NEWSLETTER #93 - August 2020

UCKDOWN LOCKDOWN www.sumproduct.com | www.sumproduct.com/thought

Much of the world may be in lockdown

but not this newsletter. We continue to see if we can make a monthly newsletter require a ream of paper for printing!

Microsoft didn't announce two new functions this month – but they have been spotted out in the wilds of the Microsoft 365 Beta Channel: we let you know what we've figured out about ARRAYTOTEXT and VALUETOTEXT. Have you got what it text to read about them ..?

We take another look at Excel Money this month as we find out more about this, albeit it may be of only limited global interest, given its current focus on the US (and then it seems for only certain versions of Excel) - but for the future, who knows?

Aside from the insider knowledge on the Windows Insider channels, we also have our monthly regulars Beat the Boredom, Visual Basics, Power Pivot Principles, Power Query Pointers, Power BI Updates, the A to Z of Excel Functions (read before they EXPire), Keyboard Shortcuts et al.

Happy reading and remember: stay safe, stay happy, stay healthy.

Until next month.

Liam Bastick, Managing Director, SumProduct



New Excel Functions: ARRAYTOTEXT and VALUETOTEXT

Have you got what it text to succeed with Excel..? Imagine you had a list of countries, selected randomly:

	А	В	С
1			
2			
3		Country	
4		Australia	
5		Brazil	
6		China	
7		France	
8		Germany	
9		Hungary	
10		Japan	
11		New Zealand	
12		Tunisia	
13		United States	
14			
1			

If I wanted to put these into a "grammatical" list, I
could simply use the TEXTJOIN function, <i>viz</i> .

	А	В	С	D	E	F	G	Н	1
1									
2									
3		Country							
4		Australia							
5		Brazil							
6		China							
7		France							
8		Germany							
9		Hungary							
10		Japan							
11		New Zealand							
12		Tunisia							
13		United States							
14									
15		Australia, Braz	il, China, Fr	ance, Germ	any, Hungar	y, Japan, Ne	w Zealand,	Tunisia, Unit	ed States
16									
17		=TEXTJOIN(", '	,,B4:B13)						



=TEXTJOIN(", ",,B4:B13)

is a very elegant way to combine all items into a punctuated list. That's great, but let's complicate it. Instead of doing this, imagine I had converted these country names to the Geography Data Type, by highlighting the cells and changing them:

Auto	Save 💽 🗄 🖌) • (° • % • 10 =		Book1 - Exe	el	I
File	Home Insert	Draw Page Layout	Formulas Data	Review View	v Developer Ad	d-ins Hel
Get Data ~		Table/ Recent nge Sources Connections	Refresh Properti	cs 🗌	Stocks Geograp	hy Z
B4		• : ×	🗸 🏂 Aus	stralia		
	А	В	С	D	E	F
1						
2						
3		Country				
4		Australia				
5		Brazil				
6		China				
7		France				
8		Germany				
9		Hungary				
10		Japan				
11		New Zealand				
12		Tunisia				
13		United States				
14						
15						

This causes a problem for our previous formula:

	А	В	С
1			
2			
3		Country	
4		⑪Australia	
5		印Brazil	
6		⑪China	
7			
8		⑪Germany	
9		⑪Hungary	
10		⑪Japan	
11			
12		⑪Tunisia	
13		⑪United States	
14			
15		#VALUE!	
16			
17		=TEXTJOIN(", ",,B4:	B13)
10			

To get the formula to work, we need to extract the Name field from the Geography Data Types:

=TEXTJOIN(", ",,B4:B13.Name)

	А	В	С	D	E	F	G	Н	1
1									
2									
3		Country							
4		⑪Australia							
5		印Brazil							
6		⑪China							
7									
8		⑪Germany							
9		⑪Hungary							
10		∭Japan							
11		MNew Zealand							
12		⑪Tunisia							
13		回United States							
14									
15		Australia, Brazil, Ch	ina, France,	Germany, H	lungary, Jap	an, New Zea	aland, Tunis	ia, United St	ates
16									
17		=TEXTJOIN(", ",,B4	B13.Name)						
10									

In fact, as soon as you add the period (.) to the range reference, the world (quite literally!) is your oyster, e.g. if you just type the dot:

=TEXTJOIN(", ",,B4:B13.)

=TEXTJOIN(", ",,B4:B13.)	
TEXTJOIN(delimiter, ignore_empty, text1, [text2]], [text3],)
	<u>^</u>
Abbrevia	ation
Agricultu	ural land (%)
Area	
Armed for	orces size
Sirth rate	e
Capital/I	Major City
Carbon	dioxide emissions
🖉 СРІ	
CPI Char	nge (%)
Currency	y code
Dialling	-

You can see a whole new world opens up. For example:

=TEXTJOIN(", ",,B4:B13.[Carbon dioxide emissions])

	А	В	С	D	E	F	G	Н	1	J	K	L
1												
2												
3		Country										
4												
5		印Brazil										
6		⑪China										
7												
8		⑪Germany										
9		⑪Hungary										
10		∭Japan										
11												
12		⑪Tunisia										
13		DUnited States										
14												
15		361261.839, 52980	08.16, 1029	1926.878, 3	03275.568,	719883.43	8, 42086.15	9, 1214048	.358, 34664	.151, 28829	9.954, 5254	279.285
16												
17		=TEXTJOIN(", ",,B4:	B13.[Carbo	n dioxide en	nissions])							
10												

Introducing ARRAYTOTEXT

The concern is though, for some people, this may be a little too much and they may very well just want to convert what they have to a text list. This is where the first of two new – and unannounced – Excel functions comes to the rescue, the first one being **ARRAYTOTEXT**:

=ARRAYTOTEXT(B4:B13)

	А	В	С	D	E	F	G	Н	I.
1									
2									
3		Country							
4									
5		⑪Brazil							
6		⑪China							
7									
8									
9		⑪Hungary							
10		∭Japan							
11									
12		⑪Tunisia							
13		⑪United States							
14									
15		Australia, Brazil, Ch	ina, France	, Germany, I	Hungary, Jap	oan, New Zea	aland, Tunis	ia, United St	ates
16									
17		=ARRAYTOTEXT(B4	:B13)						
10									

Notice that you neither need to supply the name field explicitly nor the delimiter. In its simplest form, it tries to keep things simple. **ARRAYTOTEXT** follows your locale (regional setting) convention, so, here in Australia, we use a comma as a list delimiter, but this will not always be the case.

ARRAYTOTEXT has two arguments:

ARRAYTOTEXT(array, [format])

The arguments are as follows:

• array is a required argument and represents the array that needs to be listed. This means the range may have more than one row and / or more than one column:

	А	В	C
1			
2			
3		Country	
4		⑪Australia	⑪China
5		印Brazil	即France
6			
7		Australia, China, Br	azil, France
8			
9		=ARRAYTOTEXT(B4	:C5)
10			

Note that the array is listed like reading a book in English – left to right, then down the page. This is different to how INDEX works for example

• format is an optional argument. This has two options:

Format	Description
0 [default]	Concise: list is presented in an easy to read format
1	Strict: list is presented in a strict array format

Here is the same example using the 'Strict' format:		А	В	С	D	
	1					
	2					
	3		Country			
	4			⑪China		
	5		印Brazil	即France		
	6					
	7		{"Australia","China	";"Brazil","F	rance"}	
	8					
	9		=ARRAYTOTEXT(B4	:C5,1)		
	10					

Here, each column is separated by a comma and each column by a semi-colon. The text is also shown contained with quotation marks (double inverted commas).

Unlike the **TEXTJOIN** function, it cannot suppress blanks:

4					
	A	В	С	D	E
1					
2					
3		Country			
4					
5		 Brazil			
6					
7					
8					
9					
10					
11					
12		⑪Tunisia			
13		回United States			
14					
15		Australia, Brazil, , ,	, , , , Tunisia	, United Sta	tes
16					
17		=ARRAYTOTEXT(B4	:B13,0)		
18					

Having said that, **TEXTJOIN** has its own problems with blanks and Geography or Stock Data Types:

	А	В	С	D
1				
2				
3		Country		
4		⑪Australia		
5		印Brazil		
6				
7				
8				
9				
10				
11				
12		⑪Tunisia		
13		回United States		
14				
15		#FIELD!		
16				
17		=TEXTJOIN(", ",,B4:	B13.Name)	
10				

This generates the #FIELD! error, which denotes that you have tried to retrieve data from a non-existent Data Type field (please see here for more details).

It's not just blank ranges that can cause this. With the May release of In Excel's data types gallery, you will be able to find data from featured Power BI Desktop, you can now curate featured tables to be referenced tables in Power BI datasets. For example, you can feature data on in Excel (Insider or Beta build). This can help you easily link your Excel Customers, Product and Suppliers: sheets with authoritative enterprise data.

- Excel			D Sea	arch	
View He	lp Data Str	eamer	Power Bl	Power Pivot	
Featured					
俞		Ġ.	\geq		
Stocks	Geography	Organiz	ation		
Work Data					
\bigotimes	\bigotimes		≽		
Customers	Products	Supp	liers		-
🏈 More Dat	a				
					.:

Additionally, by using Power BI's certified and promoted datasets capabilities, you can enable members of your organisation to find and use relevant / refreshable data to assist in decision-making.

For example, the 'Let's Stop N Shop' cell (below) is linked to curated, organisational data from Power BI, so you can find the contact information for the owner of the store right within your spreadsheet, *viz*.

⇔Let's Stop N Shop	Let's Stop N Shop			-
	Data retrieved 4/14/2020 12:35			
	CustomerID LETSS			
	ContactName Jaime Yorres		t	
	ContactTitle Owner	43		
	Address 87 Polk St. Suite 5			
	City San Francisco			
	Region CA			I
	PostalCode			-
	Powered by Power Bl		((0))	Ρ

This way you may generate "Power BI Data Types". In the example below, Human is a Power BI Data Type that has no name field:

D2		\bullet : \times \checkmark f_x	=TEXTJOIN(","	,,B2:B6.Name)	
	А	В	С	D	E
1					
2		仰 New York	4	#FIELD!	
3		印 Paris			
4		仰 London			
5		仰Tokyo			
6		🔁 human			
7					
8					
9					
10					

The problem with **TEXTJOIN** persists. There are other problems too: the **TEXTJOIN** formula does not consider the end user's locale preferences, for instance.

And There's More: VALUETOTEXT

ARRAYTOTEXT is not the only new, "unintroduced" function. Ladies and gentlemen, may I also present to you **VALUETOTEXT**. This may be seen as a "building block" because it allows you to access the individual text fields returned in **ARRAYTOTEXT** and then use them in other ways.

VALUETOTEXT also has two - hopefully familiar - arguments:

VALUETOTEXT(value, [format])

The arguments are as follows:

- value is a required argument and represents a single value you wish to convert to text. This is why this function is considered a "building block" for ARRAYTOTEXT
- format is an optional argument. This has two options:

Format	Description
0 [default]	Concise: list is presented in an easy to read format
1	Strict: list is presented in a strict array format

In its most basic form, VALUETOTEXT converts a value to text:

	А	В	С	D	E
1					
2					
3		Country			
4		⑪Australia			
5					
6					
7		Australia		=VALUETO	TEXT(B4)
8					
9		"Australia"		=VALUETO	TEXT(B4,1)
10					
4.4					

From this illustration, you may think TEXT(,"General") and VALUETOTEXT are interchangeable. However, they differ in several ways:

- TEXT may be used to change a value to numerous different formats, e.g. "mmm yy" or "\$#,##0". This is not the case with VALUETOTEXT
- TEXT(,"General") will currently produce an #VALUE! error when used with the Stocks and Geography Data Types. VALUETOTEXT has no such issues
- VALUETOTEXT supports additional encodings and may be expanded in the future (i.e. it is "future-proofed")
- VALUETOTEXT is locale friendly.

As a final, more contrived here is how VALUETOTEXT might be used as a building block. Imagine you wanted to put AND rather than a comma between items in a list. You could use

=TEXTJOIN(" and ",,VALUETOTEXT(B4:C5))

	А	В	С	D
1				
2				
3		Country		
4		⑪Australia	⑪China	
5		印Brazil	即France	
6				
7		Australia and China	and Brazil a	and France
8				
9		=TEXTJOIN(" and ",	,VALUETOTI	EXT(B4:C5))
10				

English teachers with a nervous disposition should look away at this point.

Dynamic arrays allow you to enter this formula without the need for CTRL + SHIFT + ENTER.

These two new functions may not appear to represent the most exciting Excel announcement of recent times, but I cannot help thinking these are necessary stepping stones to something greater.

probably being flighted only in Microsoft 365 Beta Channel, but perhaps only to a percentage of Excel Insiders (*i.e.* not everyone in this channel will have it).

With no announcement supporting these functions (yet!), it's not clear as to the availability of these functions. Our best guess is they are I'd keep watching this space for more details...

Excel Virtually Global Over and Out



It's over! 55 hours; 57 sessions; 64 presenters; 712 attendees.

Tuesday 21 to Thursday 23 July was officially Crazy Time here at SumProduct Central. With two of the first four sessions not going ahead due to technical issues (apologies to Bob Umlas and Jon Peltier), attendees might have been forgiven that the event might be headed for significant problems. However, running around like proverbial headless chickens, our staff ensured that these were the last and only major issues of the entire two-and-a-bit-day virtual conference.

We are still receiving feedback, but overall it seemed to be a great

success. From auditing spreadsheets to zeroing in on Power BI, there was something for everyone, of all abilities. And it was all for charity. *Médecins Sans Frontières – Doctors Without Borders and Cancer Research* will both benefit from the proceeds.

On behalf of SumProduct, we just wanted to express our sincerest appreciation and gratitude for everyone's hard efforts (co-organisers, presenters and attendees) in getting this event off the ground. Thank you to you all for making it the event that it was!

Now, who said, when is it on next ..?



Not everyone pictured here presented, but you get the idea!

Making Money in Excel : More Details

Yes, we've mentioned this before - but now we have more information!

As financial modellers, we sometimes forget that for many of our community managing personal finances can be a tad daunting. Microsoft has noticed that millions of people use Excel to track their budgets, manually updating a budget spreadsheet every month with the latest transactions in an extremely manual and time-consuming manner. We previously mentioned this back in May. Perhaps neither appropriate nor targeted at the seasoned pro, so many of whom read this newsletter, Money in Excel has now been generally released for Microsoft 365 Personal and Family subscribers – as long as you are in the United States. This Excel add-in is intended to simplify your day-to-day money decisions to help you stay on track of your longer-term financial goals.

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1	•										
1			C D E F	G H I J	K L M	N O	P Q R	S T U V	W X .	Money in Excel	~ 1
,	Tran	sa	ctions							Accounts Templates For yo	. fatises
2											A second
3										4 new transactions	
4										+ Add an account	
5	Date		Merchant	- Category	- Amount \$	- Account	- Account Number	- Institution		Cash	\$8,756.56
	3/15/20		Adatum	Insurance	-\$36.17	Credit Card	xxxx4099	Woodgrove		Checking	\$2,208.09
	3/14/20		Adatum	Insurance	-\$910.19	Credit Card	xxxx4099	Woodgrove		Woodgrove Banking	1
	3/12/20		Fourth Coffee	Shopping	-\$5.49	Credit Card	xxxx4099	Woodgrove		Credit	\$6,548.47
,	3/8/20		Margie's Travel	Auto/Transport	-\$4.28	Credit Card	xxxx4099	Woodgrove		Woodprove Banking	1
0	3/6/20		Contoso	Transfer	-\$11.19	Credit Card	xxxx4099	Woodgrove		Credit	- \$2,477.21
11	3/6/20		Adventure Works Cycles	Travel	-\$44.34	Credit Card	xxxx4099	Woodgrove		Contoso Credit	- \$2,477.21
2	3/3/20		Margie's Travel	Auto/Transport	-\$63.13	Credit Card	xxxx4099	Woodgrove		Contoso	1
3	3/3/20		Best For You Organics	Groceries	-\$72.76	Credit Card	xxxx4099	Woodgrove			
4	3/3/20		Best For You Organics	Groceries	-\$18.56	Credit Card	xxxx4099	Woodgrove		Investments 529	\$33,282.18
5	2/27/20		Wide World Importers	Shopping	-\$72.76	Credit Card	xxxx4099	Woodgrove		Northwind	10,282.16
6	2/25/20		Margie's Travel	Auto/Transport	-\$63.13	Credit Card	xxxx4099	Woodgrove			
7	2/25/20		Fourth Coffee	Shopping	-\$18.56	Credit Card	xxxx4099	Woodgrove			
18	2/23/20		Relectoud	Bills/Utilities	-\$48.22	Credit Card	xxxx4099	Woodgrove			
9	2/20/20		Contoso	Transfer	-\$20.00	Credit Card	xxxx4099	Woodgrove			
20	2/20/20		Contoso	Transfer	-\$5.74	Credit Card	xxxx4099	Woodgrove			

For U.S. subscribers only (presently), this add-in allows you to securely connect your bank, credit card, investment and loan accounts to Excel, as well as import your transaction and account information automatically into an Excel spreadsheet.

Once downloaded, the software provides on-screen prompts to connect your financial accounts using a secure third-party plugin supported by *Plaid* (this currently supports most major U.S. financial institutions). Once your account information is verified, the workbook will be updated with your latest transaction history ready for you to use.

Once your financial accounts are connected, Money in Excel will automatically import your transaction information from all your accounts

into one workbook. If you click the Update button you'll get the latest snapshot of your transactions and accounts without ever leaving Excel or needing data connectors.

Once your transaction information has been imported into Excel, it's easy to track your spending habits. You may use the '**Snapshot**' sheet to get an instant glimpse of your spending across various categories such as groceries, household items, rent and more. With the built-in graphics, your monthly spending may be summarised in moments. Money in Excel will even alert you to increases in your subscription fees, changes in bank and overdraft charges, or any big purchases that were posted during the month.

		·· E Align ~ 授 Wrap 田 Merge ~ 哈 ト				
Your Monthly Snap	oshot		Choose Month E	lelow	Accounts Templates For you	Settings
See your spending trends month over mo to the right.	nth with easy to read graphs. To sw	itch months, click the blue date box	May 202	D	Updated at 12:24 PM 05/29/20	Up
Previous vs. current month spend \$1,100 less was spent compared to last r \$3,900		This month's top spending Groceries account for 31% of mo		\$806 \$700 \$700 \$379	This month A subscription costs less now Processes Sark fee A \$3.99 AVM fee was charged to WoodON9 on 05/1/20 Big punchase \$462.29 was spent at Adventur	e Work
April	May		Health/Fitness All other Categories Total Spending	\$179 \$36 \$2,800	Cycles on 05/9/20 on Northw Monthly spending is down That's 5193.27 less in May than April, to be exact	.8722
					Last month	
Cumulative spending throughout Compared to April, you spent \$1,100 less					Monthly spending is up April cost \$393.27 more than March	1
55,000 54,000 53,000				\$3,900	A subscription costs more now Wide World Importers is now \$ per month	13.99

Money in Excel is easily customisable, such as adding your own spend categories, copying data into other Excel worksheets and performing your own calculations. You can always create your own charts and tables too.

A B C Recurrin	g Exp	ng expenses. Mone	H I J K				5 T U	V W X	Money in Excel Accounts Templates For you Settin Updated at 1224 PM 00/0020
Most costly recur	ring expense	25	Recurring expenses details						<u> </u>
\$1,440.00			Merchant	Amount \$	Frequency	YTD/Amount	1 Last Date Paid	w	
\$942.00			Video Streaming	\$11.99	Monthly	\$143.88	05/31/20		Net worth
			Adventure Works Cycles	\$78.50	Monthly	\$942.00	05/30/20		
	\$360.00	\$143.88	Humongous Insurance	\$120.00	Monthly	\$1,440.00	05/15/20		Get the latest on how assets and lia add up to your net worth
		\$48.99	Best For You Organics Fourth Coffee	\$30.00 \$4.33	Monthly Weekly	\$360.00	05/15/20 05/15/20		Add to workbook
Humongous Adventure Insurance Works Cycle	Best For You Organics	Video Fourth Streaming Coffee	FOULDI COTTER	54.33	meesty	F	03/13/20		
						1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Upcoming due da			-						Xel
Merchant	\$ Amount	Days to Pay							
Humongous Insuran	₱ \$120.00	F 15							
Video Streaming	₹ \$11.99	F 14							Recurring expenses
Best For You Organi	₽ \$30.00	F 14							
									Keep track of money that's spent o regular basis
									Update workbook
									New templates on the wa
									Stay tuned for new templates, with
									powerful calculations to get you fi

Hopefully, it will be available to other Microsoft 365 users all around the world in due course.

Windows Insider Channels

I know we mainly look at Excel, Power BI and Office products, but for those of us on a Windows Operating System, it is important to stay on top of the way Microsoft releases new Windows builds to us all.

Microsoft has recently announced that they are transitioning and converting their current "ring" model, which is based upon the frequency of builds, to a new channel model that instead concentrates on the quality of builds and better supports parallel coding efforts.

The aim is to make Windows consistent with Office programs, as well as Edge and Teams in the future. The intention is to not only make it clearer for existing Insiders to choose the experience that's right for them, but also for new Insiders to pick the right channel as they join.

It's hard to believe that Microsoft began flighting Windows 10 Insider Preview Builds over five years ago. Back then, Windows Insiders were asked to join one of two rings based upon the frequency of when new builds would be delivered to their device, either "Fast" or "Slow" (plus one):

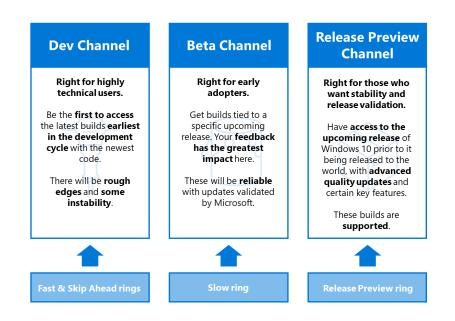
- Insiders who wanted updates the fastest and were comfortable with some rough edges joined the Fast ring
- Insiders who would rather wait for more polished and stable updates joined the Slow ring
- Since early 2016, the Release Preview ring has also been introduced for Insiders who wanted to receive early access to servicing updates on released versions of Windows 10.

Originally, the aim was to flight builds from a single product release. However, as the pace of innovation grew, Microsoft realised the development model had moved on. In the middle of 2019, Insiders were running builds from three different releases (at various stages in the development cycle):

- 1. Fast ring being on 20H1
- 2. Slow ring on 19H2 code
- 3. Release Preview ring on 19H1 code.

The original ring concept had been superseded. Microsoft realised that as they continued to evolve Windows 10, it was critical that Insiders had a flighting option tailored to their needs. Therefore, the focus has shifted from frequency to quality. Insiders may now select a channel that represents the experience they want for their device based upon the quality they are most comfortable with. The frequency of updates will remain unchanged no matter which channel is chosen.

In late June, the Fast ring will become the Dev Channel, the Slow ring will become the Beta Channel, and the Release Preview ring will become the Release Preview Channel.



• **Dev Channel:** this is intended to be ideal for highly technical users. Insiders in the Dev Channel will receive builds that is earliest in a development cycle and will contain the latest work-in-progress code from our engineers. These builds will have rough edges and some instability that could block key activities or require workarounds.

These builds will not be matched to a specific Windows 10 release. New features and OS improvements in this channel will show up in future Windows 10 releases when they are ready. They may be delivered as full OS build updates or servicing releases. Insider feedback here will help Microsoft's engineers with major fixes and changes to the latest code

 Beta Channel: this is intended to be ideal for early adopters. Insiders and IT professionals in the Beta Channel will be able to check out upcoming Windows 10 features, whilst still receiving relatively reliable updates. As a part of the Beta Channel, Insiders will see builds that will be tied to a specific upcoming release, like 20H1 previously. Feedback will still be of great importance here, since it will help Microsoft identify key issues and fix them before a major release

• Release Preview Channel: Insiders and IT professionals in the Release Preview Channel will have access to the upcoming release of Windows 10 prior to it being released to the world, with advanced quality updates and certain key features. These builds will be fully supported by Microsoft. The Release Preview Channel is the one recommended by Microsoft for companies seeking to preview and validate upcoming Windows 10 releases before broad deployment within their organisation.

As the new concept rolls out, Microsoft has stated it reserves the right to rename, reclassify or add new channels as it sees fit.

These new channels are intended to align with Office, where <u>new channel name</u>s were recently announced. Now, those on the Insider programme may make a choice as to which experience they want and have it mean the same thing between Windows and Office. It should be noted that Insiders still need to opt into each Insider Program separately, but this may change in the future.

	Windows	Office
Right for highly technical users and developers. Be the first to access the latest builds earliest in the development cycle with the newest code. There will be rough edges and some instability.	Dev Channel	N/A
Right for early adopters and IT Pros who want more reliable builds that are still in development. See what's coming up next and help validate new features.	Beta Channel	Beta Channel
Right for those who want early access to upcoming releases. Where companies preview and validate upcoming releases before broad deployment. These are supported.	Release Preview Channel	Current or Semi-Annual Preview Channel

For Windows Insiders, the move to channels will be easy. If your device is currently flighting, Microsoft will automatically move your devices based on your current ring to the new channel that best corresponds with that experience. No action is required.

If you are not yet flighting, it is something you can always consider. Simply go to Settings -> Update & Security -> Windows Insider Program and choose the most appropriate channel / experience.

Beat the Boredom Challenge

With many of us currently "working from home" / quarantined, there are only so Zoom / Teams calls you can make before you reach your data limit. Perhaps they should measure data allowance in mugs of coffee. To try and keep our readers engaged, we will continue to reproduce some of our popular **Final Friday Fix** challenges from yesteryear in this and upcoming newsletters. One suggested solution may be found later in this newsletter. Here's this month's...

Abigail Dowd

First appearing in Excel 2013, slicers are a visual filter that can be used to interact with PivotTables, PivotCharts or Tables. They are very popular with end users as they are highly intuitive requiring little more than a quick point and click.

The problem is, there's one tiny issue with slicers. They are great for selecting one or more elements to filter, but if there are many items, searching is cumbersome. *There appears to be no search facility*.

Searching with a Slicer

Sum of Sale (\$	i) Colu	mn Labels 🔄								Name	žΞ	
Row Labels	 East 		No	rth	So	uth	We	est	Grand Total		-	
Laptop	\$	295,176.74	\$	336,336.44	\$	278,241.70	\$	296,814.70	\$ 1,206,569.58	Abigail Bailey		1
Phone	\$	353,698.91	\$	298,889.02	\$	299,192.54	\$	287,517.37	\$ 1,239,297.84	Abigoil Doll		í.
Sofa	\$	301,773.36	\$	319,407.21	\$	296,665.75	\$	310,206.30	\$ 1,228,052.62	Abigail Bell		
Stereo	\$	323,455.01	\$	304,966.69	\$	289,063.75	\$	295,584.66	\$ 1,213,070.11	Abigail Blake		
TV	\$	235,884.09	\$	289,580.50	\$	295,804.09	\$	306,401.96	\$ 1,127,670.64			6.
Grand Total	\$	1,509,988.11	\$ 1	1,549,179.86	\$	1,458,967.83	\$	1,496,524.99	\$ 6,014,660.79	Abigail Cameron		
										Abigail Campbell		
										Abigail Clark		Ì.
										Abigail Coleman		í.

In the example above, wouldn't it be good if you could search for, say, everyone whose surname was "Smith"?

Searching with a Slicer

		umn Labels 🔄	-						Name 🌾	X
Row Labels	- Eas	t	North	So	uth	We	est	Grand Total	smith	2
Laptop	\$	295,176.74	\$ 336,336.44	\$	278,241.70	\$	296,814.70	\$ 1,206,569.58		
Phone	\$	353,698.91	\$ 298,889.02	\$	299,192.54	\$	287,517.37	\$ 1,239,297.84	 Select All Search Results) 	~
Sofa	\$	301,773.36	\$ 319,407.21	\$	296,665.75	\$	310,206.30	\$ 1,228,052.62	Add current selection to filter	
Stereo	\$	323,455.01	\$ 304,966.69	\$	289,063.75	\$	295,584.66	\$ 1,213,070,11	Adam Smith	
TV	\$	235,884.09	\$ 289,580,50	\$	295,804.09	\$	306,401,96	\$ 1,127,670,64		
Grand Total	\$	1.509.988.11	\$ 1,549,179.86	\$ 1	1.458.967.83	\$	1.496.524.99	\$ 6,014,660.79	Amanda Smith	
		.,,	• •,• ••,• •••		.,,		.,,	• • • • • • • • • • • • • • • •		
									Brian Smith	
									Cameron Smith	
									Diane Smith	
									Frank Smith	
										~
									Select Multiple Items	
									OK Car	ncel

Sound easy? Try it. One solution may be found later in this newsletter - but no reading ahead!

Visual Basics

We thought we'd run an elementary series going through the rudiments of Visual Basic for Applications (VBA) as a springboard for newer users. This month, we consider your options when you run into errors.



Last time we were here, we talked about a macro you could use to loop through all of the sheets in a file and unhide them and unprotect them. This presents problems when there are passwords that you're not aware of. If this happens, you get a debug error that looks something like this when it keeps trying to run:

Run-time erro	'1004':				
Unable to set t	he Hidden pro	perty of th	e Range clas	s	

Well, what can we do about it? It depends what do you want it to do, really. Error handling is an important part of VBA because it helps us dictate what you do in these circumstances. Here are some common tools you can use:

On Error Goto <abc>

This is generally followed up somewhere else in your code by the text "**<abc>:**". This line tells Excel that it if it runs into an error, it should jump to that section of your code and run the next statement. This is generally how you may jump out of an error that might cause other parts of your code to have problems.

On Error Goto 0

It seems a little strange, in the context of the last point, but this line undoes the effect of the previous line and causes errors to stop the code and prompt you for instructions. While this stops your code from running smoothly, it alerts you to problems so that you can address them appropriately.

On Error Resume Next

This is a useful but dangerous tool that will ignore any errors and plough on with the next line of code. This should only be used if you expect to have errors occur that will have no follow-up consequences.

Here's how we might use examples of the above to improve our macro code:

```
For Each ws In ActiveWorkbook.Sheets
  ws.Visible = xlSheetVisible
  ws.Activate
  ws.Unprotect
  On Error GoTo NextSheet
  ws.Rows.EntireRow.Hidden = False
  ws.Columns.EntireColumn.Hidden = False
NextSheet:
        On Error GoTo 0
```

Next ws

Now, when a sheet can't be unprotected, it will skip trying to unhide rows and columns, and just move straight onto the next sheet. It's important to note that we have reset the error check so that if another unexpected error occurs, we can ensure that it gets raised just like it should.

More next time.

Power Pivot Principles

We continue our series on the Excel COM add-in, Power Pivot. This month, we look at the ALLEXCEPT function in DAX.

Last month, we discussed the **ALL** function, together with the **CALCULATE** function to sum up values that will not be affected by a filter. Here, we turn the idea on its head with the **ALLEXCEPT** function.

As a refresher, the **ALL** function is often used in conjunction with the **CALCULATE** function, *e.g.*

Measure				?	×
Table name: Sales					~
Measure name: All Months Sa	les				
Description:					
Formula: f_X Check form	ula				
=CALCULATE([Sale	s],ALL(Sales[Order	Date (Month)]))		
Formatting Options					
Category:					
General	Symbol:	\$			~
Number Currency	Decimal places:	2 🜲			
Date TRUE/FALSE	☑ Use 1000 separator (,)				
			OK	Cano	el

This will result in a column that always sums the total sales of the product category, no matter what filter is applied to this field. If we wish to subject other fields: *e.g.* **ProductKey** and **CustomerKey**, to the **ALL** function we can use a function like this:

=CALCULATE([Sales],ALL(Sales[OrderDate (Month)],ALL(Sales[ProductKey]),ALL(Sales[CustomerKey])).

It's pretty simple, but the formula may get unnecessarily long quite quickly. This function will ensure that the **OrderDate**, the **ProductKey** and the **CustomerKey** will not be knocked affected by filters on these fields.

But what if we have a table with 30 fields and we don't want 29 of the fields to be knocked off instead of just three? We would have to write up a formula with 29 ALL functions!

This is where we can use the ALLEXCEPT function. Consider our Sales table once more:

	Produc 🐕 🔽	Order 🐕 🔽	OrderDateKey 🔽	DueDateKey 🔽	Custome 🐕 🔽	Promotio 🐕 🔽	SalesTerritor 🐕 🔽	SalesOrderNumber 🔽
1	87	10-Aug-14 1	20140810	20140822	103	1	9	SO43966
2	98	17-Aug-14 1	20140817	20140829	111	1	9	SO43993
3	82	22-Aug-14 1	20140822	20140903	112	1	9	SO44024

Let's say we don't want to filter any of the fields except for OrderDate. We can use the following CALCULATE and ALLEXCEPT combination:

Measure		?	×
Table name:	Sales		\sim
Measure name:	Measure		
Description:			
Formula: f_X	Check formula		
=CALCUL/	ATE([Sales],ALLEXCEPT(Sales,Sales[OrderDate]))		
Category:			
General Number Currency Date TRUE/FALSE			
	ОК	Cano	el .:

This measure will then allow us to filter all of the other fields, except for the Order Date field in the **Sales** table. Do note the difference in syntax, where the **ALLEXCEPT** function requires us to specify the table first before the field:

ALLEXCEPT(Table, Table[Field])

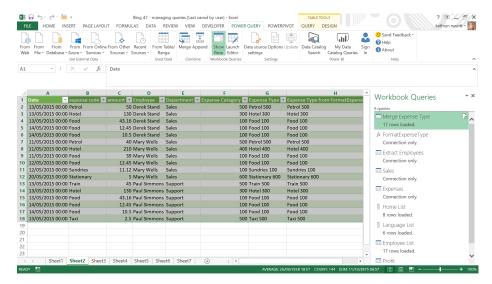
If you think about it, this makes sense. If we are saying we want to only except certain fields we need to specify the set of fields we are talking about - that is, the <u>table</u>.

More Power Pivot Principles next month.

Power Query Pointers

Each month we'll reproduce one of our articles on Power Query (Excel 2010 and 2013) / Get & Transform (Office 365, Excel 2016 and 2019) from www.sumproduct.com/blog. If you wish to read more in the meantime, simply check out our Blog section each Wednesday. This month, we look at the options available to organise queries within a workbook.

When you have spent some time in a particular Excel workbook, transforming and loading data using Power Query, you may find that you have created quite a few different queries. To avoid confusing anyone opening the workbook, whether that is yourself or someone else, there are some techniques you can use. We have already looked at how to get an overview of the connections between queries, but there are other ways you may make it easier to get a quick overview of your queries.



Above, we have a workbook where we have created nine queries – this is obviously a small example, but there is a limit to how much admin anyone wants / needs to see!

The first thing to notice is the 'QUERY' tab within the 'TABLE TOOLS' tab (this is a context specific tab that appears when you click on one or more cells in the loaded table). This only appears when the table has a linked query, and it gives access to a number of options. The 'QUERY' tab will not allow you to access queries that are not linked to your table. For example, if you need to access 'FormatExpenseType', then you would need to select your query and right click to see the options available.

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	Date 🔽 expens						Expense Type from FormatExpense	WOIKBOOK Queries	
	13/05/2015 00:00 Petrol		0 Derek Stand	Sales		IO Petrol 500	Petrol 500	9 queries	_
	13/05/2015 00:00 Hotel		0 Derek Stand	Sales		IO Hotel 300	Hotel 300	Merge Expense Type	Le.
	13/05/2015 00:00 Food		6 Derek Stand	Sales		10 Food 100	Food 100	17 rows loaded.	
	14/05/2015 00:00 Food		5 Derek Stand	Sales		0 Food 100	Food 100	fx FormatExpenseType	
	14/05/2015 00:00 Food 11/05/2015 00:00 Petrol		5 Derek Stand 0 Mary Wells	Sales Sales		10 Food 100 10 Petrol 500	Food 100 Petrol 500		
	11/05/2015 00:00 Petrol 11/05/2015 00:00 Hotel		0 Mary Wells	Sales		0 Hotel 400	Hotel 400	Connection only.	
	11/05/2015 00:00 Food		9 Mary Wells	Sales		10 Food 100	Food 100	Extract Employees	
	12/05/2015 00:00 Food		5 Mary Wells	Sales		10 Food 100	Food 100	Connection only.	
	12/05/2015 00:00 Food 12/05/2015 00:00 Sundri		2 Mary Wells	Sales		0 Sundries 100	Sundries 100	I Sales	
	20/05/2015 00:00 Station		5 Mary Wells	Sales		0 Stationary 600	Stationary 600		
	13/05/2015 00:00 Train		5 Paul Simmons			0 Train 500	Train 500	Connection only.	
	13/05/2015 00:00 Hotel		0 Paul Simmons			0 Hotel 300	Hotel 300	Expenses	
	13/05/2015 00:00 Food		6 Paul Simmon			0 Food 100	Food 100	Connection only.	
	14/05/2015 00:00 Food		5 Paul Simmons		10	0 Food 100	Food 100	Home List	
	14/05/2015 00:00 Food		5 Paul Simmons		10	0 Food 100	Food 100		
	13/05/2015 00:00 Taxi	2.	5 Paul Simmons	Support	50	0 Taxi 500	Taxi 500	8 rows loaded.	
Ì								Language List	
								6 rows loaded.	
								Employee List	
								 17 rows loaded. 	

For those queries linked to your table, you have access to the 'QUERY TAB' containing the main query options, which are grouped into 'Edit', 'Load', 'Reuse', 'Combine' and 'Power BI'. For this example, we are

interested in how you may make your queries easier to understand and use, so we want to look at the 'Properties' in the 'Edit' section:

		To talog	? 道 一 声 × kathryn newitt * <mark>後</mark>
A1 $-$: $\times - f_x$	Date C D	× H • w · t	A solv Queries
1 Date ▼ expense code ▼ 2 13/05/2015 00:00 Petrol	amount 💌 Employee 💌 Der 50 Derek Stand Sale	Query rioperties on romatcypers	ook Queries 🔹 🗙
3 13/05/2015 00:00 Hotel	130 Derek Stand Sale	Name 9 queries	
4 13/05/2015 00:00 Food	43.16 Derek Stand Sale	Merge Expense Type	Expense Type 🛛 🔂 🚬
5 14/05/2015 00:00 Food	12.45 Derek Stand Sale	Description 17 rows	loaded.
6 14/05/2015 00:00 Food	10.5 Derek Stand Sale		ExpenseType
7 11/05/2015 00:00 Petrol	40 Mary Wells Sale	This query merges two neius to provide an expense Type column.	tion only.
8 11/05/2015 00:00 Hotel	210 Mary Wells Sale		*
9 11/05/2015 00:00 Food	39 Mary Wells Sale	III Extract	
10 12/05/2015 00:00 Food	12.45 Mary Wells Sale	Connect	tion only.
11 12/05/2015 00:00 Sundries	11.12 Mary Wells Sale	Fast Data Load ()	
12 20/05/2015 00:00 Stationary	5 Mary Wells Sale	Connect	tion only.
13 13/05/2015 00:00 Train	45 Paul Simmons Sup		· · · · · · · · · · · · · · · · · · ·
14 13/05/2015 00:00 Hotel	130 Paul Simmons Sup	OK Cancel Expense	
15 13/05/2015 00:00 Food	43.16 Paul Simmons Sup	Connect	tion only.
16 14/05/2015 00:00 Food	12.45 Paul Simmons Suppo		ist
17 14/05/2015 00:00 Food	10.5 Paul Simmons Suppo	ort 100 Food 100 Food 100 8 rows la	
18 13/05/2015 00:00 Taxi	2.5 Paul Simmons Suppo	ort 500 Taxi 500 Taxi 500	
19		I Langua	-
20		6 rows le	paded.
21		Employ	ee List
22		17 rows	
23		▼	~
← → Sheet1 Sheet2 Sheet3	3 Sheet4 Sheet5 Sheet6 S	Sheet7 🕀 : 4 🕨 Profit	
READY 🔚		AVERAGE: 26/09/1938 18:57 COUNT: 144 SUM: 11/10/3875 06:57 🏢 [🗐 🛄 🗕 — — 🕂 100%

In this dialog, you may describe your query in more detail, and give it a better name if you wish. There is also a little checkbox for 'Fast Data Load' which is worth a look. This is for those queries that are a priority. As Microsoft puts it:

"The default behaviour(*sic*) is "Background Data Load," but now users can instead choose the "Fast Data Load" mode in the Options dialog. When loading a query using the "Fast Data Load" mode, your query will take less time to load, however, Excel may be unresponsive for long periods of time during the upload."

So basically, it depends upon which is more important to you: running your query or continuing with other tasks. We are going to leave the queries in this particular workbook loading as a background task, but it's good to know we have a choice.

Assuming we have given all our queries nice names and detailed descriptions, is there anything else we can do to make life easier? The answer to this can be found in the right-click options on any query:

Edit	Properties Delete y Edit	LØ 💔 👔		Merge Append Combine	Send To Data Catalog Power BI							
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	13/05/2015 00:00) Derek Stand	Sales	5	00 Petrol 500	Petrol 500		9 que	ries	
	13/05/2015 00:00		130	Derek Stand	Sales	3	00 Hotel 300	Hotel 300		-	Verge Expense Type	R
	13/05/2015 00:00	Food	43.16	Derek Stand	Sales	1	00 Food 100	Food 100			17 rours loaded	
	14/05/2015 00:00			Derek Stand	Sales	1	00 Food 100	Food 100			Сору	
	14/05/2015 00:00	Food	10.5	Derek Stand	Sales	1	00 Food 100	Food 100		fx	Paste	
	11/05/2015 00:00			Mary Wells	Sales	5	00 Petrol 500	Petrol 500			Edit	
	11/05/2015 00:00	Hotel	210	Mary Wells	Sales	4	00 Hotel 400	Hotel 400		m	× Delete	
	11/05/2015 00:00	Food	39	Mary Wells	Sales	1	00 Food 100	Food 100			Rename	
	12/05/2015 00:00	Food	12.45	Mary Wells	Sales	1	00 Food 100	Food 100		1	1 1010110	
	12/05/2015 00:00	Sundries	11.12	Mary Wells	Sales	1	00 Sundries 10	D Sundries 100			Refresh	
2	20/05/2015 00:00	Stationary	5	Mary Wells	Sales	6	00 Stationary 6	00 Stationary 600			Load To	
3	13/05/2015 00:00	Train	45	Paul Simmons	Support	5	00 Train 500	Train 500		_	Duplicate	
L	13/05/2015 00:00	Hotel	130	Paul Simmons	Support	3	00 Hotel 300	Hotel 300			Reference	
5	13/05/2015 00:00	Food	43.16	Paul Simmons	Support	1	00 Food 100	Food 100		1	Merge	
5	14/05/2015 00:00	Food	12.45	Paul Simmons	Support	1	00 Food 100	Food 100			Append	
7	14/05/2015 00:00	Food	10.5	Paul Simmons	Support	1	00 Food 100	Food 100			Send To Data Catalog	
3	13/05/2015 00:00	Taxi	2.5	Paul Simmons	Support	S	00 Taxi 500	Taxi 500			•	
									New Group		Move To Group	
											Move Up	
										m	Move Down	
2											Show the peek	
3									*		Properties	1

There are a number of options towards the bottom of the list that may help. We can move a query up or down the list, or we may keep our queries in groups, which are essentially folders of queries. As we

currently have no groups set up in the workbook, our only option is to create a new one. Therefore, let's put 'Merge Expense Type' into a new group called 'Expense Type Calculations'.

	Blog 47 - managing queries [Last saved by user] - Excel MULAS DATA REVIEW VIEW DEVELOPER POWER QUERY POWERPIVOT	TABLE TOOLS ? IN A S X X X X X X X X X X X X X X X X X X
File HOME INSERI PIACE LATOLI FUM Edit Properties Delete Refresh Load Guery Edit Load - To Load Regression Reg	····	QUERT DESKIN - Kallingin rayona 🦓
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A B C 1 Date ▼ expense code ▼ amount 2 13/05/2015 00:00 Petrol	D Employee Dep Dep So Derek Stand Sak New Group	Morkbook Queries
3 13/05/2015 00:00 Hotel 1 4 13/05/2015 00:00 Food 43.	30 Derek Stand Sak New GrOup 16 Derek Stand Sak Name 45 Derek Stand Sak Expense Type Calculations	9 queries Merge Expense Type 17 rows loaded.
6 14/05/2015 00:00 Food 10 7 11/05/2015 00:00 Petrol	5.5 Derek Stand Sal Description 40 Mary Wells Sal Queries in this group create an Expense Type column for expense	fx FormatExpenseType Connection only.
9 11/05/2015 00:00 Food 10 12/05/2015 00:00 Food 12.	10 Mary Wells Sala 39 Mary Wells Sala 45 Mary Wells Sala	Extract Employees Connection only.
12 20/05/2015 00:00 Stationary	12 Mary Wells Sale 5 Mary Wells Sale 45 Paul Simmons Sup	ncel Connection only.
15 13/05/2015 00:00 Food 43.	30 Paul Simmons Sup 16 Paul Simmons Support 100 Food 100 Food 45 Paul Simmons Support 100 Food 100 Food	
17 14/05/2015 00:00 Food 10 18 13/05/2015 00:00 Taxi 2	Approximation Support D0 Food 100 Food 5.5 Paul Simmons Support 100 Food 100 Food 2.5 Paul Simmons Support 500 Taxi 500 Taxi 500	100 Brows loaded.
19 20 21		Language List 6 rows loaded.
22 23		Employee List
Sheet1 Sheet2 Sheet3 Sheet4		Profit B1857 COUNT: 144 SUM: 11/10/3875 0657

Click 'OK' to create a new group.

FILE HON Edit Properties Query Edit		Load To	T FORMUI Duplicate Reference	-	d REVII		saved by user] - E DEVELOPER	xcel POWER C	QUERY POWERP	TABLE TOOL IVOT QUERY DE	SIGN		? 团 kathiyn i	- E × newitt - ₪
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	5 00:00 Hotel			Derek Star		es		300	Hotel 300	Hotel 300			nse Type Calculations [11
4 13/05/201	5 00:00 Food		43.16	Derek Star	nd Sal	es		100	Food 100	Food 100				
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6 14/05/201	5 00:00 Food		10.5	Derek Star	nd Sal	es		100	Food 100	Food 100		🔲 Me	rge Expense Type	6
7 11/05/201	5 00:00 Petrol		40	Mary Well	s Sal	es		500	Petrol 500	Petrol 500		17 r	ows loaded.	
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9 11/05/201	5 00:00 Food		39	Mary Well	s Sal	25		100	Food 100	Food 100		Other	ir Queries [8]	
10 12/05/201	5 00:00 Food		12.45	Mary Well	s Sal	25		100	Food 100	Food 100		<i>fx</i> For	matExpenseType	
11 12/05/201	5 00:00 Sundrie	s	11.12	Mary Well	s Sal	es		100	Sundries 100	Sundries 100		Con	nection only.	
	5 00:00 Stationa	iry		Mary Well					Stationary 600	Stationary 600		E Date	act Employees	
13 13/05/201				Paul Simm				500	Train 500	Train 500				
	5 00:00 Hotel			Paul Simm					Hotel 300	Hotel 300		Con	nection only.	
	5 00:00 Food			Paul Simm					Food 100	Food 100		💷 Sale	25	
16 14/05/201				Paul Simm					Food 100	Food 100		Con	nection only.	
	5 00:00 Food			Paul Simm					Food 100	Food 100		Exp	· · · · · ·	
	5 00:00 Taxi		2.5	Paul Simm	ions Sup	port	-	500	Taxi 500	Taxi 500				
19												Con	nection only.	
20												Hor	me List	
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	heet1 Sheet2	Sheet3	Sheet4	Sheet5	Sheet6	Sheet7	(+) :	4					ws loaded.	\sim
READY 🔚	Sileetz	Sneets	Sheet4	Sheets	Sneeto	Sneet/				/09/1938 18:57 COUNT:		_		

Not only has the 'Merge Expense Type' been added to our newly created 'Expense Type Calculations' group, but another group, 'Other Queries',

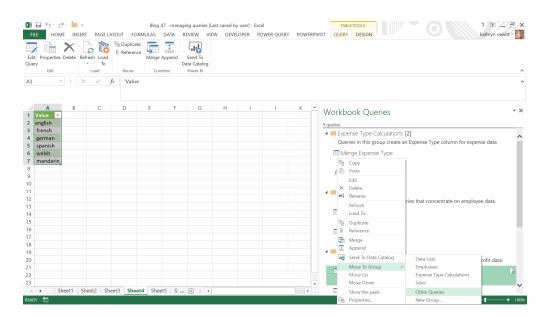
has been created to house the rest of the queries. Next, we want to add the 'FormatExpenseType' function to our new group too:

Ed Qui		C C C C C C C C C C C C C C C C C C C	N	lerge Append Combine	Send To Pata Catalog Power Bl						
1	- : ×	√ fx Da	ate C	D	F	F	G	Н			
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	13/05/2015 00:00 Pet			Derek Stand	Sales		Petrol 500	Petrol 500	9 que		
	13/05/2015 00:00 Hot			Derek Stand	Sales		Hotel 300	Hotel 300			
	13/05/2015 00:00 Foo			Derek Stand	Sales		Food 100	Food 100		Expense Type Ca	
	14/05/2015 00:00 Foo	d	12.45	Derek Stand	Sales	100	Food 100	Food 100		Queries in this gro	up create an E
	14/05/2015 00:00 Foo	d	10.5	Derek Stand	Sales	100	Food 100	Food 100		💷 Merge Expense	e Type
	11/05/2015 00:00 Pet	rol	40	Mary Wells	Sales	500	Petrol 500	Petrol 500		17 rows loaded.	
	11/05/2015 00:00 Hot	el	210	Mary Wells	Sales	400	Hotel 400	Hotel 400			
	11/05/2015 00:00 Foo	d	39	, Mary Wells	Sales	100	Food 100	Food 100	A .	Other Queries [8	3]
)	12/05/2015 00:00 Foc	d	12.45	Mary Wells	Sales	100	Food 100	Food 100		fx FormatExpress	T
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	20/05/2015 00:00 Stat	tionary	5	Mary Wells	Sales	600	Stationary 600	Stationary 600			Paste
	13/05/2015 00:00 Tra	in	45	Paul Simmons	Support	500	Train 500	Train 500		💷 Extract Emp	Invoke
	13/05/2015 00:00 Hot	el	130	Paul Simmons	Support	300	Hotel 300	Hotel 300		Connection	Edit
	13/05/2015 00:00 Foo	d	43.16	Paul Simmons	Support	100	Food 100	Food 100		Sales ×	Delete
	14/05/2015 00:00 Foc	d	12.45	Paul Simmons	Support	100	Food 100	Food 100		Connection	Rename
	14/05/2015 00:00 Foc	d	10.5	Paul Simmons	Support	100	Food 100	Food 100			Refresh
	13/05/2015 00:00 Tax	i	2.5	Paul Simmons	Support	500	Taxi 500	Taxi 500		Expenses	Duplicate
										Connection	
										II Homo List	Send To Data Catalo
									Expense Type O	Calculations	Move To Group
											Move Up
									New Group	1	move op

This time the group appears for us to select; we may continue creating groups for the other queries.

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	13/05/2015 00:00				Sales	500		9 queries
	13/05/2015 00:00				Sales	300		Expense Type Calculations [2]
	13/05/2015 00:00				Sales	100		Queries in this group create an Expense Type column for expense data
	14/05/2015 00:00		£12.45	Derek Stand	Sales	100		
	14/05/2015 00:00				Sales	100		🛄 Merge Expense Type
	11/05/2015 00:00				Sales	500		17 rows loaded.
	11/05/2015 00:00				Sales	400		fx FormatExpenseType
	11/05/2015 00:00				Sales	100		
D	12/05/2015 00:00				Sales	100		Connection only.
1	12/05/2015 00:00		£11.12		Sales	100		🔺 📫 Employees [2]
	20/05/2015 00:00				Sales	600		This group contains those gueries that concentrate on employee data
3	13/05/2015 00:00	Train	£45.00	Paul Simmons	Support	500		
4	13/05/2015 00:00	Hotel	£130.00	Paul Simmons	Support	300		Extract Employees
5	13/05/2015 00:00			Paul Simmons		100		Connection only.
5	14/05/2015 00:00		£12.45	Paul Simmons	Support	100		Employee List
7	14/05/2015 00:00			Paul Simmons		100		17 rows loaded.
	13/05/2015 00:00	Taxi	£2.50	Paul Simmons	Support	500		
9								A 📫 Sales [3]
)								This group includes those queries that provide sales, cost and profit data.
1								III Sales
2								Connection only.
3								

Now all our queries are in groups, and we still have the 'Other Queries' group for new queries.



We also have options available when we select a group:

22 - : × ✓ fx		G Number G	g * Table * Styles * * * * * * * * Filter * Select * Styles Cells Editing	
A B	C D E	F G F	Workbook Queries	~
	amount 💌 Employee 💽 Department 💌 Expen		WOLKDOOK Quelles	
13/05/2015 00:00 Petrol	£50.00 Derek Stand Sales £130.00 Derek Stand Sales	500	9 queries	
13/05/2015 00:00 Hotel 13/05/2015 00:00 Food	£130.00 Derek Stand Sales £43.16 Derek Stand Sales	300	Expense Type Calculations [2]	
14/05/2015 00:00 Food	£12.45 Derek Stand Sales	100	Queries in this group create an Expense Type column for expense	se data
14/05/2015 00:00 Food	£10.50 Derek Stand Sales	100	Merge Expense Type	
11/05/2015 00:00 Petrol	£40.00 Mary Wells Sales	500	17 rows loaded.	
11/05/2015 00:00 Hotel	£210.00 Mary Wells Sales	400		
11/05/2015 00:00 Food	£39.00 Mary Wells Sales	100	<i>f</i> x FormatExpenseType	
12/05/2015 00:00 Food	£12.45 Mary Wells Sales	100	Connection only.	
12/05/2015 00:00 Sundries	£11.12 Mary Wells Sales	100	Employees [2] Employees [2]	
20/05/2015 00:00 Stationary	£5.00 Mary Wells Sales	600	This group contains those Paste n employee	a data
13/05/2015 00:00 Train	£45.00 Paul Simmons Support	500	Refresh	r uata
13/05/2015 00:00 Hotel	£130.00 Paul Simmons Support	300	Extract Employees New Group	
13/05/2015 00:00 Food	£43.16 Paul Simmons Support	100	Connection only. Ungroup	
14/05/2015 00:00 Food	£12.45 Paul Simmons Support	100	Employee List Delete Group	
14/05/2015 00:00 Food	£10.50 Paul Simmons Support	100	17 rows loaded.	
13/05/2015 00:00 Taxi	£2.50 Paul Simmons Support	500		
			Sales [3] Expand All Collapse All	
			This group includes those post and pr	rofit data.
			Move to Top Level	
			Sales	
2			Sales Move To Group	
0 1 2 3 4 • Sheet1 Sheet2 Sheet3	Sheet4 Sheet5 Si (+) : (Sales Move To Group	

We may add the group to another group, either new or existing, which will create subfolders. To undo this, we can 'Move to Top Level' again. We may also ungroup the queries in the selected group. Just be careful when you delete a group though, as it will also delete any queries in your group!

We may also control the order my groups appear in by moving up or down to alter their position in the queries pane.

as				Center - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Image: Solutional Format as Cell Image: Solutional Format as Cell Image: Solutional Format as Cell Solutional Format as Cell Image: Solutional Format as Solution Solutional Format as Cell Solutional Format as Cell Solutional Format as Cell
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	13/05/2015 00:00 Petrol	£50.00 Derek Stand	Sales	500	9 queries
	13/05/2015 00:00 Hotel	£130.00 Derek Stand	Sales	300	A i Sales [4]
	13/05/2015 00:00 Food	£43.16 Derek Stand	Sales	100	This group includes those gueries that provide sales, cost and profit data.
	14/05/2015 00:00 Food	£12.45 Derek Stand	Sales	100	
	14/05/2015 00:00 Food	£10.50 Derek Stand	Sales	100	Expense Type Calculations [2]
	11/05/2015 00:00 Petrol	£40.00 Mary Wells	Sales	500	Queries in this group create an Expense Type column for expense data
	11/05/2015 00:00 Hotel 11/05/2015 00:00 Food	£210.00 Mary Wells £39.00 Mary Wells	Sales Sales	400	Sales
	12/05/2015 00:00 Food	£12.45 Mary Wells	Sales	100	Connection only.
	12/05/2015 00:00 Food 12/05/2015 00:00 Sundries	£12.45 Mary Wells £11.12 Mary Wells	Sales	100	
	20/05/2015 00:00 Stationary	£5.00 Mary Wells	Sales	600	Expenses
	13/05/2015 00:00 Stationary	£45.00 Paul Simmons		500	Connection only.
	13/05/2015 00:00 Hotel	£130.00 Paul Simmons		300	Profit
	13/05/2015 00:00 Food	£43.16 Paul Simmons		100	17 rows loaded
	14/05/2015 00:00 Food	£12.45 Paul Simmons		100	
	14/05/2015 00:00 Food	£10.50 Paul Simmons		100	Employees [2]
	13/05/2015 00:00 Taxi	£2.50 Paul Simmons		500	This group contains those queries that concentrate on employee data
					Data Lists [2]
					This group contains data lists accessed in other gueries
					Uther Queries
21 22					Other Queries

Now my queries are much easier to follow when you come back to this workbook in a few months' time.

More next month!

Power BI Desktop Latest Updates

This month's updates include several enhancements to Q&A, gradient legend support, an ability to further customise slicer header text, the General Availability release for both the relative time filter and Model View enabled for Live Connect, an ability to now launch external tools from Power BI Desktop and more.

Here's the full list of updates:

Reporting

- Gradient legend
- Ability to further customise slicer header text
- Relative time filter is now Generally Available

Analytics

- Enhancements to Q&A:
 - o Field synonyms
 - o Visual renames as suggested synonyms
 - o Orange underlines for ambiguous terms
 - o Updates to Q&A pop-out

Visualisations

- Azure Maps visual (Preview):
 - o Bubble layer
 - o 3D bar chart layer
 - o Reference layer
 - o Custom tile layer
 - o Real-time traffic overlay
- Updates to Multi-Axis Chart by xViz

Modelling

- Support for Excel financial functions
- Model View enabled for Live Connect is now Generally Available

Data Preparation

Global option to disable automatic type detection

Template Apps

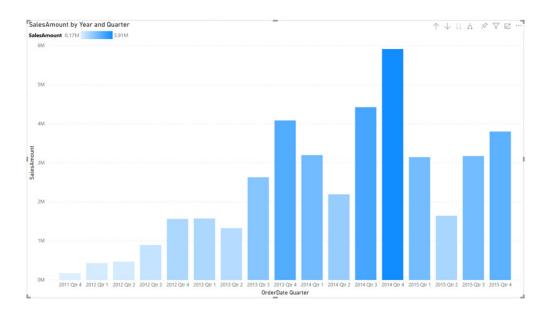
• YouTube Analytics by MAQ Software

Other

- Launch external tools from Power BI Desktop (Preview).
- Let's take a look at each in turn.

Gradient legend

You can now include a legend for data colours that have been conditionally formatted by colour scale. This legend is useful for clarifying the meaning of the colours in a visual to report viewers.



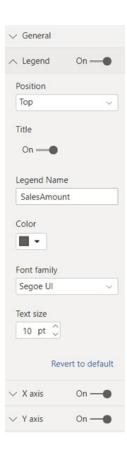
You can find the 'Conditional formatting' dialog in the 'Data colors' card of the Formatting pane.

∧ Data colors
Show all
Off O —
Default color fx
Revert to default

You may use this dialog to set a new rule to format your data along a colour scale:

Default color - Data colors		د
Format by		
Color scale 🗸		
Based on field	Summarization	Default formatting ①
Sum of SalesAmount	Sum 🗸	As zero 🗸
Minimum		Maximum
Lowest value		Highest value
Enter a value		Enter a value
Diverging		
Learn more		OK Cancel

This will enable the Legend card in the Formatting pane. You may enable the gradient legend by toggling it on, then formatting the legend as required.



Do bear in mind that you cannot both conditionally format your data colours and split your data using the Legend field well. This is because the Legend field well already colours your data by category.

The gradient legend feature is enabled for bar, column, and scatter charts, such as:

- Stacked bar chart
- Stacked column chart
- Clustered bar chart
- Clustered column chart
- 100% stacked bar chart
- 100% stacked column chart
- Scatter chart.

Ability to further customise slicer header text

Last month's update heralded the General Availability of the hierarchical slicer, which included enhancements not just for hierarchy scenarios, but general use cases for slicers themselves. This update adds the ability to further customise the slicer header text.

\wedge Slicer header	On —●
Title text	
Type, Platform, Name	ſx

This capability will be mainly beneficial to hierarchical slicer scenarios. For example, let's consider an hierarchical slicer. You may notice that by default the title is based upon the field inputs:

ک 🗗 🗤 Type, Platform, Na	Field
\sim \Box Console	Type $\checkmark imes$
Handheld	Platform $\lor \times$
V 🗌 PC	Name $\checkmark imes$

Now, when you navigate to the Format pane -> Slicer header, you will see that the Title text of the header may be customised:

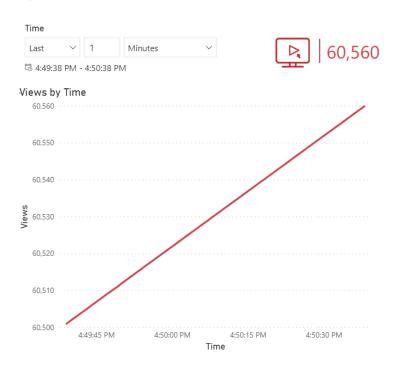
Type, Platform, Na	□ <mark>□ </mark>
Console	\checkmark General
	∧ Slicer header On —●
	Title text Type, Platform, Name

This can be particularly useful when you have several fields in your slicer, and you want to provide a shorter, custom header text (without turning off the slicer header and using visual title setting instead).

∑ ⊮ E …	
Game type	∧ Slicer header On —●
Console Handheld PC	Title text Game type
d	Font color

Relative time filter is now Generally Available

Earlier in the year, Microsoft released a public Preview of the relative time filter, which allowed you to filter to a smaller window of time, such as last one hour or last one minute (no jokes, please).



This feature is now Generally Available.

Enhancements to Q&A

There have been several enhancements to Q&A with this update. These include:

- New field synonyms
- Visual renames as suggested synonyms
- Orange underlines for ambiguous terms
- Updates to Q&A pop-out.

FIELD SYNONYMS

Field synonyms are the newest addition to the Q&A setup, where you may manage the synonyms for tables and fields, and include or exclude specific tables and fields from Q&A. The field synonyms section shows a list of all tables in your data model. Turning off 'Include in Q&A' for a table will hide everything in that table from Q&A. When you expand a

table, you will see the table name and all the fields with their terms and suggested terms. Q&A prioritises terms over suggested terms, so if you want to keep one of the suggested terms, you can use the plus sign to add it to the list of terms. Next to promoting suggested terms, you may also add new terms, delete or reorder them.

Q&A setup Getting started	Field synonyms Add terms people might use as syn	onyms for the fields and tables in your data.			×	CIANNA - A
Field synonyms	A Geo			-		1
Review questions	Name	Terms	Suggested terms	Include in Q&A	ì l	
Teach Q&A Manage terms	E Geo	geo Add +		-	11	
Suggest questions	City	city Add +	$\begin{array}{llllllllllllllllllllllllllllllllllll$	•		
	Region	region Add +	$\begin{array}{llllllllllllllllllllllllllllllllllll$	-		
	Z Revenue per transaction	revenue per transaction Add +	income per transaction $+ \times$ profit per transaction $+ \times$ turnover per transaction $+ \times$	-		
	O This feature is in preview. Learn	more				

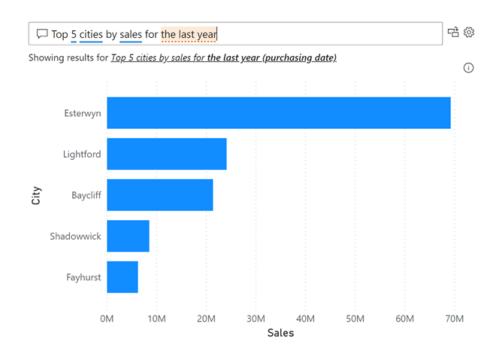
VISUAL RENAMES AS SUGGESTED SYNONYMS

Next to adding common synonyms for field names in the suggested terms, the latest Power BI Desktop update adds field renames from visuals in the report (great English!) to the list of suggested terms. This means that when you change a field name on the axis of a line chart, this

will be added as an alternative to the initial field name. For example, changing the field name '**Prod_cat_L2**' to '**Product category level 2**' on a chart, will add the latter as a suggested synonym.

ORANGE UNDERLINES FOR AMBIGUOUS TERMS

This update introduces a third type of underline to the Q&A question box. In addition to red double underlines for terms that Q&A doesn't understand and blue underlines for terms that Q&A does understand, you will now also see orange dotted underlines for ambiguous terms. An example of an ambiguous term can be when there are two dates in a table *e.g.* 'purchasing date' and 'delivery date'. When asking Q&A a question related to the last year, it might not be clear whether you mean the last year for purchasing or delivery date, in this instance. The new underline formatting helps distinguish this ambiguity so you may adjust your question if needed.



UPDATES TO Q&A POP-OUT

The Q&A pop-out has also been modified. When adding a Q&A button to a report, you will now see the pop-out aligns with the Q&A visual. It also contains any suggested questions you have defined in Q&A setup. Questions that have been saved to existing Q&A buttons will be consolidated under the suggested questions section in Q&A setup.

E	Ask a question about you	e data				×	V Filters	
L	Try one of these to get st						2	
Frai	Cancellations and average revenue per transaction by city	Average purchase size by customer segment	Top 5 cities by sales for the last year	Number of website visits and sales amount by customer	Revenue YoY% by region and brand			
					Show all suggest	ons.		
L								
Month								
2								
L								

Azure Maps visual (Preview)

The Azure Maps visual for Power BI is now available for public Preview and includes the following visualisation layers:

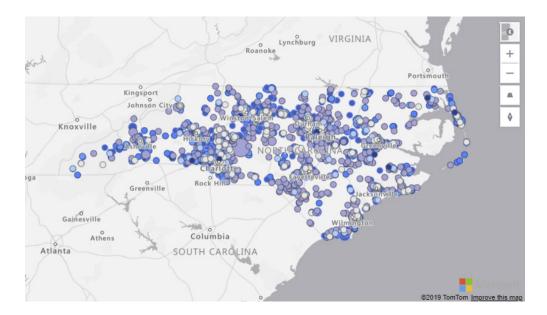
- Bubble layer
- 3D bar chart layer
- Reference layer
- Custom tile layer
- Real-time traffic overlay.

In addition to these visualisation layers, this visual also leverages built-in Power BI features such as tooltips, colour themes and filter / slicer support.

BUBBLE LAYER

Bubble layers represent location data as scaled circles on the Azure map visual. You may use a linear scaling method or customise the scaling logic, using a logarithmic or Cubic-Bezier curve (whatever that is). Additionally, users may pass a value into the legend field and have the fill colour of the circles dynamically set. You may also outline the circles with a single colour or enable the high contrast outline option to have a high contrast variant of the fill colour assigned to the circle, to help ensure the circles are clearly visible regardless of which style the map is selected. This allows you to easily visualise two metrics for each location on the map, namely scale and category.

For example, the following image shows bicycle accident locations in North Carolina (US). The colour indicates the speed limit of the road the accident occurred on and the size is based on the number of individuals involved in the accident. We might get gory pictures next.



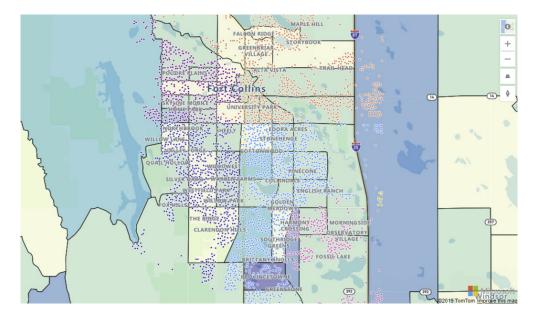
3D BAR CHART LAYER

3D bar charts are useful for allowing visualisation of location data as either 3D bars or cylinders on the map. You may tilt and rotate the map by holding down the right mouse button and dragging or use one of the navigation controls to view your data from different perspectives. Like the bubble layer, the bar chart layer can easily depict two metrics at the same time using colour and relative height. The following map displays store locations with bar heights representing the revenue generated from each location, coloured by sales region:



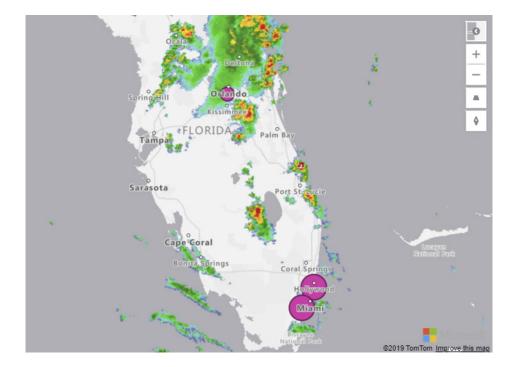
REFERENCE LAYER

Power BI currently allows a single data set to be connected to a visual. However, when working with maps, it's often desirable to be able to overlay additional data layers to add more context to a report. With this feature, a GeoJSON file containing custom location data may be uploaded and overlaid on the map. Properties in the GeoJSON file can be used to customise the style of the shapes. For example, the following map image adds a GeoJSON file of census tract boundaries coloured by population below a layer of addresses, coloured by real estate value. This then provides insights on how population density is related to property values:



CUSTOM TILE LAYER

You may overlay a custom tile layer on the map to add an additional layer of context. Tile layers allow you to superimpose images on top of Azure Maps base map tiles. For example, you may overlay weather data from the Azure Maps weather services or bring your own tile service. The following map displays a bubble layer of sales data of store selling sunglasses above a tile layer, showing current weather radar from Azure Maps. In this case, you can easily see that fewer sales of sunglasses are occurring where there is rain.



REAL-TIME TRAFFIC OVERLAY

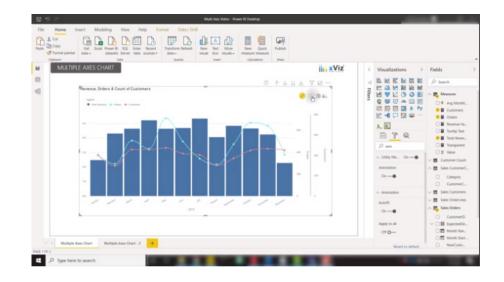
Here is a very practical one. You may overlay real-time traffic flow data to see how traffic congestion relates to your data. For example, the following map is showing the position of field technicians rendered as a bubble layer on the map, coloured by their experience level. This has been scaled by the amount of remaining time on their current job. Realtime traffic is overlaid on the map and provides a quick visual reference of which technicians are most likely to be delayed getting to their next job due to traffic congestion.



Updates to Multi-Axis Chart by xViz

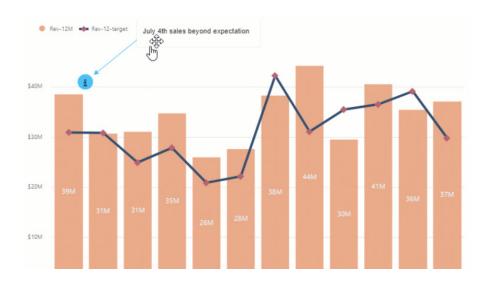
xViz has released a new version (1.1.5) of the Multi-Axis Chart with new features, including annotations for storytelling, external URL linking, advanced data label and axis customisations. It supports 20+ chart options, covering single series, multiple series, combo charts, dual axis,

grouped charts, multiple axes and flipped axes charts. There are also stacked chart dedicated enhancements, such as display column totals for Stacked chart and ToolTips for stacked scenario charts. Further, styling options have also been added in this release.



You may add data-point annotations with context to enhance "storytelling", with textual call outs driving focus to important areas.

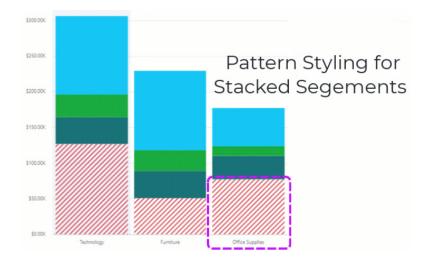
These highlighted areas may be emphasised with differently coloured icons and arrows.



There have been many new features added to the Multi-Axis Chart:

- Annotation
- Runtime deviation bar
- External URL
- Interaction: Lasso, reverse Lasso and Zoom
- Column totals for stacked charts
- Styling: pattern for stacked charts
- New chart options: lollipop, stepped area and line charts
- Data label customisation for individual series
- Specific data label positioning and format options for line, column, and stacked charts
- Number formatting, specific to each series

- Axis break for **y** axis
- Log axis
- **x** axis label display options
- Time series capabilities
- Series ordering
- Series visibility
- Breadcrumb
- Marker customisation for line, area, and Lollipop
- ToolTip enhancements: shared ToolTip and stacked chart ToolTip
- Responsiveness: axis labels auto hide.



Support for Excel financial functions

We have been saying for some time that we want DAX to support Excel's built-in financial functions. With this release, Microsoft has now added **49** financial functions to DAX.

XNPV and **XIRR** were earlier arrivals, but now they have been joined by a raft of useful functions. These new additions have the same name

- ACCRINT
- ACCRINTM
- AMORDEGRC
- AMORLINC
- COUPBAYBS
- COUPDAYS
- COUPDAYSNC
- COUPNCD
- COUPNUM
- COUPPCD
- CUMIPMT
- CUMPRINC
- DB
- DDB
- DISC
- DOLLARDE
- DOLLARFR

- DURATION
- EFFECT
- FV
- INTRATE
- IPMT
- ISPMT
- MDURATION
- NOMINAL
- NPER
- ODDFPRICE
- ODDFYIELD
- ODDLPRICE
- ODDLYIELD
- PDURATION
- PMT
- **PPMT**
- PRICE

and signature as their Excel counterparts, so they should be instantly recognisable in DAX.

It should be noted that although these functions are available for all languages, the functions themselves will be in English only at this point.

Here's the full list of these added financial functions:

- PRICEDISC
- PRICEMAT
- PV
- RATE
- RECEIVED
- RRI
- SLN
- SYD
- TBILLEQ
- TBILLPRICE
- TBILLYIELD
- VDB
- YIELD
- YIELDDISC
- YIELDMAT.

Model View enabled for Live Connect is now Generally Available

The Model View enabled for Live Connected sources is now Generally Available. In addition to making the feature Generally Available, Microsoft has made some revisions too:

- If you are connected to a multidimensional source or an older version of AS, relationship lines will be displayed. However, column information will not be shown
- If you have display folders and are viewing a model with translated captions, your display folders will now show those caption names.

Global option to disable automatic type detection

When working against schema-less data sources (such as Files, Web Pages, *etc.*), Power Query will try to automatically detect column headers and types based on the data. For some time, it's also been possible to disable automatic type detection as a "current file" option.

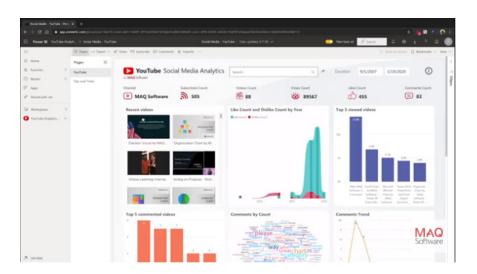
Microsoft admitted that a common request was that this option should be available globally, so that advanced users can always disable type detection. With this month's release, Power BI Desktop has introduced a new global option that allows users to disable automatic header and type detection against schema-less sources.

This new option can be found under the Options dialog (under **Global** -> **Data Load**). This allows users to control whether header / type detection should be always enabled, always disabled or depend on the specific setting for the current file (available under **Current File** -> **Data Load**).

GLOBAL		Type Detection
Data Load Power Query Editor DirectQuery		 Always detect column types and headers for unstructured sources Detect column types and headers for unstructured sources according to each file's setting Never detect column types and headers for unstructured sources
R scripting Python scripting Security		Time intelligence Auto date/time for new files Learn more
Privacy Regional Settings		Data Cache Management Options ③ Currently used: 3.25 G8
Updates Usage Data		Clear Cache Maximum allowed (MB): 4096 O
Diagnostics Preview features		Restore Defaults
Auto recovery Report settings		Q&A Cache Options O
CURRENT FILE		Currently used: 63.6 MB Clear Cache
Data Load Regional Settings		Maximum allowed (MB): 4096 ① Restore Defaults
Privacy Auto recovery	~	

YouTube Analytics by MAQ Software

The YouTube Analytics by MAQ Software allows YouTube channel owners and contributors to identify and analyse their content performance across time, through data received from comments and feedback. This report is targeted towards enterprises and independent channel owners, who want to gauge their channel / campaign performances across time. By consolidating the key data points in a single report, users will get a quick overview to help evaluate channel performance.



The YouTube Analytics enables sales operations personnel to identify and analyse things such as:

- which videos have the highest reach and engagement
- the overall success rate (total views / total likes)
- comments trend across time
- top emerging themes.

Using the insights found in YouTube Analytics, social media channel administrators can:

- uncover insights faster: derive valuable insights faster by analysing and visualising your channels and channels in terms of content performance
- campaign Planning: extract and identify underlying themes which may be correlated with channel content to design campaign strategies
- optimise content performance: implement the insights gained to improve and optimise the channel content performance.



To use this application, users must:

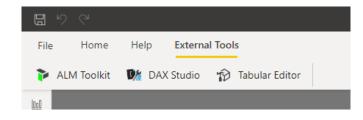
- possess a Google API key, with access to the library 'YouTube Data API v3'
- be a Power BI Pro User.

To connect data:

- you will need a Google API key, with access to the library 'YouTube Data API v3'
- fetch the channel ID from your YouTube Channel
- after these details, you will be asked to validate four connection strings with Authentication method set to Anonymous and privacy level setting as 'Public'
- After all the above steps have been completed, the report will be refreshed with the data of the channel.

Launch external tools from Power BI Desktop (Preview)

Power BI Desktop supports external-tool extensibility to provide abilities beyond the core functionality. Leveraging the community tools for Analysis Services, this unlocks additional Analysis Services engine features for BI professionals, DAX query /expression optimisation and authoring, and application lifecycle management (ALM). The External Tools Ribbon contains buttons for external tools installed on the machine and registered with Power BI Desktop. External tools launched from Power BI Desktop are automatically connected to the Analysis Services engine running behind Power BI Desktop providing a seamless experience for users.



That's it for this month - more next month, we're sure!

The A to Z of Excel Functions: EXP

This function returns e raised to the power of number. The constant e equals 2.71828182845904, the base of the natural logarithm.



The EXP function employs the following syntax to operate:

EXP(number)

The **EXP** function has the following arguments:

• number: this is required and represents the exponent applied to the base e.

It should be further noted that:

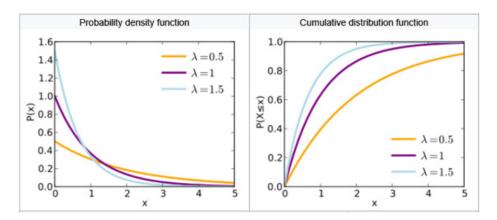
- to calculate powers of other bases, use the exponentiation operator (^)
- EXP is the inverse of LN, the natural logarithm of number.

Please see our example below:

	А	В	С	
1	Formula	Description	Result	
2	=EXP(1)	Approximate value of e	2.718281828	
3	=EXP(2)	Base of the natural logarithm e raised to the power of 2	7.389056099	
4	=EXP(-1)	Approximate value of reciprocal of e	0.367879441	
5				-

The A to Z of Excel Functions: EXPON.DIST

In probability theory and statistics, the exponential distribution (also known as negative exponential distribution) is the probability distribution that describes the time between events in a Poisson point process. That's good if you know what that is! This is a process in which events occur continuously and independently at a constant average rate. It is a particular case of the probability distribution known as the gamma distribution. It is also the continuous analogue of the geometric distribution, and it has the key property of being memoryless. In addition to being used for the analysis of Poisson point processes, it is also found in various other contexts.



It should be noted that the exponential distribution is not the same as the class of exponential families of distributions, which is a large class of probability distributions that includes the exponential distribution as one of its members, but also includes the normal distribution, binomial distribution, gamma distribution, Poisson and many others. So, back to Excel. This function returns the exponential distribution. You should use **EXPON.DIST** to model the time between events, such as how long an automated bank teller (ATM) takes to deliver cash. For example, you can use **EXPON.DIST** to determine the probability that the process takes at most one minute.

The **EXPON.DIST** function employs the following syntax to operate:

EXPON.DIST(x, lambda, cumulative)

This function originated in Excel 2010 for compatibility purposes.

The **EXPON.DIST** function has the following arguments:

- **x**: this is required and represents the value of the function
- lambda: this is also required and denotes the parameter value
- cumulative: again, required. This is a logical value that indicates which form of the exponential function to provide. If cumulative is TRUE, EXPON.DIST returns the cumulative distribution function; if FALSE, it returns the probability density function.

It should be further noted that:

- if x or lambda is nonnumeric, EXPON.DIST returns the #VALUE! error value
- if x < 0, EXPON.DIST returns the #NUM! error value
- if lambda ≤ 0, EXPON.DIST returns the #NUM! error value
- The equation for the probability density function is:

$$f(x;\lambda) = \lambda e^{-\lambda x}$$

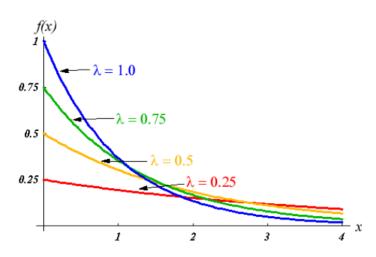
• The equation for the cumulative distribution function is:

$$F(x; \lambda) = 1 - e^{-\lambda x}$$

Please see the example below:

	А	В	С
1	Data	Description	
2	0.5	Value of the function	
3	5	Parameter value	
4			
5			
6	Formula	Description	Result
7	=EXPON.DIST(A2,A3,TRUE)	Cumulative exponential distribution function	0.917915001
8	=EXPON.DIST(A2,A3,FALSE)	Probability exponential distribution function	0.410424993
9			

The A to Z of Excel Functions: EXPONDIST



This function is similar to **EXPON.DIST** (*above*). This has been replaced with that function, which may provide improved accuracy and whose name better reflects its usage. Although this function is still available

for backward compatibility, you should consider using the new functions from now on, because this function may not be available in future versions of Excel, according to Microsoft.

The **EXPONDIST** function employs the following syntax to operate:

EXPONDIST(x, lambda, cumulative)

The **EXPONDIST** function has the following arguments:

- x: this is required and represents the value of the function
- lambda: this is also required and denotes the parameter value
- cumulative: again, required. This is a logical value that indicates which form of the exponential function to provide. If cumulative is TRUE, EXPONDIST returns the cumulative distribution function; if FALSE, it returns the probability density function.

It should be further noted that:

- if x or lambda is nonnumeric, EXPONDIST returns the #VALUE! error value
- if x < 0, EXPONDIST returns the #NUM! error value
- if lambda ≤ 0, EXPONDIST returns the #NUM! error value
- The equation for the probability density function is:

$$f(x;\lambda) = \lambda e^{-\lambda x}$$

• The equation for the cumulative distribution function is:

$$F(x; \lambda) = 1 - e^{-\lambda x}$$

Please see my example below:

	А	В	С
1	Data	Description	
2	0.5	Value of the function	
3	5	Parameter value	
4			
5			
6	Formula	Description	Result
7	=EXPONDIST(A2,A3,TRUE)	Cumulative exponential distribution function	0.917915001
8	=EXPONDIST(A2,A3,FALSE)	Probability exponential distribution function	0.410424993
9			

More Excel Functions next month...

Beat the Boredom Suggested Solution

Earlier in the newsletter, we discussed slicers. First appearing in Excel 2013, slicers are a visual filter that can be used to interact with PivotTables, PivotCharts or Tables. They are very popular with end users as they are highly intuitive requiring little more than a quick point and click.

The problem was that although are great for selecting one or more elements to filter, if there are many records to scroll through, searching is cumbersome. *There appears to be no search facility*.

Searching with a Slicer

Sum of Sale (\$)	Colu	ımn Labels 🗠									Name	žΞ	
Row Labels 🔄 👻	East	t	No	rth	So	uth	W	est	Grand Total	6		v—	~
Laptop	\$	295,176.74	\$	336,336.44	\$	278,241.70	\$	296,814.70	\$ 1,206,569.58		Abigail Bailey		^
Phone	\$	353,698.91	\$	298,889.02	\$	299,192.54	\$	287,517.37	\$ 1,239,297.84	H	Abigail Bell		1
Sofa	\$	301,773.36	\$	319,407.21	\$	296,665.75	\$	310,206.30	\$ 1,228,052.62	IJ	Abigali Beli		
Stereo	\$	323,455.01	\$	304,966.69	\$	289,063.75	\$	295,584.66	\$ 1,213,070.11		Abigail Blake		
TV	\$	235,884.09	\$	289,580.50	\$	295,804.09	\$	306,401.96	\$ 1,127,670.64	H			í .
Grand Total	\$	1,509,988.11	\$	1,549,179.86	\$ 1	1,458,967.83	\$	1,496,524.99	\$ 6,014,660.79	ΙI	Abigail Cameron		J
											Abigail Campbell		
											Abigail Clark		
											Abigail Coleman		
										1	Abigail Dowd		

In the example above, wouldn't it be good if you could search for, say, everyone whose surname was "Smith"?

Searching with a Slicer

Row Labels

Sum of Sale (\$) Column Labels 🔄

- East

Phone \$ 353,698.91 \$ 298,889.02 \$ 299,192.54 \$ 287,517.37 \$ 1 Sofa \$ 301,773.36 \$ 319,407.21 \$ 296,665.75 \$ 310,206.30 \$ 1 Stereo \$ 323,455.01 \$ 304,966.69 \$ 289,063.75 \$ 295,584.66 \$ 1	
	220 052 62
Stereo \$ 323,455,01 \$ 304,966,69 \$ 289,063,75 \$ 205,584,66 \$,220,052.02
	,213,070.11
TV \$ 235,884.09 \$ 289,580.50 \$ 295,804.09 \$ 306,401.96 \$1	,127,670.64
Grand Total \$ 1,509,988.11 \$ 1,549,179.86 \$ 1,458,967.83 \$ 1,496,524.99 \$ 6	6,014,660.79

South

West

Clearly from the screenshot I appear to have achieved it. But that's exactly my point. I appear to have achieved it. Perception is nine-tenths of the game sometimes. So how did I do it?

North

It's easy - just follow these steps, assuming you are creating a slicer for a PivotTable:

- Create a PivotTable in the usual way
- Insert a slicer on the worksheet (click inside the PivotTable and then from the context tab 'PivotTable Tools, Analyze' tab on the Ribbon, select the slicer you require. You will note there is <u>no</u> search facility
- Make a copy of the PivotTable and paste it close to the original PivotTable. Note that the slicer is connected to both of these summary tables
- Remove <u>all</u> of the fields from the new PivotTable. If this causes an error, you have the two PivotTables too close together and you will need to separate them further apart
- In the Field list of the second (now empty) PivotTable, add the slicer field to the 'Filters' area of the PivotTable
- Now comes the clever part. Line up the slicer / adjust column widths so that it covers the filter button of the second PivotTable except for the drop-down arrow. This gives the impression that the drop-down arrow 'belongs' to the slicer
- Turn off the Autofit column widths option on both PivotTables (simply right-click on the PivotTable and select 'PivotTable Options...'): \rightarrow
- Right-click on the slicer and select 'Size and Properties...' from the shortcut menu. In the 'Properties' section, choose 'Don't move or size with cells'



- These two setting changes will ensure the slicer continues to cover the second PivotTable
- Optionally, you can hide the column that contains the field name in the 'Filters' area of the new PivotTable.

That's it! You can check out our example Excel file here (please link to the workbook).

Until next time.

Layout & Format	Totals & Filters	Display	Printing	Data	Alt Text
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Display fields in	report filter area:	Down The	n Over 🗸		
Report filter field		÷	in orten		
Format	is per column.	•			
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Cancel

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Name

smith

PivotTable Options

PivotTable Name: PivotTable1

(Select All Search Results)

Adam Smith
 Adam Smith
 Alexandra Smith
 Amanda Smith
 Srian Smith
 Gameron Smith
 O Lane Smith
 Diane Smith
 Frank Smith
 Select Multiple Items

Add current selection to filter

OK

Grand Total

Upcoming SumProduct Training Courses - COVID-19 update

Due to the COVID-19 pandemic that is currently spreading around the globe, we are suspending our in-person courses until further notice. However, to accommodate the new working-from-home dynamic, we are switching our public and in-house courses to an online delivery stream, presented via Microsoft Teams, with a live presenter running through the same course material, downloadable workbooks to complete the hands-on exercises during the training session, and a recording of the sessions for your use within 1 month for you to refer back to in the event of technical difficulties. To assist with the pacing and flow of the course, we will also have a moderator who will help answer questions during the course.

If you're still not sure how this will work, please contact us at training@sumproduct.com and we'll be happy to walk you through the process.

Location	Course	Date	Date	Duration	Duration
Online (Australia)	Excel Tips and Tricks	18 Aug 2020	09:00-17:00 AEST	(-1 day) 23:00-07:00 GMT	1 Day
Online (Australia)	Financial Modelling	19 - 20 Aug 2020	09:00-17:00 AEST	(-1 day) 23:00-07:00 GMT	2 Days
Online (Australia)	Power Pivot, Power Query and Power BI	7 - 9 Sep 2020	09:00-17:00 AEST	(-1 day) 23:00-07:00 GMT	3 Days
Online (Australia)	Power Pivot, Power Query and Power BI	9 - 11 Nov 2020	09:00-17:00 AEDT	(-1 day) 22:00-07:00 GMT	3 Days
Online (Australia)	Excel Tips and Tricks	16 Nov 2020	09:00-17:00 AEDT	(-1 day) 22:00-07:00 GMT	1 Day
Online (Australia)	Financial Modelling	17 - 18 Nov 2020	09:00-17:00 AEDT	(-1 day) 22:00-07:00 GMT	2 Days
Online (Australia)	Power Pivot, Power Query and Power BI	14 - 16 Dec 2020	09:00-17:00 AEDT	(-1 day) 22:00-07:00 GMT	3 Days

Key Strokes

Each newsletter, we'd like to introduce you to useful keystrokes you may or may not be aware of. This month, we thought we would hold a FUNCTION ...

Keystroke	What it does	Keystroke	What it does
F1	Help	F7	Check spelling
F2	Toggle Select, Edit and Enter / Point modes		Extend selection mode
F3	Paste names	F9	Calculate now
F4	Redo / Edit (F2) mode: toggle \$ references for cell anchoring	F10	Activate menus
F5	Go To / Refresh File List	F11	Insert chart on a new sheet
F6	Next Pane	F12	Save As

There are c.550 keyboard shortcuts in Excel. For a comprehensive list, please download our Excel file at www.sumproduct.com/thought/keyboard-shortcuts. Also, check out our new daily Excel Tip of the Day feature on the www.sumproduct.com homepage.

Our Services

We have undertaken a vast array of assignments over the years, including:

- **Business planning**
- Building three-way integrated financial statement projections
- Independent expert reviews
- Key driver analysis
- Model reviews / audits for internal and external purposes
- M&A work
- Model scoping
- **Power BI, Power Query & Power Pivot** Project finance
- **Real options analysis**
- Refinancing / restructuring .
- Strategic modelling
- Valuations
- Working capital management

If you require modelling assistance of any kind, please do not hesitate to contact us at contact@sumproduct.com.

Link to Others

These newsletters are not intended to be closely guarded secrets. Please feel free to forward this newsletter to anyone you think might be interested in converting to "the SumProduct way".

If you have received a forwarded newsletter and would like to receive future editions automatically, please subscribe by completing our newsletter registration process found at the foot of any www.sumproduct.com web page.

Any Questions?

If you have any tips, comments or queries for future newsletters, we'd be delighted to hear from you. Please drop us a line at newsletter@sumproduct.com.

Training

SumProduct offers a wide range of training courses, aimed at finance professionals and budding Excel experts. Courses include Excel Tricks & Tips, Financial Modelling 101, Introduction to Forecasting and M&A Modelling.

Check out our more popular courses in our training brochure:



Drop us a line at training@sumproduct.com for a copy of the brochure or download it directly from www.sumproduct.com/training.

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