

Table of Contents

Key Performance Indicators:.....	2
Dashboard:.....	2
Effective Dashboards:	2
Power Pivot DAX Measures = "Formulas for PivotTables"	3
Steps for Dashboard Project	4
Step 1: Power Query to Clean, Transform & Import Text Files.....	4
Step 2: Import Data into Power Pivot Data Model	6
Step 3: PivotTable #1: for Month & Year Revenue	7
Step 4: Group Dates in PivotTable based on Data Model: Automatically adds Columns to Data Model Table.....	7
Step 5: First DAX Measure: "Formula for PivotTable"	9
Step 6: Name PivotTables	11
Step 7: Add Slicer to Multiple PivotTables.....	11
Step 8: Chart #1: Line Chart for Month and Year Data	12
Step 9: PivotTable #2: Revenue for each SalesRep. Name Pivot. Connect to Slicer	12
Step 10: Chart #2: Bar Chart for SalesRep Revenue	13
Step 11: PivotTable #3: Create Year PivotTable. Name Pivot. Connect to Slicer.....	14
Step 12: Create Text Label for Chart #2 based on PivotTable #3 and Slicer	15
Step 13: PivotTable #4: Cross Tabulated Table for Product and Region	16
Step 14: Conditional Formatting for PivotTable #4	16
Step 15: Paste Linked Picture of PivotTable in Dashboard	17
Step 16: Add formatting and Alignment to Dashboard	18
Step 17: Add new Text Files to Folder and Refresh Dashboard.....	19
Cumulative List of Keyboards Throughout Class:.....	20

Key Performance Indicators:

- 1) Quantifiable measurements that can gauge performance over time.
- 2) Help to determine an entity's progress in achieving its:
 - Strategic goals
 - Operational goals
 - Comparison with Industry
 - Other
- 3) Examples:
 - Company wants to monitor:
 1. Revenue or expenses over time
 2. Employee Sales Data
 3. Customer Satisfaction
 4. Top 5 Products
 5. Current cash flow
 6. Employee turnover
 - Supplier wants to monitor:
 1. On time performance
 2. Fulfillment rate ($\text{Fill Rate} = \text{Supplied Quantity} / \text{Ordered Quantity}$)
 3. Top 5 Products
 - College wants to monitor:
 1. Graduation rate
 2. Retention rate
 3. Teacher Performance
 - Sports Team wants to monitor:
 1. Wins/Losses
 2. Averages
 3. Top 5 Athletes

Dashboard:

- 1) Data Visualization that presents useful information and metrics and will update automatically when new data become available.
- 2) Dashboards may contain:
 - Tables
 - Charts
 - Data Validation
 - Pictures
 - Other visualizations of Data

Effective Dashboards:

- 1) Presents timely summary data or metrics/KPIs
- 2) Metrics/KPIs should be useful for the user/decision maker
- 3) Dashboard should inform rather than overwhelm
- 4) Should call attention to unusual metrics/KPIs that require attention or are of interest

Power Pivot DAX Measures = “Formulas for PivotTables”

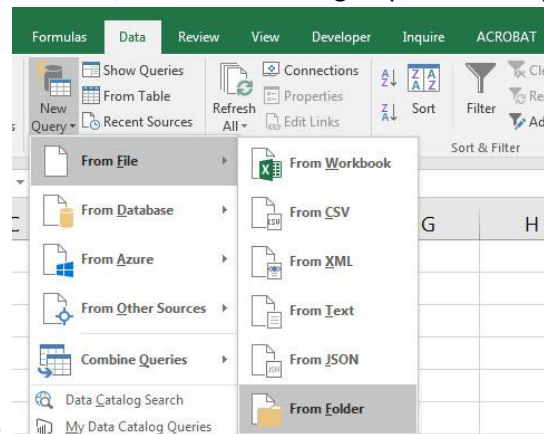
- 1) DAX = **D**ata **A**nalysis **E**Xpressions
- 2) Power Pivot DAX Measures = Formulas you can use in PivotTable = “Formulas for PivotTables”
- 3) Words that mean “Formulas for PivotTables”:
 - DAX Formulas
 - DAX Measures
 - Measures
 - DAX
 - Calculated Fields
 - Portable Formulas
 - Expressions
 - Formulas for PivotTables
- 4) DAX Measures are amazing because:
 - They calculate VERY fast on Big Data
 - You create the formula once and then you can add it to as many PivotTables as you want.
 - You can add Number Formatting to the DAX Measure, which they automatically applied when you drop it into the PivotTable.
 - There are more functions than in a normal PivotTable
- 5) Implicit vs. Explicit calculations:
 - Examples:
 1. If you use the SUM function in a normal PivotTable, you create an implicit calculation for adding. Implicit calculations are less efficient for Big Data.
 2. If you use the DAX SUM function when you create a Measure in the Data Model, you create an explicit calculation for adding. Explicit calculations are efficient for Big Data.
 - Implicit
 1. Functions from a normal PivotTable.
 2. Do not calculate quickly with Big Data.
 - Explicit
 1. DAX Function and formulas.
 2. Calculate quickly on Big Data because they are designed specifically to work Data Model Columnar Database and with Relationships.

Steps for Dashboard Project

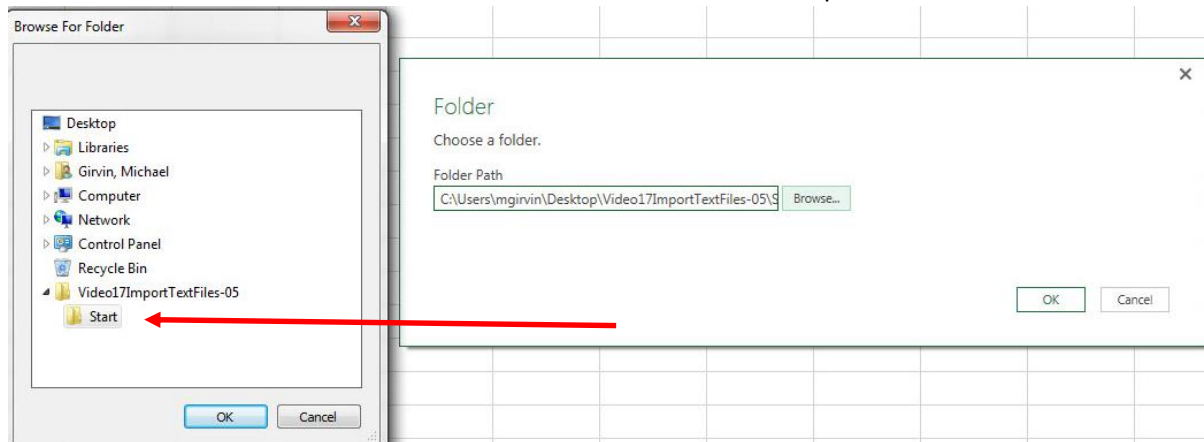
- 1) Power Query to Clean, Transform & Import Text Files
- 2) Import Data into Power Pivot Data Model
- 3) PivotTable #1: for Month & Year Revenue
- 4) Group Dates in PivotTable based on Data Model: Automatically adds Columns to Data Model Table.
- 5) First DAX Measure: "Formula for PivotTable"
- 6) Name PivotTables
- 7) Add Slicer to Multiple PivotTables
- 8) Chart #1: Line Chart for Month and Year Data
- 9) PivotTable #2: Revenue for each SalesRep. Name Pivot. Connect to Slicer.
- 10) Chart #2: Bar Chart for SalesRep Revenue
- 11) PivotTable #3: Create Year PivotTable. Name Pivot. Connect to Slicer.
- 12) Create Text Label for Chart #2 based on PivotTable #3 and Slicer.
- 13) PivotTable #4: Cross Tabulated Table for Product and Region.
- 14) Conditional Formatting for PivotTable #4.
- 15) Paste Linked Picture of PivotTable in Dashboard
- 16) Add formatting and Alignment to Dashboard
- 17) Add new Text Files to Folder and Refresh Dashboard

Step 1: Power Query to Clean, Transform & Import Text Files

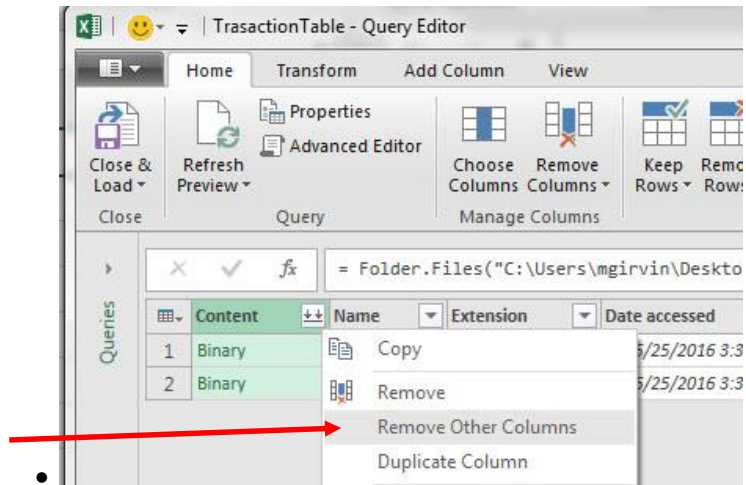
- 1) Data Ribbon Tab, Get & Transform group, New Query, From File, From Folder:



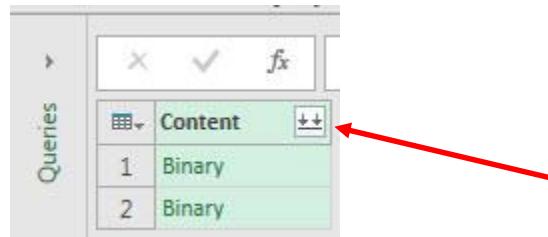
- 2) Browse for Folder Path and select the "Start" folder inside "Video17ImportTextFiles-05" folder:



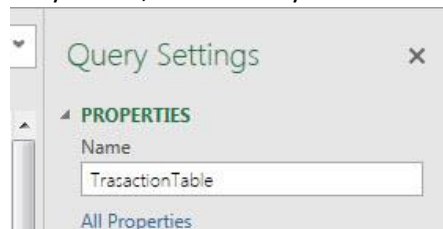
- 3) Right-click Content Column and click on “Remove Other Columns”



- 4) Content column contains the text files. Click Double Downward Pointing Arrows.



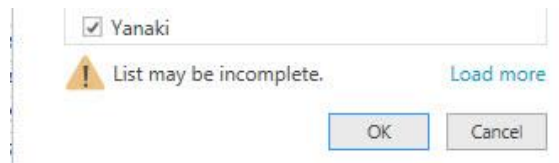
- 5) In the Query Editor, name Query “TransactionTable”:



- 6) In the Query Editor, select the Trans #, Web Site, Units, Discount, and Price columns and Right-click, “Remove Columns”:

	Trans #	DateTime	SalesRep	Region	Web Site	Product	Units	Discount	Price	Type	Net Revenue
1	1	1/1/2016 12:19:00 AM	Sioux Sanders	Europe	amazon.com	Maxi MTA	24	0.275	8	Copy	
2	2	1/1/2016 2:07:00 AM	Tyrone Tillard	Africa	coloradoboomerangs.com	Sunset	8	0.035	26.9	Remove Columns	
3	3	1/1/2016 2:11:00 AM	Gigi Griffin	North America	amazon.com	Yanaki	72	0.4	24.9	Remove Other Columns	
4	4	1/1/2016 2:23:00 AM	Tyrone Tillard	Africa	ebay.com	Sunbell	1	0	23.9	Remove Duplicates	
5	5	1/1/2016 2:28:00 AM	Al Alberto	Africa	amazon.com	Yanaki	2	0	24.9	Remove Errors	
6	6	1/1/2016 2:39:00 AM	Popi Prince	Europe	gel-boomerang.com	Aspen	2	0	24.9	Replace Values...	
7	7	1/1/2016 2:40:00 AM	Chin Chen	South America	coloradoboomerangs.com	Yanaki	2	0	24.9		

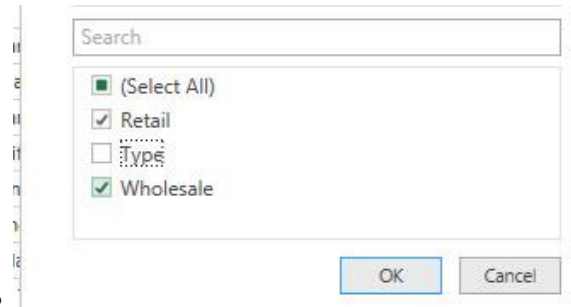
- 7) Click Filter Button in Product Field and then click “Load More”.



- 8) Filter out “TriFly” (Amounts for this product are too small for our analysis):



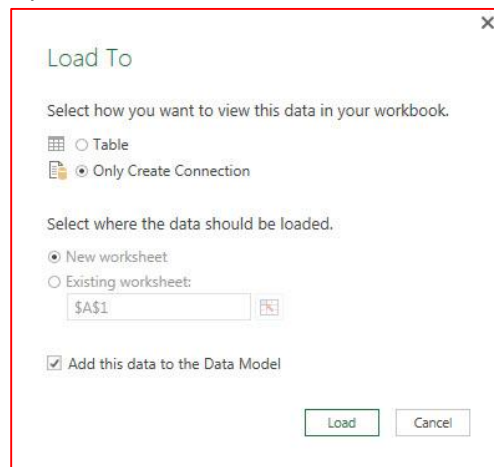
- 9) Click Filter Button in Product Field and then click “Load More”. Then filter out the extra fields by filtering out “Type”:



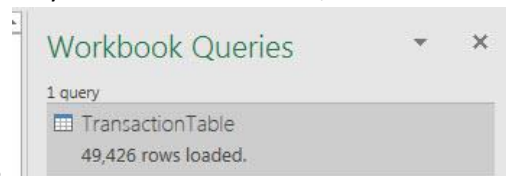
- 10) Check each Data Type to make sure that it matches the data in the Field.
11) Power Query Home Ribbon Tab, Close group, Close and Load to:



- 12) Click “Only Create Connection” and check “Add this data to the Data Model”:

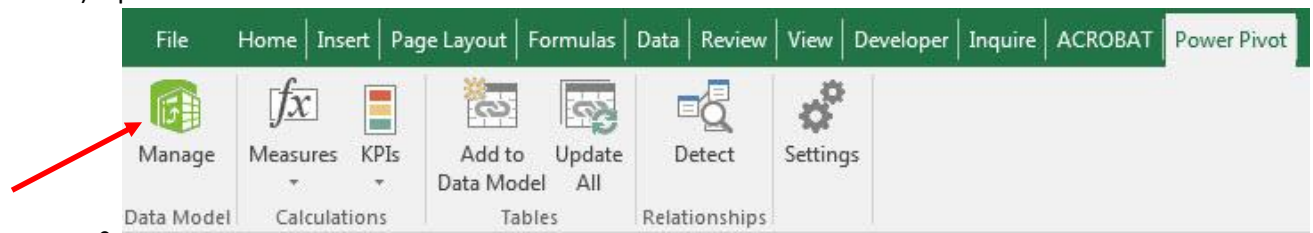


- 13) Show Query Pane should show 49,426 records have been added to the Data Model:



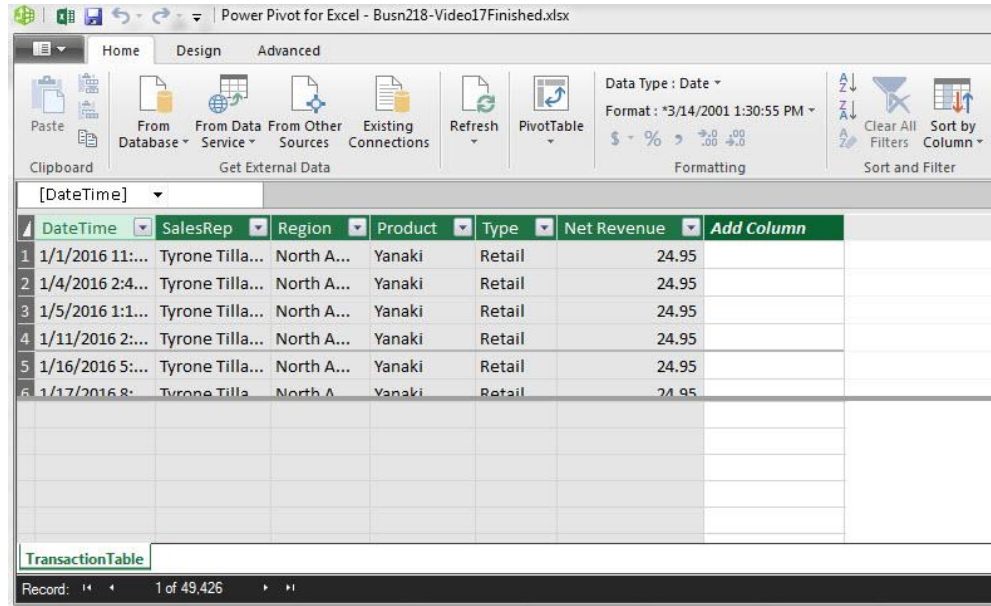
Step 2: Import Data into Power Pivot Data Model

- 14) Open Data Model in Power Pivot Ribbon Tab:



15) Table should look something like:

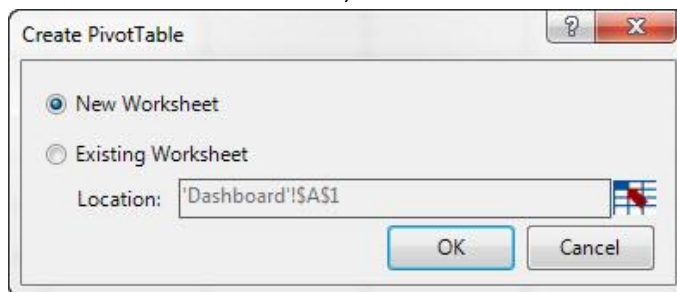
- Notice that the table took the Query Name: “TransactionTable”.
- Notice that there are 6 fields.



	DateTime	SalesRep	Region	Product	Type	Net Revenue
1	1/1/2016 11:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95
2	1/4/2016 2:4...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95
3	1/5/2016 1:1...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95
4	1/11/2016 2:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95
5	1/16/2016 5:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95
6	1/17/2016 8:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95

Step 3: PivotTable #1: for Month & Year Revenue

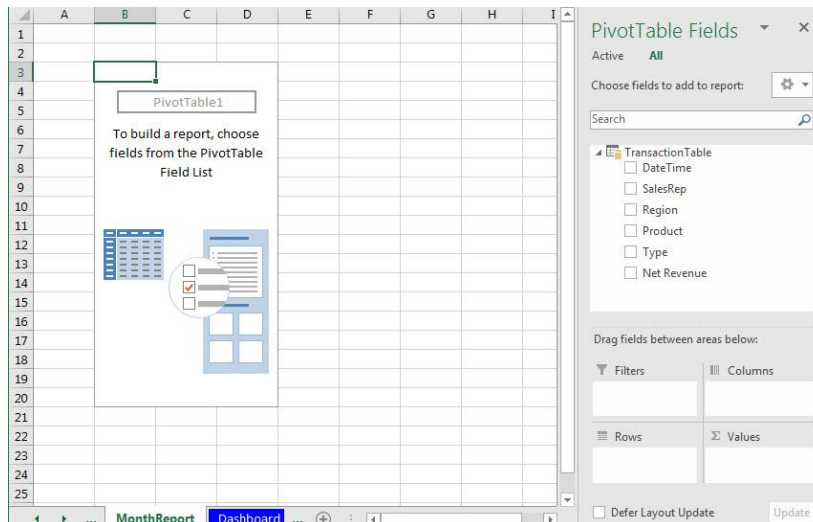
16) In the PowerPivot Home Ribbon Tab, click the PivotTable button and create a PivotTable on a new sheet:



17) Name the new sheet “MonthReport”

Step 4: Group Dates in PivotTable based on Data Model: Automatically adds Columns to Data Model Table

18) The PivotTable Field List shows the TransactionTable from the Data Model:



19) Drag DateTime Field to Row area and a number of new Fields are created in the Field List for Year, Month, Quarter:

The screenshot shows an Excel worksheet with a PivotTable. The PivotTable has Row Labels with 2016, 2017, and Grand Total. The PivotTable Fields task pane is open on the right, showing the TransactionTable with DateTime, DateTime (Month), DateTime (Quarter), and DateTime (Year) checked. Red arrows point from the task pane to the PivotTable.

20) When you look back at the Data Model, you see the new Calculated Fields are added to the Data Model Table:

DateTime	SalesRep	Region	Product	Type	Net Revenue	DateTime (Year)	DateTime (Quarter)	DateTime (Month Index)	DateTime (Month)	Add Column
1/1/2016 11:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/4/2016 2:4...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/5/2016 1:1...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/11/2016 2:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/16/2016 5:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/17/2016 8:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/31/2016 7:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	
1/31/2016 2:...	Tyrone Tilla...	North A...	Yanaki	Retail	24.95	2016	Qtr1	1	Jan	

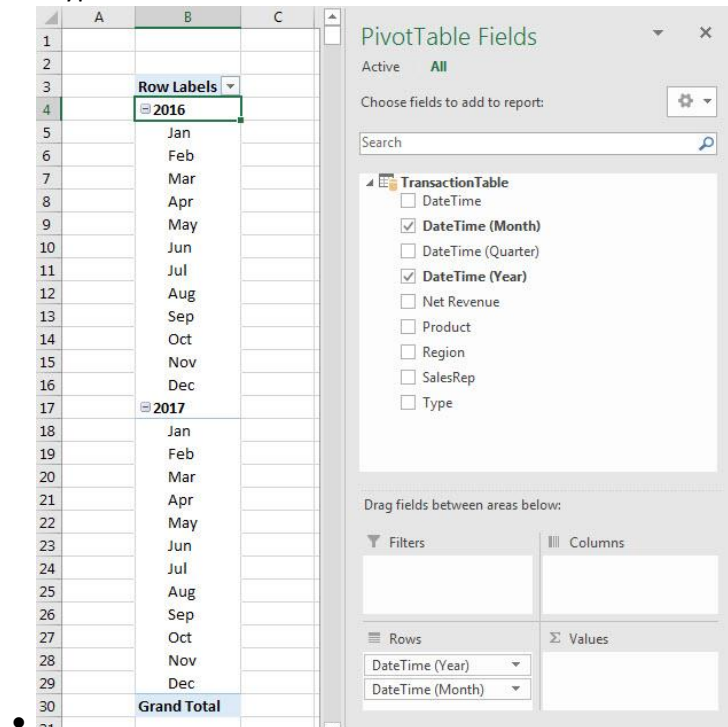
21) In earlier versions of PowerPivot Grouping by Month and Year was not available if you created a PivotTable from the Data Model.

- Feature added in Oct, 2015: <https://blogs.office.com/2015/10/13/time-grouping-enhancements-in-excel-2016/>

22) Remove Quarter and DateTime fields from Row area. Expand rows in PivotTable: Right-click, Expand, Expand All:

The screenshot shows the context menu for a PivotTable row. The menu includes options like Subtotal, Expand/Collapse, Drill Down/Drill Up, Group, Ungroup, Expand Entire Field, and Collapse Entire Field.

23) In cell B3 type the new name “Month Year”. The PivotTable should look like:

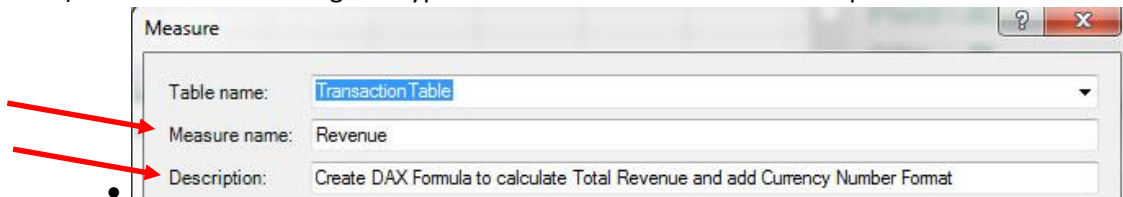


Step 5: First DAX Measure: "Formula for PivotTable"

24) To create our first formula for our PivotTable, go to Power Pivot Ribbon Tab, Calculation group, then click the drop-down for Measures and click on New Measures:

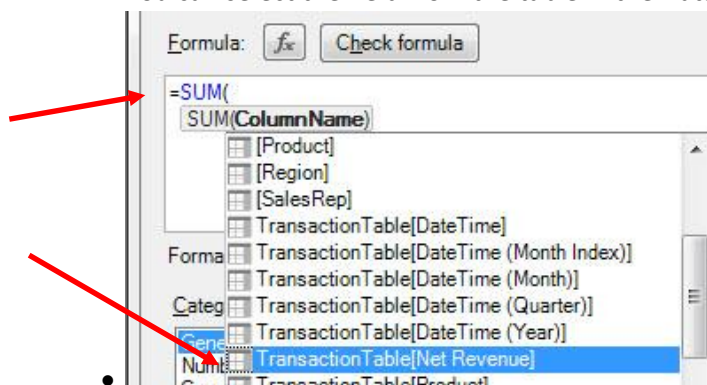


25) In the Measure dialog box type a “Measure name” and a “Description”:



26) In the Formula area, create your DAX Measure with the SUM function and the table name and field name “TransactionTable[NetRevenue]”:

- You can select the field from the table in the Data Model from the drop-down list:



27) Then add Number Formatting to your formula:



Formatting Options

Category:

- General
- Number
- Currency**
- Date
- TRUE/FALSE

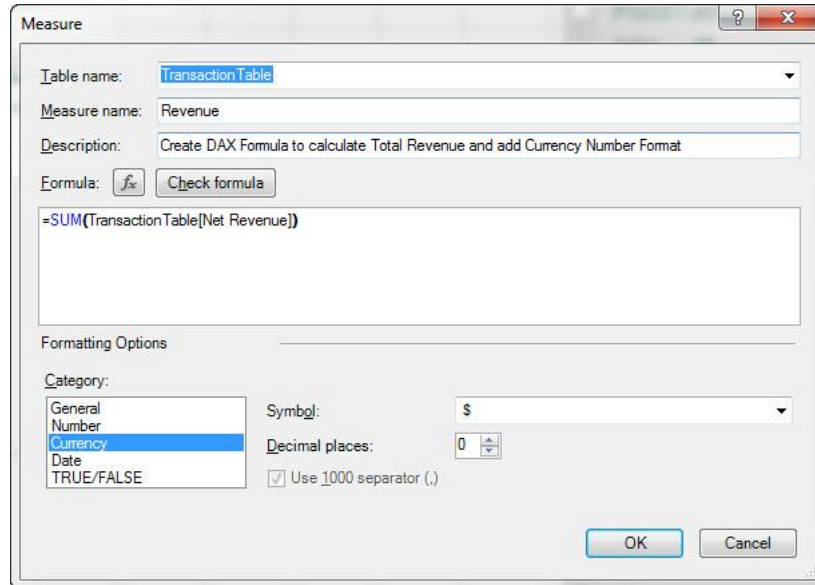
Symbol: \$

Decimal places: 0

☒ Use 1000 separator (,)

28) The full Measure dialog box looks like this:

- This is an amazing ability we have for PivotTables created from the Data Model:
 - Formula can be used over and over
 - Number Formatting will always follow the formula around!



Measure

Table name: TransactionTable

Measure name: Revenue

Description: Create DAX Formula to calculate Total Revenue and add Currency Number Format

Formula:

=SUM(TransactionTable[Net Revenue])

Formatting Options

Category:

- General
- Number
- Currency**
- Date
- TRUE/FALSE

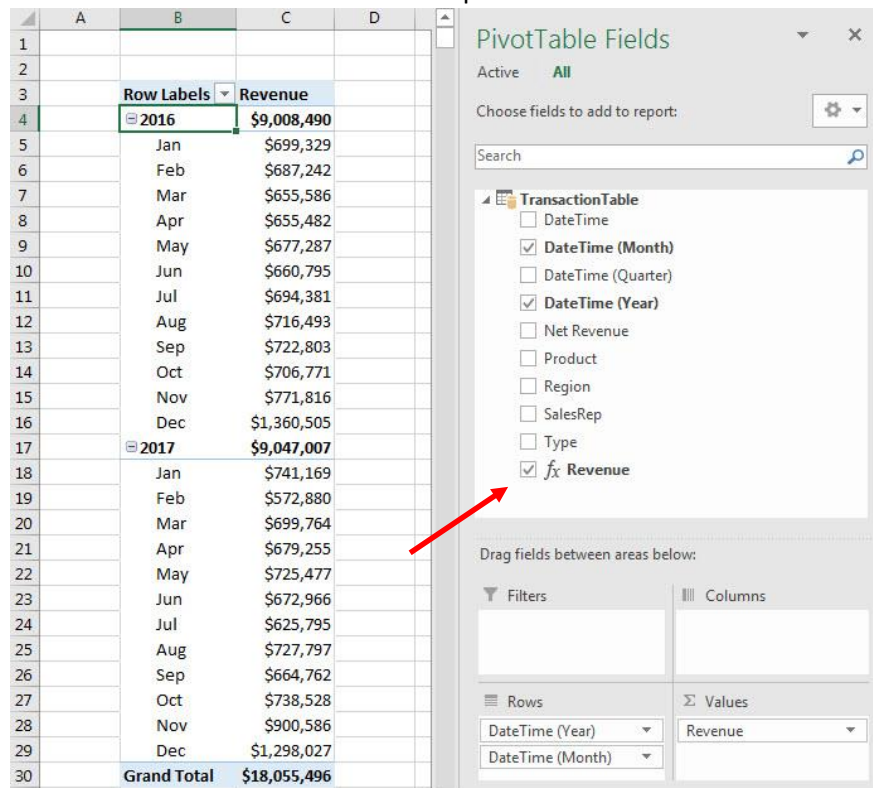
Symbol: \$

Decimal places: 0

☒ Use 1000 separator (,)

29) PivotTable now looks like this:

- Notice that the DAX Measure shows up in the Field List with the function icon (Fx):



	A	B	C	D
1				
2				
3		Row Labels	Revenue	
4		2016	\$9,008,490	
5		Jan	\$699,329	
6		Feb	\$687,242	
7		Mar	\$655,586	
8		Apr	\$655,482	
9		May	\$677,287	
10		Jun	\$660,795	
11		Jul	\$694,381	
12		Aug	\$716,493	
13		Sep	\$722,803	
14		Oct	\$706,771	
15		Nov	\$771,816	
16		Dec	\$1,360,505	
17		2017	\$9,047,007	
18		Jan	\$741,169	
19		Feb	\$572,880	
20		Mar	\$699,764	
21		Apr	\$679,255	
22		May	\$725,477	
23		Jun	\$672,966	
24		Jul	\$625,795	
25		Aug	\$727,797	
26		Sep	\$664,762	
27		Oct	\$738,528	
28		Nov	\$900,586	
29		Dec	\$1,298,027	
30		Grand Total	\$18,055,496	

PivotTable Fields

Active: All

Choose fields to add to report:

Search

TransactionTable

- ☐ DateTime
- ☒ DateTime (Month)
- ☐ DateTime (Quarter)
- ☒ DateTime (Year)
- ☐ Net Revenue
- ☐ Product
- ☐ Region
- ☐ SalesRep
- ☐ Type
- ☒ fx Revenue

Drag fields between areas below:

Filters

Columns

Rows

Values

DateTime (Year)

Revenue

30) Go back to the Data Model and notice that the Measure is stored below the Data Model Table:

[DateTime]	Revenue:=SUM(TransactionTable[Net Revenue])
1/1/2016 11:24:00 PM	Tyrone Tilla... North A... Yanaki
1/4/2016 2:46:00 AM	Tyrone Tilla... North A... Yanaki
1/5/2016 1:16:00 AM	Tyrone Tilla... North A... Yanaki
1/11/2016 2:45:00 AM	Tyrone Tilla... North A... Yanaki
1/16/2016 5:44:00 PM	Tyrone Tilla... North A... Yanaki
1/17/2016 8:12:00 PM	Tyrone Tilla... North A... Yanaki
1/31/2016 7:08:00 AM	Tyrone Tilla... North A... Yanaki
1/31/2016 2:55:00 PM	Tyrone Tilla... North A... Yanaki
Revenue: \$18,055,4...	

Step 6: Name PivotTables

31) Right-click PivotTable and click on PivotTable Options. Name it: "MonthPivot":

PivotTable Options

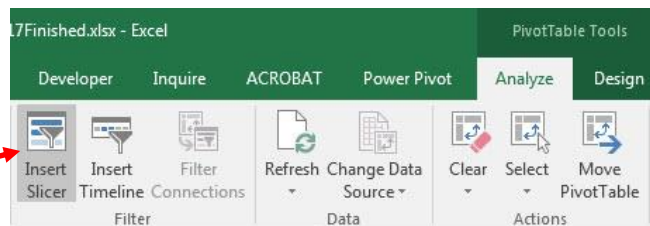
PivotTable Name: MonthPivot

Layout & Format Totals & Filters Display Printing Data Alt Text

Step 7: Add Slicer to Multiple PivotTables

32) We will add a Slicer for Year to the first PivotTable and then later we will attach all the PivotTables to this one Slicer.

33) With cursor in PivotTable, click on the PivotTable Tools Analyze Ribbon Tab, then in the Filter group click on Insert Slicer:

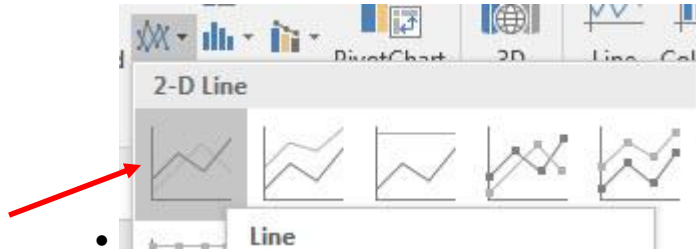


34) After checking the DateTime Year field, edit the Slicer in the Slicer Tools Options Ribbon Tab to show 3 columns:

The screenshot shows the Excel Slicer Tools Options tab. The 'Tell me what you want to do' search bar is active. The 'Columns' dropdown is set to 3. Below the screenshot, the 'DateTime (Year)' slicer is shown with buttons for 2016 and 2017.

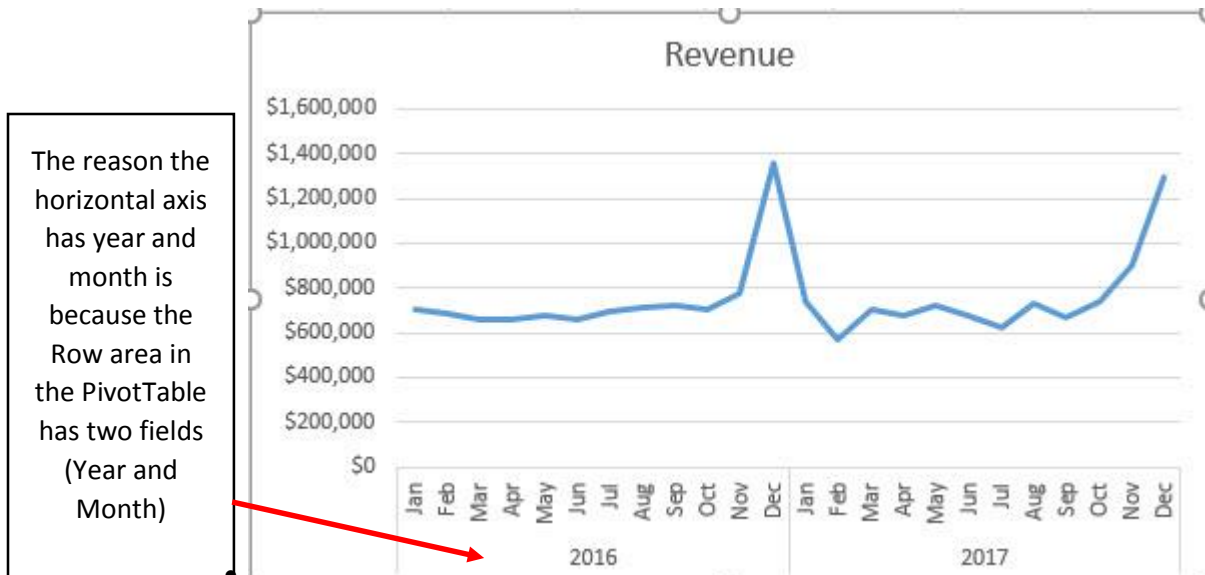
Step 8: Chart #1: Line Chart for Month and Year Data

35) Click in the PivotTable and then in the Insert Ribbon Tab, in the Chart group, click on Line Chart:



36) For chart:

- Right-click Grey Field buttons and click on “Hide all field buttons on chart”
- Delete the Legend
- Change Chart Title to “Revenue”
- Chart should look like:

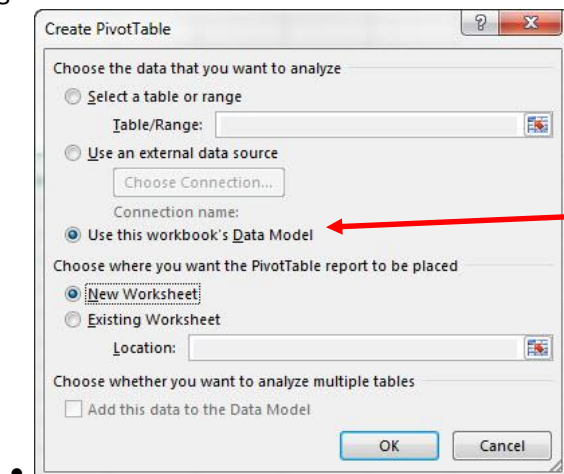


37) Move the Slicer and the Line Chart to the Dashboard Sheet using Cut (Ctrl + X) and Paste (Ctrl + V)

Step 9: PivotTable #2: Revenue for each SalesRep. Name Pivot. Connect to Slicer

38) With your cursor on the Dashboard Sheet, use the keyboard to insert a PivotTable on a New Sheet: Alt, N, V

39) Click the “Use this workbook’s Data Model” dialog button (New in Excel 2016) and “New Worksheet” dialog button:



“Use this workbook’s Data Model” is NEW in Excel 2016 (used to have to use “Use an external data source”)

40) Name the Sheet: "SalesRepReport"

41) Create PivotTable SalesRep in Row area and Revenue Measure in Values area, like:

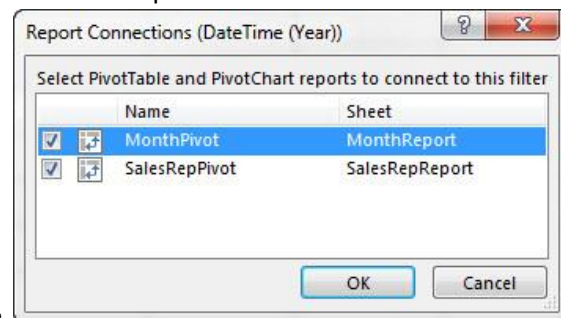
The screenshot shows an Excel spreadsheet with a PivotTable and the PivotTable Task Pane. The PivotTable is located in the range A3:B14. The Row Labels are SalesRep and the Values are Revenue. The data is as follows:

SalesRep	Revenue
Al Alberto	\$530,304
Chin Chen	\$552,755
Erika Ellen	\$606,228
Gigi Griffin	\$549,123
Kiki Krantz	\$1,171,984
Lori Long	\$585,634
Popi Prince	\$561,603
Sheliadawn Sho	\$1,210,655
Sioux Sanders	\$1,678,479
Tyrone Tillard	\$1,600,241
Grand Total	\$9,047,007

The PivotTable Task Pane is open on the right, showing the TransactionTable source. The SalesRep field is checked in the Rows area and the Revenue field is checked in the Values area.

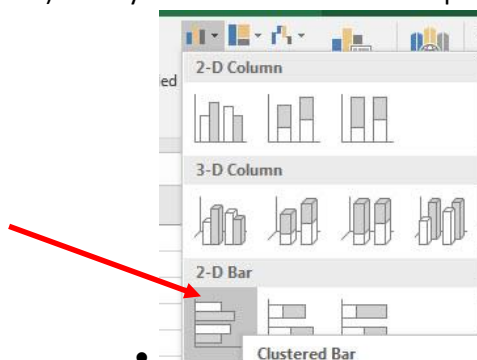
42) Name PivotTable "SalesRepPivot"

43) On the Dashboard Sheet, Right-click the Slicer and point to "Report Connections", then check the PivotTable "SalesRepPivot".



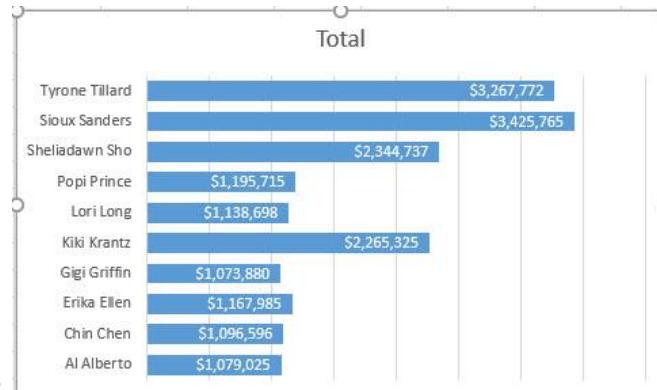
Step 10: Chart #2: Bar Chart for SalesRep Revenue

44) With your cursor in the Sales Rep PivotTable, insert a Clustered Bar Chart:



45) For the Bar Chart:

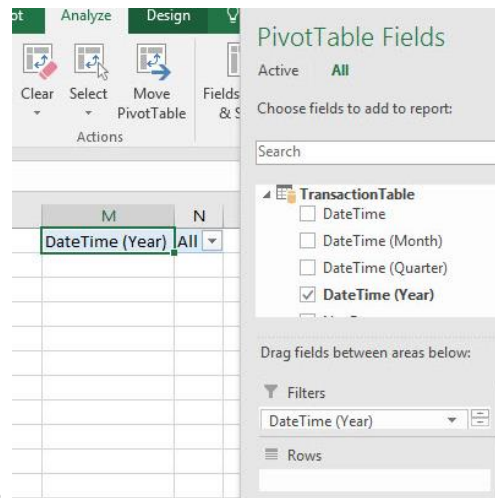
- Right-click Grey Field buttons and click on “Hide all field buttons on chart”
- Delete the Legend
- Delete the horizontal axis
- Click on the Columns and then use the keyboard Ctrl + 1 to open Task Pane, then change Gap width to 50%
- Then use the Green Plus next to the chart to add “Data Labels”
- Click on the Data Labels and use the keyboard Ctrl + 1 to open Task Pane, then select dialog button for “Inside End”
- With the Data Labels all selected, in the Home Ribbon Tab in the Font group, select White Font.
- Delete vertical grid lines.
- Chart should look like:



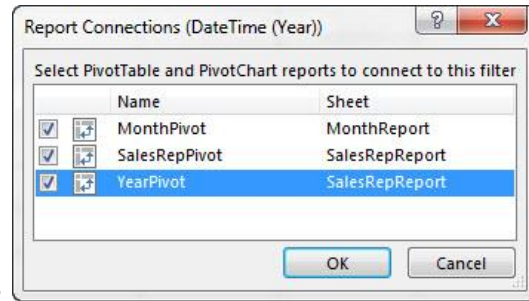
46) Because we are going to filter the Sales Rep Report by Year, we need to create a Chart Title with the Year in it. To do this we have create a “Year PivotTable” (Step 11) and a Text Formula Based on the Year PivotTable (Step 12).

Step 11: PivotTable #3: Create Year PivotTable. Name Pivot. Connect to Slicer

- 47) With a cursor in cell M1 on the “SalesRepReport” Sheet, open the Create PivotTable dialog box with the keyboard: Alt, N, V.
- 48) In the Create PivotTable dialog box, select “Use this workbook’s Data Model” and “Existing worksheet” dialog buttons.
- 49) Then place the PivotTable in cell M1.
- 50) From the Field List, drag DateTime (Year) to the Filter Area.
- 51) Right-click the PivotTable, click on PivotTable Options and then name the PivotTable “YearPivot”.
- 52) It should look like this:

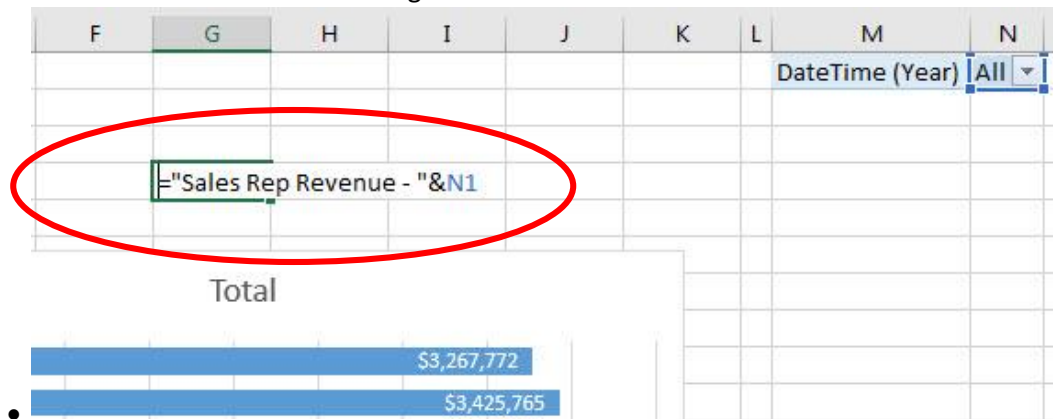


- 53) On the Dashboard Sheet, Right-click the Slicer and point to “Report Connections”, then check the PivotTable “YearPivot”.

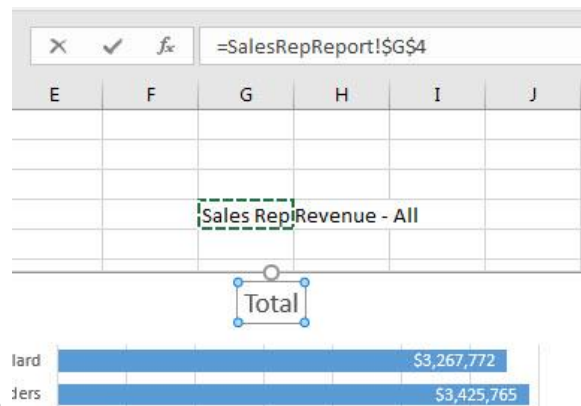


Step 12: Create Text Label for Chart #2 based on PivotTable #3 and Slicer

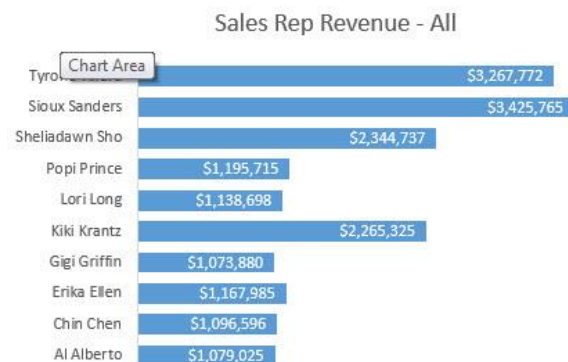
- 54) Above the Bar Chart create the following formula:



- 55) With Chart Title selected (make sure solid line is around Chart title (not dotted line)), link Chart Title to Cell with formula:



- 56) Final Chart has a Chart Title that is linked to the “YearPivot”, which is in turn linked to the Year Slicer:



- 57) Move the Bar Chart to the Dashboard Sheet using Cut (Ctrl + X) and Paste (Ctrl + V)

Step 13: PivotTable #4: Cross Tabulated Table for Product and Region

58) With a cursor in an empty cell on the “Dashboard” Sheet, open the Create PivotTable dialog box with the keyboard: Alt, N, V.

59) In the Create PivotTable dialog box, select “Use this workbook’s Data Model” and “New Worksheet” dialog buttons and then hit Enter (or click OK).

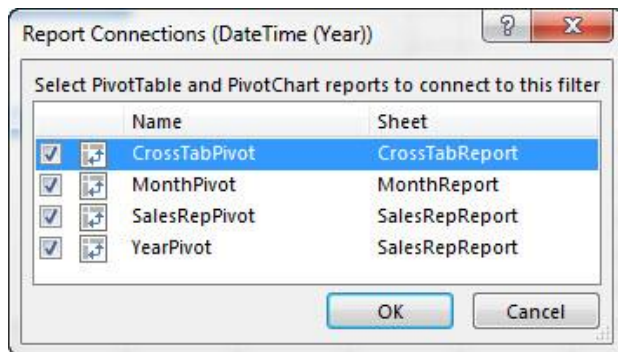
60) Name the Sheet “CrossTabReport”.

61) Create the following PivotTable with DateTime (Years) in Filter area, Region in Column area, Product in Rows area and the Revenue Measure in the Values area:

DateTime (Year)	2017								
Revenue	Region								
Product	Africa	Antarctica	Asia	Australia	Europe	North America	South America	Grand Total	
Aspen	\$83,488	\$49,275	\$34,383	\$43,909	\$171,357	\$258,783	\$119,700	\$760,894	
Carlota	\$61,564	\$27,805	\$28,314	\$29,321	\$159,549	\$217,748	\$98,104	\$622,405	
Distance	\$46,840	\$47,026	\$14,156	\$31,014	\$148,679	\$181,046	\$114,300	\$583,061	
Doublers	\$97,964	\$66,513	\$58,644	\$34,069	\$223,214	\$317,424	\$156,556	\$954,385	
FastCatch	\$80,454	\$40,535	\$45,686	\$40,072	\$167,574	\$235,463	\$121,310	\$731,092	
Maxi MTA	\$68,501	\$12,715	\$29,870	\$37,669	\$152,406	\$212,774	\$87,144	\$601,079	
Quad	\$197,786	\$108,112	\$125,486	\$111,847	\$441,792	\$639,976	\$322,676	\$1,947,675	
Sunbell	\$40,013	\$21,793	\$22,808	\$17,913	\$70,475	\$135,923	\$50,508	\$359,433	
Sunset	\$87,823	\$44,559	\$37,242	\$50,087	\$186,224	\$264,334	\$135,514	\$805,782	
Sunshine	\$59,586	\$38,609	\$27,428	\$41,503	\$130,173	\$191,568	\$113,188	\$602,054	
Yanaki	\$123,330	\$57,097	\$60,331	\$47,458	\$248,378	\$350,774	\$191,779	\$1,079,148	
Grand Total	\$947,349	\$514,038	\$484,347	\$484,862	\$2,099,821	\$3,005,812	\$1,510,777	\$9,047,007	

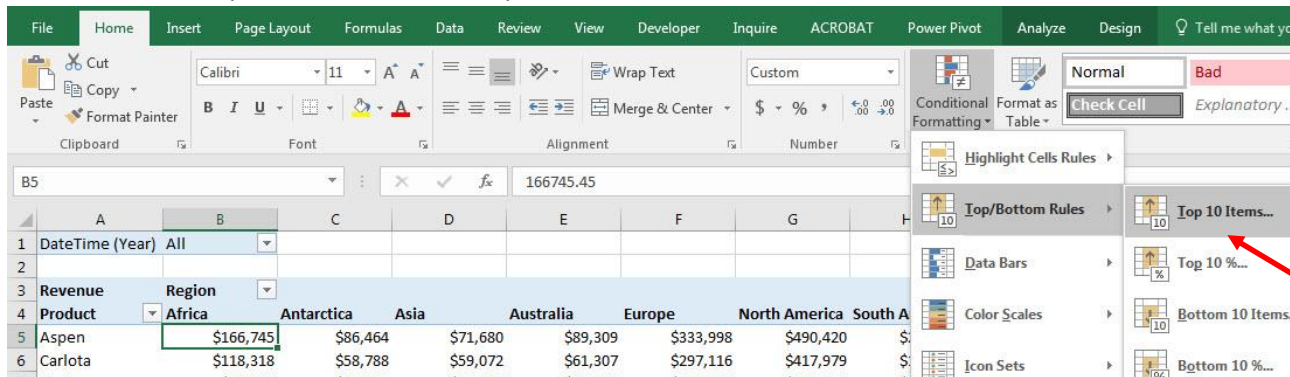
62) Right-click the PivotTable, click on PivotTable Options and then name the PivotTable “CrossTabPivot”.

63) On the Dashboard Sheet, Right-click the Slicer and point to “Report Connections”, then check the PivotTable “CrossTabPivot”.

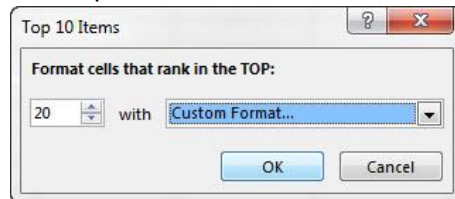


Step 14: Conditional Formatting for PivotTable #4

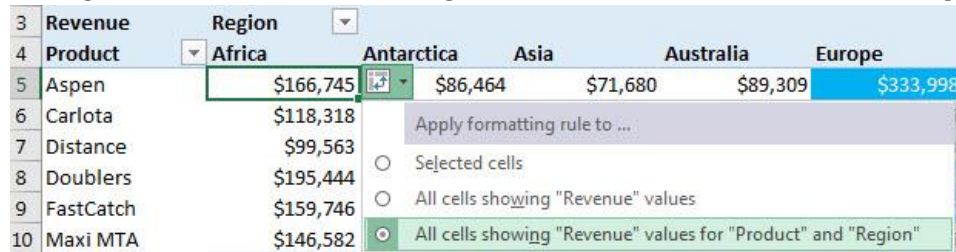
64) Click in cell B5 and then go to the Home Ribbon Tab, Styles group, Conditional Formatting drop-down, Top/Bottom Rules and Top 10 Items:



65) Change the “top” to 20 and add the formatting you want, then click OK:



66) Click Smart Tag and click on “All cells showing “Revenue” values for “Product” and “Region”:



67) In the View Ribbon Tab, in Show group, uncheck Gridlines.

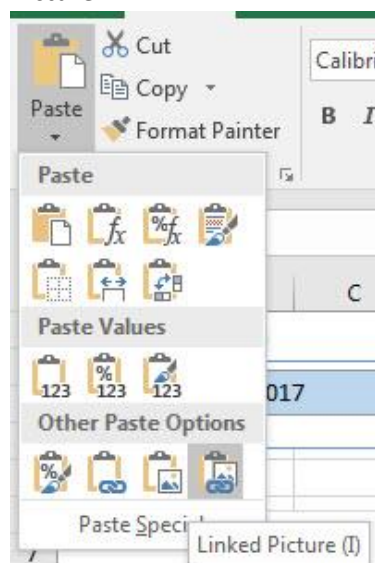
68) Finished PivotTable should look like:

	A	B	C	D	E	F	G	H	I
1	DateTime (Year) All								
2									
3	Revenue	Region							
4	Product	Africa	Antarctica	Asia	Australia	Europe	North America	South America	Grand Total
5	Aspen	\$166,745	\$86,464	\$71,680	\$89,309	\$333,998	\$490,420	\$241,241	\$1,479,858
6	Carlota	\$118,318	\$58,788	\$59,072	\$61,307	\$297,116	\$417,979	\$194,735	\$1,207,316
7	Distance	\$99,563	\$75,126	\$46,617	\$76,460	\$262,423	\$387,802	\$181,183	\$1,129,174
8	Doublers	\$195,444	\$114,747	\$111,075	\$71,858	\$460,395	\$561,709	\$331,537	\$1,846,765
9	FastCatch	\$159,746	\$79,024	\$90,570	\$84,454	\$337,085	\$494,622	\$254,579	\$1,500,079
10	Maxi MTA	\$146,582	\$45,663	\$68,643	\$72,359	\$262,876	\$473,974	\$177,080	\$1,247,178
11	Quad	\$430,730	\$216,585	\$233,523	\$238,029	\$895,980	\$1,291,414	\$677,685	\$3,983,944
12	Sunbell	\$74,947	\$39,316	\$42,336	\$36,929	\$159,347	\$239,006	\$115,417	\$707,296
13	Sunset	\$178,865	\$82,850	\$82,998	\$88,585	\$357,614	\$522,808	\$259,054	\$1,572,773
14	Sunshine	\$111,182	\$72,964	\$61,469	\$74,504	\$254,607	\$375,183	\$201,757	\$1,151,665
15	Yanaki	\$249,487	\$119,225	\$119,131	\$117,865	\$500,586	\$727,394	\$395,760	\$2,229,447
16	Grand Total	\$1,931,611	\$990,751	\$987,114	\$1,011,658	\$4,122,026	\$5,982,310	\$3,030,027	\$18,055,496

Step 15: Paste Linked Picture of PivotTable in Dashboard

69) Highlight the entire Cross Tab PivotTable, including the Filter area And then copy with Ctrl + C.

70) On the “Dashboard” Sheet, click in a cell below the other Charts and then go to the Clipboard group in the Home Ribbon Tab, click the Paste button drop-down and the click on the lower right corner icon for “Linked Picture”:



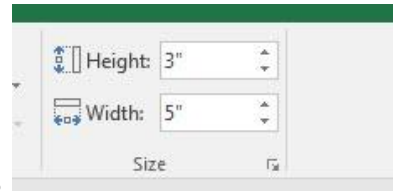
71) With the Linked Picture selected, use Ctrl + 1 to open the Task Pane. Then use Solid Fill, White.

Step 16: Add formatting and Alignment to Dashboard

72) On the "Dashboard" Sheet, Select the range A1:Z50 and add a light blue fill to the cells.

73) Size the Charts, Pictures and Slicer so that they fit neatly on the "Dashboard" Sheet.

74) You can click on objects (like Chart) and set the height and width in the Format Ribbon Tabs, like:

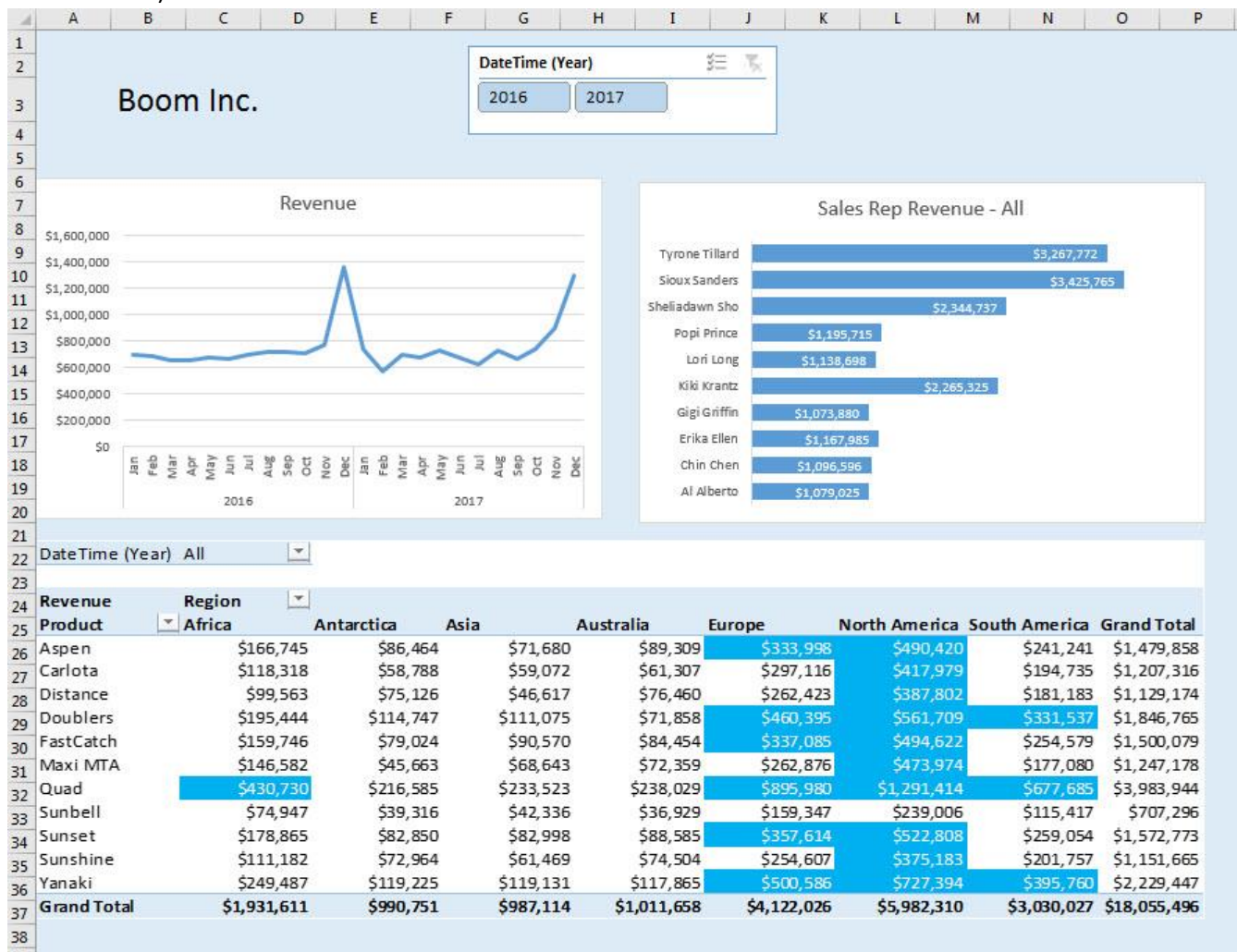


75) You can select the Two Charts (using Ctrl key) and then in the Format Ribbon Tab, you can select Alignment, "Align Top":



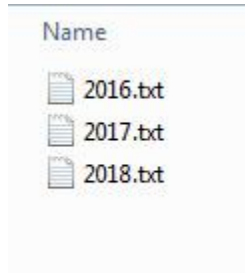
76) Type Business Name into cell A1.

77) Finished Dashboard:

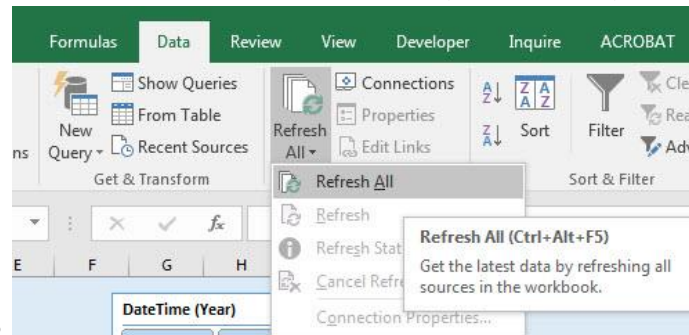


Step 17: Add new Text Files to Folder and Refresh Dashboard

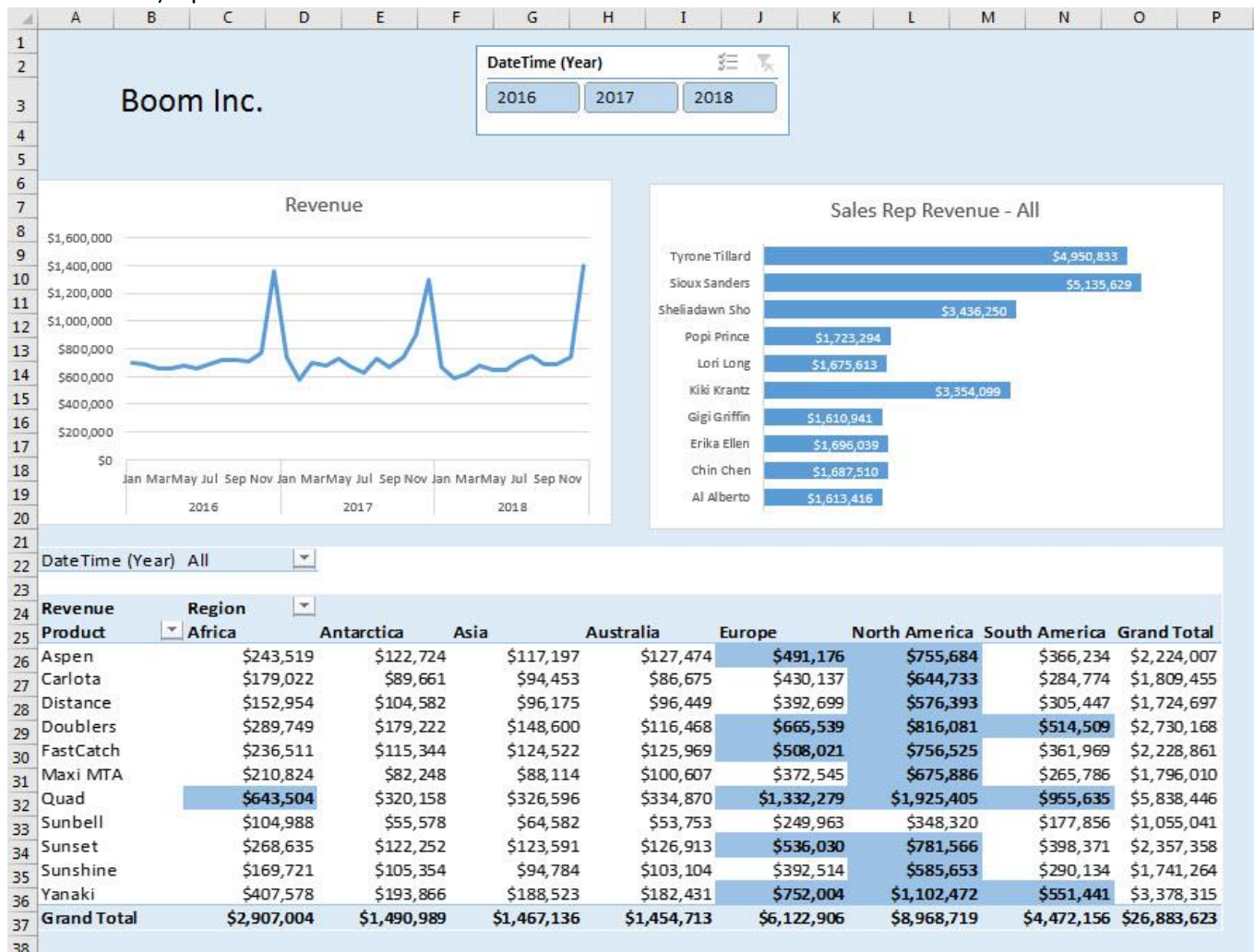
78) Drop 2018 text file into "Start" Folder.



79) In the Data Ribbon Tab, click the Refresh All (Ctrl + Alt + F5):



80) Updated Dashboard Looks Like:



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**

New Keyboards in This Video:

- 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**