

Table of Contents

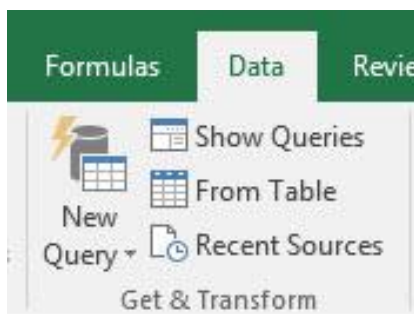
Power Query (Get & Transform) Overview.....	2
Overview: Import Multiple Excel Files with 1 Sheet Each & Create PivotTable Report	3
Step 1: Import Multiple Excel Files, 1 Sheet Each	4
Step 2: Load to Data Model and create DAX Measure for Total Sales, Edit Power Query	11
Step 3: Create PivotTable based on Data Model and Group Dates by Month and Year.	14
Step 4: Add Slicers for City and Year	14
Step 5: Use Show Values As feature in a PivotTable:.....	15
Step 6: Finalize Report	16
Step 7: We Get New Files in Folder, After we Refresh: Everything Updates!	17
Cumulative List of Keyboards Throughout Class:.....	18

Power Query (Get & Transform) Overview

1) Power Query = Get & Transform

- New feature in Excel 2016 that allows you to **import**, **clean** and **transform** data.
- Examples:
 1. Clean Raw Data = Fix unusable raw data so that it can be used to perform data analysis.
 - i. Examples:
 1. Remove unwanted characters.
 2. Add needed characters.
 3. Split data apart into desired data.
 4. Join data together to get desired data.
 2. Transform Data Sets = Fix unusable data set so that it can be used to perform data analysis.
 - i. Examples:
 1. Filter, combine, merge, append or unpivot data sets.
 2. Add, remove or filter columns in data sets.
 3. Import Data = import data from external sources (single or multiple sources) into Excel or Power Pivot's
- History:
 1. Before Excel 2016 it was called "Power Query".
 2. In Excel 2016 Microsoft changed the name from "Power Query" to "Get & Transform".

2) Get & Transform group is in the Data Ribbon Tab:



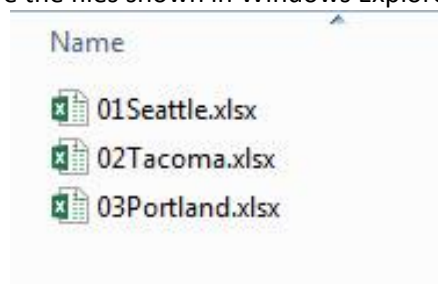
- **New Query** button = Open Power Query Editor
- **Show Queries** button shows list of queries that you have made
- **From Table** is button to click when you want to bring data from an Excel sheet into Power Query.
 1. Data **MUST** be in an Excel Table before you can bring it into Power Query.
 2. Why must it be in an Excel Table? It must be in an Excel Table so that if the data changes the Power Query output can be updated with the Refresh button.

3) What Power Query will do for us:

1. We can import "Source Data" from external sources or an Excel Table.
2. Clean and Transform the data.
3. Click the "Load To" button to load it back into new Excel Table or the Data Model.
4. The loaded data will sit in an Excel Table or the Data Model and can be refreshed by right-clicking and pointing to Refresh.
5. When we build PivotTables, Charts and Formulas based on the Power Query Data, they all can be updated when the Power Query Data is updated.

Overview: Import Multiple Excel Files with 1 Sheet Each & Create PivotTable Report

- 1) Import data from the three Excel Files (over 500,000 rows of data) and load it into the Data Model.
- 2) Here are the files shown in Windows Explorer:



- 3) Each Excel File has over 100,000 rows of Sales Data

Seattle Excel File:					Tacoma Excel File:					Portland Excel File:				
	A	B	C	D		A	B	C	D		A	B	C	D
1	Date	Sales	StoreID		1	Date	Sales	StoreID		1	Date	Sales	StoreID	
2	1/1/2014	\$9.66	1034		2	1/1/2014	\$17.30	1522		2	5/24/2014	\$104.42	877	
3	1/1/2014	\$23.04	1036		3	1/1/2014	\$15.77	1520		3	6/22/2014	\$93.11	876	
4	1/1/2014	\$40.83	1036		4	1/1/2014	\$151.36	1520		4	5/10/2014	\$77.05	876	
221080	8/14/2015	\$117.03	1034		155399	6/9/2015	\$161.04	1522		131321	5/5/2014	\$128.41	878	
221081	8/14/2015	\$43.33	1035		155400	6/9/2015	\$10.28	1520		131322	8/13/2015	\$227.95	875	
221082	8/14/2015	\$37.88	1034		155401	6/9/2015	\$12.19	1523		131323	12/22/2014	\$98.97	878	
221083					155402					131324				

- 4) After we load it into the Power Pivot Data Model, create a DAX Measure and use the Show Values As feature in our PivotTable, the end result report should look like this:

City

Portland

Seattle

Tacoma

Date (Year)

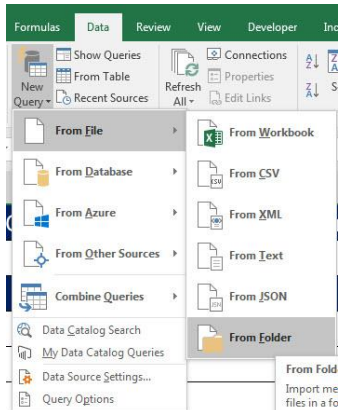
2014

2015

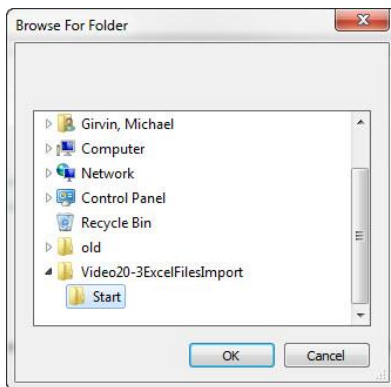
Date (Month)	Sales	% of Total	Change	% Change	Running Total	% Running Total
Jan	\$807,105	19.72%			\$807,105	19.72%
Feb	\$723,717	17.68%	(\$83,388)	-10.33%	\$1,530,823	37.39%
Mar	\$799,655	19.53%	\$75,937	10.49%	\$2,330,477	56.93%
Apr	\$751,466	18.36%	(\$48,189)	-6.03%	\$3,081,943	75.28%
May	\$796,692	19.46%	\$45,226	6.02%	\$3,878,635	94.74%
Jun	\$215,214	5.26%	(\$581,479)	-72.99%	\$4,093,849	100.00%
Grand Total	\$4,093,849	100.00%				

Step 1: Import Multiple Excel Files, 1 Sheet Each

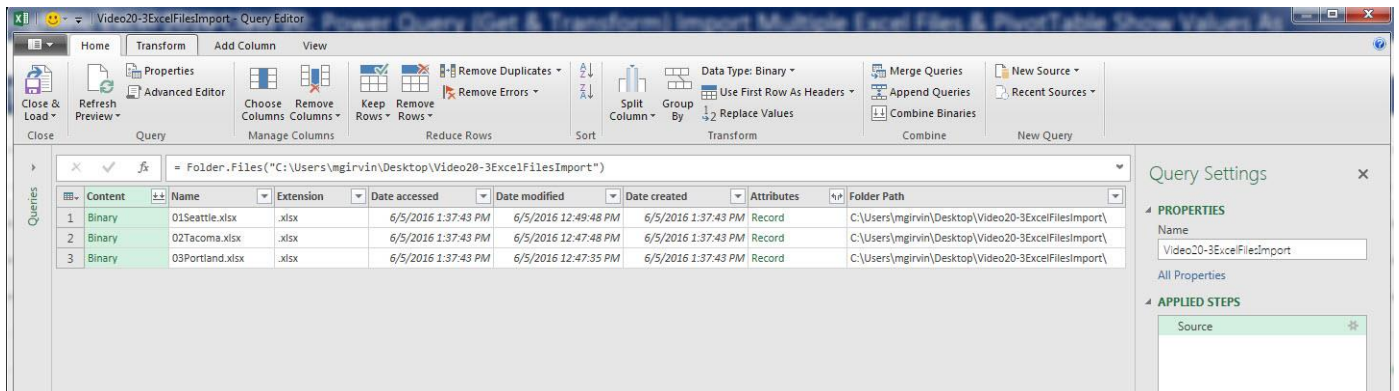
1) Data Ribbon Tab, New Query, From File, From Folder:



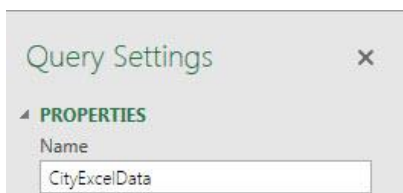
2) Browse to Folder with files:



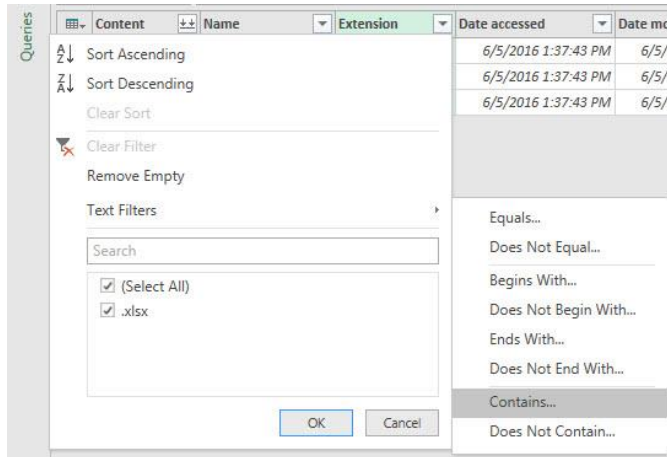
3) The Power Query Editor window should look like this:



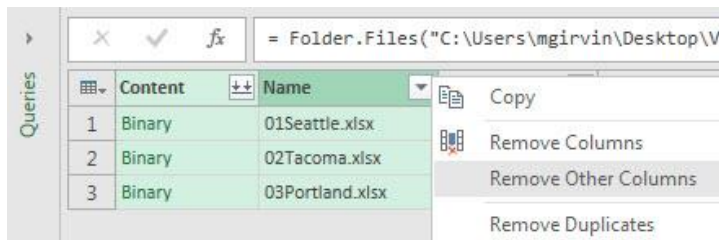
4) Name Query (will also be name of Table in Data Model):



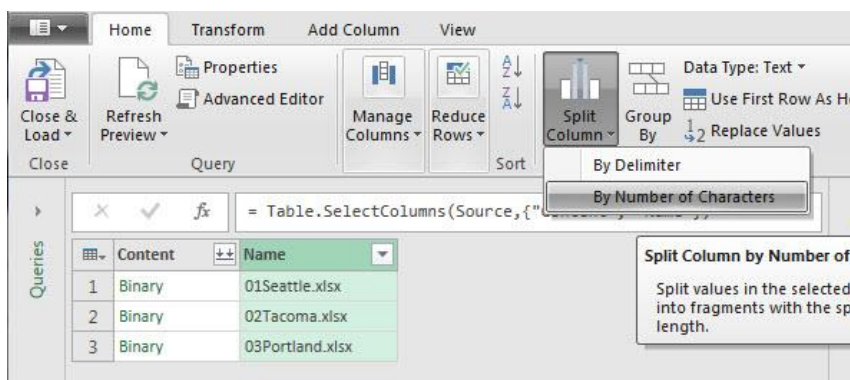
- 5) We would like to make sure that we only import “.xlsx” Excel Files from the Folder. Just in case there are other file types in the folder, we are going to run a “Contains” Filter on the file extension column.



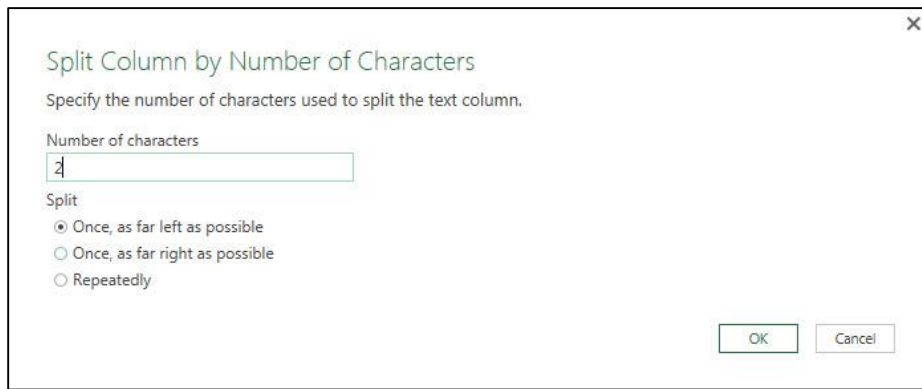
- 6) In Query Editor, we highlight first two columns and right-click and click on “Remove Other Columns”:



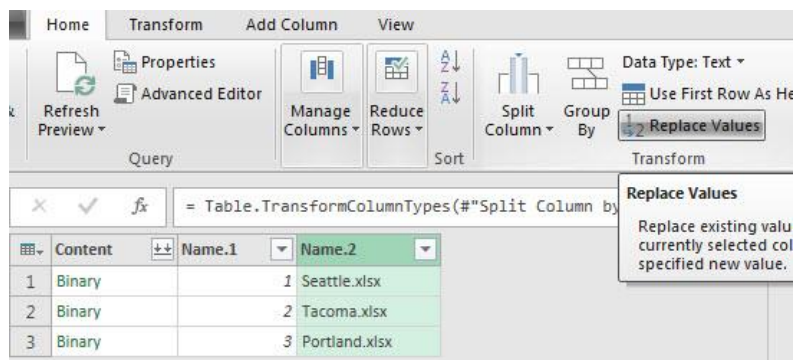
- 7) The file names (01Seattle.xlsx, 02Tacoma.xlsx, 03Portland.xlsx) have data we need in the imported data set. We need the City Name from the file name, so we need to keep the file name column.
- 8) The first step in extract the City Name is that in the Name column we need to remove the first two characters of each file name. Highlight Name Column, click on “Split Column” in the Transform group in the Home Ribbon Tab. Then click on “By Number of Characters”.



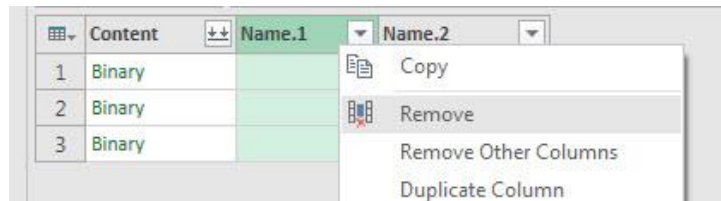
9) Split by 2 at “Once, as far left as possible”.



10) Select Name.2 Column and use the Replace Values button in the Transform group in the Home Ribbon Tab to Replace “.xlsx” with nothing:



11) Remove Name 1 Column:



12) Should look like this:

	Content	Name.2
1	Binary	Seattle
2	Binary	Tacoma
3	Binary	Portland

13) We can't use the Double Arrow to expand data because that is only for Text Files. We have Excel Workbook File “Content” that contains many different objects.

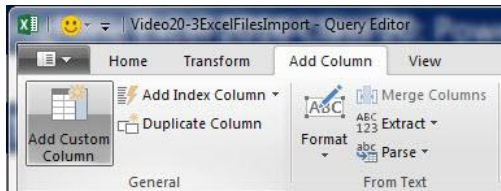


14) Excel Workbook File “Content”:

- The Context Column contains Excel data.
- Excel Workbook File data is different than Text File Data.
- Text File Data has only Text
- Excel Workbook File data has many potential objects inside the file. Excel Workbook File Objects such as:
 1. Sheets
 2. Excel Tables
 3. Defined Names

15) In order to get to the data that is on the Sheets in the Excel File, we need to add a new column and use the Power Query function **Excel.Workbook**

16) In the Add Column Ribbon Tab, click “Add Custom Column”



17) Name column: GetExcelData. Create Power Query Formula: =Excel.Workbook([Content]). This formula will extract all the objects in the Excel Workbook File (such as Sheets, Tables, Defined Names).

A screenshot of the 'Add Custom Column' dialog box. The 'New column name' field contains 'GetExcelData'. The 'Custom column formula' field contains '=Excel.Workbook([Content])'. The 'Available columns' list on the right shows 'Content' and 'Name.2'. At the bottom, there is a message 'No syntax errors have been detected.' and 'OK' and 'Cancel' buttons.

Add Custom Column

New column name
GetExcelData

Custom column formula:
=Excel.Workbook([Content])

Available columns:
Content
Name.2

<< Insert

Learn about Power Query formulas

✓ No syntax errors have been detected.

OK Cancel

18) New column created by Excel.Workbook Function:

A screenshot of the Power Query results table. The table has four columns: 'Content', 'Name.2', and 'GetExcelData'. The 'Content' column has three rows of data: 'Binary', 'Binary', and 'Binary'. The 'Name.2' column has three rows of data: 'Seattle', 'Tacoma', and 'Portland'. The 'GetExcelData' column has three rows of data: 'Table', 'Table', and 'Table'. The 'GetExcelData' column is highlighted in green.

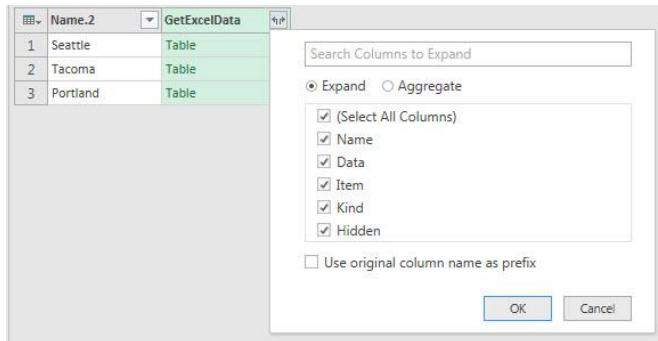
	Content	Name.2	GetExcelData
1	Binary	Seattle	Table
2	Binary	Tacoma	Table
3	Binary	Portland	Table

19) We don't need Content Column anymore, so Right-click Content and click on “Remove”.

20) From the GetExcelData column, click this button (Expand button):



21) Expand Button (Double outward pointing arrow) shows this dialog box with the different objects (make sure check box unchecked):



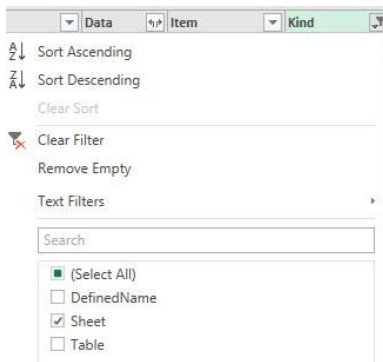
22) Now the Power Query Editor looks like this:

	Name.2	Name	Data	Item	Kind	Hidden
1	Seattle	Seattle	Table	Seattle	Sheet	FALSE
2	Seattle	Sheet1	Table	Sheet1	Sheet	FALSE
3	Seattle	SalesDN	Table	SalesDN	DefinedName	FALSE
4	Tacoma	Tacoma	Table	Tacoma	Sheet	FALSE
5	Tacoma	Sheet2	Table	Sheet2	Sheet	TRUE
6	Portland	Portland	Table	Portland	Sheet	FALSE
7	Portland	Sheet2	Table	Sheet2	Sheet	FALSE
8	Portland	NamesSalesRep	Table	NamesSalesRep	Table	FALSE

23) What different columns mean:

- Name = Name of object
- Data = Data in objects
- Item = Name of object, including Sheet Names
- Kind = what sort of object, such as: Sheet, Excel Table, Defined Name and so on.
- Hidden = tells you if object is hidden.

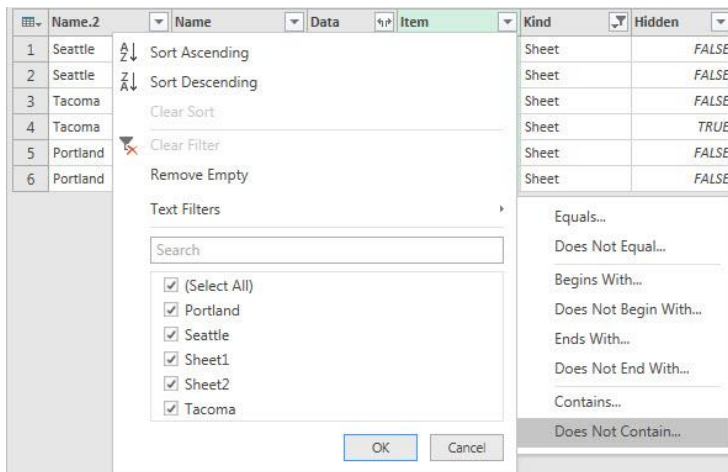
24) From the Kind Column we see that we have a Defined Name and a Table. We want to filter out the Defined Name and Table, so we use the Filter to check only "Sheet" object.



25) Now the Power Query Editor looks like this:

	Name.2	Name	Data	Item	Kind	Hidden
1	Seattle	Seattle	Table	Seattle	Sheet	FALSE
2	Seattle	Sheet1	Table	Sheet1	Sheet	FALSE
3	Tacoma	Tacoma	Table	Tacoma	Sheet	FALSE
4	Tacoma	Sheet2	Table	Sheet2	Sheet	TRUE
5	Portland	Portland	Table	Portland	Sheet	FALSE
6	Portland	Sheet2	Table	Sheet2	Sheet	FALSE

26) The Item column has the name of the object. We want the sheets with a city name such as “Seattle” or “Portland”. To get the sheets with a city name we want to eliminate the sheets with the default name “Sheet” by creating a “Does Not Contain” filter with the word “Sheet”:



27) In the “Does Not Contain” textbox type: “Sheet”:

Filter Rows

Show rows where: Item

does not contain

Sheet

And

Or

OK

Cancel

28) After “Does Not Contain” Filter Query Editor looks like:

	Name.2	Name	Data	Item	Kind	Hidden
1	Seattle	Seattle	Table	Seattle	Sheet	FALSE
2	Tacoma	Tacoma	Table	Tacoma	Sheet	FALSE
3	Portland	Portland	Table	Portland	Sheet	FALSE

29) Highlight Data and Item Name.2 columns and right-click and click on “Remove Other Columns”:

	Name.2	Name	Data	Item	Kind	Hidden
1	Seattle	Copy		Seattle	Sheet	FALSE
2	Tacoma	Remove Columns		Tacoma	Sheet	FALSE
3	Portland	Remove Other Columns		Portland	Sheet	FALSE

30) Now we need to expand, so we click the Double outward pointing arrow:

	Data	Name.2
1	Table	Seattle
2	Table	Tacoma
3	Table	Portland

31) Click OK (make sure check box unchecked):

The screenshot shows the 'Name.2' dialog box in QlikView. The dialog has a title bar with a close button and a dropdown menu showing 'Name.2'. Below the title bar, there is a list of columns to expand. The first column is 'Table' (selected), followed by 'Table' and 'Table'. To the right of the list, there is a search box labeled 'Search Columns to Expand'. Below the search box, there are two radio buttons: 'Expand' (selected) and 'Aggregate'. Below the radio buttons, there is a list of columns to expand: 'Table' (selected), 'Table', and 'Table'. Below the list, there are two checkboxes: 'Use original column name as prefix' (unchecked) and 'Use original column name as prefix' (unchecked). At the bottom, there are two buttons: 'OK' and 'Cancel'.

32) In Upper Left Corner, click dropdown and select "Use First Row As Headers"

Column1	Column2	Column3	Name.2
Copy Entire Table		StoreID	Seattle
Use First Row As Headers		1034	Seattle
		1036	Seattle

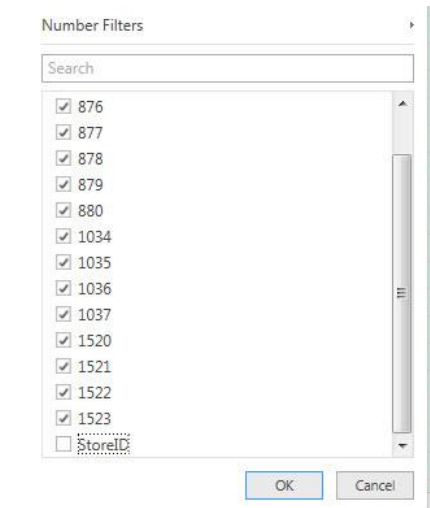
33) After “Use First Row As Headers” Filter Query Editor looks like:

	Date	Sales	StoreID	Seattle
1	1/1/2014	9.66	1034	Seattle
2	1/1/2014	23.04	1036	Seattle
3	1/1/2014	40.83	1036	Seattle
4	1/1/2014	43.43	1037	Seattle
5	1/1/2014	173.64	1034	Seattle
6	1/1/2014	41.08	1036	Seattle

34) Name last column "City":

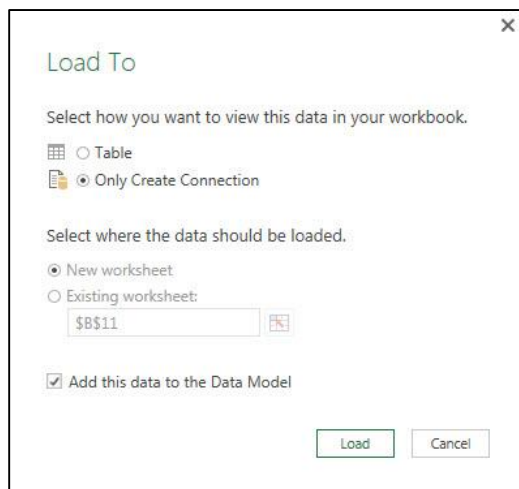
	Date	Sales	StoreID	City
1	1/1/2014	9.66	1034	Seattle
2	1/1/2014	23.04	1036	Seattle

35) Top filter out extra Field Names lower down in the consolidated data, Filter Out "StoreID" in the StoreID column (be sure to click Load More button):

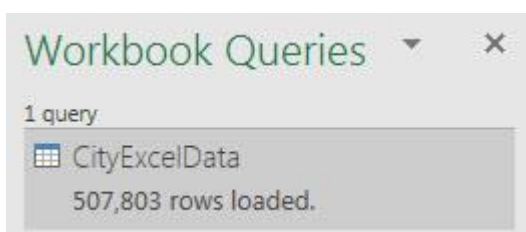


Step 2: Load to Data Model and create DAX Measure for Total Sales, Edit Power Query

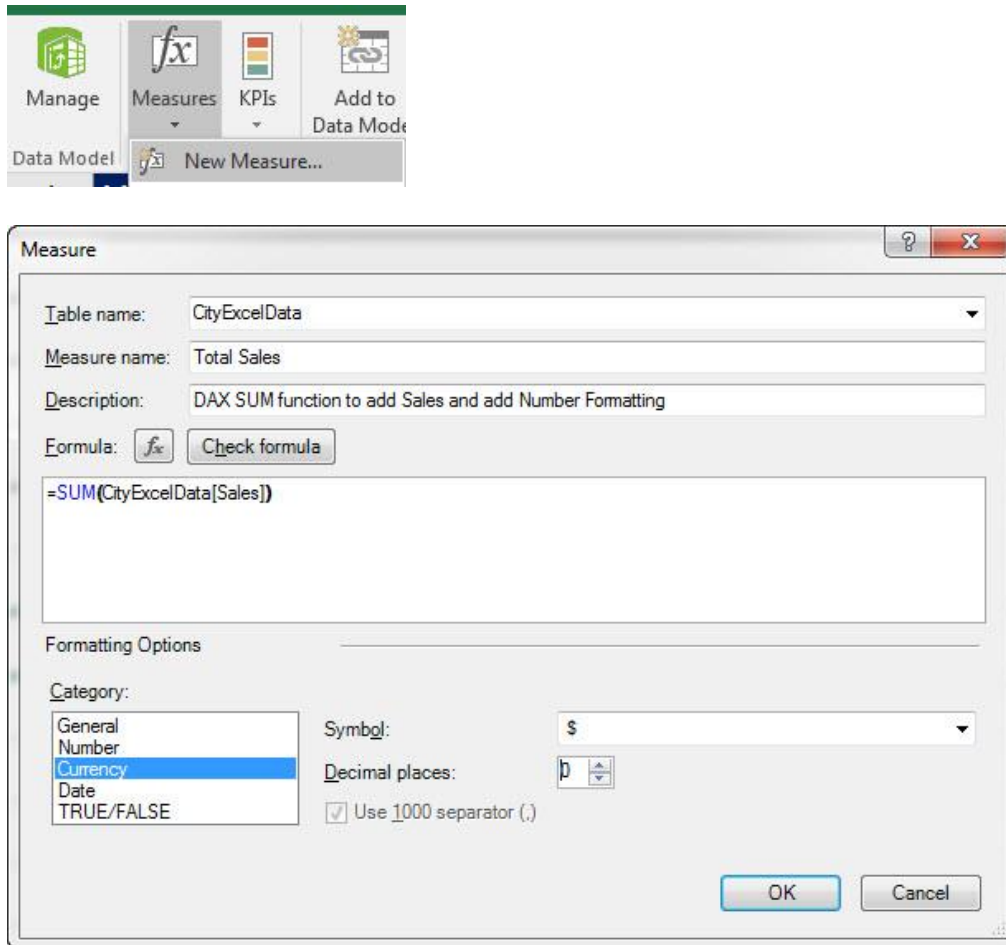
36) Close and Load To Data Model:



37) Workbook Query should look like:



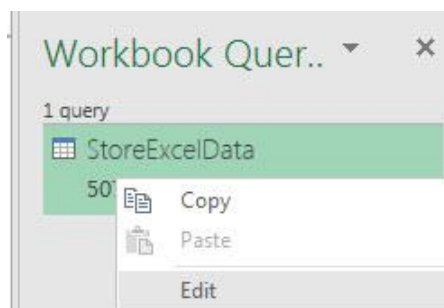
38) From PowerPivot Ribbon Tab create DAX Measure to add total sales:



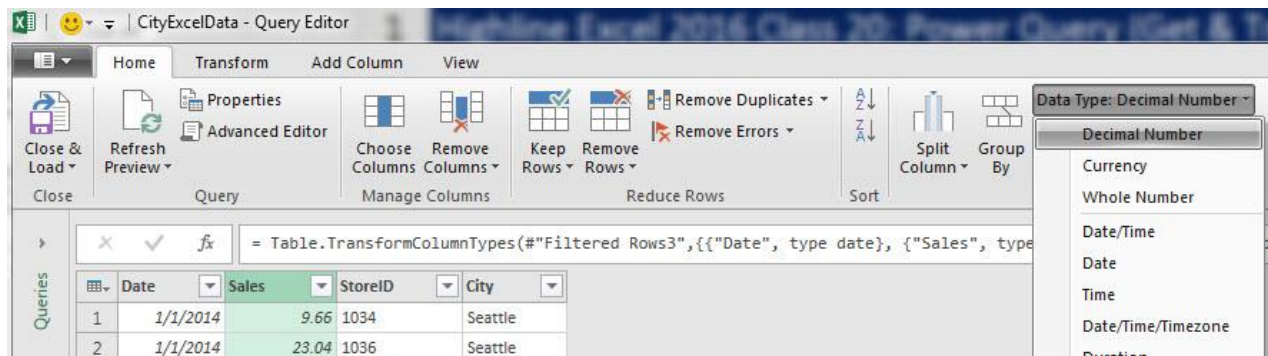
39) Open Data Model (Power Pivot Ribbon Tab, Manage Data Model button).

	City	Date	Sales	StoreID	Add Column
1	Seattle	3/19/2...	36.3	1037	
2	Seattle	3/19/2...	44.7	1037	
3	Seattle	3/19/2...	191.43	1037	
4	Seattle	3/19/2...	39.87	1037	
5	Seattle	3/19/2...	44.86	1037	
6	Seattle	3/19/2...	129.81	1037	
7	Seattle	3/19/2...	112.27	1037	
8	Seattle	3/19/2...	176.02	1037	
	Total Sales: #ERROR				

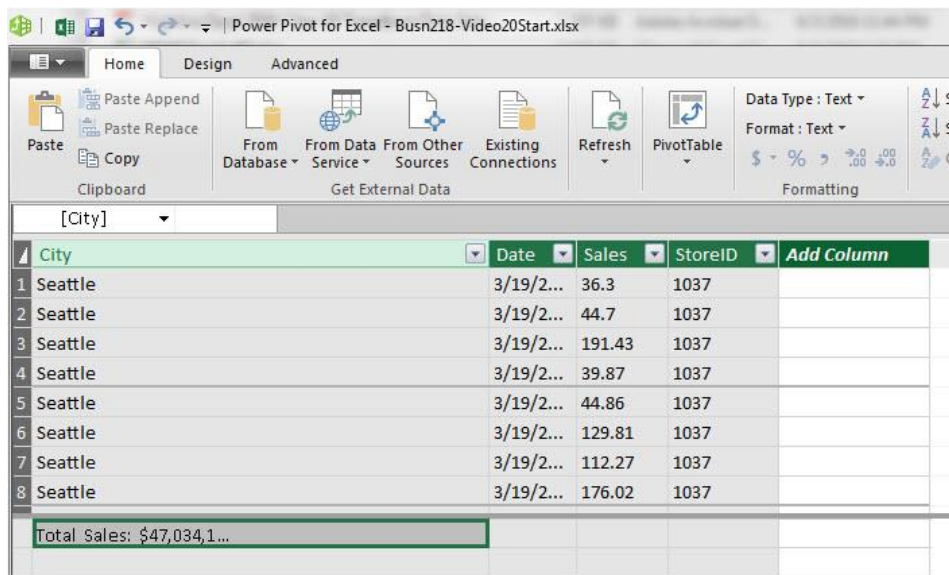
40) Edit Power Query:



41) Change Data Types so that Dates are dates and Sales are Decimal Values:



42) Go back to "Manage Data Model" and verify that error is gone:



Step 3: Create PivotTable based on Data Model and Group Dates by Month and Year.

43) in Manage Data Model window, Click PivotTable button and create the following PivotTable on a new sheet:

The screenshot shows an Excel worksheet with a PivotTable and the PivotTable Fields task pane. The PivotTable has 'Row Labels' with years 2014 and 2015, and 'Total Sales' as the value field. The task pane shows the data source 'StoreExcelData' with fields: City, Date, Date (Month), Date (Quarter), Date (Year), Sales, StoreID, and Total Sales. The 'Date (Month)' and 'Date (Year)' fields are selected for the Rows area, and 'Total Sales' is selected for the Values area.

Row Labels	Total Sales
2014	\$28,371,647
2015	\$18,662,521
Grand Total	\$47,034,168

44) Remember that new Calculated Columns are created in the Data Model:

City	Date	Sales	StoreID	Date (Year)	Date (Quarter)	Date (Month Index)	Date (Month)	Add Column
Seattle	3/19/2...	36.3	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	44.7	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	191.43	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	39.87	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	44.86	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	129.81	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	112.27	1037	2014	Qtr1		3 Mar	
Seattle	3/19/2...	176.02	1037	2014	Qtr1		3 Mar	
Total Sales: \$47,034,1...								

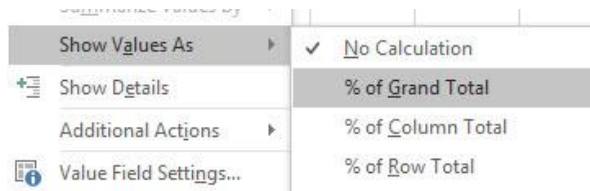
Step 4: Add Slicers for City and Year

The screenshot shows an Excel worksheet with a PivotTable and two slicers. The 'City' slicer has buttons for 'Portland', 'Seattle', and 'Tacoma'. The 'Date (Year)' slicer has buttons for '2014' and '2015'. The PivotTable shows 'Date (Month)' on the rows and 'Total Sales' on the values. The data is filtered for 'Seattle' and '2014'.

Date (Month)	Total Sales
Jan	\$4,868,805
Feb	\$4,342,006
Mar	\$4,825,416
Apr	\$4,632,297
May	\$4,822,414
Jun	\$4,100,257
Jul	\$4,014,989
Aug	\$3,472,467
Sep	\$2,922,139
Oct	\$3,055,188
Nov	\$2,930,687
Dec	\$3,047,504
Grand Total	\$47,034,168

Step 5: Use Show Values As feature in a PivotTable:

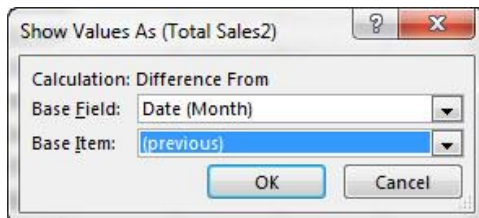
- 45) Add DAX Total Sales Measure to Values area a second time. Right-click and point to “Show Values As” and then click on “% of Grand Total”:



- 46) PivotTable will look like (Rename column: Right-click “Values Field Settings”):

Date (Month)	Total Sales	% of Total
Jan	\$4,868,805	10.35%
Feb	\$4,342,006	9.23%
Mar	\$4,825,416	10.26%
Apr	\$4,632,297	9.85%
May	\$4,822,414	10.25%
Jun	\$4,100,257	8.72%
Jul	\$4,014,989	8.54%
Aug	\$3,472,467	7.38%
Sep	\$2,922,139	6.21%
Oct	\$3,055,188	6.50%
Nov	\$2,930,687	6.23%
Dec	\$3,047,504	6.48%
Grand Total	\$47,034,168	100.00%

- 47) Add DAX Total Sales Measure to Values area a third time. Right-click and point to “Show Values As” and then click on “Difference From”. After the dialog box comes up, select “Previous” for base item:



- 48) PivotTable will look like (Rename column: Right-click “Values Field Settings”):

Date (Month)	Total Sales	% of Total	Change
Jan	\$4,868,805	10.35%	
Feb	\$4,342,006	9.23%	(\$526,799)
Mar	\$4,825,416	10.26%	\$483,410
Apr	\$4,632,297	9.85%	(\$193,119)
May	\$4,822,414	10.25%	\$190,117
Jun	\$4,100,257	8.72%	(\$722,157)
Jul	\$4,014,989	8.54%	(\$85,267)
Aug	\$3,472,467	7.38%	(\$542,523)
Sep	\$2,922,139	6.21%	(\$550,328)
Oct	\$3,055,188	6.50%	\$133,049
Nov	\$2,930,687	6.23%	(\$124,501)
Dec	\$3,047,504	6.48%	\$116,817
Grand Total	\$47,034,168	100.00%	

49) Add the DAX Total Sales Measure to Values area three more times. Then use the following Show Values As calculations:

- “% Difference From”
- “Running Total”
- “% Running Total”

50) PivotTable will look like (Rename column: Right-click “Values Field Settings”):

Date (Month)	Total Sales	% of Total	Change	% Change	Running Total	% Running Total
Jan	\$4,868,805	10.35%			\$4,868,805	10.35%
Feb	\$4,342,006	9.23%	(\$526,799)	-10.82%	\$9,210,811	19.58%
Mar	\$4,825,416	10.26%	\$483,410	11.13%	\$14,036,227	29.84%
Apr	\$4,632,297	9.85%	(\$193,119)	-4.00%	\$18,668,524	39.69%
May	\$4,822,414	10.25%	\$190,117	4.10%	\$23,490,938	49.94%
Jun	\$4,100,257	8.72%	(\$722,157)	-14.98%	\$27,591,194	58.66%
Jul	\$4,014,989	8.54%	(\$85,267)	-2.08%	\$31,606,184	67.20%
Aug	\$3,472,467	7.38%	(\$542,523)	-13.51%	\$35,078,650	74.58%
Sep	\$2,922,139	6.21%	(\$550,328)	-15.85%	\$38,000,789	80.79%
Oct	\$3,055,188	6.50%	\$133,049	4.55%	\$41,055,978	87.29%
Nov	\$2,930,687	6.23%	(\$124,501)	-4.08%	\$43,986,665	93.52%
Dec	\$3,047,504	6.48%	\$116,817	3.99%	\$47,034,168	100.00%
Grand Total	\$47,034,168	100.00%				

Values area
of
PivotTable:

Σ Values
Total Sales
% of Total
Change
% Change
Running Total
% Running Total

Step 6: Finalize Report

City

Portland
Seattle
Tacoma

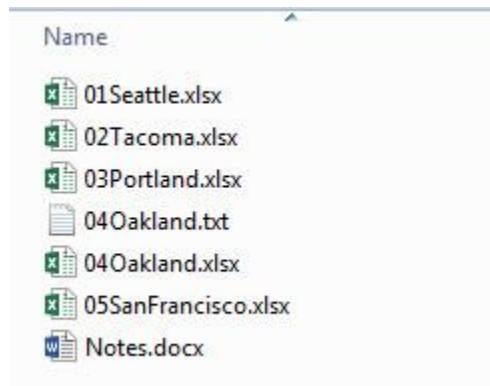
Date (Year)

2014
2015

Month	Total Sales	% of Total	Change	% Change	Running Total	% Running Total
Jan	\$4,868,805	10.35%			\$4,868,805	10.35%
Feb	\$4,342,006	9.23%	(\$526,799)	-10.82%	\$9,210,811	19.58%
Mar	\$4,825,416	10.26%	\$483,410	11.13%	\$14,036,227	29.84%
Apr	\$4,632,297	9.85%	(\$193,119)	-4.00%	\$18,668,524	39.69%
May	\$4,822,414	10.25%	\$190,117	4.10%	\$23,490,938	49.94%
Jun	\$4,100,257	8.72%	(\$722,157)	-14.98%	\$27,591,194	58.66%
Jul	\$4,014,989	8.54%	(\$85,267)	-2.08%	\$31,606,184	67.20%
Aug	\$3,472,467	7.38%	(\$542,523)	-13.51%	\$35,078,650	74.58%
Sep	\$2,922,139	6.21%	(\$550,328)	-15.85%	\$38,000,789	80.79%
Oct	\$3,055,188	6.50%	\$133,049	4.55%	\$41,055,978	87.29%
Nov	\$2,930,687	6.23%	(\$124,501)	-4.08%	\$43,986,665	93.52%
Dec	\$3,047,504	6.48%	\$116,817	3.99%	\$47,034,168	100.00%
Grand Total	\$47,034,168	100.00%				

Step 7: We Get New Files in Folder, After we Refresh: Everything Updates!

51) New files dropped in folder (notice the Word document and the Text file – our Filter for “.xlsx” files will protect against importing these files):



52) After we use the keyboard for Refresh All (Ctrl + Alt + F5), we see that our final report updates:

City		Date (Year)	
Oakland		2014	
Portland		2015	
SanFrancisco			
Seattle			
Tacoma			

Month	Total Sales	% of Total	Change	% Change	Running Total	% Running Total
Jan	\$8,314,232	9.53%			\$8,314,232	9.53%
Feb	\$7,432,182	8.52%	(\$882,050)	-10.61%	\$15,746,413	18.05%
Mar	\$8,234,206	9.44%	\$802,024	10.79%	\$23,980,619	27.48%
Apr	\$7,941,764	9.10%	(\$292,442)	-3.55%	\$31,922,383	36.59%
May	\$8,176,805	9.37%	\$235,041	2.96%	\$40,099,188	45.96%
Jun	\$7,399,049	8.48%	(\$777,757)	-9.51%	\$47,498,237	54.44%
Jul	\$7,433,150	8.52%	\$34,101	0.46%	\$54,931,387	62.96%
Aug	\$6,897,660	7.91%	(\$535,490)	-7.20%	\$61,829,047	70.86%
Sep	\$6,247,544	7.16%	(\$650,115)	-9.43%	\$68,076,591	78.02%
Oct	\$6,494,215	7.44%	\$246,671	3.95%	\$74,570,806	85.47%
Nov	\$6,210,105	7.12%	(\$284,110)	-4.37%	\$80,780,911	92.58%
Dec	\$6,470,986	7.42%	\$260,881	4.20%	\$87,251,897	100.00%
Grand Total	\$87,251,897	100.00%				

Cumulative List of Keyboards Throughout Class:

- 1) **Esc Key**:
 - i. Closes Backstage View (like Print Preview).
 - ii. Closes most dialog boxes.
 - iii. If you are in Edit mode in a Cell, Esc will revert back to what you had in the cell before you put the Cell in Edit mode.
- 2) **F2 Key** = Puts formula in Edit Mode and shows the rainbow colored Range Finder.
- 3) **SUM Function: Alt + =**
- 4) **Ctrl + Shift + Arrow** = Highlight column (Current Region).
- 5) **Ctrl + Backspace** = Jumps back to Active Cell
- 6) **Ctrl + Z** = Undo.
- 7) **Ctrl + Y** = Undo the Undo.
- 8) **Ctrl + C** = Copy.
- 9) **Ctrl + X** = Cut.
- 10) **Ctrl + V** = Paste.
- 11) **Ctrl + PageDown** = expose next sheet to right.
- 12) **Ctrl + PageUp** = expose next sheet to left.
- 13) **Ctrl + 1** = Format Cells dialog box, or in a chart it opens Format Chart Element Task Pane.
- 14) **Ctrl + Arrow**: jumps to the bottom of the "Current Region", which means it jumps to the last cell that has data, right before the first empty cell.
- 15) **Ctrl + Home** = Go to Cell A1.
- 16) **Ctrl + End** = Go to last cell used.
- 17) Alt keyboards are keys that you hit in succession. Alt keyboards are keyboards you can teach yourself by hitting the Alt key and looking at the screen tips.
 - i. Create PivotTable dialog box: **Alt, N, V**
 - ii. Page Setup dialog box: **Alt, P, S, P**
 - iii. Keyboard to open Sort dialog box: **Alt, D, S**
- 18) **ENTER** = When you are in Edit Mode in a Cell, it will put thing in cell and move selected cell DOWN.
- 19) **CTRL + ENTER** = When you are in Edit Mode in a Cell, it will put thing in cell and keep cell selected.
- 20) **TAB** = When you are in Edit Mode in a Cell, it will put thing in cell and move selected cell RIGHT.
- 21) **SHIFT + ENTER** = When you are in Edit Mode in a Cell, it will put thing in cell and move selected cell UP.
- 22) **SHIFT + TAB** = When you are in Edit Mode in a Cell, it will put thing in cell and move selected cell LEFT.
- 23) **Ctrl + T** = Create Excel Table (with dynamic ranges) from a Proper Data Set.
 - i. Keyboard to name Excel Table: **Alt, J, T, A**
 - ii. **Tab** = Enter Raw Data into an Excel Table.
- 24) **Ctrl + Shift + ~ (`)** = General Number Formatting Keyboard.
- 25) **Ctrl + ;** = Keyboard for hardcoding today's date.
- 26) **Ctrl + Shift + ;** = Keyboard for hardcoding current time.
- 27) **Arrow Key** = If you are making a formula, Arrow key will "hunt" for Cell Reference.
- 28) **Ctrl + B** = Bold the Font
- 29) **Ctrl + * (on Number Pad) or Ctrl + Shift + 8** = Highlight Current Table.
- 30) **Alt + Enter** = Add Manual Line Break (Word Wrap)
- 31) **Ctrl + P** = Print dialog Backstage View and Print Preview
- 32) **F4 Key** = If you are in Edit mode while making a formula AND your cursor is touching a particular Cell Reference, F4 key will toggle through the different Cell References:
 - i. **A1** = Relative
 - ii. **\$A\$1** = Absolute or "Locked"

- iii. **A\$1** = Mixed with Row Locked (Relative as you copy across the columns AND Locked as you copy down the rows)
 - iv. **\$A1** = Mixed with Column Locked (Relative as you copy down the rows AND Locked as you across the columns)
- 33) **Ctrl + Shift + 4** = Apply Currency Number Formatting
- 34) **Tab key** = When you are selecting a Function from the Function Drop-down list, you can select the function that is highlighted in blue by using the Tab key.
- 35) **F9 Key** = To evaluate just a single part of formula while you are in edit mode, highlight part of formula and hit the F9 key.
- i. If you are creating an Array Constant in your formula: Hit F9.
 - ii. If you are evaluating the formula element just to see what that part of the formula looks like,
REMEMBER: to Undo with Ctrl + Z.
- 36) **Alt, E, A, A** = Clear All (Content and Formatting)
- 37) Evaluate Formula One Step at a Time Keyboard: **Alt, M, V**
- 38) Keyboard to open Sort dialog box: **Alt, D, S**
- 39) **Ctrl + Shift + L** = Filter (or **Alt, D, F, F**) = Toggle key for Filter Drop-down Arrows
- 40) **Ctrl + N** = Open New File
- 41) **F12** = Save As (Change File Name, Location, File Type)
- 42) Import Excel Table into Power Query Editor: **Alt, A, P, T**
- 43) **Ctrl + 1 (When Chart element in selected)**: Open Task Pane for Chart Element
- 44) **F4 Key** = If you are in Edit mode while making a formula AND your cursor is touching a particular Cell Reference, F4 key will toggle through the different Cell References:
- i. **A1** = Relative
 - ii. **\$A\$1** = Absolute or "Locked"
 - iii. **A\$1** = Mixed with Row Locked (Relative as you copy across the columns AND Locked as you copy down the rows)
 - iv. **\$A1** = Mixed with Column Locked (Relative as you copy down the rows AND Locked as you across the columns)
- 45) Keyboard to open Scenario Manager = **Alt, T, E**
- 46) **Ctrl + Tab** = Toggle between Excel Workbook File Windows
- 47) **Ctrl + Shift + F3** = Create Names From Selection
- 48) **Ctrl + F3** = open Name Manager
- 49) **F3** = Paste Name or List of Names
- 50) **Alt + F4** = Close Active Window
- 51) **Window Key + Up Arrow** = Maximize Active Window
- 52) **Ctrl + Shift + Enter** = Keystroke to enter Array Formulas that: 1) have a function argument that requires it, or 2) whether or not you are entering the Resultant Array into multiple cells simultaneously.
- 53) **Ctrl + /** = Highlight current Array
- 54) Data Validation Dialog Box: **Alt, D, L**
- 55) **F11** = Create Chart on a new sheet
- 56) **Alt + F11** = Create Chart on currently selected sheet.
- 57) New Format Rule dialog box: **Alt, H, L, N**
- 58) Delete conditional Formatting Rule: **Alt, O, D, D**
- 59) Manage Rule dialog box keyboard: **Alt, O, D**
- 60) "Format values where this formula is true": **Alt, H, L, N, PageDown, Tab**
- 61) Shift + F11 = Insert a New Sheet
- 62) Ctrl + F1 = Toggle Ribbon Tabs on and off
- 63) Ctrl + Alt + F5 = Refresh All Data in Excel Workbook.

64) Zoom to Selection = **Alt, W, G**

65) Ctrl + F = Find

66) Ctrl + H = Find and Replace

67) Advanced Filter keyboard: Alt, A, Q or Alt, D, F, A

New Keyboards in This Video:

68) ??