

This is a hands-on workshop. Please make sure to download to your laptop Power BI Desktop and the data file I developed.

Link to download Power BI Desktop:
powerbi.microsoft.com/en-us/desktop/

*Power BI desktop is FREE!

Link to download data for workshop
(Google Drive):
<https://goo.gl/MfdBvu>

Power at Your Fingertips: Developing an Interactive Dashboard Using Power BI

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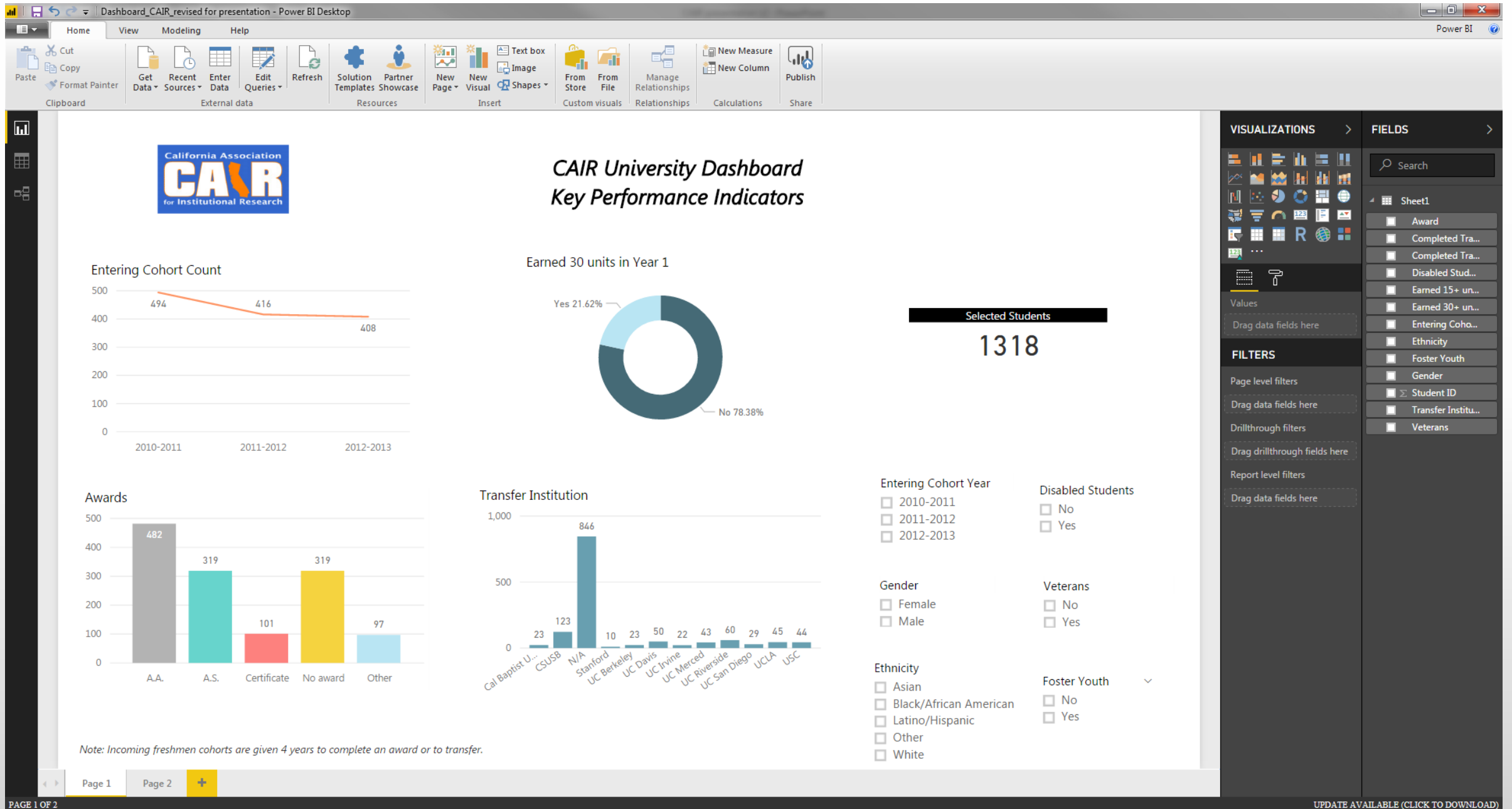
Moreno Valley College

2017 CAIR Conference

Learning objectives of workshop

- Learn how to upload data to Power BI.
- Learn how to develop a dashboard.
- Learn how to publish your Power BI dashboard to Power BI service.

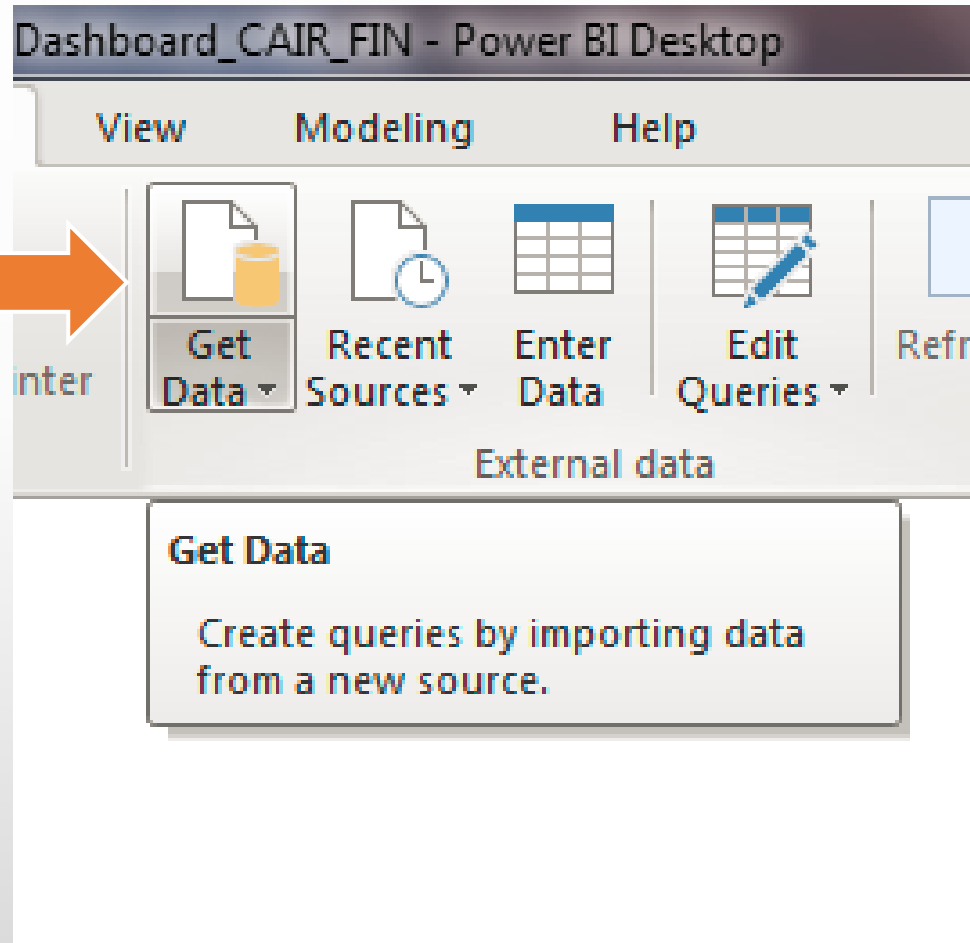
This is the dashboard we will be creating today.



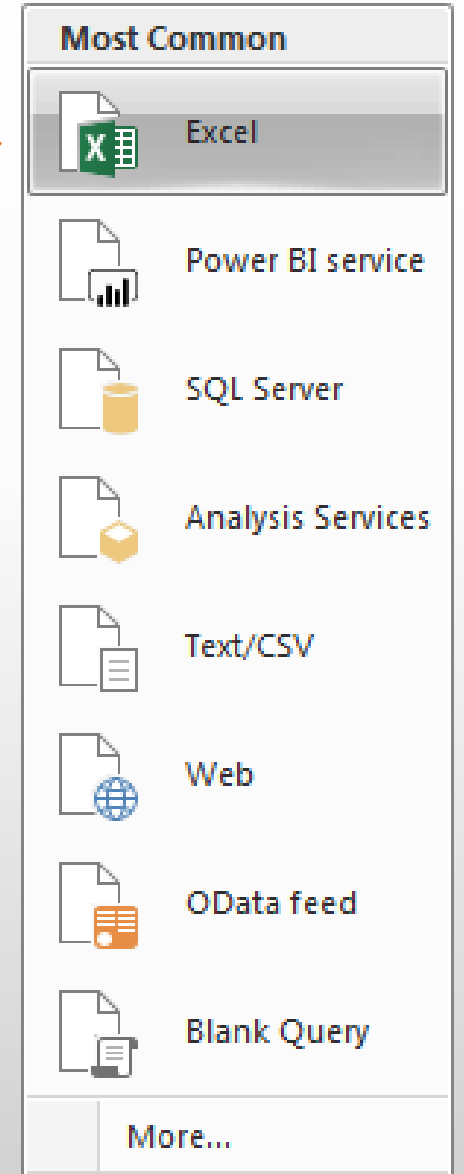
Let's get started!

Steps to upload the data file.

Step 1



Step 2



Select data file from saved location.

Click on sheet



Navigator

Display Options ▾

Data file for dashboard_CAIRfin.xlsx [1]

☒ Sheet1

Sheet1

Student ID	Entering Cohort Year	Ethnicity	Gender	Award
12357	2011-2012	Asian	Female	A.S.
12358	2011-2012	Asian	Female	A.S.
12359	2011-2012	Asian	Female	A.S.
12360	2011-2012	Asian	Female	A.S.
12361	2011-2012	Asian	Female	A.S.
12362	2011-2012	Asian	Female	A.S.
12363	2011-2012	Asian	Female	A.S.
12364	2011-2012	Asian	Female	A.S.
12365	2011-2012	Black/African American	Female	A.S.
12366	2011-2012	Black/African American	Female	A.S.
12367	2011-2012	Black/African American	Female	A.S.
12368	2011-2012	Black/African American	Female	A.S.
12369	2011-2012	Black/African American	Female	A.S.
12370	2011-2012	Black/African American	Female	A.S.
12371	2011-2012	Latino/Hispanic	Female	A.A.
12372	2011-2012	Latino/Hispanic	Female	A.A.
12373	2011-2012	Latino/Hispanic	Female	A.A.
12374	2011-2012	Latino/Hispanic	Female	A.A.
12375	2011-2012	Latino/Hispanic	Male	A.A.
12376	2011-2012	Latino/Hispanic	Male	A.A.
12377	2011-2012	Latino/Hispanic	Male	A.A.
12378	2011-2012	Latino/Hispanic	Male	A.A.
12379	2011-2012	Latino/Hispanic	Male	A.A.

Click on Load

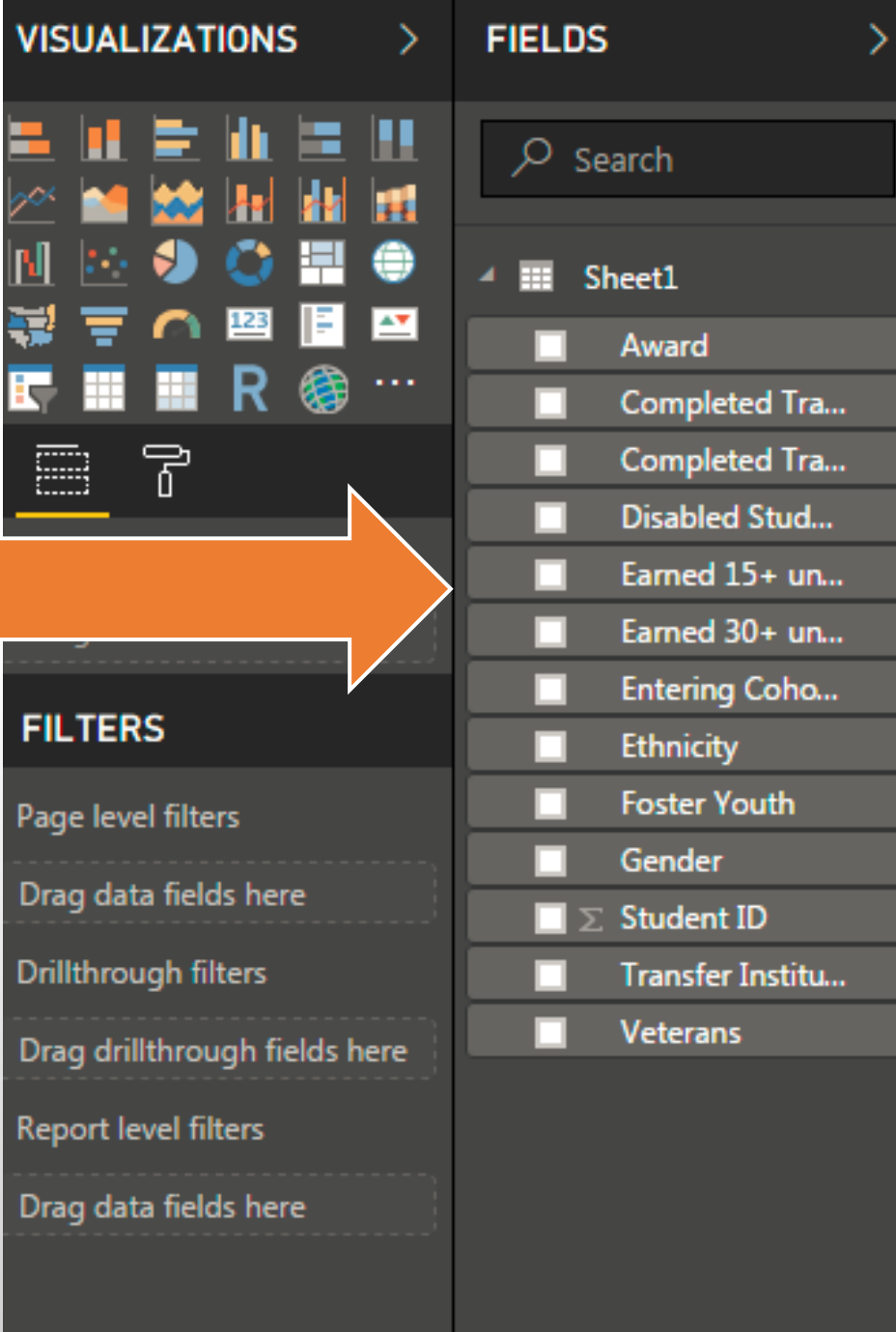


Load

Edit

Cancel

In FIELDS
section there
should now be
data fields.
Data upload
successful!



The screenshot displays a software interface for data visualization, divided into two main panels: VISUALIZATIONS and FIELDS. The VISUALIZATIONS panel on the left contains a grid of various chart and map icons, with a table icon highlighted at the bottom. The FIELDS panel on the right features a search bar and a list of data fields under the heading 'Sheet1'. A large orange arrow points from the text on the left towards the FIELDS section.

Field Name
Award
Completed Tra...
Completed Tra...
Disabled Stud...
Earned 15+ un...
Earned 30+ un...
Entering Coho...
Ethnicity
Foster Youth
Gender
Σ Student ID
Transfer Institu...
Veterans

FILTERS

Page level filters

Drag data fields here

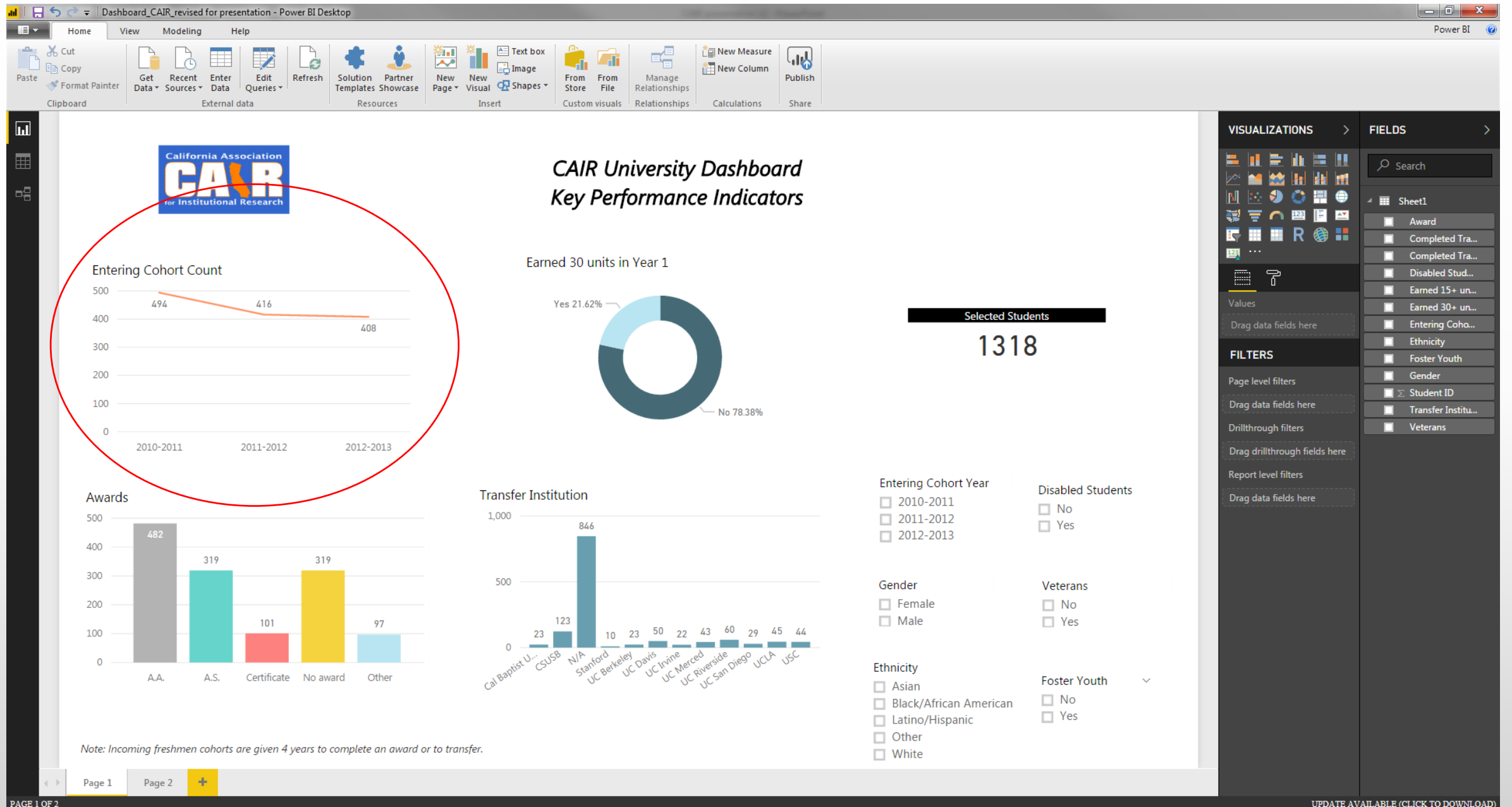
Drillthrough filters

Drag drillthrough fields here

Report level filters

Drag data fields here

#1: Line Chart



VISUALIZATIONS



Click on *Line Chart*

Dashboard_CAIR_FIN - Power BI Desktop

Visual tools

Sign in

HomeViewModelingHelpFormatData / Drill

Paste

CutCopyFormat Painter

Clipboard

Get DataRecent SourcesEnter DataEdit QueriesRefresh

External data

Solution TemplatesPartner Showcase

Resources

New PageNew VisualImageShapes

Insert

From StoreFrom File

Custom visuals

Manage Relationships


Relationships

New MeasureNew Column

Calculations


Publish

Share



You will now see this on your canvas.

VISUALIZATIONS



Axis

Drag data fields here

Legend

Drag data fields here

Values

Drag data fields here

Tooltips

Drag data fields here

FILTERS

Visual level filters

Drag data fields here

Page level filters

Drag data fields here

Drillthrough filters

Drag drillthrough fields here

Report level filters

FIELDS

Search

Sheet1

Award

Completed Tra...

Completed Tra...

Disabled Stud...

Earned 15+ un...

Earned 30+ un...

Entering Coho...

Ethnicity

Foster Youth

Gender

Student ID

Transfer Institu...

Veterans

Page 1

+

PAGE 1 OF 1

In the FIELDS section,
select Entering Cohort
and StudentID.



FIELDS >

Sheet1

☐

 Award

☐

 Completed Tra...

☐

 Completed Tra...

☐

 Disabled Stud...

☐

 Earned 15+ un...

☐

 Earned 30+ un...

☒

 Entering Coho...

☐

 Ethnicity

☐

 Foster Youth

☐

 Gender

☒ Σ

 Student ID

☐

 Transfer Institu...

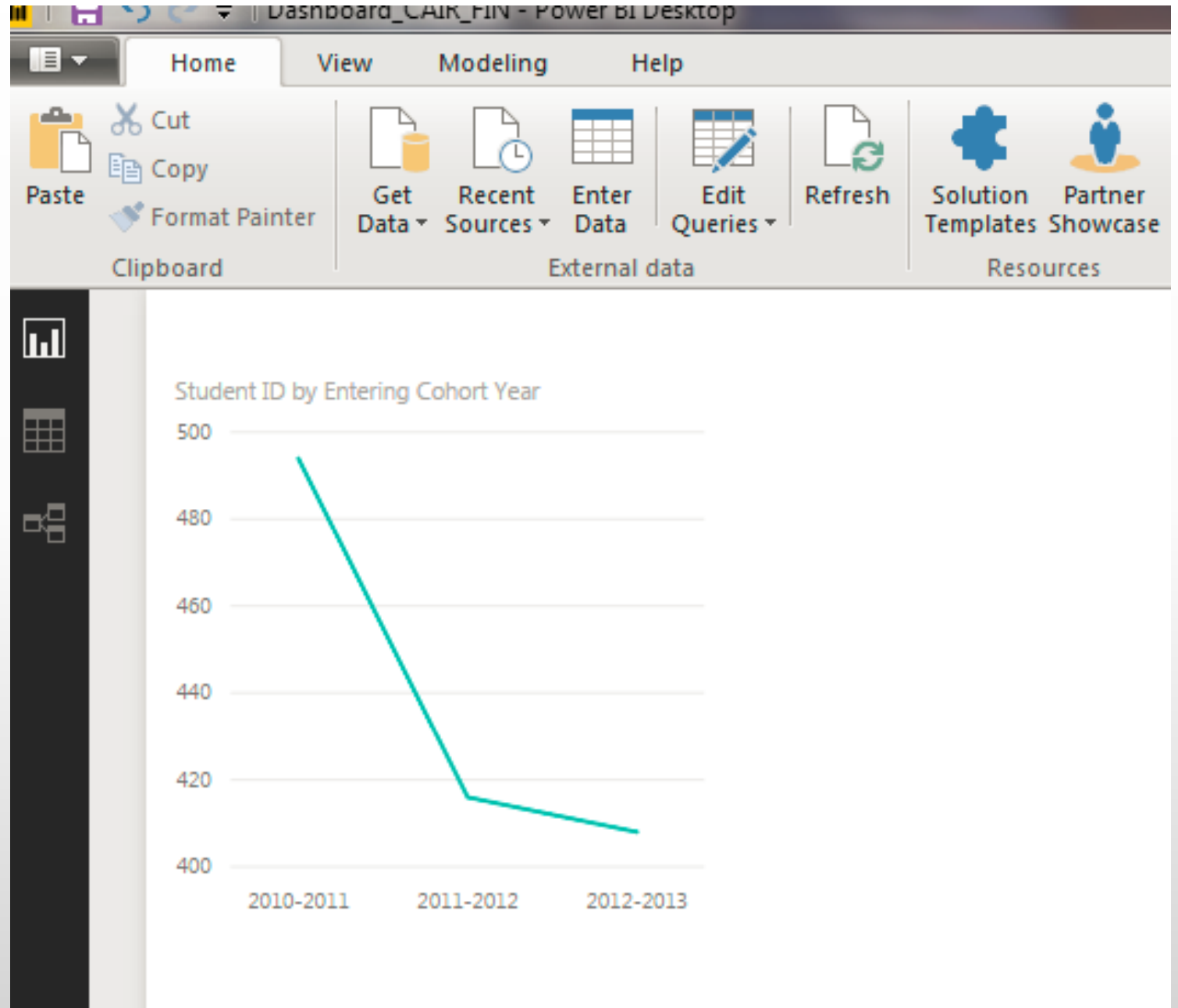
☐

 Veterans

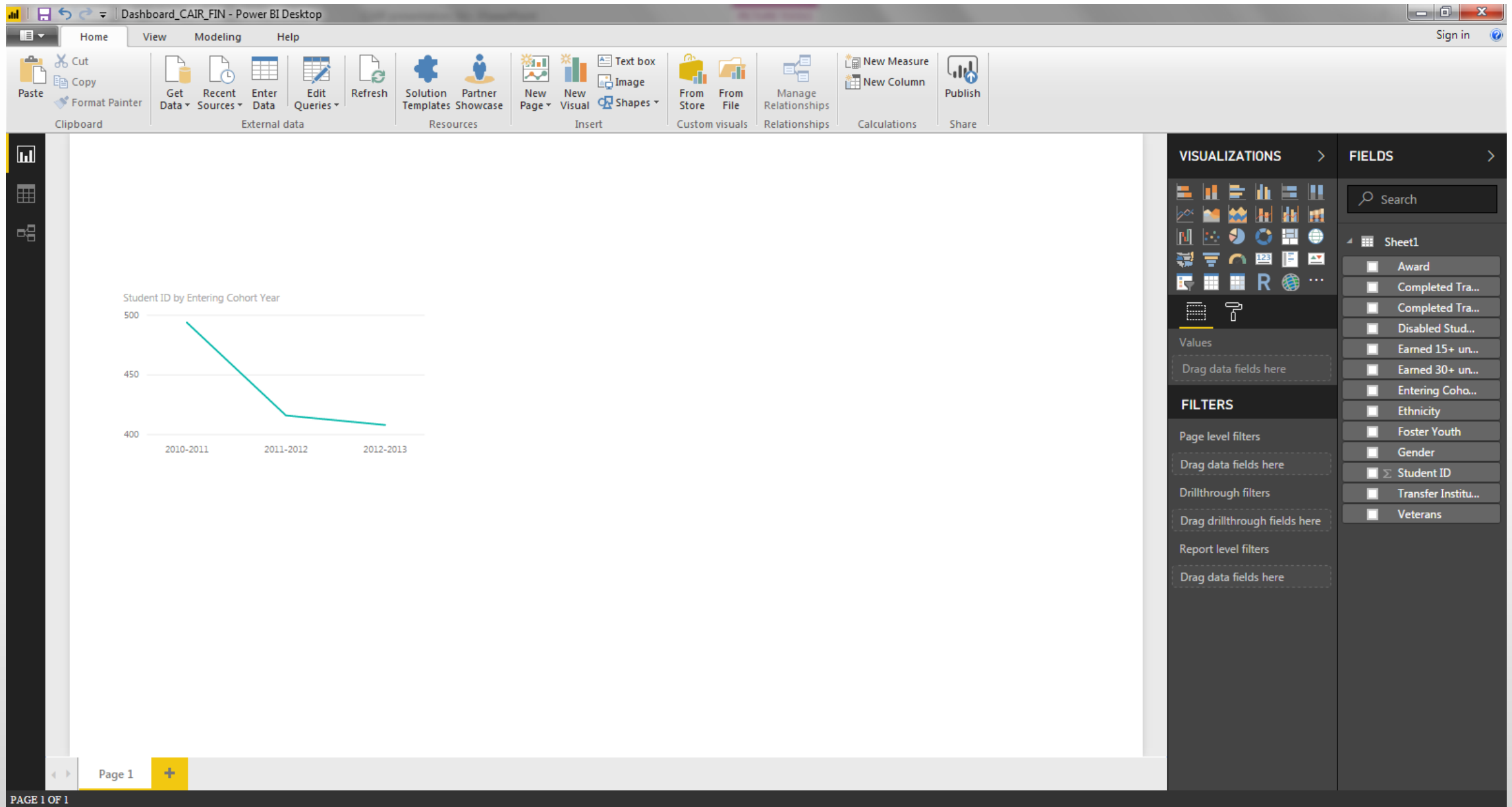
You should now see this line chart on your canvas.

Adjust size and location on canvas.*

* Do this for remaining items you will add to canvas.



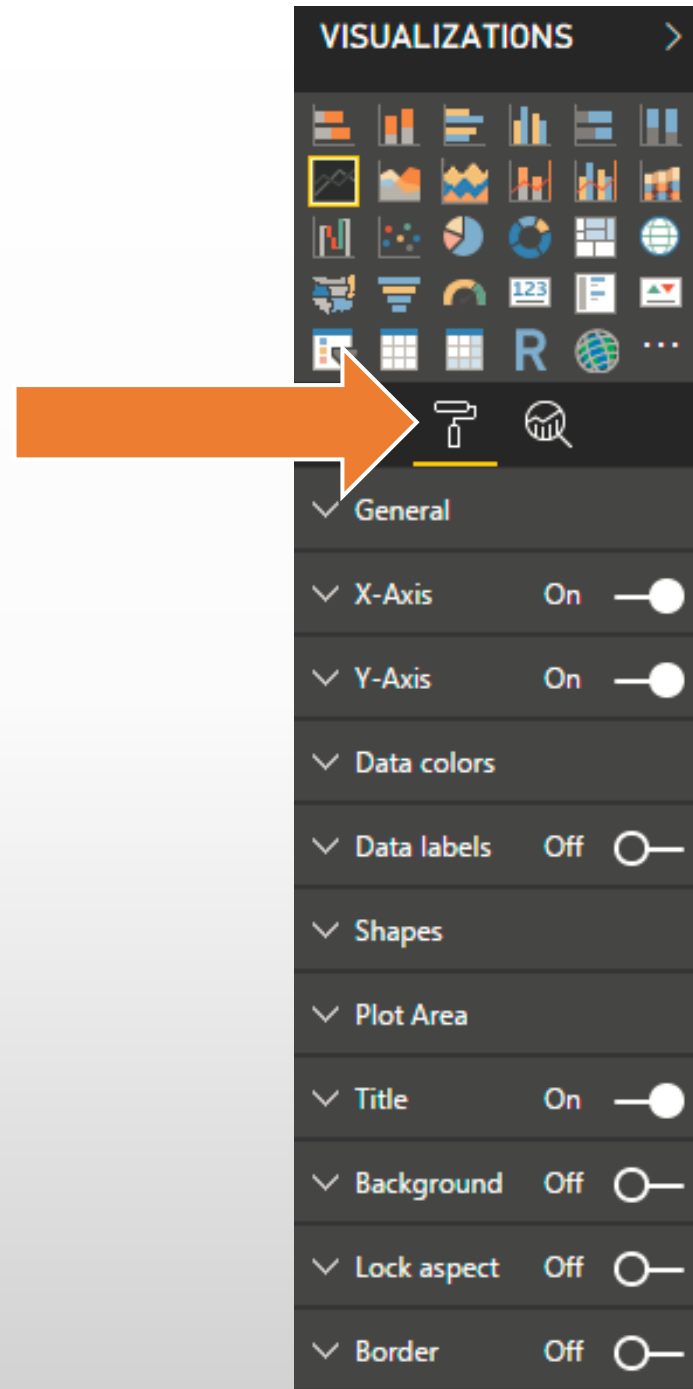
Line chart should look like this.



Click on line chart so you
see this border.



Under *Visualizations* section, click on the *Paint Roller*.



Click on Y-Axis:

- Since our line chart data ranges from 0 to 500, we are going to put 0 in *Start* and 500 *End*.

A screenshot of a dark-themed configuration panel for a chart. At the top, there are three icons: a grid, a line chart, and a magnifying glass. Below the icons are three sections: 'General' with a downward arrow, 'X-Axis' with a downward arrow, and 'Y-Axis' with an upward arrow. The 'Y-Axis' section is expanded, showing 'On' status with a toggle switch. Below this, there are fields for 'Position' (set to 'Left'), 'Scale type' (set to 'Linear'), 'Start' (set to '0'), 'End' (set to '500'), and 'Color' (with a color picker icon).

This step is important since it keeps the Y Axis of the chart from changing when criteria is selected on the dashboard.

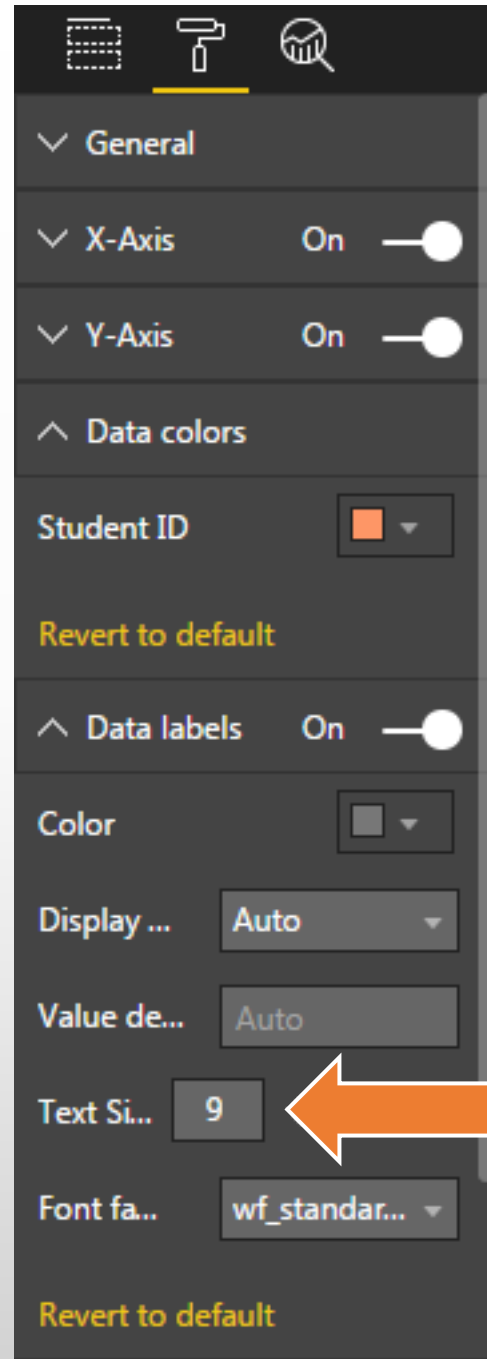
Data colors:

- Pick a color for line in chart.



Data labels:

Turn On

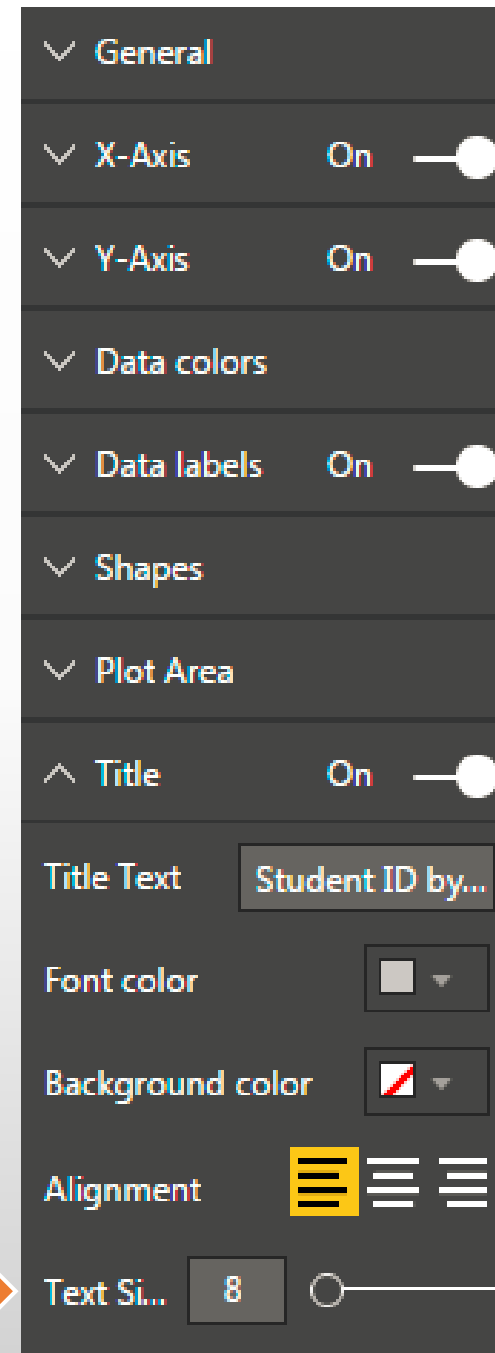


Under *Data Labels* you can also change color and size of text for the data labels.



Title Text: Change to
*Entering Cohort
Count.*

Text Size: You can
change text size here
for title. I select 11 for
chart titles.

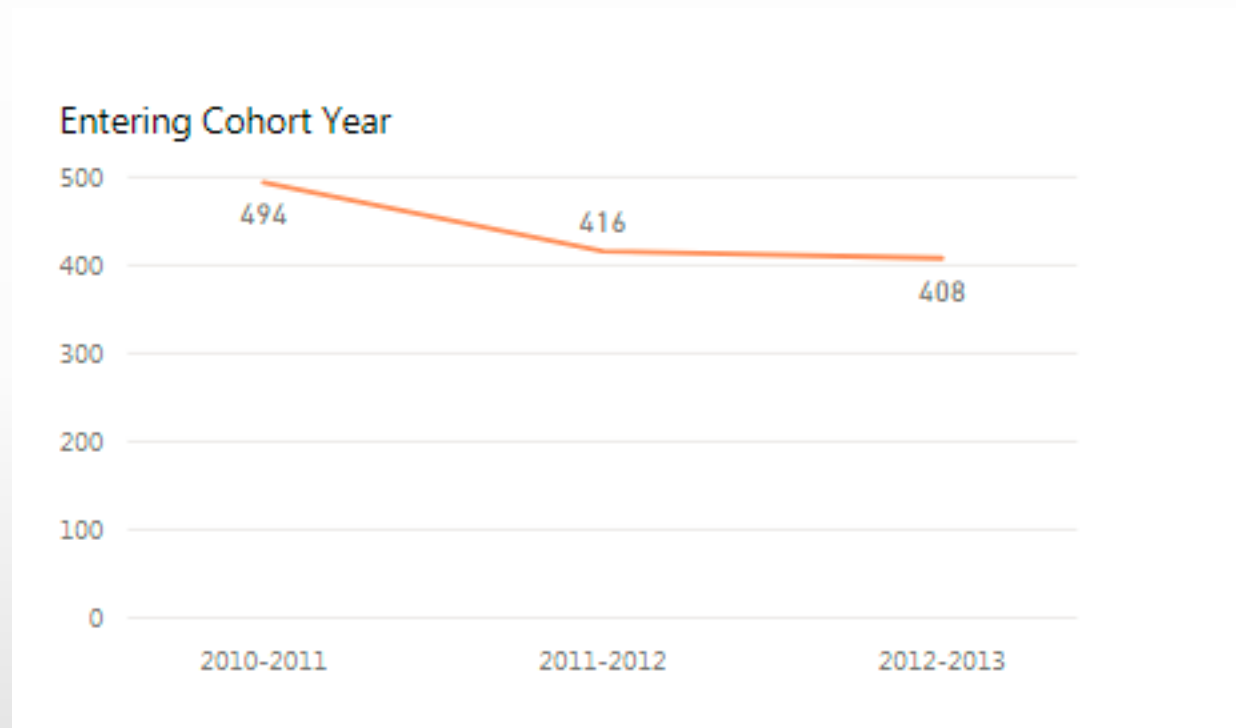


A vertical configuration menu for a chart. It includes sections for General, X-Axis, Y-Axis, Data colors, Data labels, Shapes, Plot Area, and Title. The Title section is expanded, showing options for Title Text, Font color, Background color, Alignment, and Text Size. Three orange arrows point from the text blocks on the left to the Title section: one to the Title section header, one to the Title Text field, and one to the Text Size field.

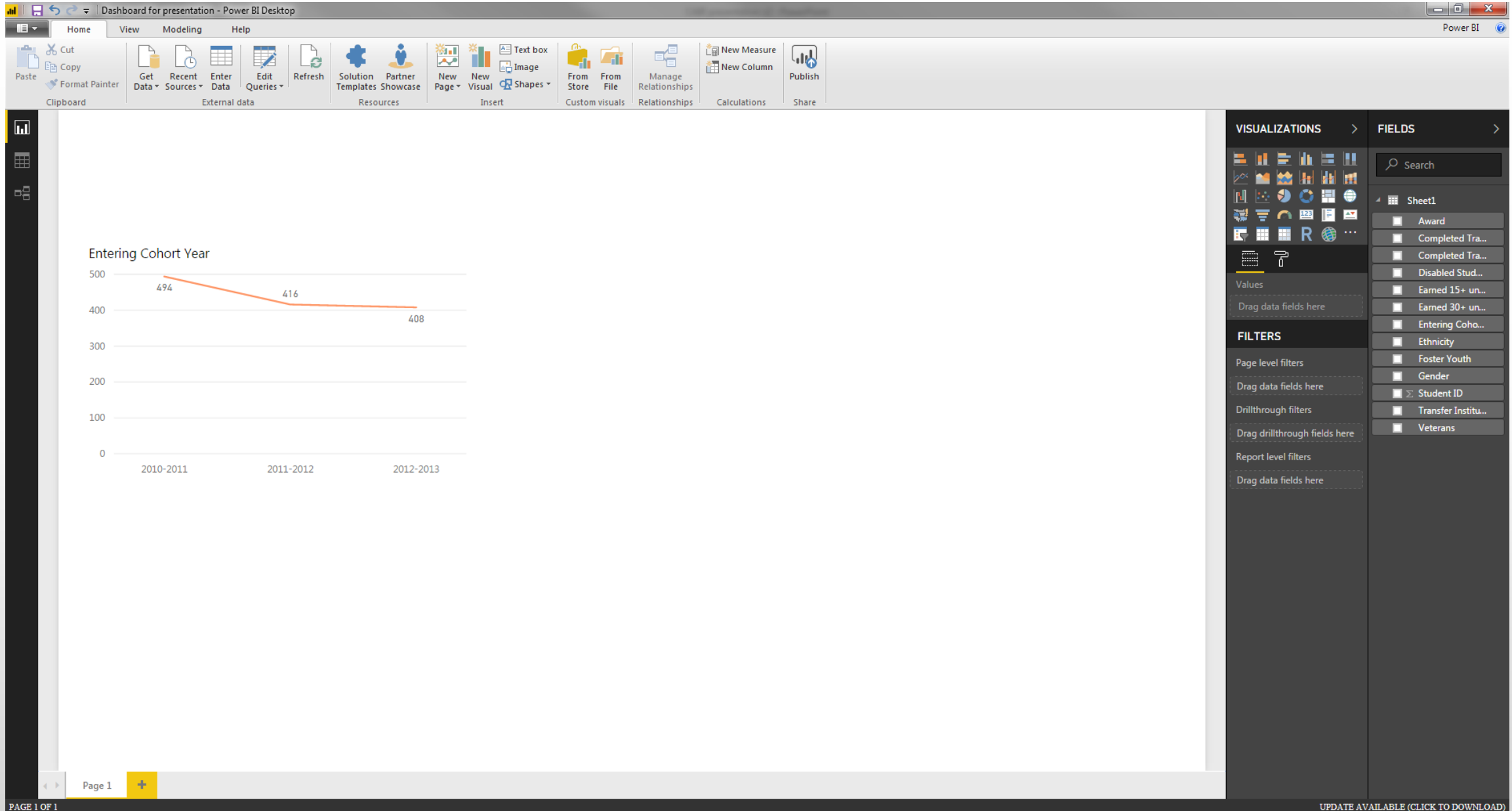
- General
- X-Axis On
- Y-Axis On
- Data colors
- Data labels On
- Shapes
- Plot Area
- Title On
 - Title Text Student ID by...
 - Font color
 - Background color
 - Alignment
 - Text Si.. 8

Font Color:
You can
change color
of text for the
title.

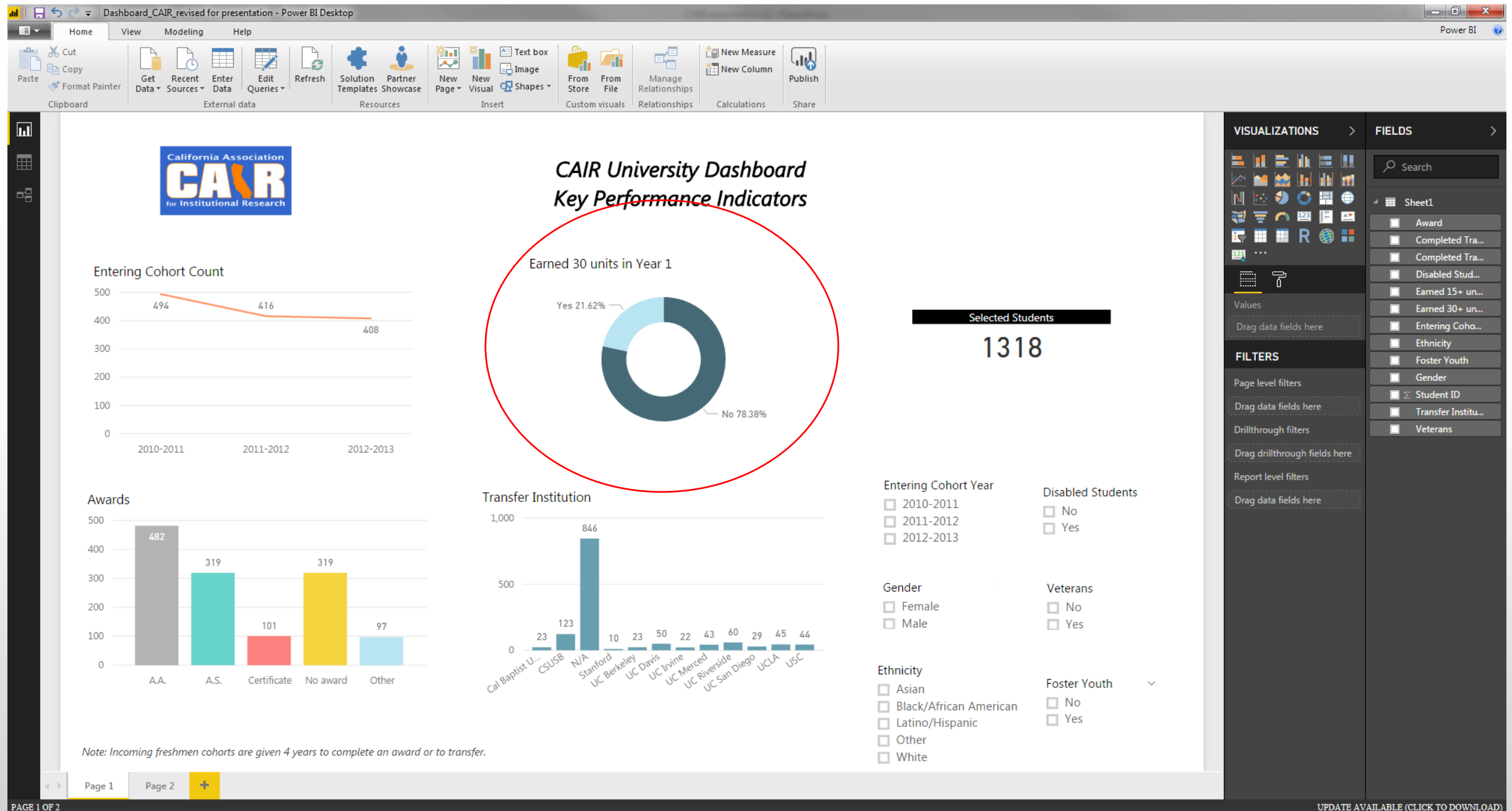
Your line chart should look like this.



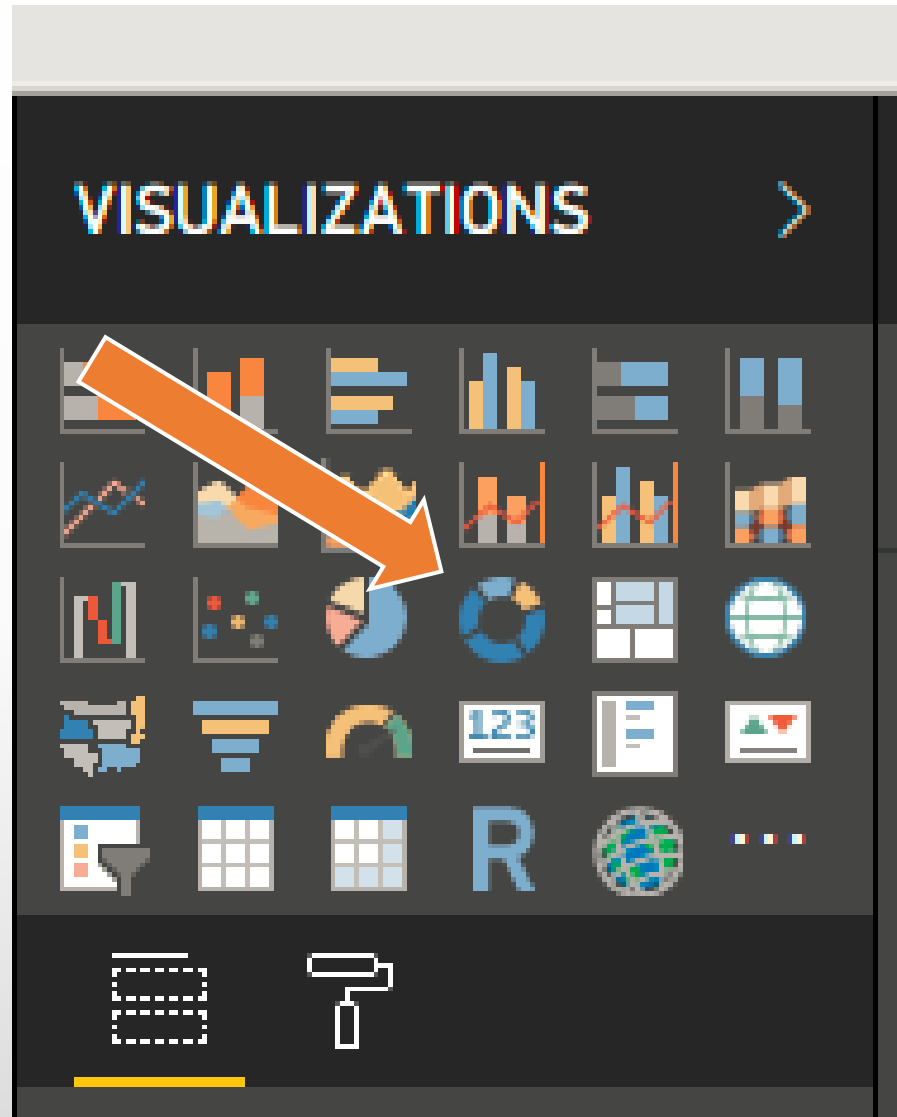
The line chart and canvas should look like this now.



#2: Donut Chart



Click on
Donut Chart



In the FIELDS section,
select Earned 30+ units
in Year 1 and StudentID.



FIELDS

Search

Sheet1

☐

Award

☐

Completed Tra...

☐

Completed Tra...

☐

Disabled Stud...

☐

Earned 15+ un...

☒

Earned 30+ un...

☐

Entering Coho...

☐

Ethnicity

☐

Foster Youth

☐

Gender

☒

Σ Student ID

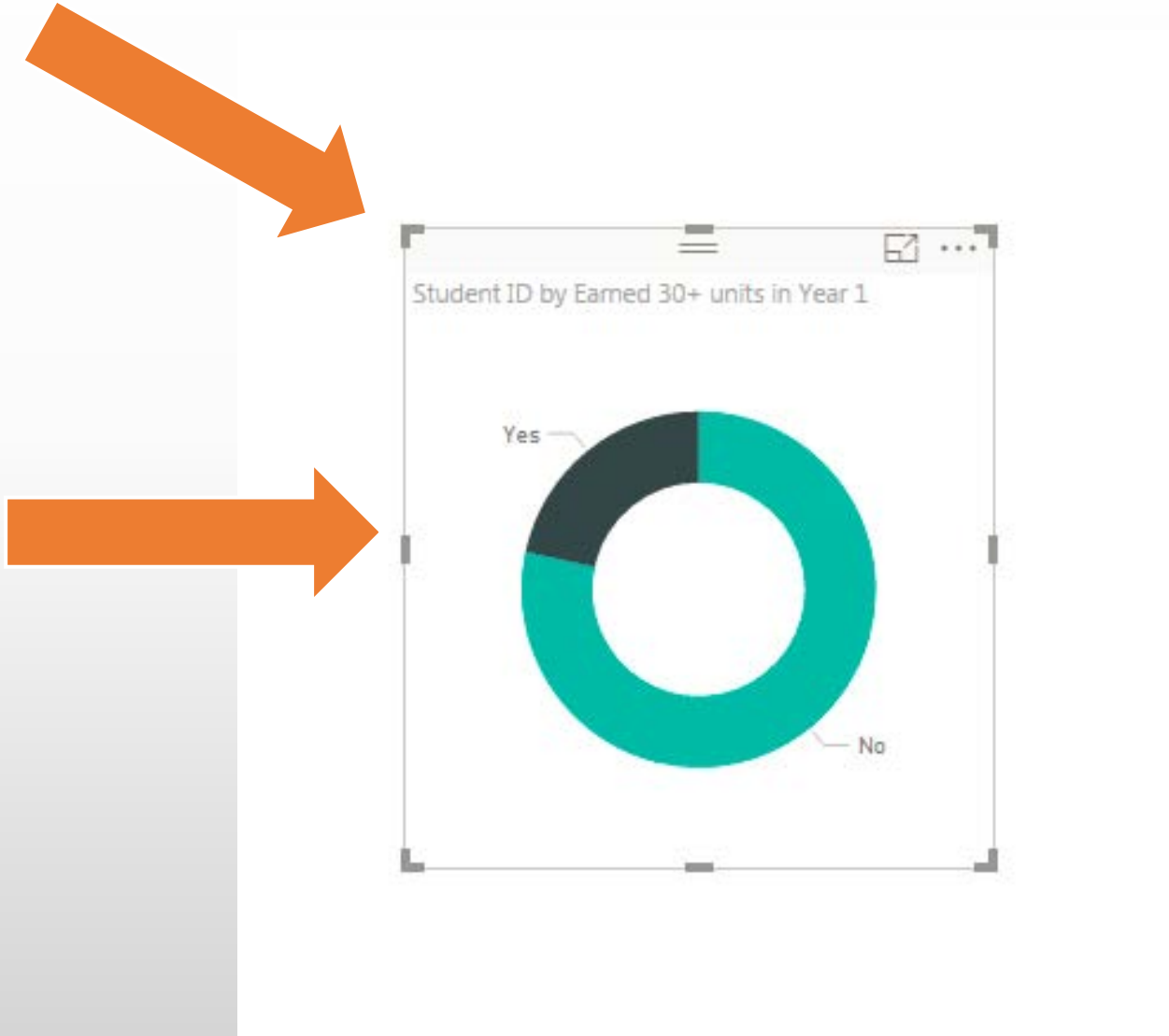
☐

Transfer Institu...

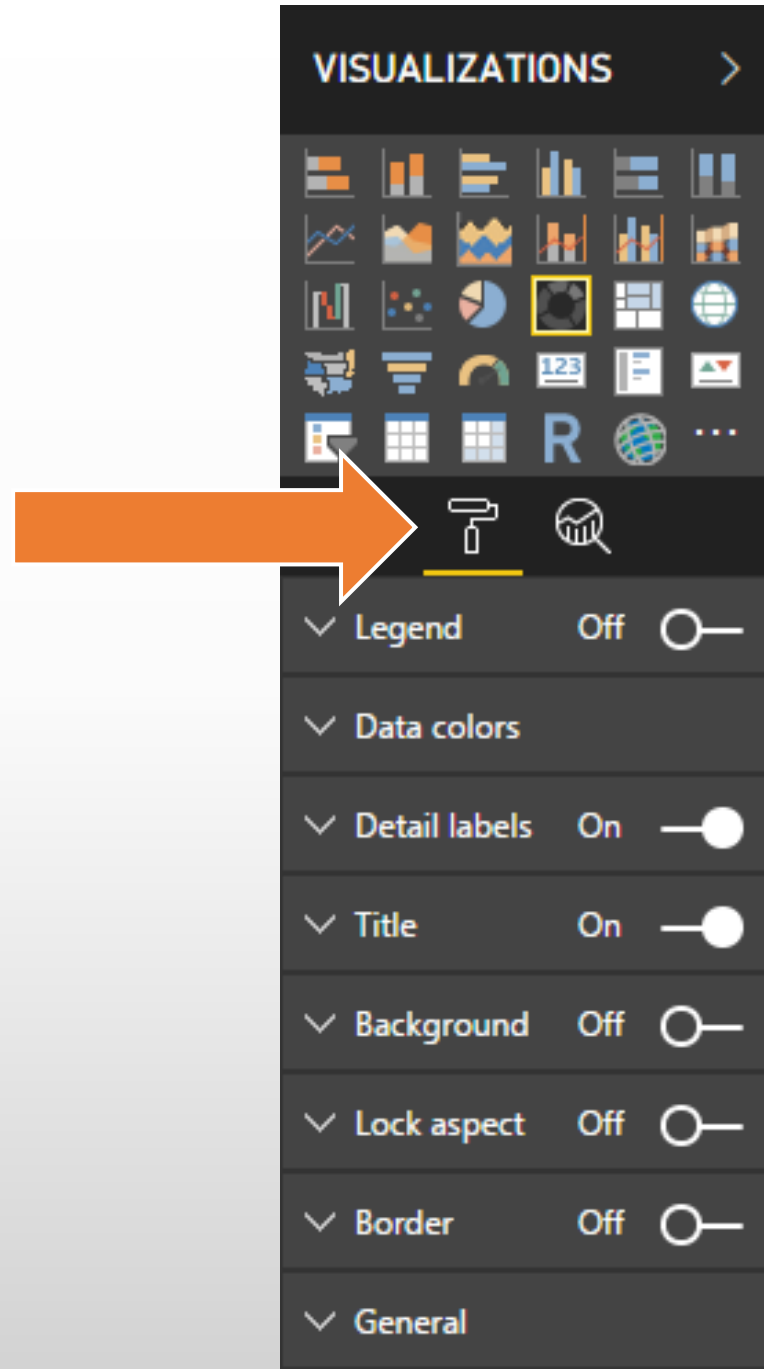
☐

Veterans

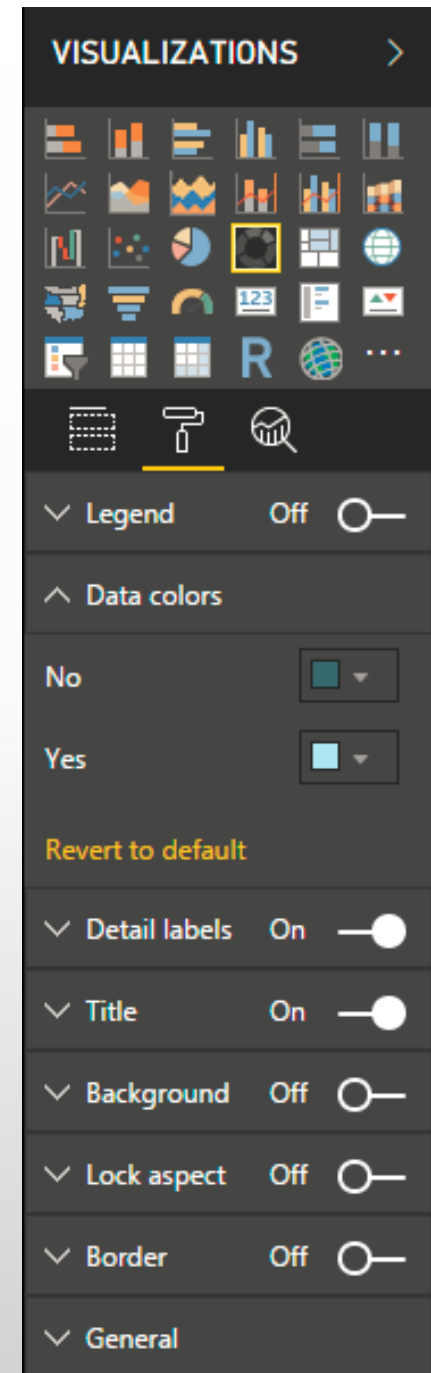
Click on Donut Chart so
you see this border.



Under Visualizations section, click on the *Paint Roller*.

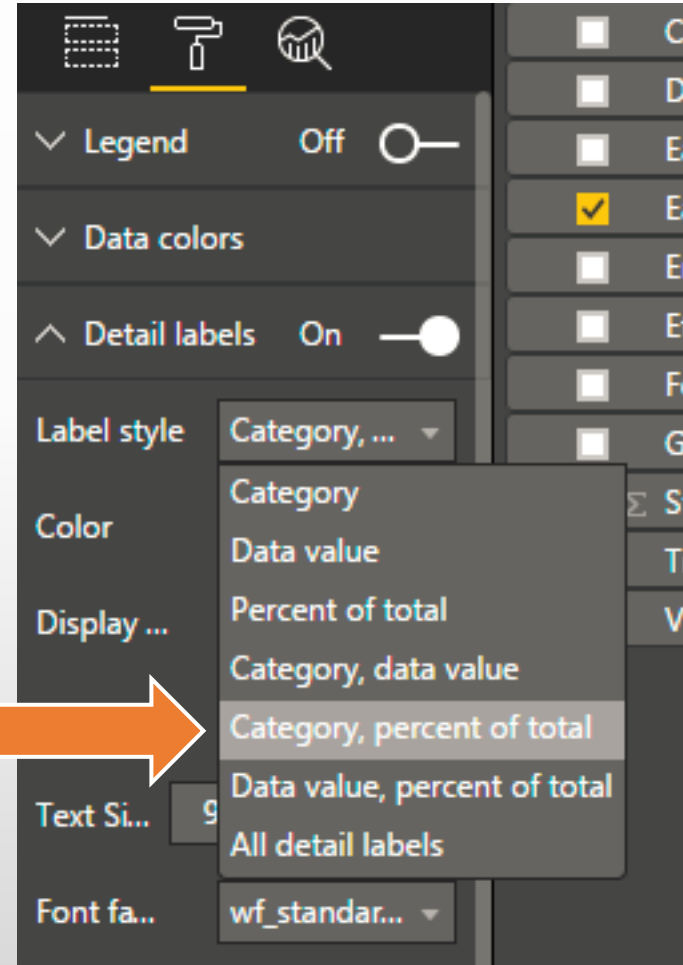


Data colors:
- Pick two colors.

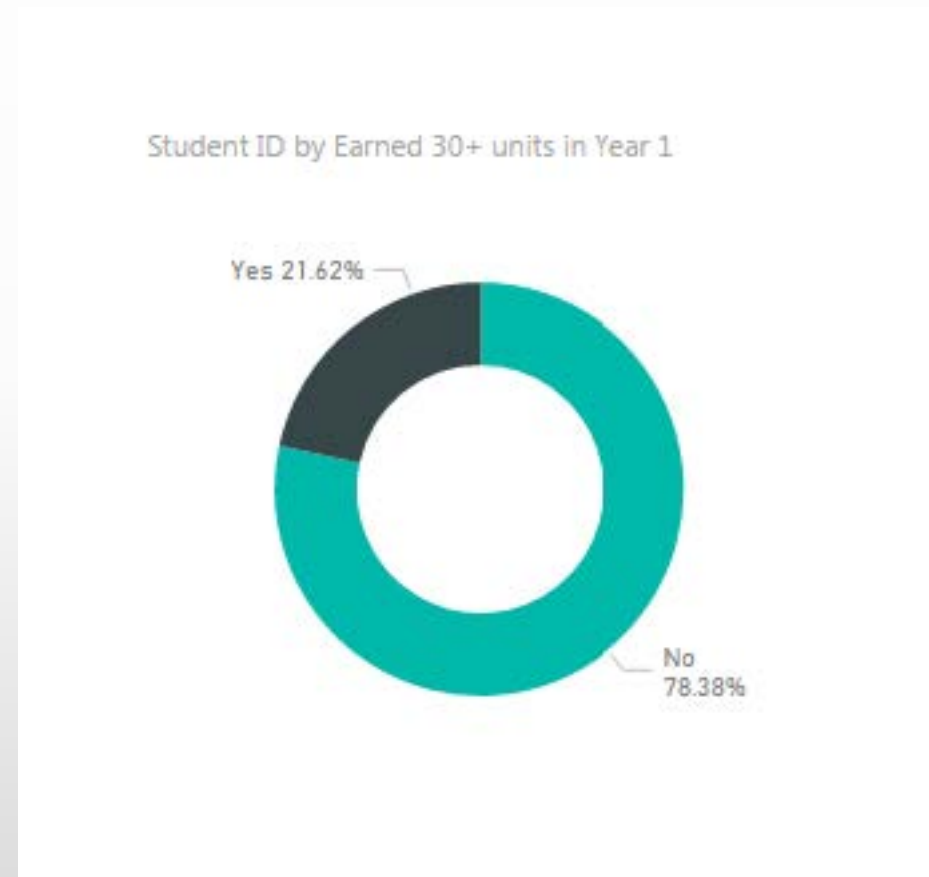


Under Label Style, select
Category, Percent of Total.

This option will provide
the percent totals for Yes
and No responses.



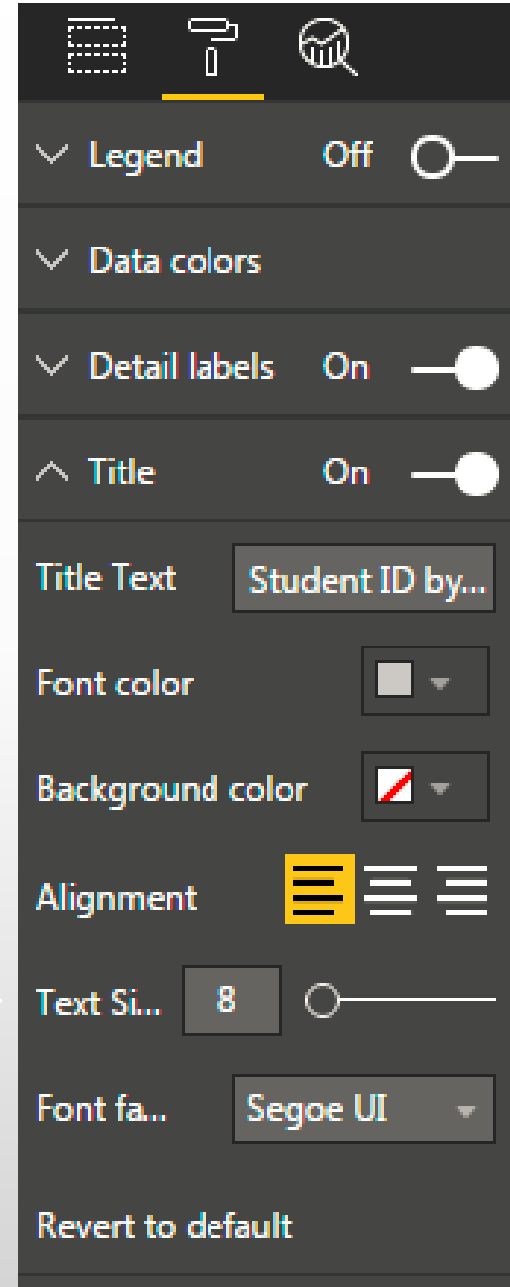
Your Donut Chart should look like this with new labels.



Title Text: Change to
*Earned 30 units in
Year 1.*

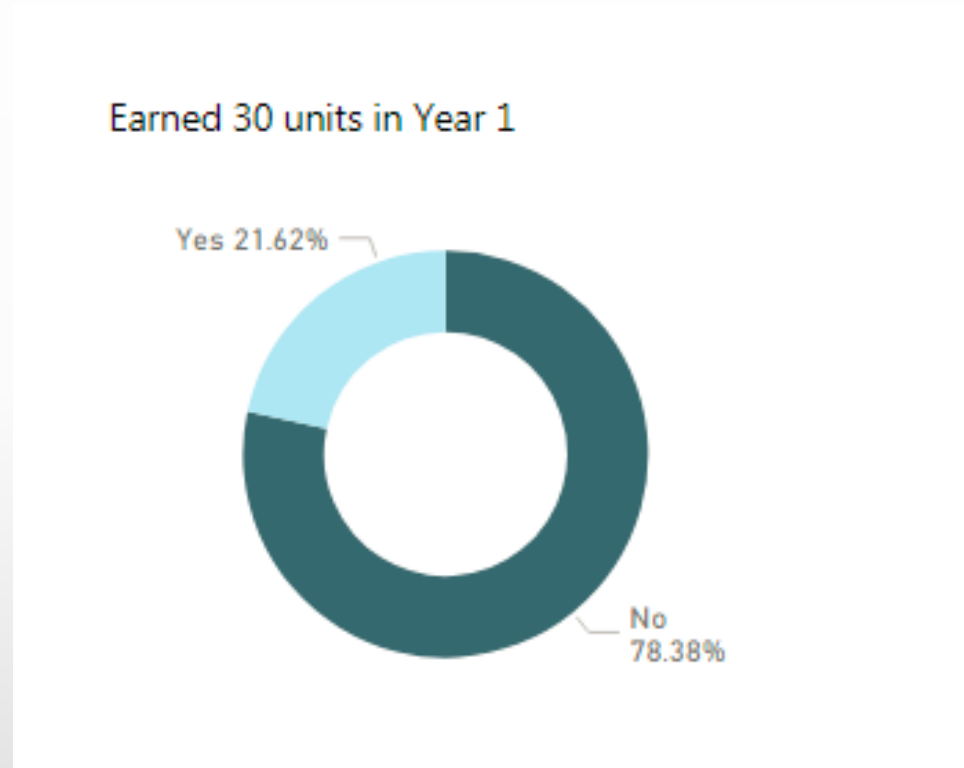


Text Size: You can
change text size here
for title. I select 11 for
chart titles.

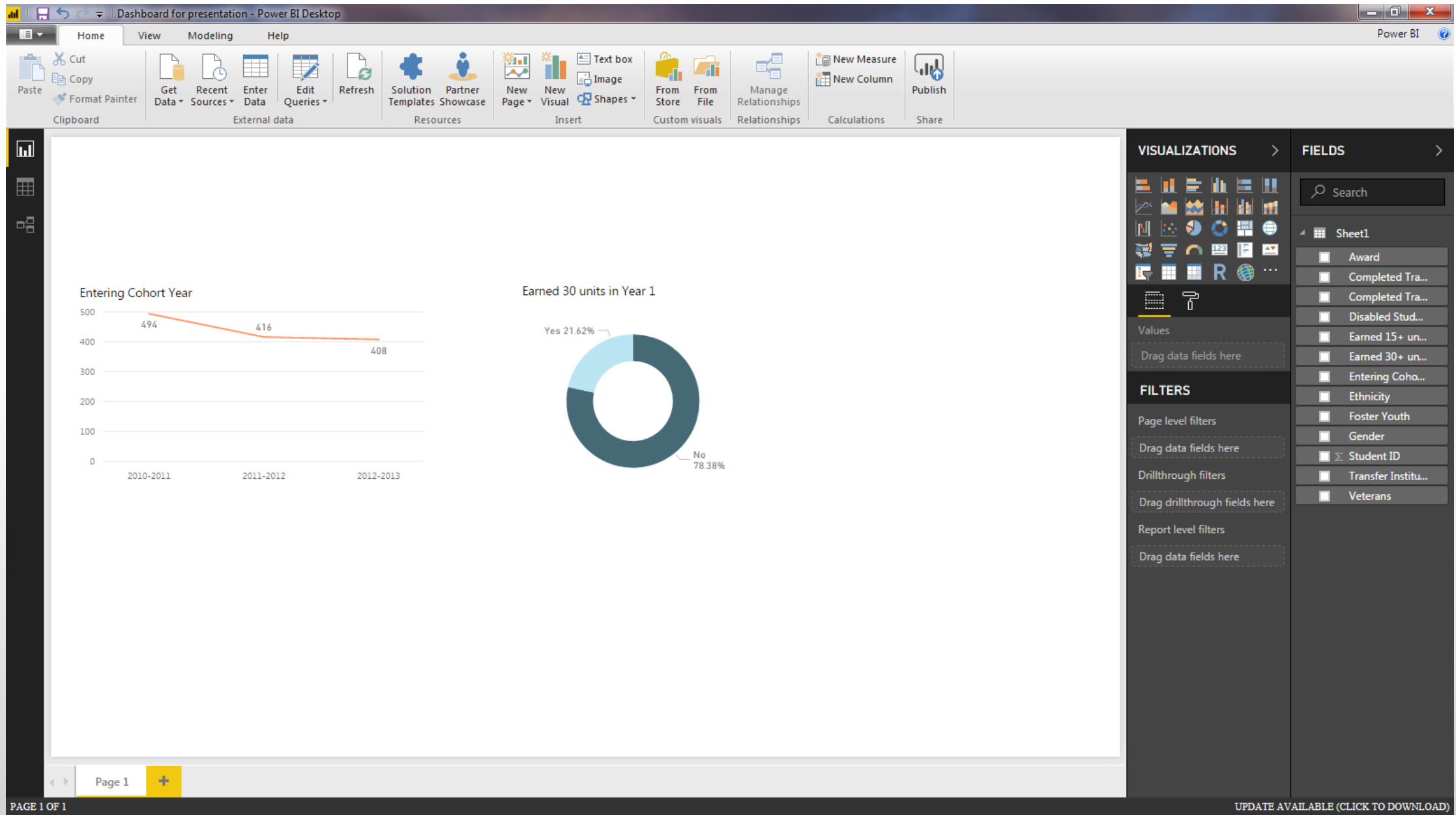


Font Color:
You can
change font
color of the
title.

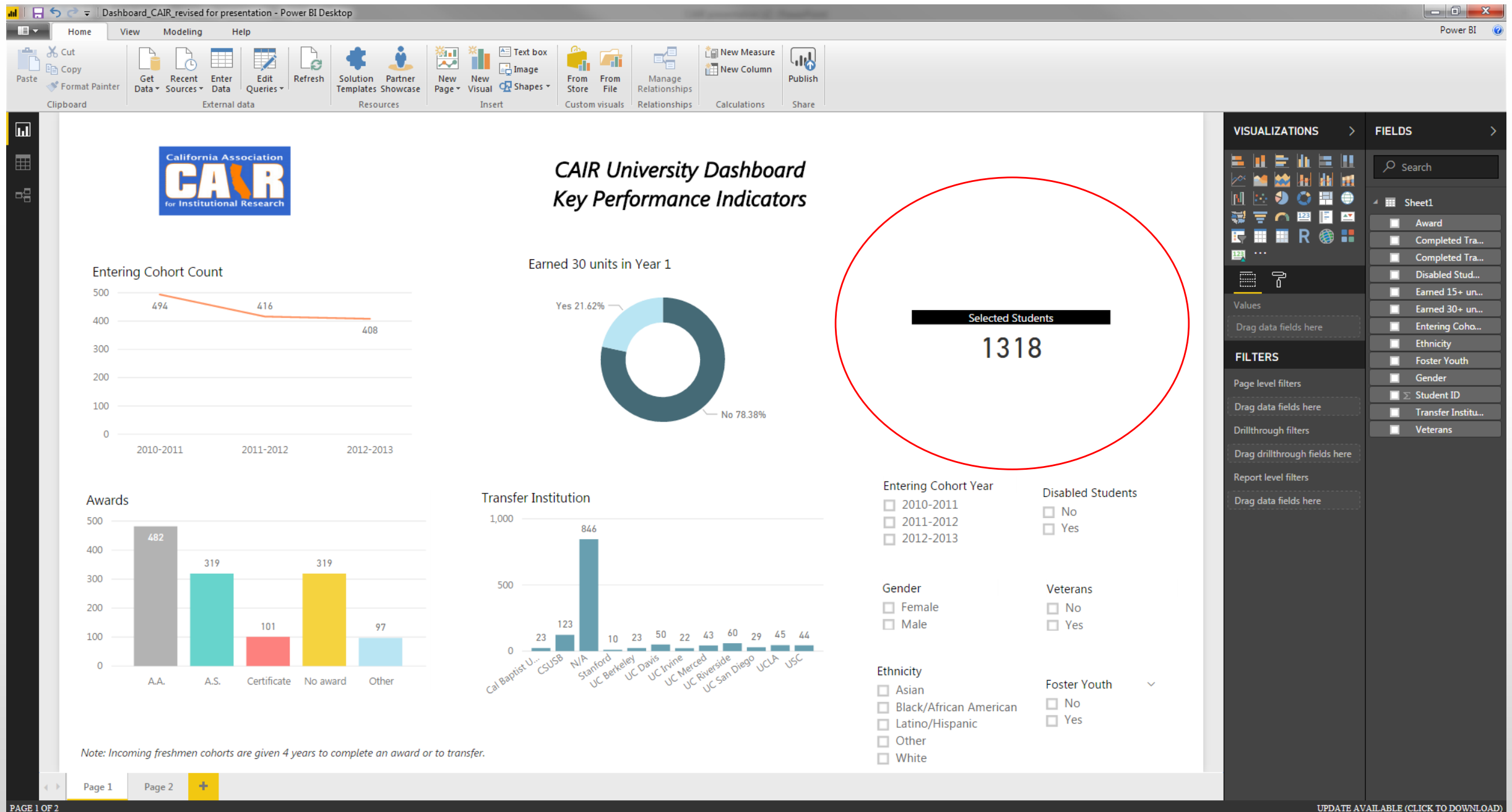
Your donut chart should look like this.



The donut chart and canvas should look like this now.



#3: Card



The value of using a card in your dashboard is its ability to inform the user at all times how many students have been selected according to the different criteria selected in the dashboard .

In the FIELDS section,
click StudentID.



FIELDS >

Sheet1

☐

 Award

☐

 Completed Tra...

☐

 Completed Tra...

☐

 Disabled Stud...

☐

 Earned 15+ un...

☐

 Earned 30+ un...

☐

 Entering Coho...

☐

 Ethnicity

☐

 Foster Youth

☐

 Gender

☒ Σ

 Student ID

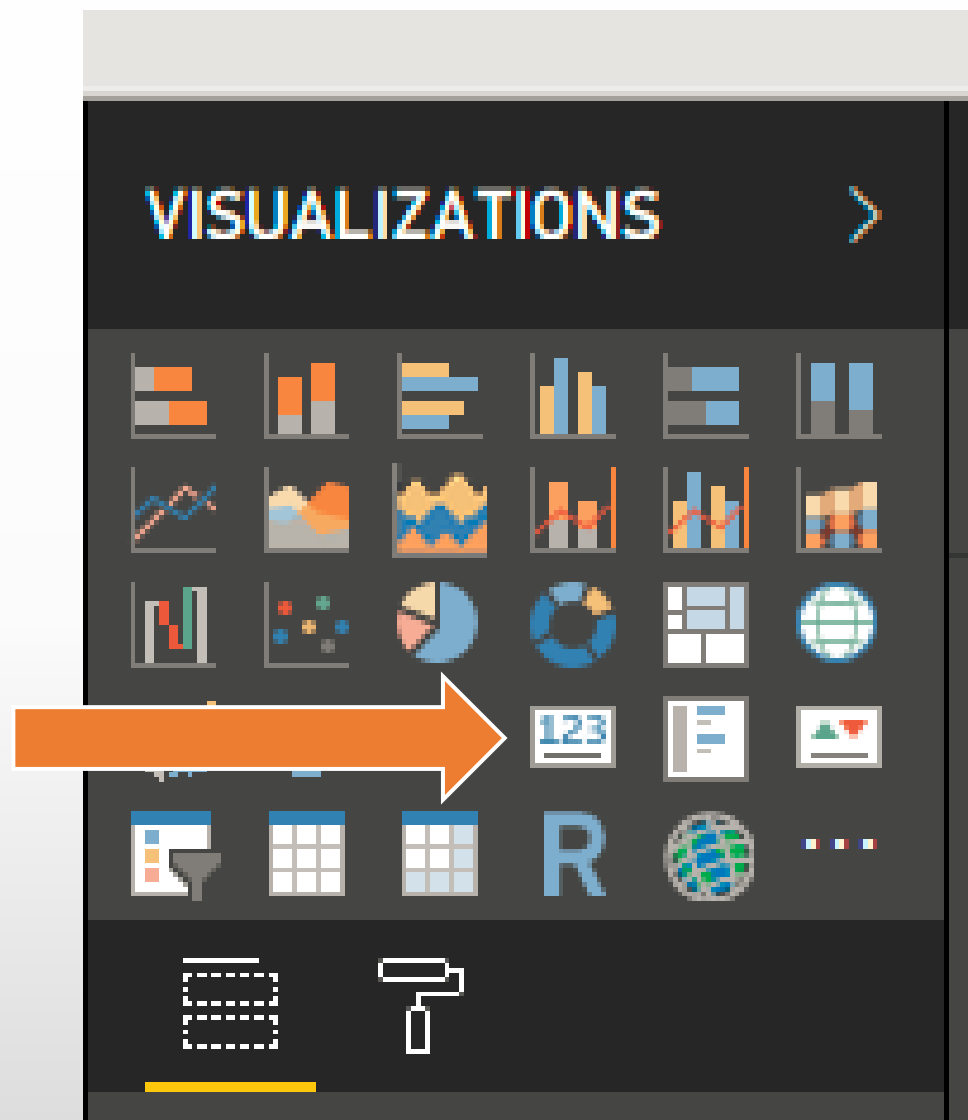
☐

 Transfer Institu...

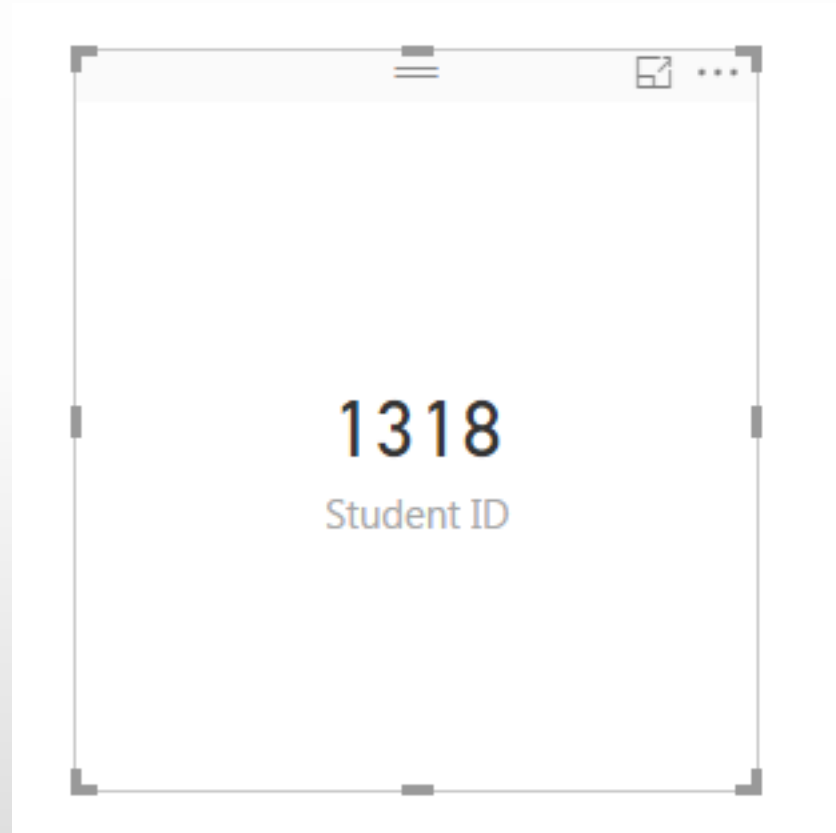
☐

 Veterans

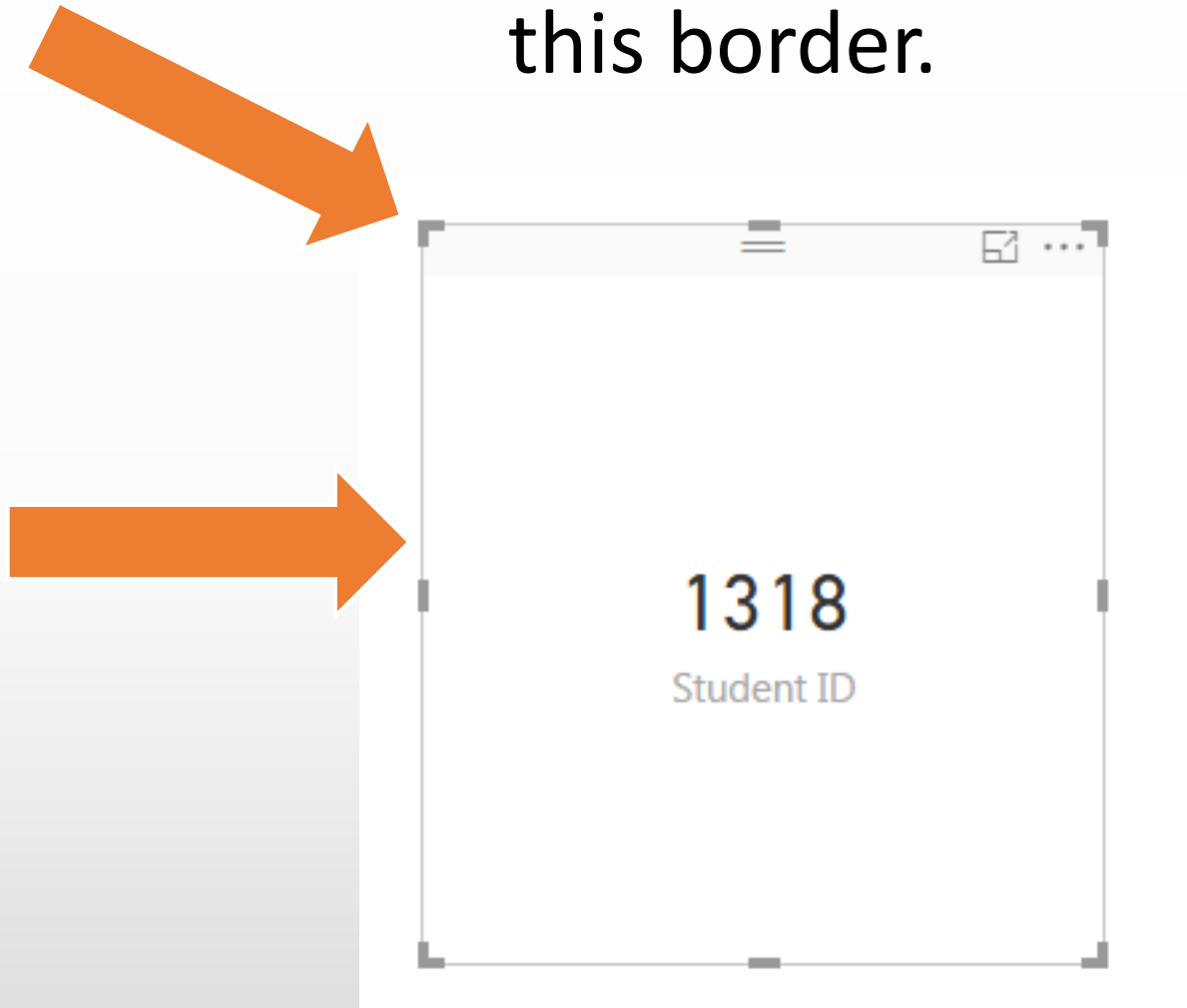
Click on *Card*



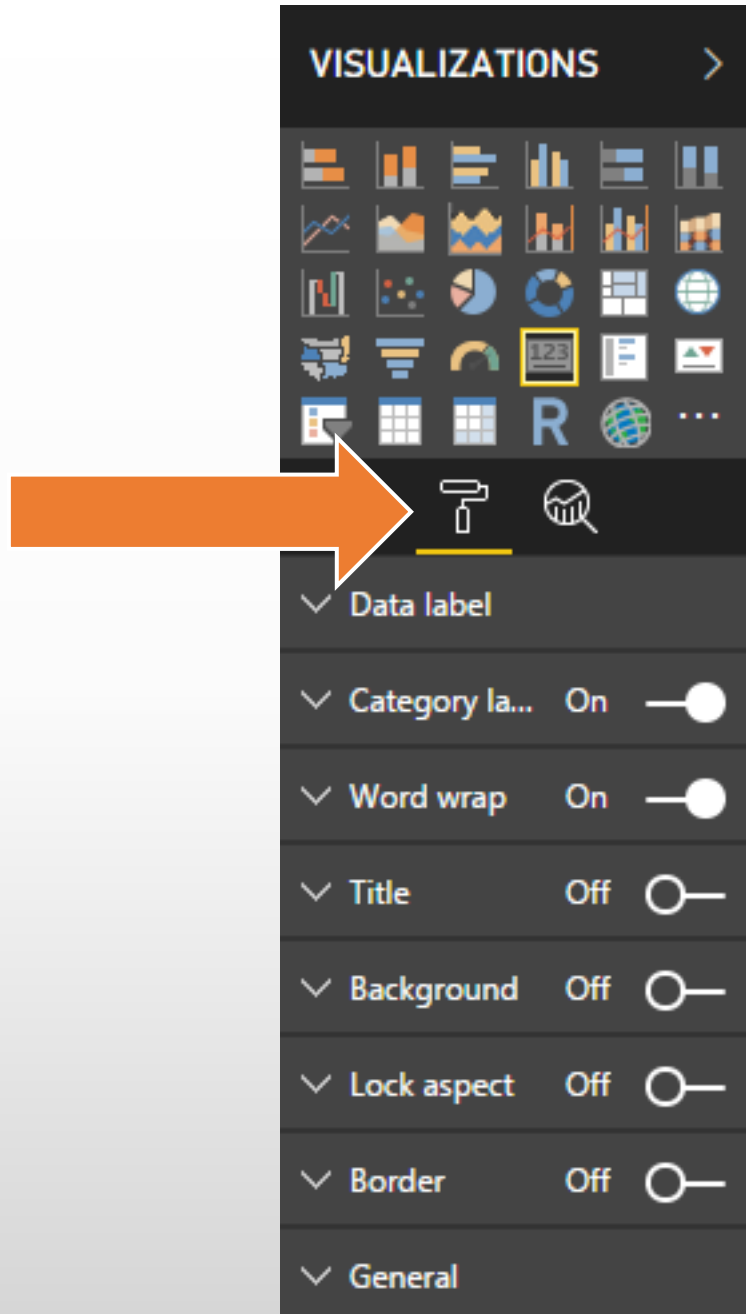
Your Card should look like this.



Click on Card so you see
this border.



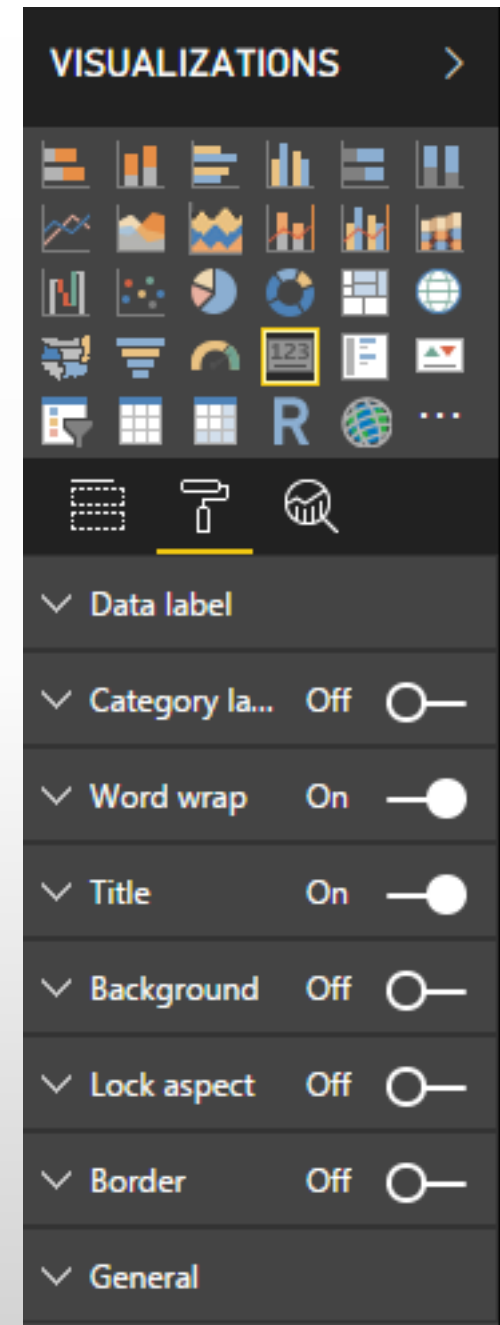
Under Visualizations section, click on the *Paint Roller*.



Turn *Category Label* off



Turn *Title* on

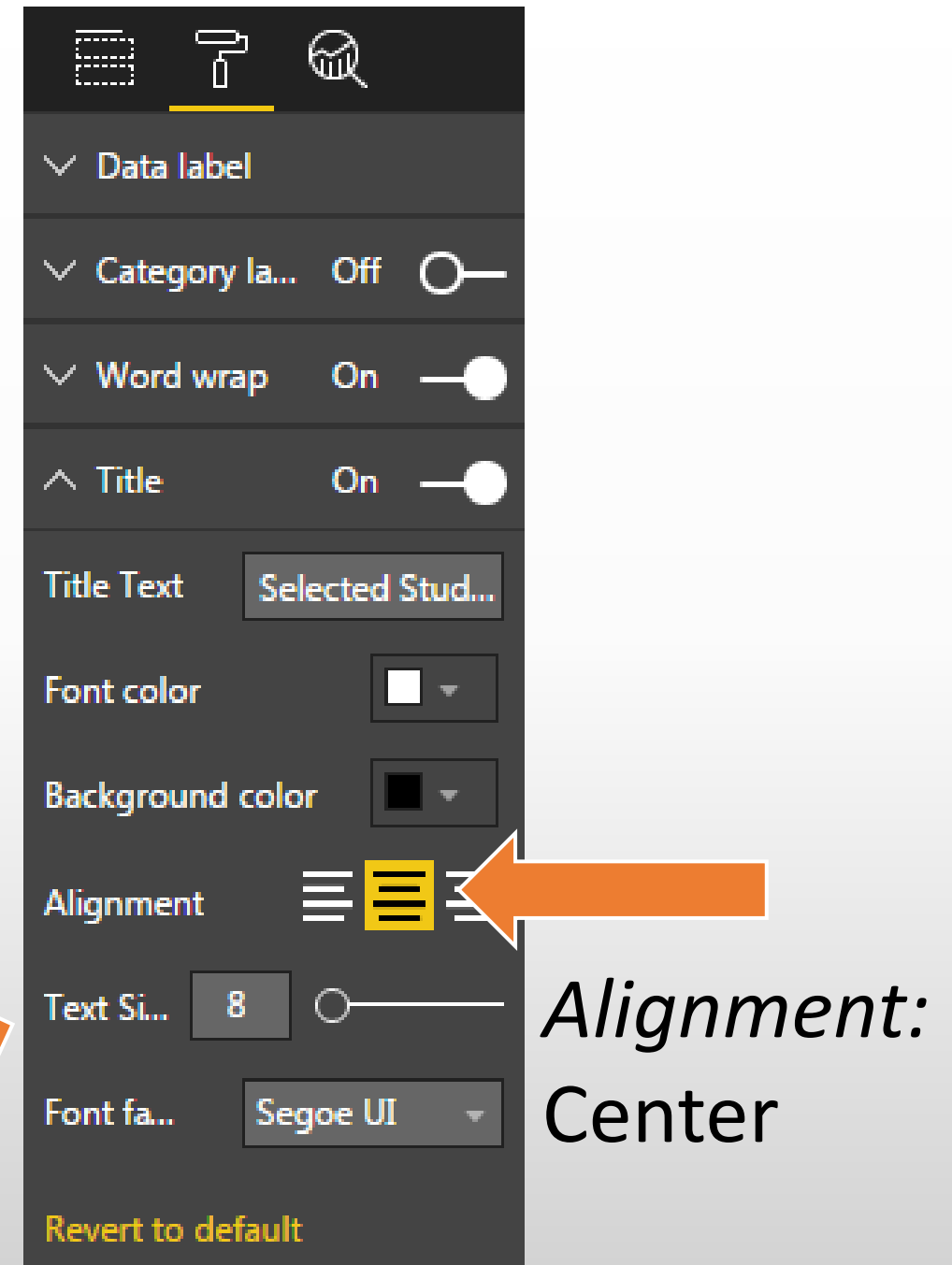


Title Text: Change to
Selected Students.

Font Color: White

Background Color: Black

Text Size: You can change text size here for
title.



The image shows the 'Title' formatting pane in Power BI. It includes a top bar with icons for grid, pencil, and zoom. The pane has several expandable sections: 'Data label', 'Category la...', 'Word wrap', and 'Title'. The 'Title' section is expanded, showing settings for 'Title Text' (set to 'Selected Stud...'), 'Font color' (set to white), 'Background color' (set to black), 'Alignment' (set to center), 'Text Si...' (set to 8), and 'Font fa...' (set to Segoe UI). A 'Revert to default' link is at the bottom. Four orange arrows point from the text instructions on the left to the corresponding settings in the pane: one to 'Title Text', one to 'Font color', one to 'Background color', and one to 'Alignment'. The 'Alignment' setting is highlighted with a yellow background, and a large orange arrow points to it from the right with the text 'Alignment: Center'.

▼ Data label

▼ Category la... Off ☐

▼ Word wrap On ☒

^ Title On ☒

Title Text Selected Stud...

Font color

Background color

Alignment ☒

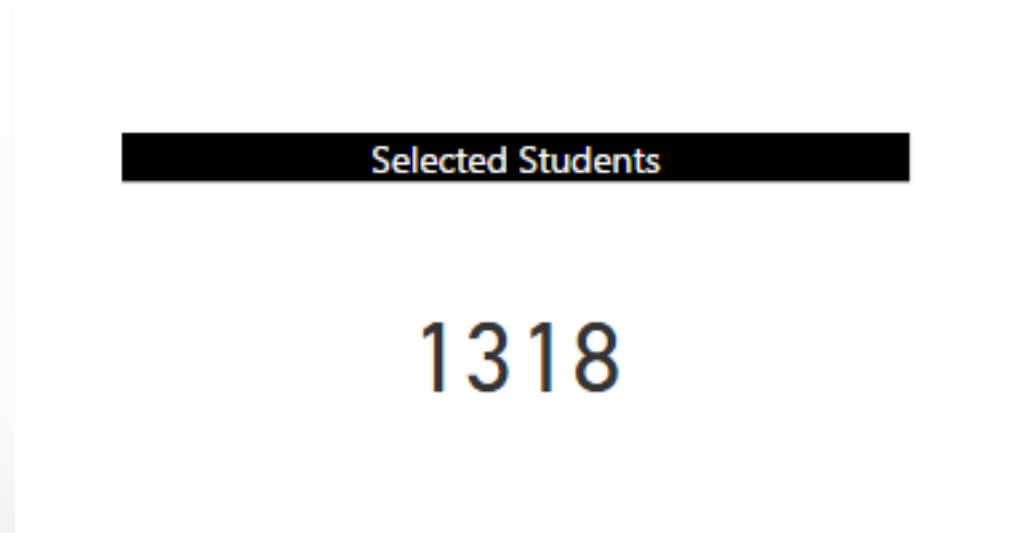
Text Si... 8 ☐

Font fa... Segoe UI

Revert to default

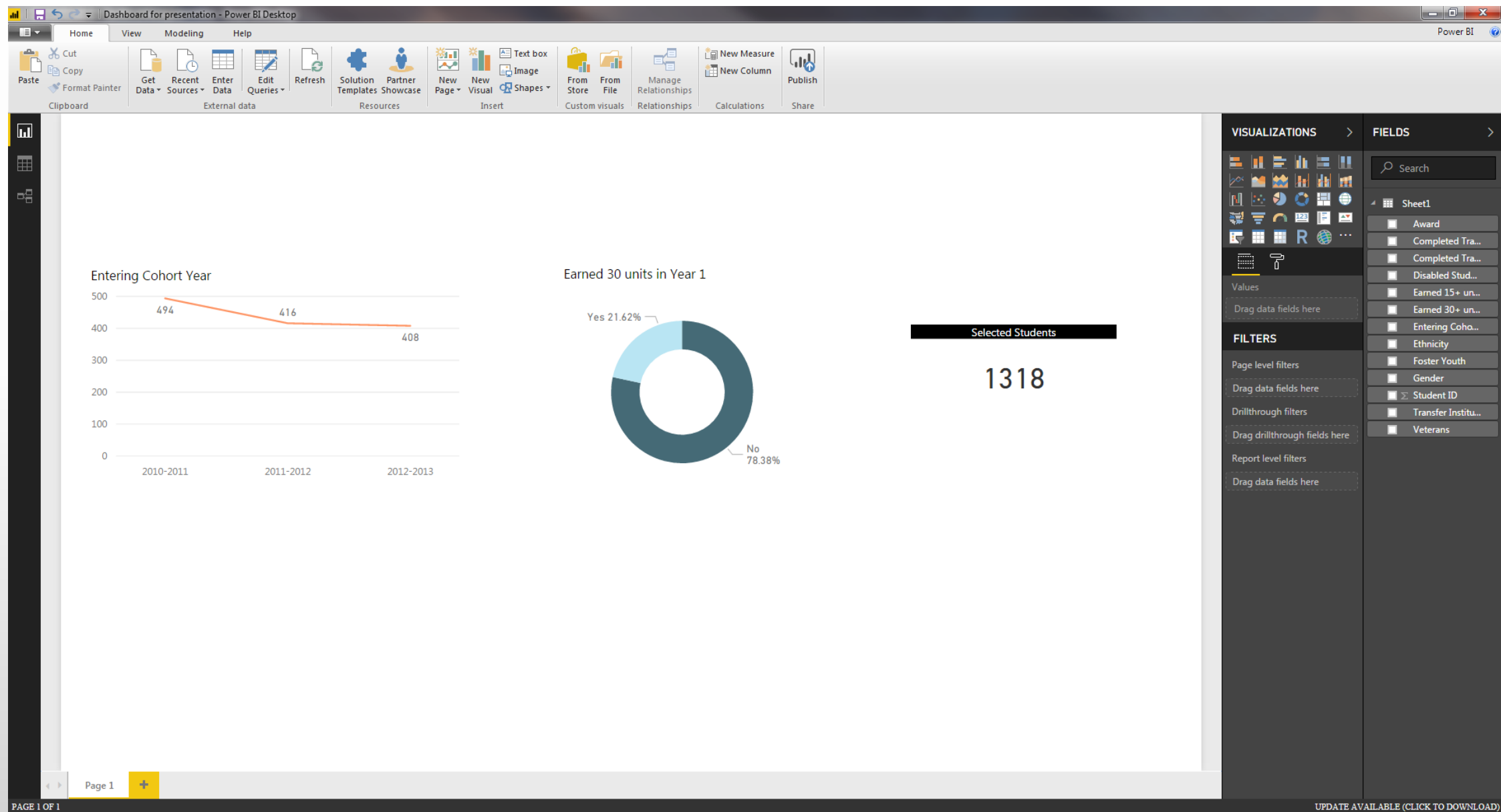
Alignment: Center

Your card should look like this.

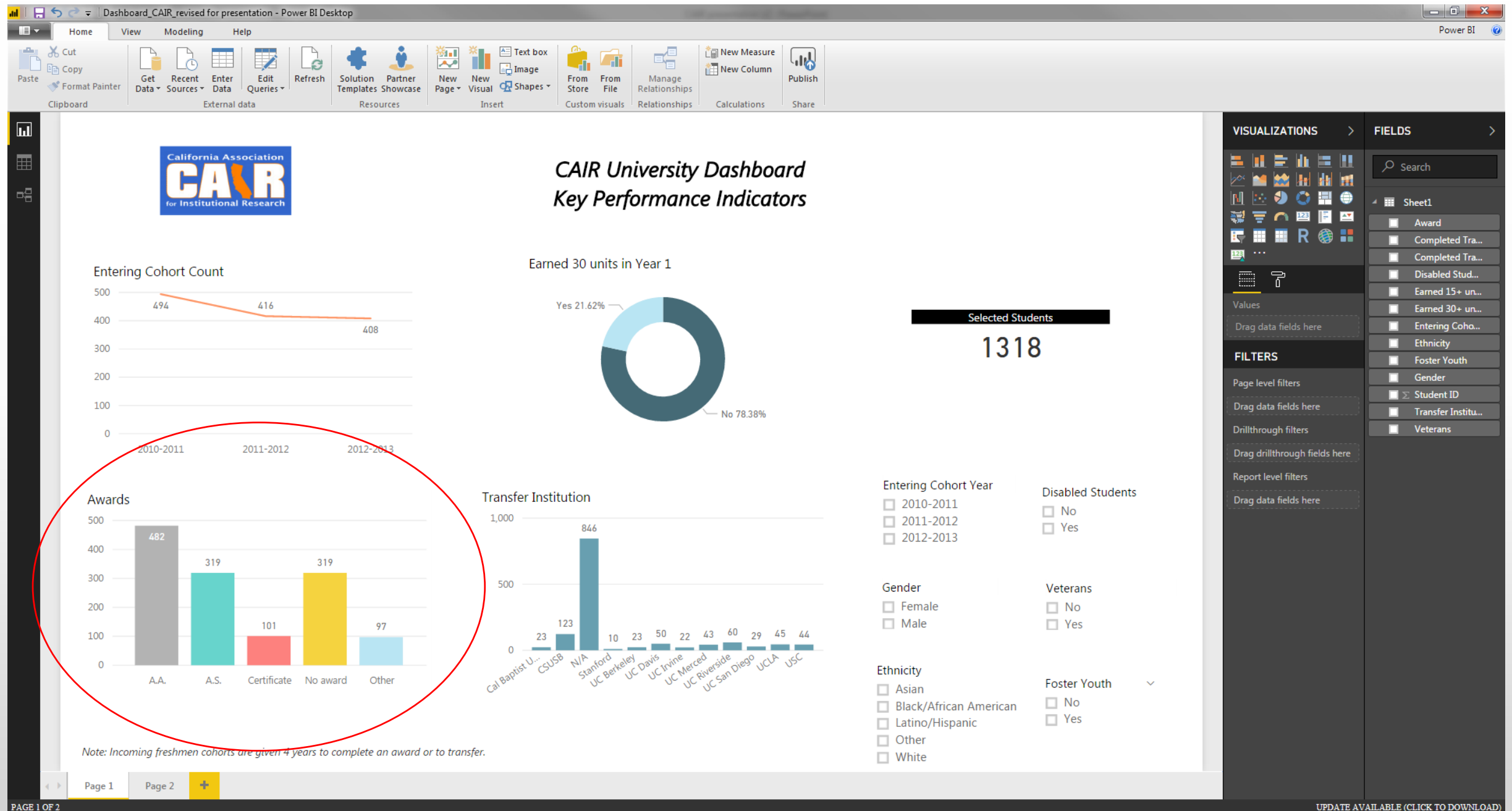


The benefit of having white font with a black background (for title: selected students) is it communicates to user this is an important number.

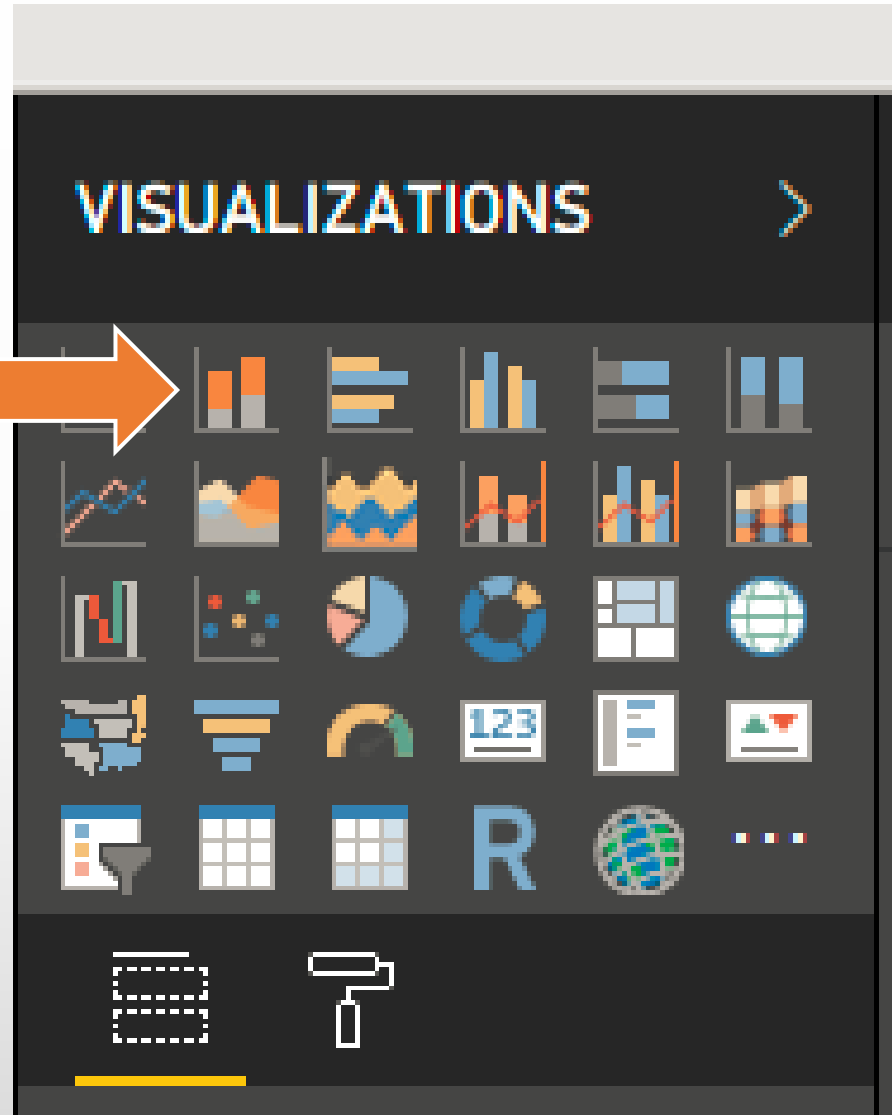
The card and canvas should look like this now.



#4: Stacked Column Chart



Click on *Stacked Column Chart*



In the FIELDS section,
select Award and
StudentID.



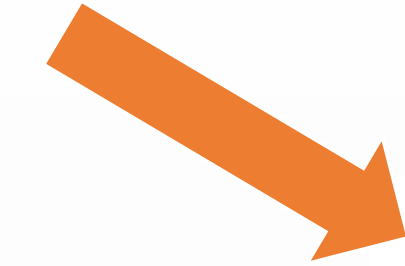
FIELDS >

Search

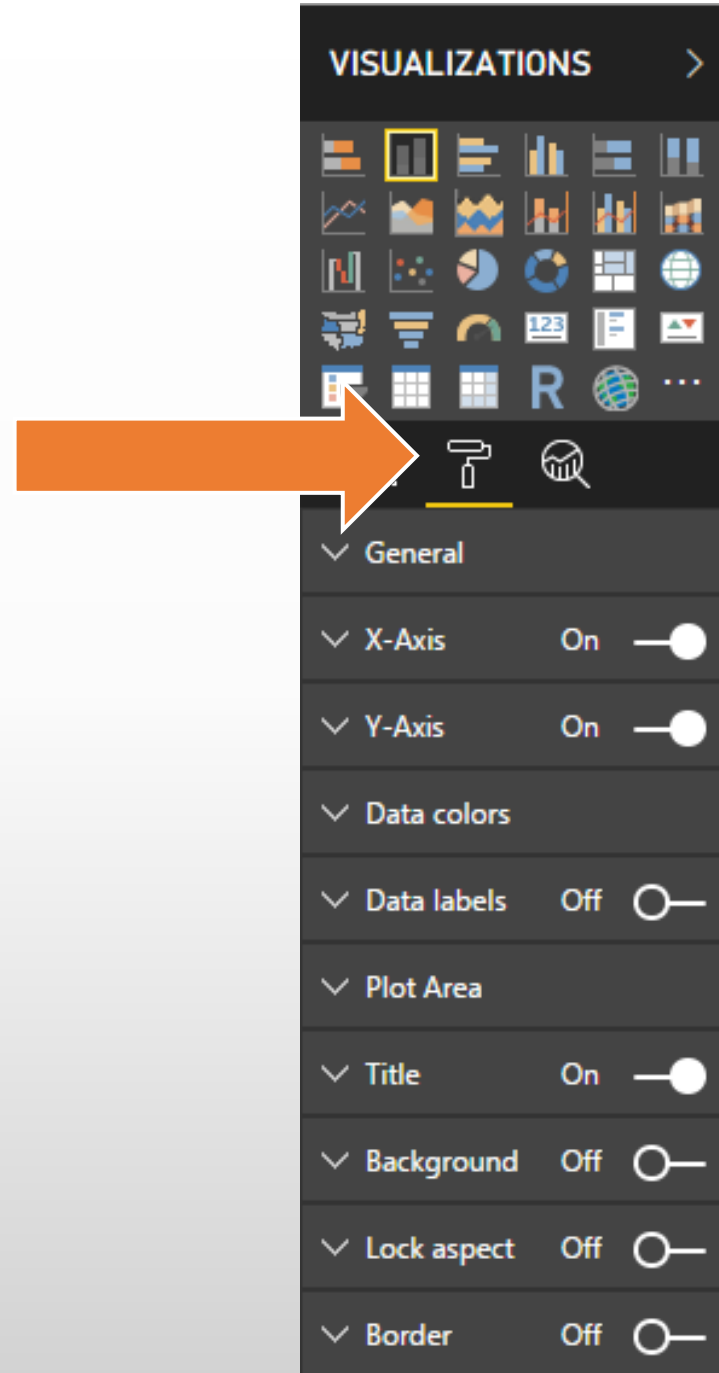
Sheet1

<input checked="" type="checkbox"/>	Award
<input type="checkbox"/>	Completed Tr...
<input type="checkbox"/>	Completed Tr...
<input type="checkbox"/>	Disabled Stud...
<input type="checkbox"/>	Earned 15+ u...
<input type="checkbox"/>	Earned 30+ u...
<input type="checkbox"/>	Entering Coho...
<input type="checkbox"/>	Ethnicity
<input type="checkbox"/>	Foster Youth
<input type="checkbox"/>	Gender
<input checked="" type="checkbox"/>	Σ Student ID
<input type="checkbox"/>	Transfer Instit...
<input type="checkbox"/>	Veterans

Click on Stacked Column Chart
so you see this border.



Under Visualizations section, click on the *Paint Roller*.



Click on Y-Axis:

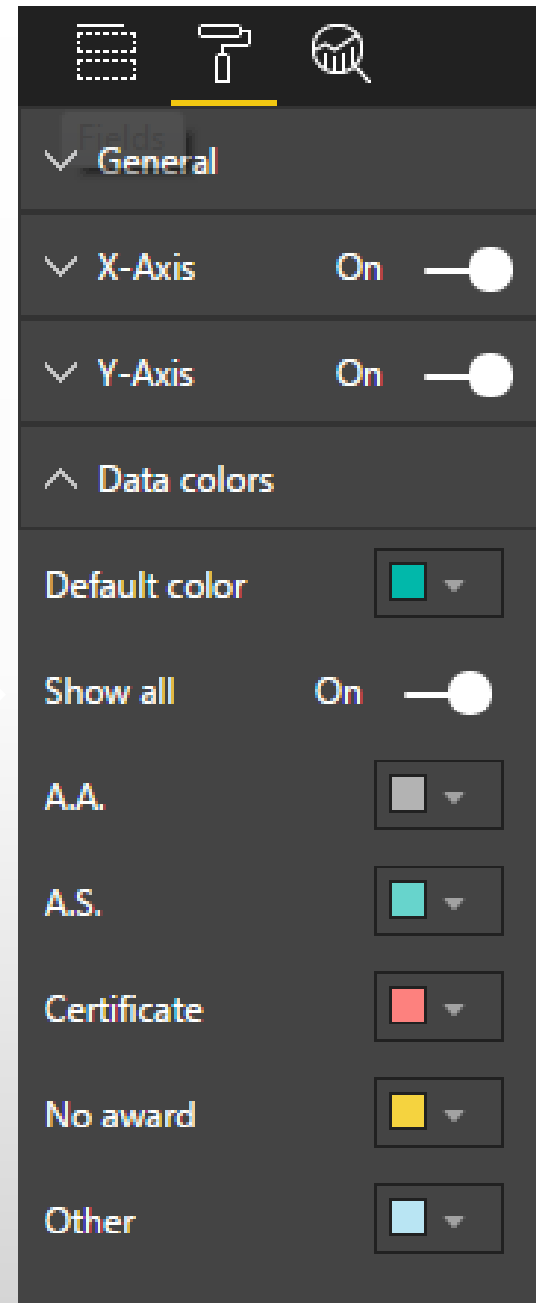
- Since the stacked column chart data ranges from 0 to 500, we are going to put 0 in *Start* and 500 *End*.

A screenshot of a settings panel for a Y-axis. At the top are three icons: a grid, a bar chart, and a line chart. Below them are sections for 'General', 'X-Axis', and 'Y-Axis'. The 'Y-Axis' section is expanded, showing settings for 'Position' (Left), 'Scale type' (Linear), 'Start' (0), 'End' (500), and 'Color' (a color picker).

This step is important since it keeps the Y Axis of the chart from changing when criteria is selected on the dashboard.

Data colors:

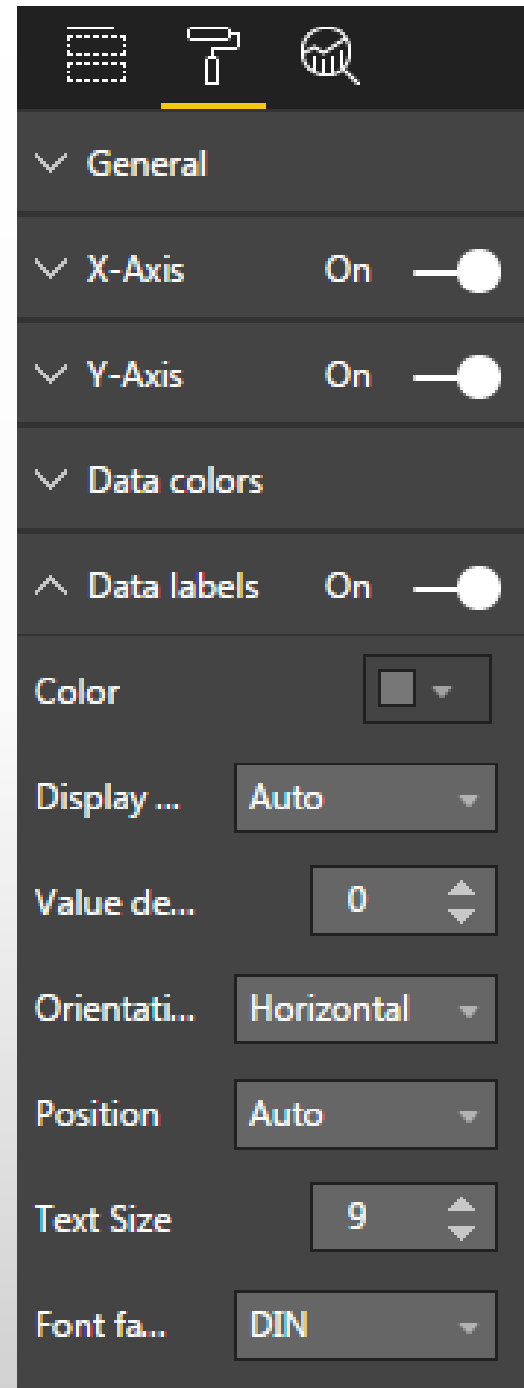
- Turn *Show all* On. This will give you the option of changing the color of each of the bars.



The settings panel is a vertical sidebar with a dark background. At the top, there are three icons: a grid, a paintbrush, and a magnifying glass. Below the icons, the panel is divided into sections. The first section is 'General' with a downward arrow. The second section is 'X-Axis' with a toggle switch set to 'On'. The third section is 'Y-Axis' with a toggle switch set to 'On'. The fourth section is 'Data colors' with an upward arrow. Below this, there are six rows, each with a label and a color selection box. The labels are 'Default color', 'Show all', 'A.A.', 'A.S.', 'Certificate', and 'No award'. The 'Show all' row has a toggle switch set to 'On'. The 'Other' label is at the bottom of the list.

Setting	Value
General	
X-Axis	On
Y-Axis	On
Data colors	
Default color	Teal
Show all	On
A.A.	Grey
A.S.	Teal
Certificate	Red
No award	Yellow
Other	Light Blue

Data labels:
Turn On

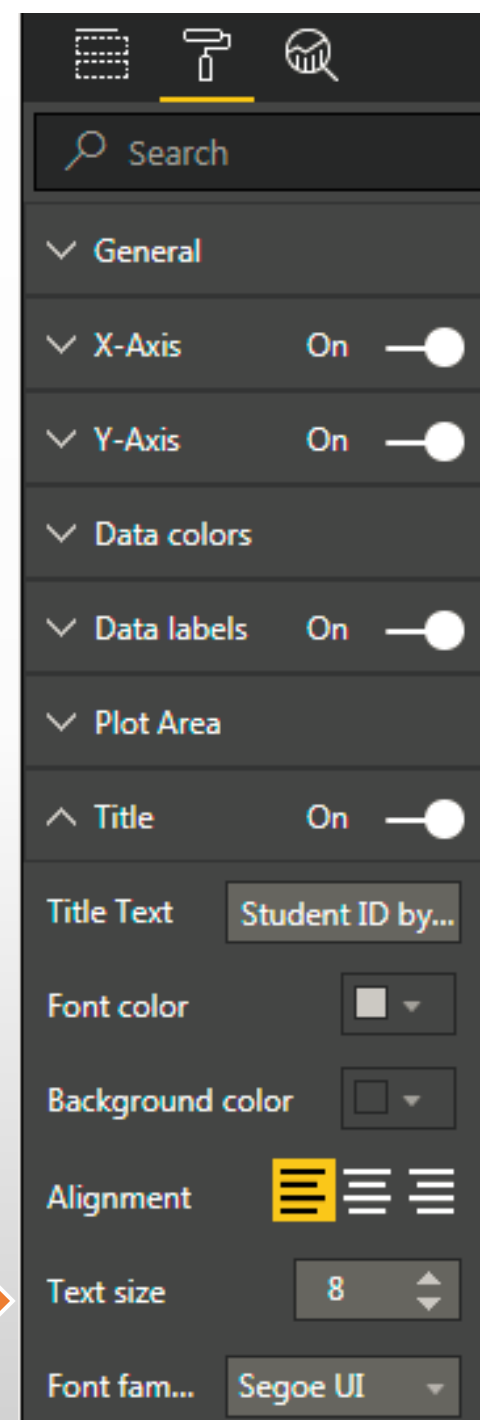


Under *Data Labels* you can also change color and size of text for the data labels.



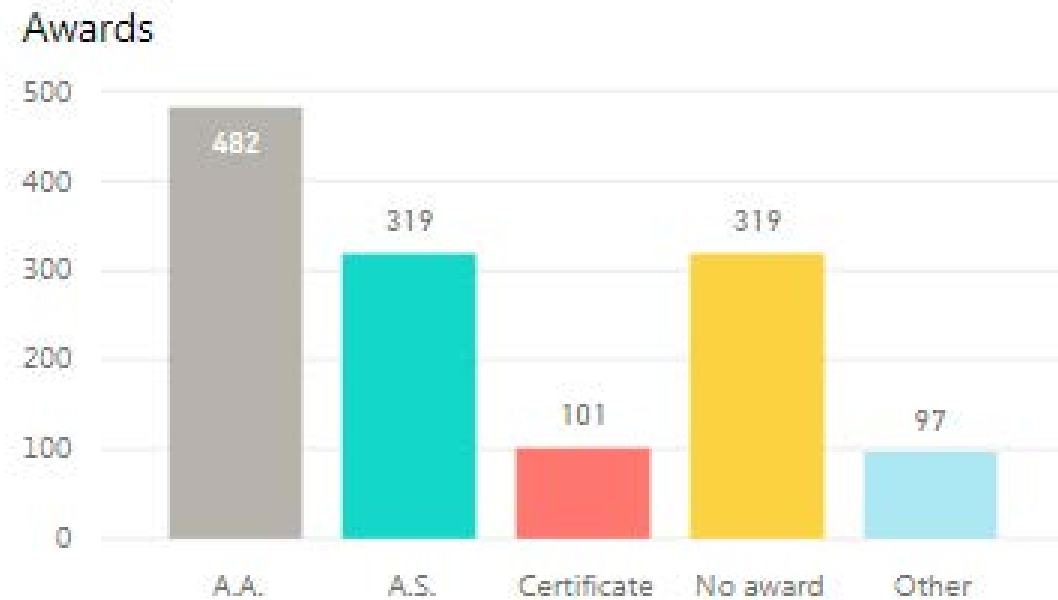
Title Text: Change to
Awards.

Text Size: You can
change text size here
for title. I select 11 for
chart titles.

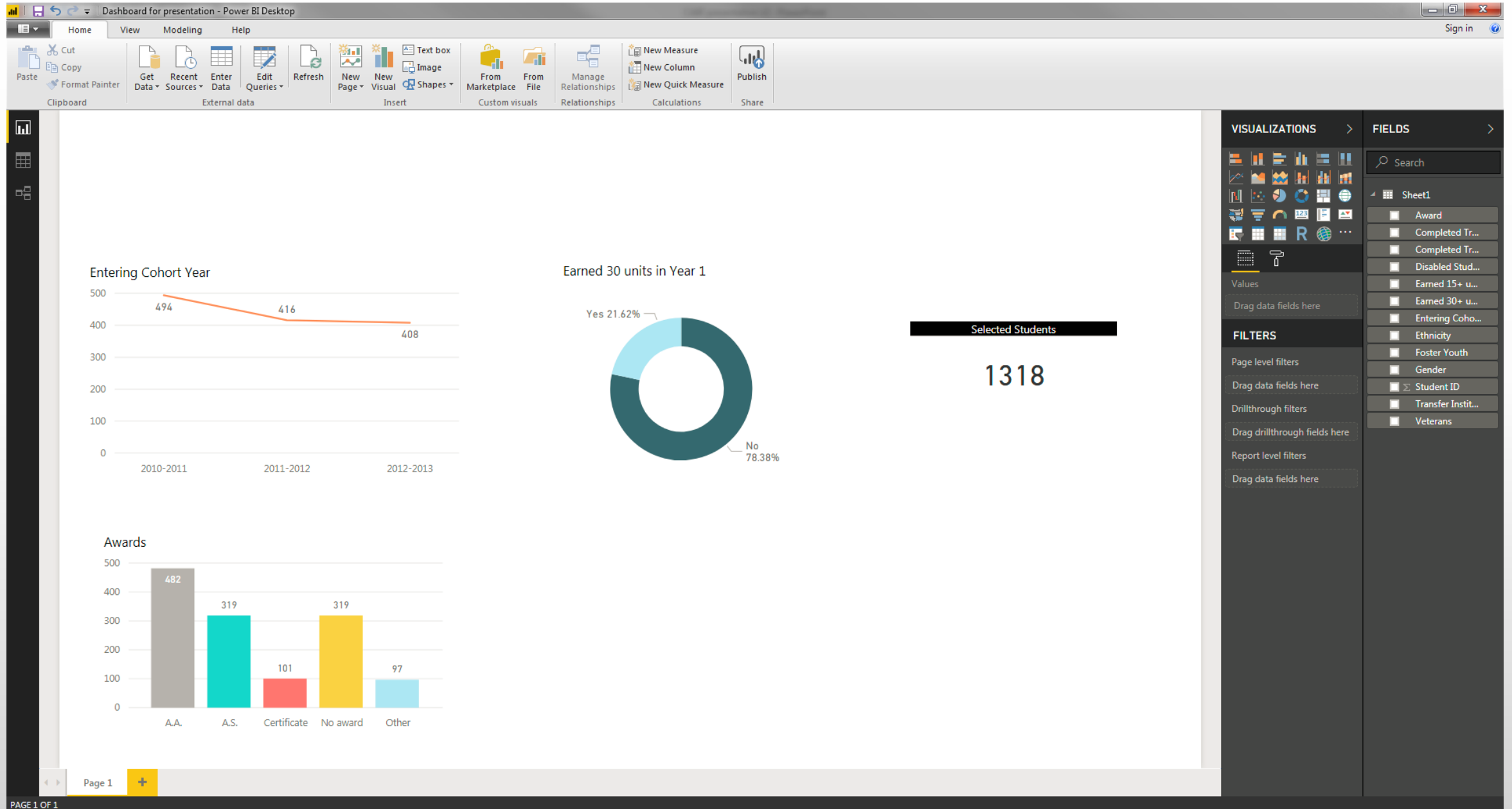


Font Color:
You can
change color
of text for the
title.

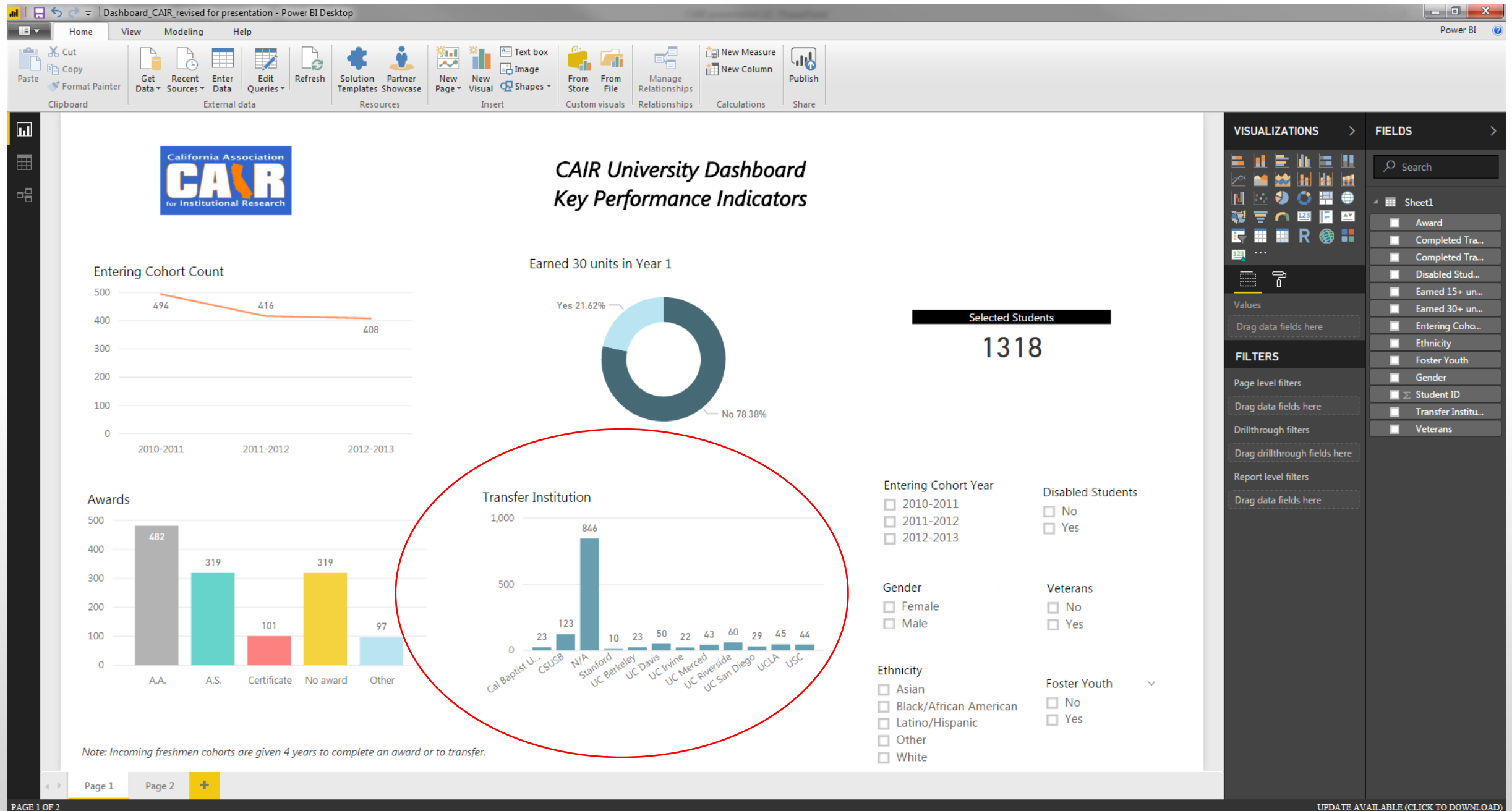
Your stacked column chart should look like this.



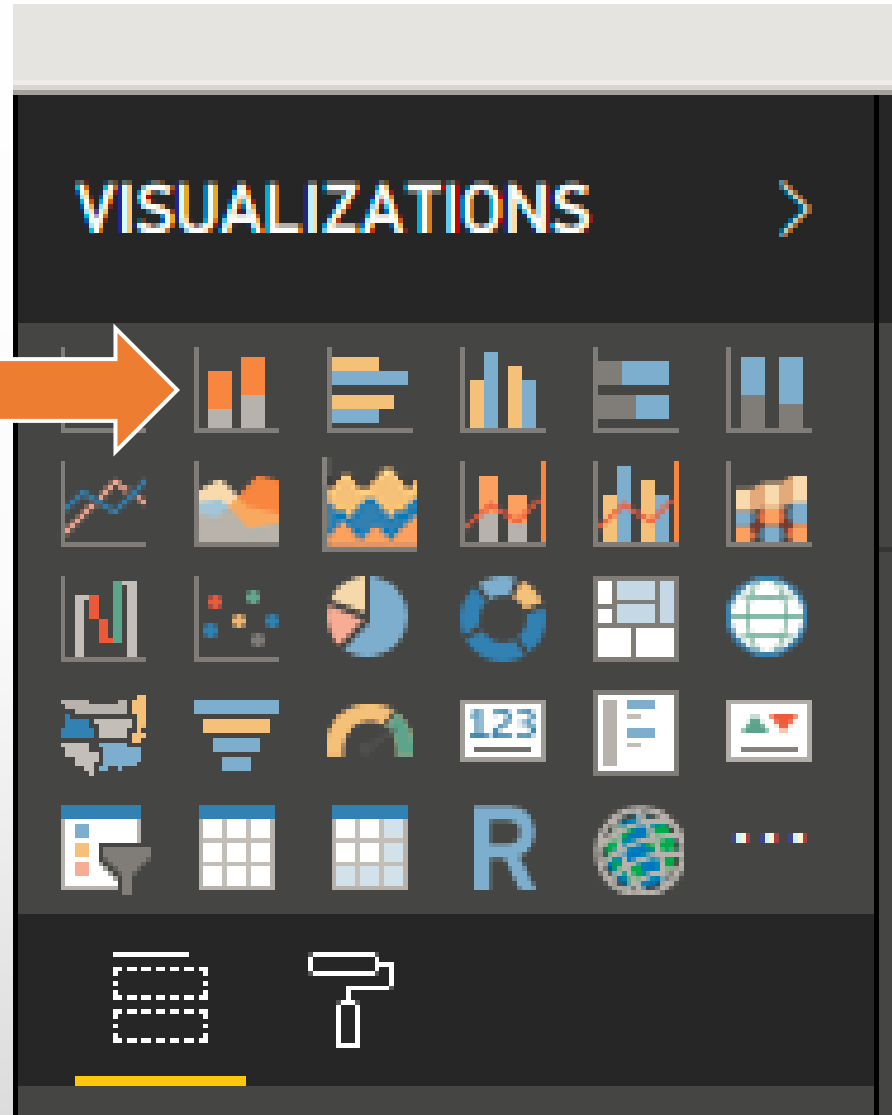
The stacked column chart and canvas should look like this now.



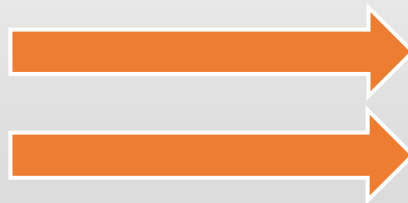
#5: Stacked Column Chart #2



Click on *Stacked Column Chart*



In the FIELDS section,
select Transfer Institution
and StudentID.



FIELDS >

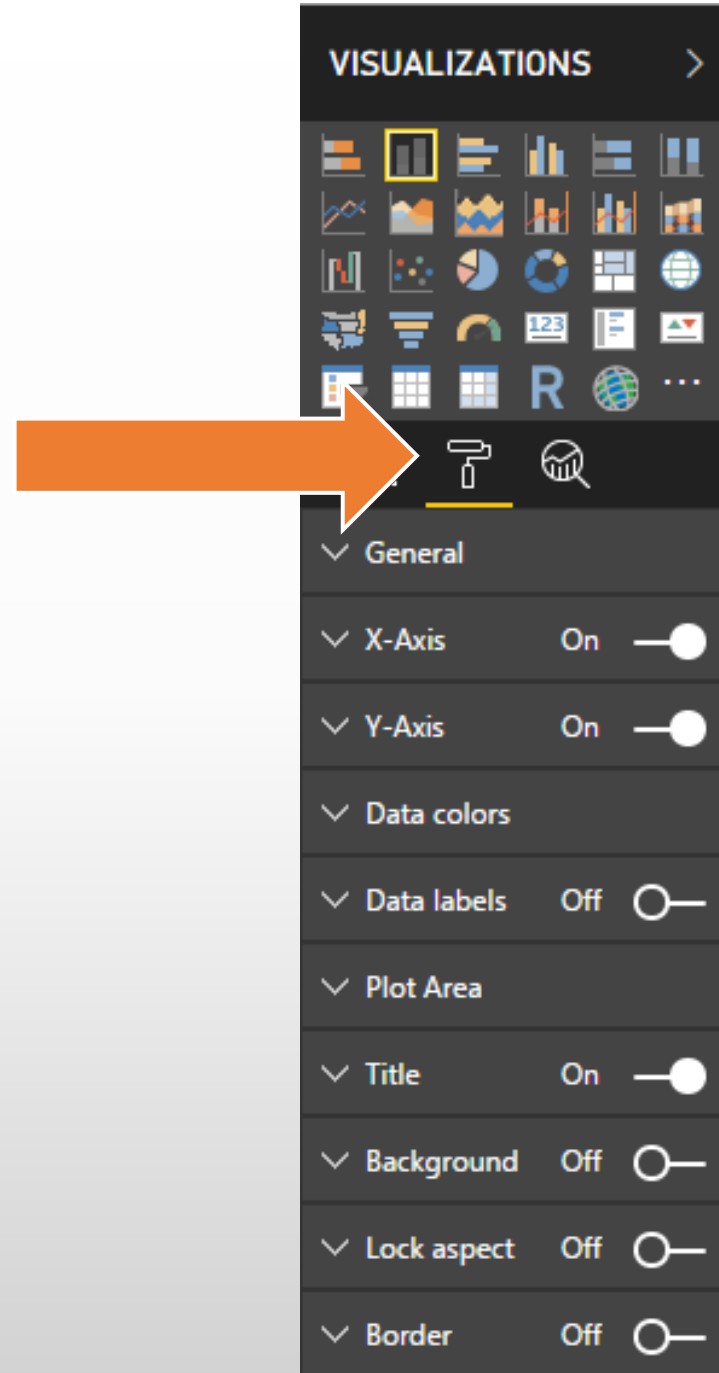
Sheet1

<input type="checkbox"/>	Award
<input type="checkbox"/>	Completed Tr...
<input type="checkbox"/>	Completed Tr...
<input type="checkbox"/>	Disabled Stud...
<input type="checkbox"/>	Earned 15+ u...
<input type="checkbox"/>	Earned 30+ u...
<input type="checkbox"/>	Entering Coho...
<input type="checkbox"/>	Ethnicity
<input type="checkbox"/>	Foster Youth
<input type="checkbox"/>	Gender
<input checked="" type="checkbox"/>	Σ Student ID
<input checked="" type="checkbox"/>	Transfer Instit...
<input type="checkbox"/>	Veterans

Click on Stacked Column Chart
so you see this border.



Under Visualizations section, click on the *Paint Roller*.



Click on Y-Axis:

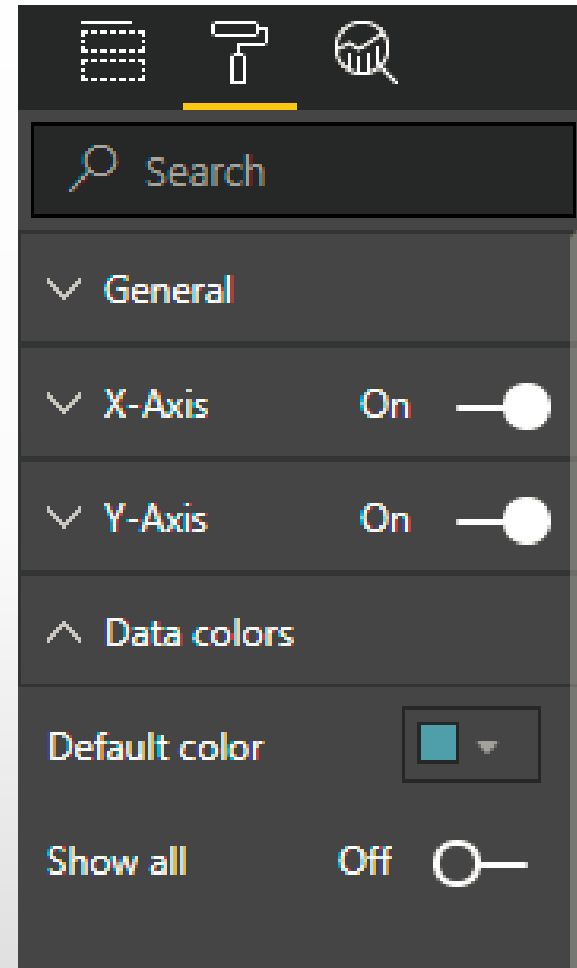
- Since the stacked column chart data ranges from 0 to 1,000, we are going to put 0 in *Start* and 1,000 *End*.

A screenshot of a settings panel for a chart. At the top, there are three icons: a grid, a paintbrush, and a magnifying glass. Below them is a search bar with the word "Search" and a magnifying glass icon. The panel has several sections: "General" with a dropdown arrow, "X-Axis" with a dropdown arrow, "Y-Axis" with a dropdown arrow, "Position" with a dropdown menu showing "Left", "Scale type" with a dropdown menu showing "Linear", "Start" with a text input field containing "0", "End" with a text input field containing "1000", and "Color" with a color picker showing a grey square.

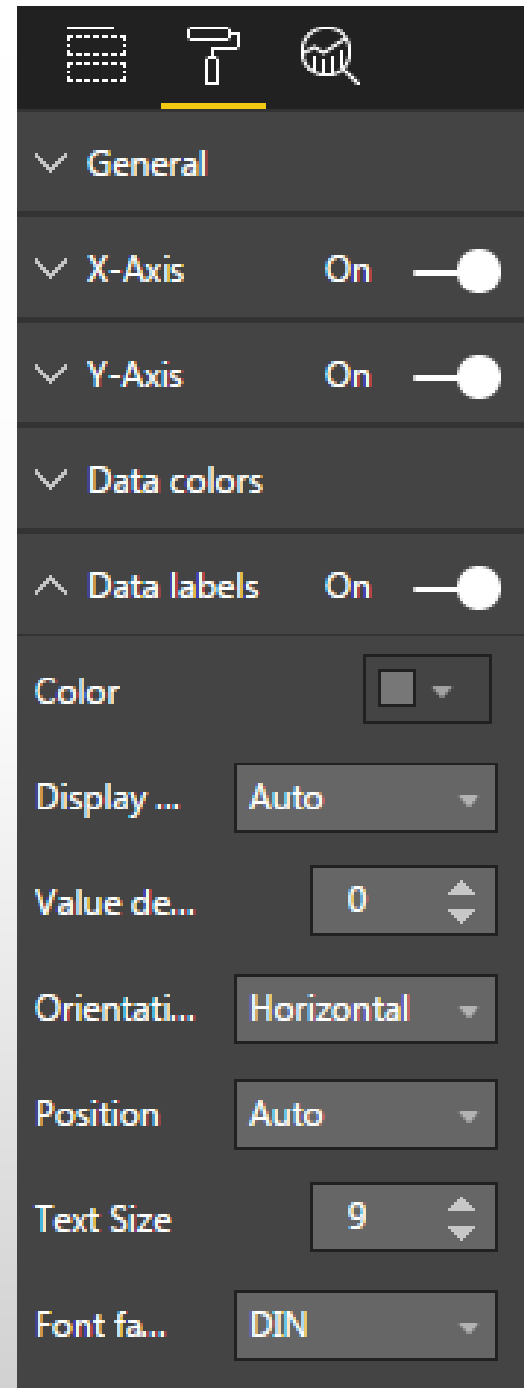
This step is important since it keeps the Y Axis of the chart from changing when criteria is selected on the dashboard.

Data colors:

- Select a color for the bars.



Data labels:
Turn On

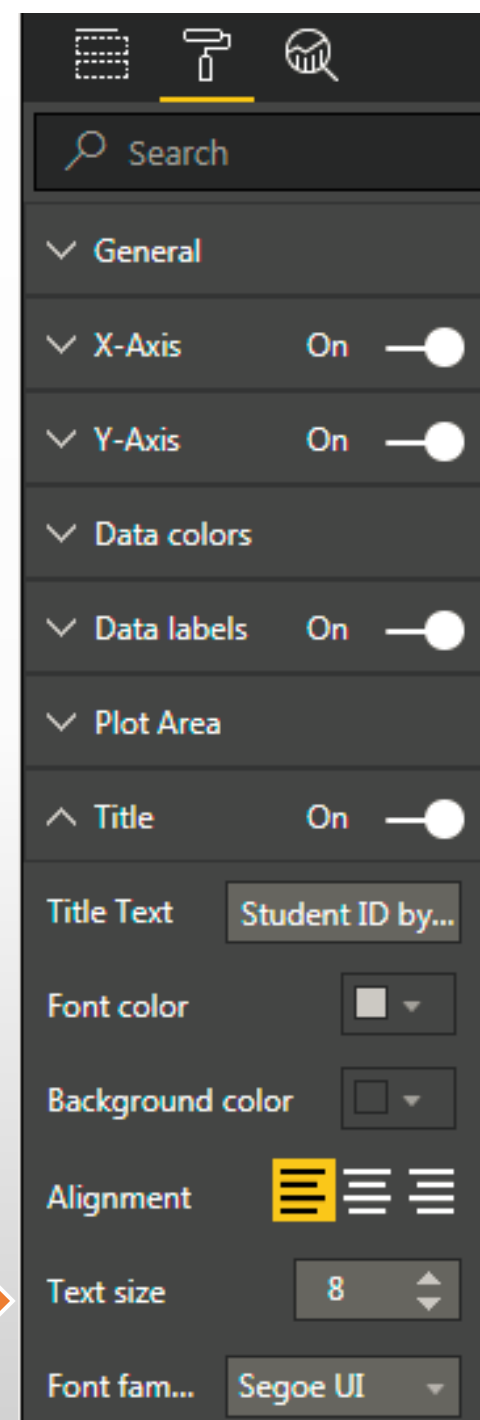


Under *Data Labels* you can also change color and size of text for the data labels.



Title Text: Change to
Transfer Institution.

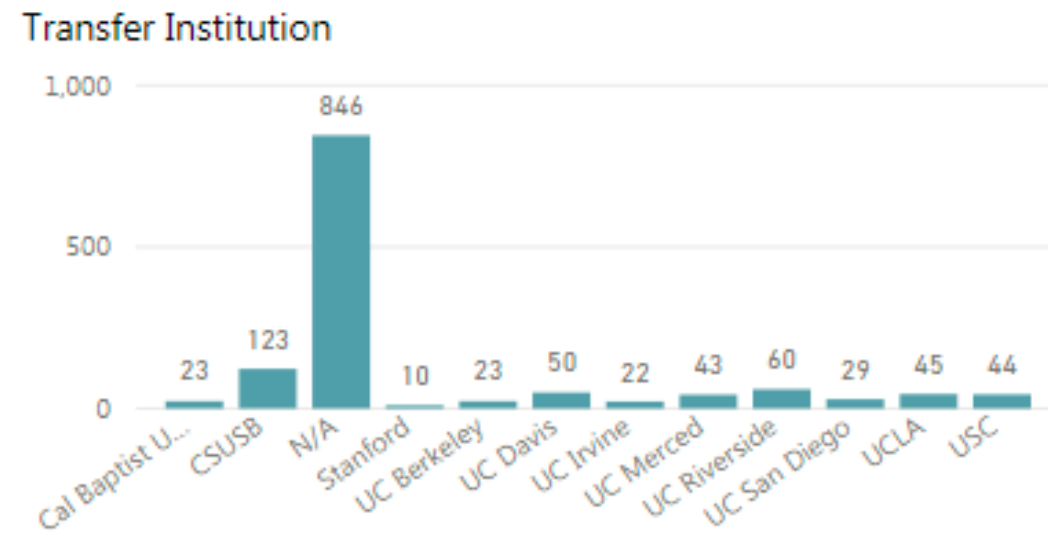
Text Size: You can
change text size here
for title. I select 11 for
chart titles.



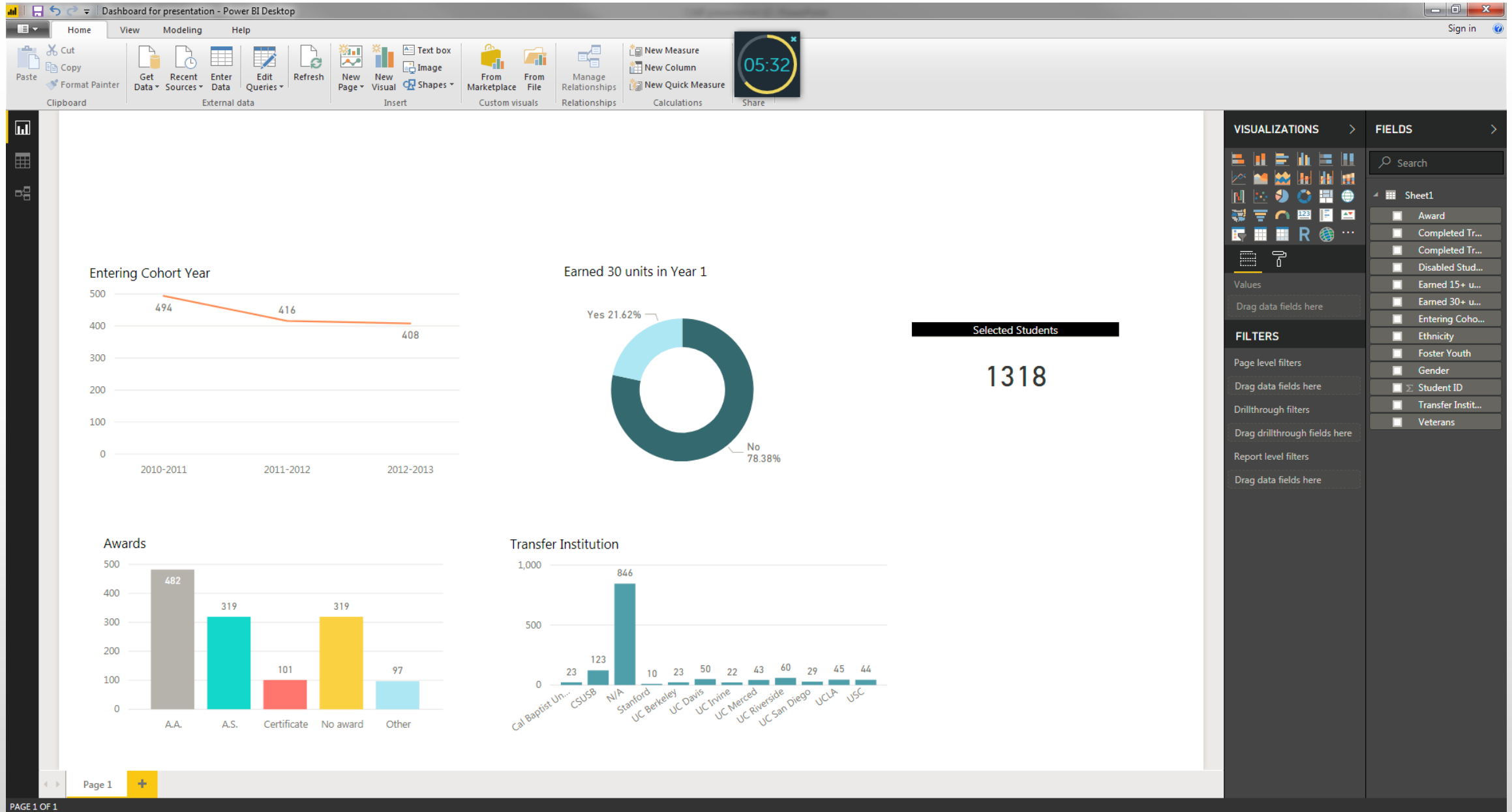
Font Color:

You can
change color
of text for the
title.

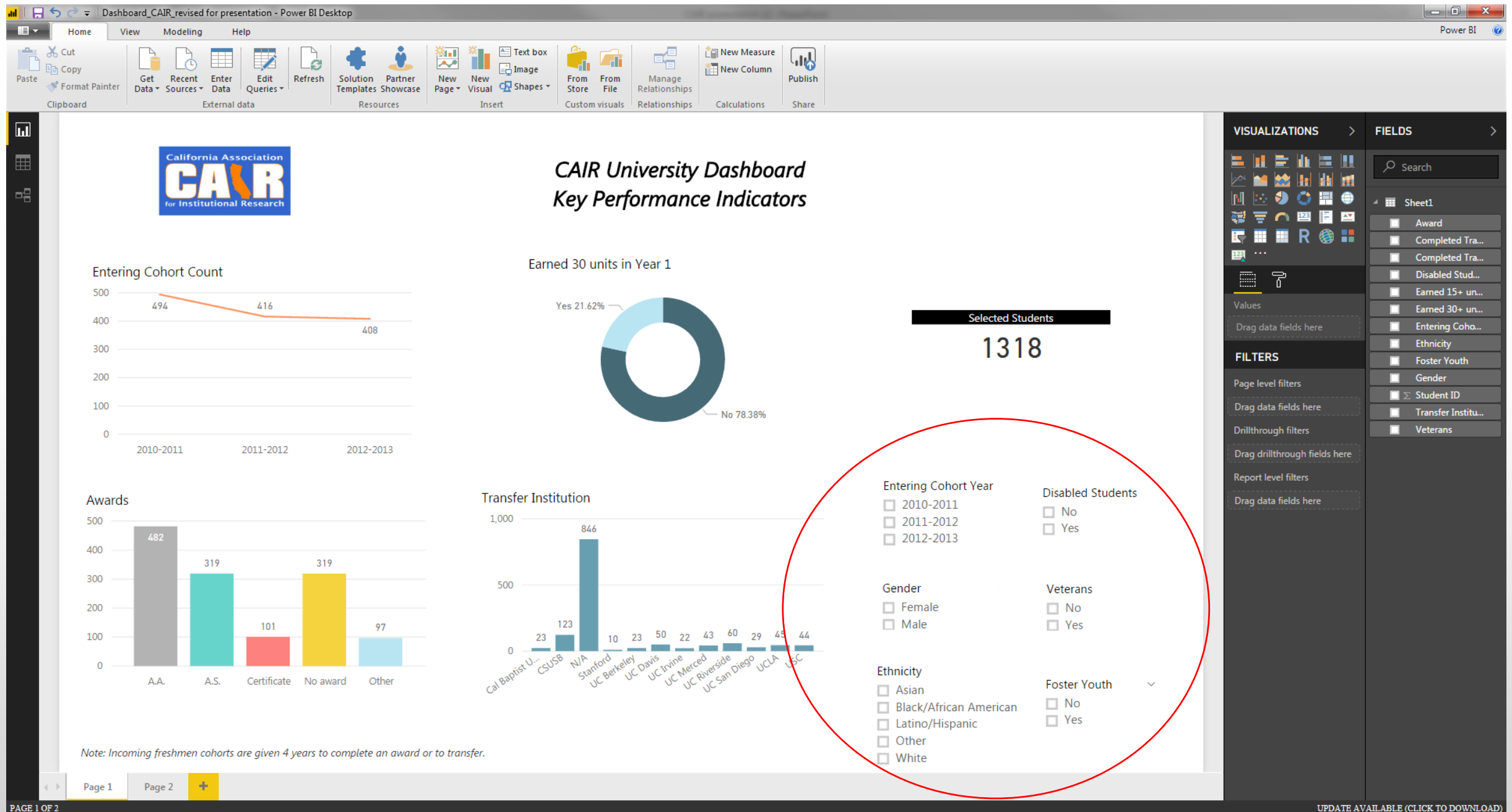
Your stacked column chart should look like this.



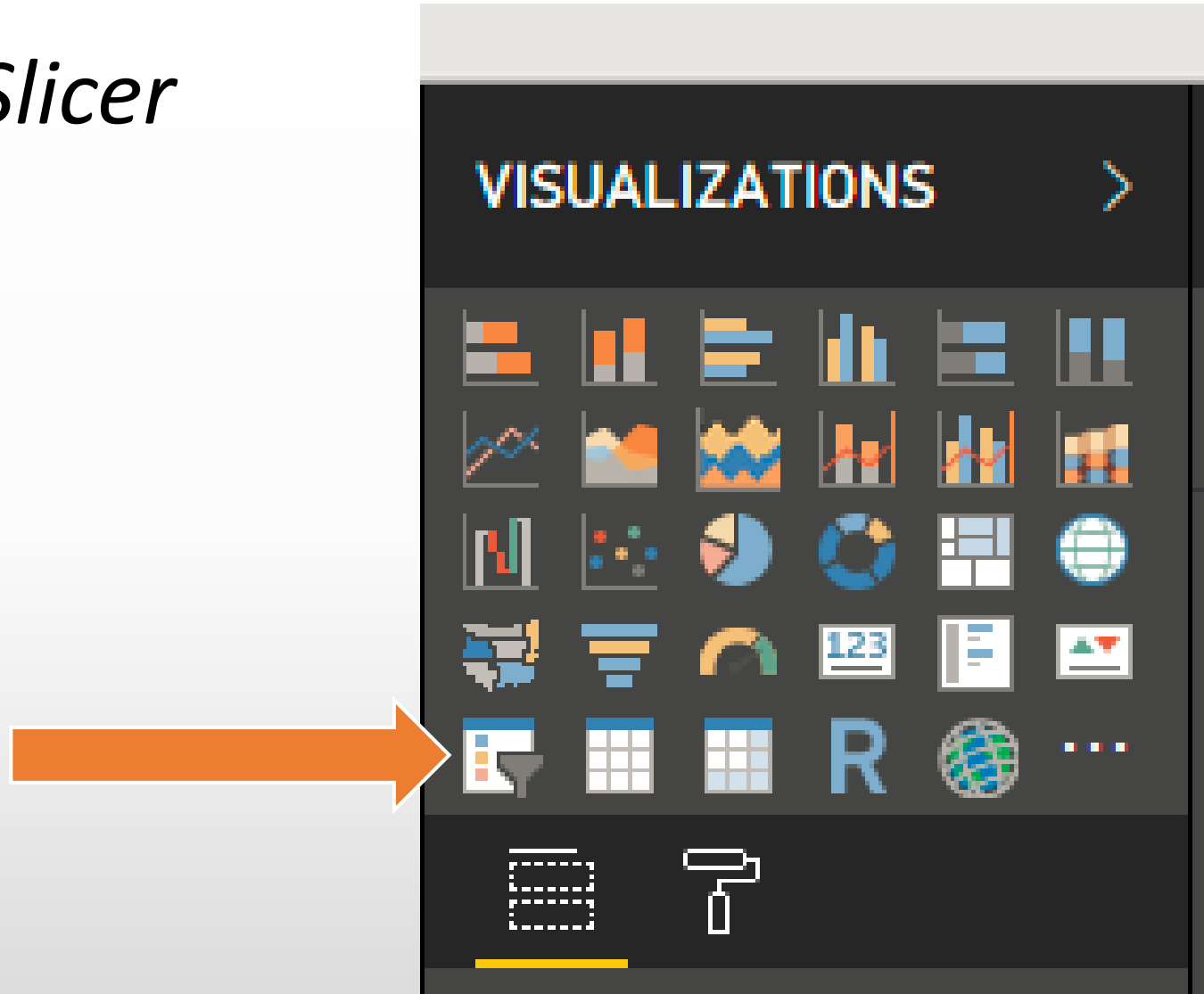
The stacked column chart and canvas should look like this now.



#6: Slicers/Filters

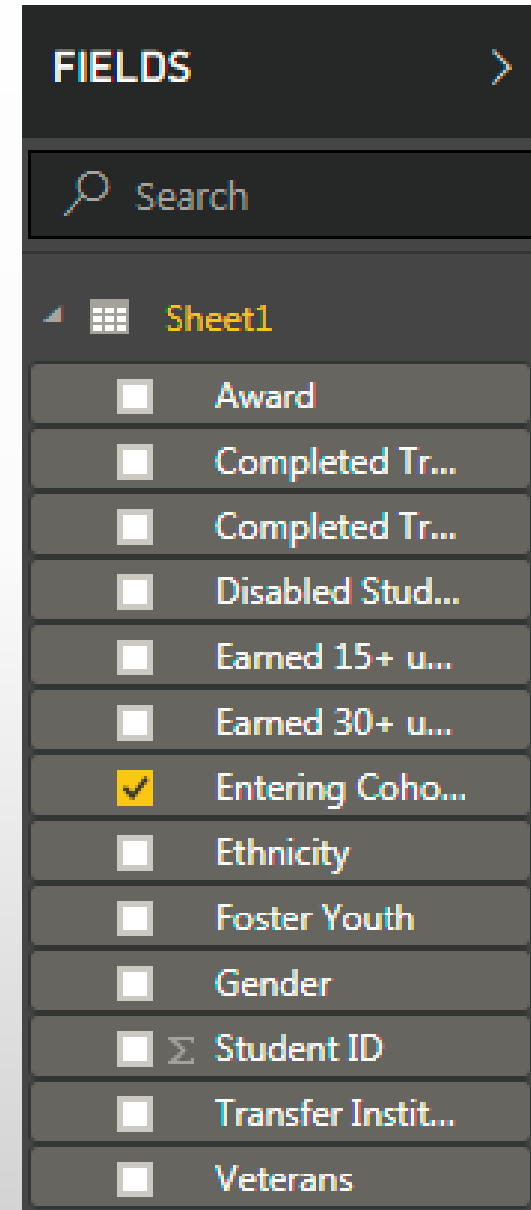


Click on *Slicer*



In the FIELDS section, select Entering Cohort Year.

Adjust the size and location of slicer/filter.



Your slicer/filter should look like this.

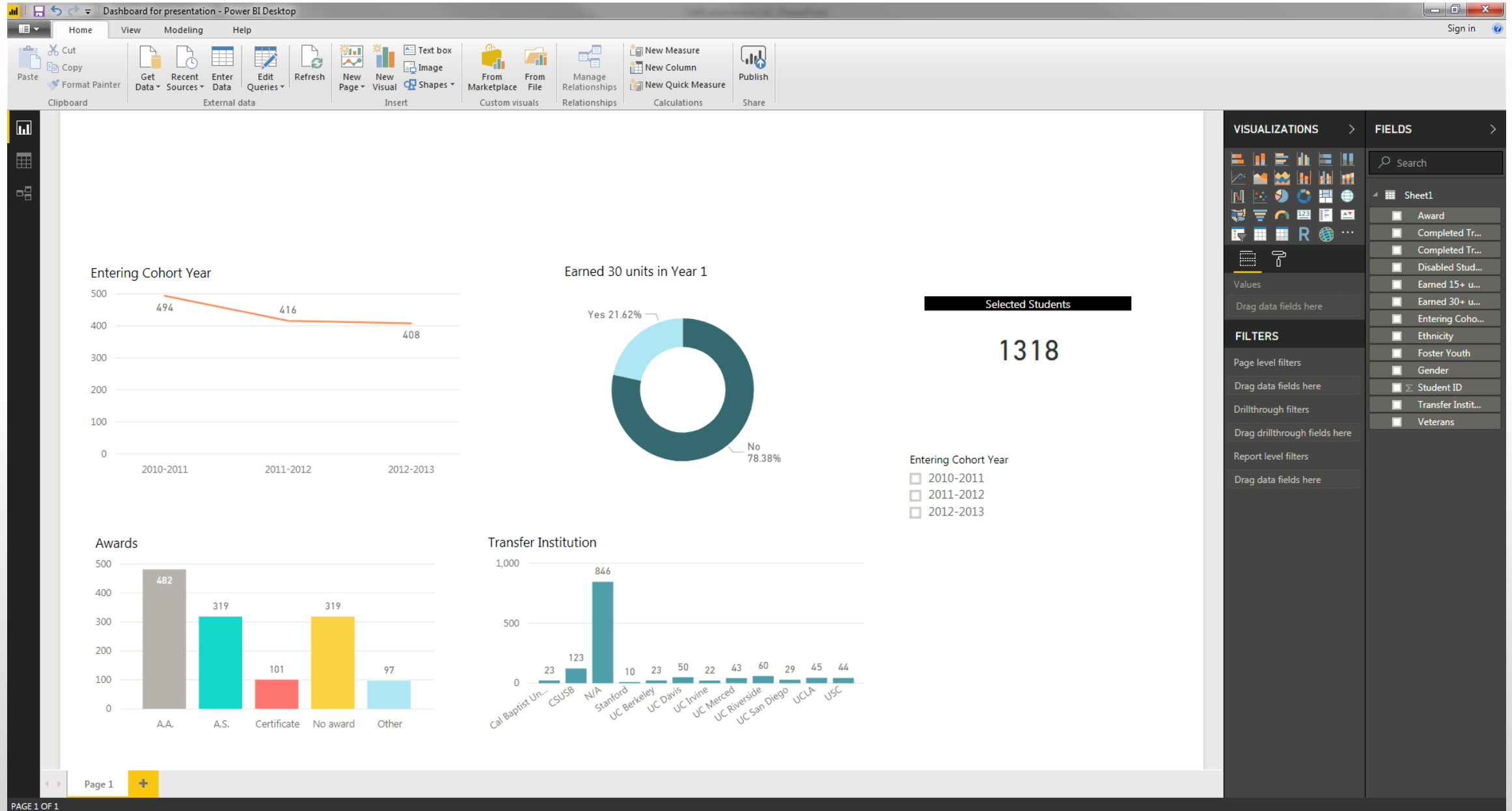
Entering Cohort Year

☐ 2010-2011

☐ 2011-2012

☐ 2012-2013

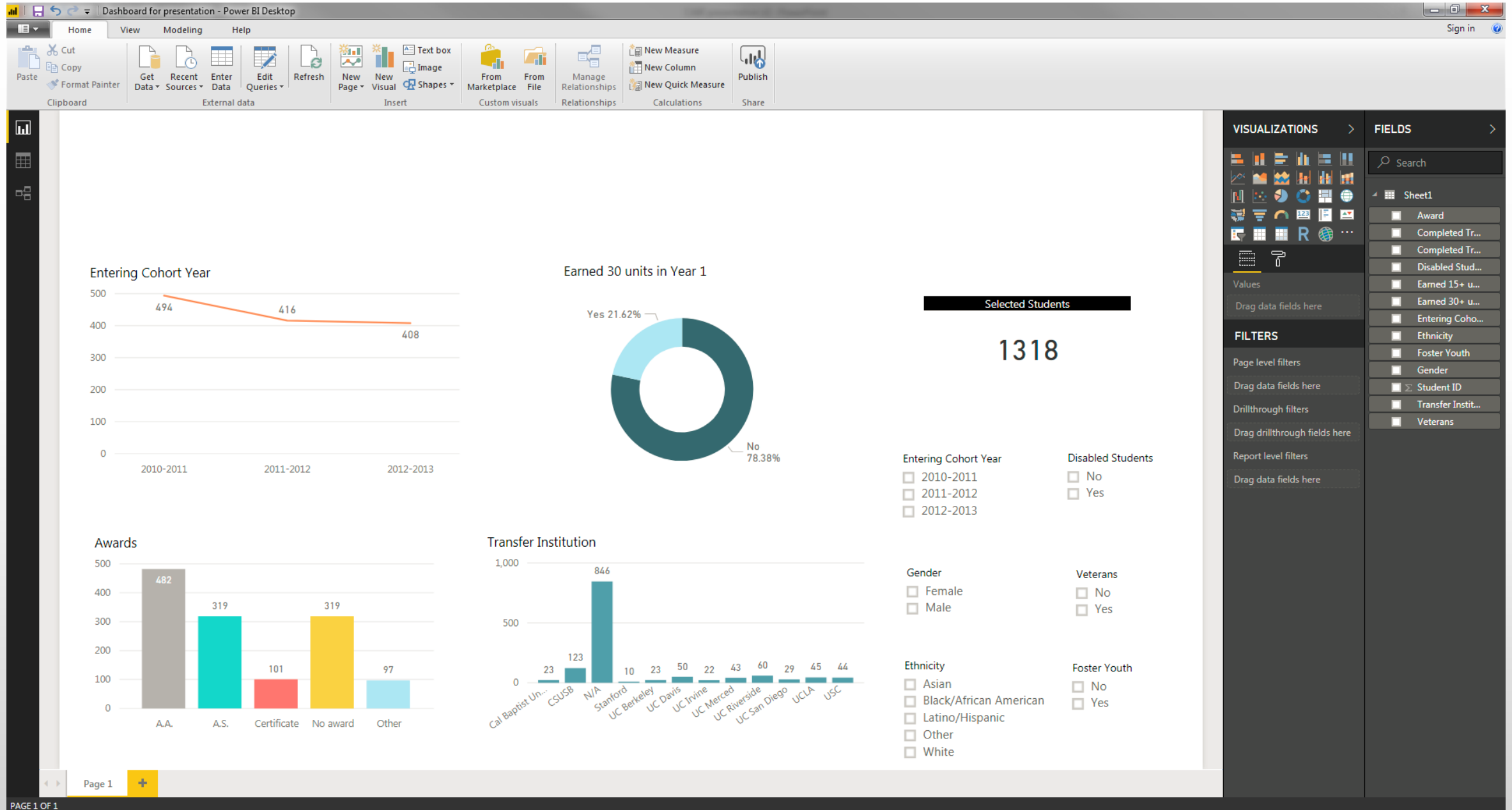
The slicer/filter and canvas should look like this now.



Replicate the same steps used to develop the *Entering Cohort Year* slicer/filter for the following variables:

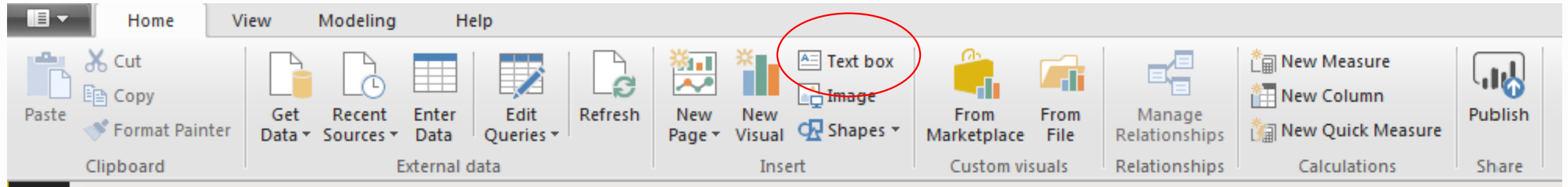
- Gender
- Ethnicity
- Disabled Students
- Veterans
- Foster Youth

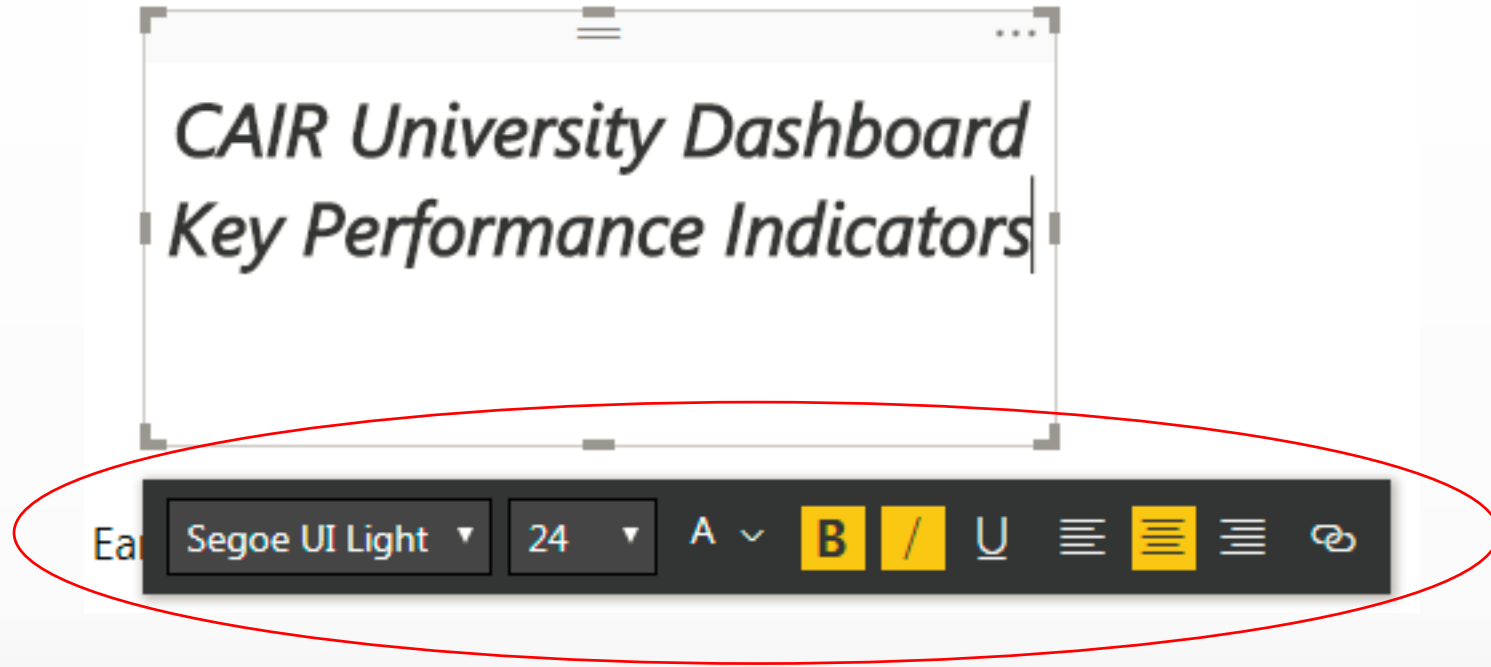
The slicers/filters and canvas should look like this now.



Now add a title to your dashboard.

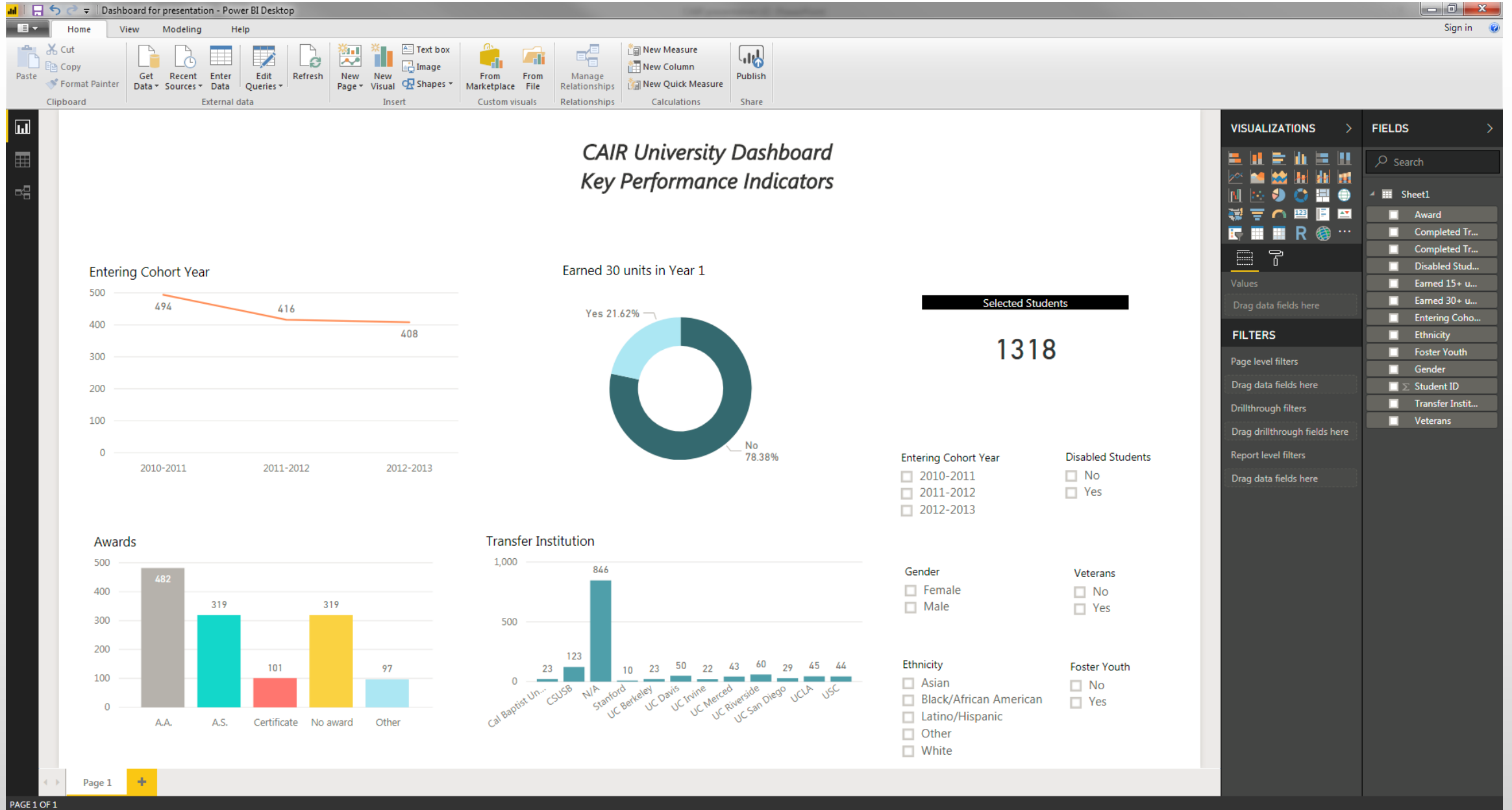
Click on Text box (found on the ribbon).





You can change font,
font size, and make
additional changes to title.

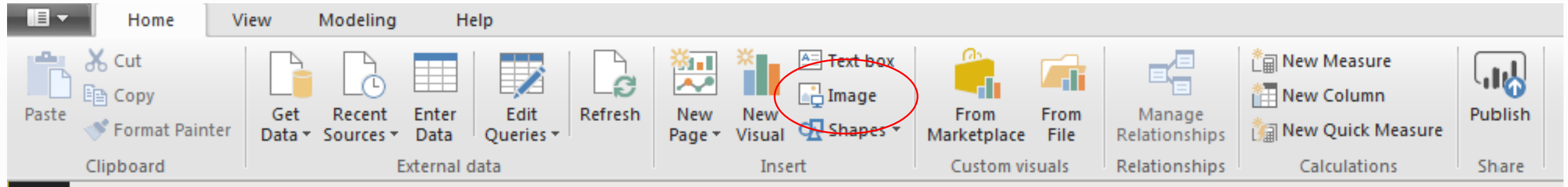
The text box and canvas should look like this now.



You can add your college logo to the dashboard.

Start by saving your logo as a JPEG.

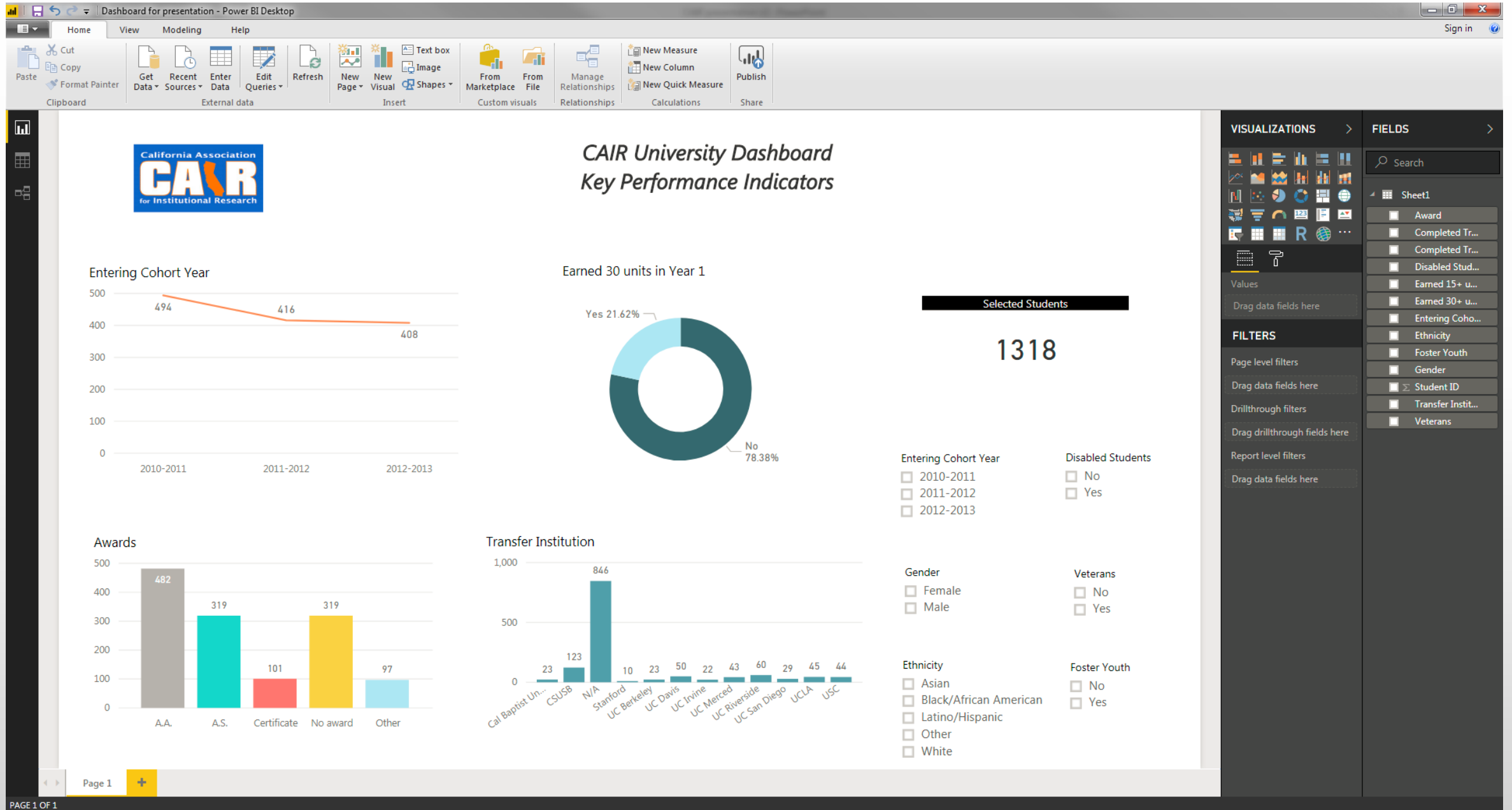
Click on Image (found on the ribbon).



Next step:

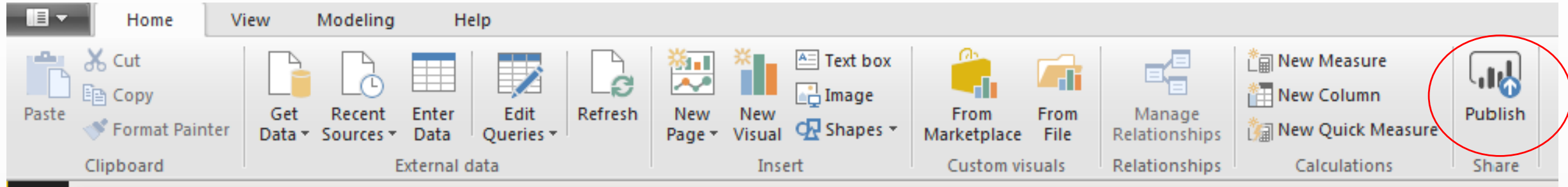
Click on JPEG from saved location and the logo will instantly be uploaded to dashboard. Make adjustments to the size and location of the logo.

The finalized dashboard should look like this.

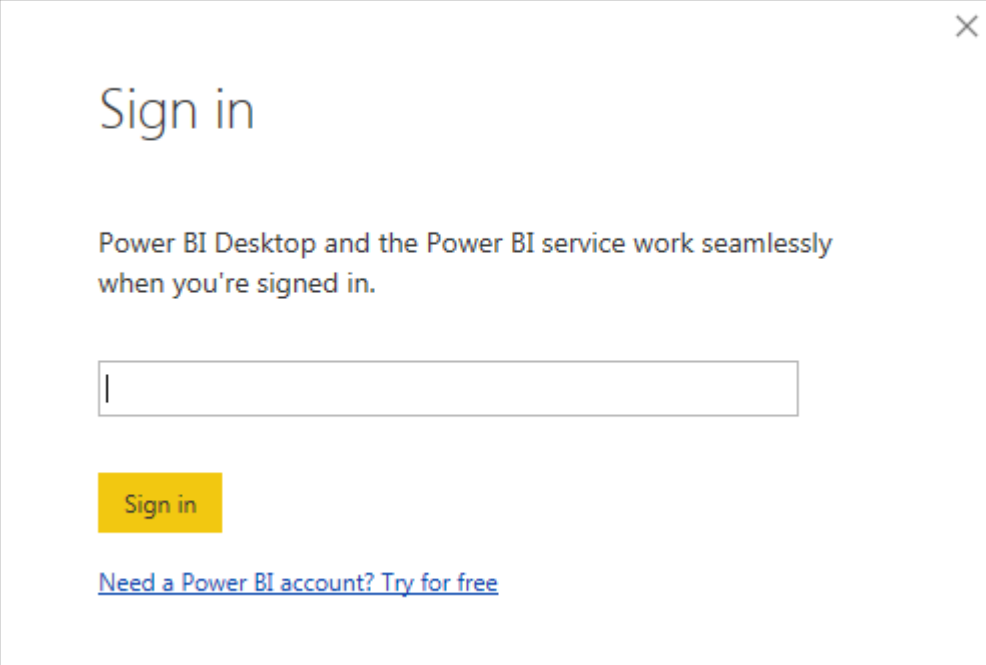


Now publish your dashboard to Power BI service.

Click on Publish (found on the ribbon).

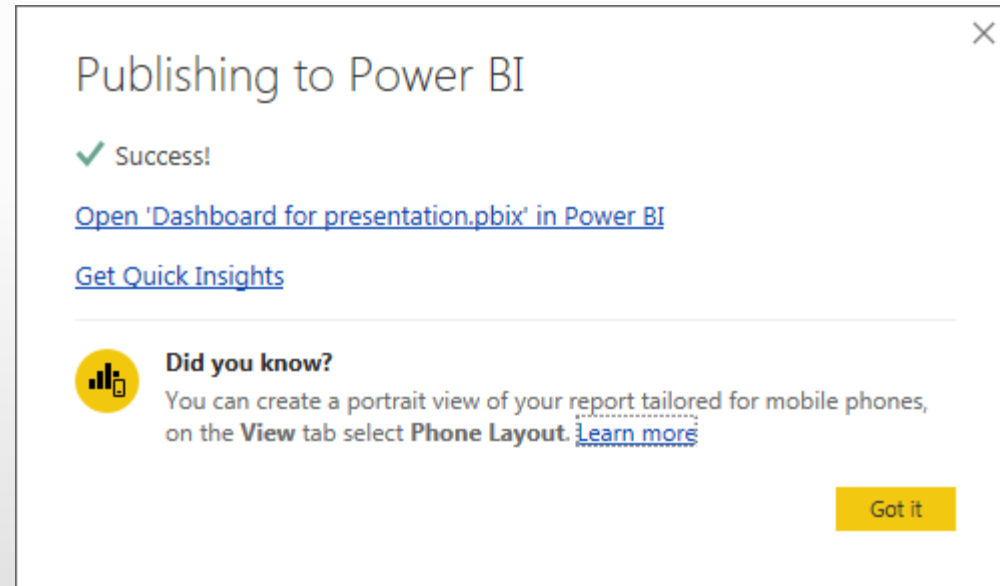


You will be prompted to provide the username and password for your Power BI service account.

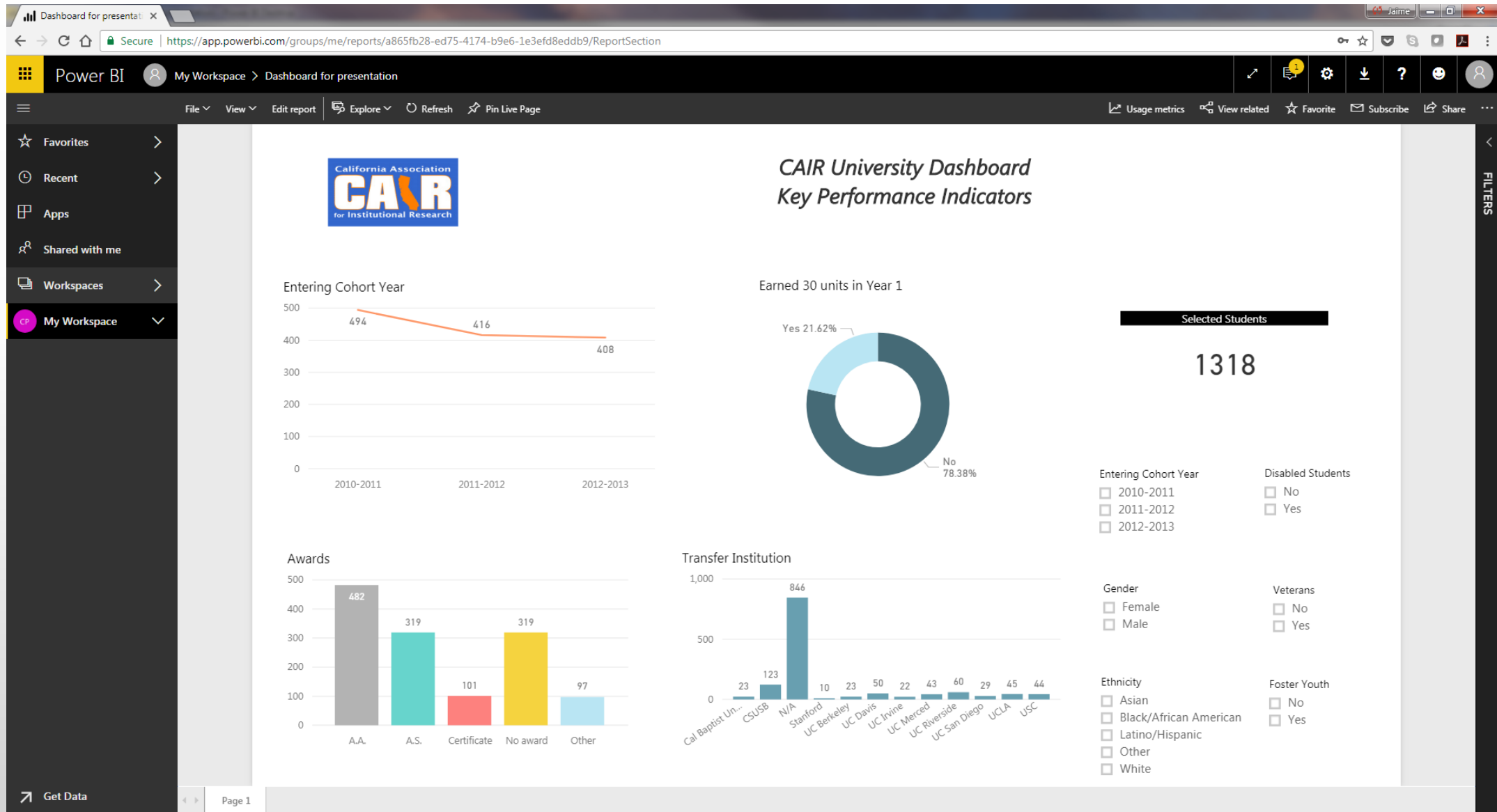
A screenshot of a 'Sign in' dialog box from Power BI. The dialog has a title bar with a close button (X) in the top right corner. The main content area has the title 'Sign in' at the top. Below the title is a message: 'Power BI Desktop and the Power BI service work seamlessly when you're signed in.' Underneath this message is a text input field with a vertical cursor on the left. Below the input field is a yellow button with the text 'Sign in'. At the bottom of the dialog is a blue hyperlink that reads 'Need a Power BI account? Try for free'.

After signing in, you will select a destination for where to publish your dashboard.

You should see this window (below) once the report is published. If so, you have officially published the dashboard to your Power BI service account!



This is the same dashboard now officially published in your Power BI service account.



After publishing the dashboard to your Power BI service account you can do the following:

- Share your dashboard with others who have a Power BI Pro account.
- Obtain an embed code (URL) to publish dashboard on your IE/IR website.

To obtain embed code, click on *File* and *Publish to web*.

The screenshot displays the Power BI web interface. On the left, the 'File' menu is open, showing options: 'Save as', 'Print', 'Publish to web', 'Embed in SharePoint Online', 'Export to PowerPoint (Preview)', and 'Download report (Preview)'. An orange arrow points to the 'Publish to web' option. The main area shows the 'CAIR University Dashboard Key Performance Indicators' with various charts and filters.

CAIR University Dashboard Key Performance Indicators

Earned 30 units in Year 1

Yes 21.62%
No 78.38%

Selected Students

1318

Awards

Award Type	Count
A.A.	482
A.S.	319
Certificate	101
No award	319
Other	97

Transfer Institution

Institution	Count
Cal Baptist Un...	23
CSUSB	123
N/A	846
Stanford	10
UC Berkeley	23
UC Davis	50
UC Irvine	22
UC Merced	43
UC Riverside	60
UC San Diego	29
UCLA	45
USC	44

Filters:

- Entering Cohort Year: ☐ 2010-2011, ☐ 2011-2012, ☐ 2012-2013
- Disabled Students: ☐ No, ☐ Yes
- Gender: ☐ Female, ☐ Male
- Veterans: ☐ No, ☐ Yes
- Ethnicity: ☐ Asian, ☐ Black/African American, ☐ Latino/Hispanic, ☐ Other, ☐ White
- Foster Youth: ☐ No, ☐ Yes

VERY IMPORTANT: Make sure you do not share or publish any confidential/sensitive data.

The screenshot shows a Power BI dashboard titled "CAIR University Dashboard Key Performance Indicators". The dashboard is displayed in a web browser window with the URL <https://app.powerbi.com/groups/me/reports/a865fb28-ed75-4174-b9e6-1e3efd8eddb9/ReportSection>. The dashboard includes a sidebar with navigation options like Favorites, Recent, Apps, Shared with me, Workspaces, and My Workspace. The main content area displays several visualizations: a line chart for "Entering Cohort Year" showing values 494 for 2010-2011 and 416 for 2011-2012; a bar chart for "Awards" with categories A.A. (482), A.S. (319), Certificate (101), No award (319), and Other (97); and a horizontal bar chart for "Selected Students" showing a total of 1318. On the right side, there are filter sections for "Entering Cohort Year" (2010-2011, 2011-2012, 2012-2013), "Disabled Students" (No, Yes), "Gender" (Female, Male), "Veterans" (No, Yes), "Ethnicity" (Asian, Black/African American, Latino/Hispanic, Other, White), and "Foster Youth" (No, Yes). An "Embed in a public website" dialog box is open in the center, warning that the report will be publicly accessible and advising to ensure data rights before publishing. The dialog box has "Publish" and "Close" buttons.

Embed in a public website

You are about to create an embed code for this report. Once published, anyone on the Internet will be able to access the report and the data it contains, and Microsoft may display the report on a public website or a public gallery.

Before publishing this report, ensure you have the right to share the data and visualizations publicly. Do not publish confidential or proprietary information, or an individual's personal data. If in doubt, check your organization's policies before publishing.

Publish **Close**

Embed Code/URL! Success!

Dashboard for presentation: x

Secure | <https://app.powerbi.com/groups/me/reports/a865fb28-ed75-4174-b9e6-1e3efd8eddb9/ReportSection>

Power BI | My Workspace > Dashboard for presentation

File View Edit report Explore Refresh Pin Live Page

Usage metrics View related Favorite Subscribe Share

Filters

CAIR University Dashboard
Key Performance Indicators

California Association
CAIR
for Institutional Research

Entering Cohort Year

494 416

2010-2011 2011-2012

Awards

482 319 101 319 97

A.A. A.S. Certificate No award Other

Selected Students

1318

Entering Cohort Year

☐ 2010-2011
☐ 2011-2012
☐ 2012-2013

Disabled Students

☐ No
☐ Yes

Gender

☐ Female
☐ Male

Veterans

☐ No
☐ Yes

Ethnicity

☐ Asian
☐ Black/African American
☐ Latino/Hispanic
☐ Other
☐ White

Foster Youth

☐ No
☐ Yes

Get Data

Page 1

Success!

Link you can send in email

<https://app.powerbi.com/view?r=eyJrIjoieYjZmMTkxZTA5YjZlZWVl>

Html you can paste into your blog or website

`<iframe width="800" height="600" src="https://app.powerbi.com/view?r=eyJrIjoieYjZmMTkxZTA5YjZlZWVl"`

Size 800 x 600 px

Close

Power BI Resources:

- [Power BI Guided Learning \(videos\)](#)
- [Guy in a Cube \(videos\)](#)
- [2017 Microsoft Data Insights Summit \(videos\)](#)

Thank you!

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jaime.rodriguez@mvc.edu