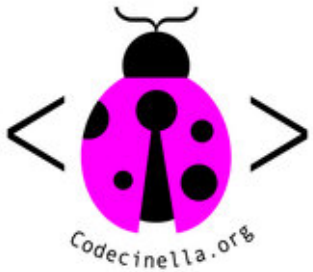
Power Query

Get & Transform data in Microsoft Excel

Dory Owen

Oct 18, 2016



Dory Owen

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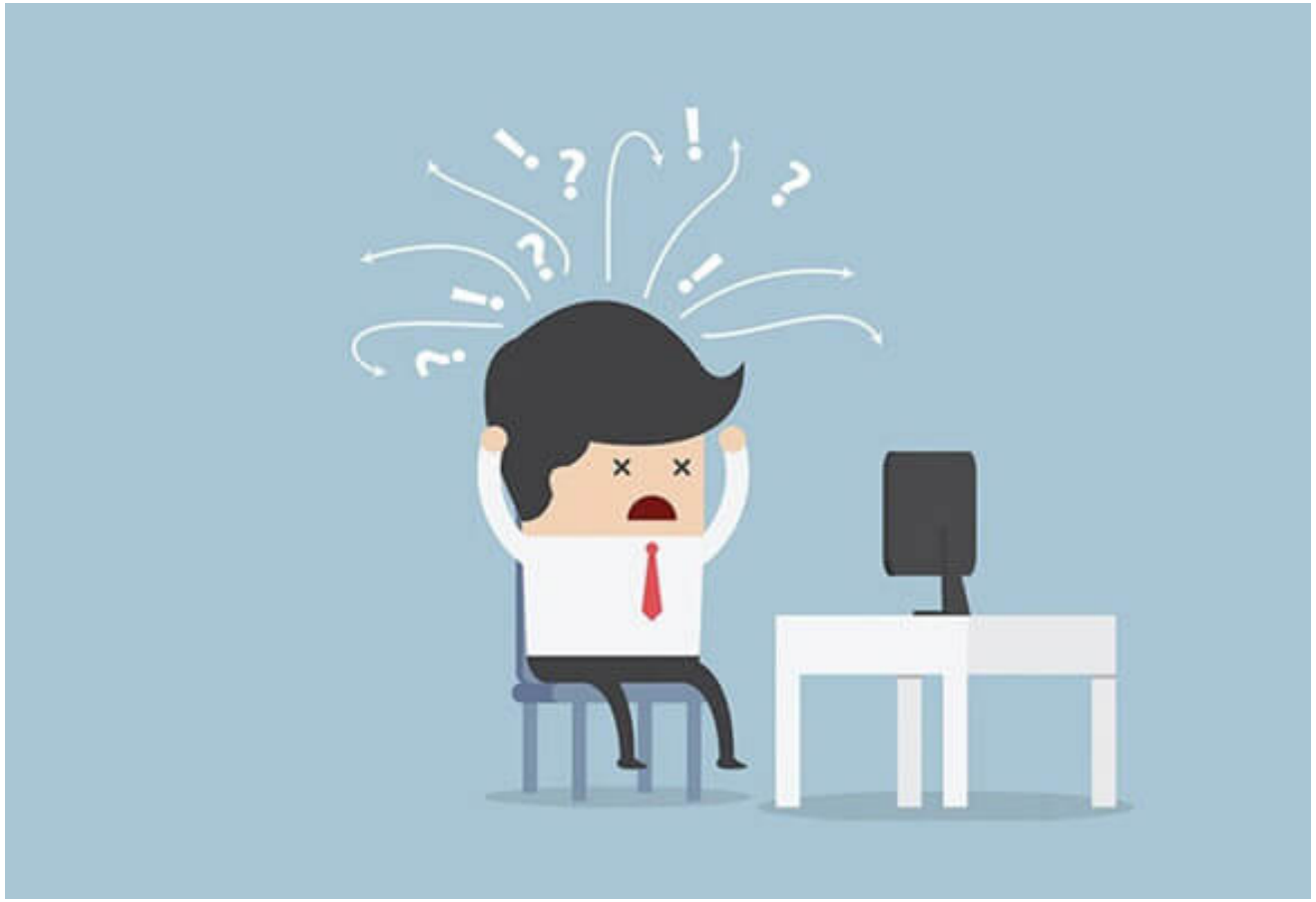
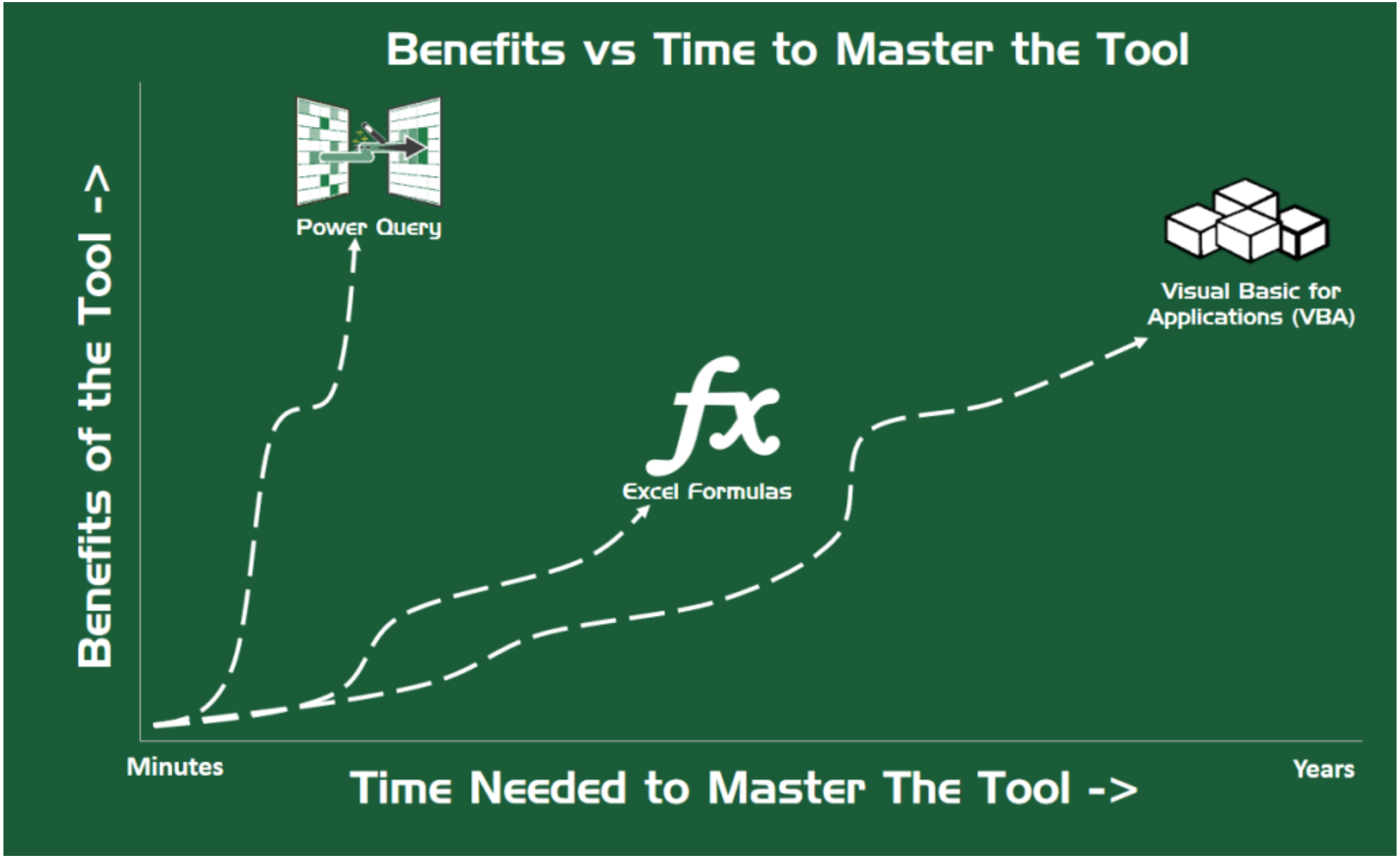
- Independent consultant
- Visual Basic for Applications, Office, SQL Server, MySQL
- When “No IT” Or “Low IT” people need agile solutions
- Follow the “copy & paste” to find targets for automation
- Word: Police reports, insurance quotes
- Access: Airport operations data, Job Center training schedule, meals-on-wheels for senior center
- Excel: Sales forecast, configure/price/quote, self-service BI

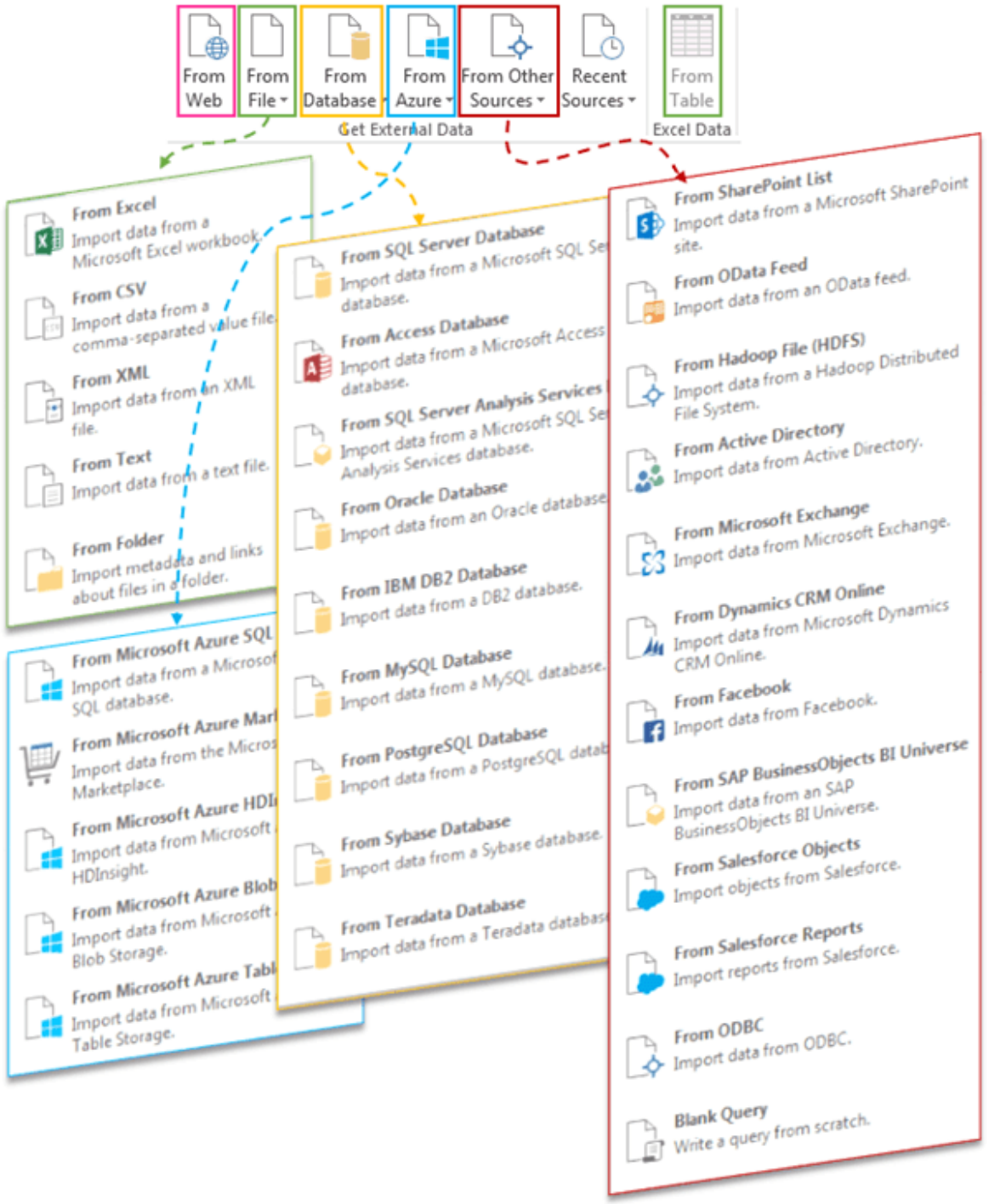
What is Microsoft Power Query?

- Microsoft says: “a new add-in that provides a seamless experience for data
  - discovery,
  - transformation and
  - enrichment for
    - Information Workers,
    - BI professionals
    - and other Excel users.”

Huh?



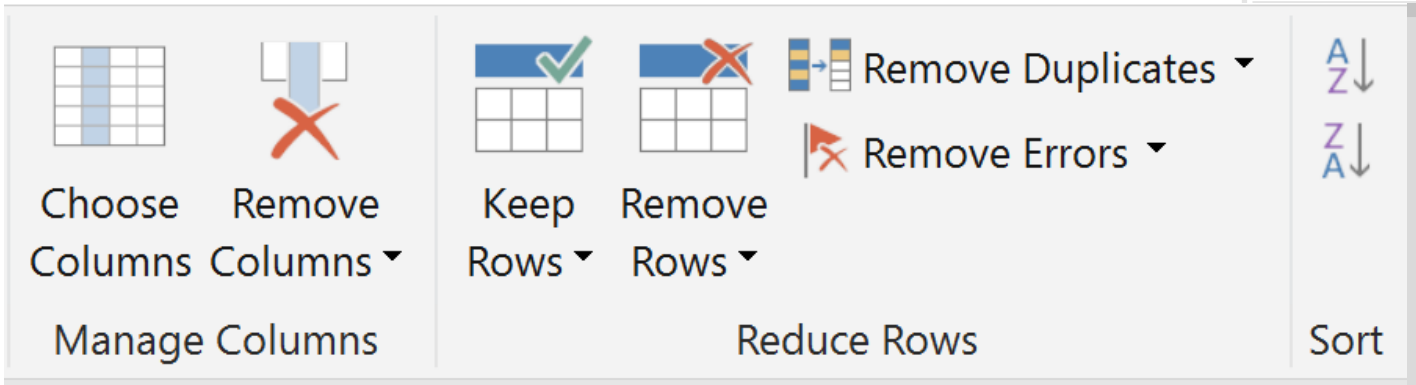

Benefits vs Time to Master the Tool
Benefits of the Tool ->
Power Query
Excel Formulas
Visual Basic for Applications (VBA)
Minutes
Years
Time Needed to Master The Tool ->
From: PowerPivotPro.com - Rob Collie

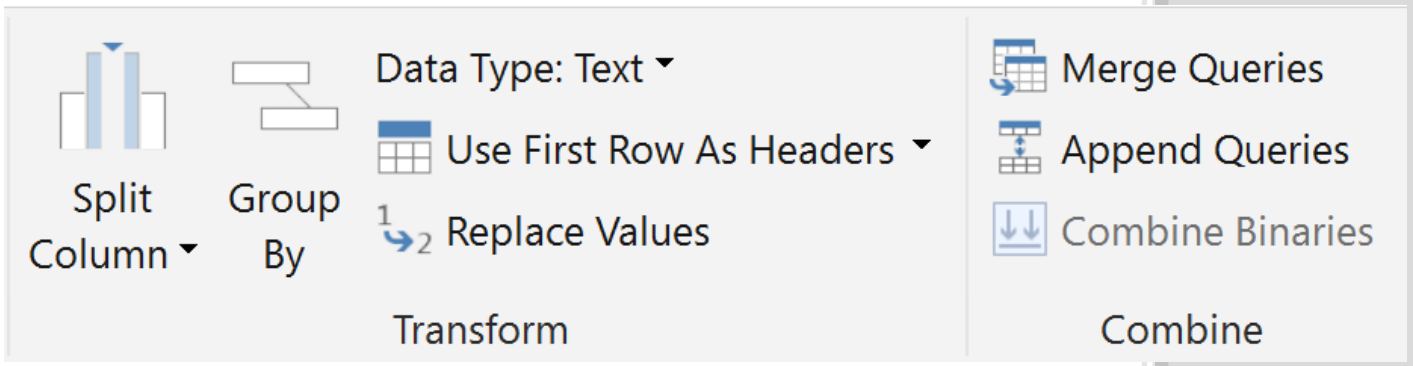


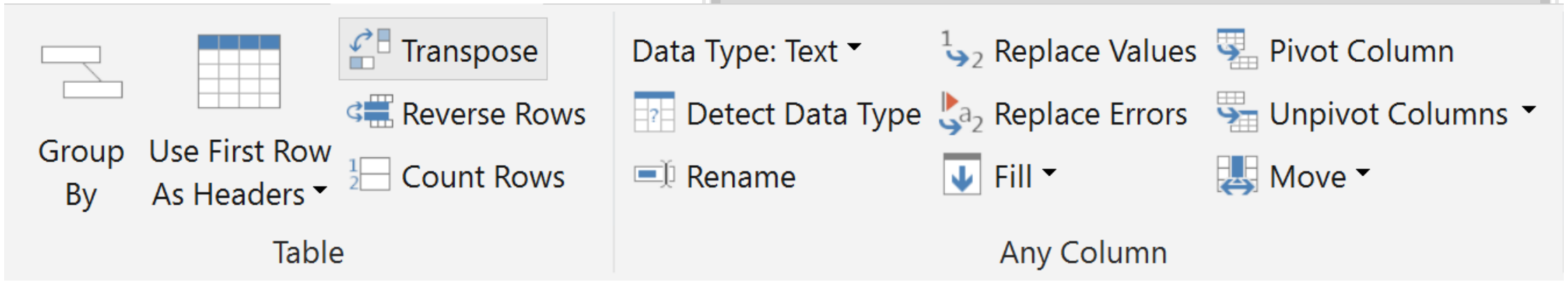
1st: Get Data

- Excel table
- a web page
- Oracle, SQL Server, MySQL
- Salesforce, SAP, Hadoop, ADS
- Text file containing a big ugly mainframe report
- JSON, XML, CSV, Access db

2nd: Transform Data







Excel 2010-13

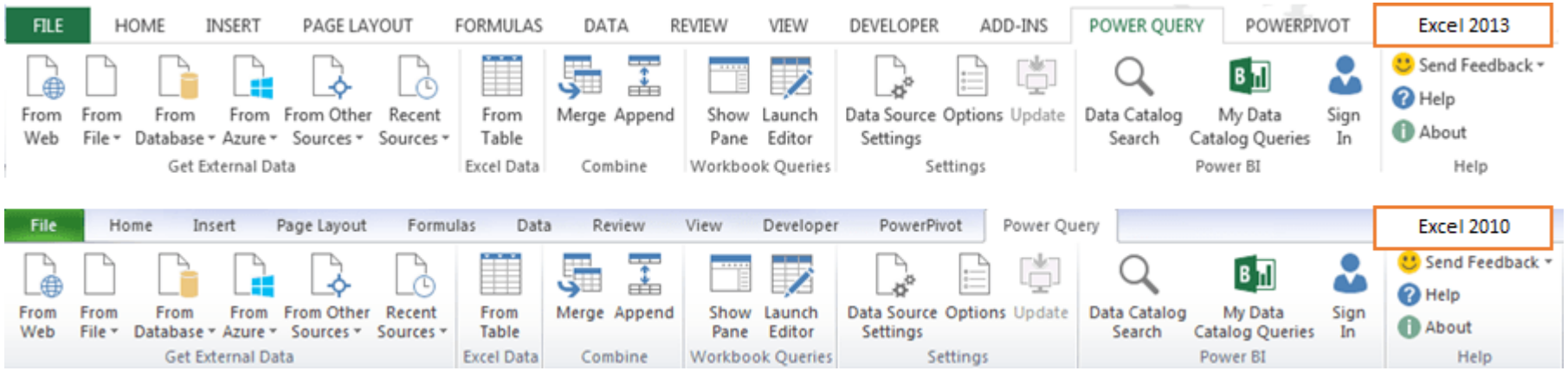
- Free download
- Add-In appears as a tab on the Excel ribbon

Microsoft Power Query for Excel

Select Language: English

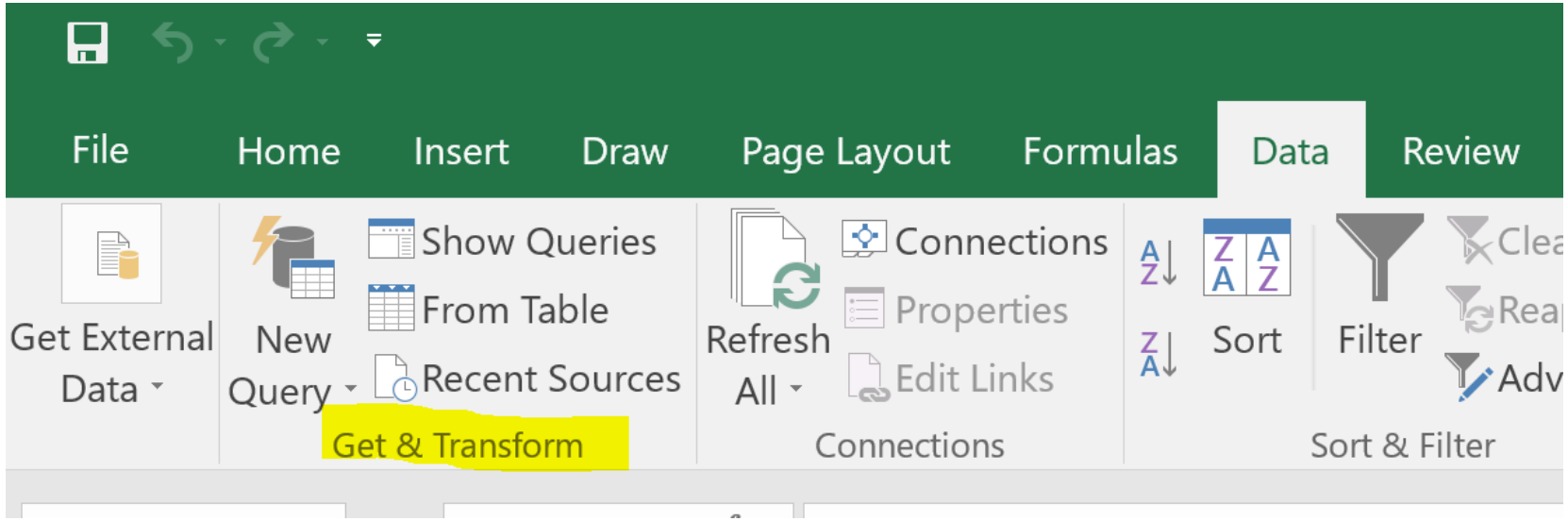
Download

Microsoft Power Query for Excel is an Excel add-in that enhances the self-service Business Intelligence experience in Excel by simplifying data discovery, access and collaboration.



Excel 2016 has Power Query built-in

- On DATA menu, look for the **Get & Transform** group
- Click “New Query” to get started…



Example: Text file with headers, groupings

2016 Budget Worksheet.txt

Column1	Column2	Column3	Column4	Column5	Colu
Acme Food Products Budget - 2016					
		Jan	Feb	Mar	Apr
Beverages					
	Apple Juice	$1,724.98	$1,068.48	$1,615.68	$1,2
	Cappuccino	$225.25	$1,599.46	$1,258.48	$1,2
	Chai	$776.16	$939.89	$1,209.74	$2,0
	Chamomile	$2,584.76	$221.16	$2,267.65	$2,0
	English Breakfast	$25,378.63	$13,574.47	$6,946.51	$1,3
	Espresso	$1,454.34	$4,766.29	$1,243.84	$3,8

Load | Edit | Cancel

Example: **Budget vs. Actual Merged**

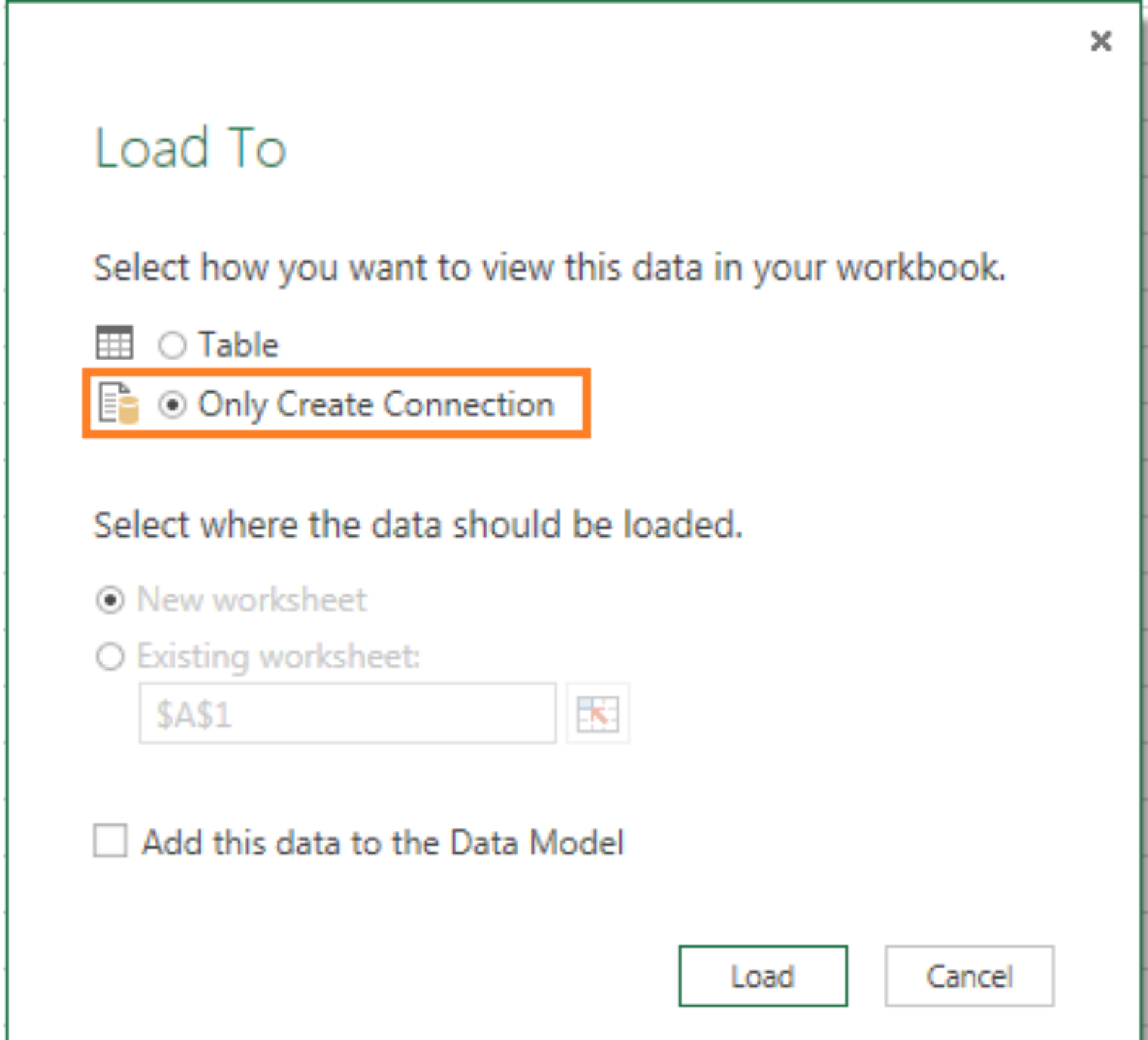
- From Mynda Treacy's blog at http://www.myonlinetraininghub.com/category/power-query
- Samples, tutorials, videos

Month	Category	Product	Budget Sales
1/1/2015	Beverages	Apple Juice	$ 1,724.98
1/1/2015	Seafood	Atlantic Salmon	$ 385.00
1/1/2015	Seafood	Banana Prawns	$ 1,503.90
1/1/2015	Grains/Cereals	Barley	$ 3,116.59
1/1/2015	Dairy Products	Brie	$ 285.18
1/1/2015	Produce	Brocollini	$ 349.20
1/1/2015	Seafood	Calamari	1,300.26
1/1/2015	Dairy Products	Camembert	3,229.40

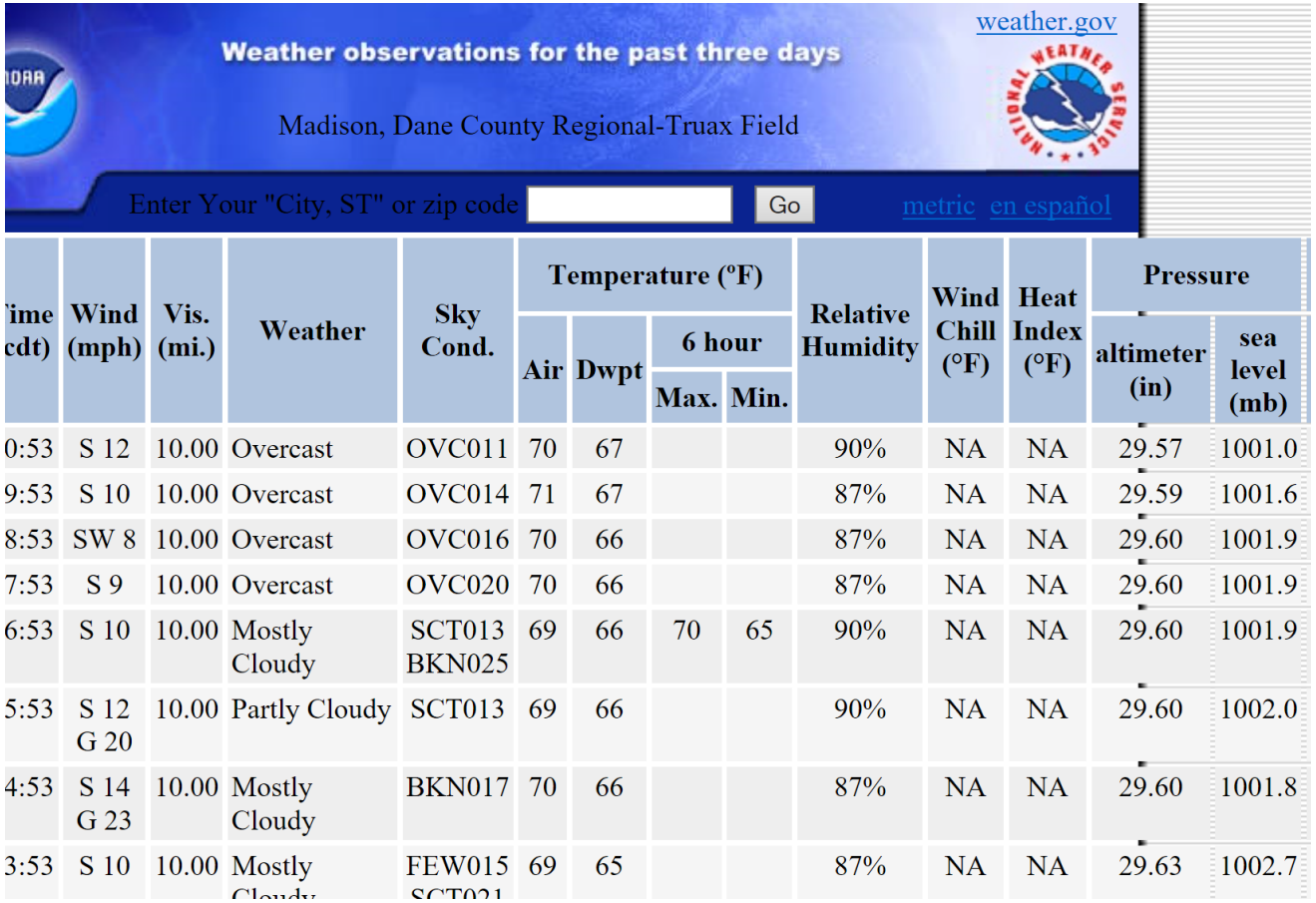
Month	Category	Product	Actual Sales
1/1/2015	Beverages	English Breakfast	25127.36
1/1/2015	Dairy Products	Gouda	9116.8
1/1/2015	Grains/Cereals	Gnocchi	6931.2
1/1/2015	Meat/Poultry	Pork Chops	5710.08
1/1/2015	Meat/Poultry	Rump Steak	5702.4
1/1/2015	Meat/Poultry	Chicken Breast	5154.85
1/1/2015	Confections	M & M's	5079.6

Creating a connection only

- Does not load the data to sheet
- Merge or append to another query



Example: Nat'l Weather Service web site



Weather observations for the past three days

weather.gov

Madison, Dane County Regional-Truax Field

Enter Your "City, ST" or zip code Go metric en español

Time (cdt)	Wind (mph)	Vis. (mi.)	Weather	Sky Cond.	Temperature (°F)				Relative Humidity	Wind Chill (°F)	Heat Index (°F)	Pressure	
					Air	Dwpt	6 hour Max.	6 hour Min.				altimeter (in)	sea level (mb)
0:53	S 12	10.00	Overcast	OVC011	70	67			90%	NA	NA	29.57	1001.0
9:53	S 10	10.00	Overcast	OVC014	71	67			87%	NA	NA	29.59	1001.6
8:53	SW 8	10.00	Overcast	OVC016	70	66			87%	NA	NA	29.60	1001.9
7:53	S 9	10.00	Overcast	OVC020	70	66			87%	NA	NA	29.60	1001.9
6:53	S 10	10.00	Mostly Cloudy	SCT013 BKN025	69	66	70	65	90%	NA	NA	29.60	1001.9
5:53	S 12 G 20	10.00	Partly Cloudy	SCT013	69	66			90%	NA	NA	29.60	1002.0
4:53	S 14 G 23	10.00	Mostly Cloudy	BKN017	70	66			87%	NA	NA	29.60	1001.8
3:53	S 10	10.00	Mostly Cloudy	FEW015 SCT021	69	65			87%	NA	NA	29.63	1002.7

- http://w1.weather.gov/data/obhistory/KMSN.html
- Madison airport
- Hourly weather data
- Past 36 hours

Example: **Wisconsin Breeding Bird Atlas**

Data collected by volunteers around the state

5 years of data being collected (2015-2019)

Reports: http://ebird.org/ebird/atlaswi/subnational2/US-WI-025?atlasPeriod=EBIRD_ATL_WI_2015

“025” = Dane County

What birds haven’t been confirmed in which counties yet?

…only the counties I’m likely to survey?

ADDITIONAL POWER QUERY RESOURCES

Chris Webbs Blog

https://cwebbbi.wordpress.com/category/power-query

Ken Puls Blog

www.excelguru.ca/blog

Power Query M Formula Reference

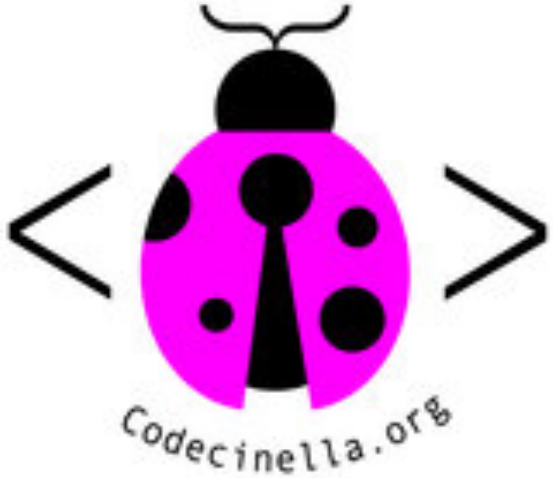
https://msdn.microsoft.com/en-us/library/mt211003.aspx

Hands-on Power Query Workshop

Saturday, November 5, 2016

9:30 AM to 12:30 PM

Madison Public Library



www.meetup.com/codecinella-madison