CREATING AND PUBLISHING INTERACTIVE DASHBOARDS WITH EXCEL POWER PIVOT, POWER BI, AND SHAREPOINT ONLINE

CAIR 2016 Annual Conference - Workshop

Ken Nelson MD, MS
Loma Linda University
wknelson@llu.edu

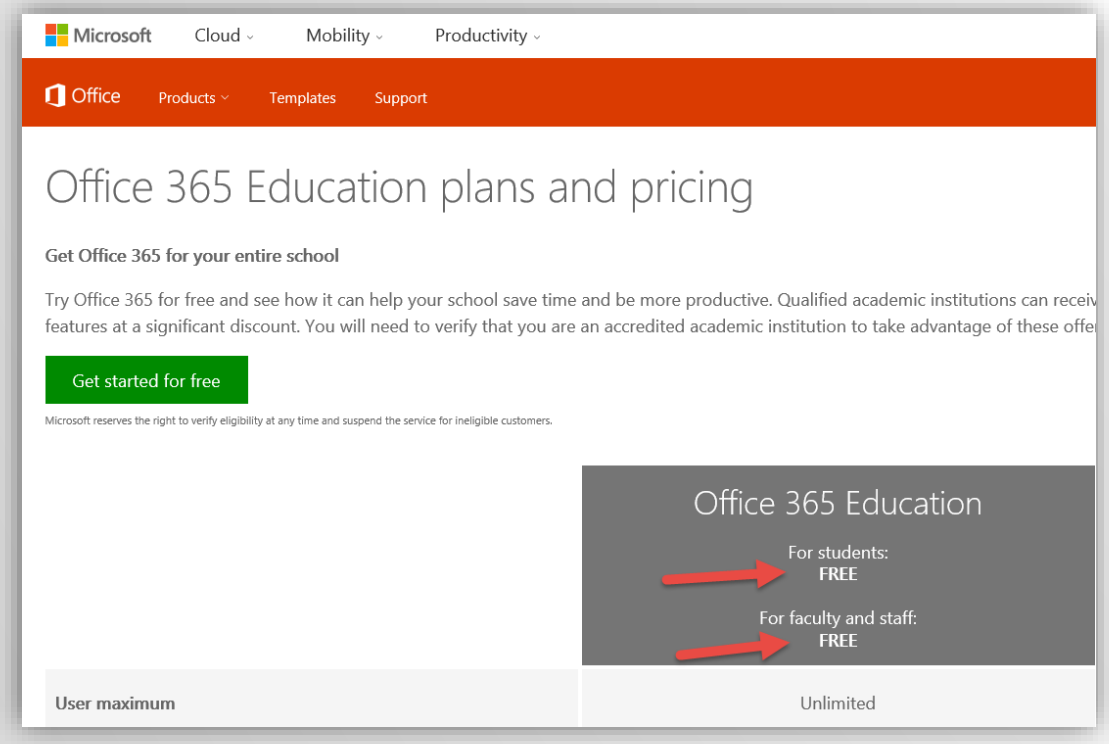
This is a Workshop

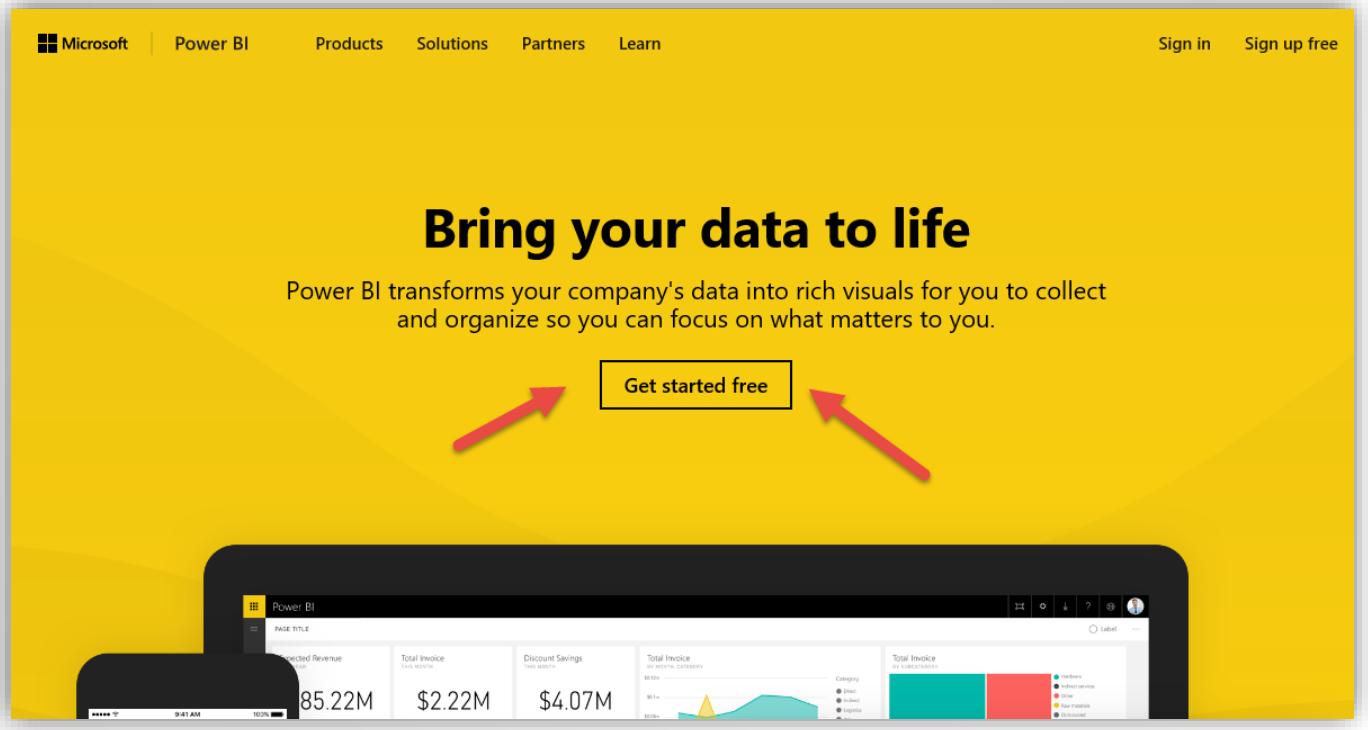
Our Task Today

- Import data to a data model in Excel
- Create a dashboard in Excel Power Pivot
- Export to SharePoint
- Import a data model into Power BI
- Create a dashboard in Power BI
- Publish Power BI to a URL that anyone can view

Everything is Free

- Wouldn't that be awesome?
- Actually at this workshop the software is.
- Really, everything you see being used here today (for an educational institution) is FREE!!!





Content for this Workshop

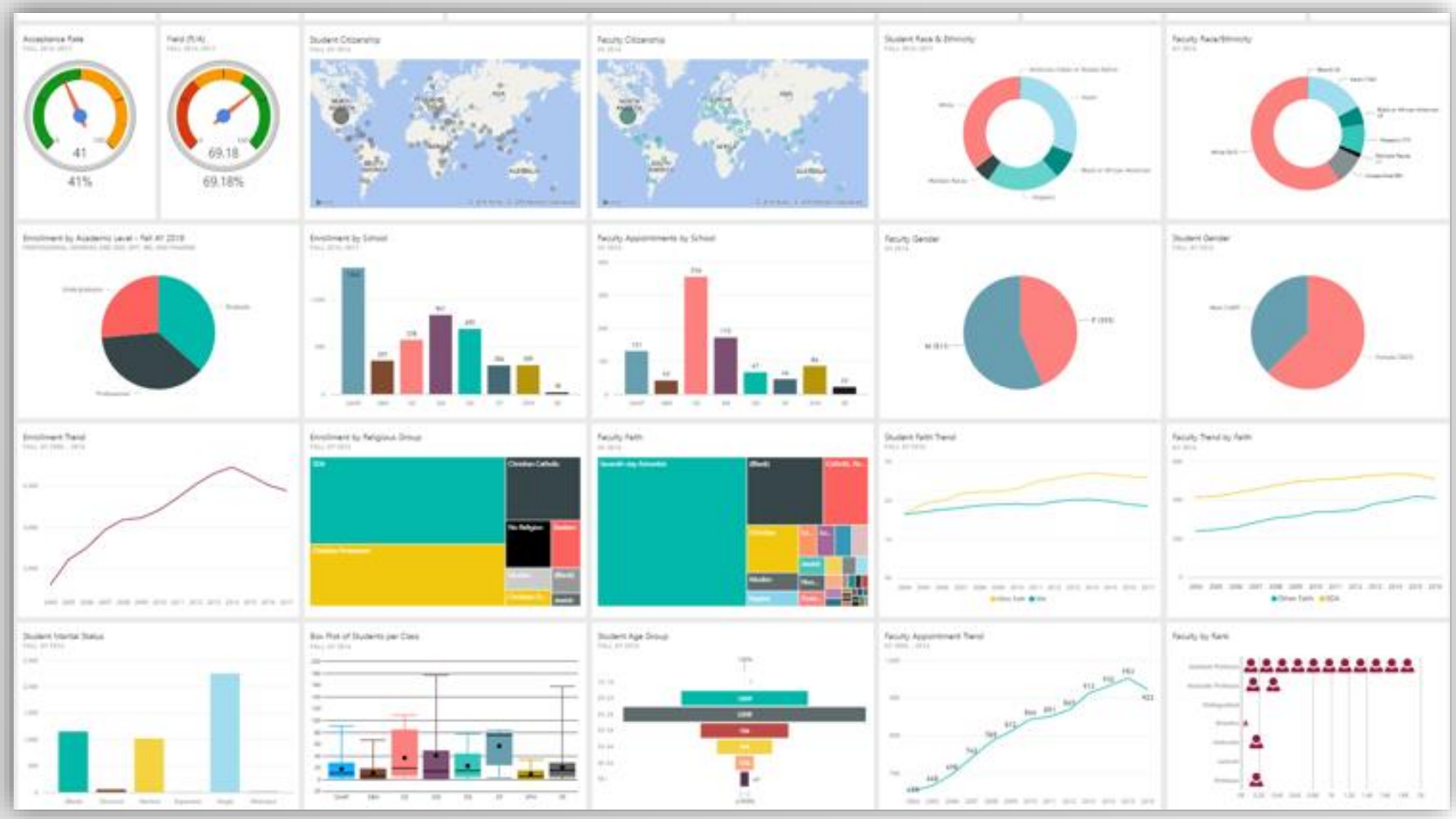
- Data files
  - Dataset Census.xlsx
  - Dataset Demographics.xlsx

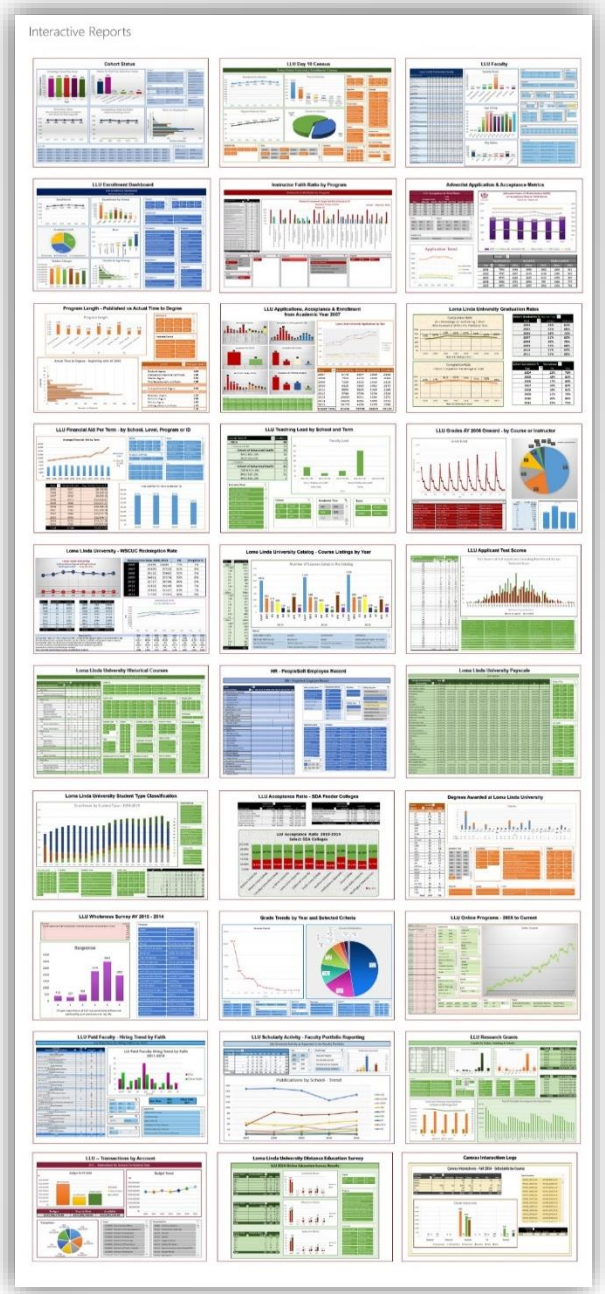
- Step by step guide – CAIR2016.pdf

http://cair2016.lluh.us

Dashboards being built today
are basic but provide
the foundation for
you to develop
complex reports
based on your data.

Be Creative

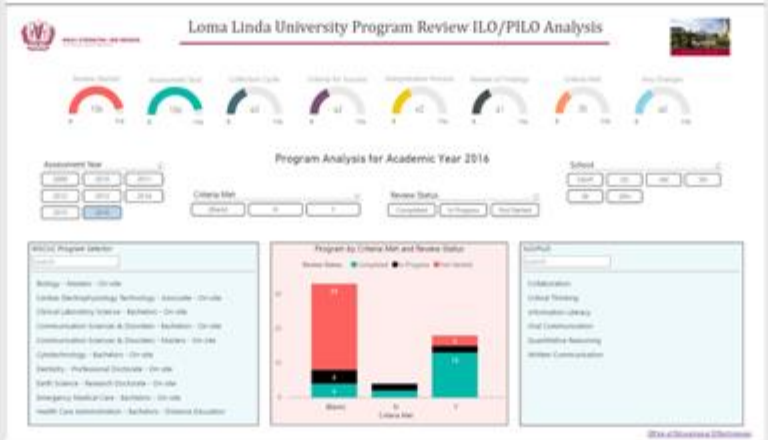




Sample - Program Review Dashboard

Click Here to View the LLU Assessment Guide

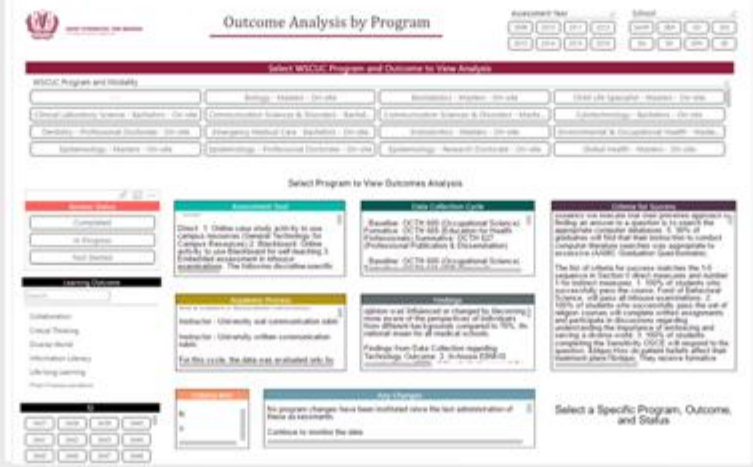
Click to View the ILO Reporting Summary



Click to View Detail Analysis

Click to View the Program Status Report

Click to View Outcome Analysis



Click to View the Action Plan Review

Loma Linda University - Program Action Plan Review

MANY STRENGTHS. ONE MISSION.
A Seventh-day Adventist Organization

Programs Reporting	Action Plans
53	222

Issue Category

Accomplishments | Assessment | Collaboration | Curricula | Faculty | Inst. Alignment | Other | Prof. Alignment | Resources | Satisfaction | Societal Alignment | Students

Academic Year

Academic Year

2014 | 2015 | 2016

Issue Status

Completed | In Progress | Not Started

Issue Action ID

6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27

Issues by School and Program

- 9 BS, Nursing
- 8 DNP, Nursing

Other (1) More

SD

- 10 DDS, Dentistry

SPH

- 8 MPH, Global Health
- 7 DrPH, Health Policy and Leadership
- 7 MPH, Biostatistics
- 6 DrPH, Preventive Care

Other (20) More

SBH

- 7 MS, Counseling
- 6 PhD, Social Policy/Social Research
- 3 MS, Child Life Specialist
- 1 MS, Marital and Family Therapy

SAHP

- 6 BS, Clinical Laboratory Science
- 6 MOT, Occupational Therapy (Entry-Le...
- 5 AS, Medical Radiography
- 4 BS, Radiation Sciences

Other (10+) More

SR

- 2 MSChap, Chaplaincy

Issues, Goals, and Action Plans

recommendations for two courses that needed higher cognitive learning objectives. This was addressed and submitted to the Review Committee and the program received the full seven year accreditation. This action is in response to: Program Seeks Re-accreditation from the

Assessment resulted in adding a presentation given to the students in the junior year by a library representative. The presentation is currently scheduled for spring quarter, but the faculty will determine if there is an This action is in response to: Students will meet the criteria for success for the

have revised the first PLO. Basic Knowledge has been separated from Technical Ability since the BOC exam is a better tool to assess basic knowledge and the bench records used by clinical faculty is a better tool to assess students' technical ability. A rubric has been developed to assess the second CLS PLO,

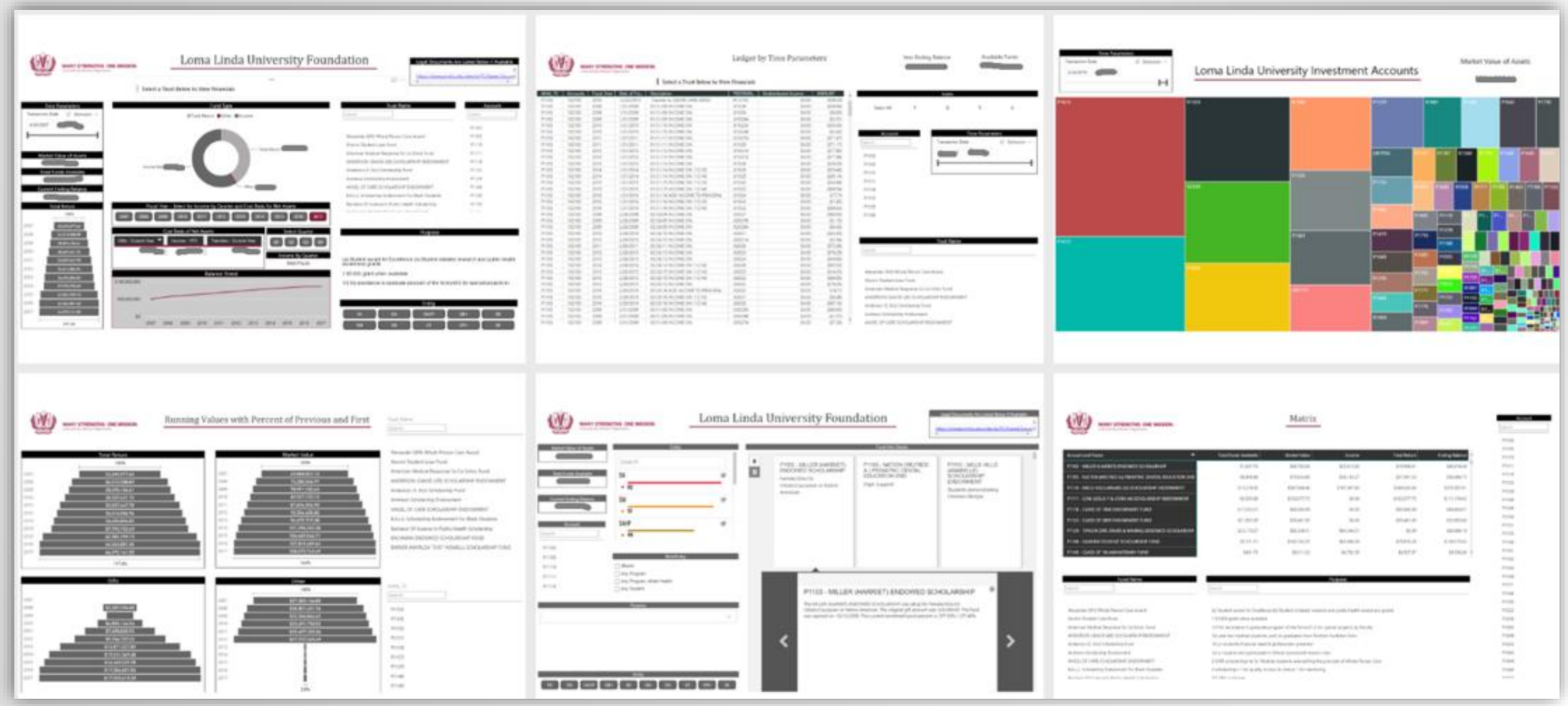
BS, Clinical Laboratory Science

In Progress, Issue ID #239

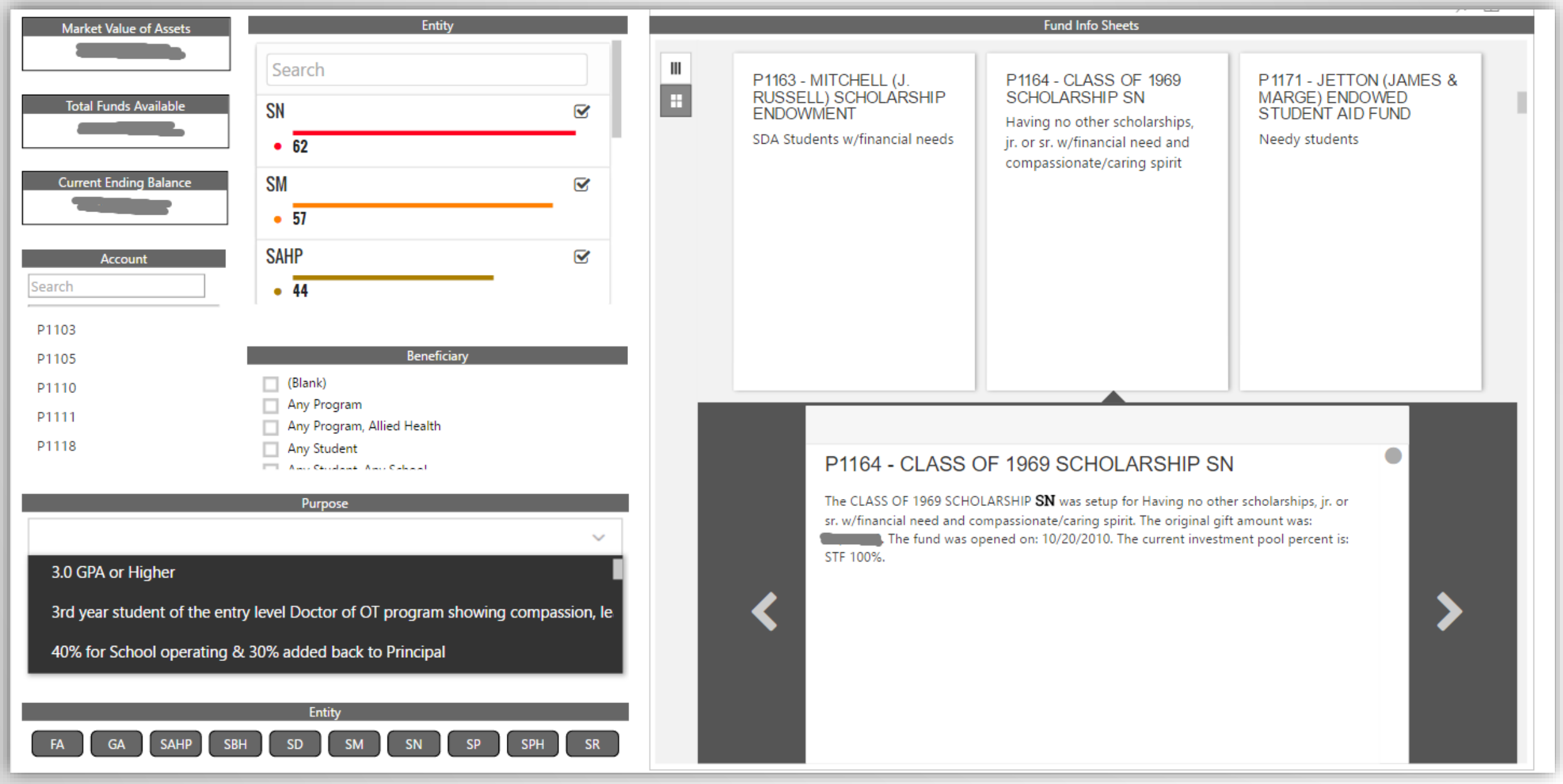
Katherine Davis • Oct. 18, 2016

Revised CLS PLOs - The faculty have revised the first PLO. Basic Knowledge has been separated from Technical Ability since the BOC exam is a better tool to assess basic knowledge and the bench records used by clinical faculty is a better tool to assess students' technical ability. A rubric has been developed to assess the second CLS PLO, technical ability, and assessment data is being entered into LiveText during the 2015-2016 academic year for this PLO. The final analysis of this assessment will occur at the end of the 2015-2016 academic year. This action is in response to: Use the BOC scores for summative assessment of Basic Knowledge and use the student bench records from the clinical year to assess Technical Ability. This issue was identified by - Program director - The issue goal is: PLO #1 needs to be revised from Basic Knowledge and Technical Ability to two separate PLOs.

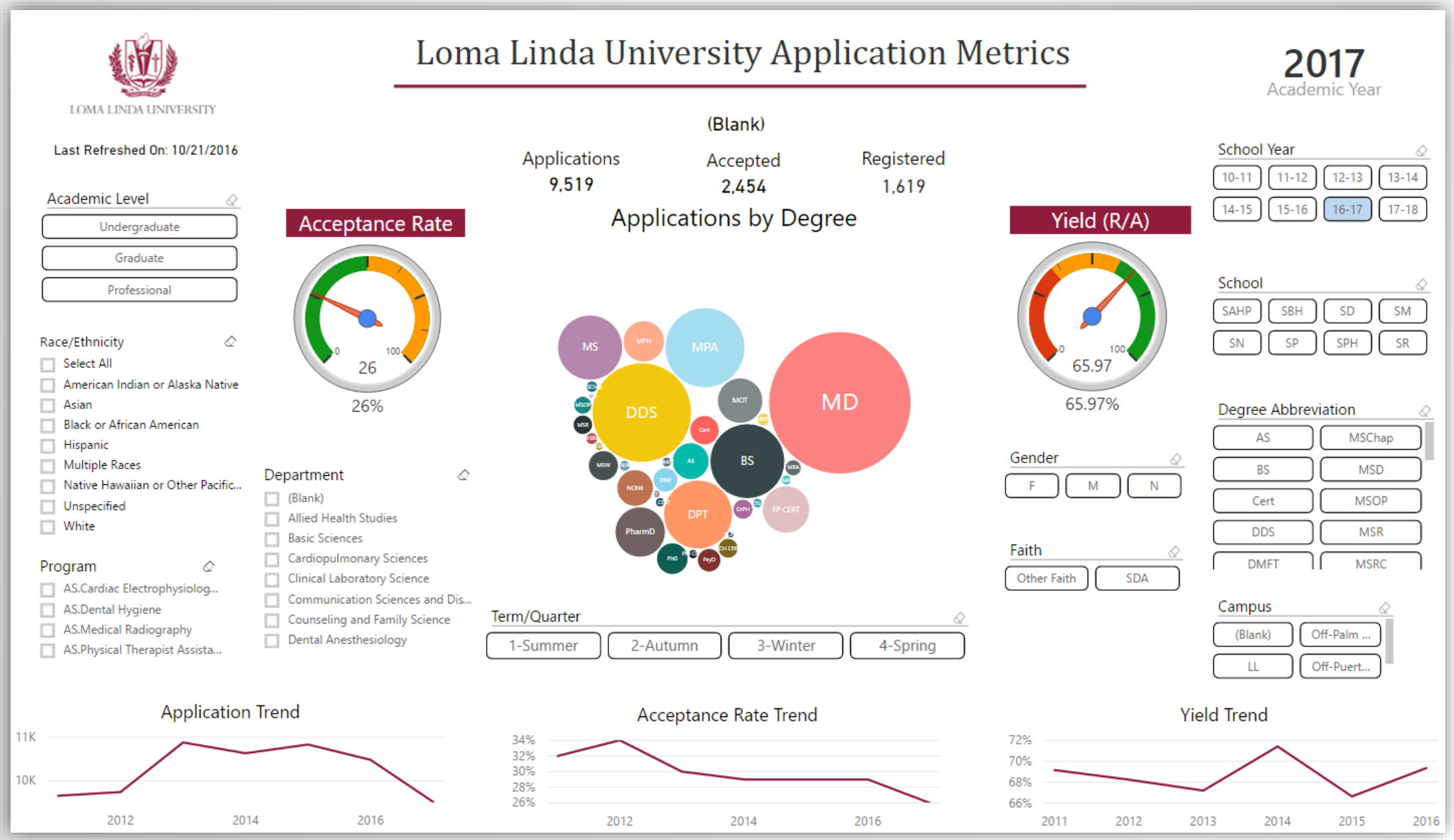
Sample - Dashboards with Hyperlinked Tiles



Sample - Financial Aid – Funds are Purpose Searchable



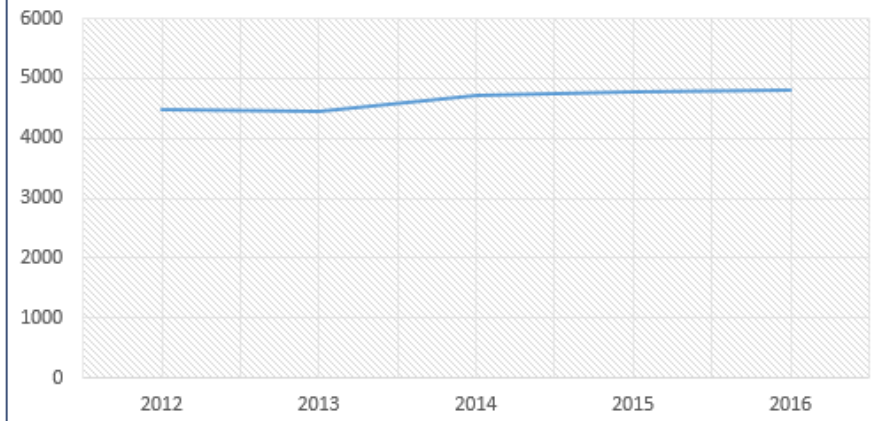
Sample - Application Metrics Dashboard



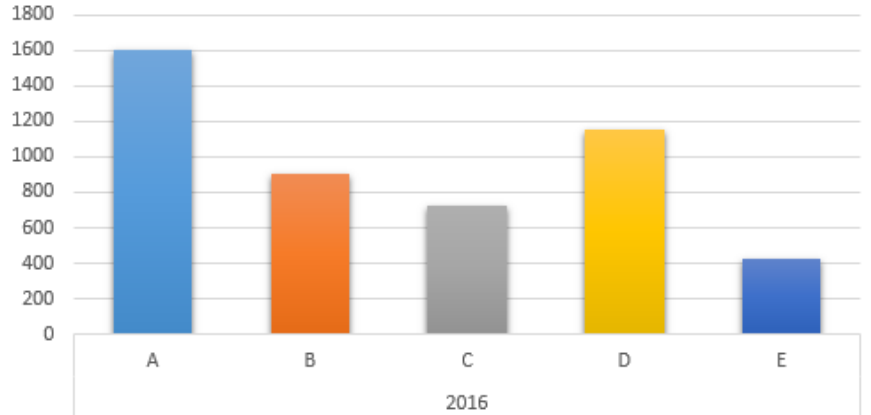
Today's Dashboard - Excel Power Pivot Example

Alphabet University Enrollment

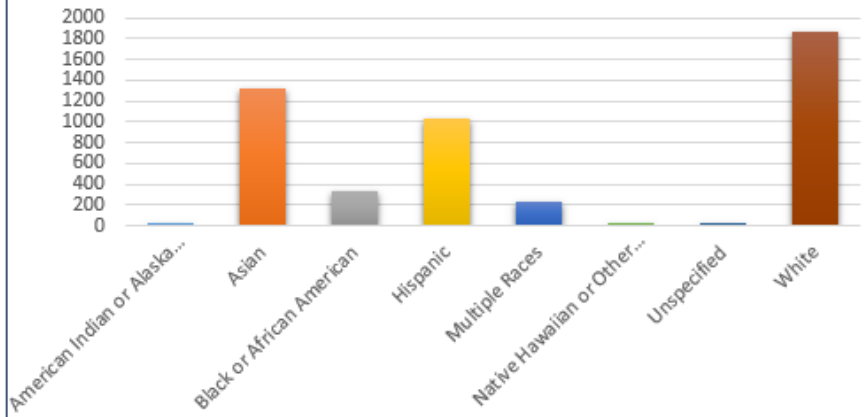
Enrollment Trend



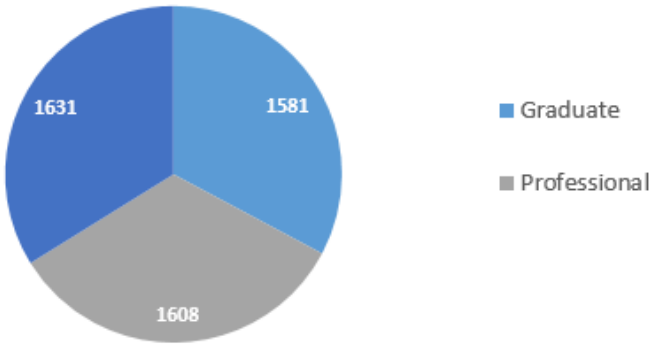
School Enrollment by Selected Year



Race/Ethnicity



Academic Level



Academic Year

2012 | 2013 | 2014 | 2015 | 2016

Quarter

1 | 2 | 3 | 4

School

A | B | C | D | E

Academic Level

Graduate
Professional
Undergraduate

Degree

BS | MS

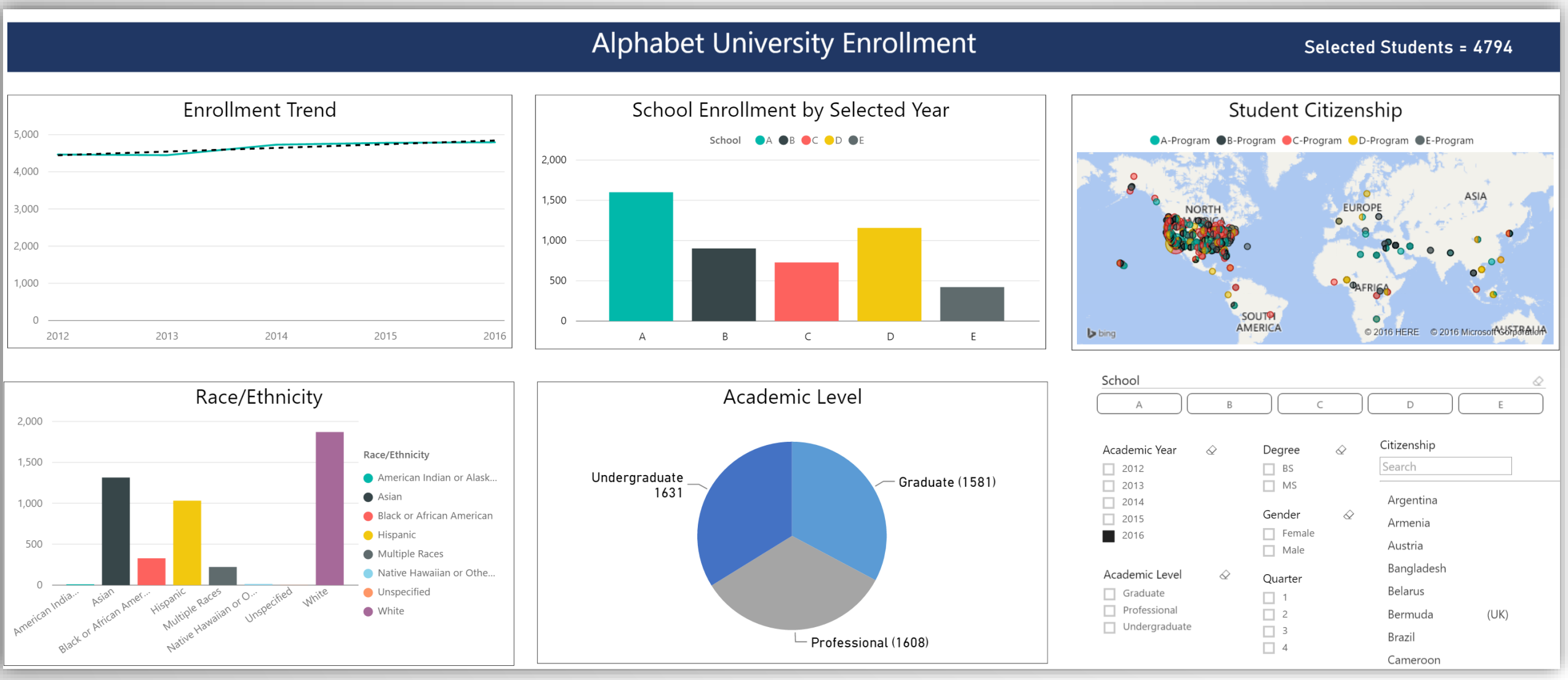
Gender

Female | Male

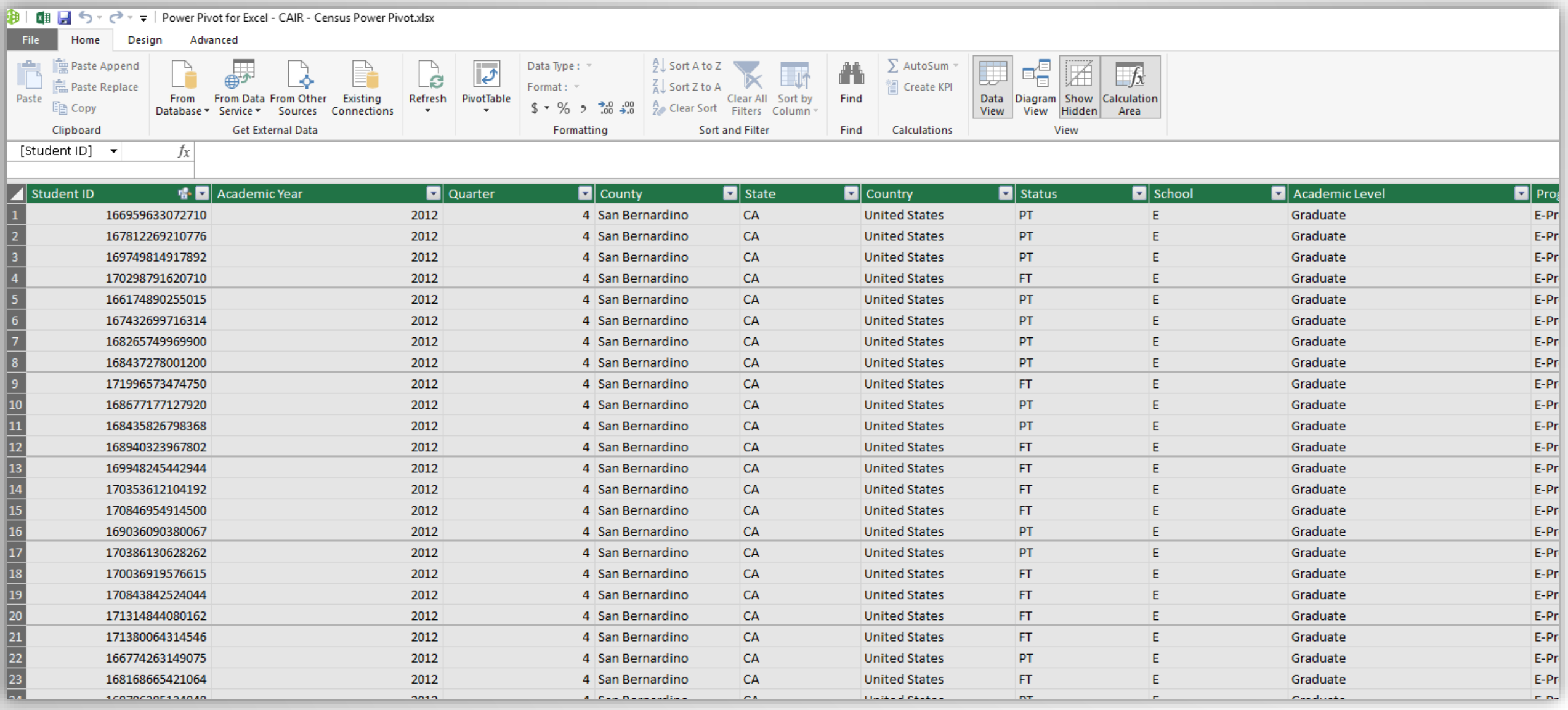
Citizenship

Argentina
Armenia
Austria
Bangladesh
Belarus
Bermuda (...
Brazil
Cameroon
Canada
Chile

Today's Dashboard - Power BI Example

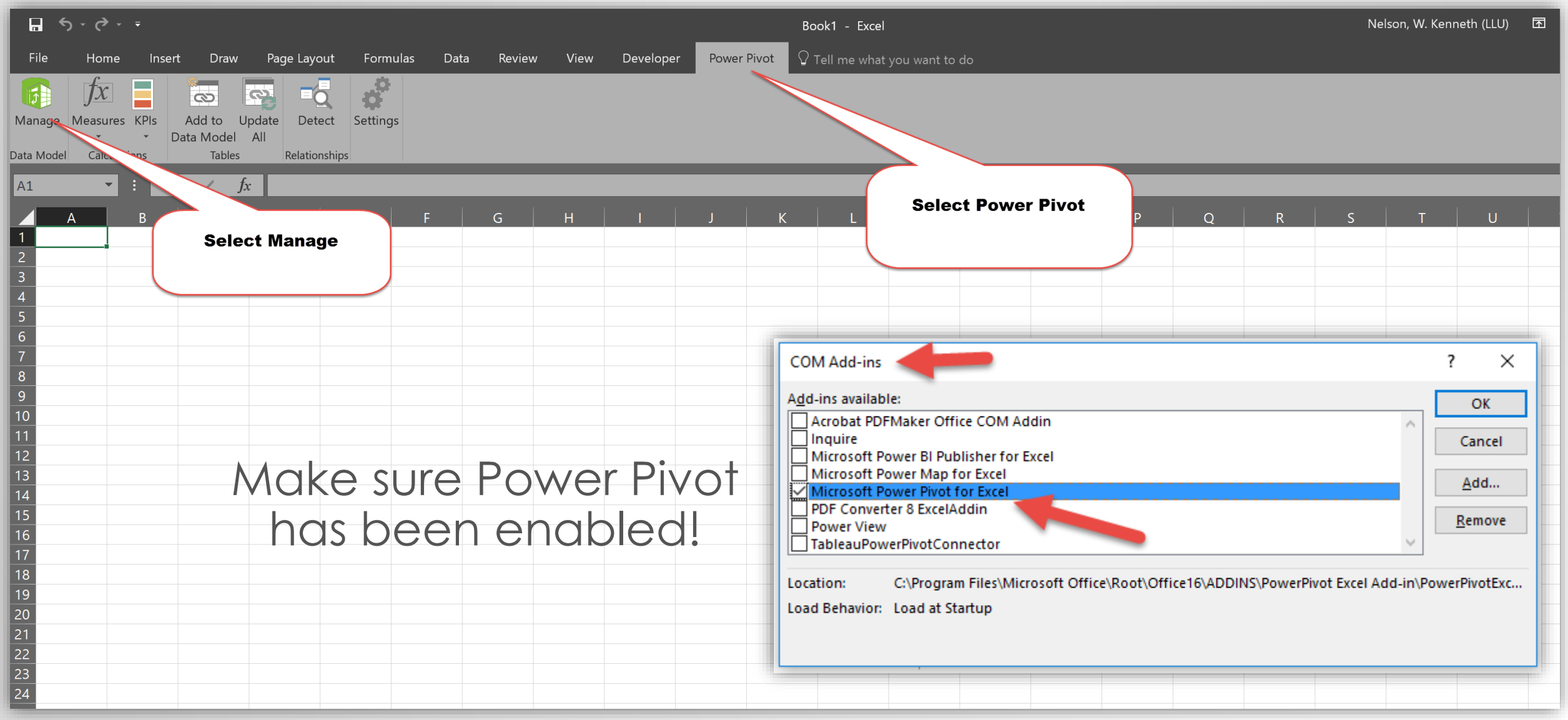


Based on an Underlying Data Model

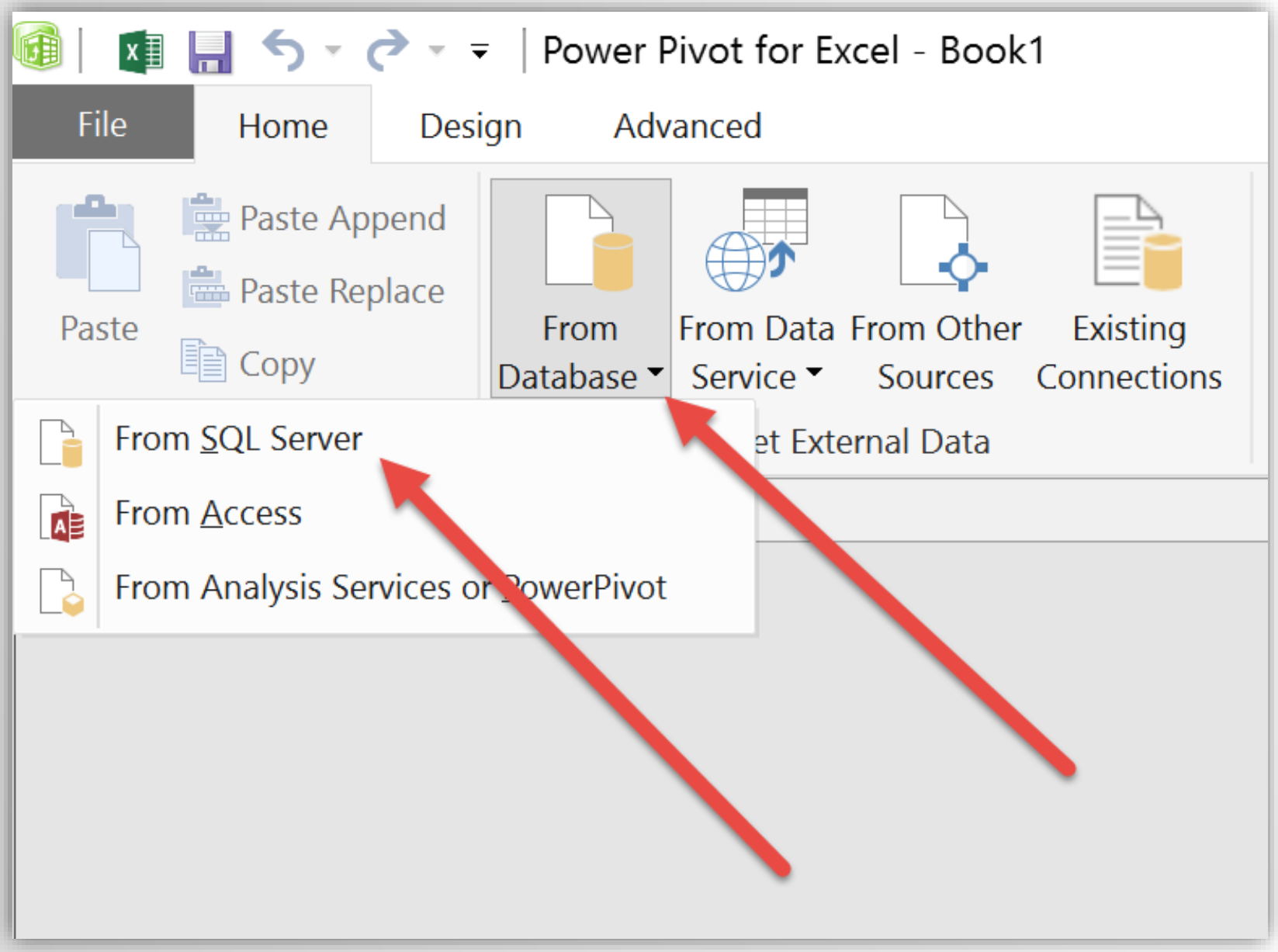


	Student ID	Academic Year	Quarter	County	State	Country	Status	School	Academic Level	Prog
1	166959633072710	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
2	167812269210776	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
3	169749814917892	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
4	170298791620710	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
5	166174890255015	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
6	167432699716314	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
7	168265749969900	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
8	168437278001200	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
9	171996573474750	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
10	168677177127920	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
11	168435826798368	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
12	168940323967802	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
13	169948245442944	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
14	170353612104192	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
15	170846954914500	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
16	169036090380067	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
17	170386130628262	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
18	170036919576615	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
19	170843842524044	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
20	171314844080162	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
21	171380064314546	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr
22	166774263149075	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Pr
23	168168665421064	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Pr

Let's Start by Opening Excel



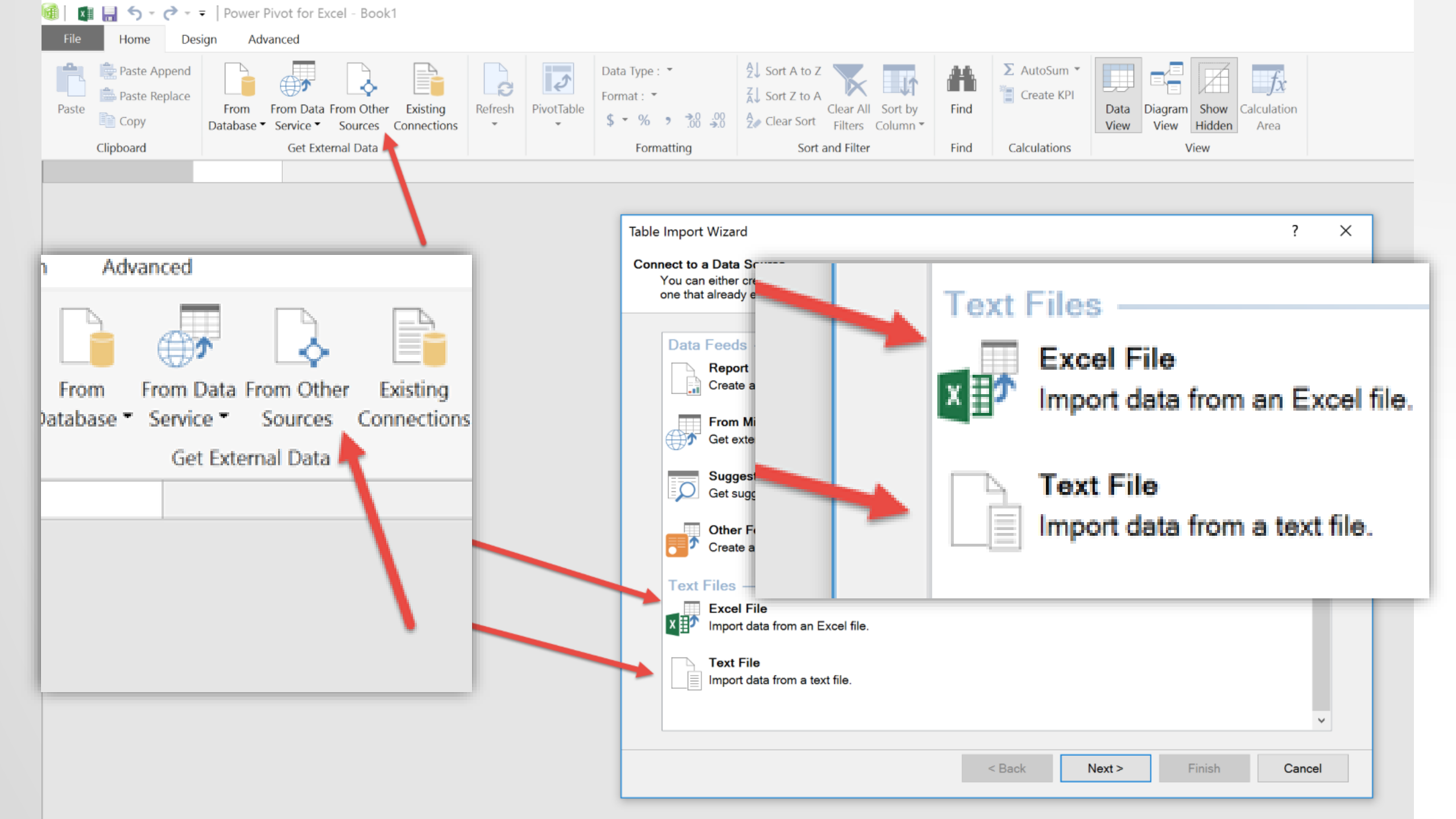
Import Data



Multiple data sources can be imported.

Commonly encountered are:

- SQL
- Excel
- Text


Power Pivot for Excel - Book1
File
Home
Design
Advanced
Paste
Paste Append
Paste Replace
Copy
Clipboard
From Database
From Data Service
From Other Sources
Existing Connections
Get External Data
Refresh
PivotTable
Data Type :
Format :
Formatting
Sort A to Z
Sort Z to A
Clear Sort
Clear All Filters
Sort by Column
Sort and Filter
Find
AutoSum
Create KPI
Calculations
Data View
Diagram View
Show Hidden
Calculation Area
View
Advanced
From Database
From Data Service
From Other Sources
Existing Connections
Get External Data
Table Import Wizard
Connect to a Data Source
You can either cre
one that already e
Data Feeds
Report
Create a
From Mi
Get exte
Suggest
Get sugg
Other F
Create a
Text Files
Excel File
Import data from an Excel file.
Text File
Import data from a text file.
< Back
Next >
Finish
Cancel
Text Files
Excel File
Import data from an Excel file.
Text File
Import data from a text file.

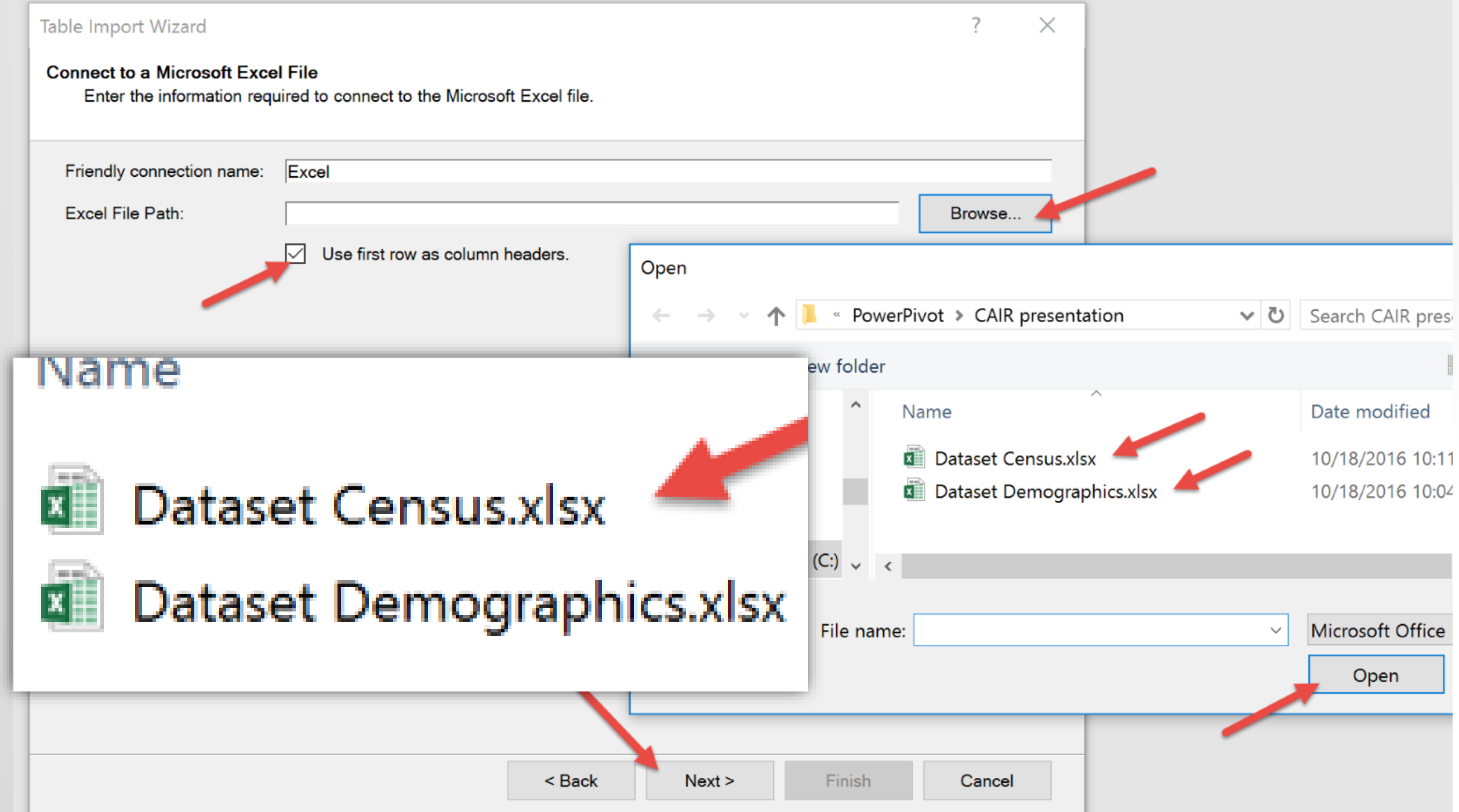


Table Import Wizard
Connect to a Microsoft Excel File
Enter the information required to connect to the Microsoft Excel file.
Friendly connection name:
Excel
Excel File Path:
Browse...
Use first row as column headers.
Open
PowerPivot
CAIR presentation
Search CAIR pres
ew folder
Name
Date modified
Dataset Census.xlsx
10/18/2016 10:11
Dataset Demographics.xlsx
10/18/2016 10:04
(C:)
File name:
Microsoft Office
Open
Name
Dataset Census.xlsx
Dataset Demographics.xlsx
< Back
Next >
Finish
Cancel

Table Import Wizard

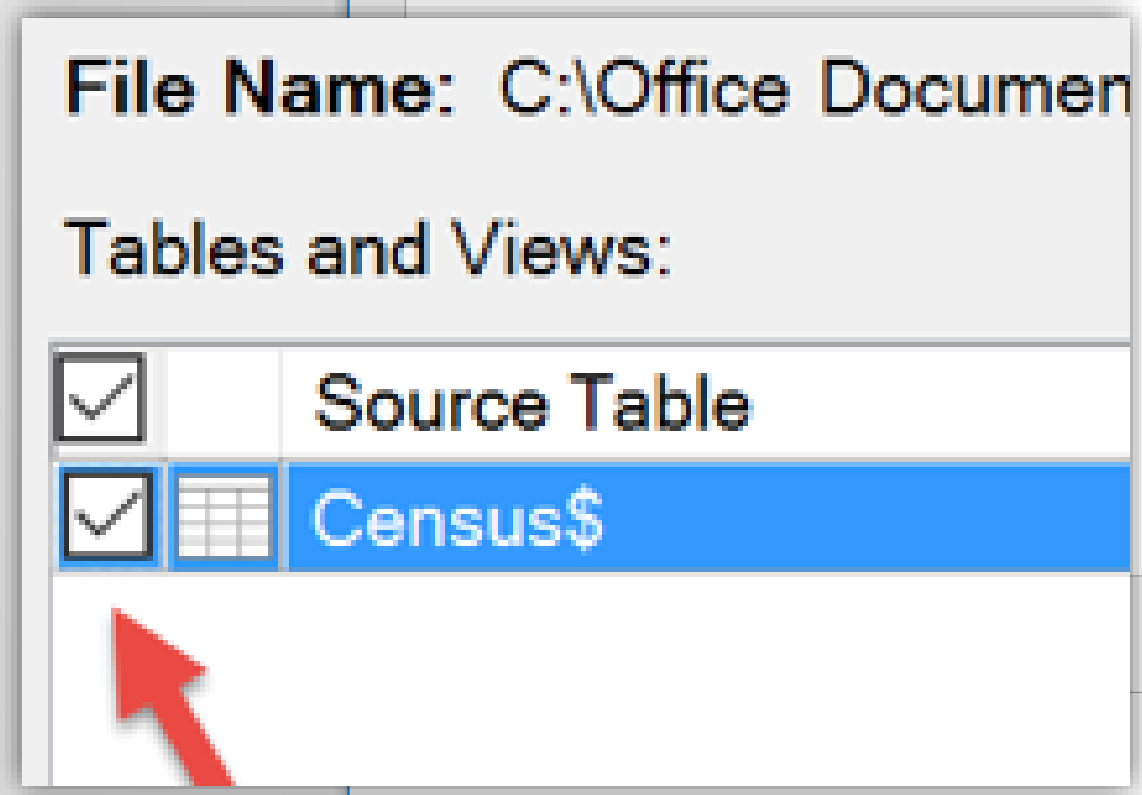
Select Tables and Views

Select the tables and views that you want to import data from.

File Name: C:\Office Documents\OEE\PowerPivot\CAIR presentation\Dataset Census.xlsx

Tables and Views:

Source Table	Friendly Name	Filter Details
Census$	Census	



Select Related Tables | Preview & Filter

< Back | Next > | Finish | Cancel

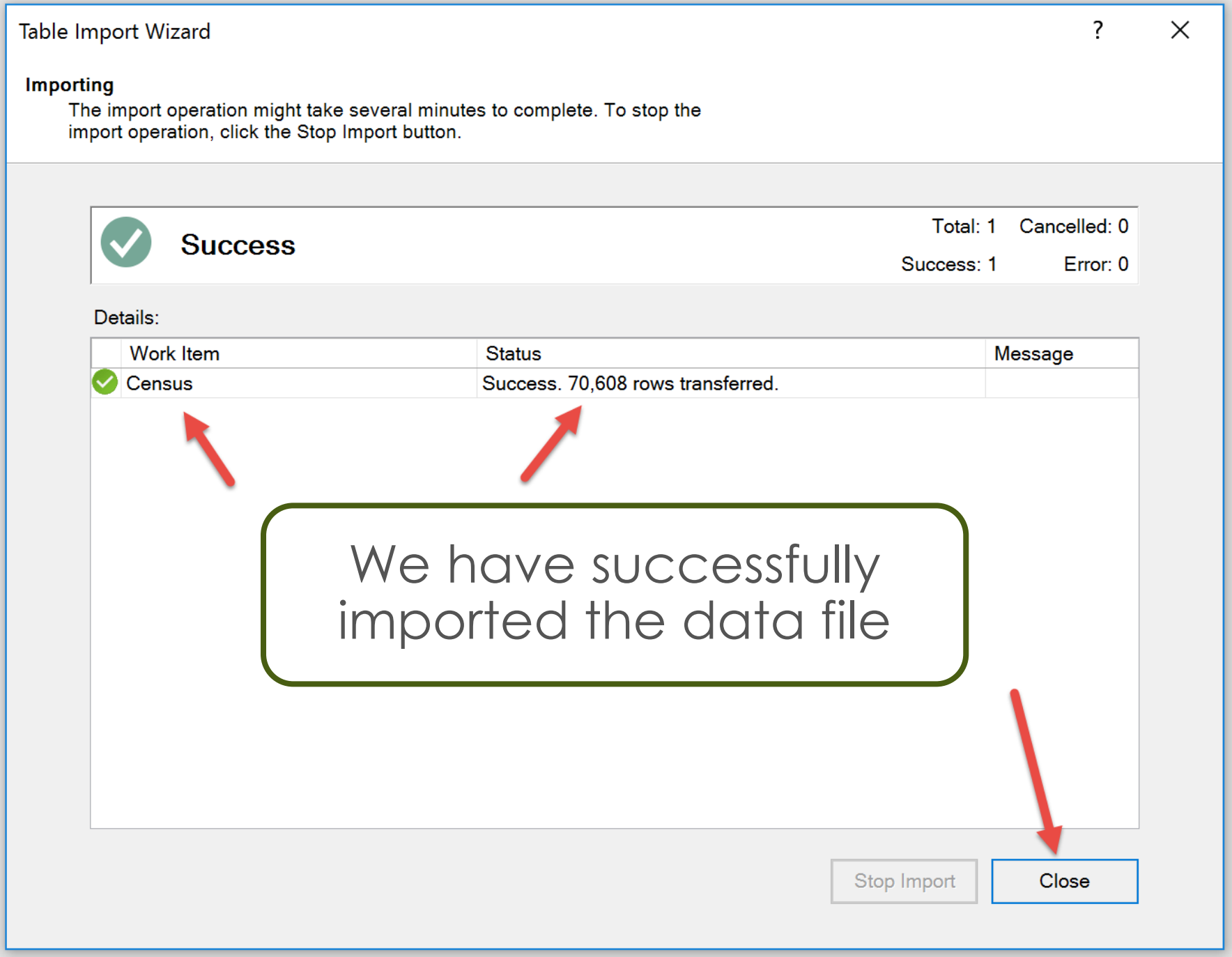
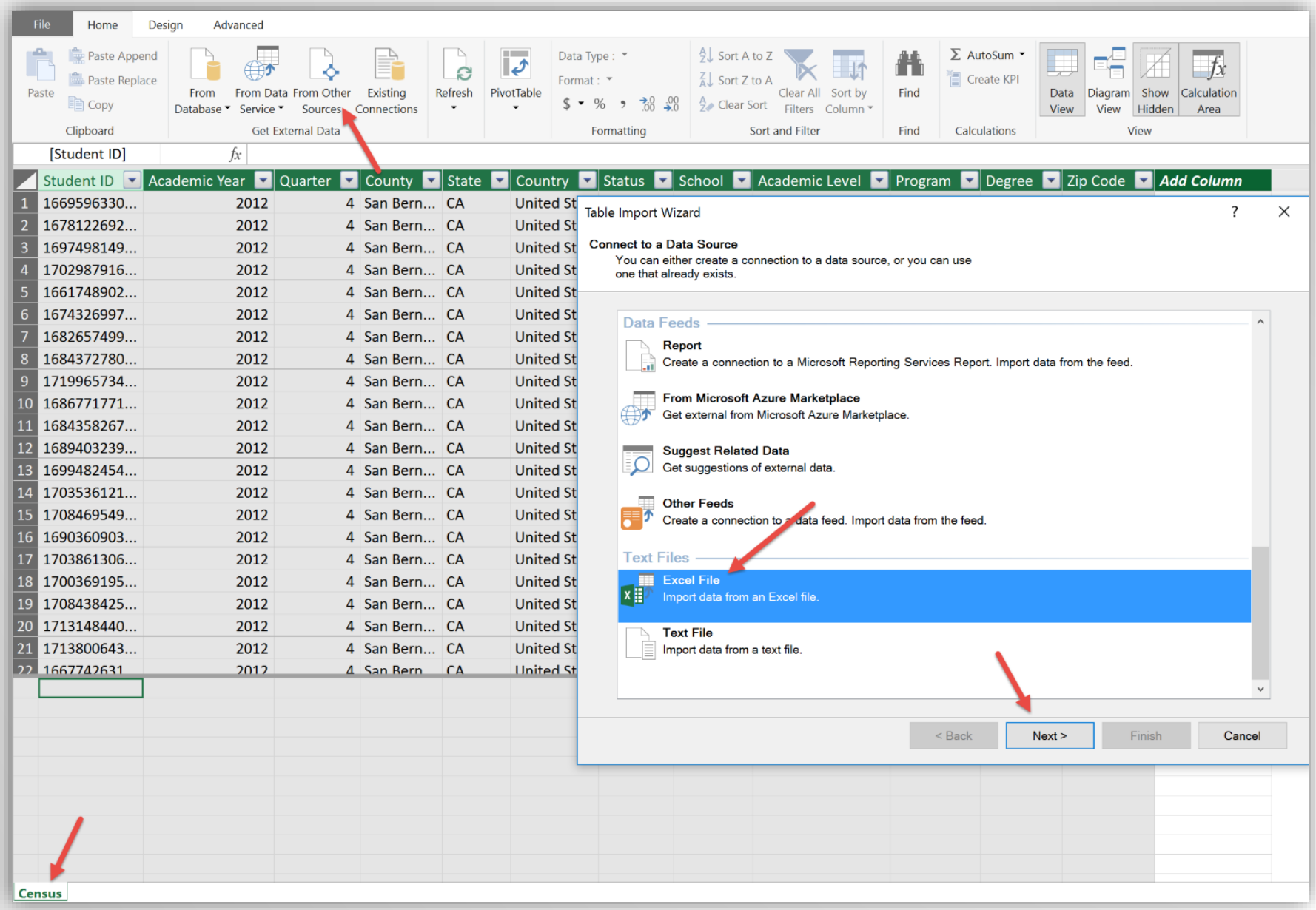


Table Import Wizard
Importing
The import operation might take several minutes to complete. To stop the import operation, click the Stop Import button.
Success
Total: 1
Cancelled: 0
Success: 1
Error: 0
Details:
Work Item
Status
Message
Census
Success. 70,608 rows transferred.
We have successfully imported the data file
Stop Import
Close

Repeat Steps to Import the 2nd Data File



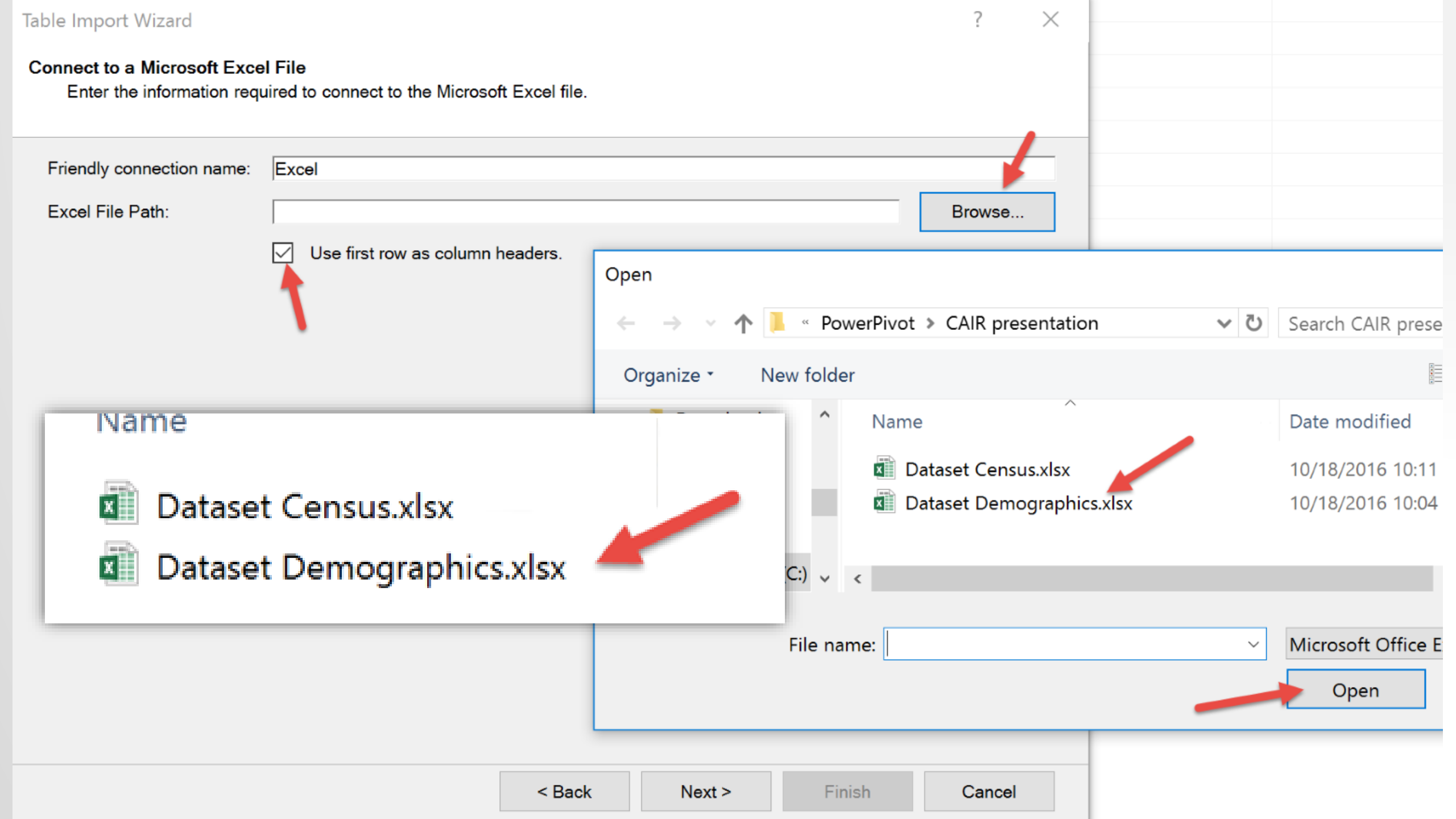


Table Import Wizard
Connect to a Microsoft Excel File
Enter the information required to connect to the Microsoft Excel file.
Friendly connection name:
Excel
Excel File Path:
Browse...
Use first row as column headers.
Open
PowerPivot › CAIR presentation
Search CAIR prese
Organize
New folder
Name
Date modified
Dataset Census.xlsx
10/18/2016 10:11
Dataset Demographics.xlsx
10/18/2016 10:04
Name
Dataset Census.xlsx
Dataset Demographics.xlsx
File name:
Microsoft Office E
Open
< Back
Next >
Finish
Cancel

	Student ID	Age Group	Birth Country	Citizenship	Race_Ethnicity	Gender
1	7856461041...	20-24	United States	United States	White	Female
2	7929833041...	20-24	United States	United States	White	Female
3	1685401477...	20-24	United States	United States	White	Female
4	1700807900...	20-24	United States	United States	White	Female
5	1701443053...	20-24	United States	United States	White	Female
6	1701836563...	20-24	United States	United States	White	Female
7	1702705999...	20-24	United States	United States	White	Female
8	1702836405...	20-24	United States	United States	White	Female
9	1702859973...	20-24	United States	United States	White	Female
10	1702883470...	20-24	United States	United States	White	Female
11	1703060808...	20-24	United States	United States	White	Female
12	1703476440...	20-24	United States	United States	White	Female
13	1703875473...	20-24	United States	United States	White	Female
14	1703925975...	20-24	United States	United States	White	Female
15	1703932354...	20-24	United States	United States	White	Female
16	1704164782...	20-24	United States	United States	White	Female
17	1704336733...	20-24	United States	United States	White	Female
18	1704373334...	20-24	United States	United States	White	Female
19	1704415094...	20-24	United States	United States	White	Female
20	1704552747...	20-24	United States	United States	White	Female
21	1704872164...	20-24	United States	United States	White	Female
22	1705182406...	20-24	United States	United States	White	Female

Census | Demographics

We have now imported two datasets:

- Census
- Demographics

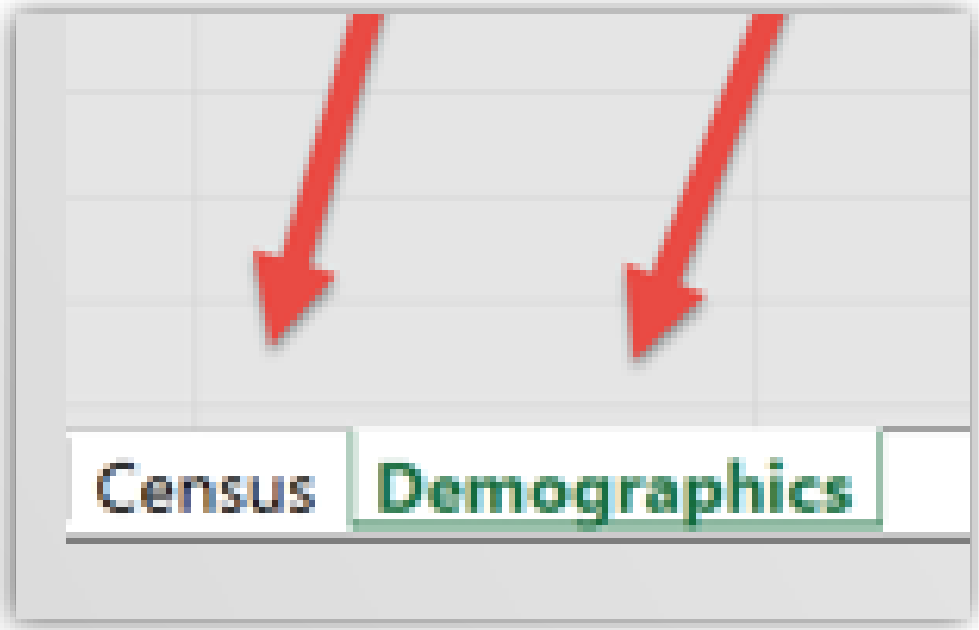
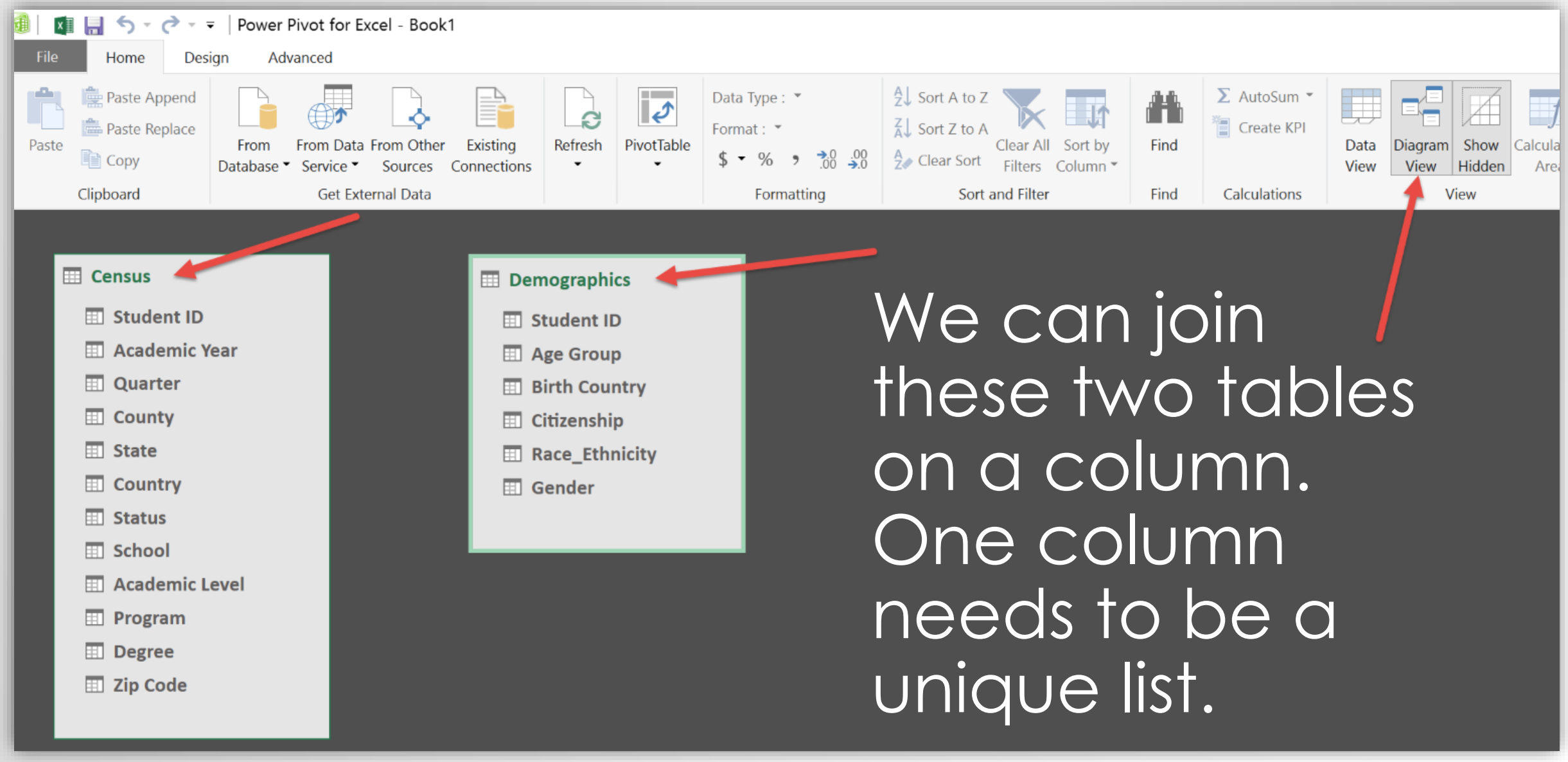
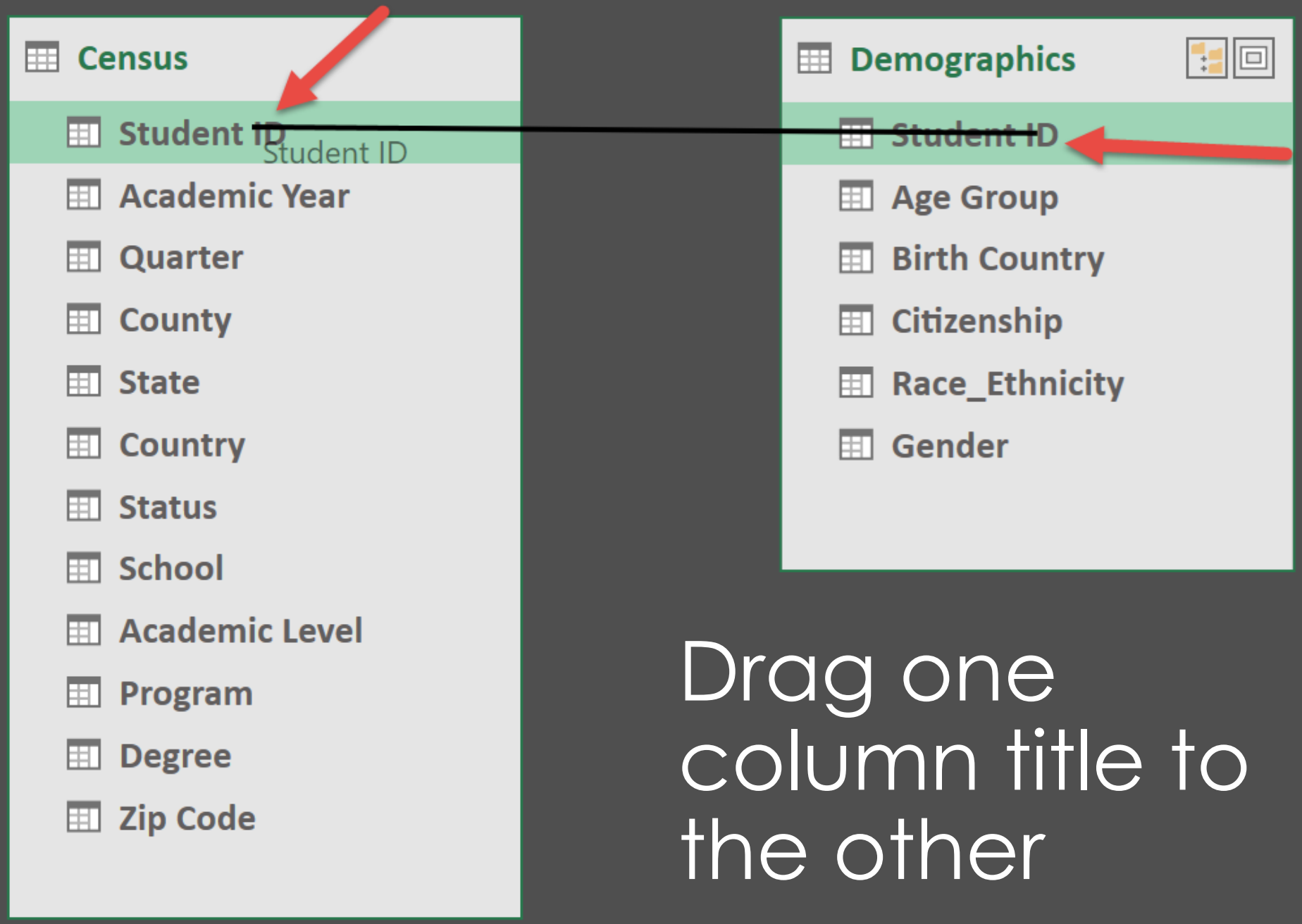


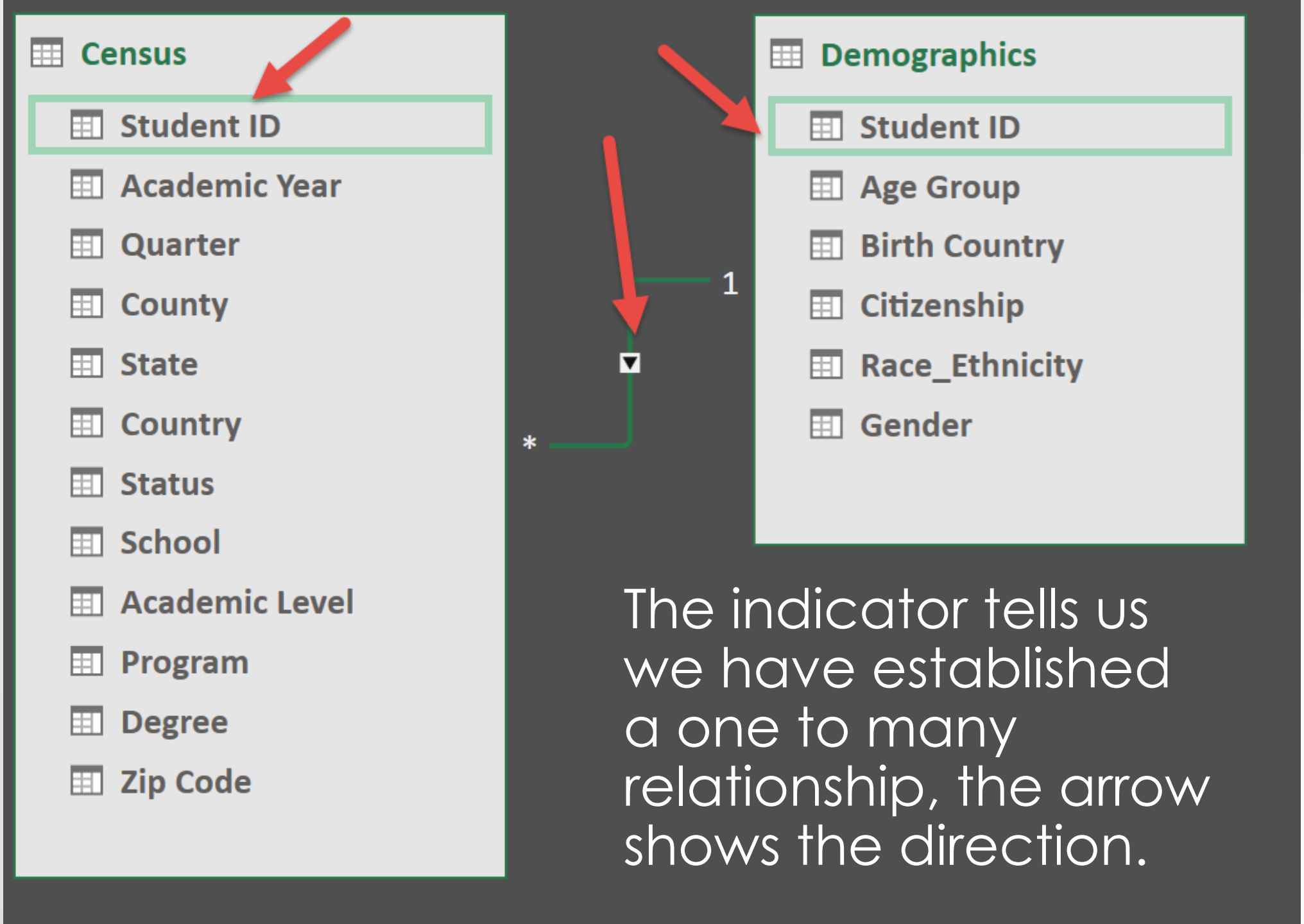
Table Joins



We can join these two tables on a column. One column needs to be a unique list.



Drag one column title to the other



The indicator tells us we have established a one to many relationship, the arrow shows the direction.

Adding a New Column

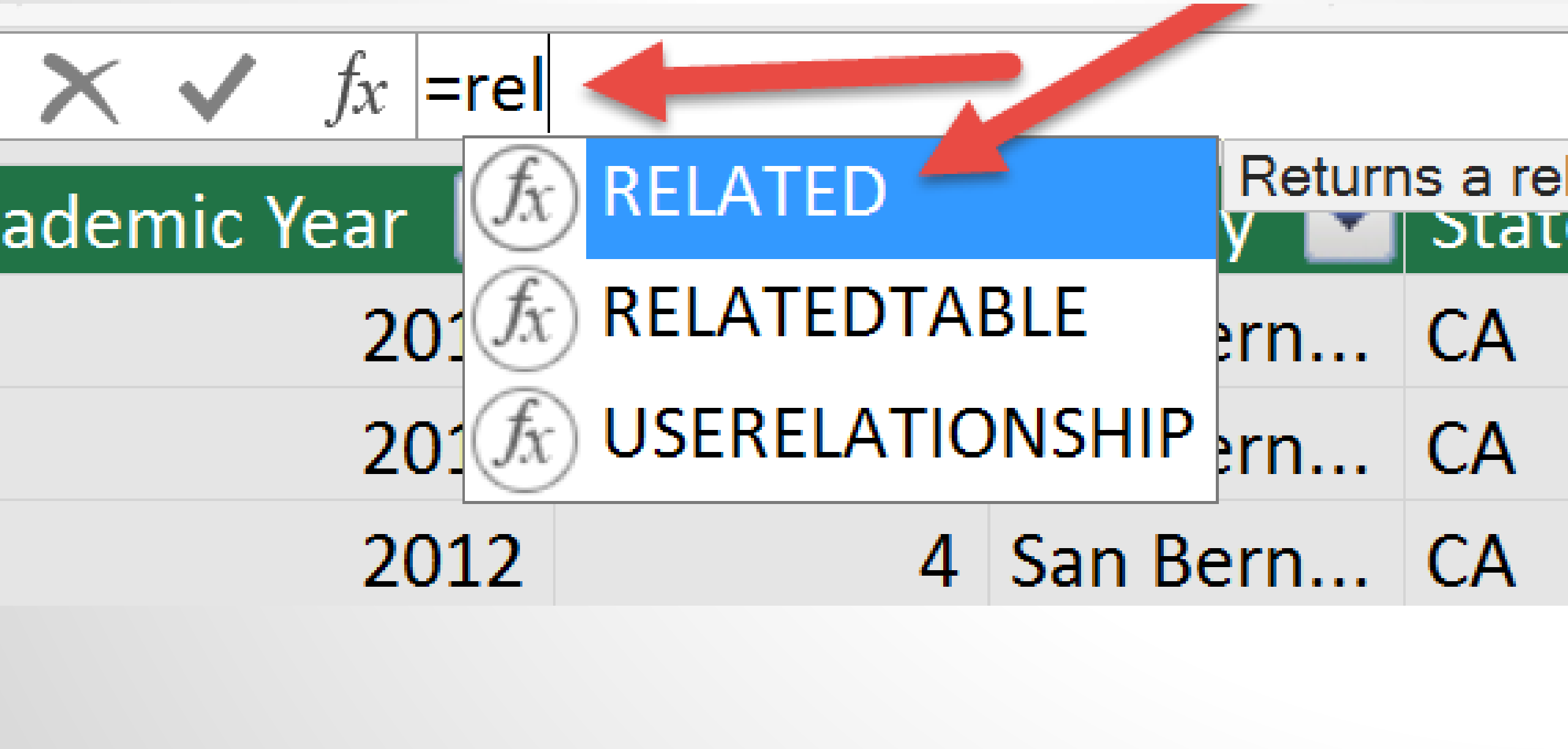
n	Degree	Zip Code	Race/Ethnicity
am	MS	92354	
am	MS	92354	
am	MS	92354	
am	MS	92354	

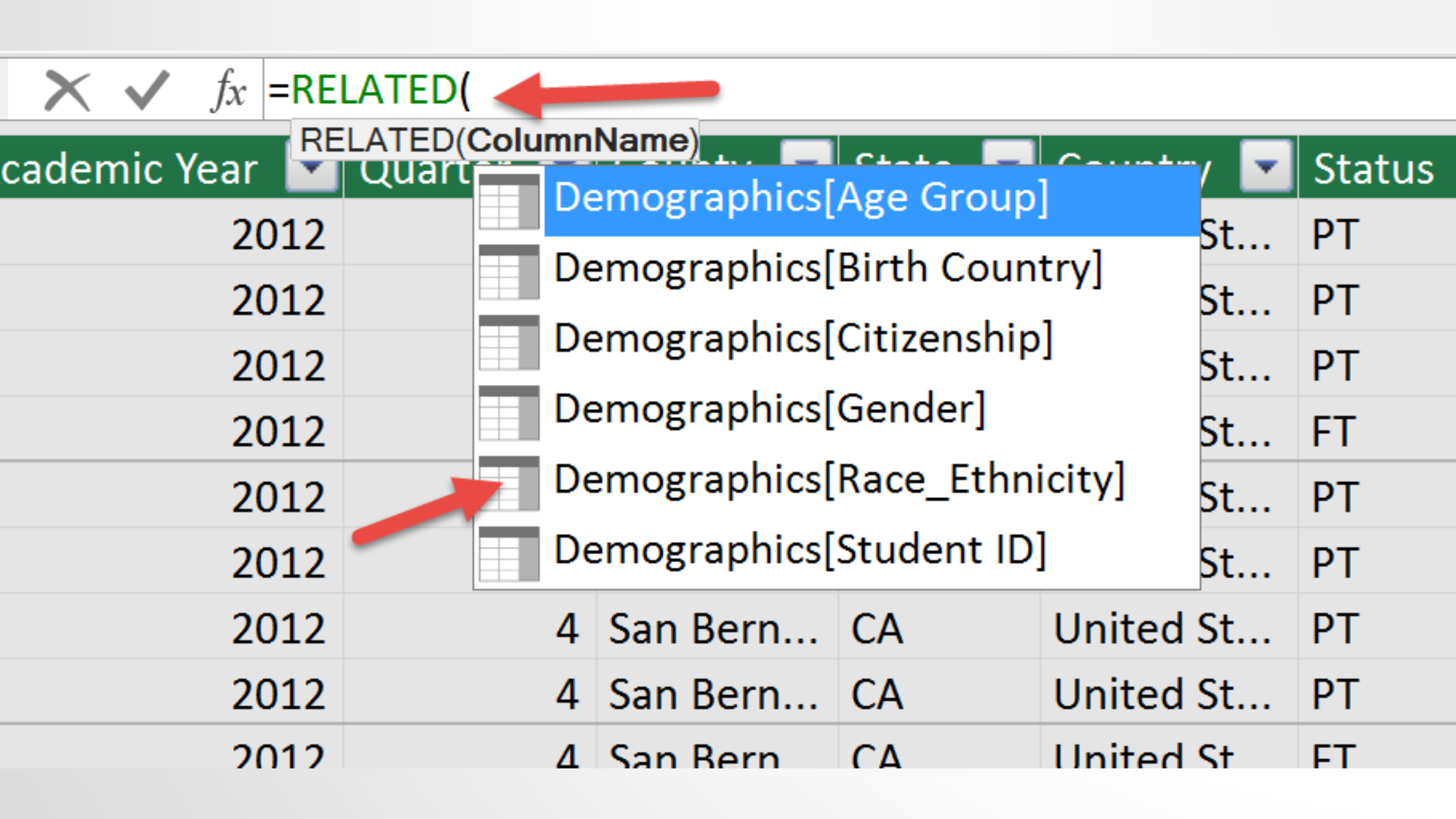
Let's add a column to our census table based on a column from the demographics table

Introducing Data Analysis Expressions – DAX

Powerful language for Power Pivot and Power BI

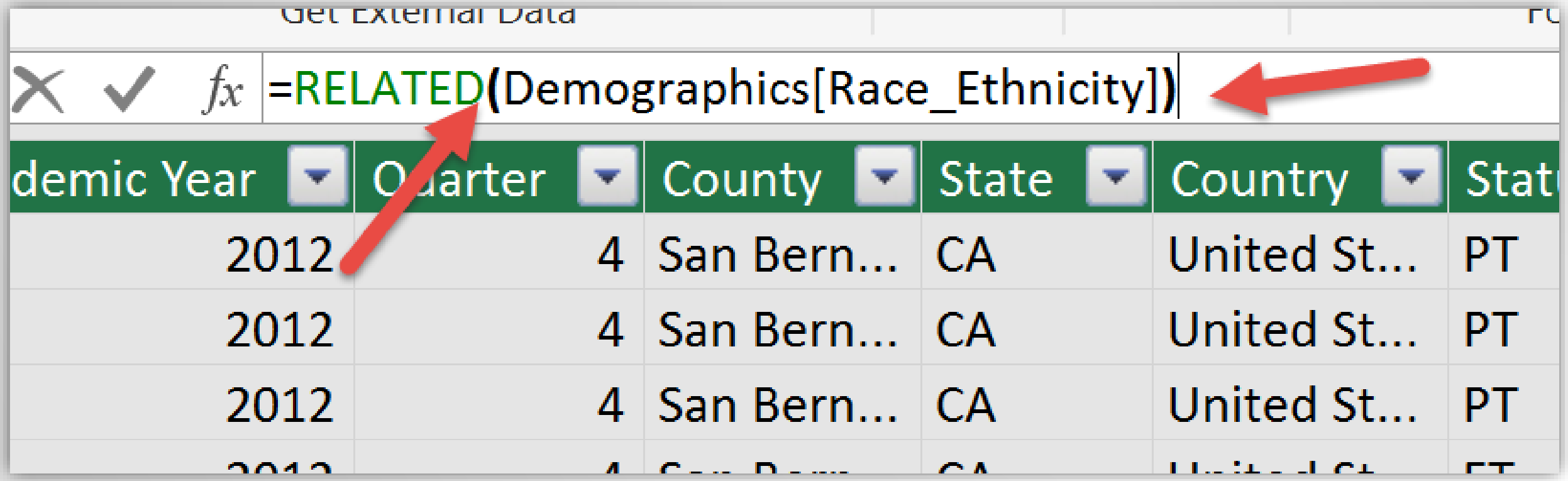
When we start to type suggestions are displayed



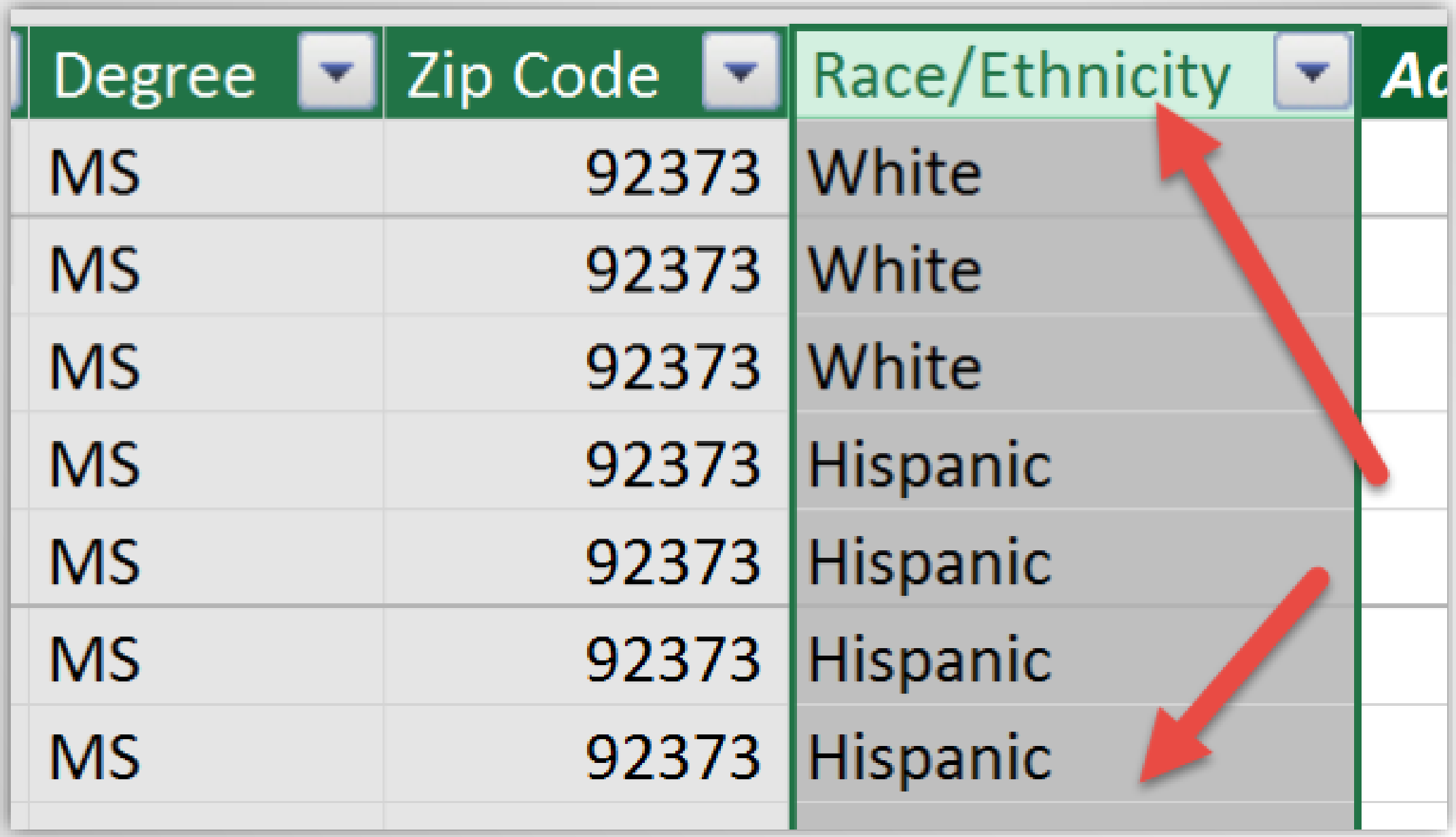

=RELATED(
RELATED(ColumnName)
Demographics[Age Group]
Demographics[Birth Country]
Demographics[Citizenship]
Demographics[Gender]
Demographics[Race_Ethnicity]
Demographics[Student ID]
cademic Year
Status
2012 PT
2012 PT
2012 PT
2012 FT
2012 PT
2012 PT
2012 4 San Bern... CA United St... PT
2012 4 San Bern... CA United St... PT
2012 4 San Bern... CA United St... FT

Complete DAX Formula

=RELATED(Demographics[Race_Ethnicity])



Our New Column Has Been Created

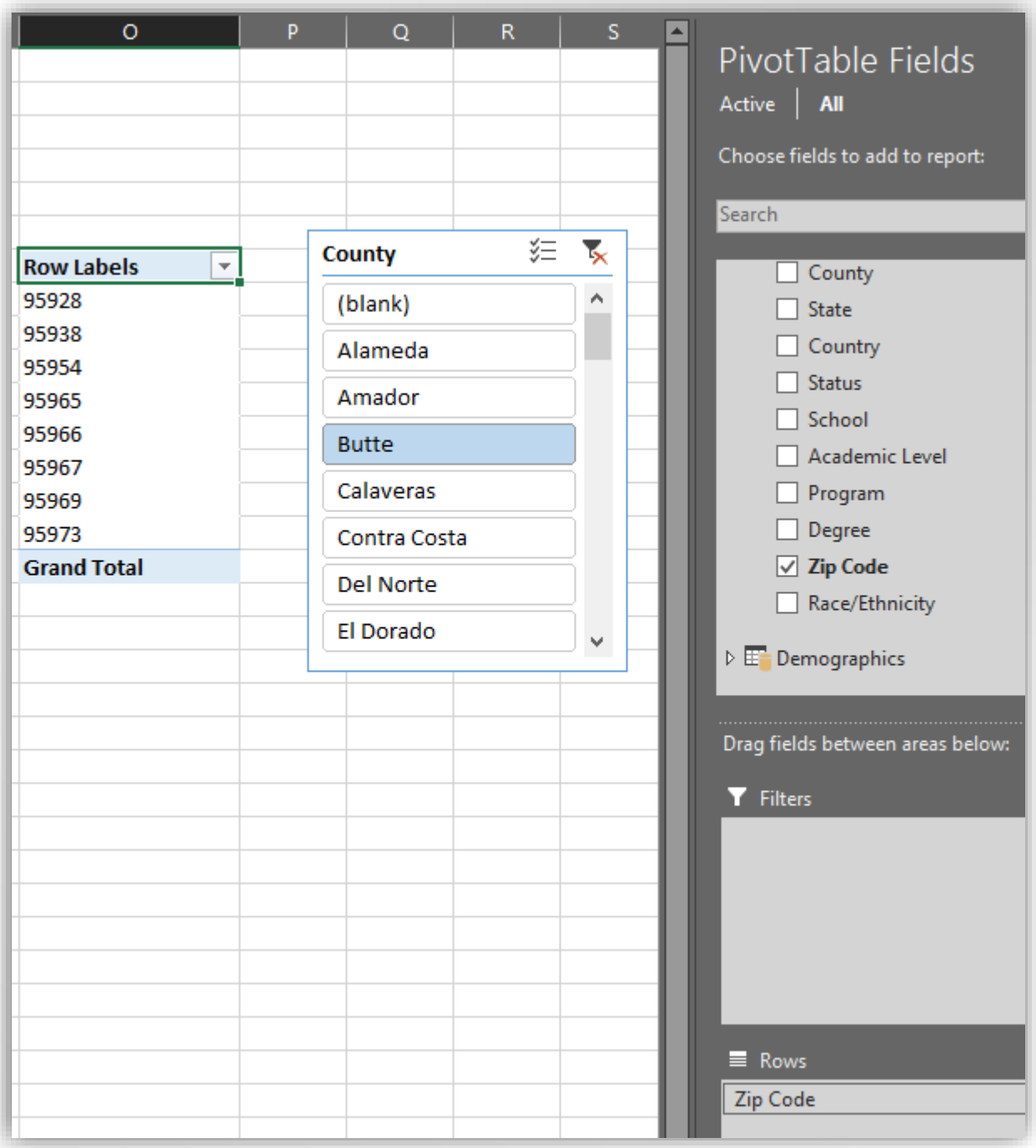


Degree	Zip Code	Race/Ethnicity	Ac
MS	92373	White	
MS	92373	White	
MS	92373	White	
MS	92373	Hispanic	
MS	92373	Hispanic	
MS	92373	Hispanic	
MS	92373	Hispanic	

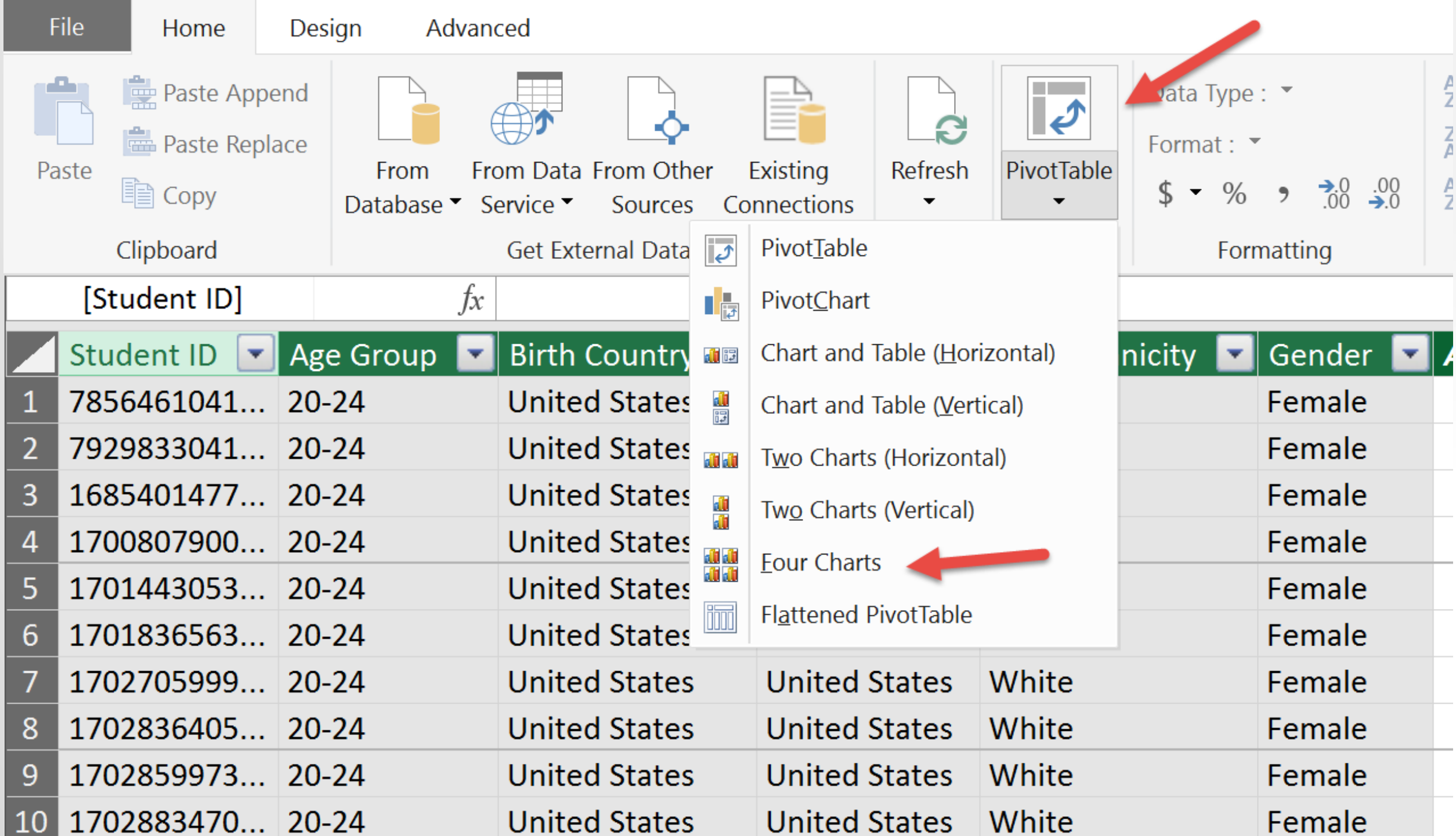
Lookup Table Example

Lookup tables support requests like listing students in a particular region while retaining multivariate filtered charts.

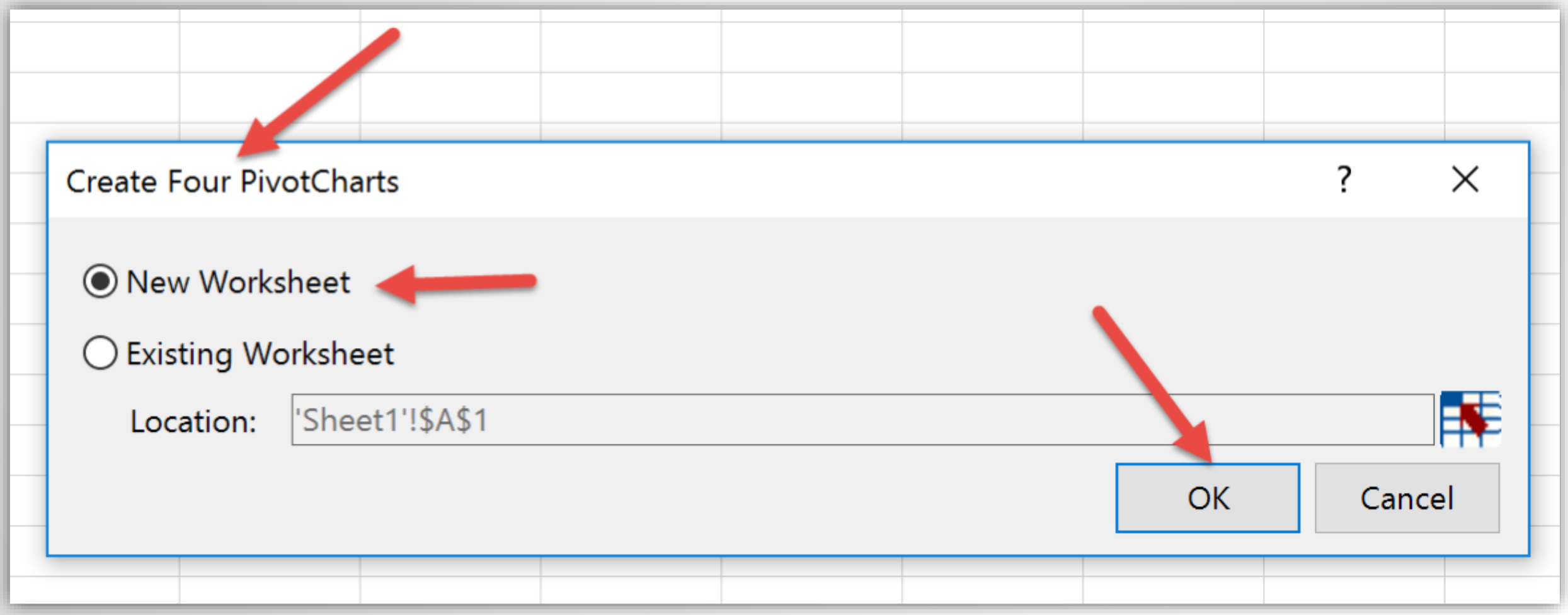
Use a slicer, create the list. This can then be used in another report keyed on zip code to filter students.



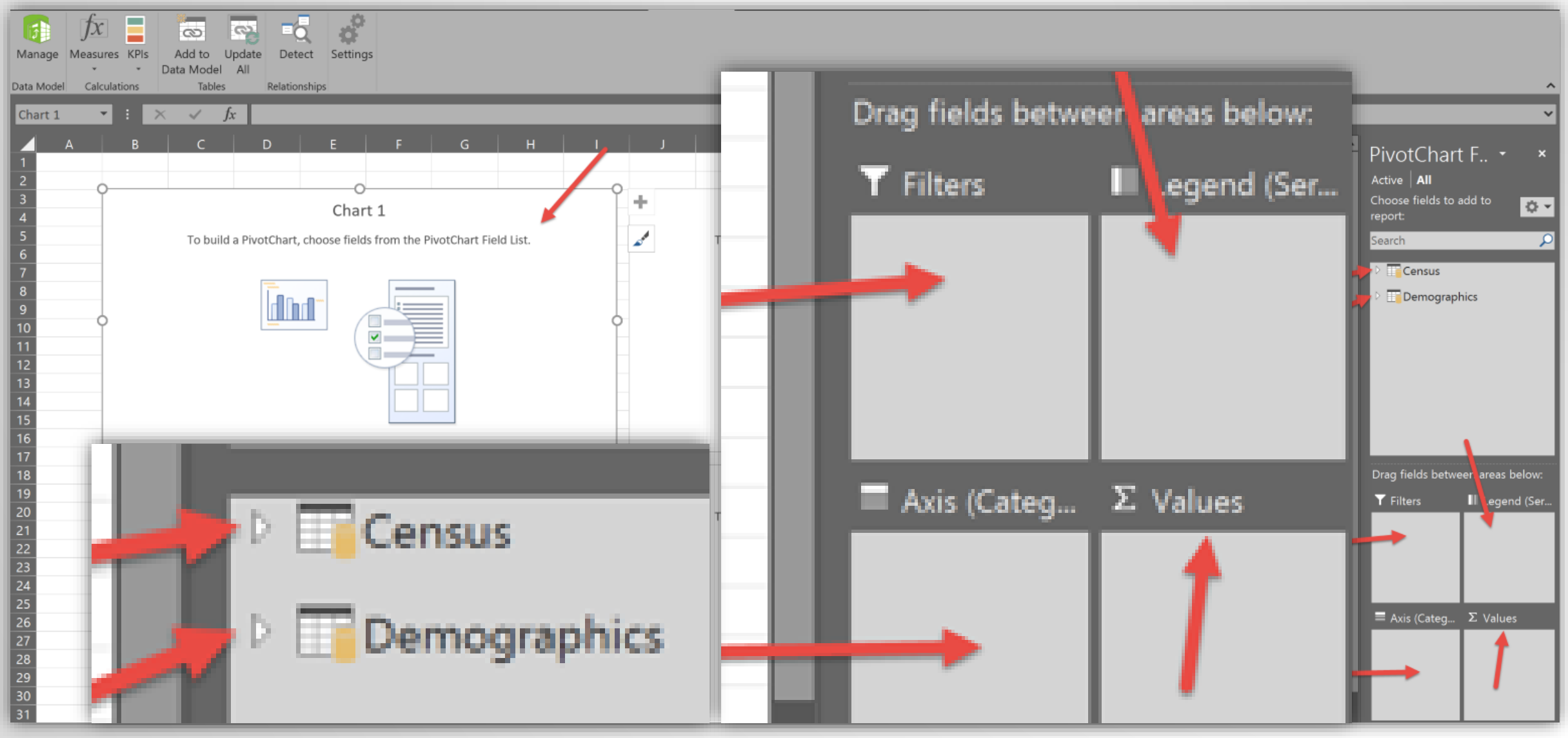
Building the Dashboard


File
Home
Design
Advanced
Paste
Paste Append
Paste Replace
Copy
Clipboard
From Database
From Data Service
From Other Sources
Existing Connections
Get External Data
Refresh
PivotTable
Data Type :
Format :
Formatting
PivotTable
PivotChart
Chart and Table (Horizontal)
Chart and Table (Vertical)
Two Charts (Horizontal)
Two Charts (Vertical)
Four Charts
Flattened PivotTable
[Student ID]
fx
Student ID
Age Group
Birth Country
nicity
Gender
1 7856461041... 20-24 United States Female
2 7929833041... 20-24 United States Female
3 1685401477... 20-24 United States Female
4 1700807900... 20-24 United States Female
5 1701443053... 20-24 United States Female
6 1701836563... 20-24 United States Female
7 1702705999... 20-24 United States United States White Female
8 1702836405... 20-24 United States United States White Female
9 1702859973... 20-24 United States United States White Female
10 1702883470... 20-24 United States United States White Female

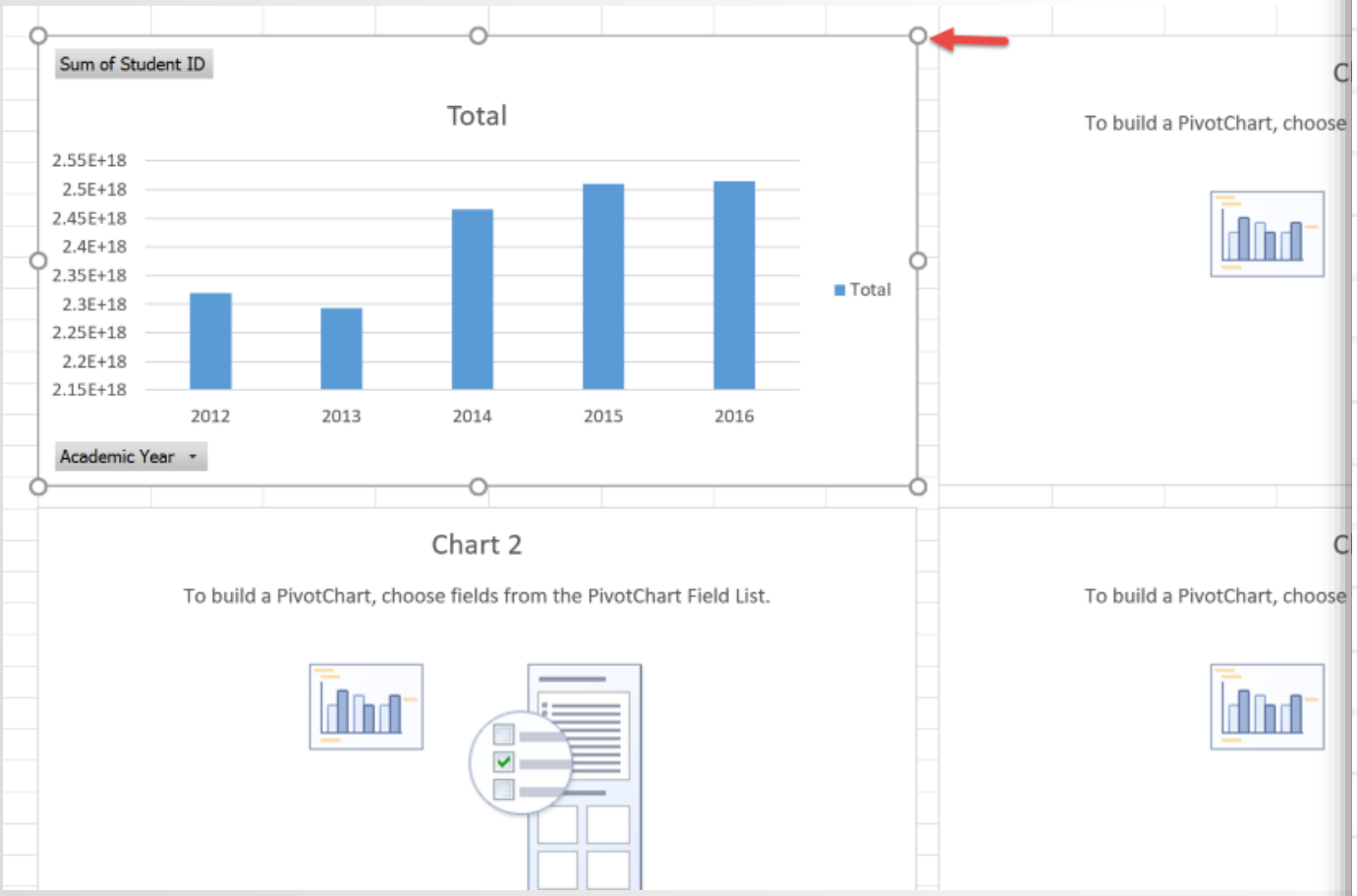
Selecting the Location for Charts

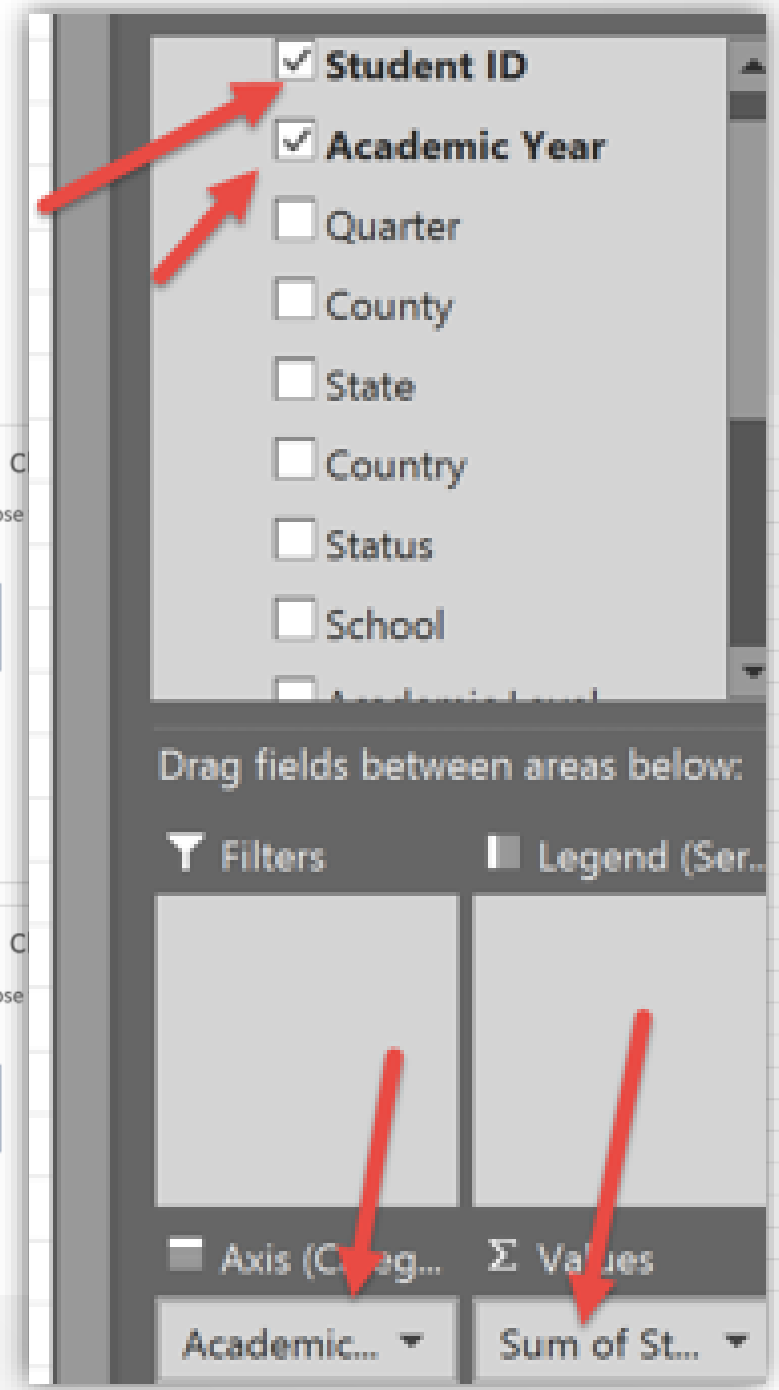


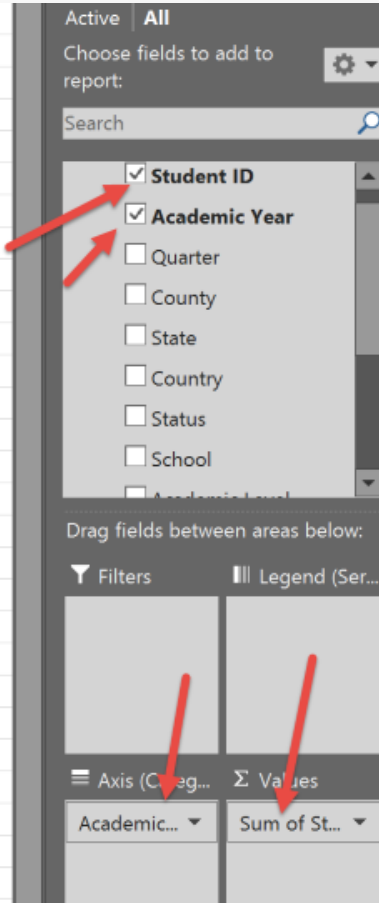
Selecting Content for Chart

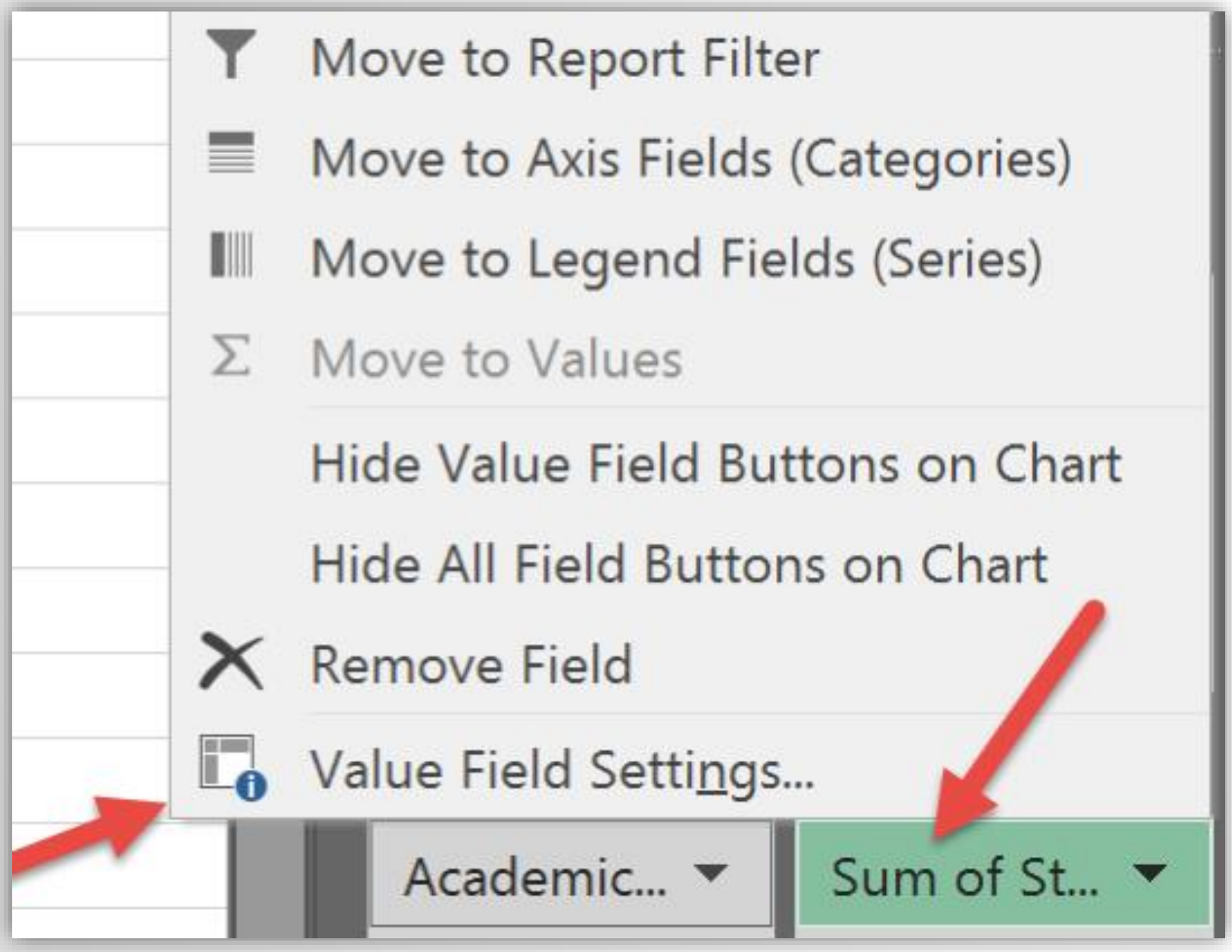


We will drag Student ID to Values and Academic Year to Axis

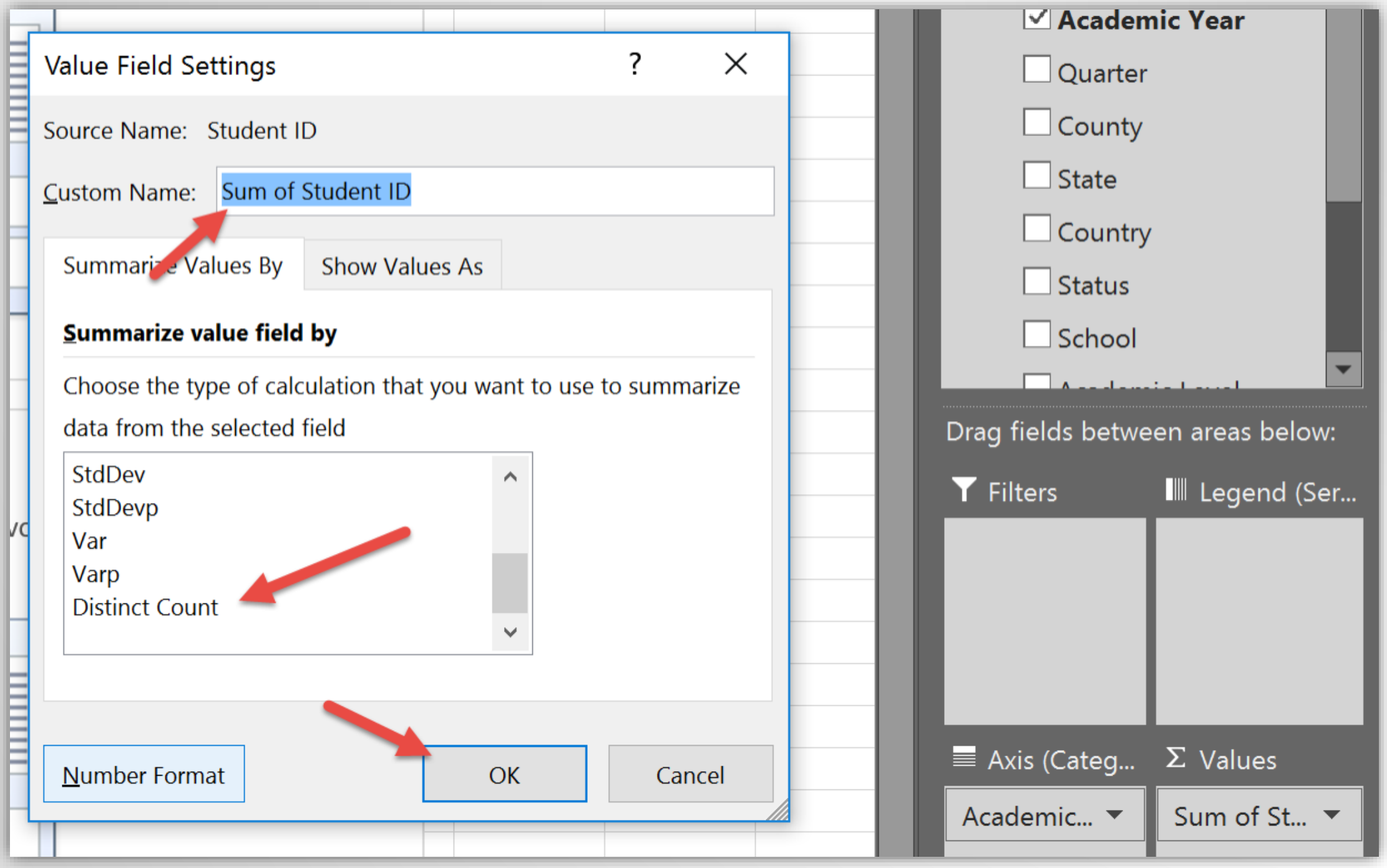




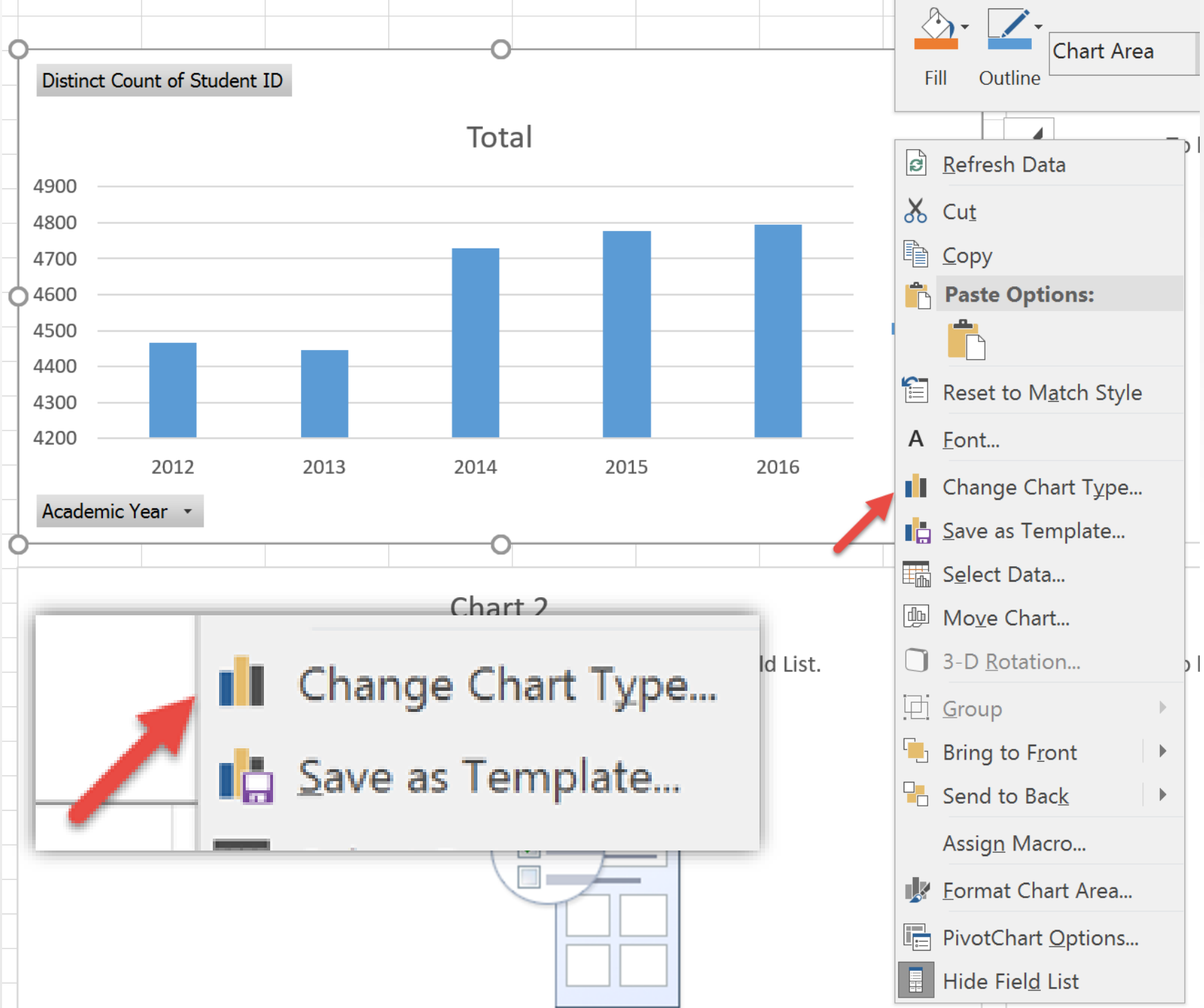


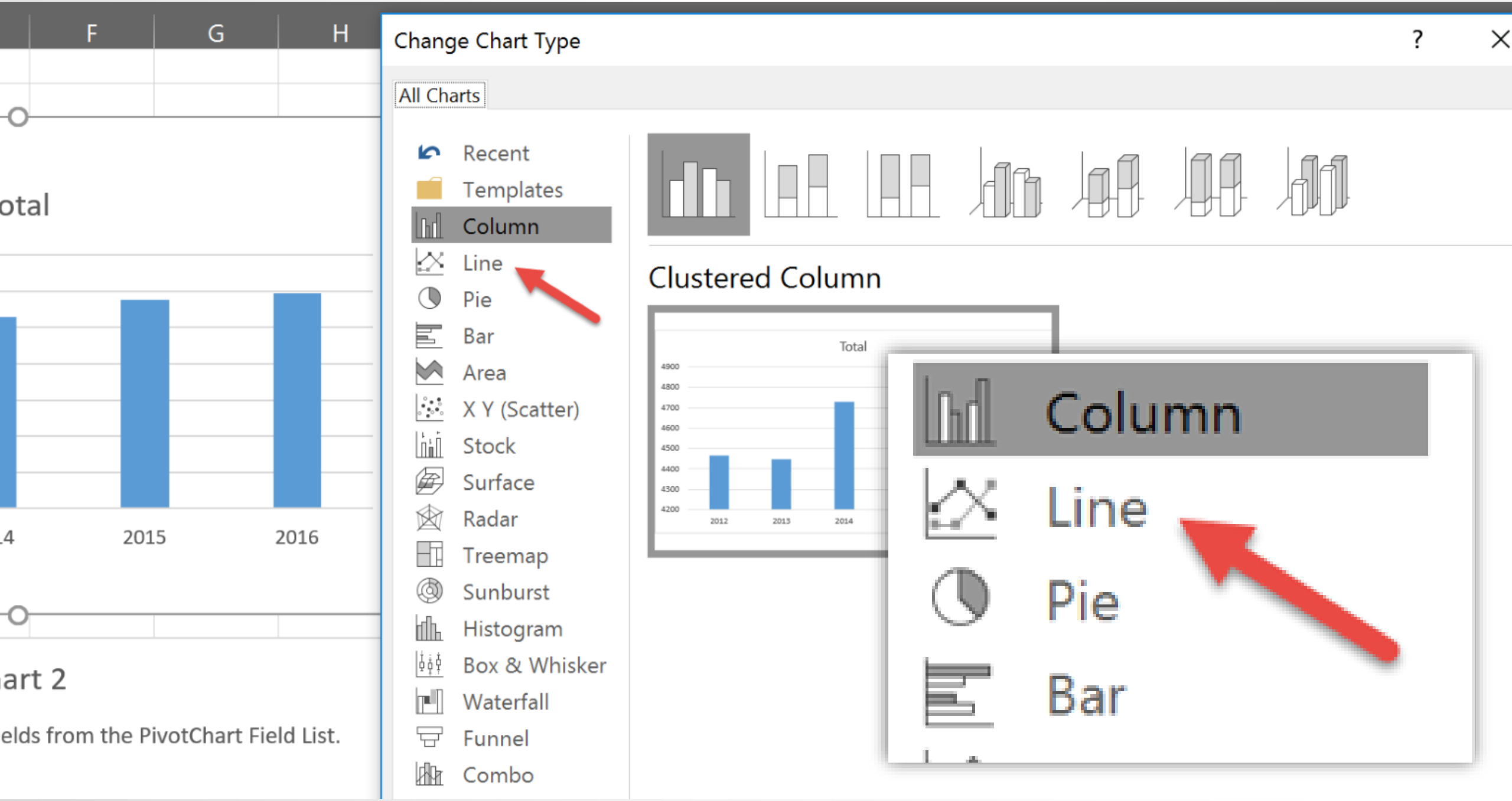


Sum doesn't work for our purpose, we want a distinct count of student ID

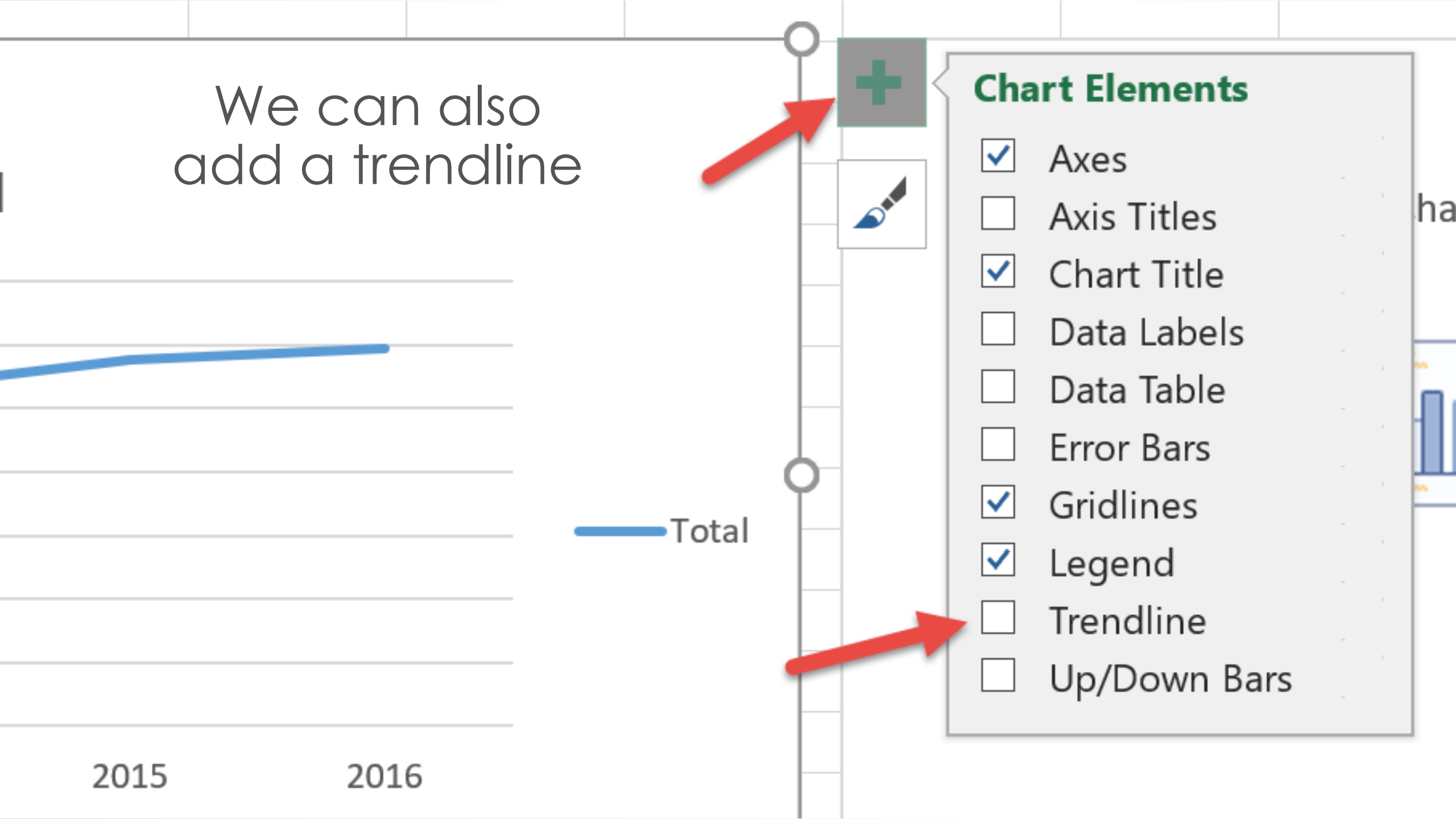

Value Field Settings
Source Name: Student ID
Custom Name: Sum of Student ID
Summarize Values By
Show Values As
Summarize value field by
Choose the type of calculation that you want to use to summarize data from the selected field
StdDev
StdDevp
Var
Varp
Distinct Count
Number Format
OK
Cancel
Academic Year
Quarter
County
State
Country
Status
School
Drag fields between areas below:
Filters
Legend (Ser...
Axis (Categ...
Values
Academic...
Sum of St...

For this display it would be nice to use a line chart for showing the trend instead of a bar chart

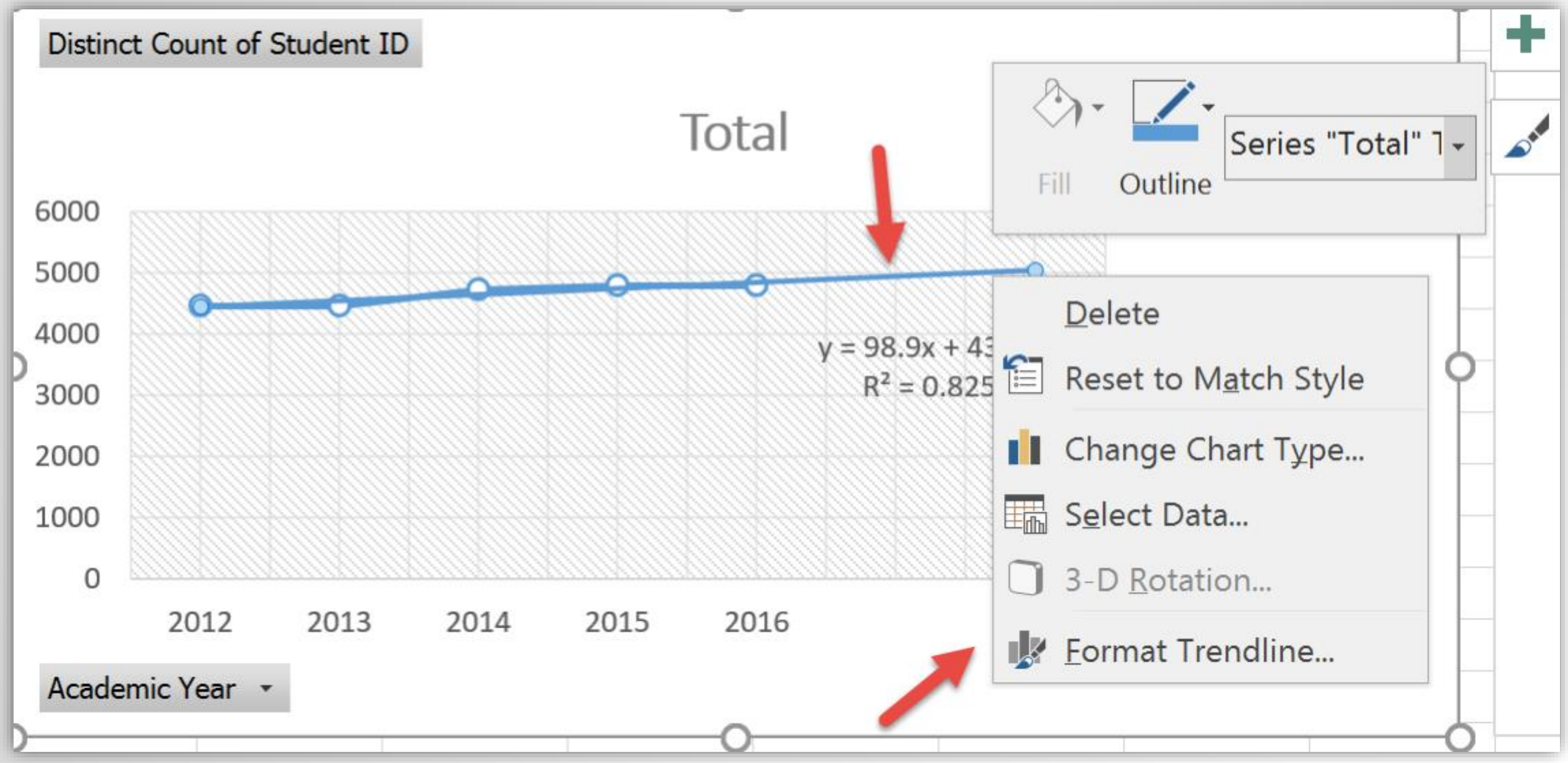



F
G
H
otal
2015
2016
art 2
elds from the PivotChart Field List.
Change Chart Type
All Charts
Recent
Templates
Column
Line
Pie
Bar
Area
X Y (Scatter)
Stock
Surface
Radar
Treemap
Sunburst
Histogram
Box & Whisker
Waterfall
Funnel
Combo
Clustered Column
Total
4900
4800
4700
4600
4500
4400
4300
4200
2012
2013
2014
Column
Line
Pie
Bar

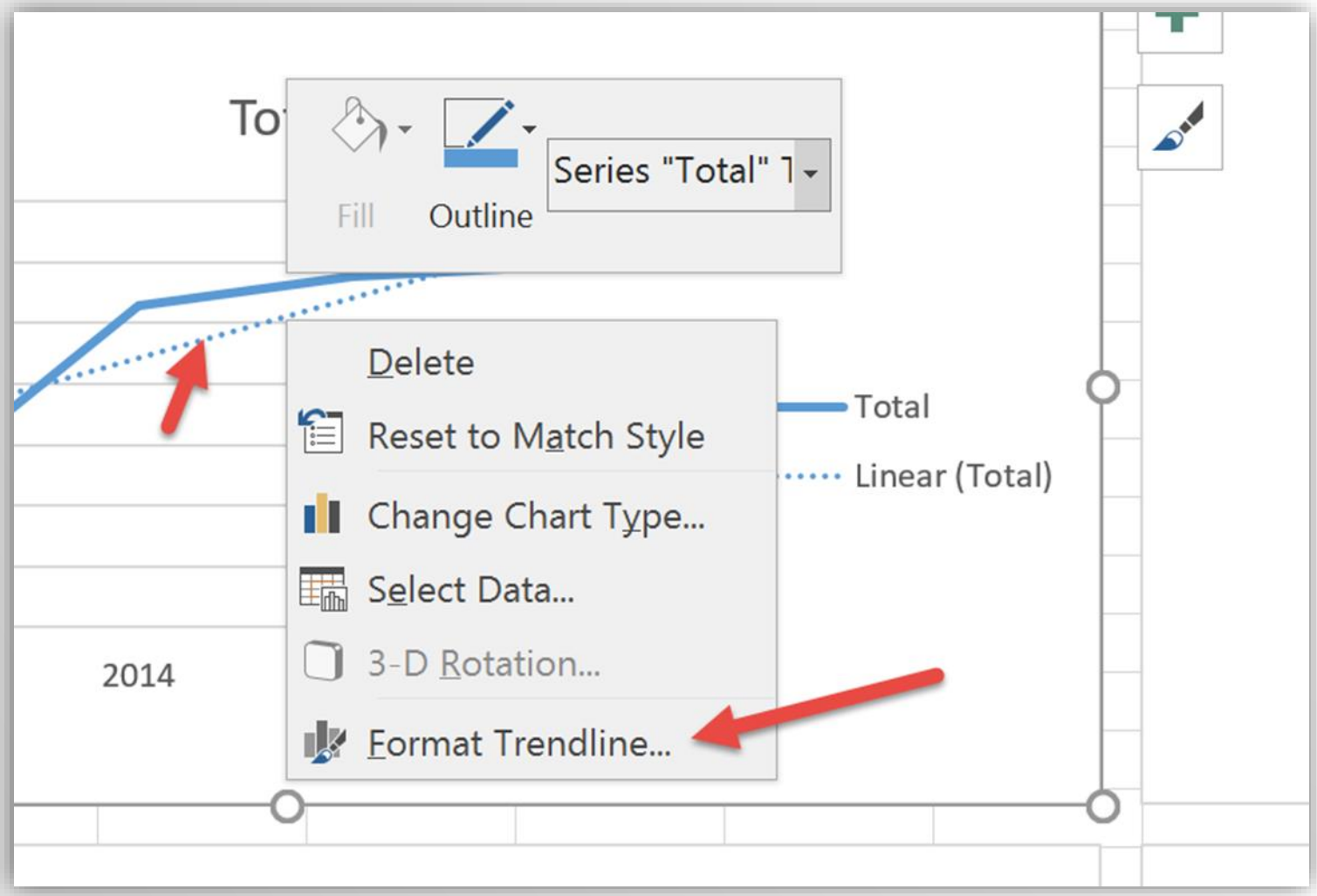
We can also add a trendline

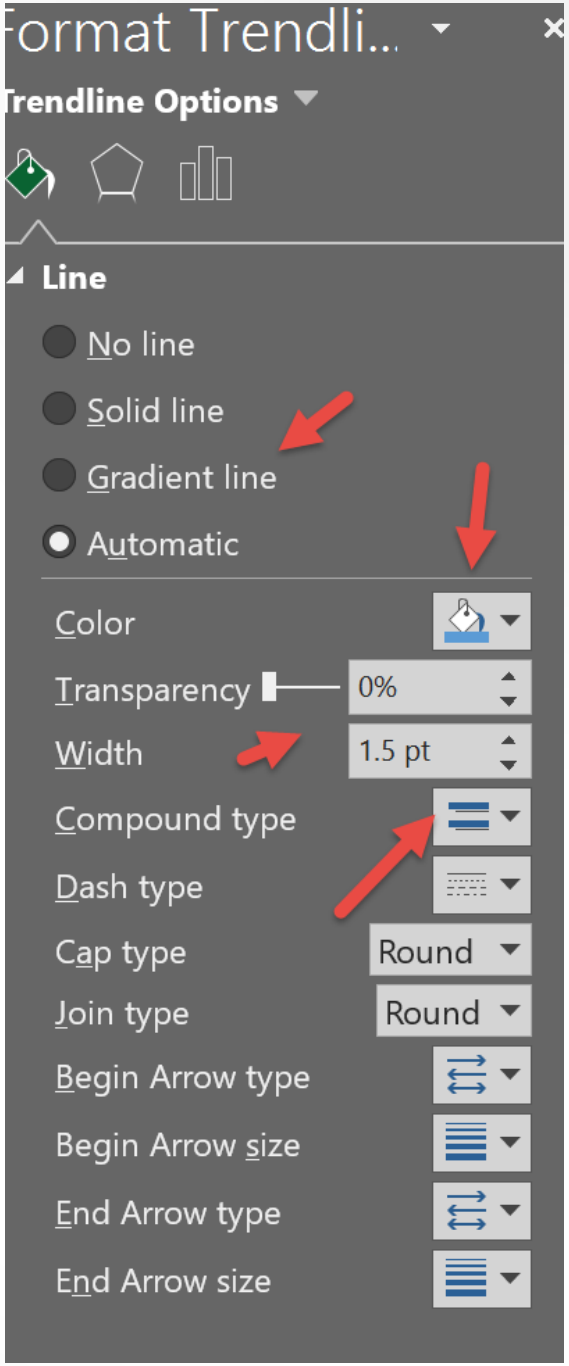


Formatting the Trendline



The trendline can be formatted to look different from the data line





The trendline can forecast forward on periods. You also have the option to add the equation and R-squared value.

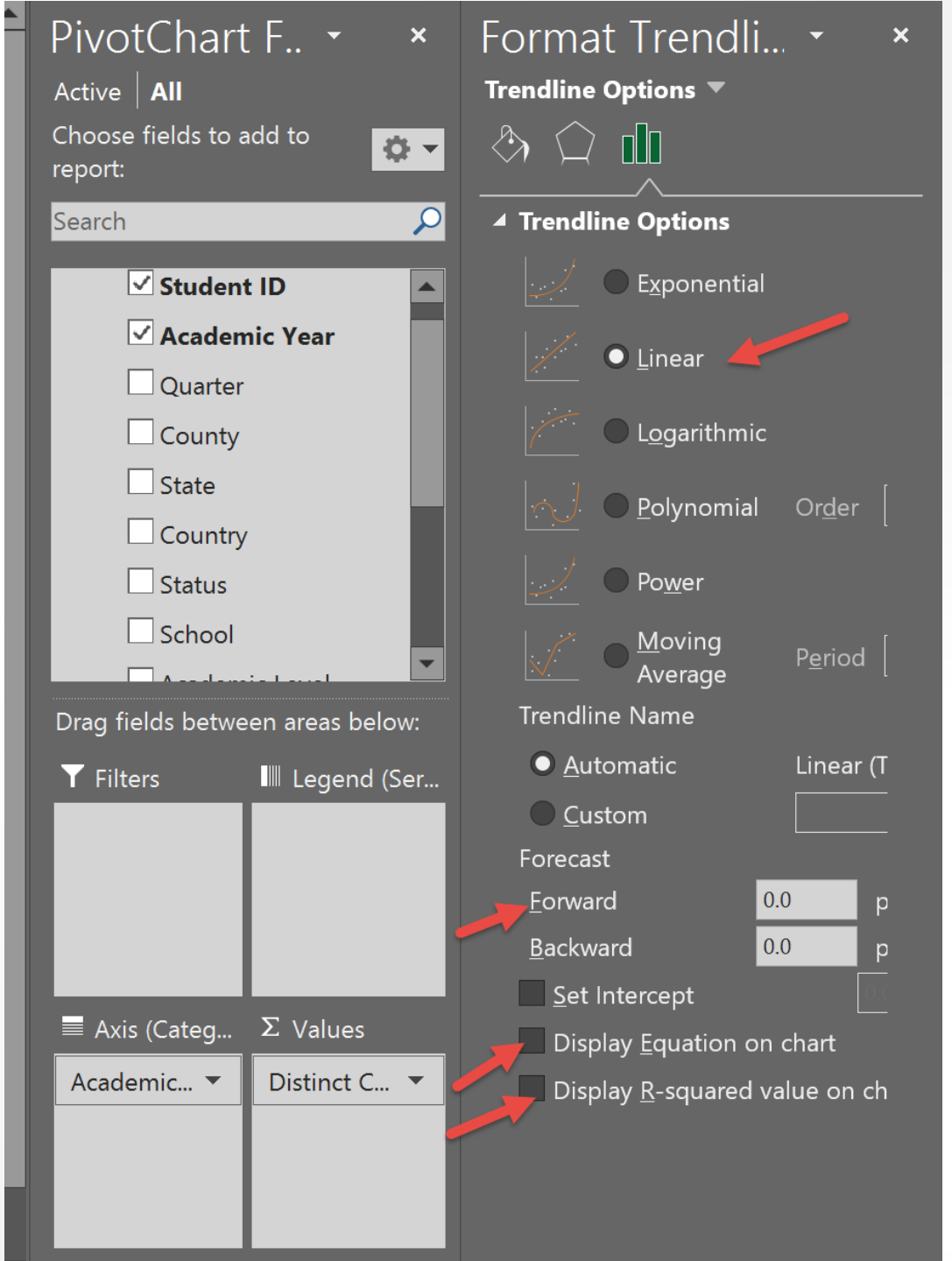
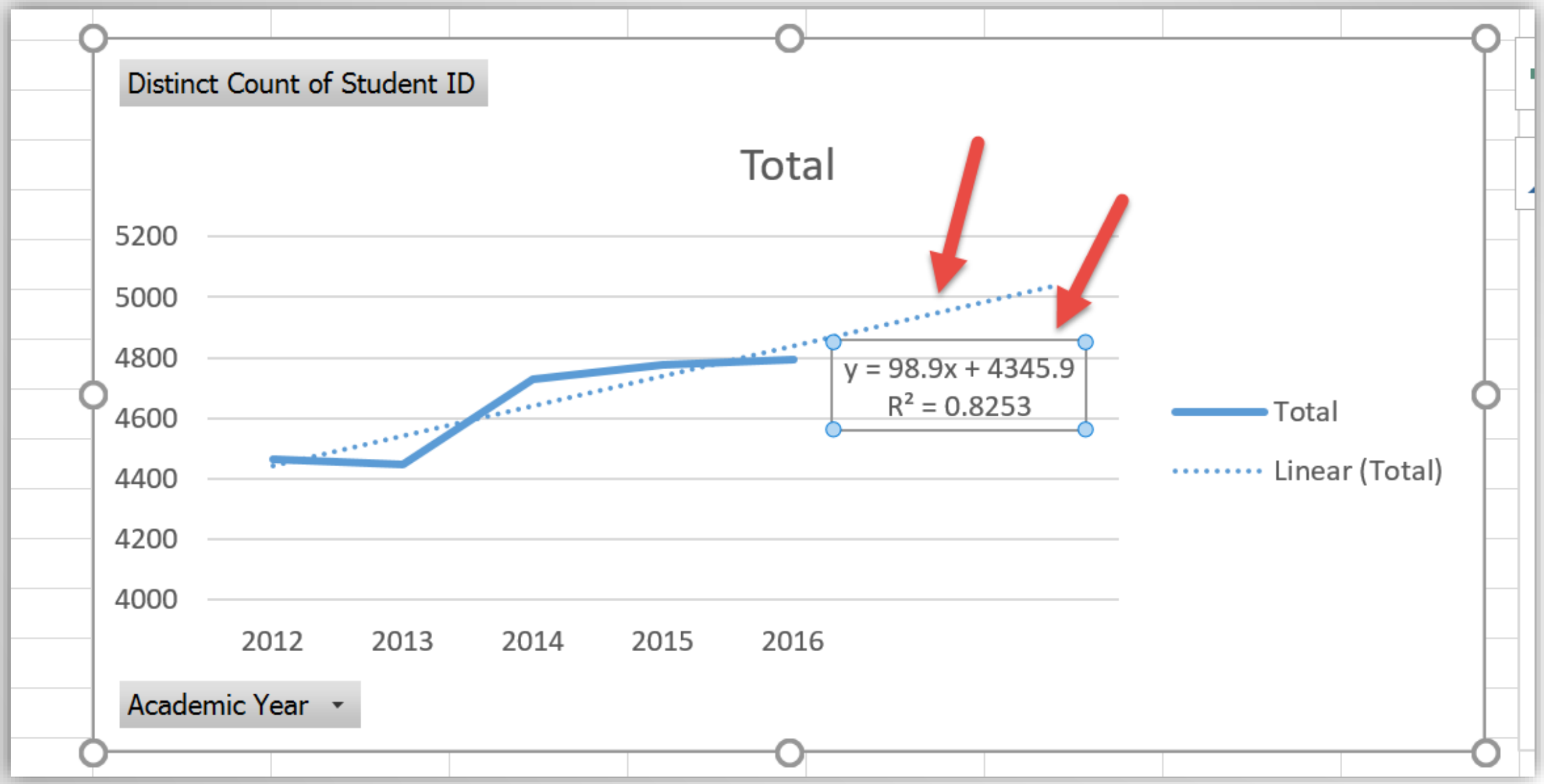
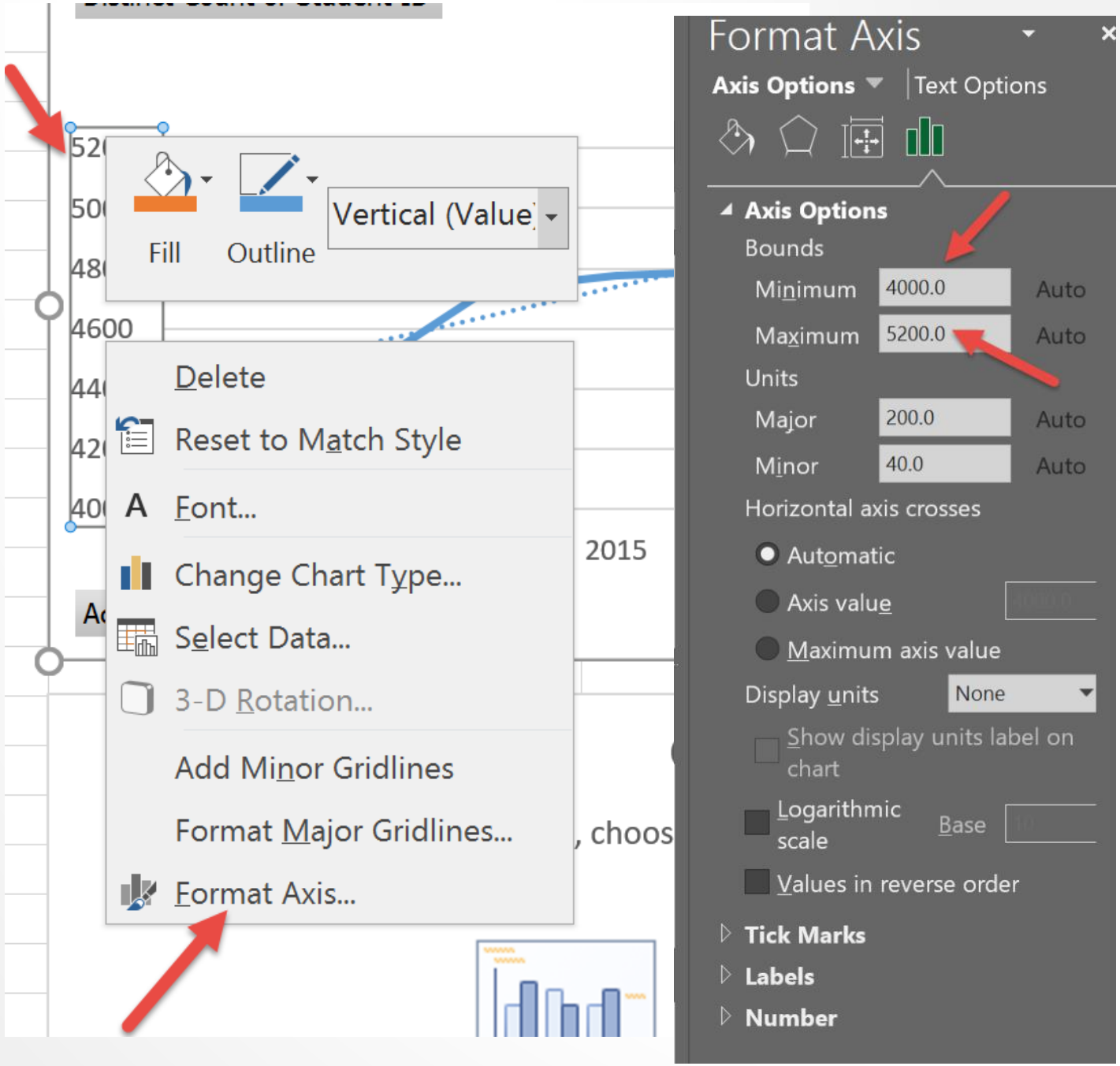


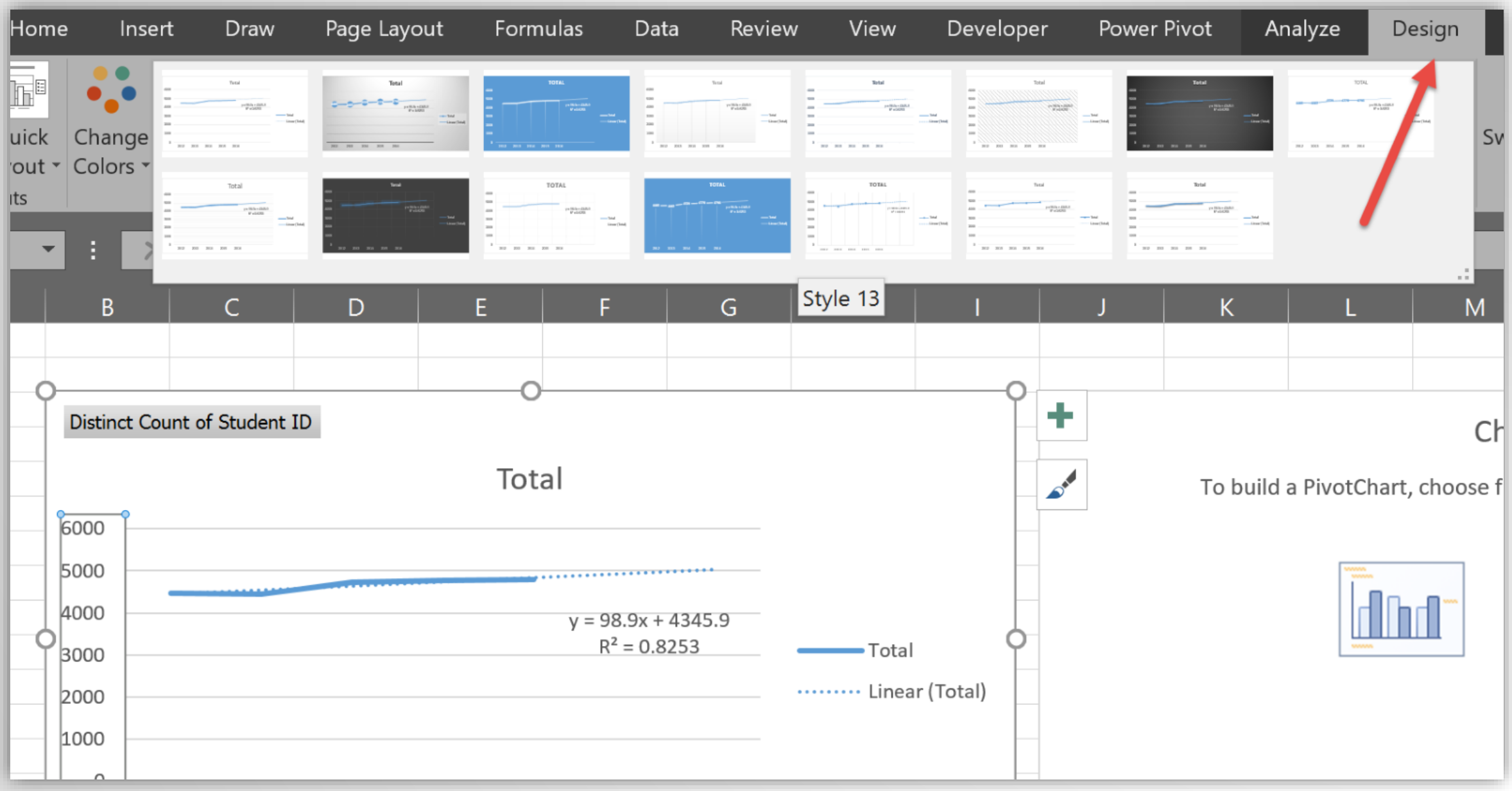
Chart with Trendline and Default Range



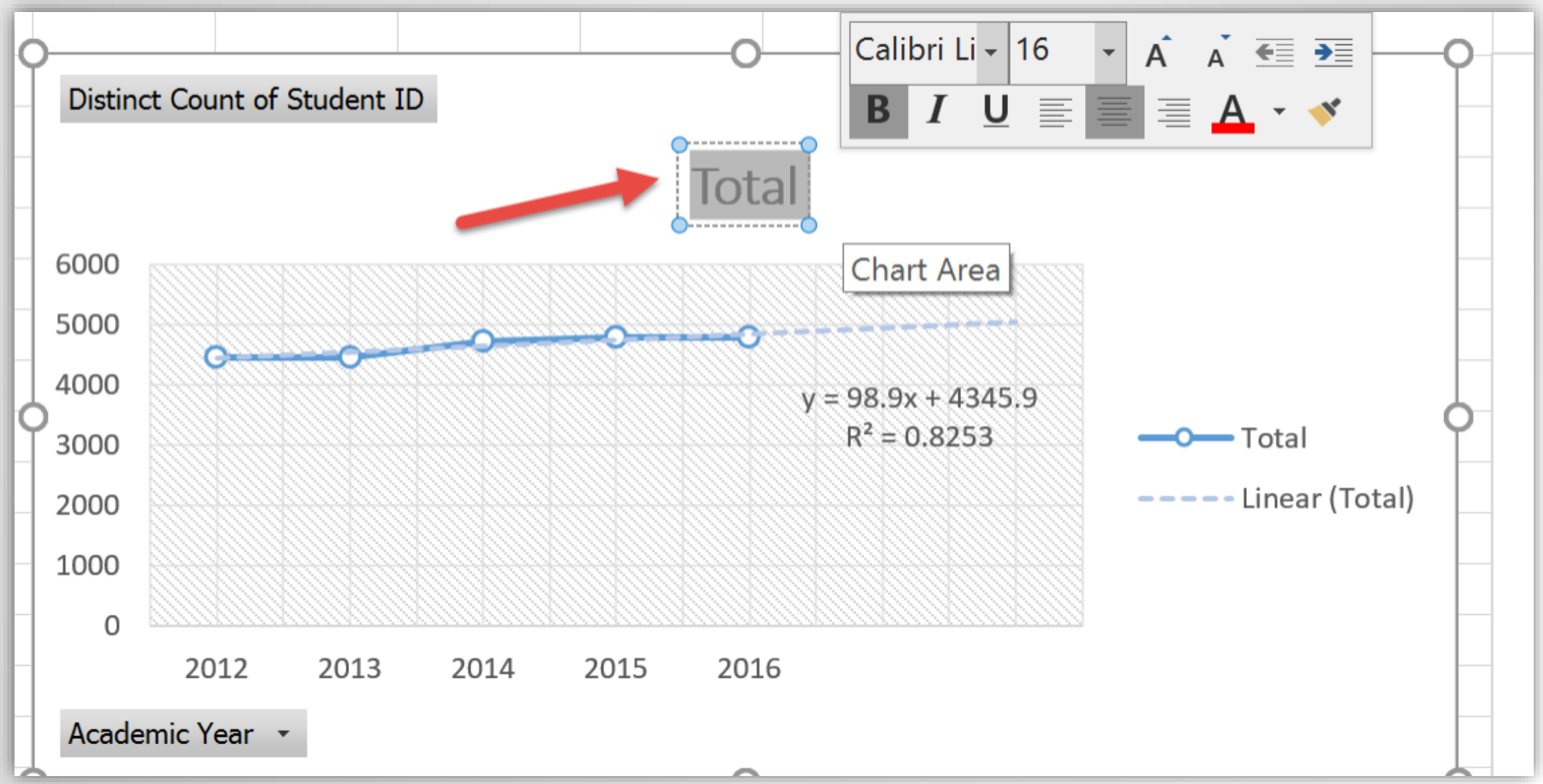
Formatting axis by selecting minimum and maximum ranges



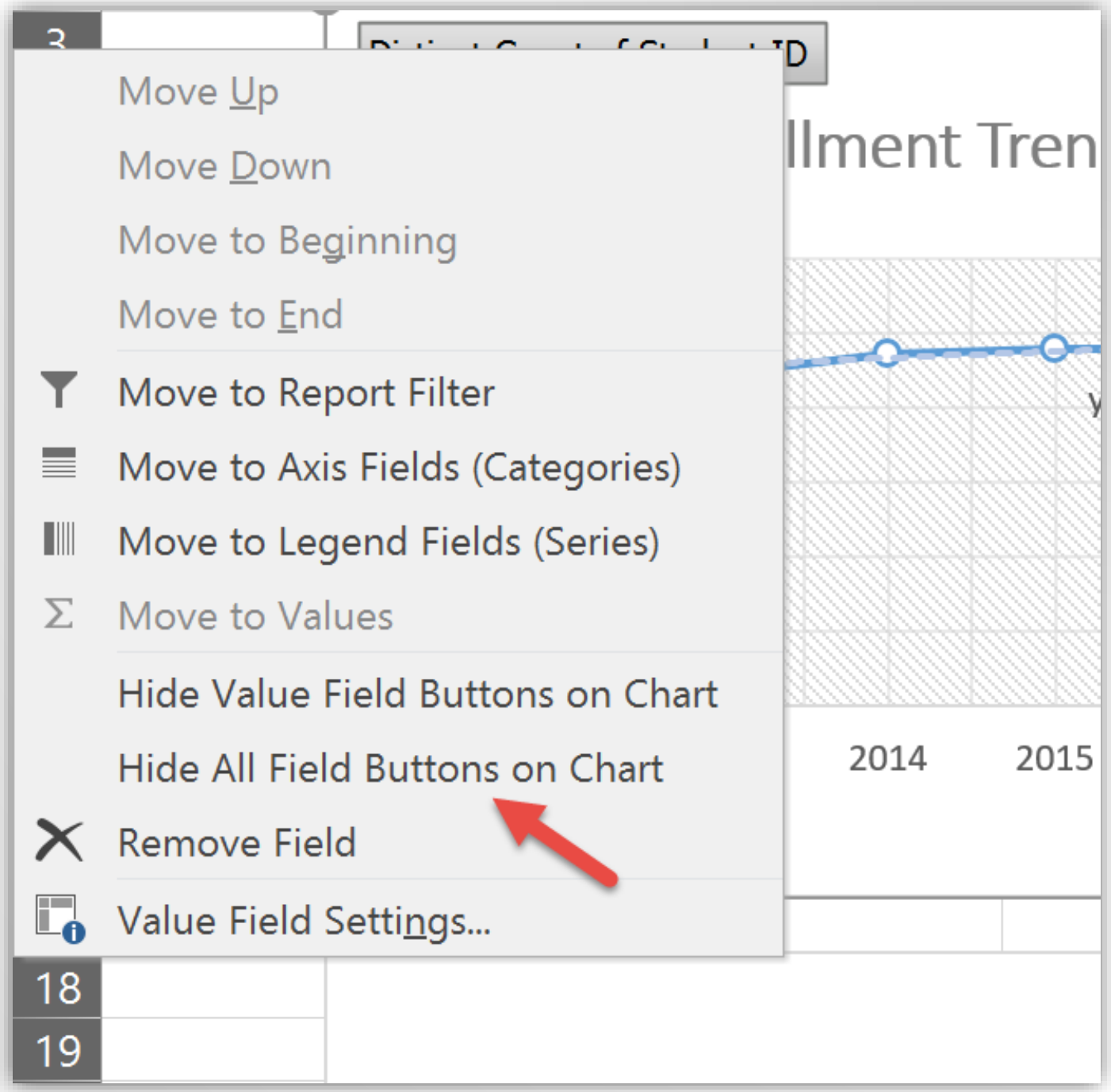
The Design Menu Offers Multiple Choices for Chart Style



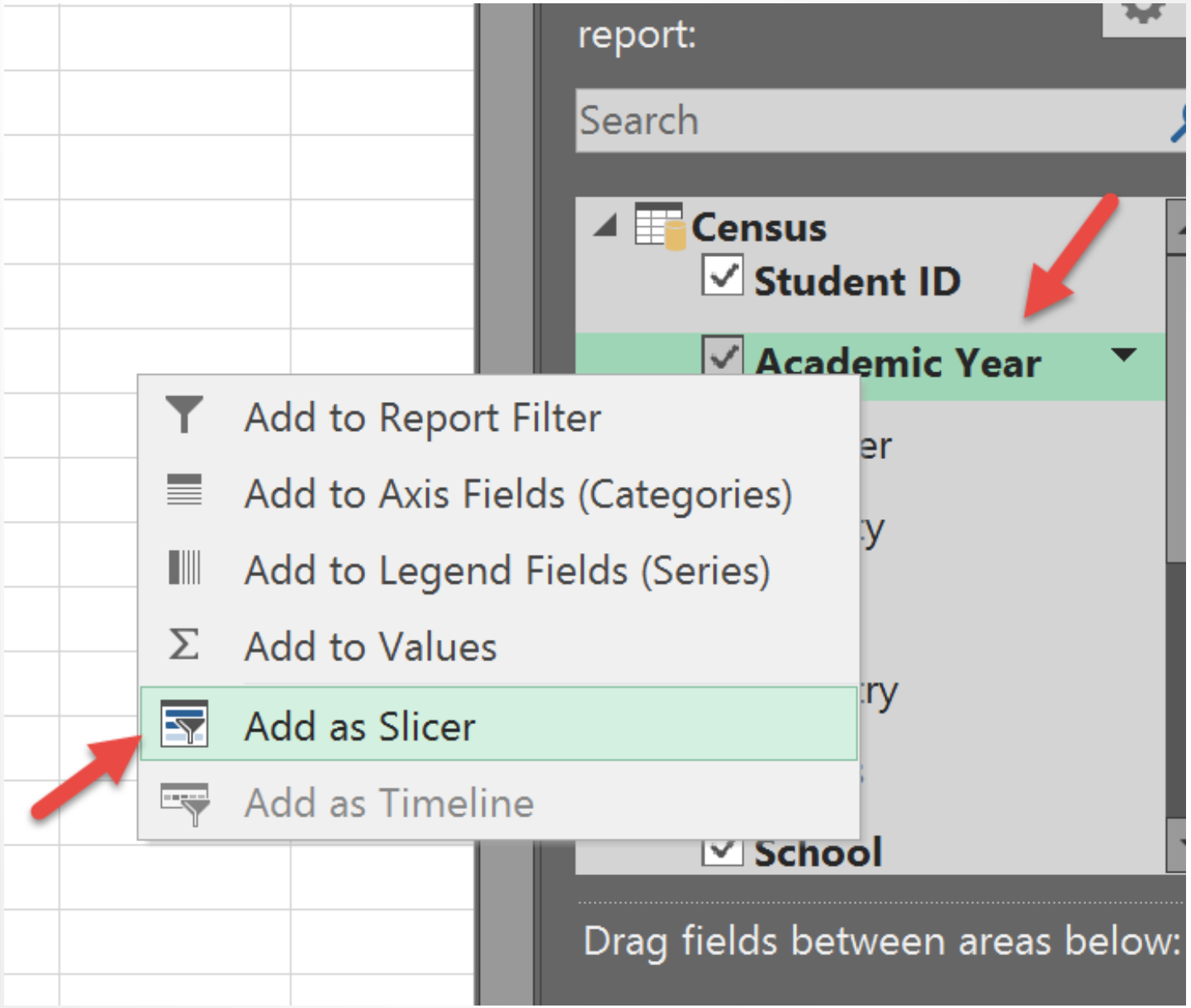
By Highlighting the Title We Can Add Our Own Text

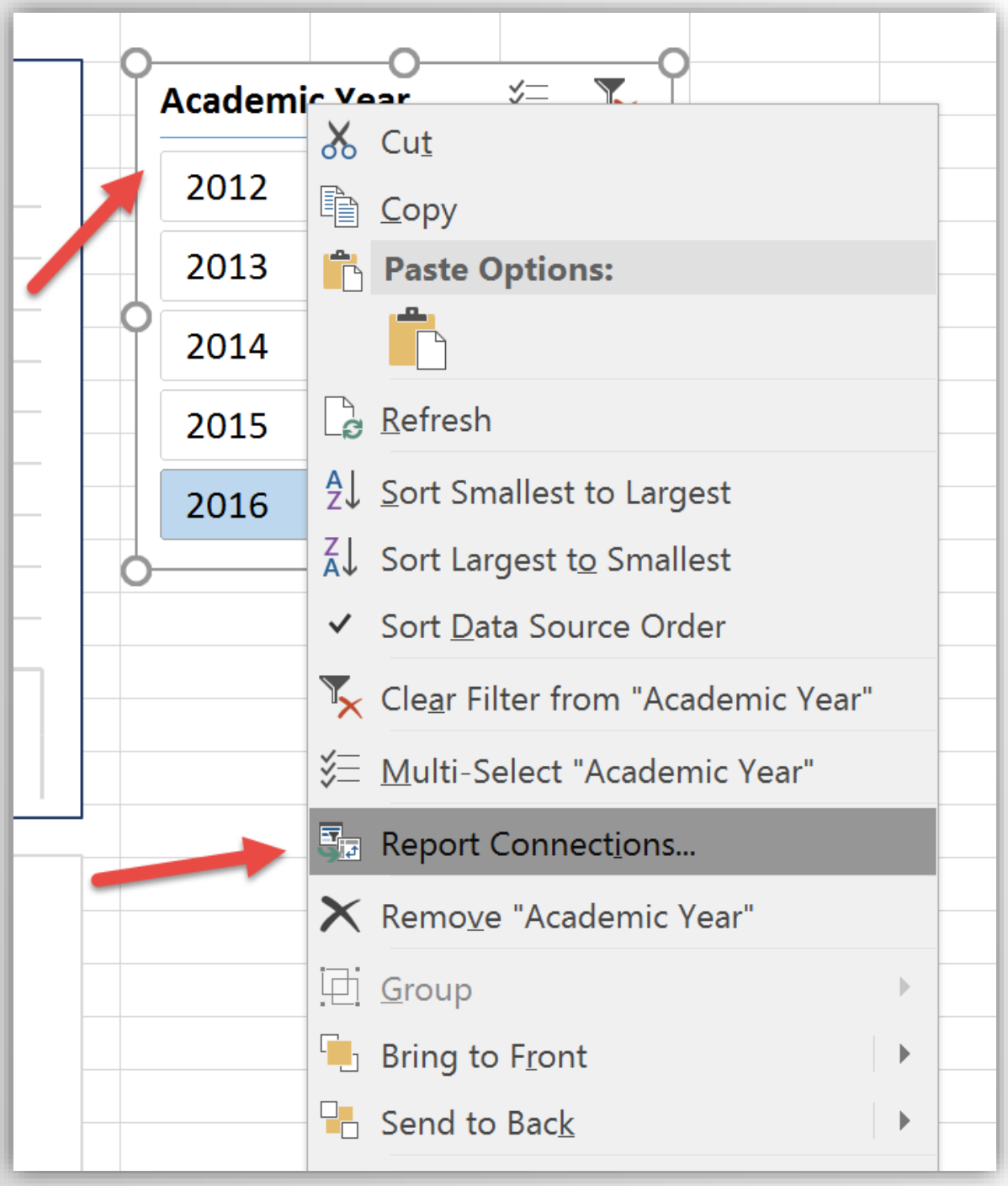


Depending on preference charts can look cleaner by removing field buttons.



Adding Filters “Slicers”

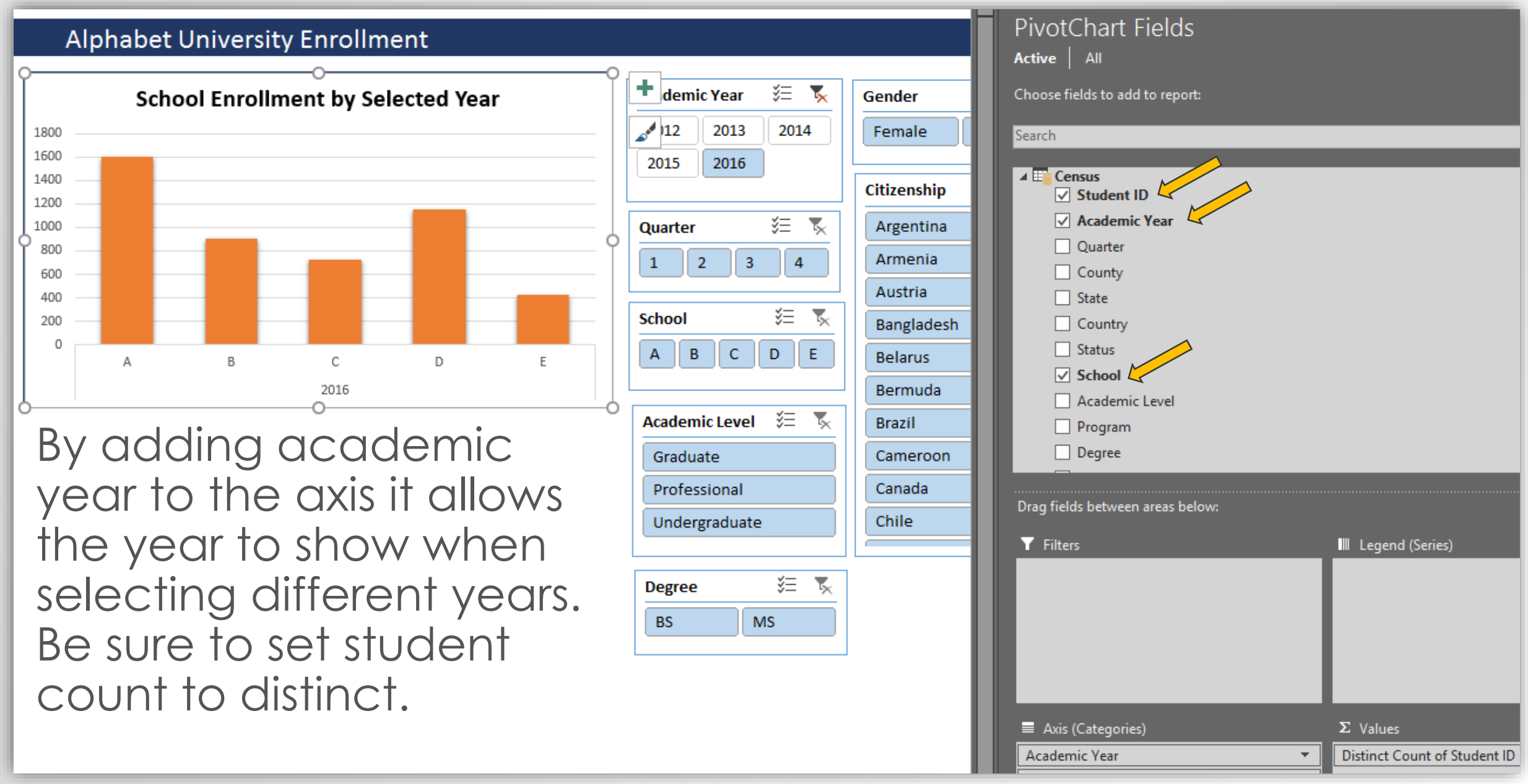




When adding a filter you should select which visualizations are to be impacted by the filter.

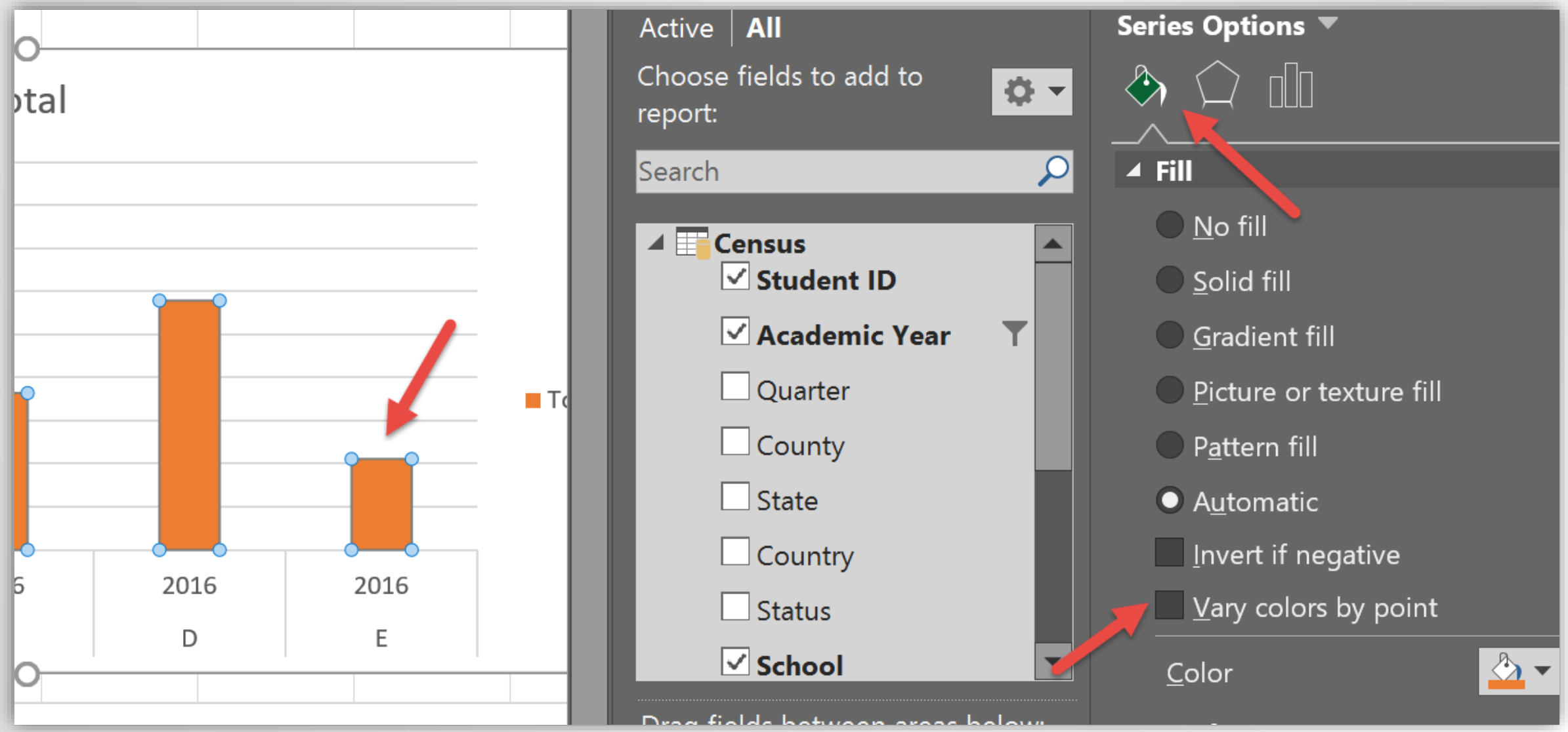
This is selected under "Report Connections" as shown on left.

Adding the Enrollment Bar Chart

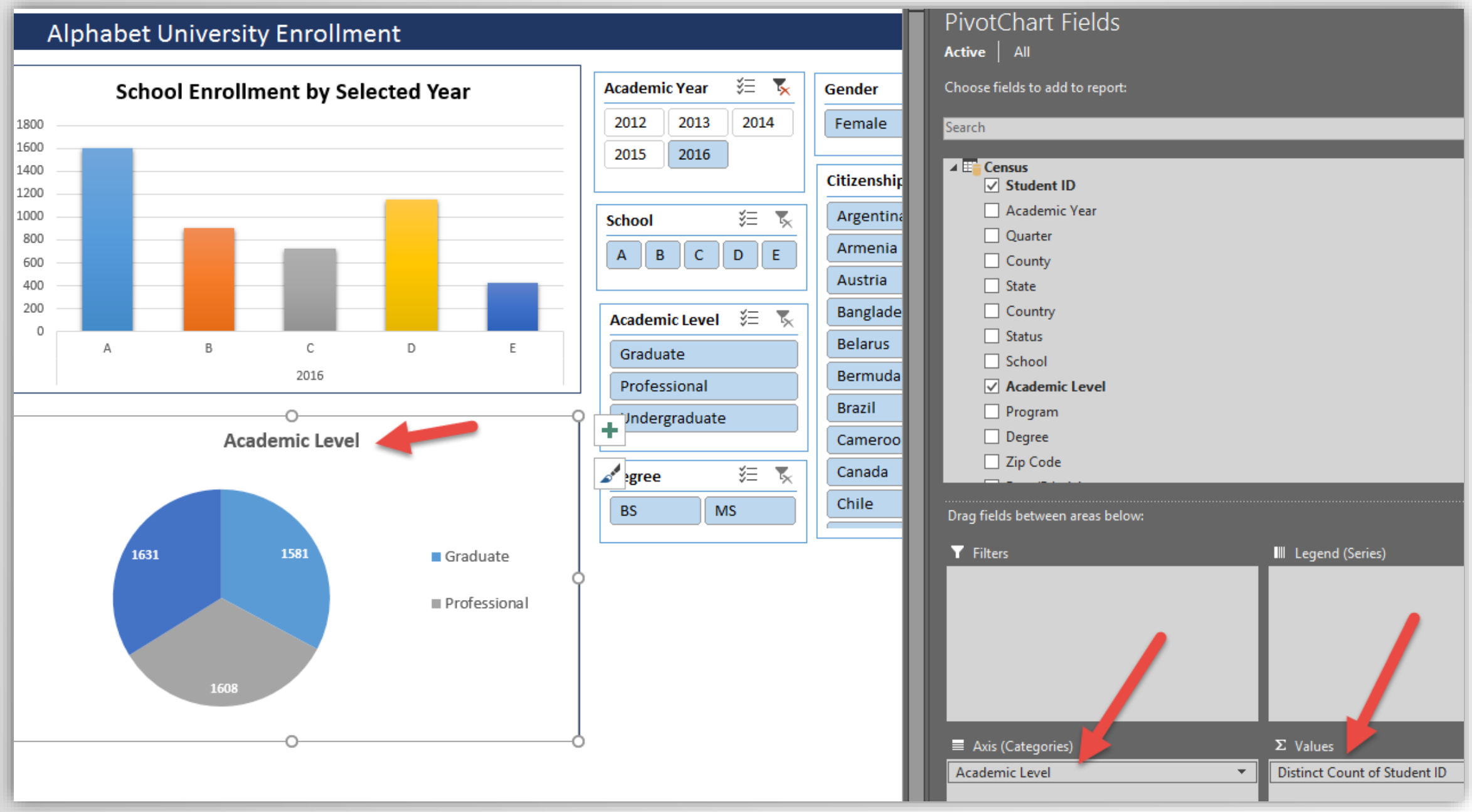


By adding academic year to the axis it allows the year to show when selecting different years. Be sure to set student count to distinct.

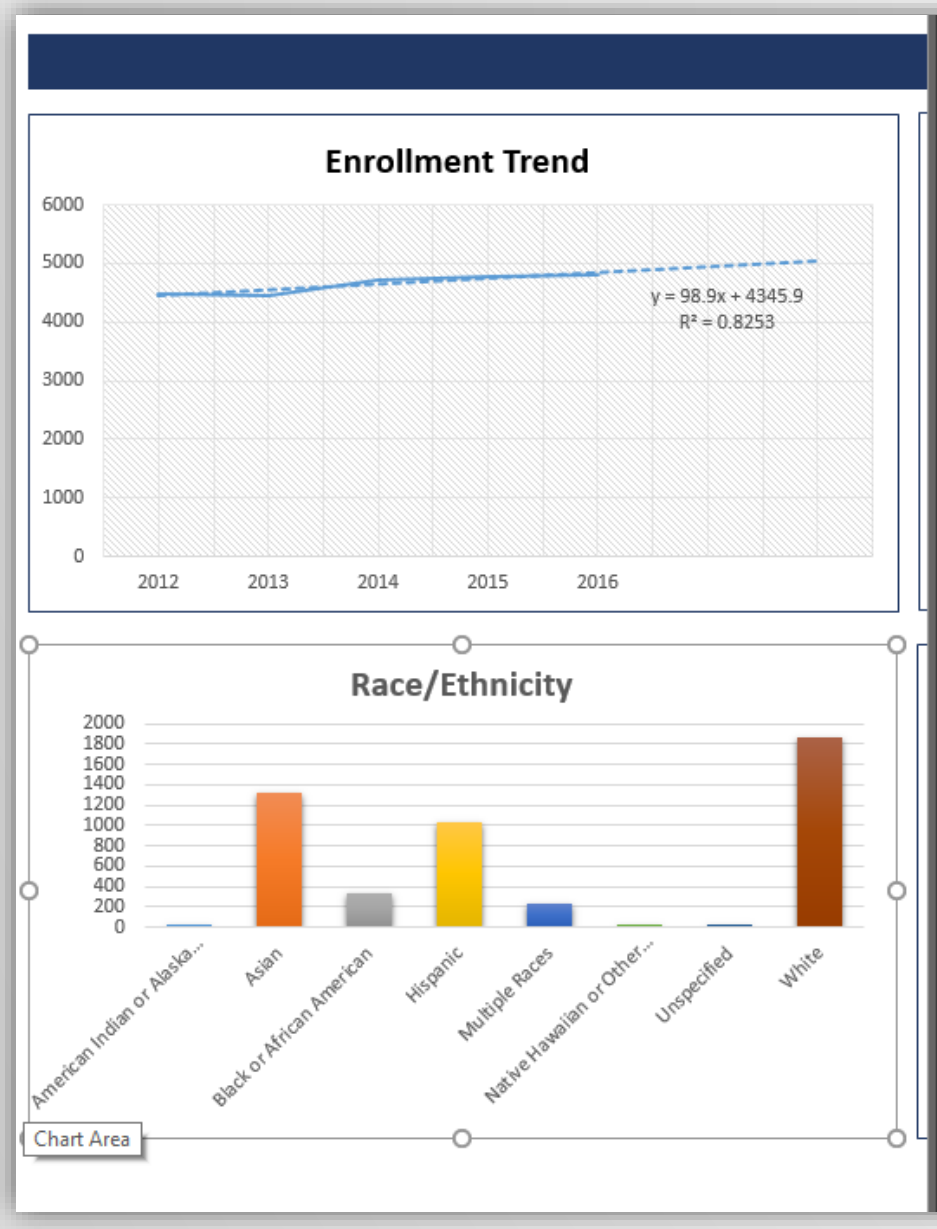
Vary Colors in the Bar Chart

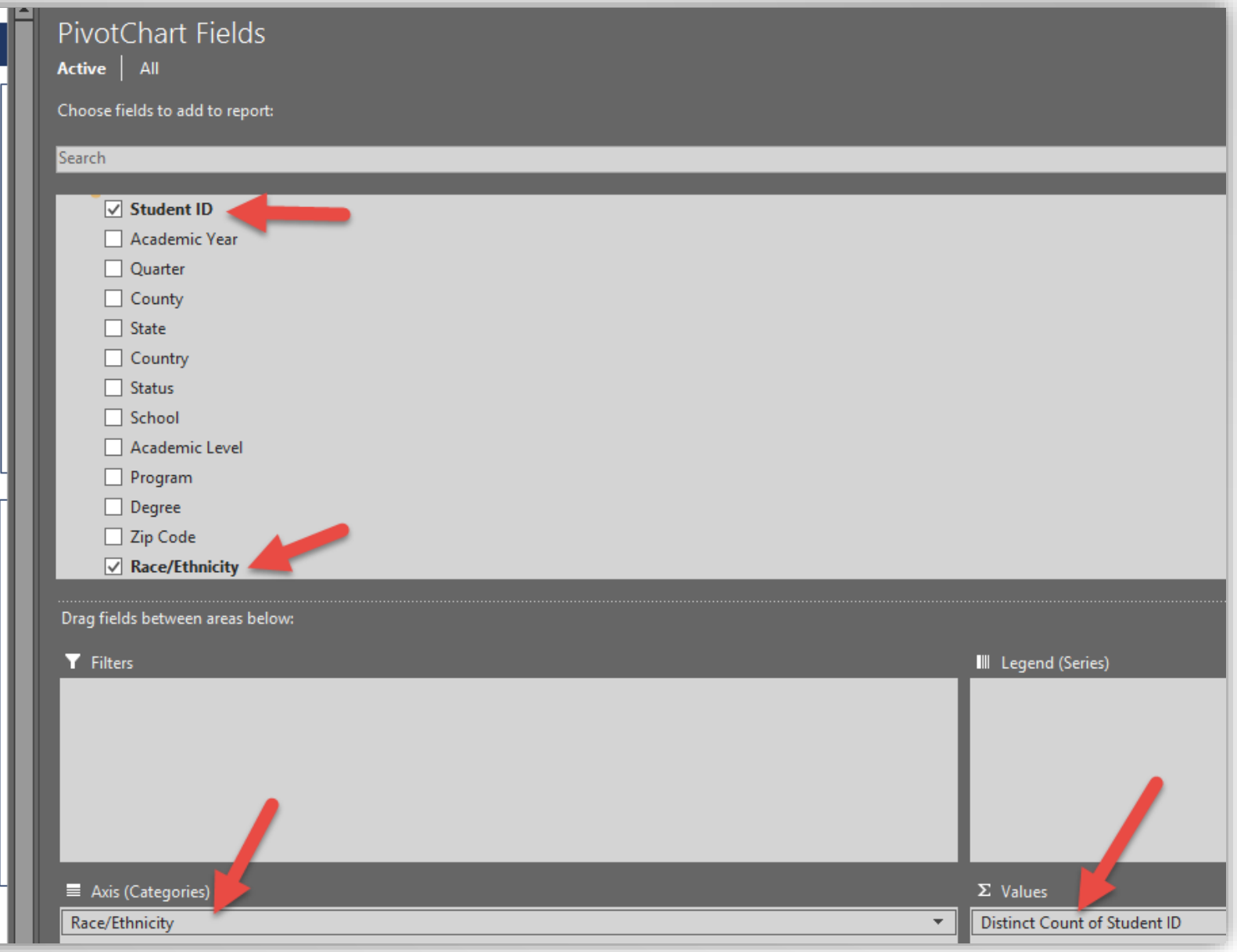


Adding the Pie Chart for Academic Level

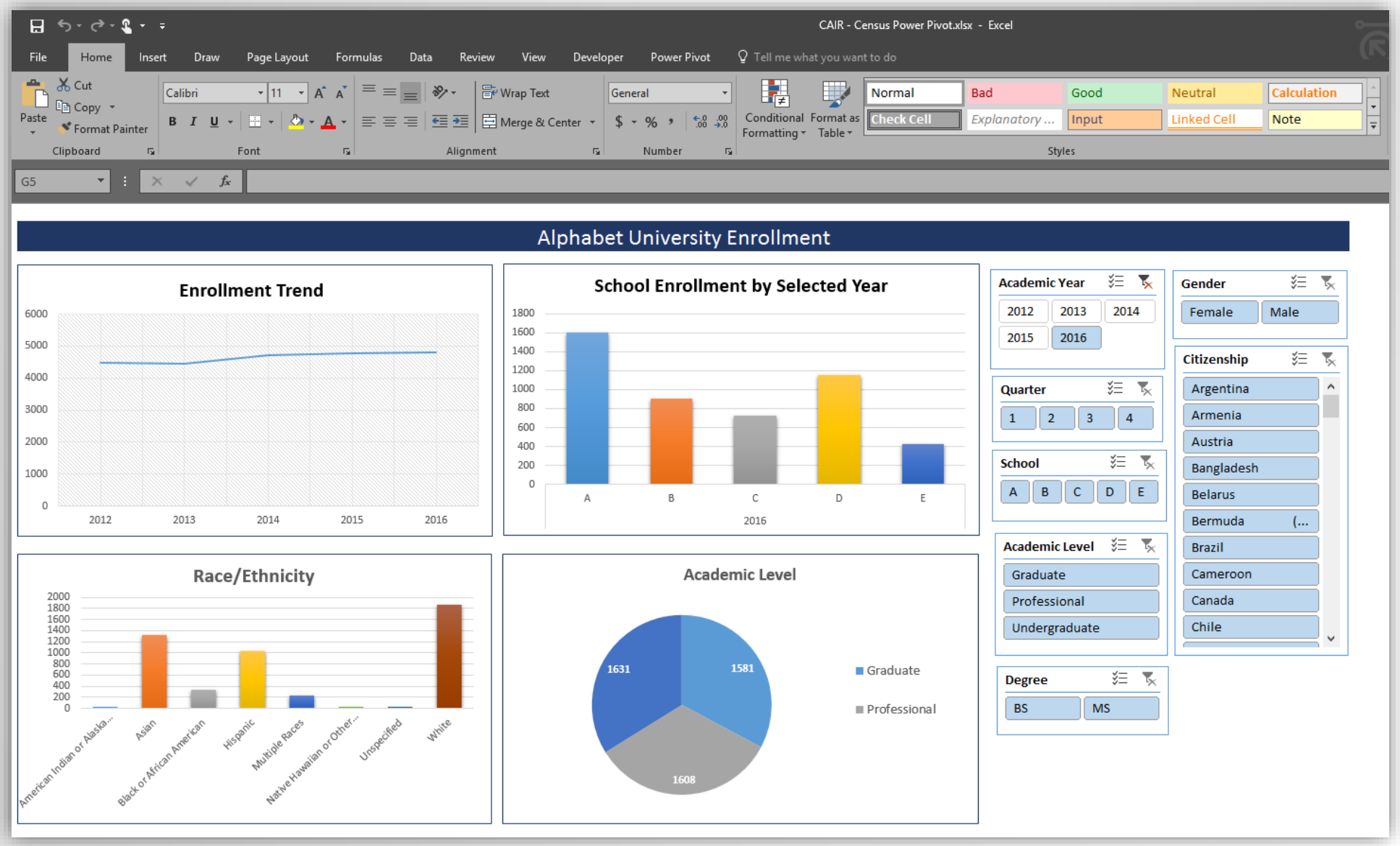


Adding the Race/Ethnicity Chart

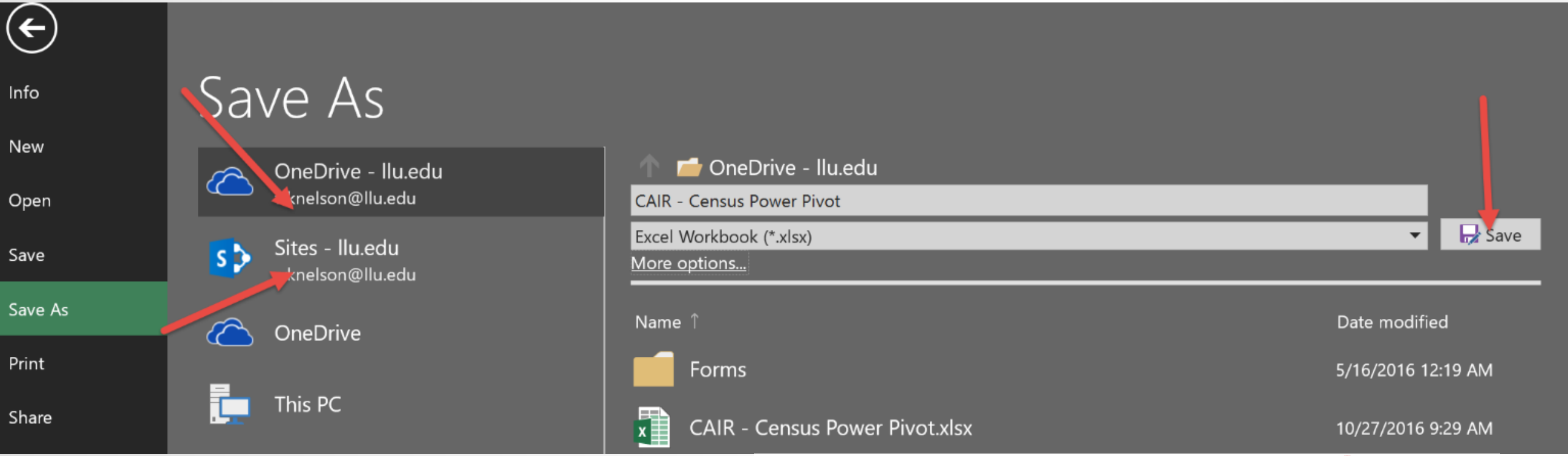




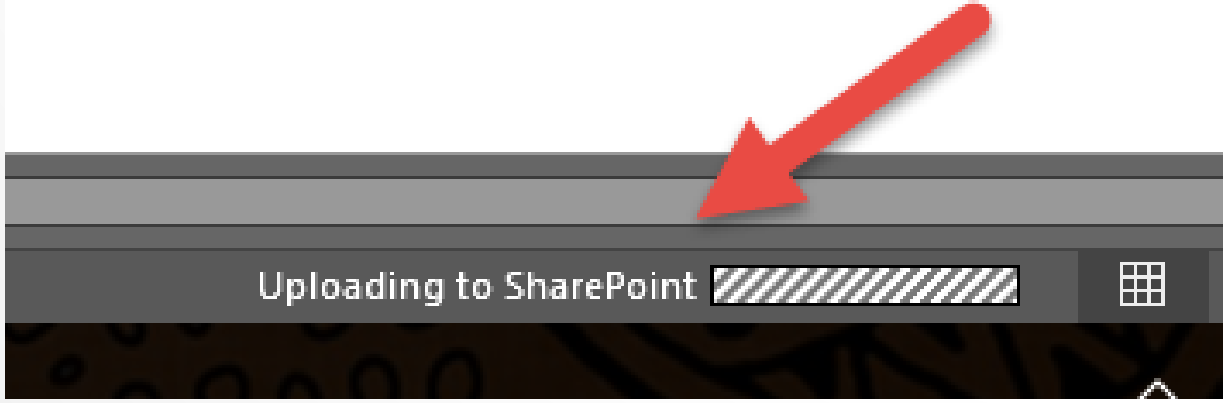
Dashboard should now look something like this



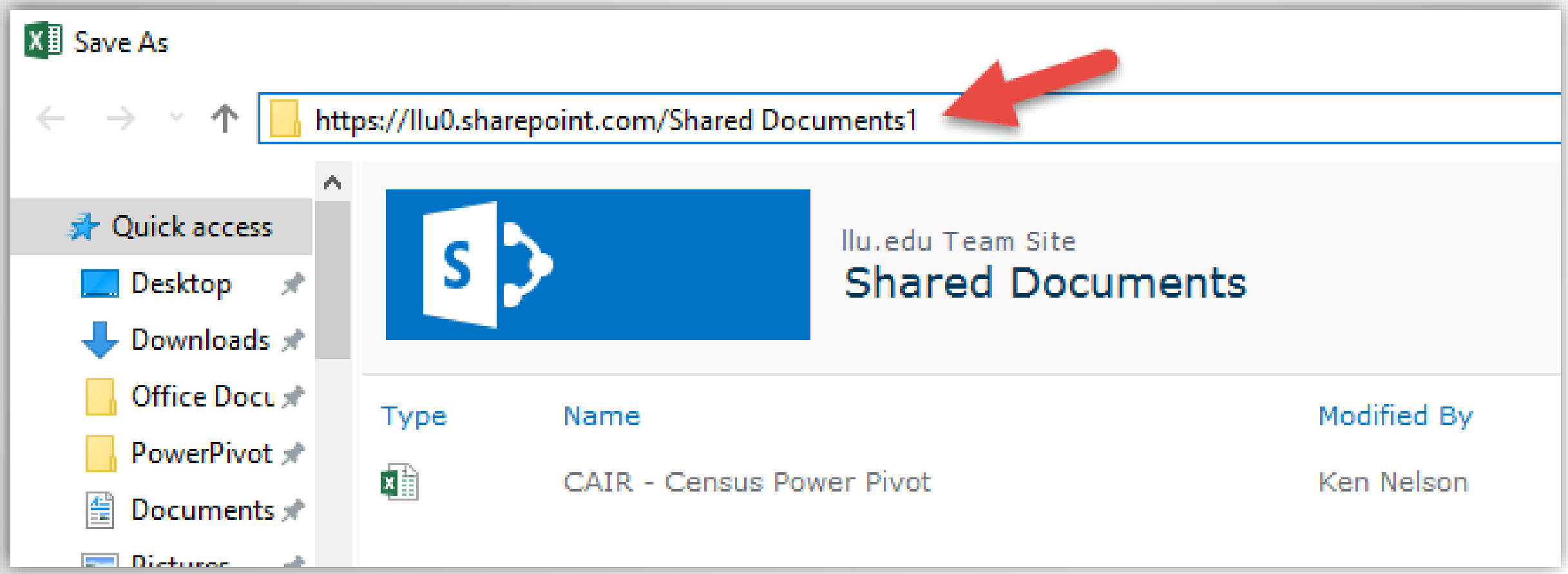
Uploading to SharePoint
Location depends on your Office 365 configuration



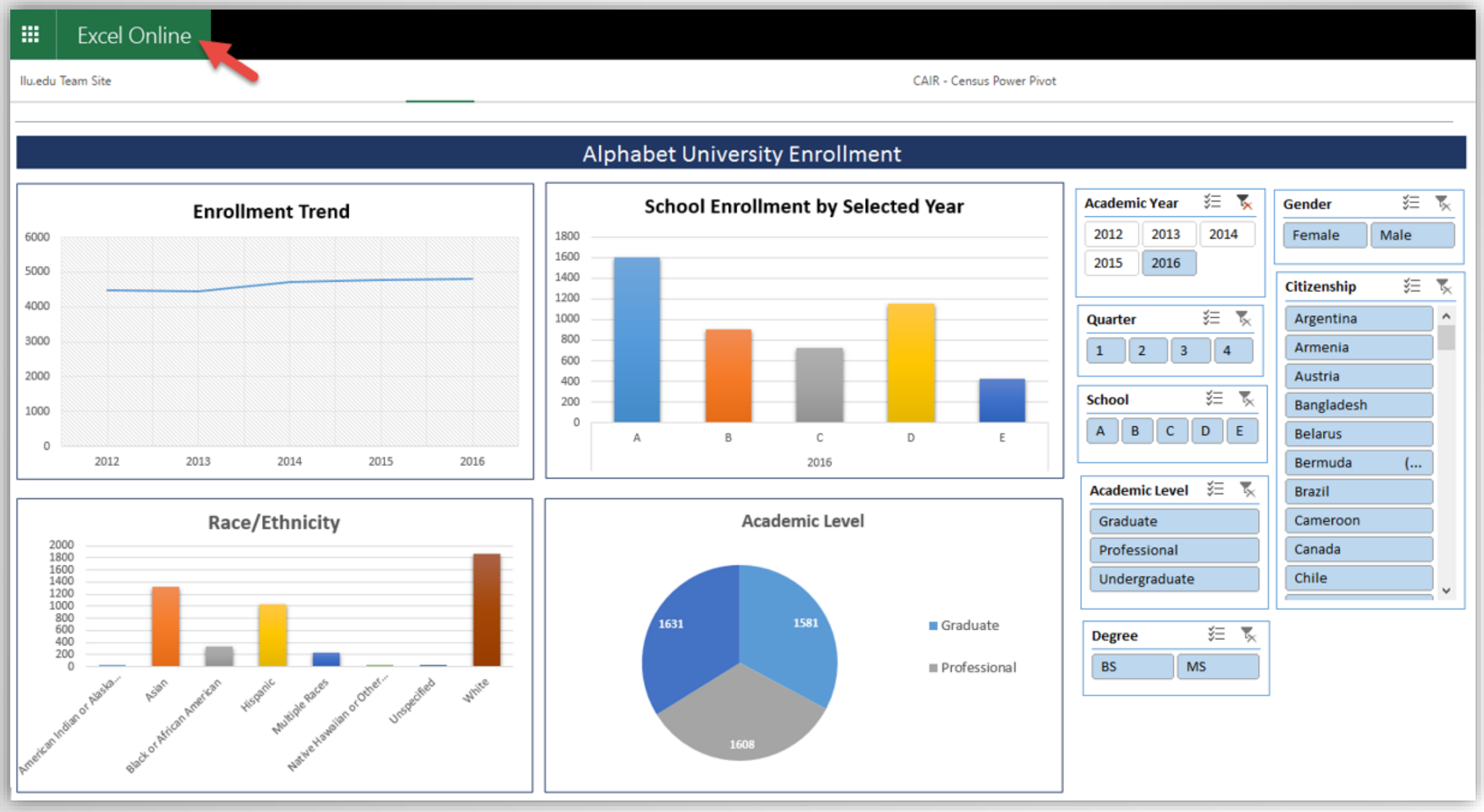
You can also save your file to a local folder.



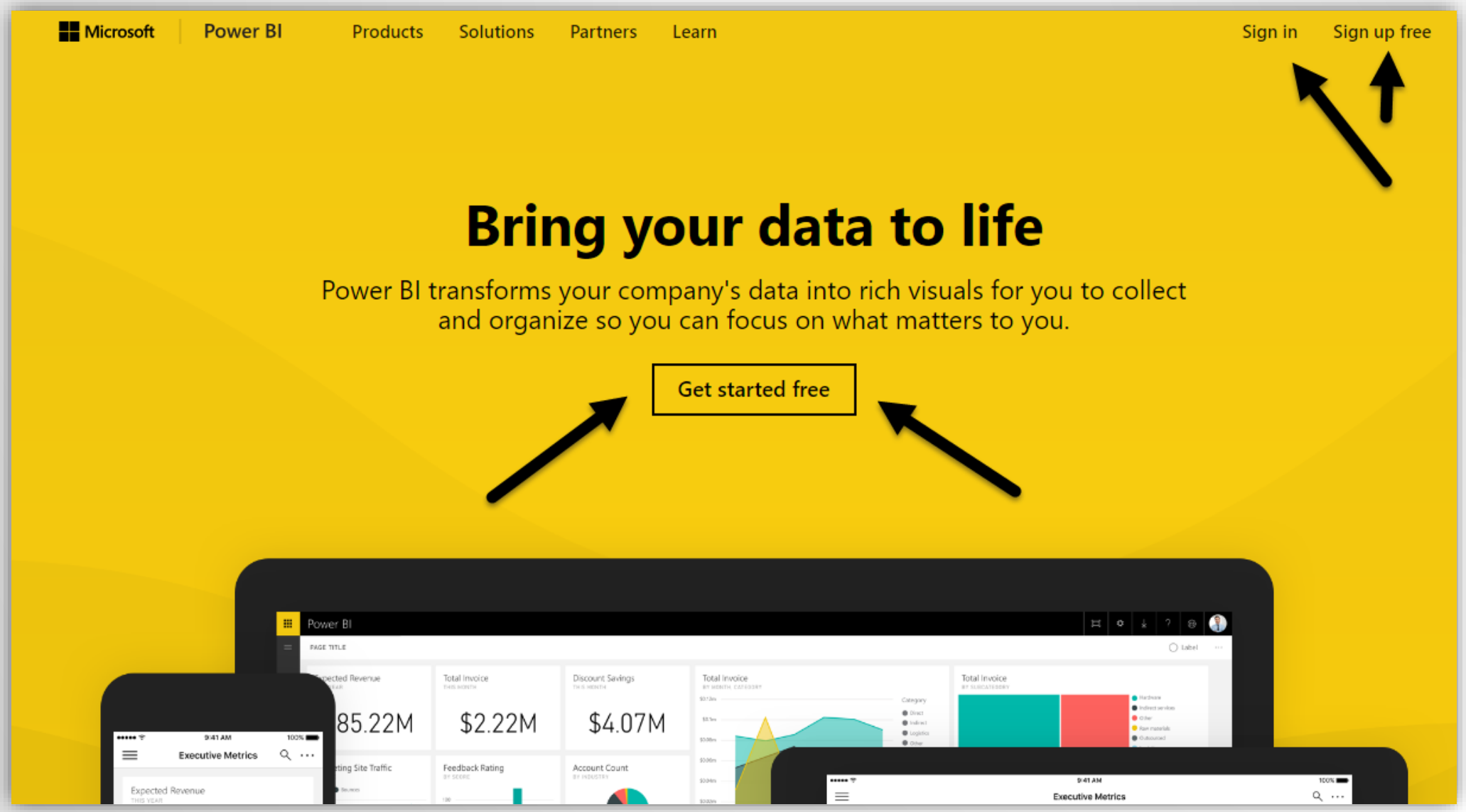
Identifying the URL for your SharePoint file is easy
Click on “Save As” and copy the address in the bar



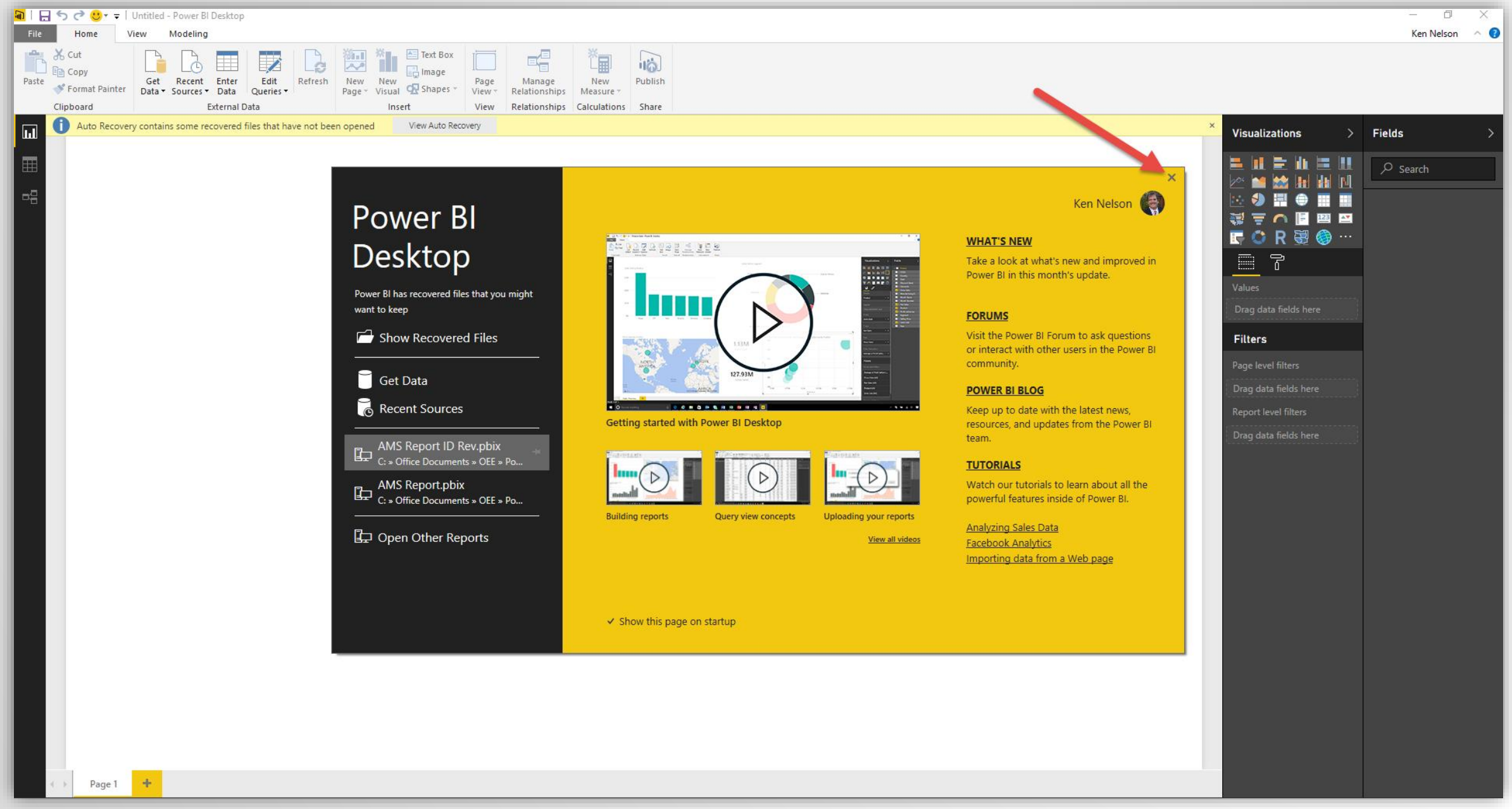
Excel Services Running in SharePoint

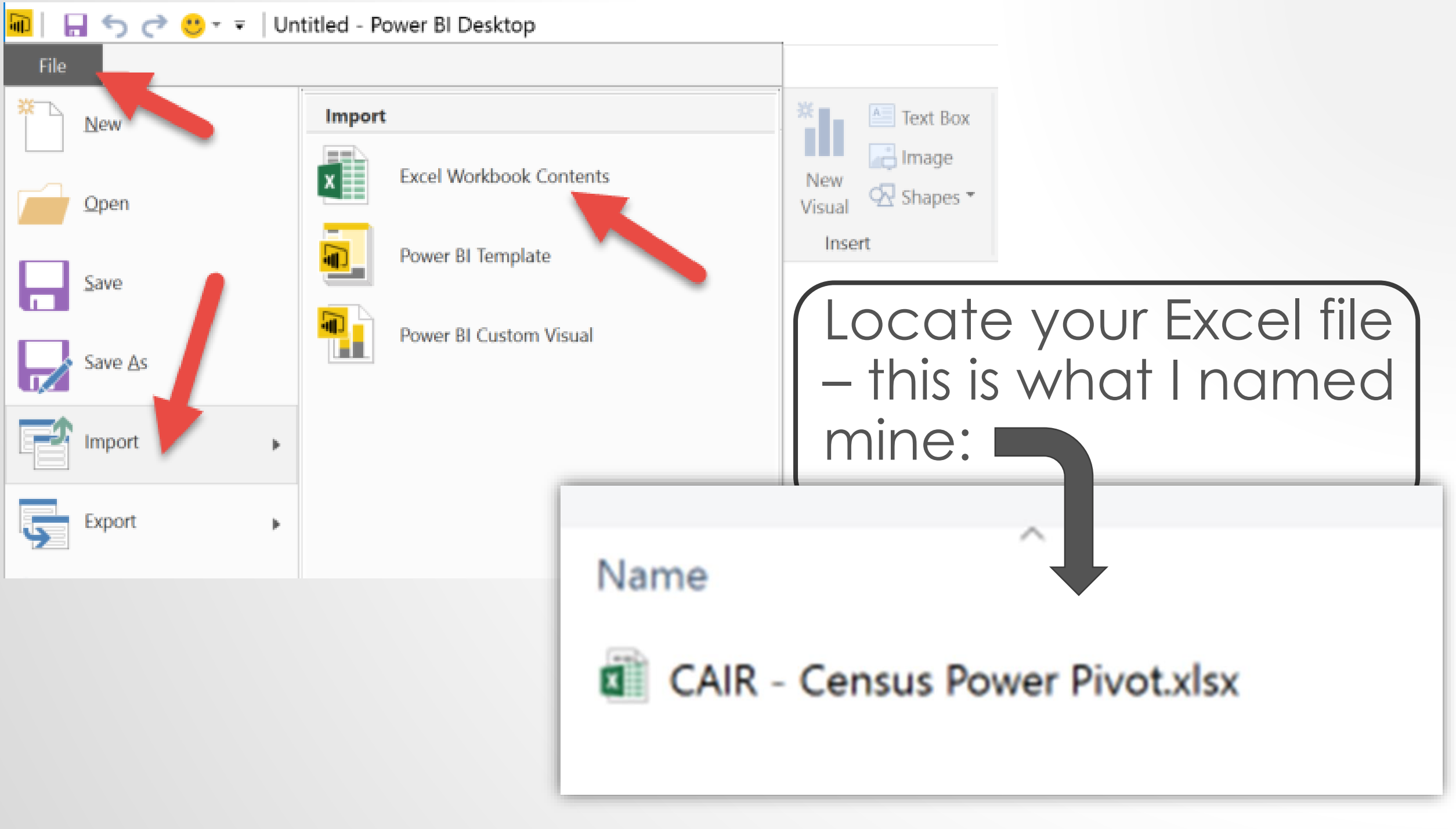


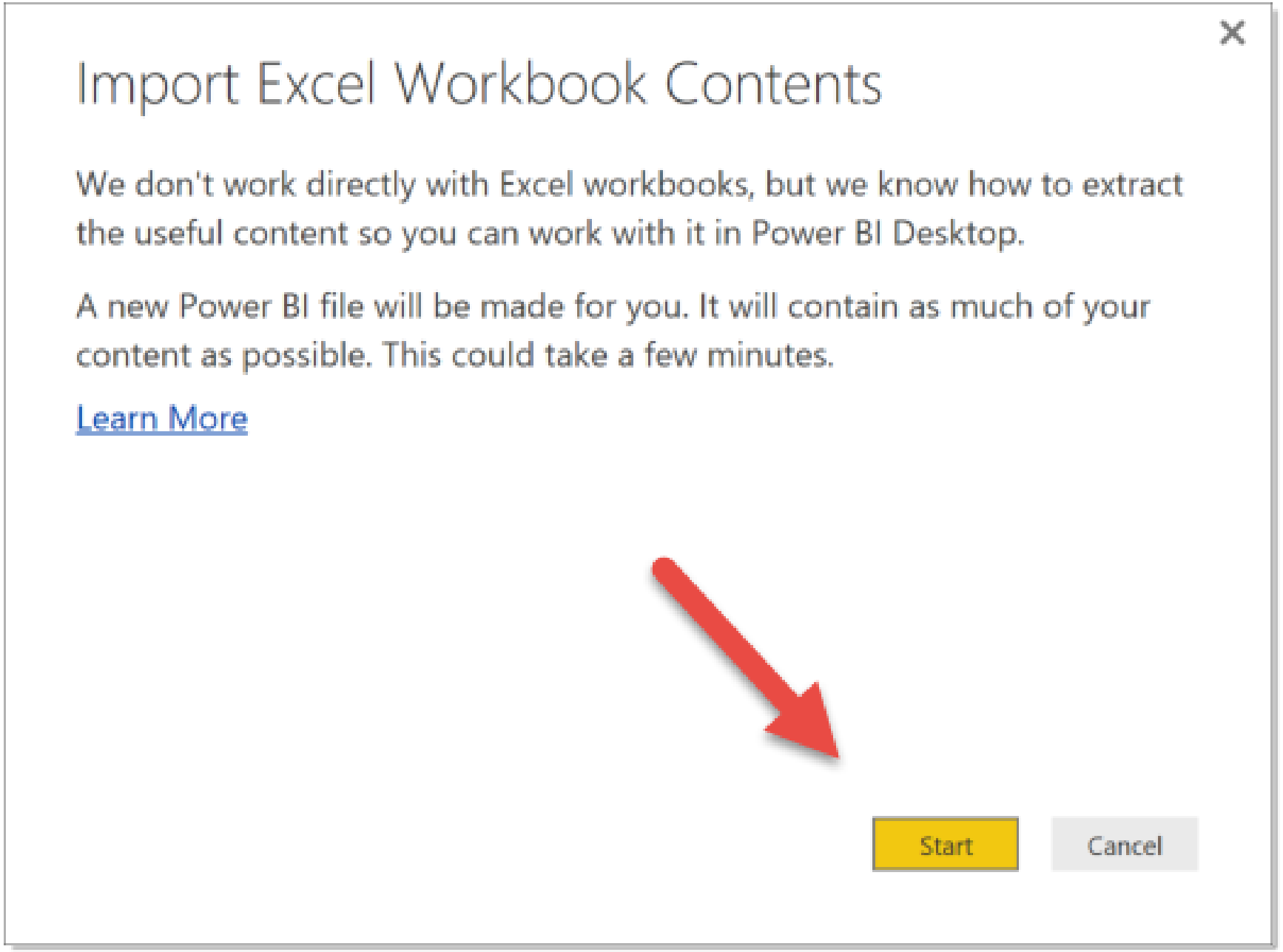
Building a Dashboard in Power BI Desktop

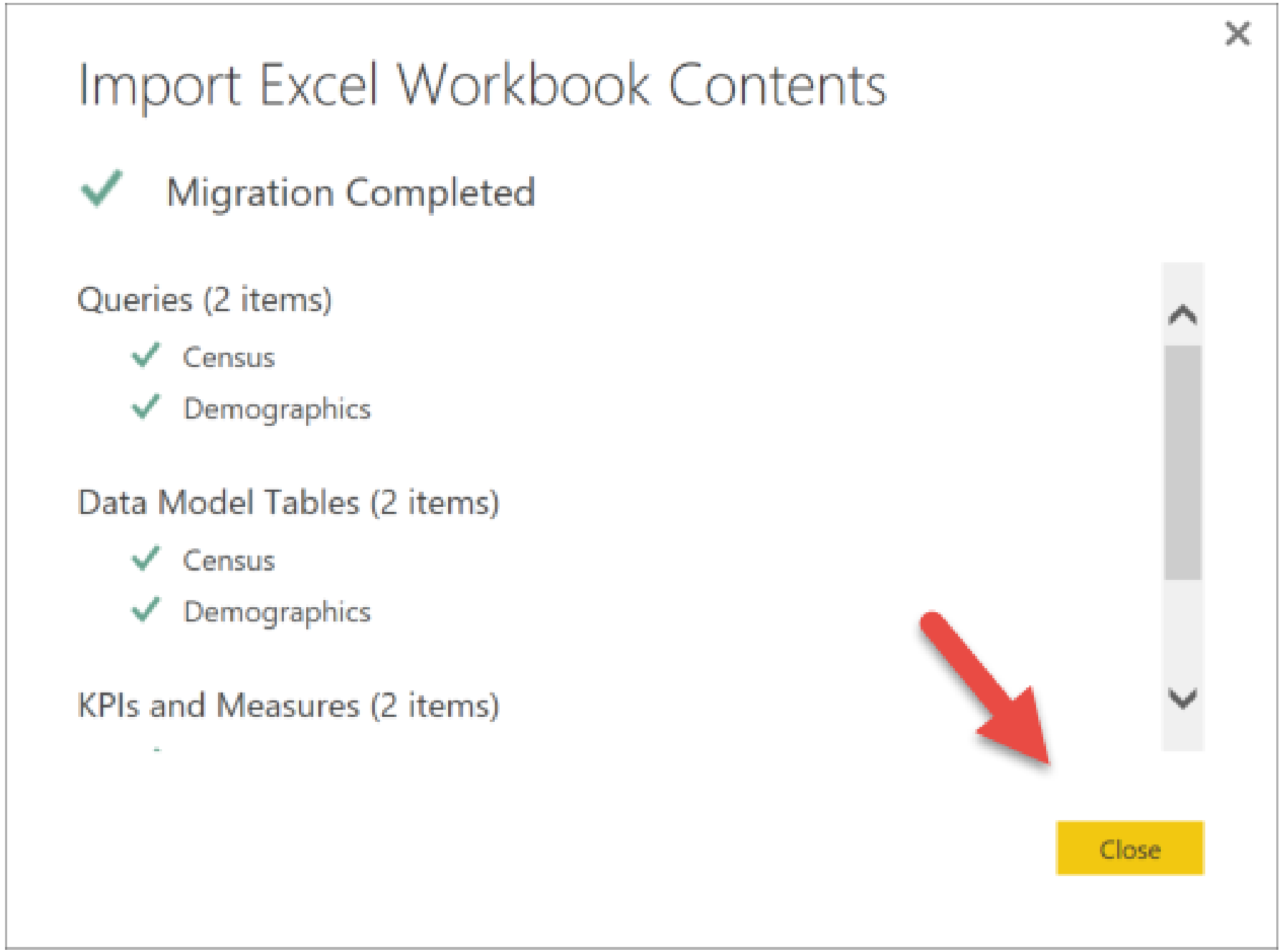


Build in the desktop app – FREE – publish online - FREE

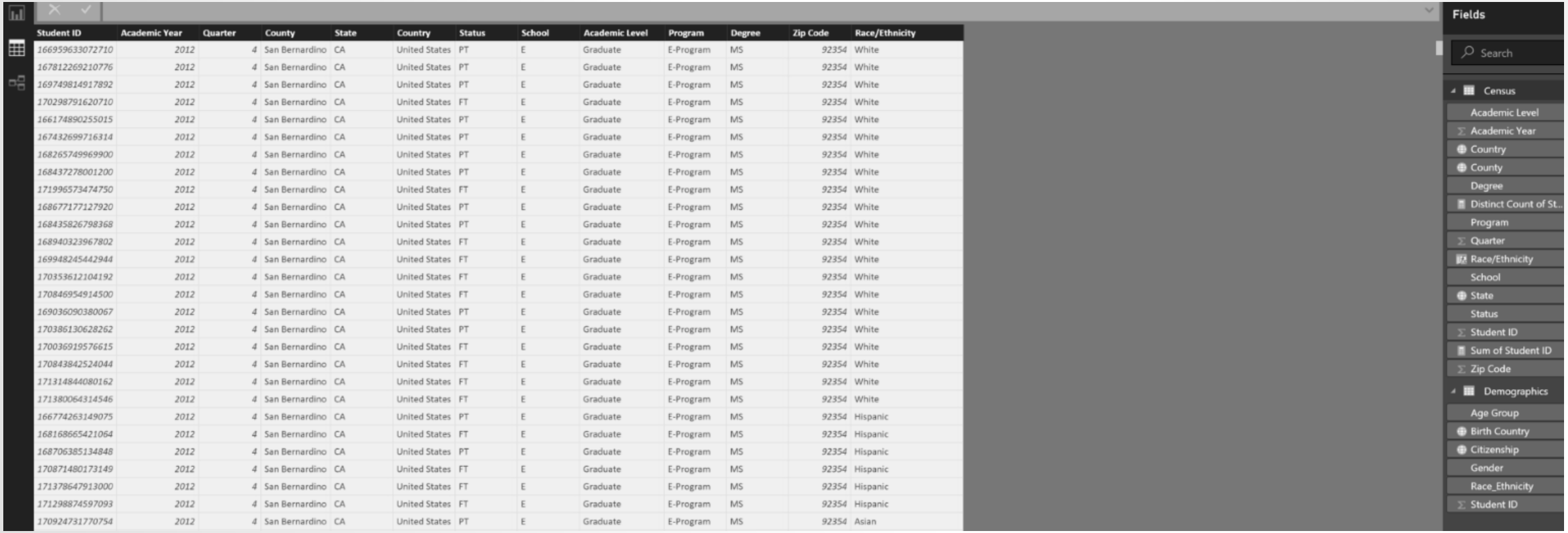



Untitled - Power BI Desktop
File
New
Open
Save
Save As
Import
Export
Import
Excel Workbook Contents
Power BI Template
Power BI Custom Visual
New Visual
Text Box
Image
Shapes
Insert
Locate your Excel file – this is what I named mine:
Name
CAIR - Census Power Pivot.xlsx


Import Excel Workbook Contents
We don't work directly with Excel workbooks, but we know how to extract the useful content so you can work with it in Power BI Desktop.
A new Power BI file will be made for you. It will contain as much of your content as possible. This could take a few minutes.
Learn More
Start
Cancel


Import Excel Workbook Contents
Migration Completed
Queries (2 items)
Census
Demographics
Data Model Tables (2 items)
Census
Demographics
KPIs and Measures (2 items)
Close

Here's our data model from Excel

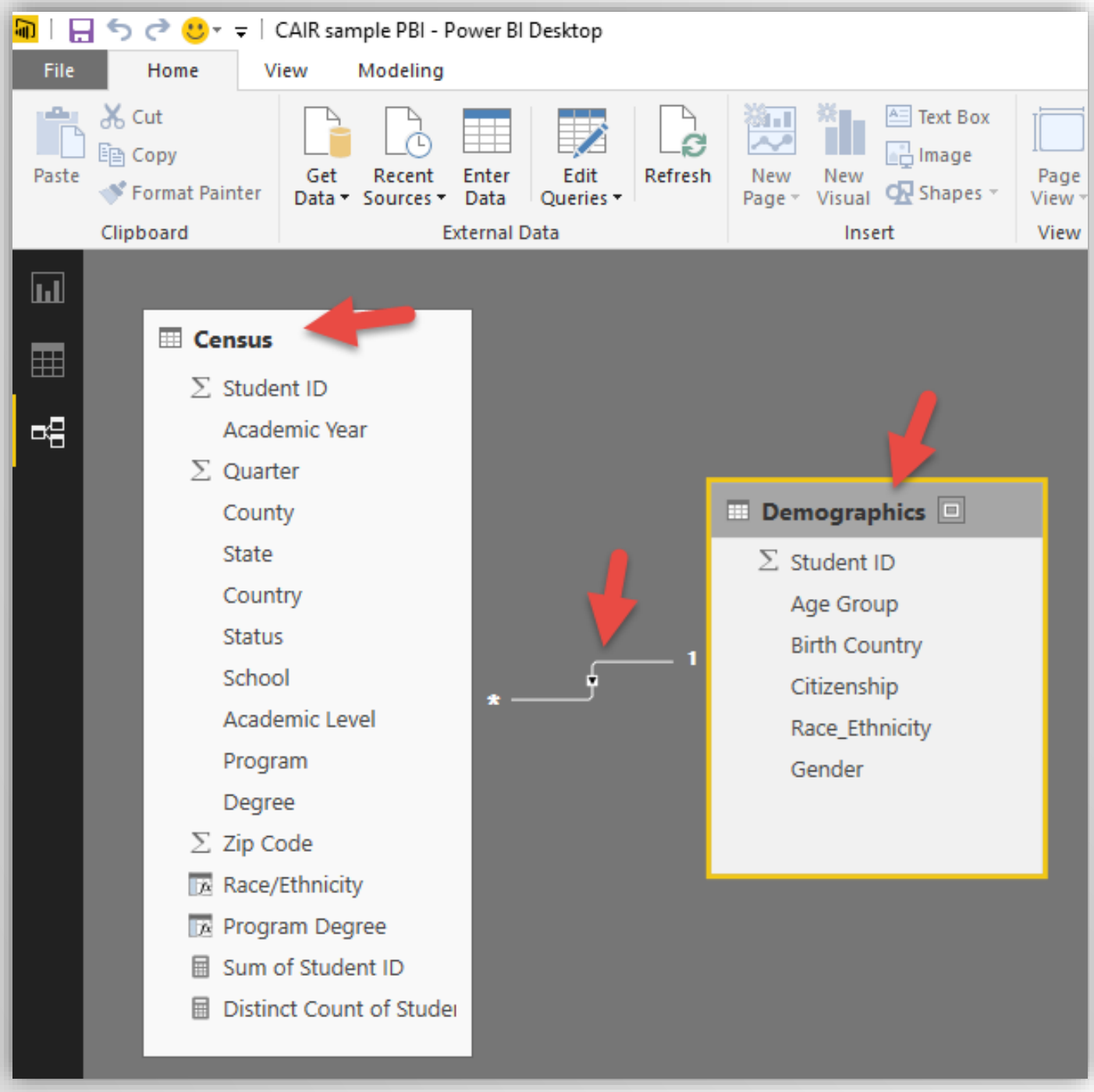


Student ID	Academic Year	Quarter	County	State	Country	Status	School	Academic Level	Program	Degree	Zip Code	Race/Ethnicity
166959633072710	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
167812269210776	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
169749814917892	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
170298791620710	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
166174890255015	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
167432699716314	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
168265749969900	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
168437278001200	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
171996573474750	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
168677177127920	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
168435826798368	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
168940323967802	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
169948245442944	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
170353612104192	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
170846954914500	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
169036090380067	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
170386130628262	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White
170036919576615	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
170843842524044	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
171314844080162	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
171380064314546	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	White
166774263149075	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	Hispanic
168168665421064	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	Hispanic
168706385134848	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	Hispanic
170871480173149	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	Hispanic
171378647913000	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	Hispanic
171298874597093	2012	4	San Bernardino	CA	United States	FT	E	Graduate	E-Program	MS	92354	Hispanic
170924731770754	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	Asian

Remember the DAX formula we wrote in Power Pivot – it's here too!

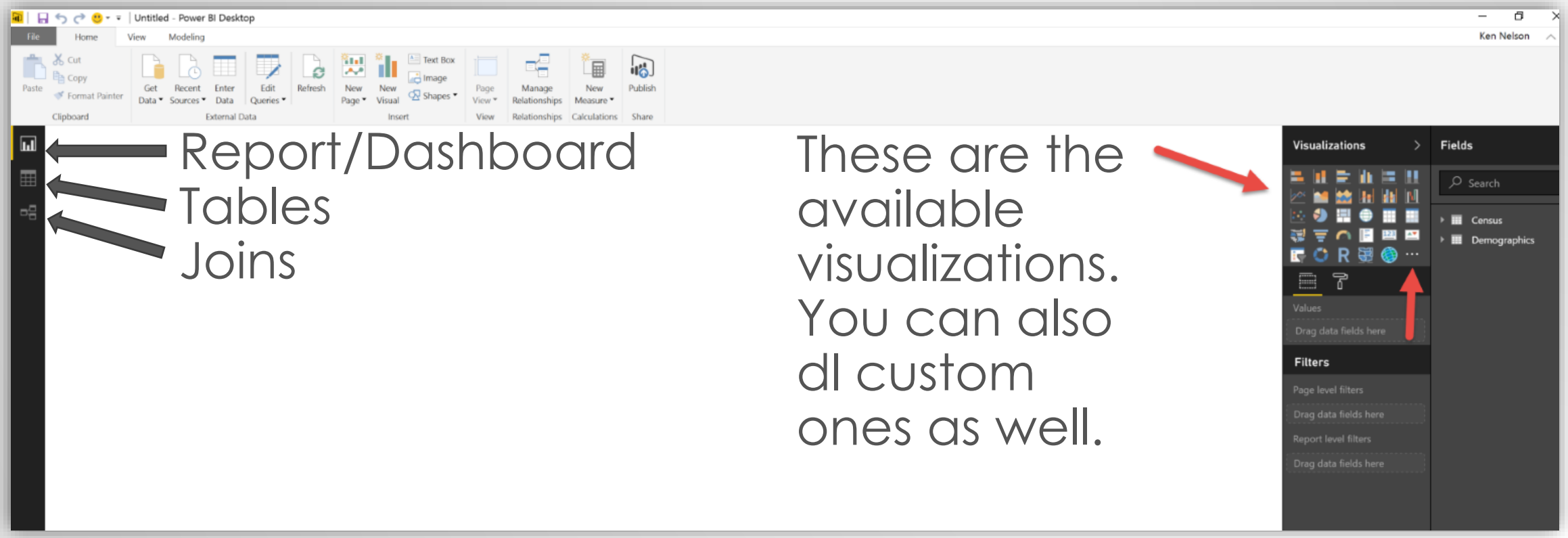
```
Race/Ethnicity = RELATED(Demographics[Race_Ethnicity])
```

Student ID	Academic Year	Quarter	County	State	Country	Status	School	Academic Level	Program	Degree	Zip Code	Race/Ethnicity	Program Degree
166959633072710	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White	E-Program MS
167812269210776	2012	4	San Bernardino	CA	United States	PT	E	Graduate	E-Program	MS	92354	White	E-Program MS



The joins are still intact as well. Even the familiar indicator is present.

Our canvas where we will start building our Power BI Dashboard



WAIT! I liked my Power Pivot Dashboard – don't make me start over!

No problem! Export from Excel to Power BI

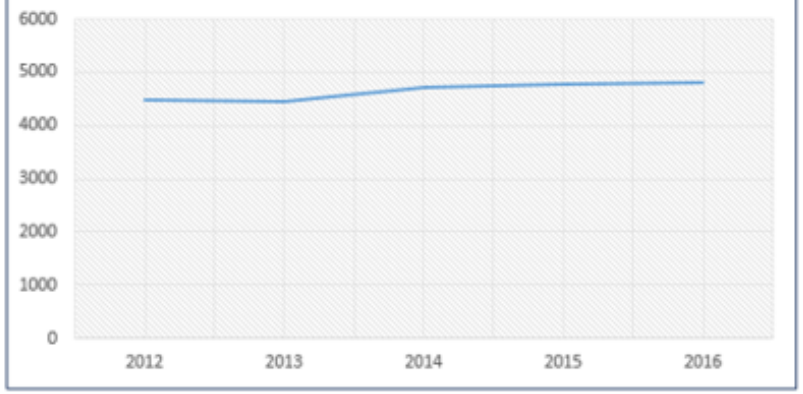
Power BI My Workspace

Excel Online

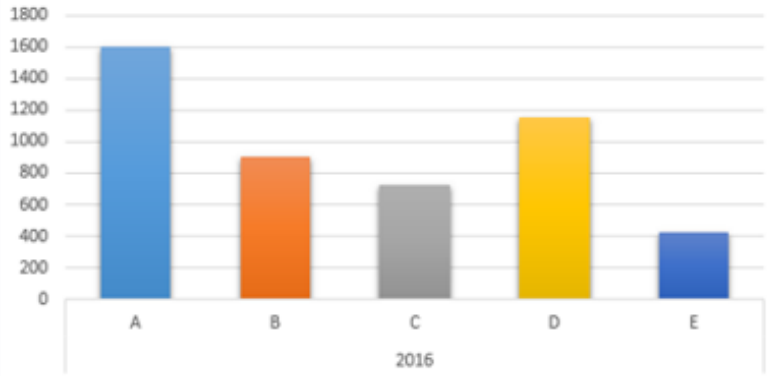
LAST DATA RE

Alphabet University Enrollment

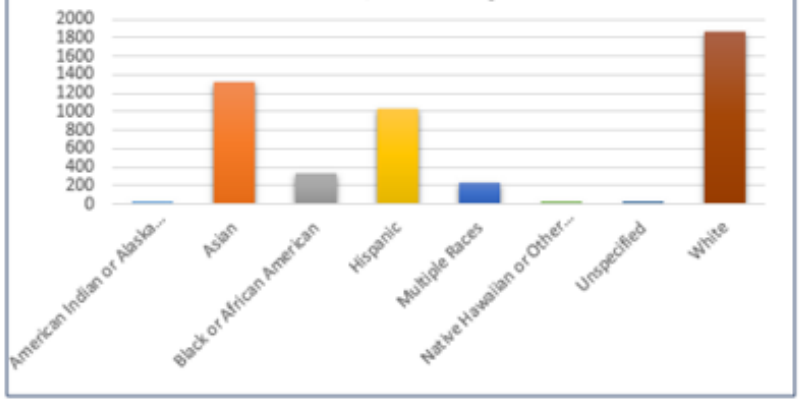
Enrollment Trend



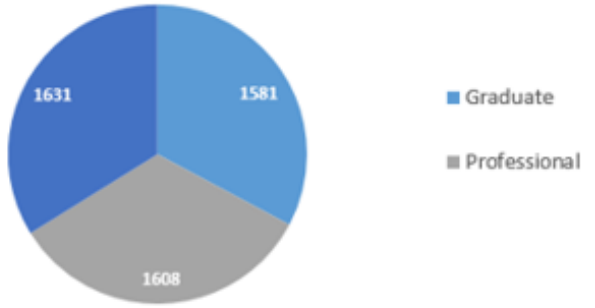
School Enrollment by Selected Year



Race/Ethnicity



Academic Level



Academic Year: 2012, 2013, 2014, 2015, 2016

Quarter: 1, 2, 3, 4

School: A, B, C, D, E

Academic Level: Graduate, Professional, Undergraduate

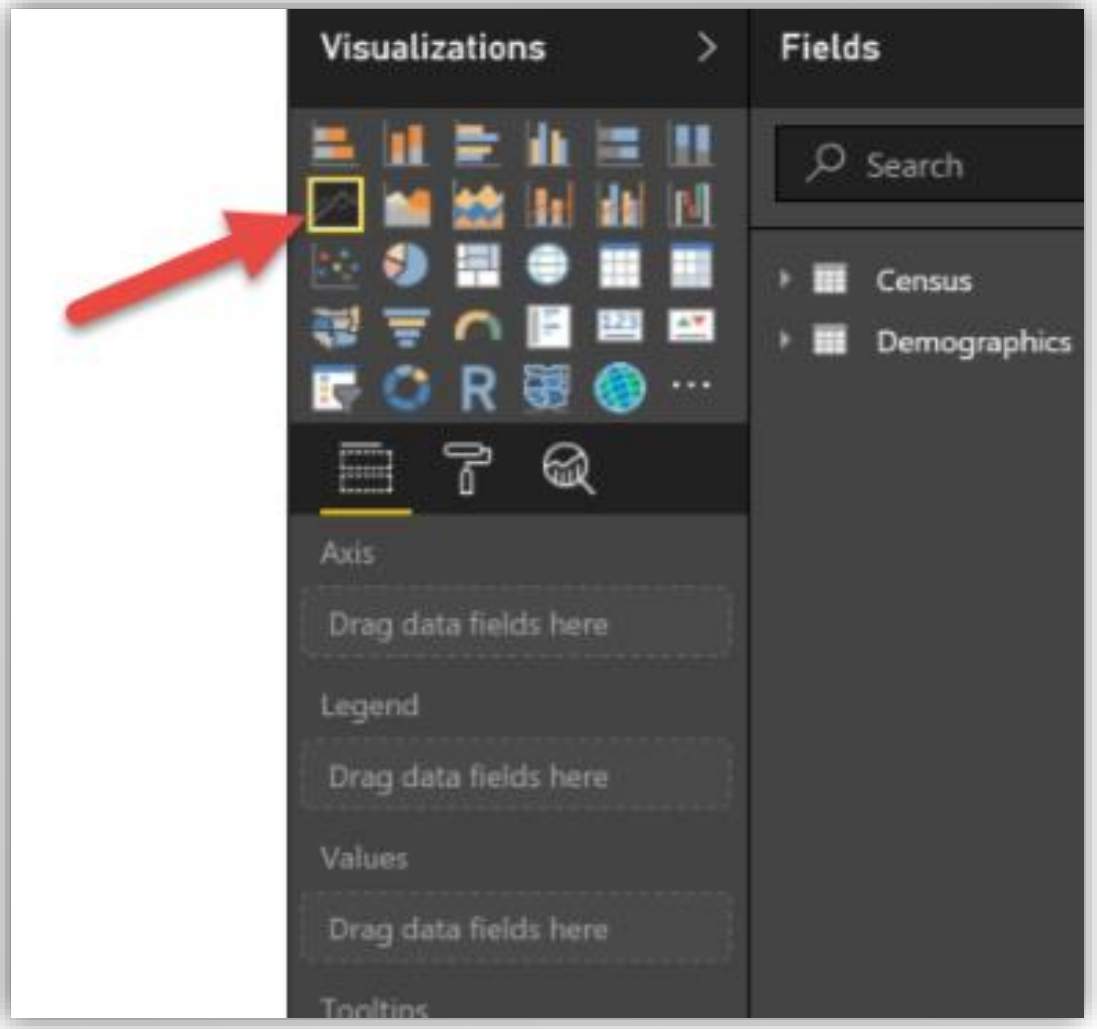
Degree: BS, MS

Gender: Female, Male

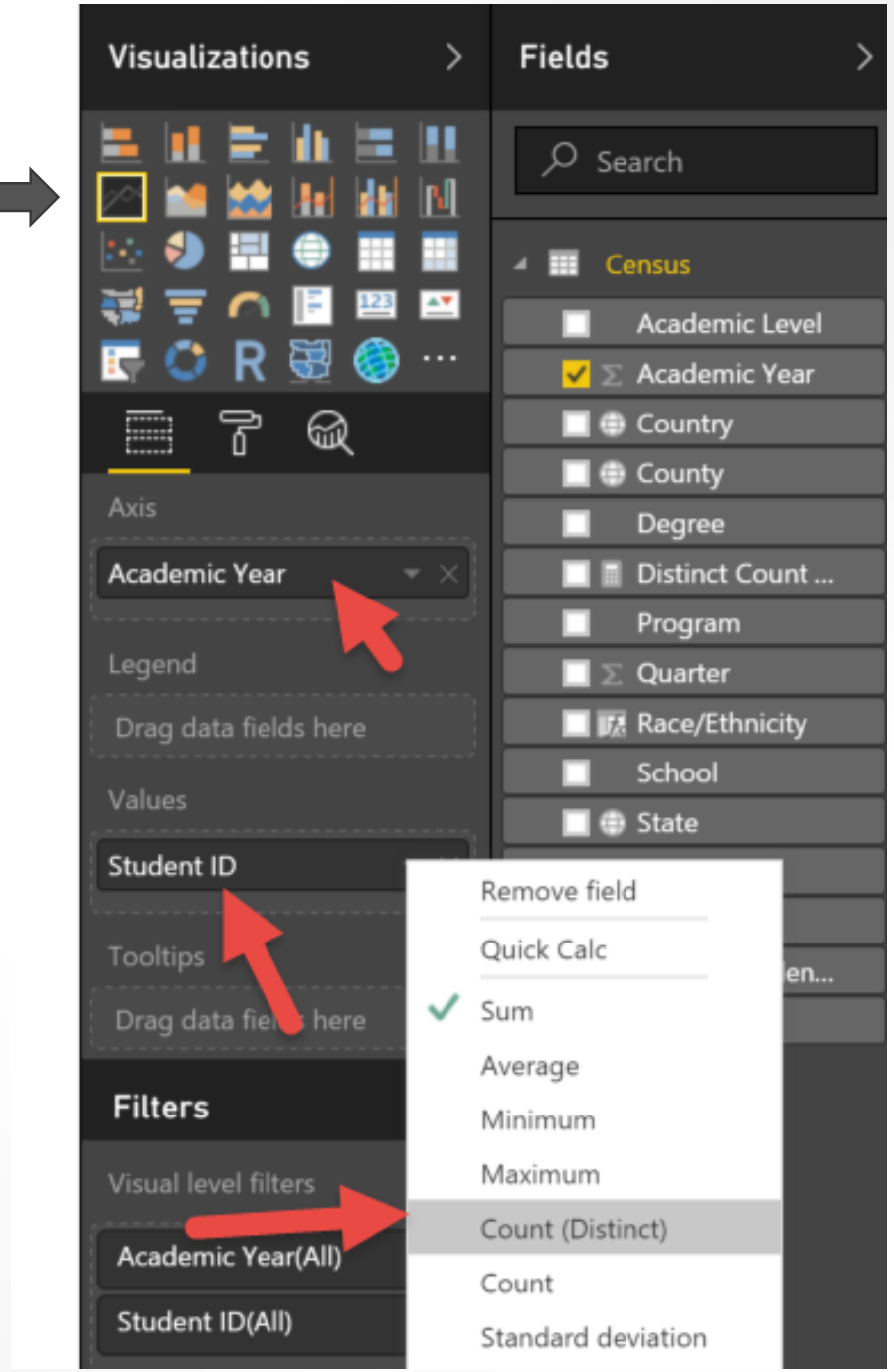
Citizenship: Argentina, Armenia, Austria, Bangladesh, Belarus, Bermuda, Brazil, Cameroon, Canada, Chile

Slicers still work!

By using Power BI you will have access to a wide variety of interactive visualizations and more continue to be added

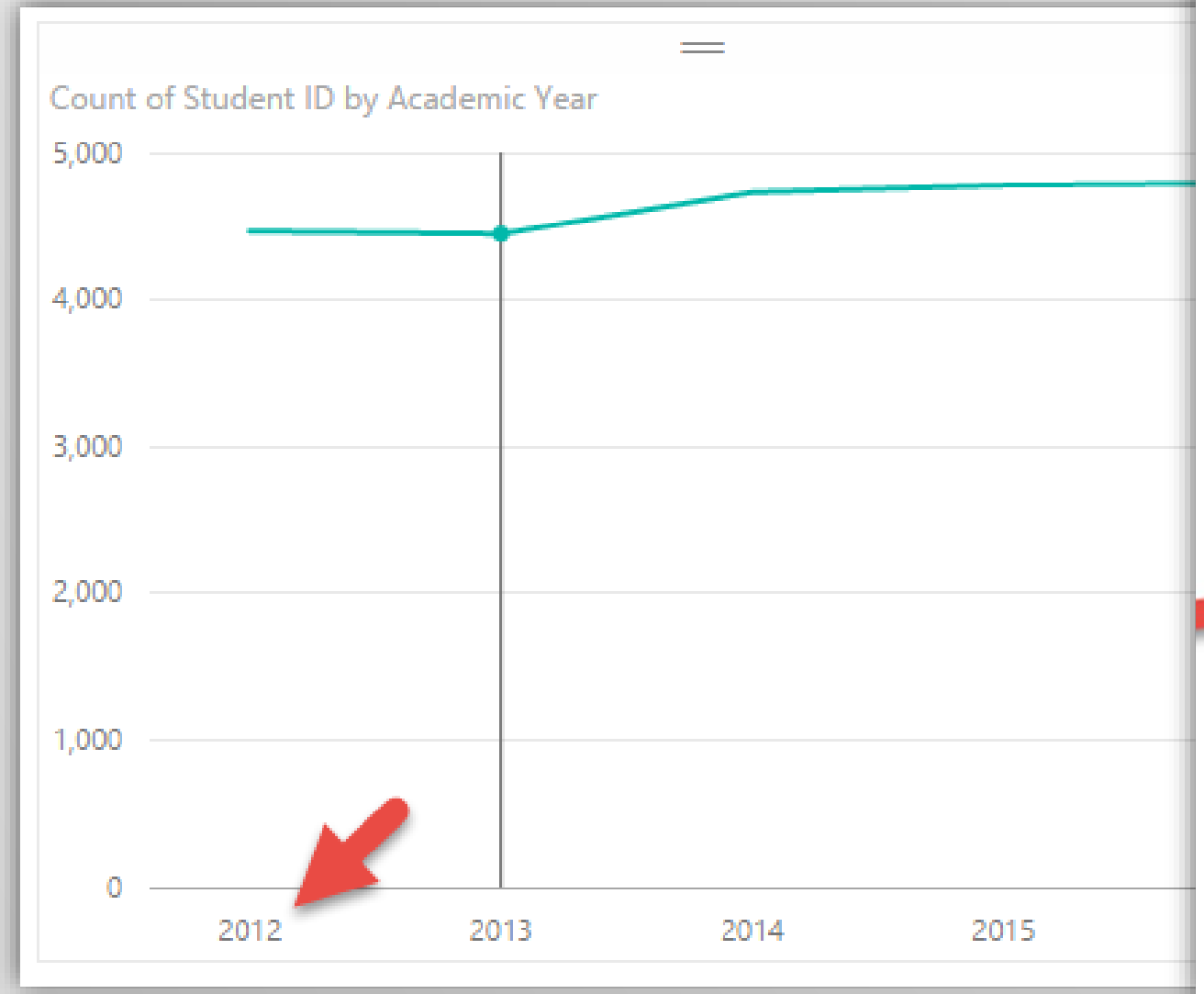


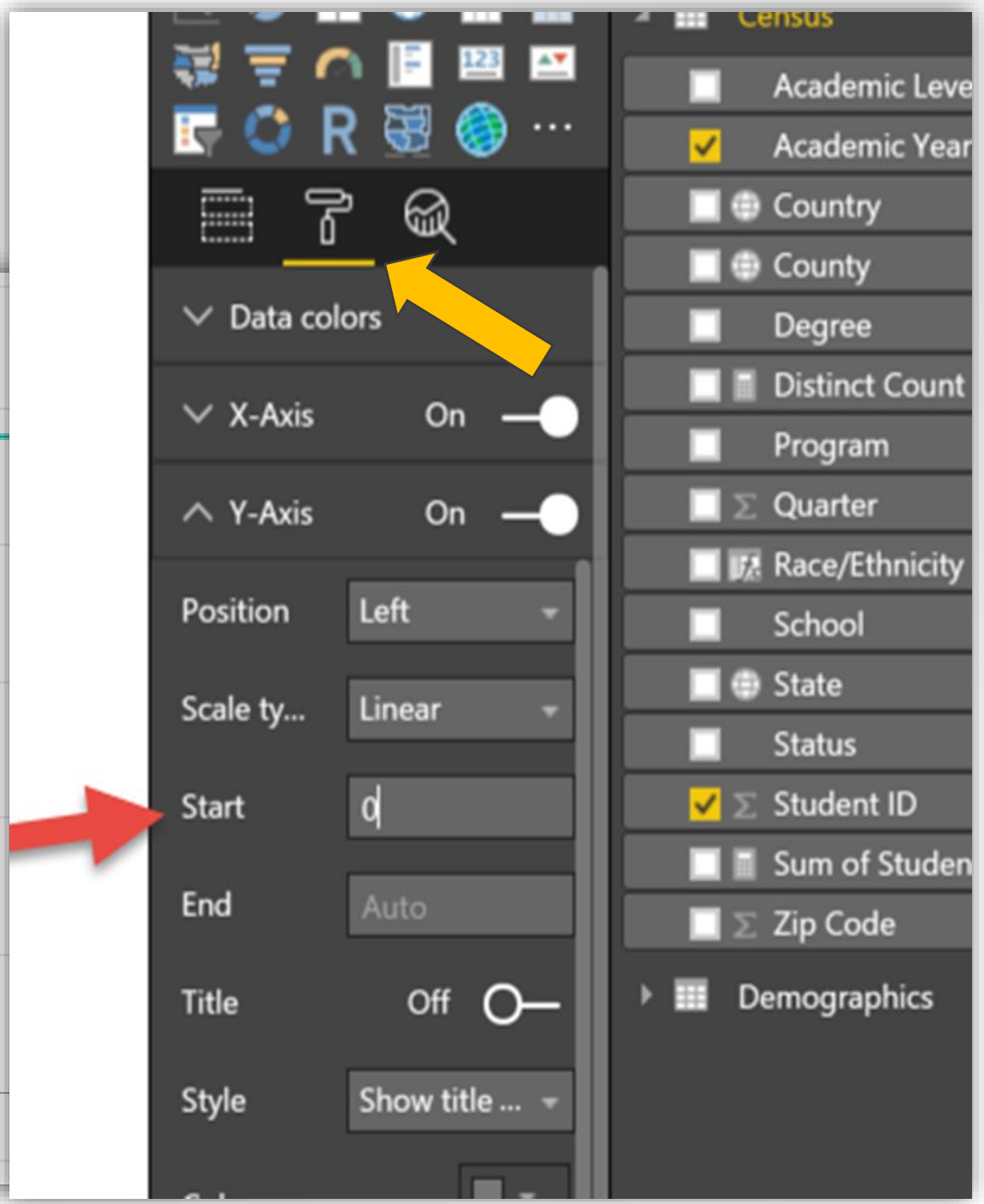
Creating the Line Chart
– *select the line chart icon*



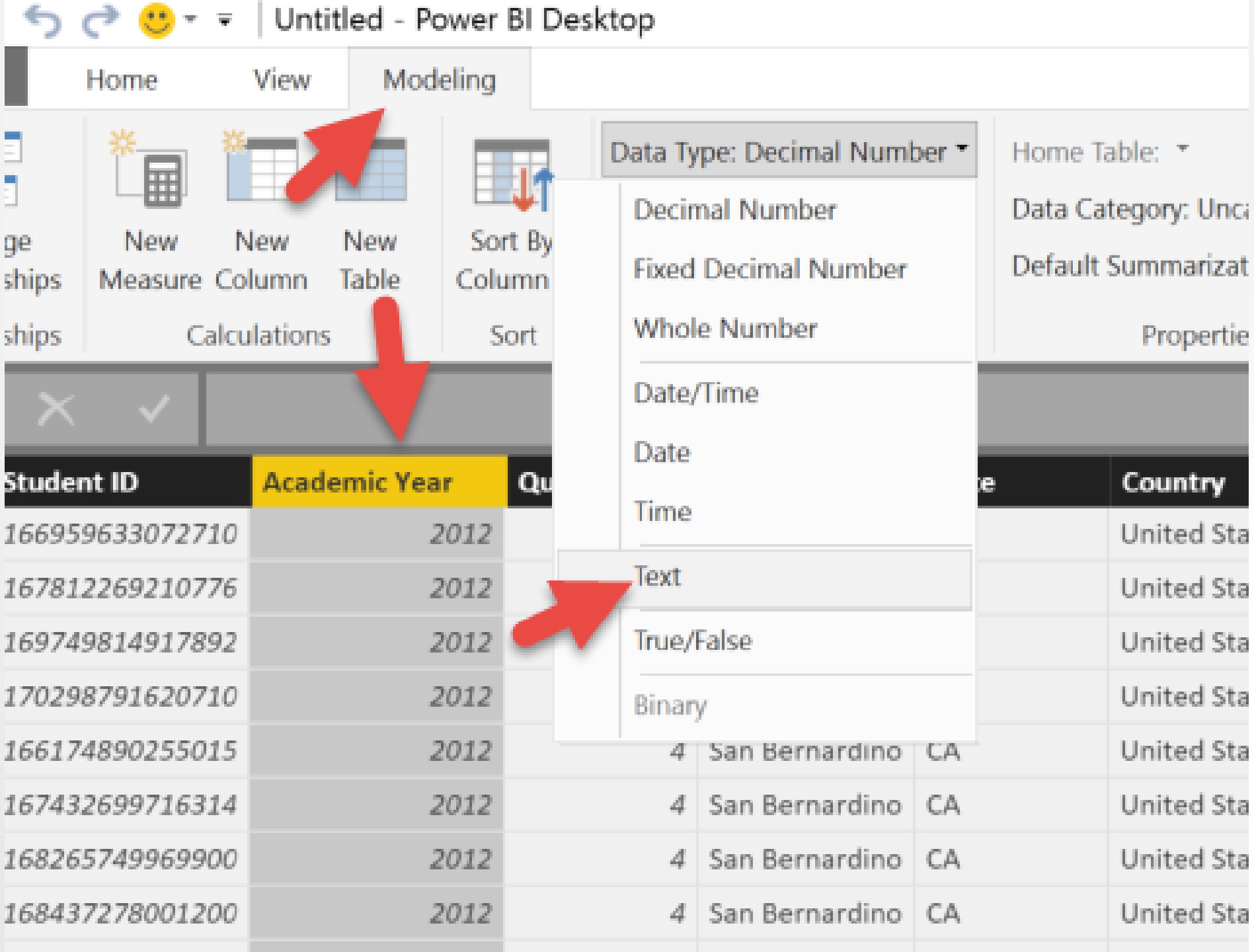
We will do just as we did in Excel – adding the Academic Year to the Axis and a distinct count of Student ID to the Values

Setting Range on the Chart

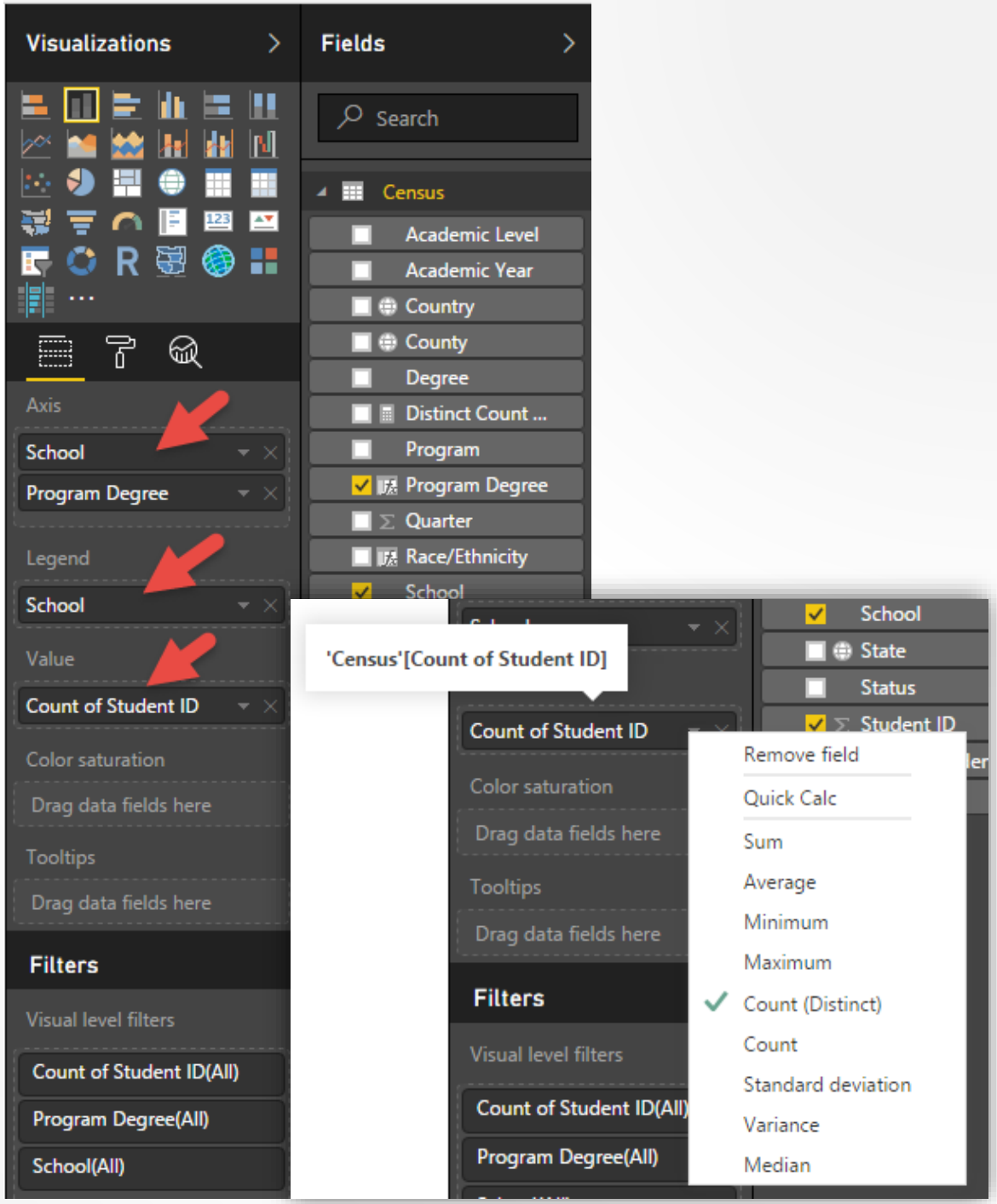


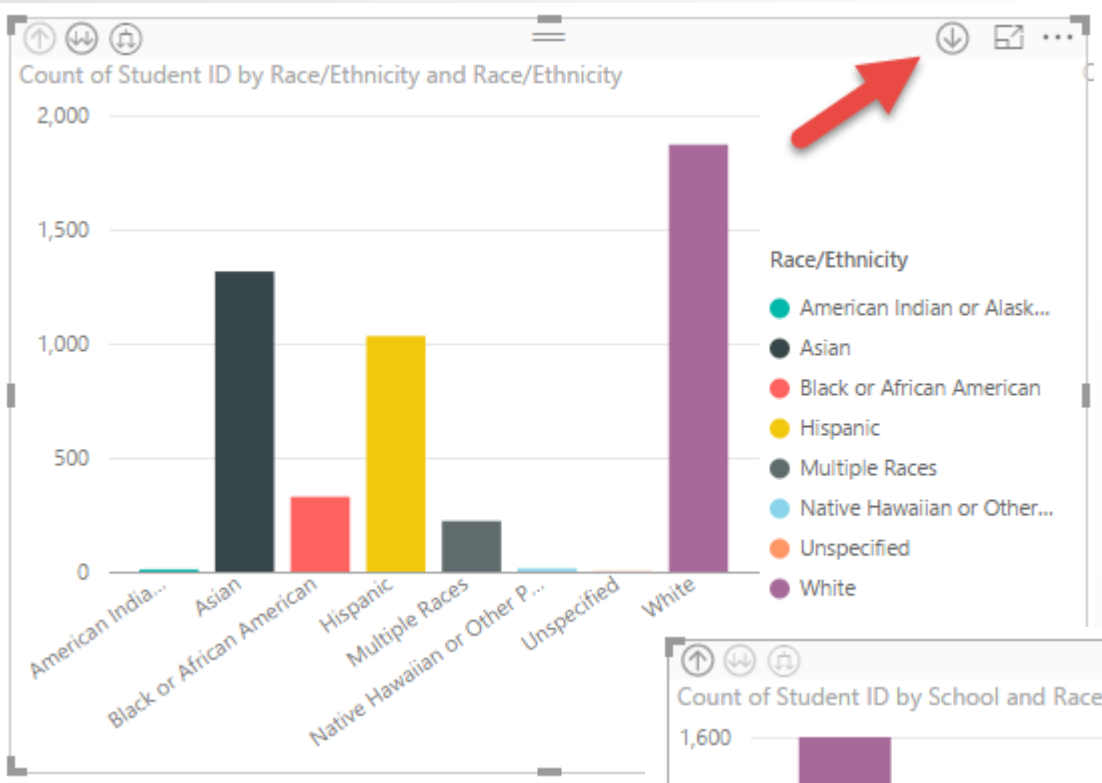


Tip to get the visualization looking right

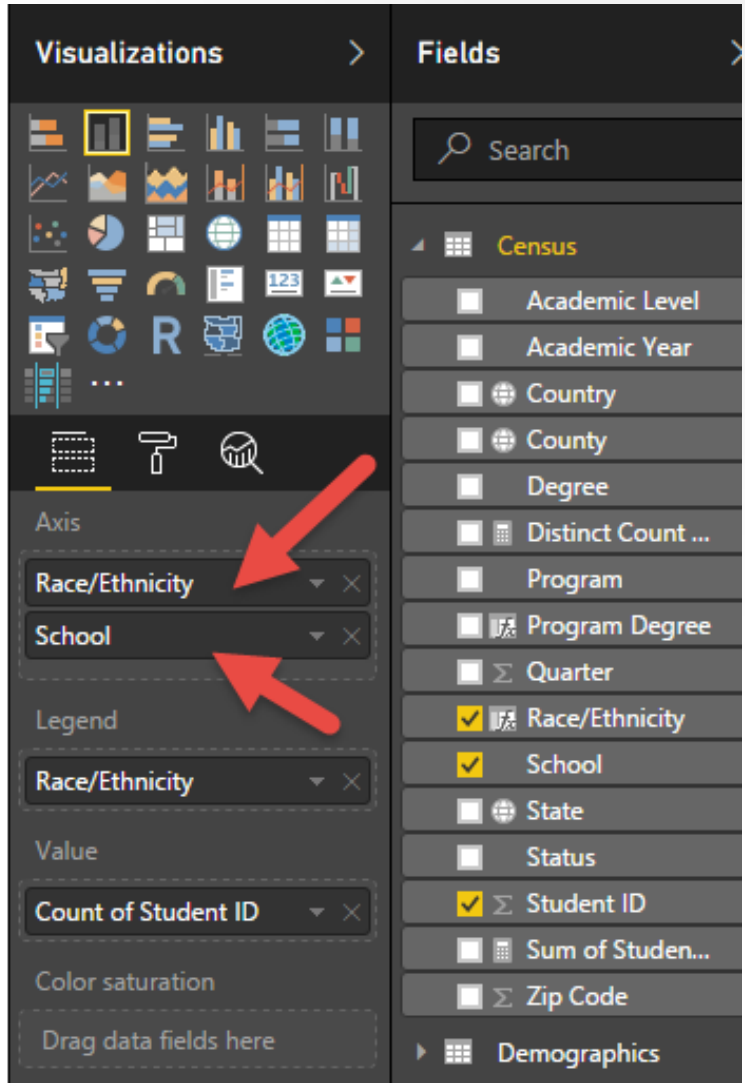


Adding Enrollment Chart

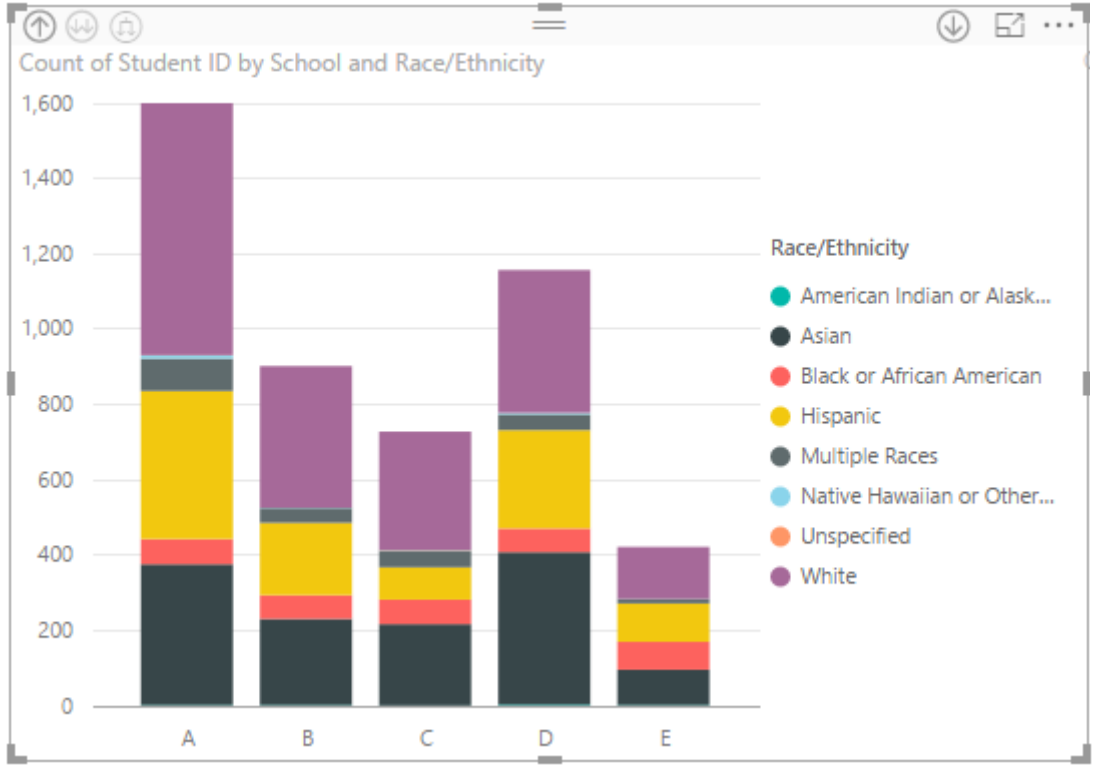




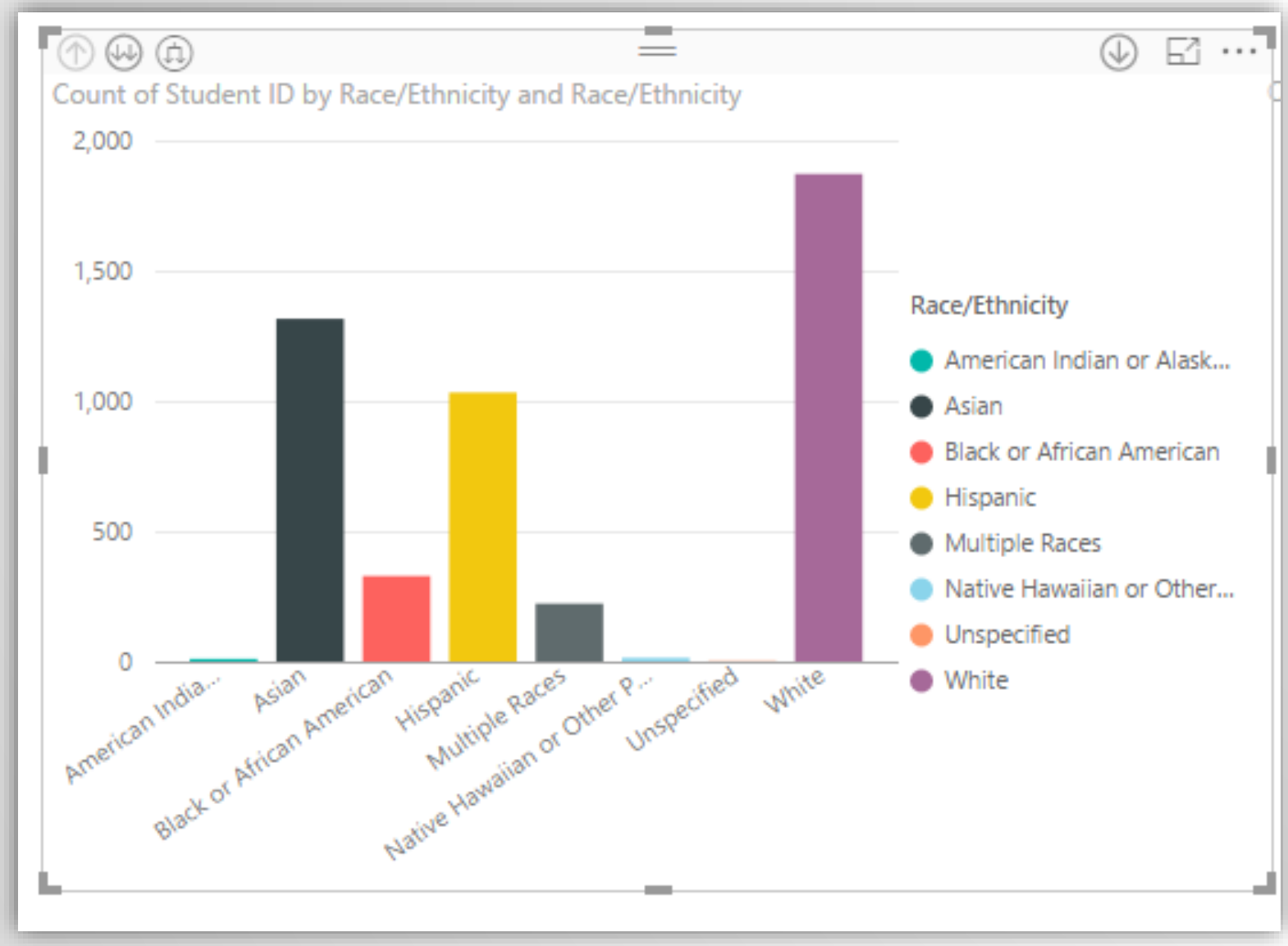
Just drag columns to the axis to enable drill down

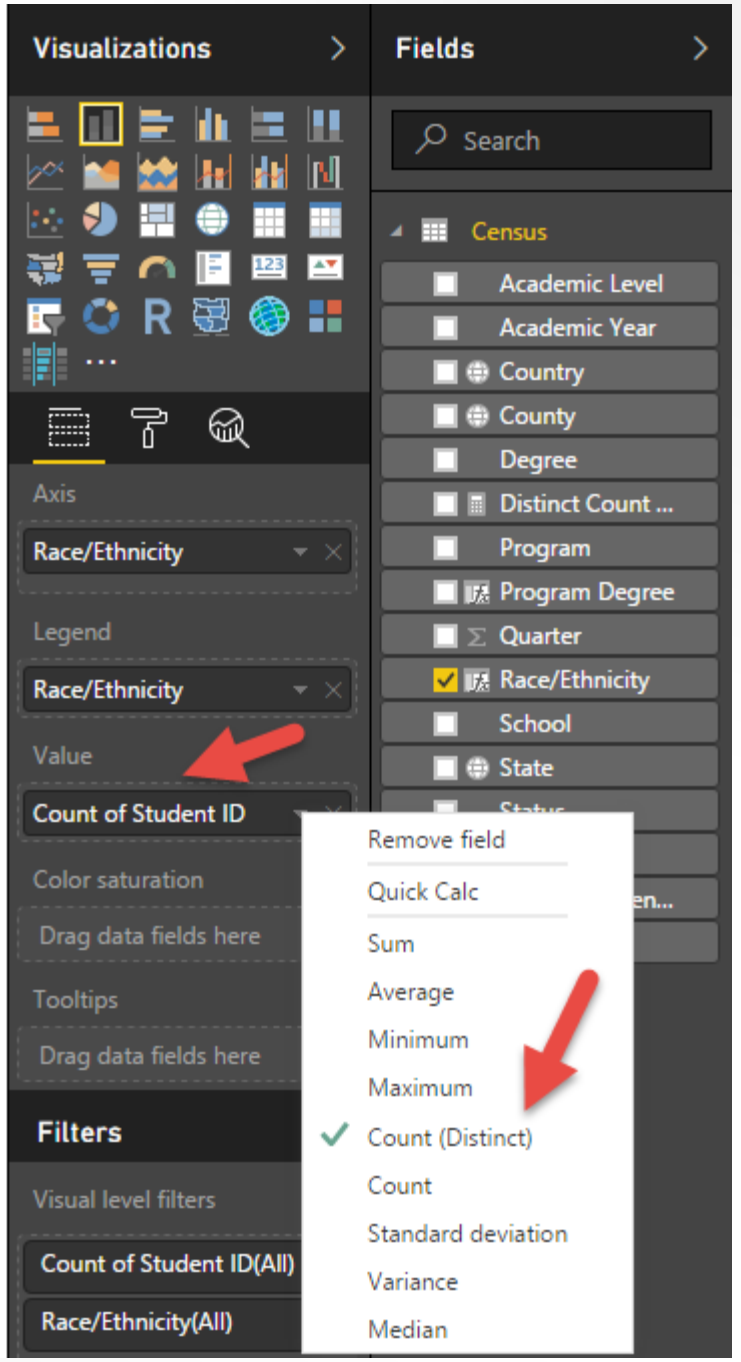


Overall values then drill down to each school. We could continue to do this for as deep as our dataset allows.

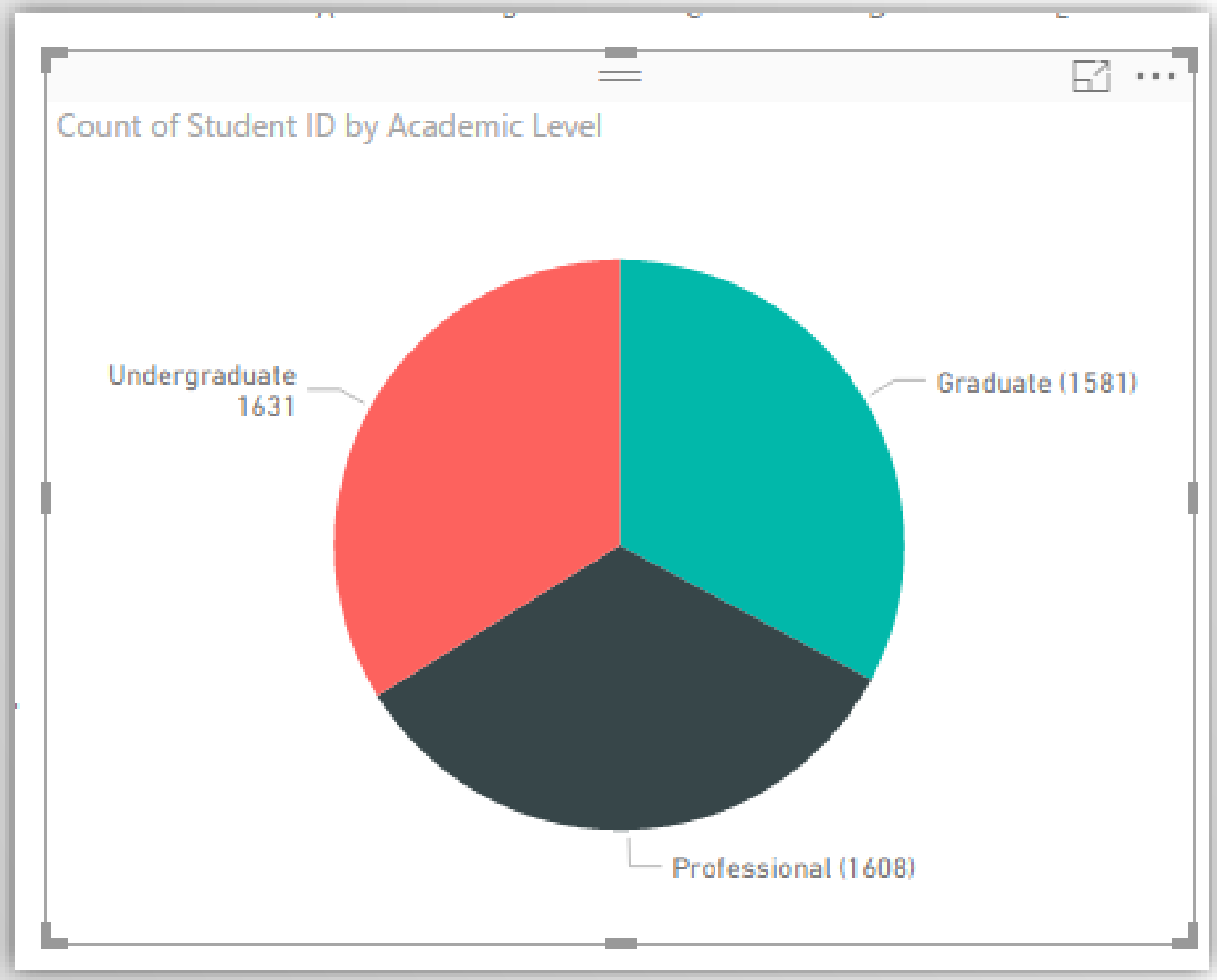


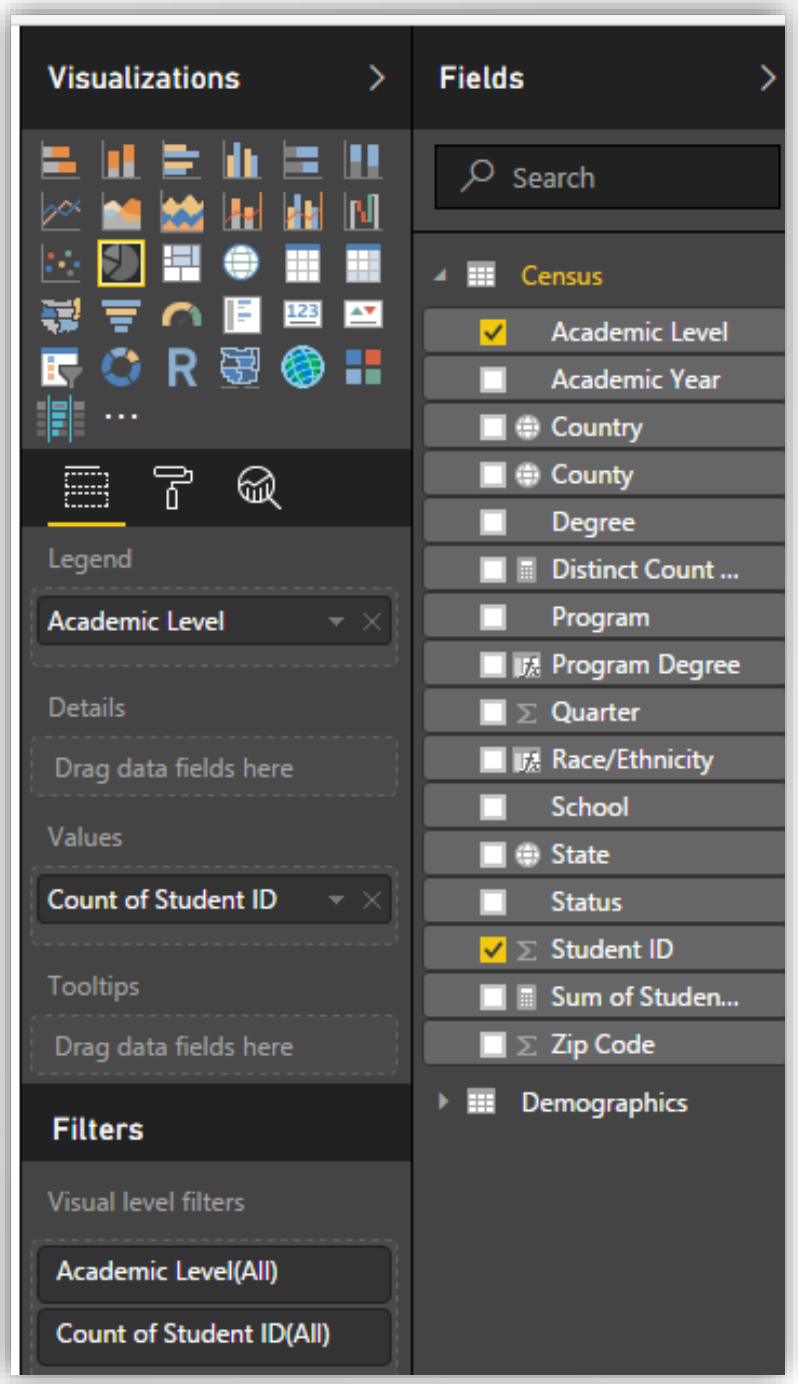
Adding Race/Ethnicity Chart



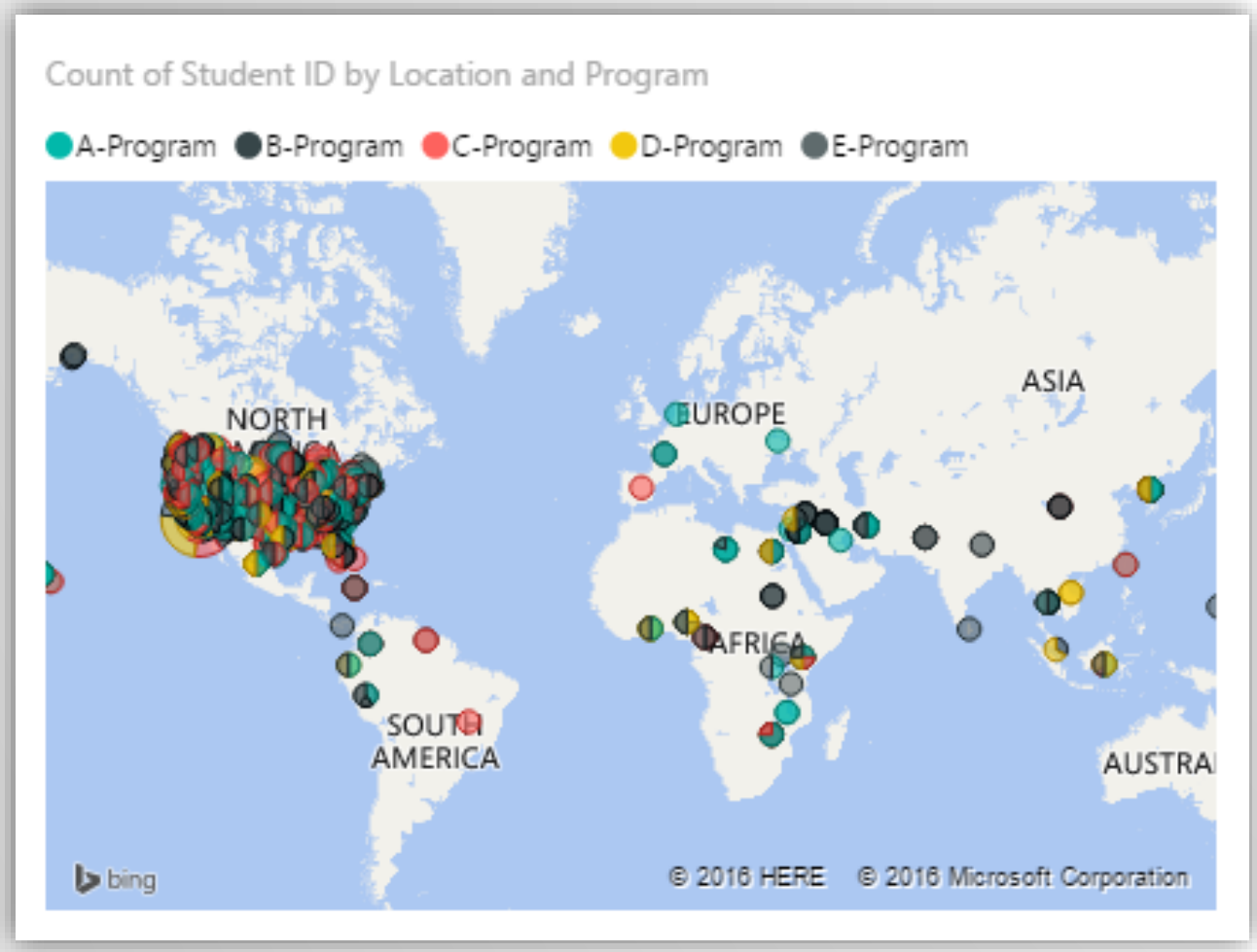


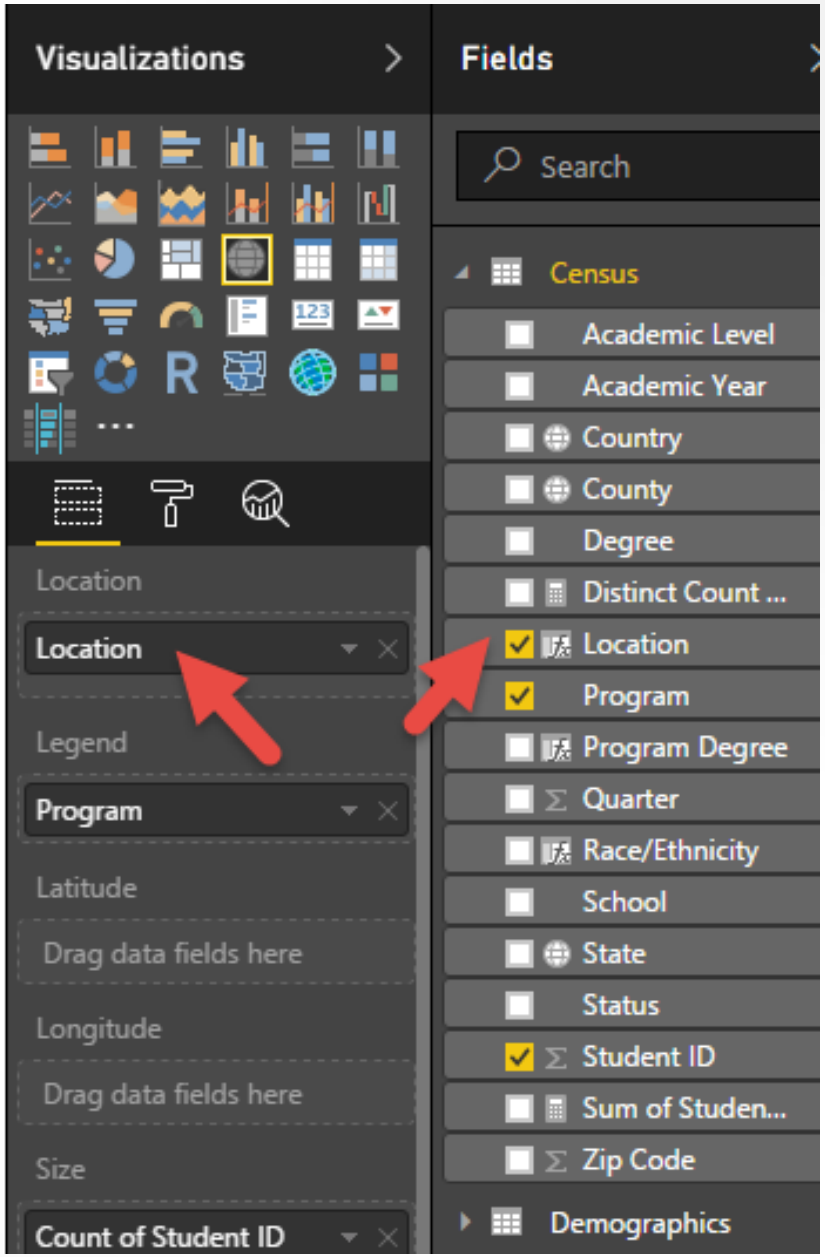
Academic Level Pie Chart





Adding a Citizenship Map

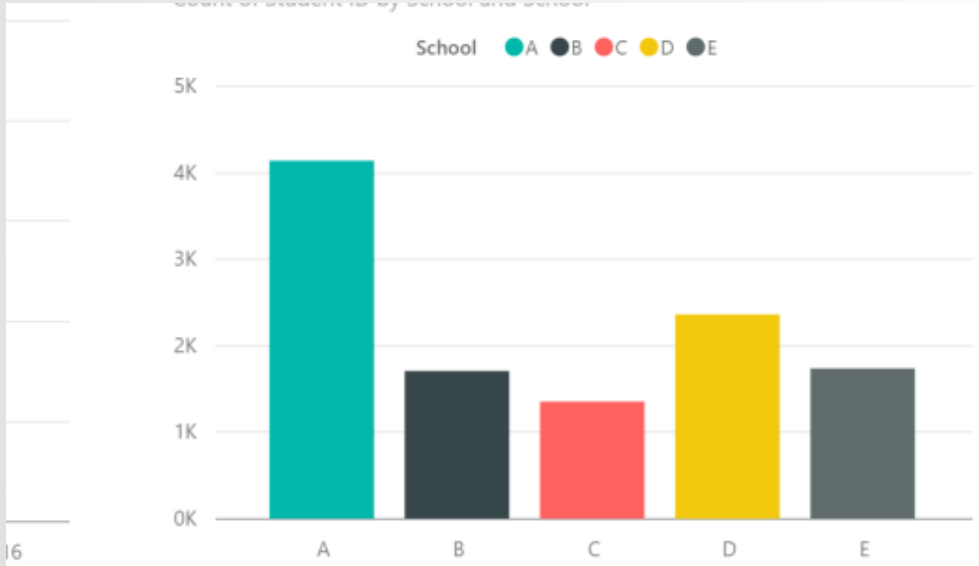


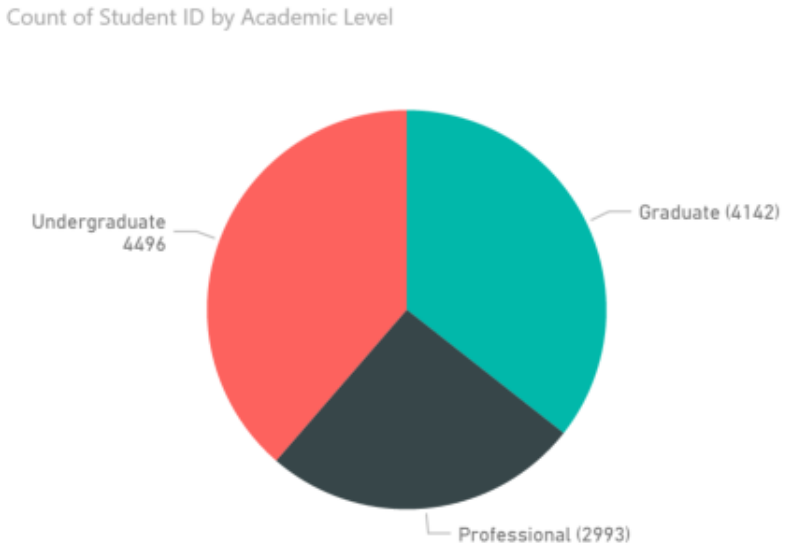


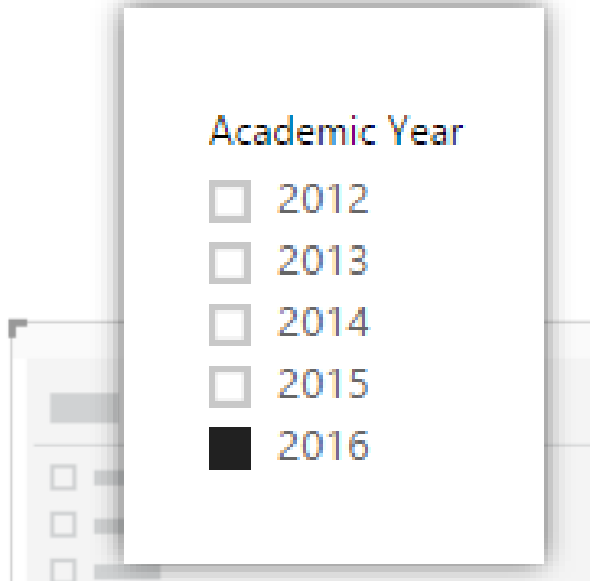
DAX to do this is:

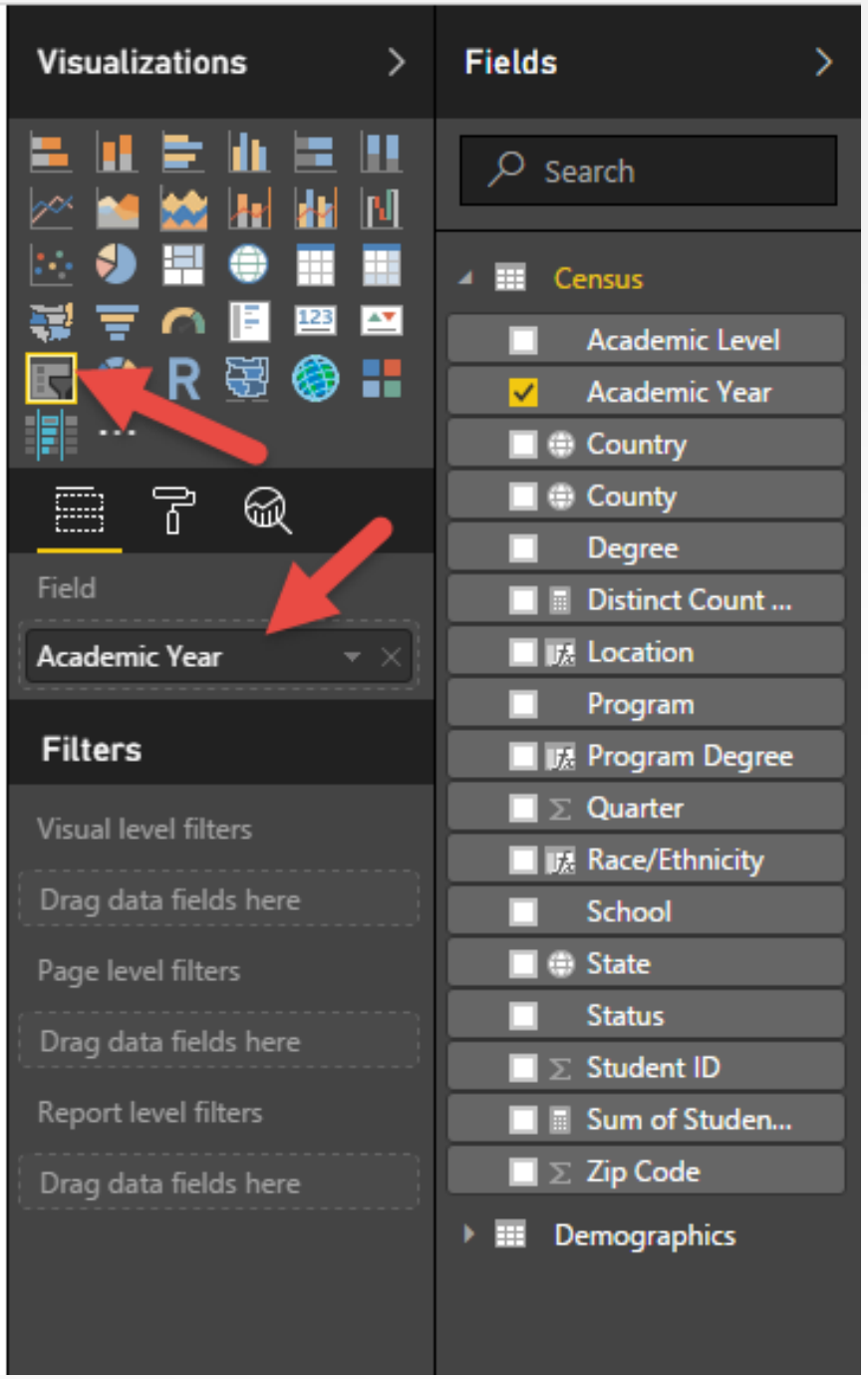
Location = [Zip Code] & "," & [Citizenship]

Adding Filters

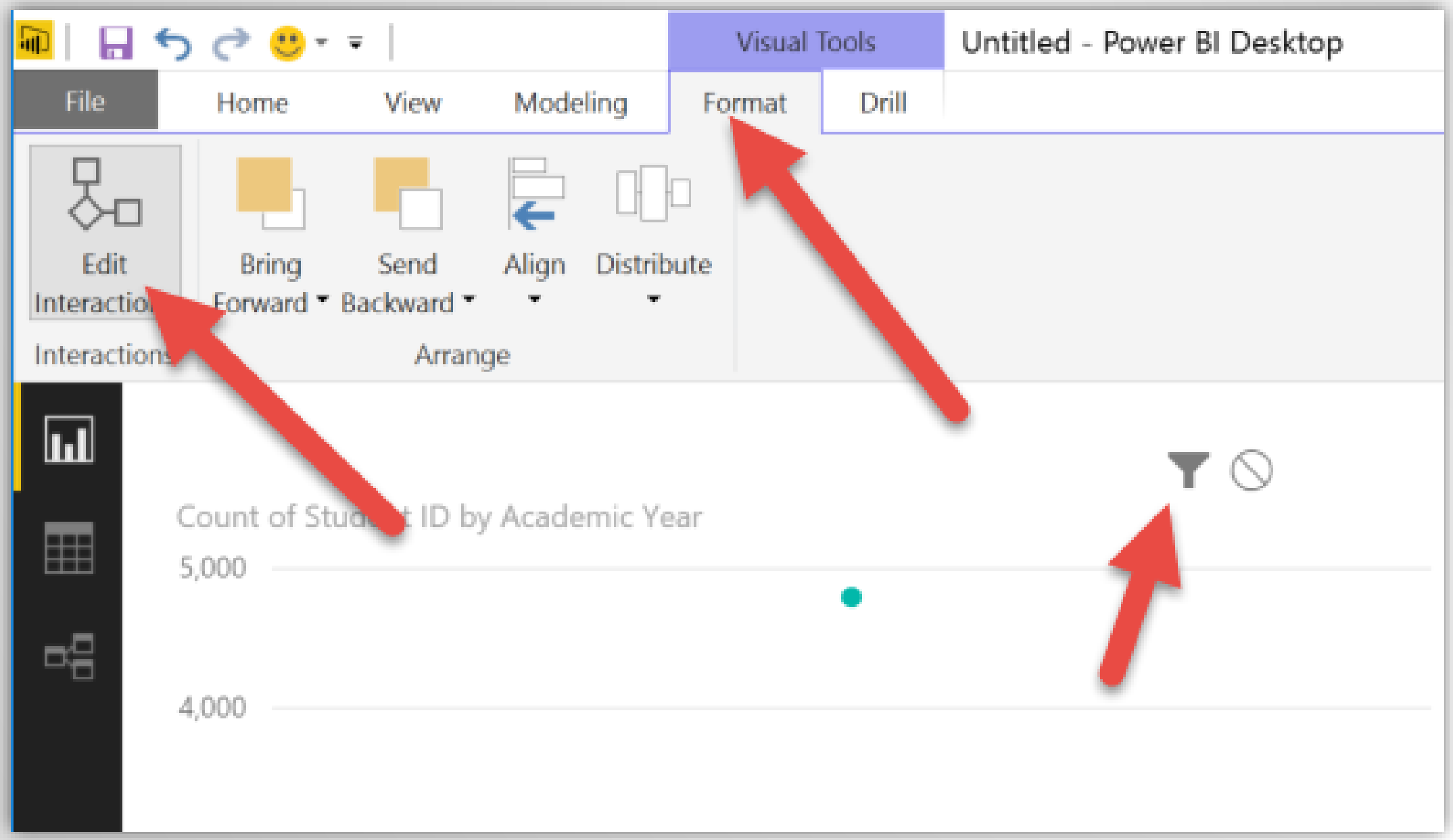




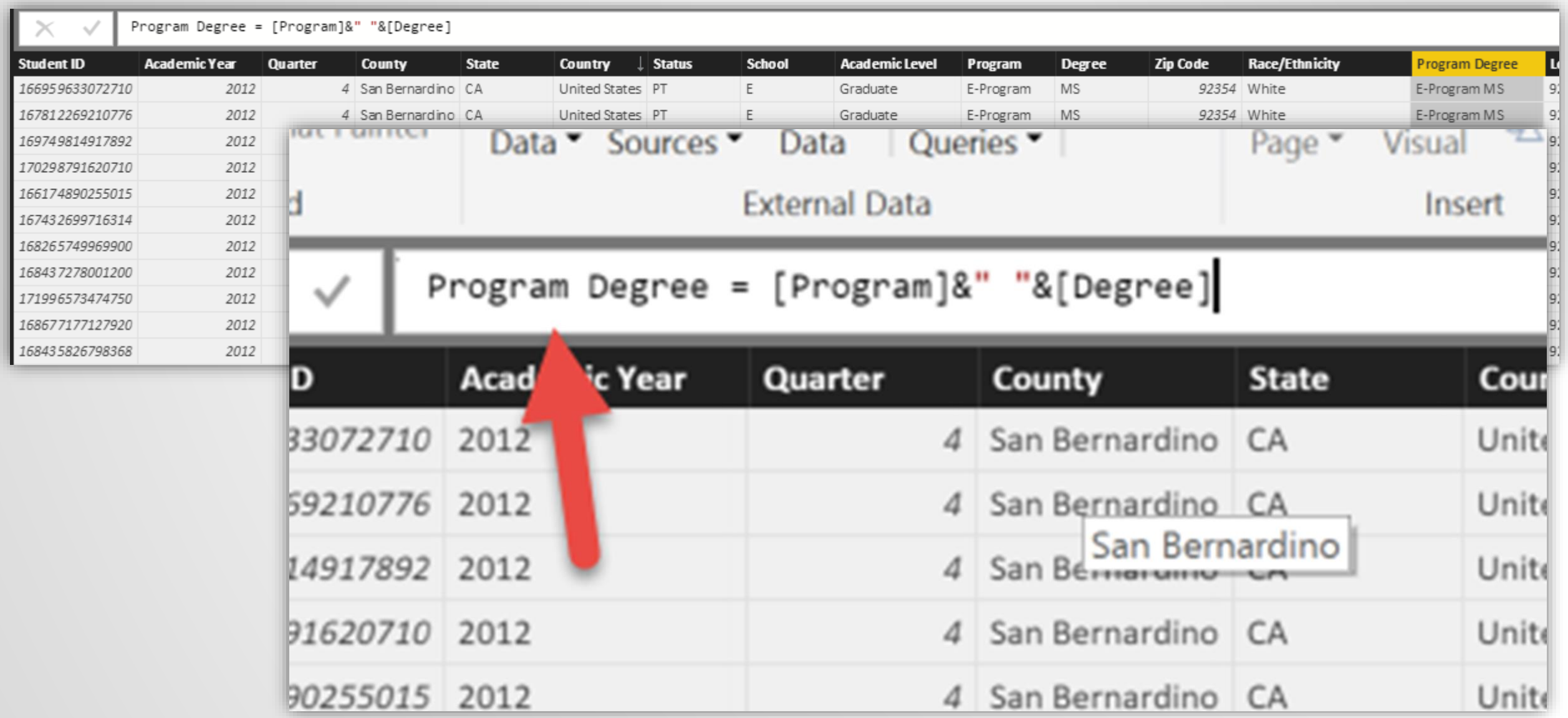




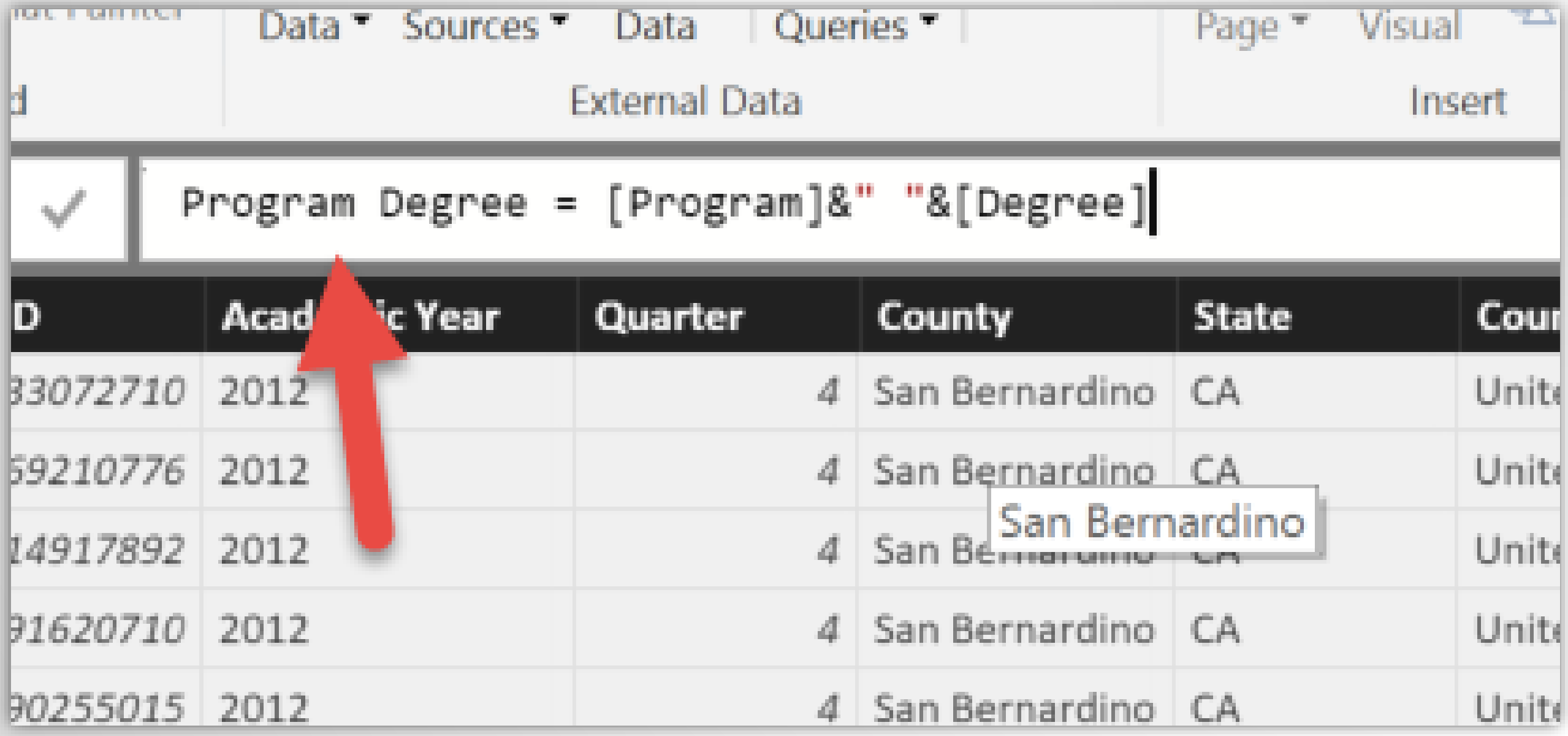
Configuring Filter Interactions



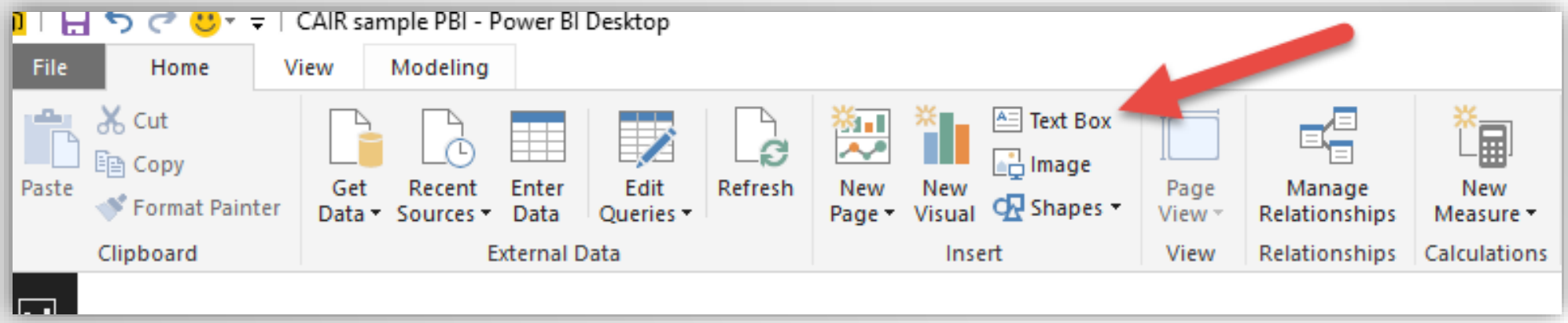
Adding a New Column – Concatenate and Add Text if Desired

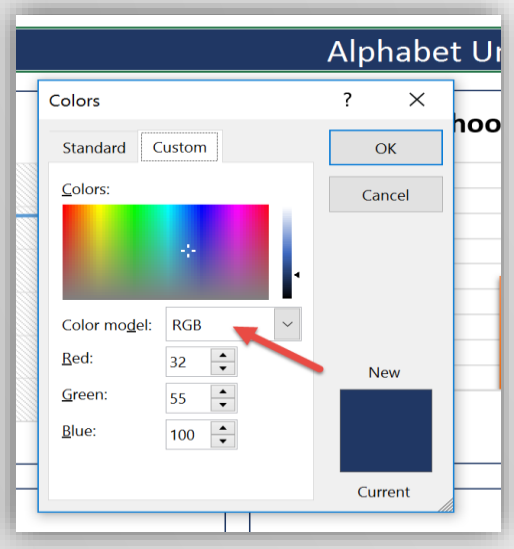


DAX Statement to Concatenate – Easy as "&"

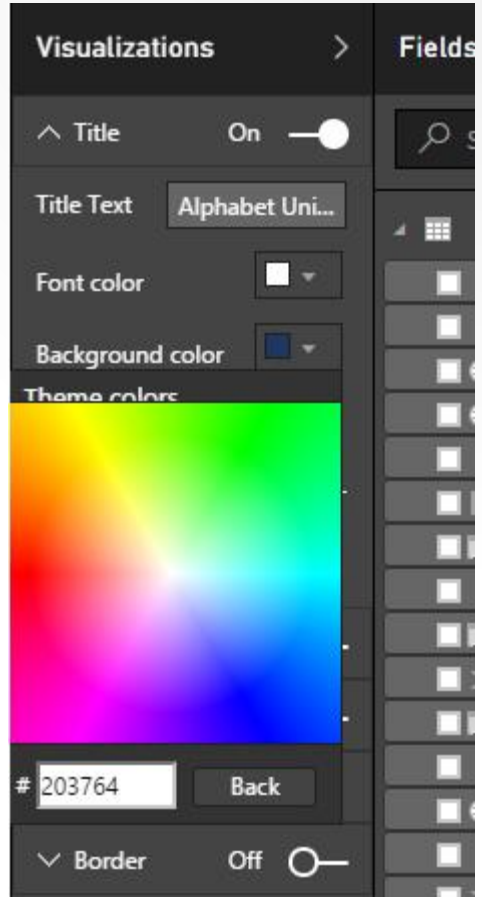


Adding a Title



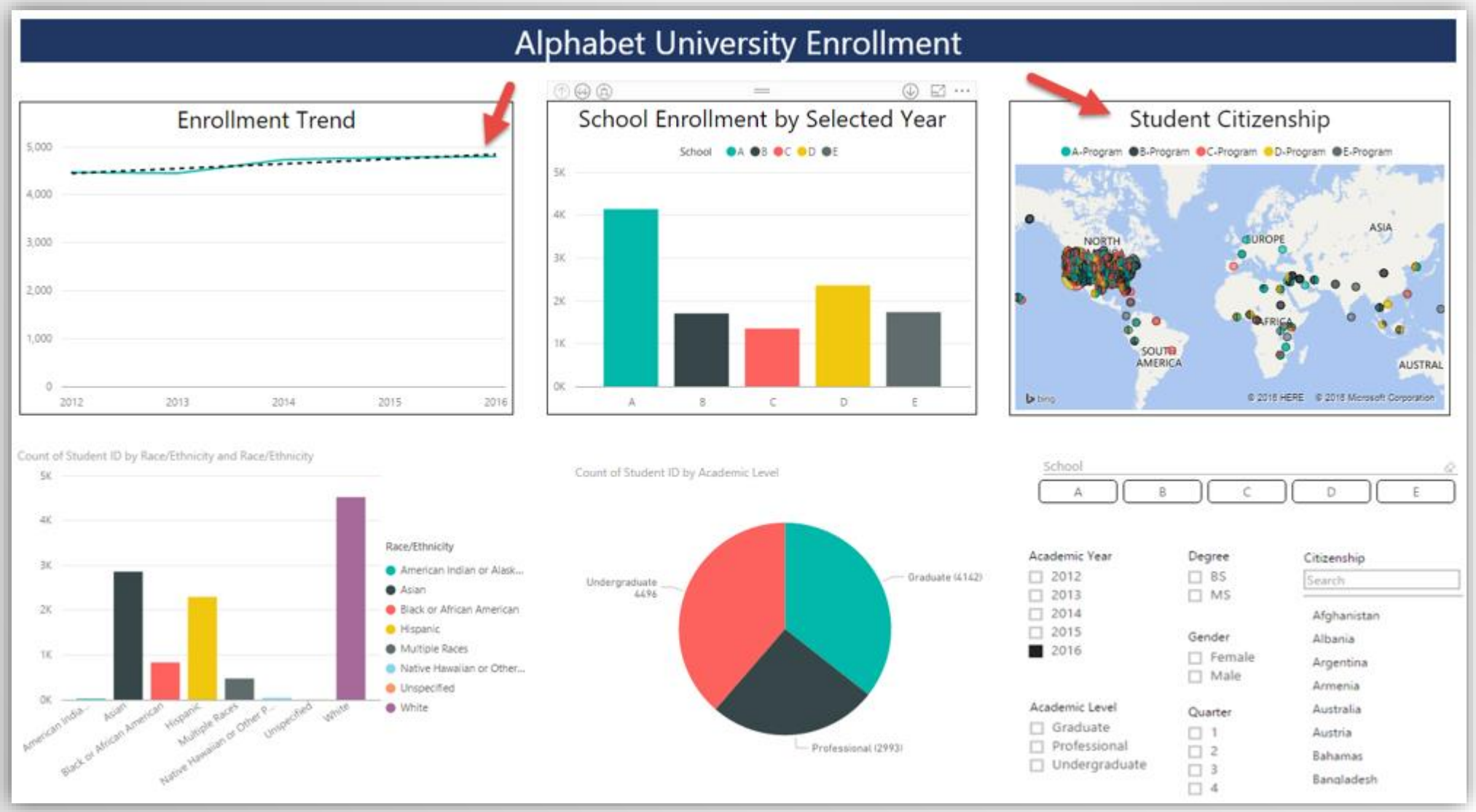


Color choice is in Hex – use color picker in Excel to see RGB and use an online converter to get Hex equivalent

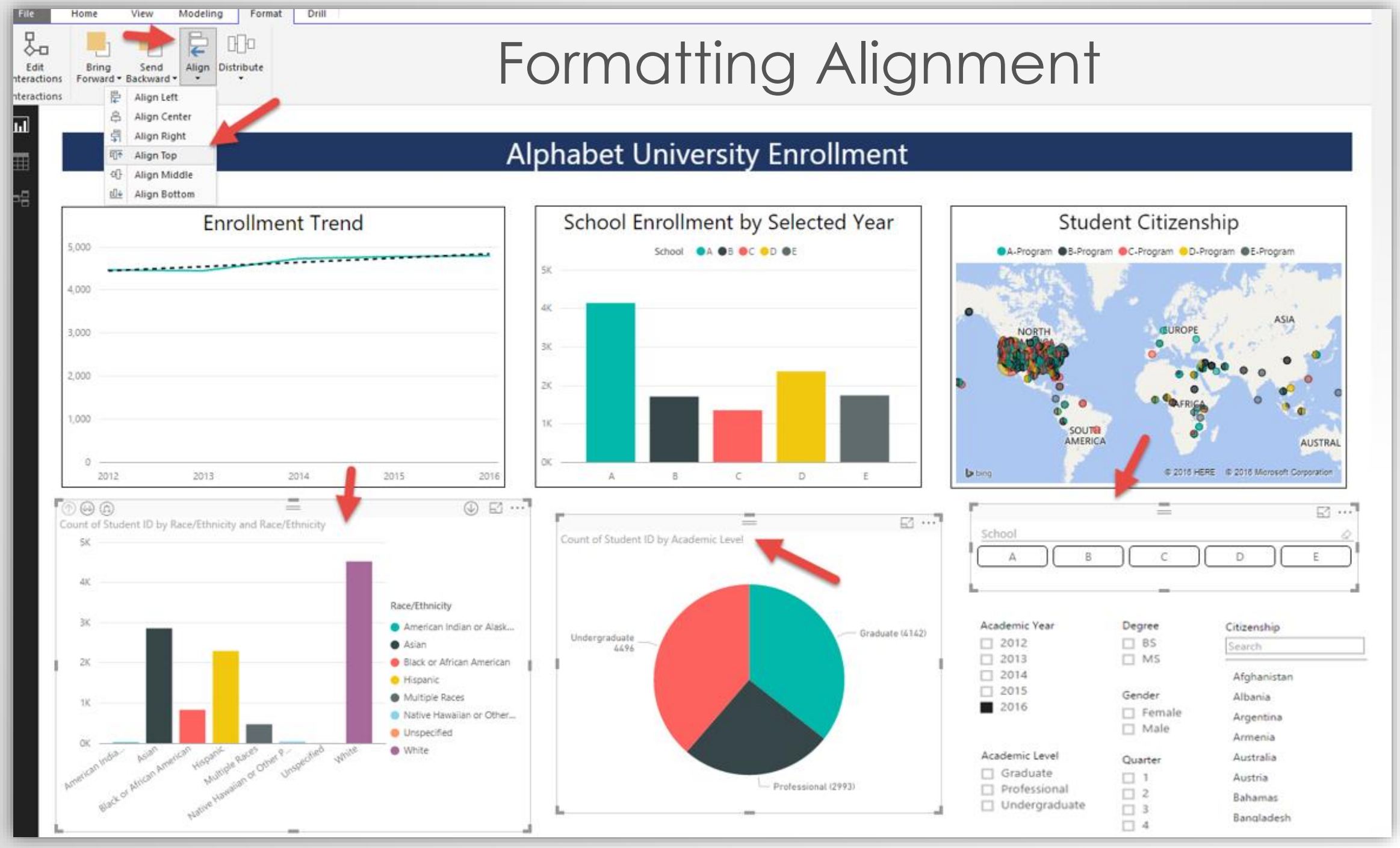


Bringing it All Together

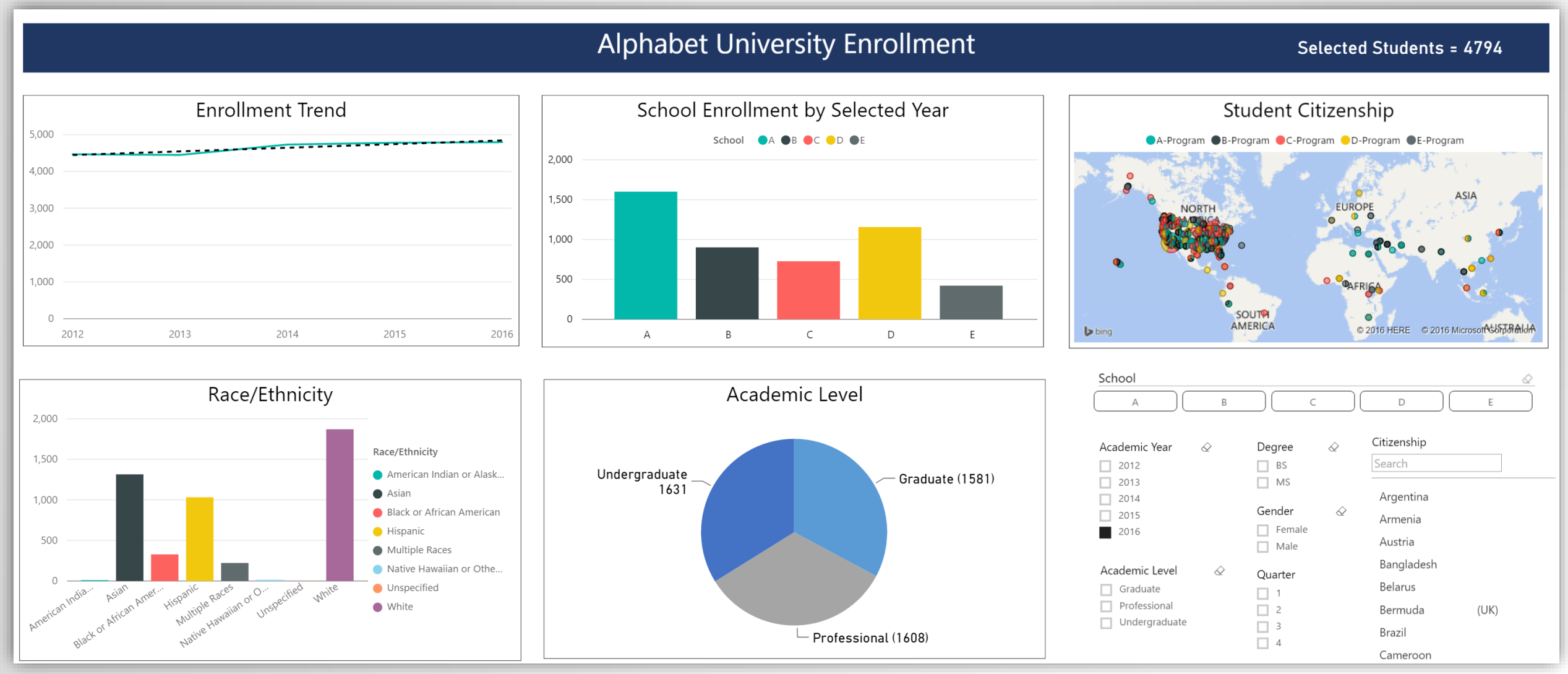
We've added some titles – still more to add below



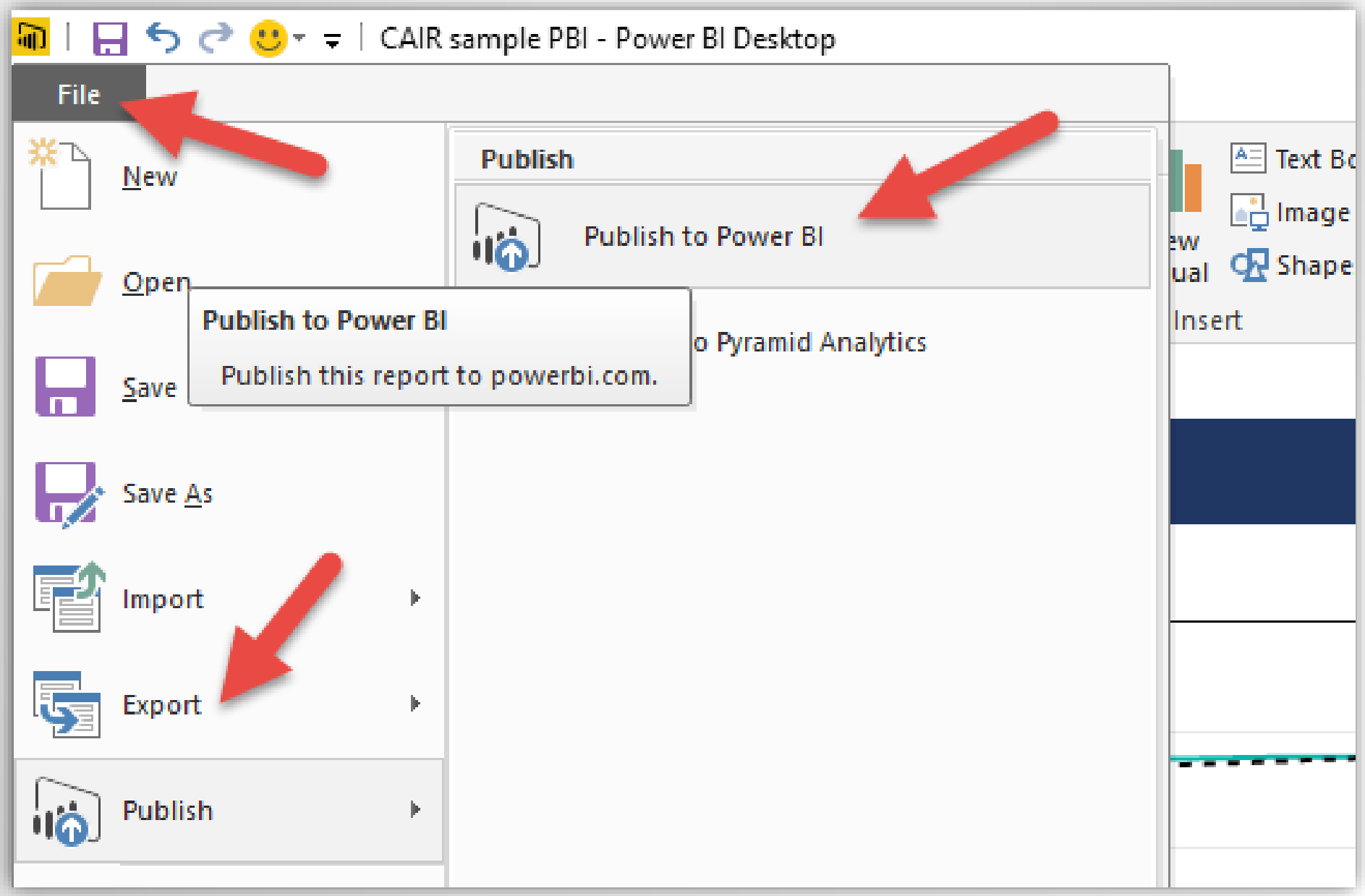
Formatting Alignment

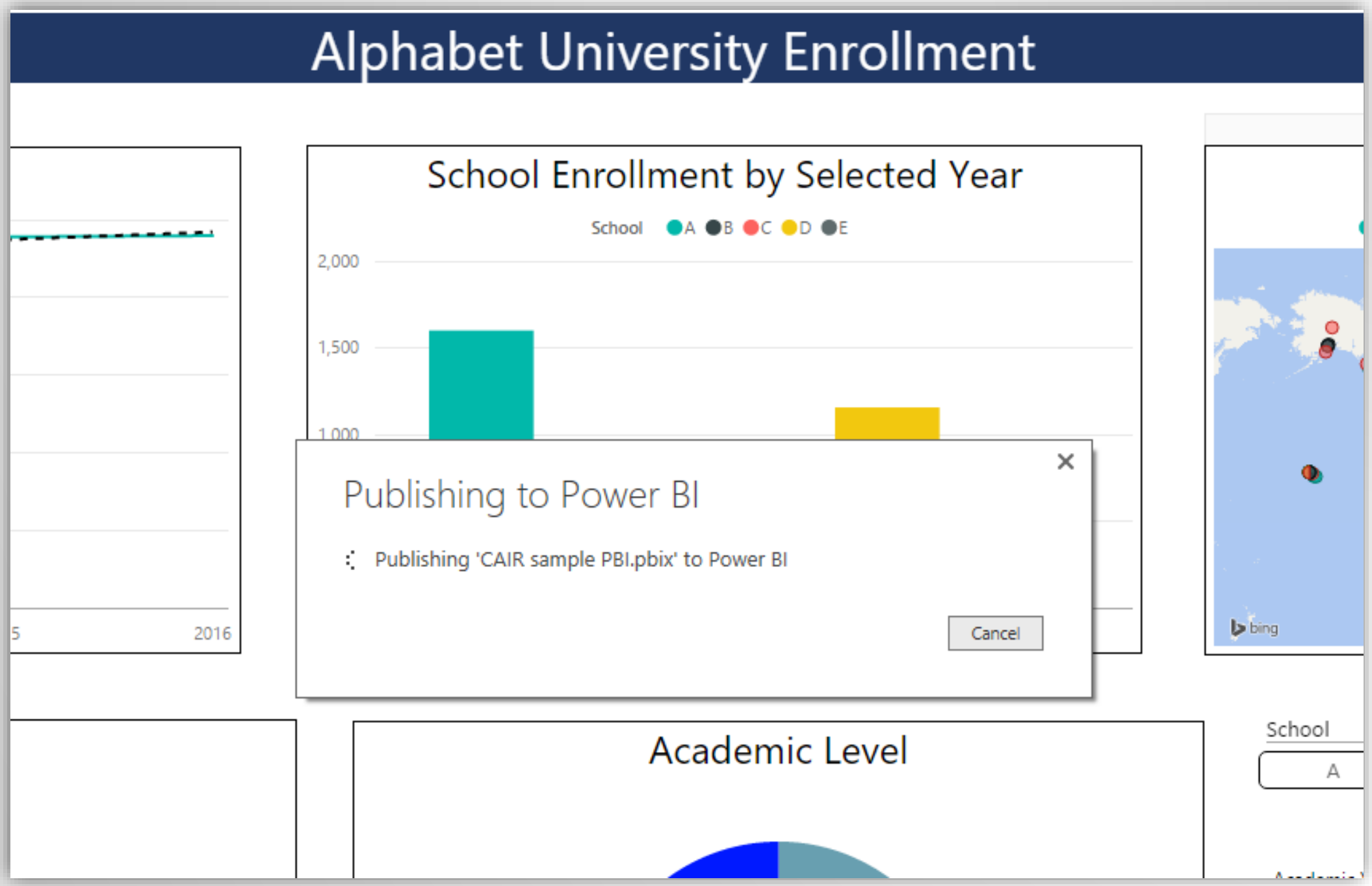


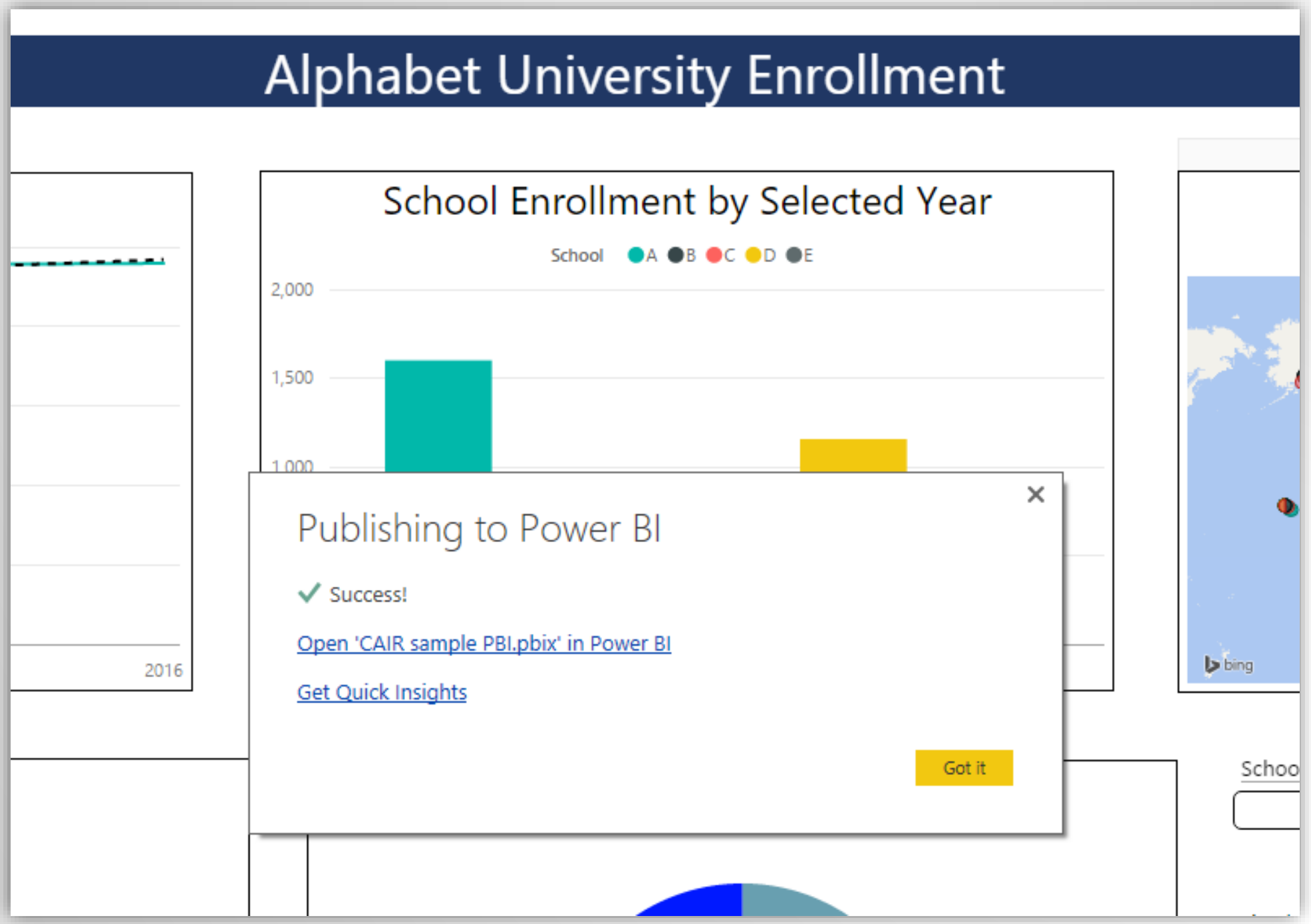
Ready to Publish



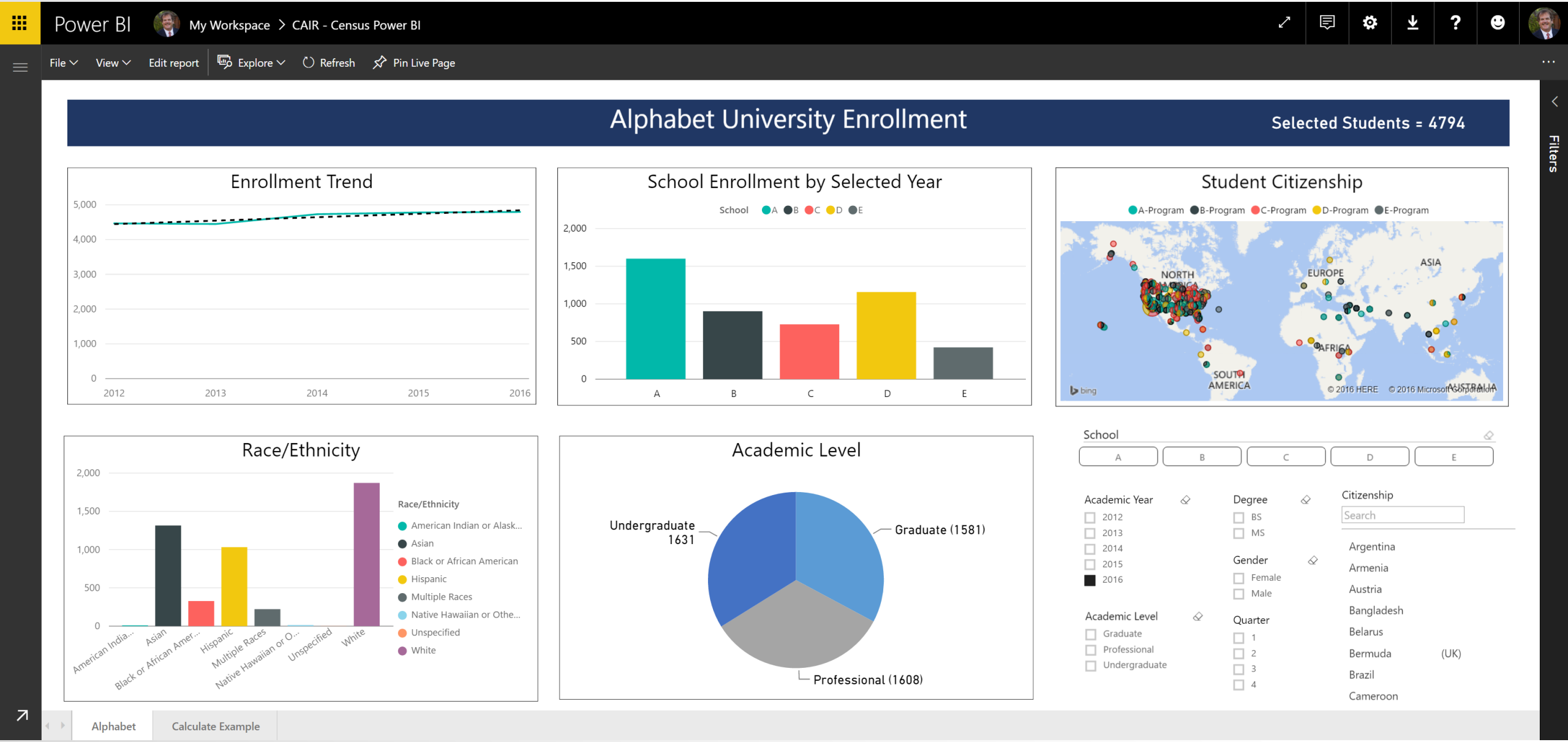
Select File, Export, Publish to Power BI



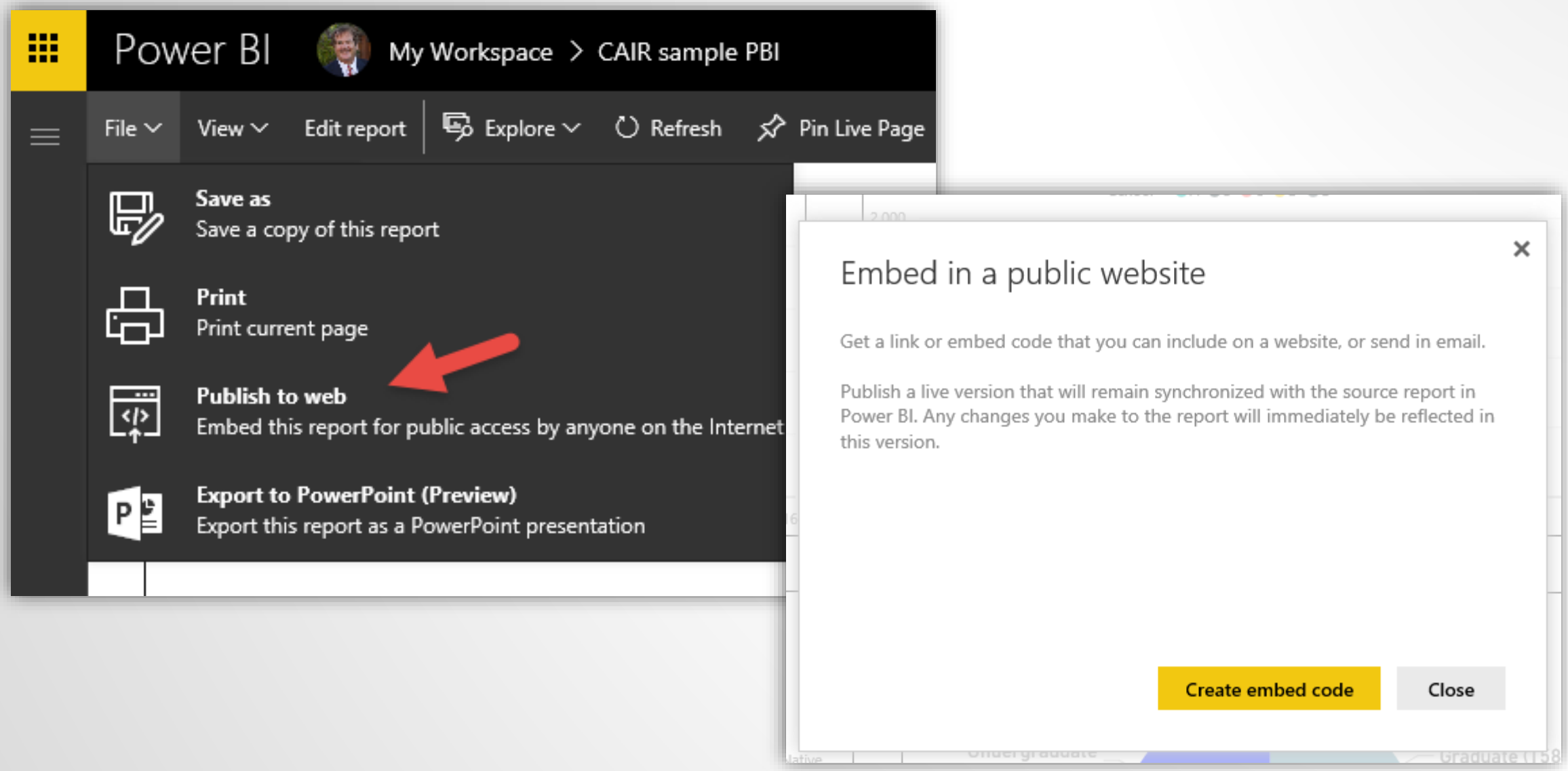

Alphabet University Enrollment
School Enrollment by Selected Year
School A B C D E
2,000
1,500
1,000
5
2016
Publishing to Power BI
Publishing 'CAIR sample PBI.pbix' to Power BI
Cancel
bing
Academic Level
School
A


Alphabet University Enrollment
School Enrollment by Selected Year
School A B C D E
2,000
1,500
1,000
2016
Publishing to Power BI
Success!
Open 'CAIR sample PBI.pbix' in Power BI
Get Quick Insights
Got it
bing
Schoo

Success – Now We Need a URL

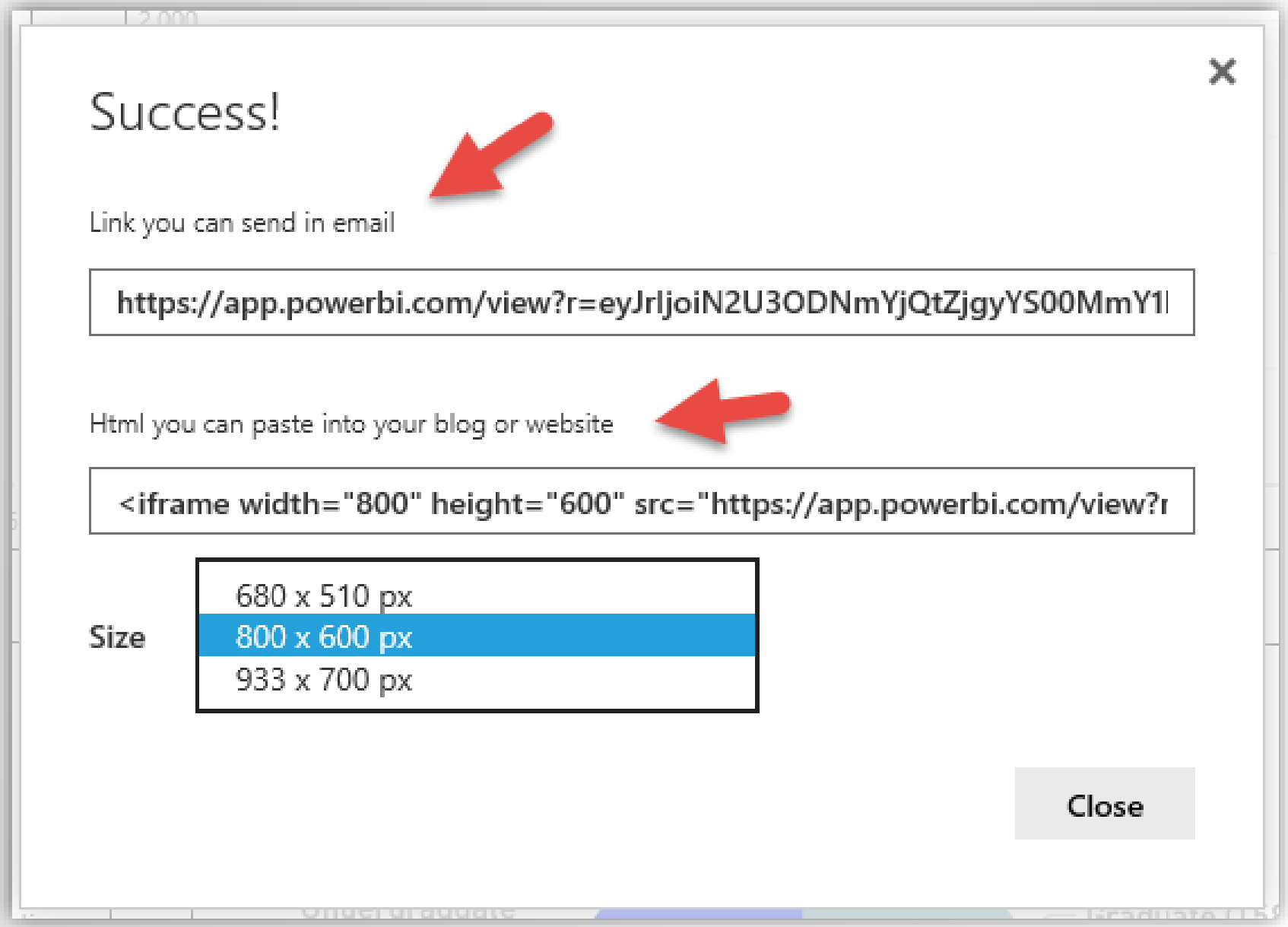


Publish to Web – URL or Embed Code



MAJOR CAUTION

URL and Embed Code



URL for the Dashboard

https://app.powerbi.com/view?r=eyJrIjoiN2U3ODNmYjQtZjgyYS00MmY1LWExMDgtNjg1MTU0MjM2NWQ2IiwidCI6ImYwNjdhMGY4LWIyNzQtNGE5Ni1hMTcwLTJlY2JhNmIxYmI1YSIsImMiOjZ9

Tips:

- Filter controls
- Drill Down
- Titles – can be content sensitive
- Import Custom Visuals
- Experiment / Share / Join a user group
- Learn some Data Analysis Expressions (DAX)
- Use R? Power BI has built-in support

DAX – CALCULATE

When we use CALCULATE in an expression it allows us to override a filter. In our example we will use it to create a percent of students in an age group.

Students filtered by Age Group in a given context, i.e., Year

Using CALCULATE to capture all students in the filtered context - Year

Age Group	Percent of Students	Students	Calculate Age Group
15-19	1 %	58	4794
20-24	41 %	1969	4794
25-29	31 %	1498	4794
30-34	14 %	661	4794
35-44	8 %	401	4794
45-54	3 %	156	4794
55+	1 %	51	4794
Total	**100 %**	**4794**	**4794**

Calculate Age Group = CALCULATE([Distinct Count of Student ID],ALL(Census[Age Group]))

Matrix

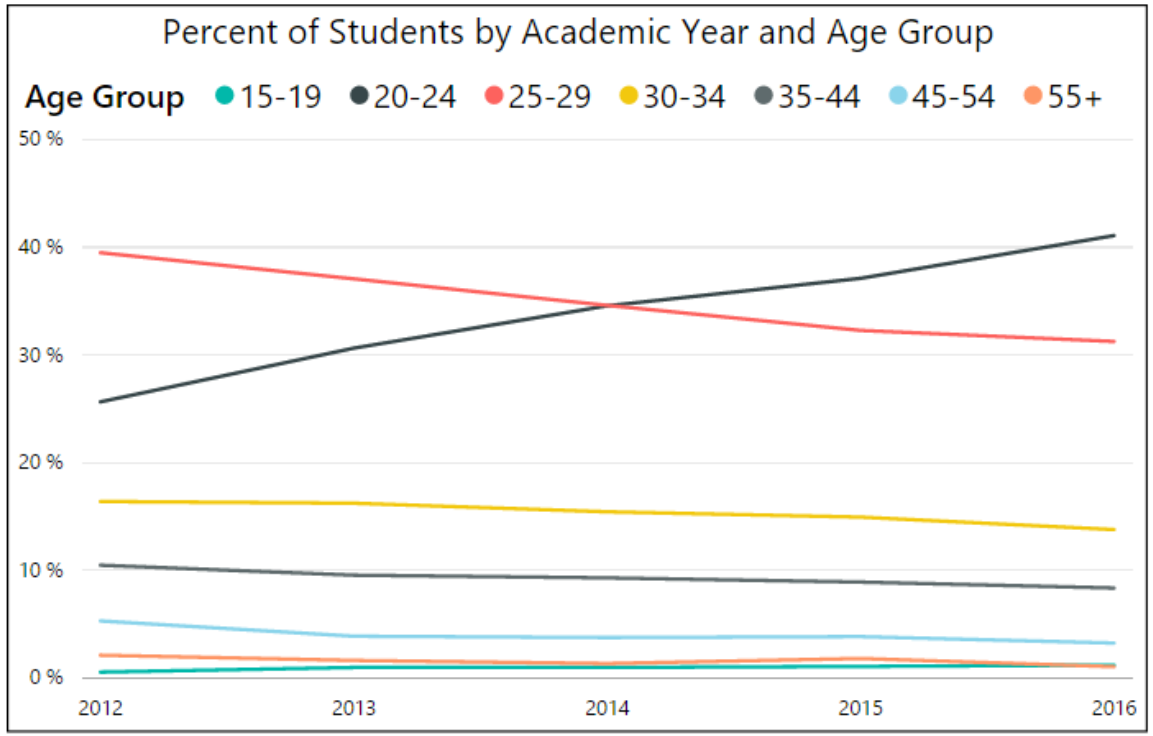
Age Group	Percent of Students	Students	Calculate Age Group
15-19	1 %	58	4794
20-24	41 %	1969	4794
25-29	31 %	1498	4794
30-34	14 %	661	4794
35-44	8 %	401	4794
45-54	3 %	156	4794
55+	1 %	51	4794
Total	**100 %**	**4794**	**4794**

Percent of Students =
DIVIDE([Students],[Calculate Age Group])

Students = DISTINCTCOUNT(Census[Student ID])

Calculate Age Group = CALCULATE([Distinct Count of Student ID],ALL(Census[Age Group]))

CALCULATE Function - Age Group as a Percentage of Enrollment Selected



Age Group
- 15-19
- 20-24
- 25-29
- 30-34
- 35-44
- 45-54
- 55+

Race/Ethnicity
- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic
- Multiple Races
- Native Hawaiian or Other Pacific Islander
- Unspecified
- White

Academic Year
- 2012
- 2013
- 2014
- 2015
- 2016

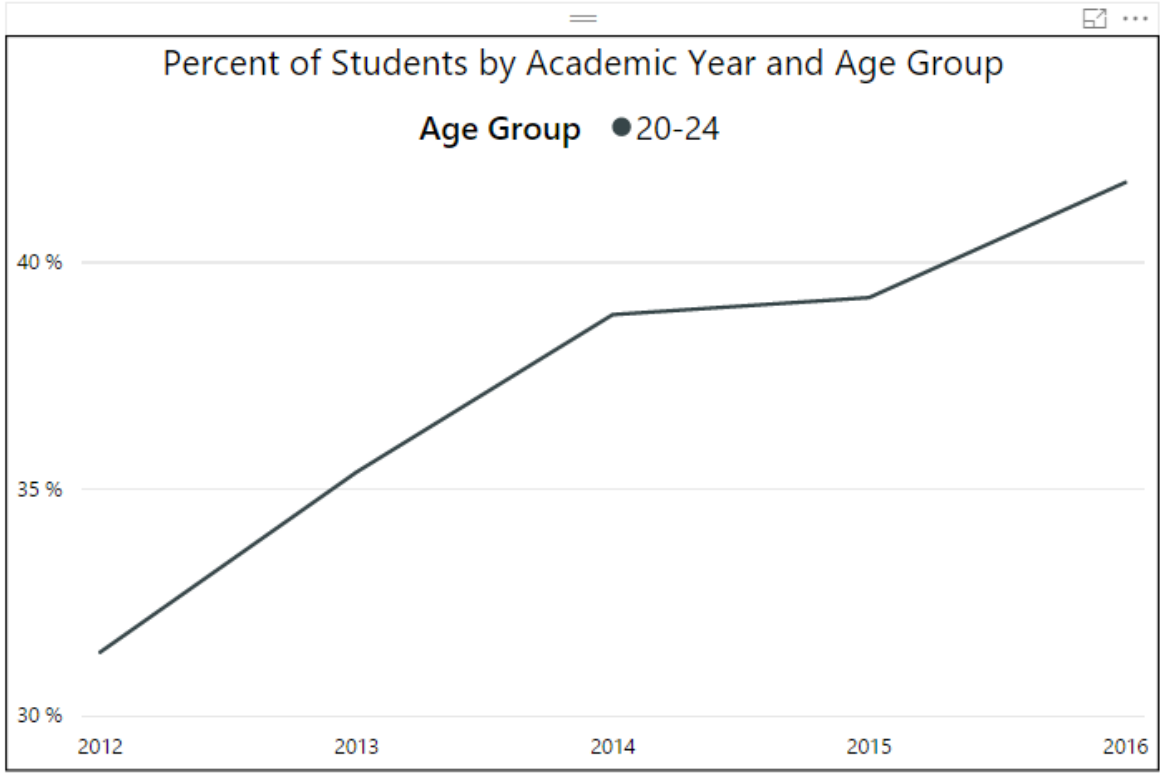
Age Group	Percent of Students	Students	Calculate Age Group
15-19	1 %	58	4794
20-24	41 %	1969	4794
25-29	31 %	1498	4794
30-34	14 %	661	4794
35-44	8 %	401	4794
45-54	3 %	156	4794
55+	1 %	51	4794
Total	**100 %**	**4794**	**4794**

4794
Students

4794
Calculate Age Group

100 %
Percent of Students

CALCULATE Function - Age Group as a Percentage of Enrollment Selected



Age Group
- 15-19
- 20-24
- 25-29
- 30-34
- 35-44
- 45-54
- 55+

Race/Ethnicity
- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic
- Multiple Races
- Native Hawaiian or Other Pacific Islander
- White

Academic Year
- 2012
- 2013
- 2014
- 2015
- 2016

Age Group	Percent of Students	Students	Calculate Age Group
20-24	42 %	431	1032
Total	**42 %**	**431**	**1032**

431
Students

1032
Calculate Age Group

42 %
Percent of Students

THANKS FOR ATTENDING!

Contact Info:

Ken Nelson
wknelson@llu.edu