a) Select the column which gives the URL to link to. b) Choose this option on the Column tools tab which appears in the Power BI Desktop ribbon to designate this as a clickable hyperlink.				
Image: Structure Structure Format Text Image: Structure Formatting Image: Structure For long spotters everywhere Image: Structure Image: Structure <	∑ Summarization Don't summarize Data category WesURI Pn Uncategorized Address Place City County State or Province Postal code Country Continent Latitude Longitude Web URL			
Urild Uril Notes 1 https://www.wiseowl.co.uk/ The Wise Owl website 2 https://www.lorryspotting.com/ For lorry spotters everywhere 3 mailto:sales@wiseowl.co.uk Ewail Wise Owl 4 ftp://completely-inted.com A made up FTP address	c) If you create a table based on this data, you can then click on any of the links (for example, this one would open your mail client, such as Outlook).			
Urild Uri Notes 1 The Wise Owl website 2 For lorry spotters everywhere 3 Email Wise Owl 4 A made up FTP address	display each URL as an icon (Power BI will do its best to e one) by setting this property for your table:			



Displaying Other Fields as Links

Rather than displaying a URL as clickable, it's often better to make some other column in your table give a link to a website or email address:

Urlld 💌	Url	Notes	Link 💌		
1	https://www.wiseowl.co.uk/	The Wise Owl website	Wise Owl		
2	https://www.lorryspotting.com/	For lorry spotters everywhere	Lorries!		
3	mailto:sales@wiseowl.co.uk	Email Wise Owl	Email us		
4	ftp://completely-invented.com	A made up FTP address	FTP site		
Here we've added a field to our table of URLs giving a description of each link					

Link	Notes			
Email us	Email Wise Owl			
FTP site	A made up FTP address			
Lorries!	For lorry spotters everywhere			
Wise Owl	The Wise Owl website			
and formatted this to appear as a clickable hyperlink.				

To do this you set the **Web URL** property of a field to be a hyperlink column:







1.3 Sorting by Multiple Columns

You can sort by more than one column as shown below:

For this example we've sorted the data:

- In reverse alphabetical order by region name; then ٠
- Within this, in reverse alphabetical order by • environment name.

Region	Environment	Average qty
Yorkshire & Humberside	Water	2.33
Yorkshire & Humberside	Land	2.29
Yorkshire & Humberside	Air	2.39
West Midlands	Water	2.36
West Midlands	Land	2.32
West Midlands	Air	2.15
South West	Water	2.06
South West	Land	2.28
South West	Air	2 38

To do this, first click once on the main column you want to sort by (click a second time to reverse the sort order):

by this column.

_	≁	Region	Enviro
		Yorkshire & Humberside	Air
		Yorkshire & Humberside	Land
		Yorkshire & Humberside	Water
		Wost Midlands	Air

Now hold down the Shift key and click	Click a second time		Region	Environment	Average qty
on each subsequent column that you	(with the Shift key		Yorkshire & Humberside	Water	2.33
want to sort by:	still held down) to		Yorkshire & Humberside	Land	2.29
······································	reverse the sort order	ſ	Yorkshire & Humberside	Air	2.39
	for any subsequent		West Midlands	Water	2.36
	column		West Midlands	Land	2.32
	column.		West Midlands	Air	2.15



To return to normal sorting just click at the top of any column without holding down the Shift key.

A downward arrow shows that

you're sorting in reverse order



1.4 Preventing Data Aggregation

By default Power BI often treats numerical fields as numbers (and aggregates them) but you can get round this either for a single table or by changing the default field setting.

Shop	Үеаг				
Altrinchan	2023	~			
Sales for this centre					
Product	Sum of Quantity	Sum of Price			
Englebert	1	£3.95			
Imogen	12	£11.97			
Yoko	1	£12.99			

Here Power BI auto product, but what if	omatically s we want to	sums the tw o list each	vo nu sale r	merica ow se	al fields for each parately to get this?
		Sales for this c	entre		
	Product	Quantity	Price		
	Englebert		1	£3.95	
	Imogen		2	£3.99	
	Imogen		3	£3.99	
	Imogen		7	£3.99	
	Yoko		1	f12.99	

Preventing Summarising for Single Fields

You can turn off summarising for single fields like this:



b) Power BI now groups the data by each product's price and quantity, rather than adding these numbers together.

	Product	Quantity	Pric	e
-	Englebert		1	£3.95
	Imogen		2	£3.99
	Imogen		3	£3.99

Changing the Default Summarisation Options

Here are two ways to force Power BI to group data by a field by default:



However, you could also change the data type of a numerical column to text. This will mean that it is left-aligned by default, and it will be impossible to aggregate it!



\$

4

CHAPTER 2 - ADVANCED SLICERS

2.1 Sync Slicers

What are Sync Slicers?

Sync slicers let you repeat slicers that you've created on every page (or selected pages) of a report:



Viewing Sync Slicers

You can configure sync slicers as follows:





What the Symbols Mean

For our example, here's what you'd choose:





The sync slicer feature is one of the buggier parts of Power BI. A particular problem is when you apply a sync slicer to a page and then change your mind and un-apply it. Power BI will behave as if there is still a hidden slicer on this page: the best solution is to create a new page, copy the visuals from the old page to the new one and then delete the old, original page (this gets round the problem).

Grouping Slicers

For those who think sync slicers aren't already complicated enough to understand, you can use sync slicer **Advanced options** to create slicer *groups*:



Select each of the slicers you
want to synchronise in turn

... and assign exactly the same group name to each. In theory the slicers should now be in step with each other, although like so many things to do with sync slicers this doesn't always seem to work in practice.

$ \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! $
Enter a group name to sync selection to any other visuals with that group name
HebitatSlicers
Sync field changes to other slicers
 Sync filter changes to other slicers



2.2 Applying/Clearing All Slicers

How Applying/Clearing Slicers Works

Refreshing all your visuals every time you change a slicer's filtering can take a while. You can add buttons to accumulate all the changes you've made, and apply (or clear) them in one go:



Adding the Buttons

To add these buttons:

a) Choose to add one of the buttons from the Power BI Insert menu (here we're adding a button to apply any slicer changes the user has made).

b)



Apply formatting changes to the **Default**, **On hover** and **Disabled** settings of each button to control how it appears (see the separate chapter on buttons for how to do this generically for all buttons using templates).





Showing a Pending Icon

If you've made a change to a slicer but not applied it, you can show a Slicer header pending icon: > Text The slicer header shows a dark blue icon to show that a change is pending, and also some explanatory text. > Border > Background Choose a region Choose a habitat In Wise Owl limbo In Wise Owl limbo Pending icon On London Forest Color Sales by town and product \sim TownName Kylie Rheinhardt Transparency 0 % 0 C You can control how (and whether) this pending icon appears in the Slicer header Position section of a slicer's formatting properties. Here we've moved the icon to appear to Left of text the left of the text and changed the text colour, wording and tooltip. Size 0 10 px



On

 \sim

On

Show tooltip

Tooltip text

Label text

In Wise Owl limbo

You need to click on the button at the bottom to apply these changes

2.3 Tricks with Slicers

Changing Date and Numeric Slicers



To make this change, tell Power BI to stop making your slicers *responsive*:

Untick this option in each slicer's general formatting properties pane. Because the slicer is no longer responding to different screen sizes, Power BI is forced to stop drawing circles (at least, that's how the author interprets this).

> Alt text
✓ Advanced options
Maintain layer order

Slicer Interactions

How one slicer affects another depends on the configuration of your table relationships:































What we do!

		Basic training	Advanced training	Systems / consultancy
e	Microsoft Excel VBA macros	2	<u>*</u>	2
Offi	Office Scripts Microsoft Access	2		
BI, etc	Power BI and DAX	<u>.</u>		
Power]	Power Apps Power Automate (both)			
	SQL	2	2	
erver	Reporting Services	2	<u>.</u>	
2L Se	Report Builder		*	**
Ň	Integration Services	<u>.</u>	<u>.</u>	<u>*</u>
	Analysis Services	<u></u>		
	Visual C#	1	2 4	≥ 4
D	VB programming	M	<u>M</u>	
Codin	MySQL			-
	Python	*	*	



