

Tableau

Interactor Training

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Tableau Interactor Training Overview

Course Overview

Princeton's Tableau Server Environment

Functional Basics

Course Overview

The goal for this course is to introduce Tableau Server within the context of its usage at Princeton University. We will teach the skills needed and provide the contact information for those who can grant access to the appropriate sites so you can get the most out of the information. Upon completion, each student should understand:

- How Tableau is used at Princeton
- Basics of the Tableau Server
- How to navigate to and interact with content
- How to select Server data sources when applicable

There is no preferred web browser when using the Tableau Server. You may use IE, Chrome, or Safari depending upon your personal preference.

The Tableau Environment at Princeton

What you need to know about Tableau and how we use it at Princeton

It's important to understand how or why you might be working with your data and to assess what your level of usage might be. Below are some important questions to consider:

- Will I be creating reports based my own data or data others have formatted?
- Will others need to access the reports I create?
- Will reports I create need to be available to the general public?
- Do I need a Desktop license?

The answer to each of these questions will determine the type of access you'll need and how you'll need to handle the distribution or publication of your material.

Here at Princeton, we use Tableau in a manner similar to the way in which we use the Data Warehouse. Differences arise from the structure of the tool itself.

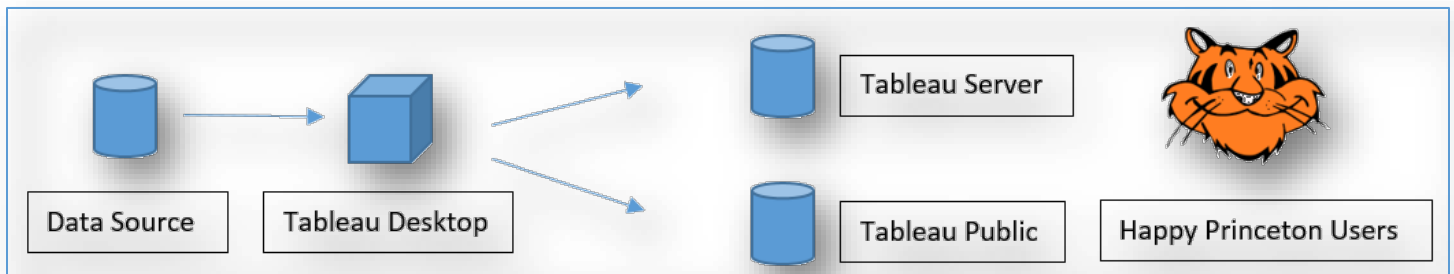


Tableau Desktop is central to the creation of all Tableau data sources.

Tableau Server is used when you have a visualization that has been designed to be consumed by others. If you have a specific, restricted audience and would like to control the manner in which they interact with your work, they should be defined on the Server where they will access it.

Tableau Public is a version of Server, however, security has been setup such that the visualizations published there may be accessed without authentication. This is where you would publish work that you want available for all public consumption, without authentication. An example of this would be a graph demonstrating historical enrollment applications to the University. This might be included on the Princeton public website.

Hands-On – Access to the Server

Start by logging onto the Server and getting comfortable with the functionality available based upon your site or project permissions.

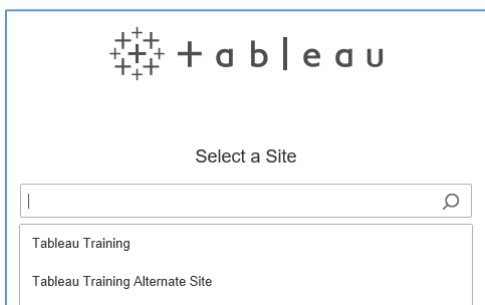
Logging In

Log into Tableau Server and get comfortable with basic navigation and functionality.

1. Open the URL for the Tableau non-production Server:
<https://tableaud.princeton.edu>.
2. Log in with your credentials (netid/password).

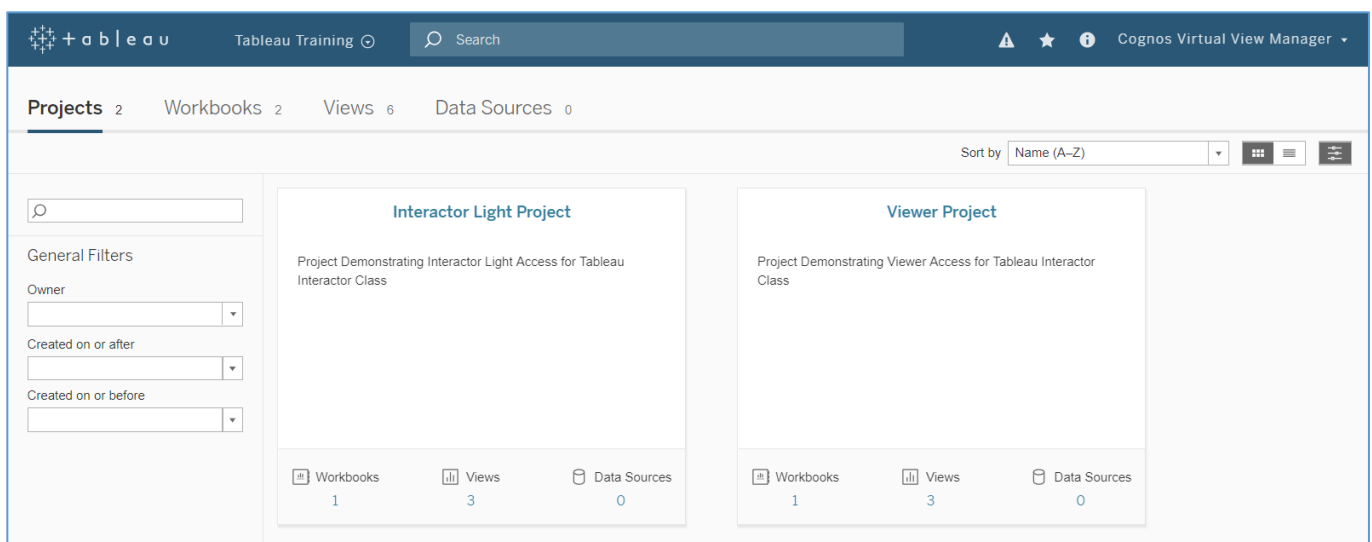
If you have access to only one site, you will be brought directly to the site. Alternatively, if you have access to more than one site, you must select the site you wish to enter from the list.

Here, we have access to two sites.



3. Start the first exercise by selecting **Tableau Training**.

Take a moment to look around.



The Tableau Server Environment

Once logged onto the Server, various options are available for navigation and personalization.

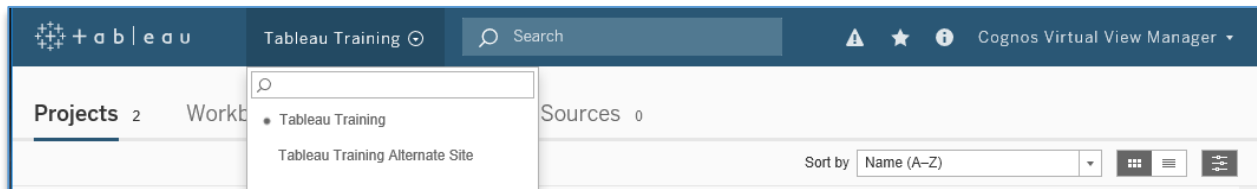
Personal Preferences, Navigation, and Messages

Site Selection

If you have been granted access to more than one site, you will have the option to select the Server site using the site selection drop-down.

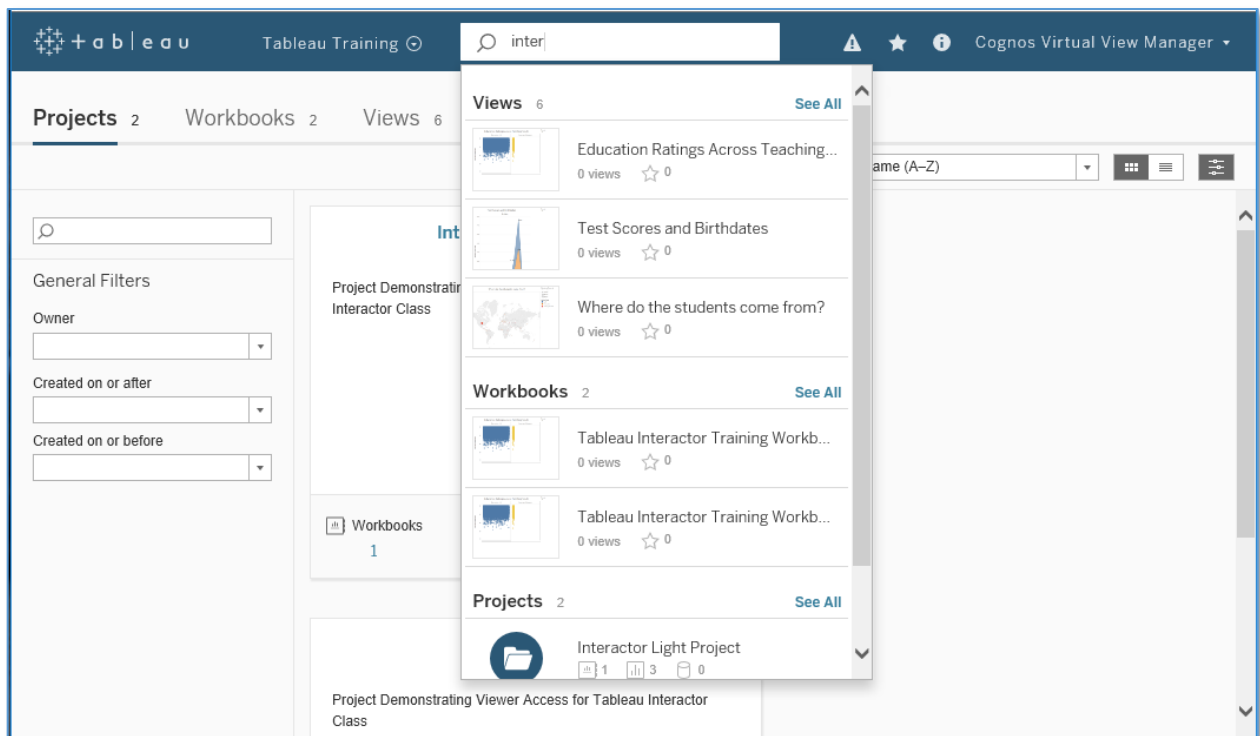


Note: The dot (or bullet) to the left of the Site Name is an indication of which site is currently active.



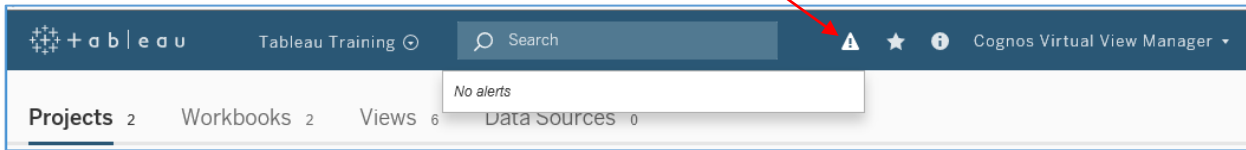
Site Global Search

You may search for content across the entire site using **Search** on the toolbar. The results are rendered in categories, showing all “Views”, “Workbooks”, and “Projects” grouped together.



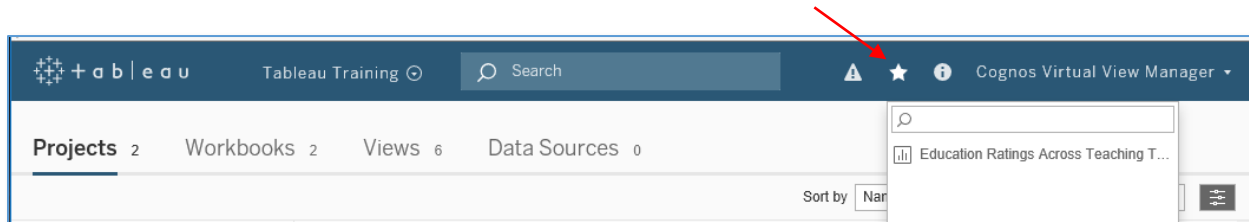
Alerts

Check for any alerts, such as failed extracts, by clicking on the **exclamation point** icon.



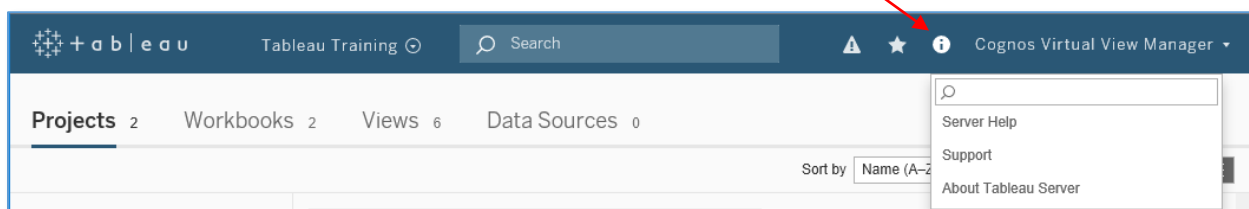
Favorites

You may save views as favorites. Once you have done this, you can search for a saved favorite by clicking the **star** icon on the toolbar.



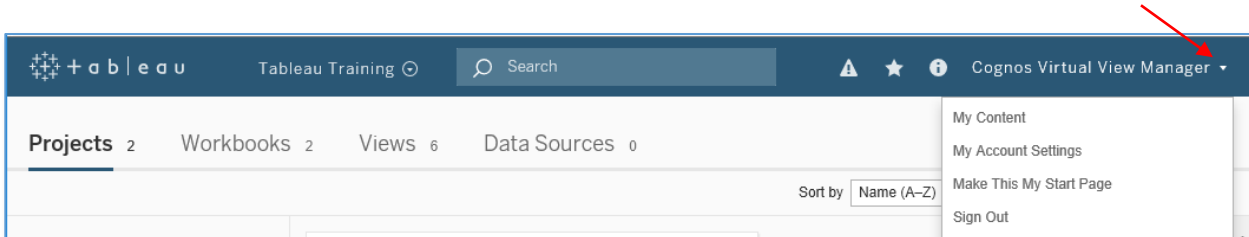
Information

You may search for help or find out the current Server version by clicking the **information** icon.



Personal Content and Settings

Clicking the drop-down arrow next to the username displayed on the toolbar allows you to navigate directly to any content you own on the Server site, as well as setting your personal preferences.



Selecting **My Content** will bring you directly to a view containing all content you own on the site.

My Account Settings will allow you to specify personal preferences.



Note: This information gets set up by your site administrator, therefore, it is not recommended that these settings be changed.

The screenshot shows the 'Settings' page of the 'Cognos Virtual View Manager'. The header includes the Tableau logo, 'Tableau Training', and a search bar. Below the header, there's a 'Back to Content' link. The main section is titled 'Cognos Virtual View Manager' and shows user details: 'USER - informix', 'Site role: Interactor', 'Last sign in: Oct 30, 2017, 1:35 PM', and 'amydim@princeton.edu'. There are tabs for 'Workbooks 0', 'Views 0', 'Data Sources 0', 'Alerts 1', 'Subscriptions 1', and 'Settings'. The 'Settings' tab is active. It contains several sections: 'Username' (informix), 'Display name' (Cognos Virtual View Manager), 'Email' (amydim@princeton.edu) with a 'Save Changes' button; 'Saved credentials' with a 'Clear All Saved Credentials...' button; 'Connected clients' (No connected clients); 'Start page' (/projects) with a 'Reset to Default...' button and a note about changing the start page; 'Language' (English) and 'Locale' (English (United States)) with 'Save Changes' buttons; and 'Email Notification' with a checked box for 'Send email when scheduled refreshes fail' and a 'Save Changes' button.

Make This My Start Page allows you to choose a specific view as the first screen (or landing page) you view when logging into Tableau Server.

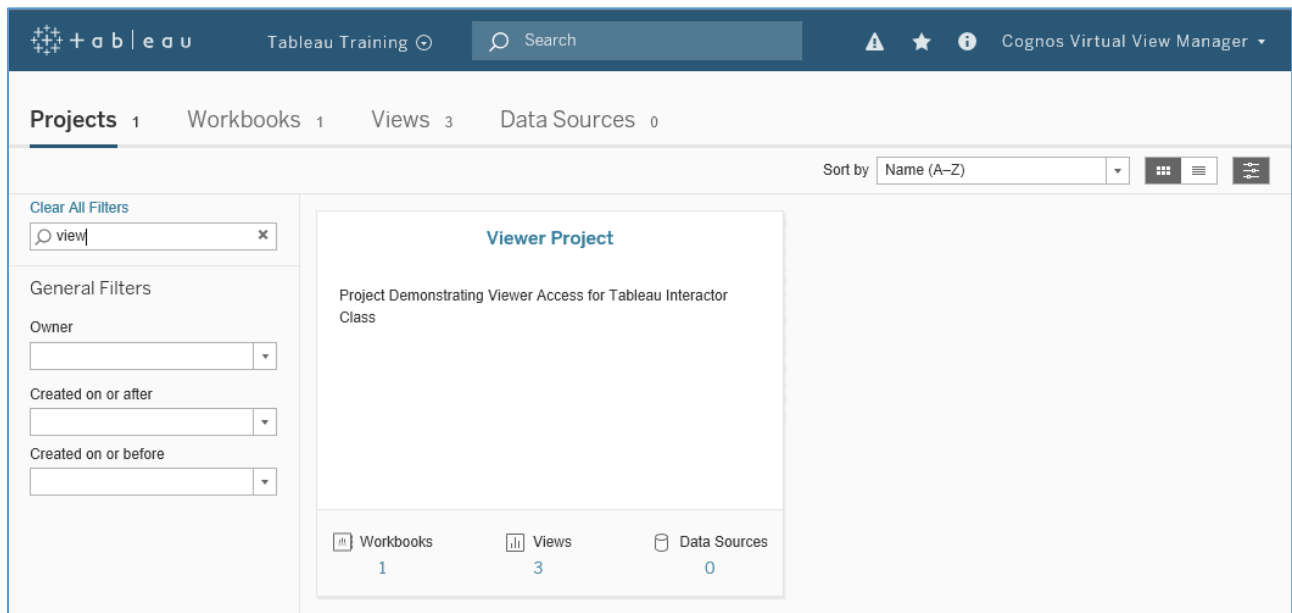


Note: As with **My Account Settings**, the Server administrator will set the default view for you so, it is not recommended to make changes here unless you have a special circumstance or specific permission.

The last option on this menu is to **Sign Out** of Tableau Server. You may also accomplish the same result by closing your browser.

Searching within Site Categories

Moving down the page, you may search within various categories of content including Projects, Workbooks, Views, and Data Sources.

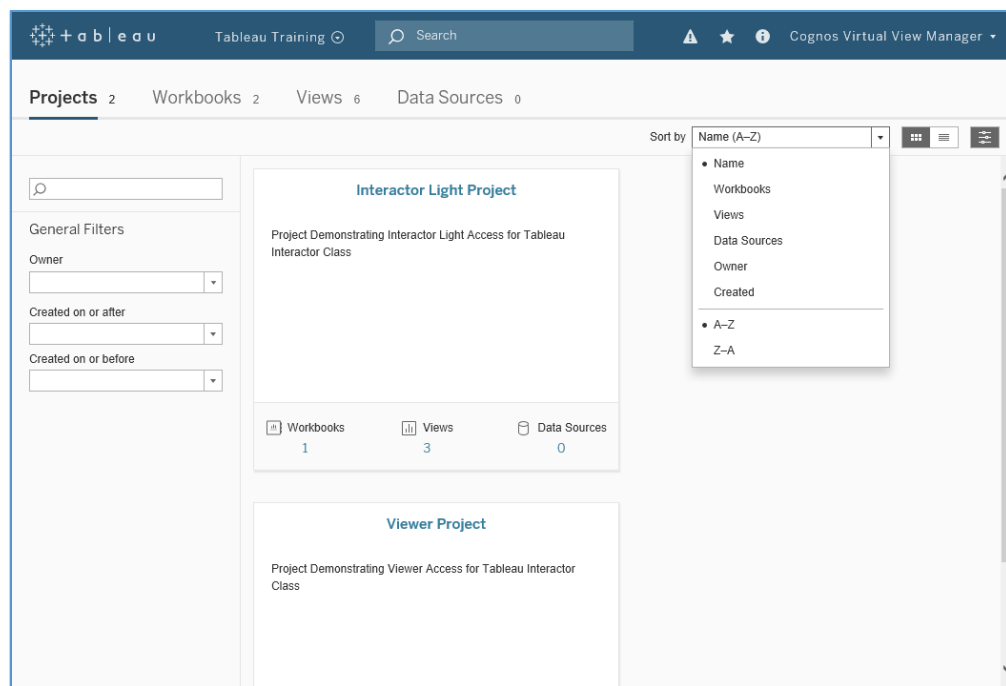


Sorting Content in the View

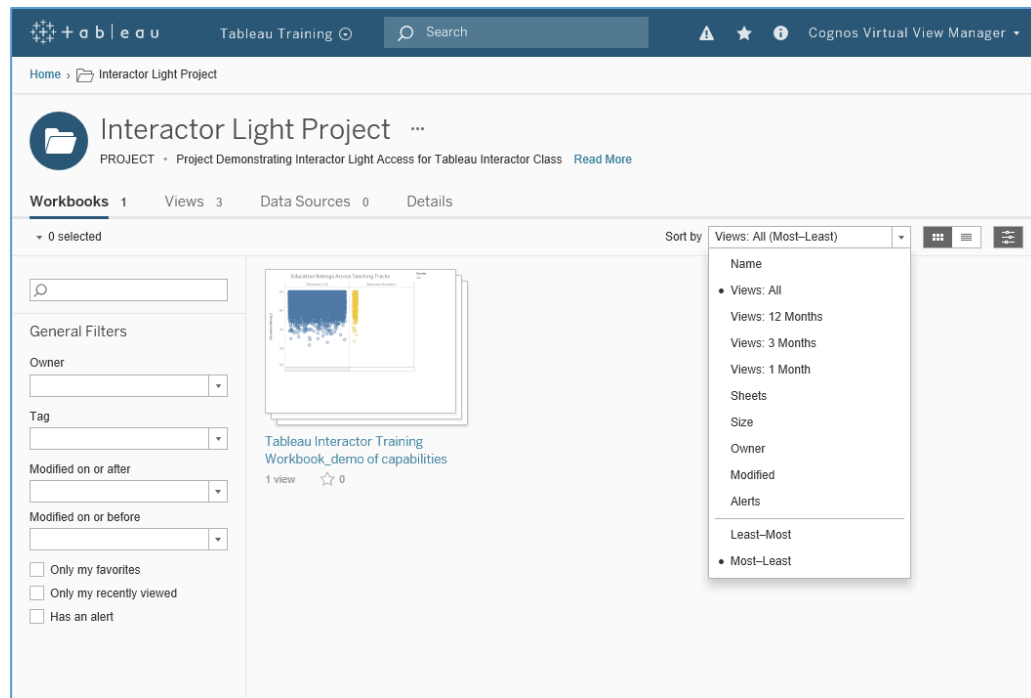
You may further customize the results by adjusting the sorting or type of detail.

Depending on where you are within the site, the sort options may vary.

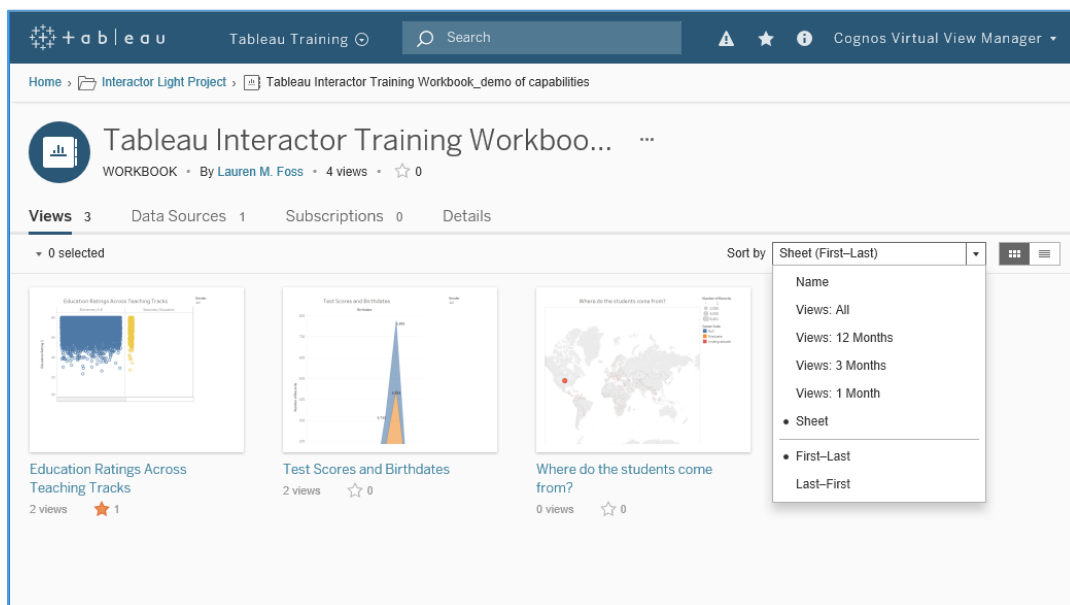
When viewing **Project** data, sort options include Name (alphabetically), Number of Workbooks, Number of Views, Number of Data Sources, Owner (alphabetically), and Creation Date. Additionally, there is an ascending or descending order selection offered, and the default varies based on the selection.



When viewing **Workbook** and **View** data, sort selections include Name, Number of Consumer Views, Number of Consumer Views within the last 12 months, Number of Consumer Views within the last 3 months, Number of Consumer Views within the last 1 month, Number of Sheets, Workbook Size, Owner, Last Modified Date, and Whether or Not There is an Alert.



When a specific **Project** or **Workbook** has been chosen, there is a crumb trail displayed at the top of the page and details are limited to the respective selection. Additionally, if a Workbook has been chosen, sort options are further limited to Name, Number of Consumer Views, Number of Consumer Views within the last 12 months, Number of Consumer Views within the last 3 months, Number of Consumer Views within the last 1 month, and Sheet Name.



Thumbnail vs. List View

The default content view is a **Thumbnail**, offering a preview of the actual view. Alternatively, you can adjust the view to a **List** view.

Name	Workbooks	Views	Data Sources	Owner	Created
Interactor Light Project	1	3	0	Lauren M. Foss	Jul 12, 2017, 11:53 AM
Viewer Project	1	3	0	Lauren M. Foss	Jul 12, 2017, 11:52 AM

Finally, by default, search options are displayed allowing you to hone in on the information shown for both **Projects** and **Workbooks** on most screens. When shown, you may also choose to hide these filters by clicking on the icon on the far right of the view.

Name	Workbooks	Views	Data Sources	Owner	Created
Interactor Light Project	1	3	0	Lauren M. Foss	Jul 12, 2017, 11:53 AM
Viewer Project	1	3	0	Lauren M. Foss	Jul 12, 2017, 11:52 AM

Hands-On – Roles on the Tableau Server

As an Interactor, you will be assigned to one of three roles including **Viewer**, **Interactor Light**, and **Interactor Full**. You may access content with each of these roles but the amount of interaction will vary between them.

Let's explore!

Viewer Access

The role with the most limited access is the **Viewer**. A Viewer can see visualizations but filtering and customization is disabled.

1. Select the **Viewer Project** by clicking on it.
2. When you place your mouse over the Workbook within this Project, you can see various properties including the Project Name, Owner, the Modification Date, and a graphical representation of the total number of views over the past 12 weeks.

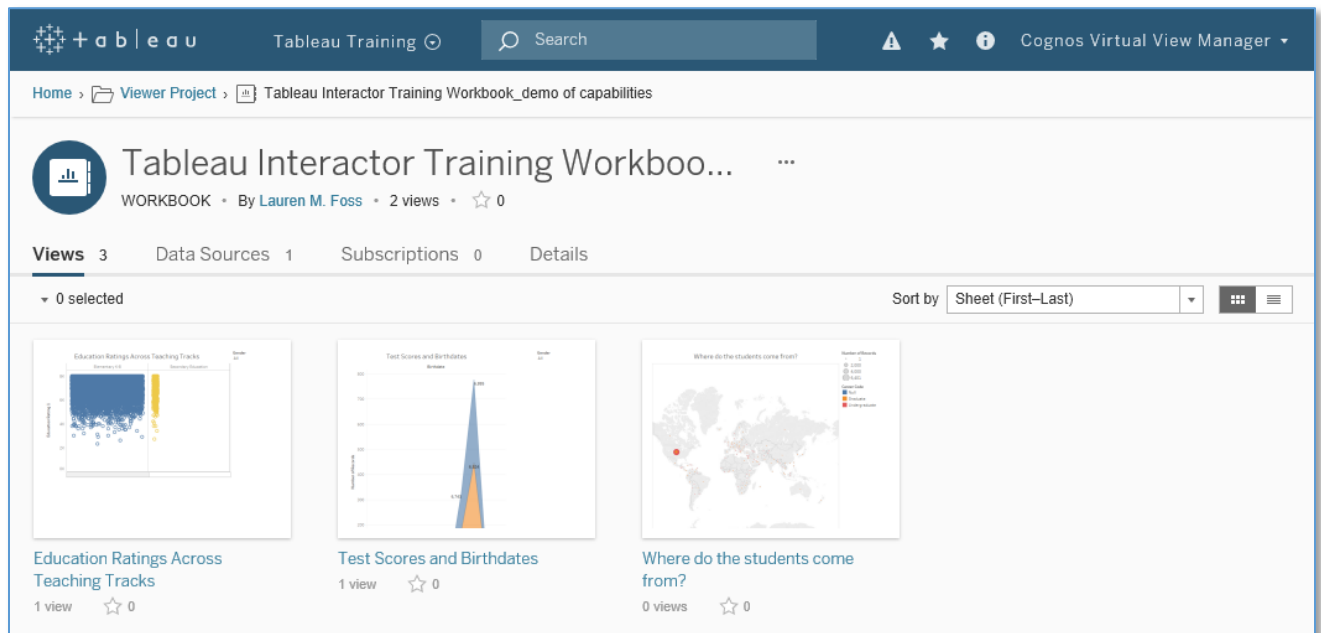


Note: In this case, a view represents the traffic accessing the page.

The screenshot shows the Tableau Server interface for the 'Viewer Project'. The page title is 'Viewer Project' with a subtitle 'PROJECT • Project Demonstrating Viewer Access for Tableau Interactor Class'. Below the title, there are tabs for 'Workbooks 1', 'Views 3', 'Data Sources 0', and 'Details'. A search bar and a 'Sort by' dropdown are also present. The main content area displays a list of workbooks. One workbook, 'Tableau Interactor Training Workbook_demo of capabilities', is highlighted. A tooltip is shown over this workbook, providing details: 'Tableau Interactor Training Workbook_demo of capabilities', 'Demo of viewing capabilities', 'Project: Viewer Project', 'Owner: Lauren M. Foss', 'Modified: Jul 14, 2017, 12:00 PM', and a line graph showing '2 views total' over the last 12 weeks. The left sidebar contains filters for Owner, Tag, and Modified dates, along with checkboxes for 'Only my favorites', 'Only my recently viewed', and 'Has an alert'.

3. Select the **Tableau Interactor Training Workbook** by clicking on it.

4. Select each of the three Views (Education Ratings Across Teaching Tracks, Test Scores by Birthdates, and Where do the students come from?) to explore.



5. Once on the View, you may have the option to highlight marks by selecting items from the legend.
6. Additionally, there are options for saving, sharing, and adjusting the view as listed across the top of the page. Each of these is described below.

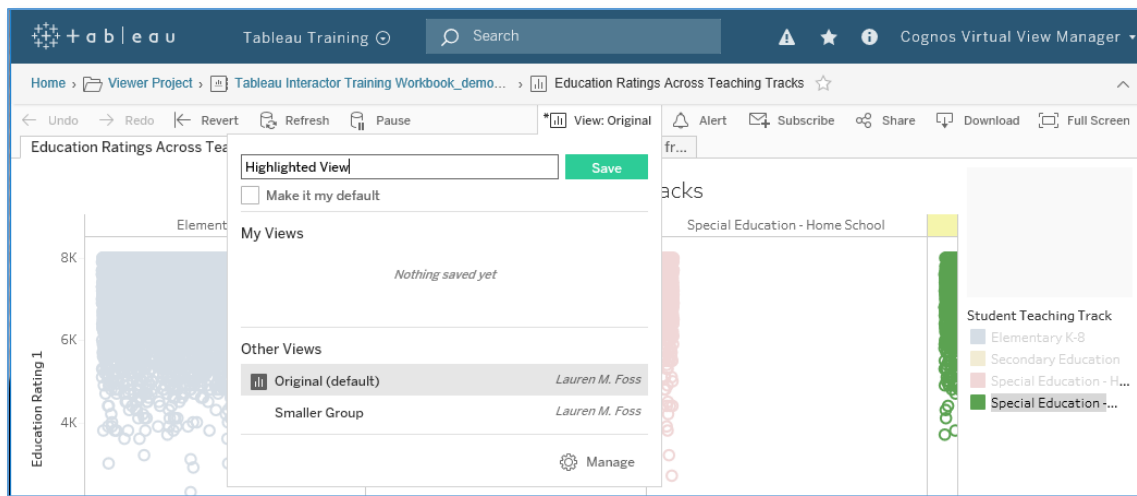


- a. **View: Original** – gives the option to save changes or review any saved and shared altered views.

If you'd like to save adjustments to a View or would like to see any other shared Views, click on the **View: Original** icon. In order to save an adjustment, simply type a descriptive name into the dialog box and click **Save**. You may also select the **Make it my default** option to retain the updated View as your primary View.

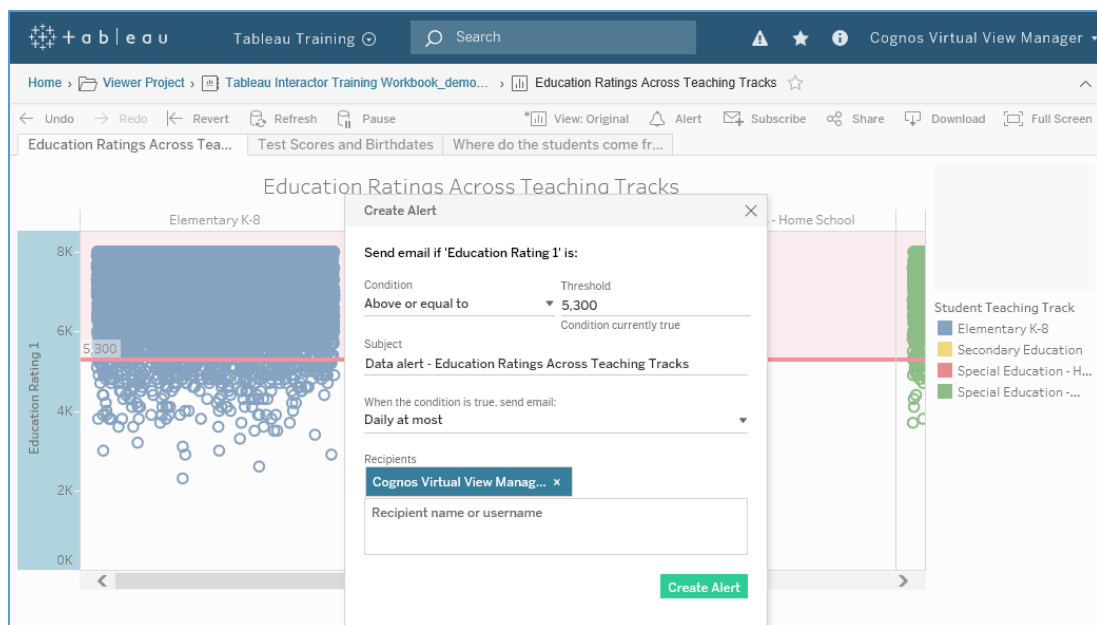


Note: Unless a View is shared, others will not be able to see it. As a Viewer, you do not have the option to share a View.



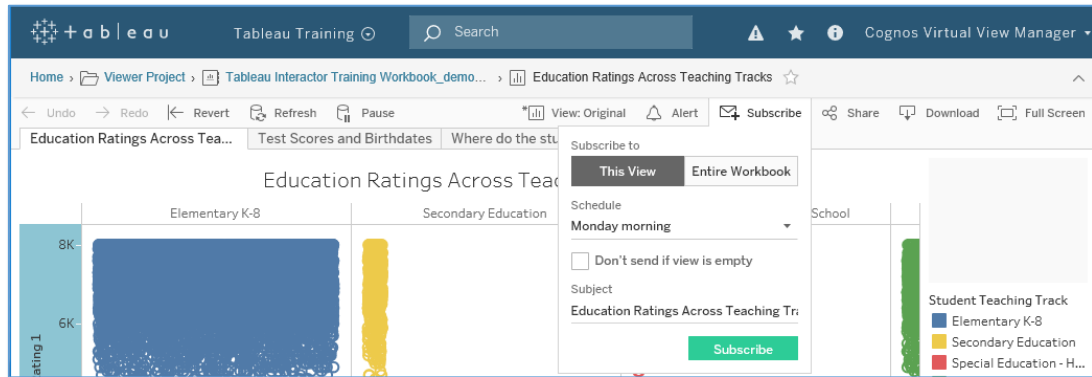
- b. **Alert** – gives the option to sign up for an alert that will send a notification when data in a view is in a specified relation to an identified threshold.

In order to set up an alert, select a numeric axis and then select the **Alert** icon. This will open the **Create Alert** dialog box. Adjust the settings as desired and click **Create Alert**.



- c. **Subscribe** – gives the option to subscribe to a report that delivers a .png version of the report via email.

In order to Subscribe, click the **Subscribe** icon. The **Subscribe to** dialog box will open. Select the type of detail (View vs. Entire Workbook), the desired schedule, whether or not the view should be sent if empty, and click **Subscribe**.

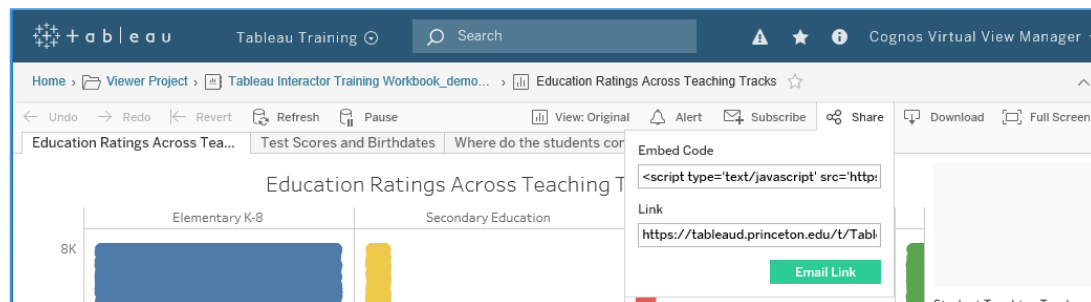


- d. **Share** – gives two URLs for the report that may be shared with others.

The Embed Code is meant to be embedded on web pages, while the Link may be shared and emailed. Using either link does require that the user log into Tableau Server and therefore be defined as a valid user.



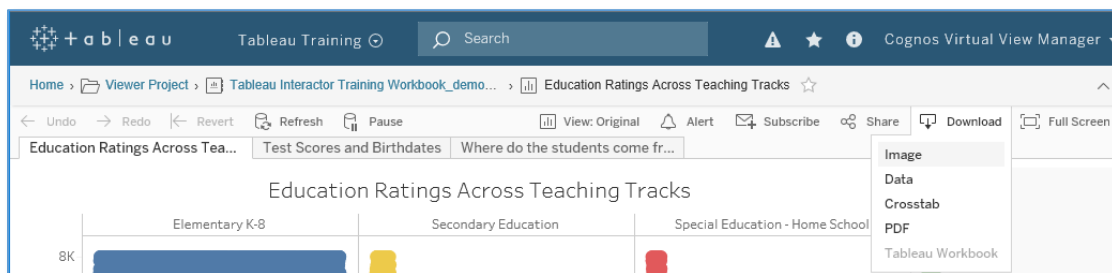
Note: Due to the way in which Drupal strips JavaScript, if your website uses Drupal, you will need to contact WDS. They will supply you with a container developed to use the Link in order to include your Tableau report within your website.



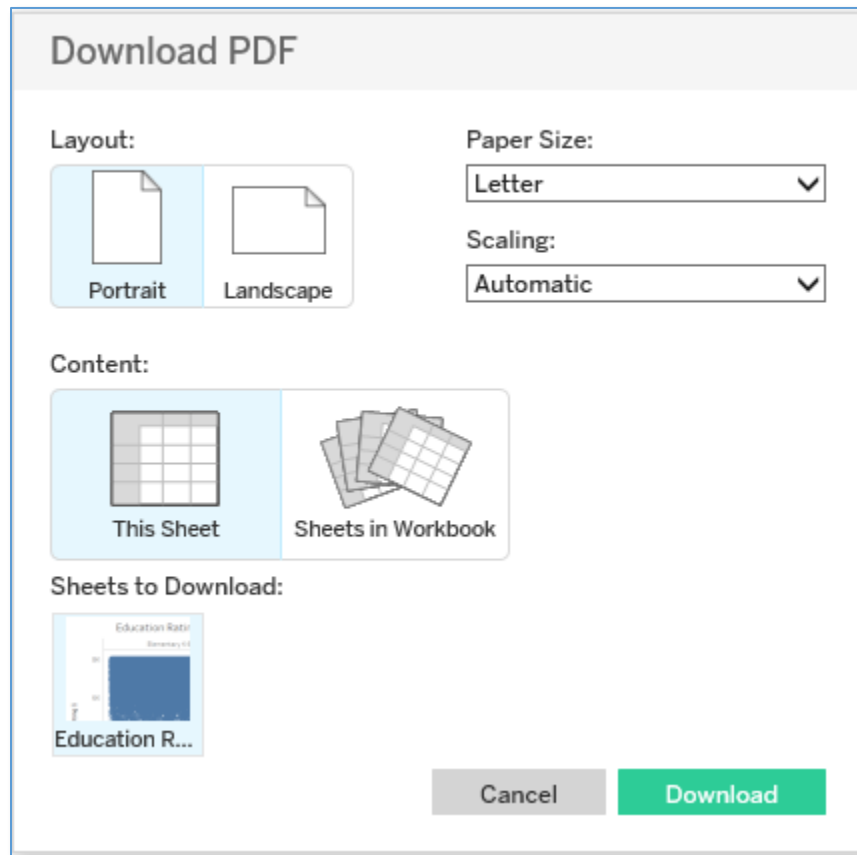
- e. **Download** – gives the option to download information from the report including an Image, Data, Crosstab, and PDF.



Note: None of the Interactor profiles have authority to download Tableau Workbooks. That option, though shown, is inactive/disabled or greyed out.



- The image download is simply a snapshot of the report as it appears on the screen.
- Data download will vary depending on your permissions. Most users will be able to download on summary or aggregate data. However, if you have appropriate permissions, there is an option to view **Full Data** as well.
- The **Crosstab** option downloads the underlying summary data in an Excel crosstab.
- The **PDF download** option offers the ability to set the page orientation, paper size, scaling, and selection of content.



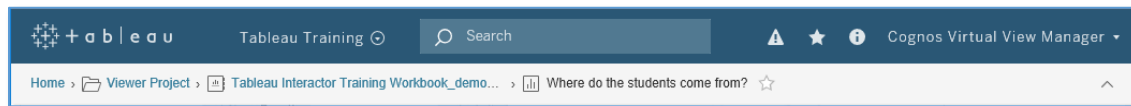
f. **Full Screen** – gives the option to adjust the view to full screen mode

All options described are available with each of the three roles but include additional capabilities per role.

Interactor Light Access

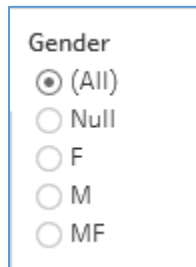
Interactor Light access introduces the ability to filter views and share customization.

1. Return to the main content view by clicking on **Home** in the crumb trail.

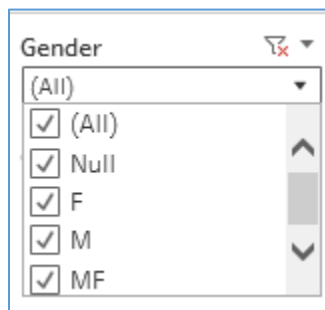


2. Click the **Interactor Light** Project.
3. Select one of the Views. Notice with this role, we now have filters available.

Education Ratings Across Teaching Tracks has a single select filter.



Test Scores and Birthdates has a multi-select dropdown filter.

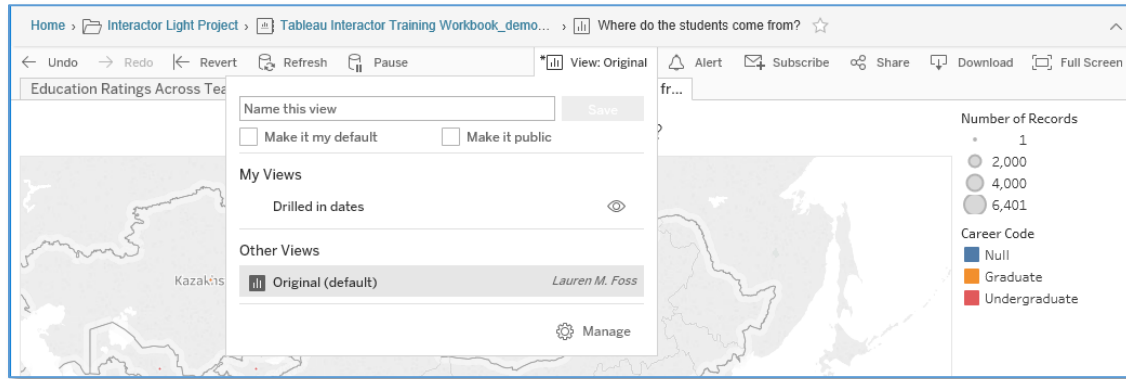


Where do the students come from? has a filter that allows zooming into the map.



Test each of these out to see how they affect the data.

Notice that the **View** option now includes the ability to Share the updated View with **Make it public**.

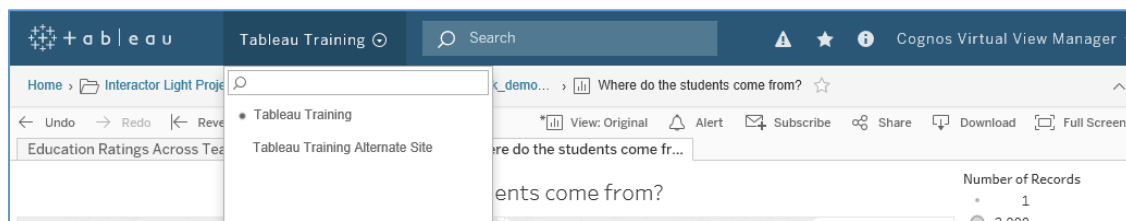


Interactor Full Access

Interactor Full layers on even more capabilities. In this role, there is access to underlying data. Additionally, there is an ability to update reports by adding new fields and even new pages. You may also create new workbooks from online data sources.

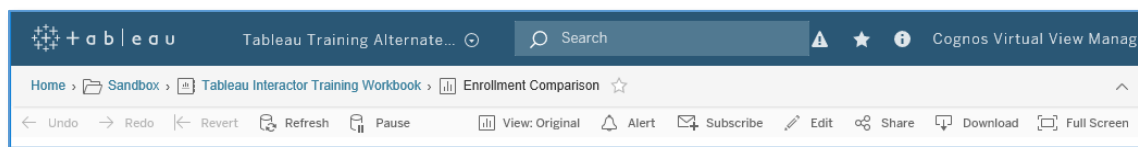
Interactor Full Editing

1. Navigate to the Tableau Training Alternate Site.



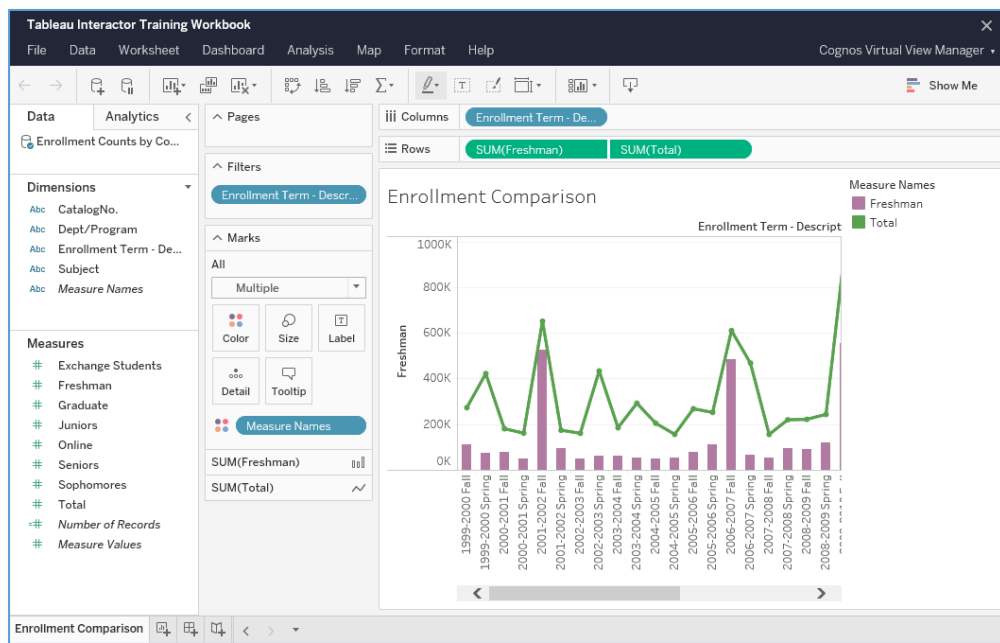
2. Select the **Sandbox** Project.
3. Select the **Tableau Interactor Training Workbook**.
4. Select **Enrollment Comparison**.

Notice there is now an **Edit** icon included.



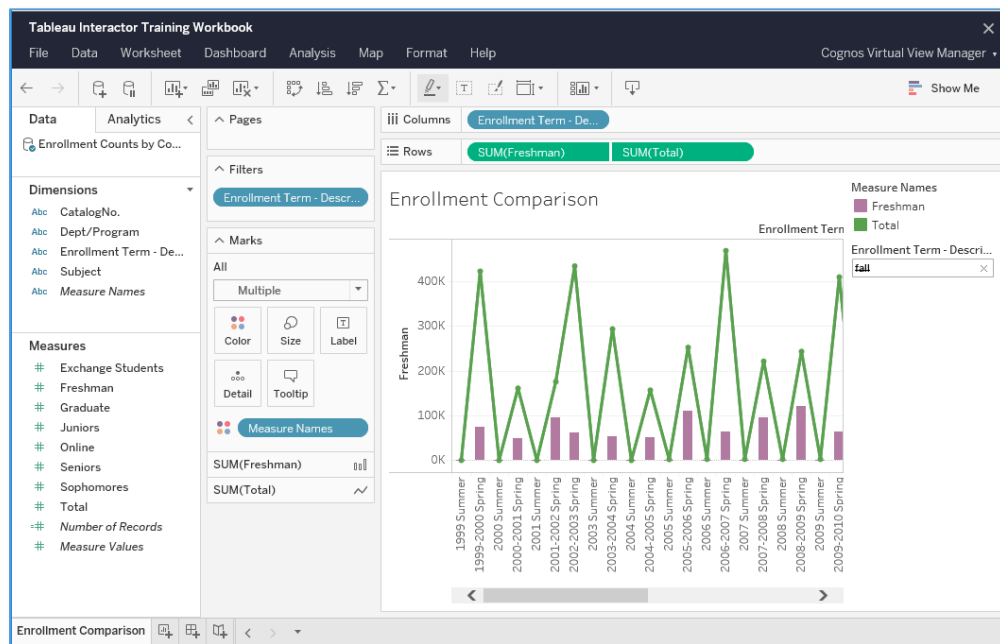
5. Click the **Edit** icon.

This opens the Web Editor.

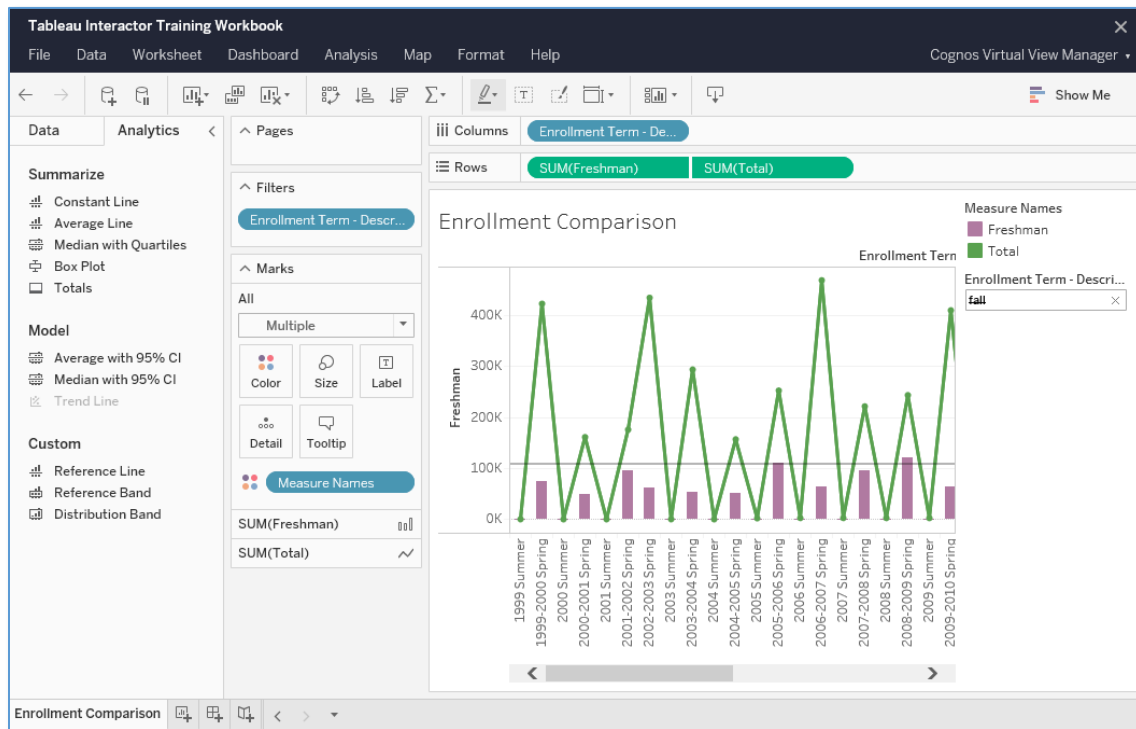


Though not all options are available, it is very similar to Tableau Desktop. Within this interface, the current view may be changed – fields changed, added, removed, and even new pages created.

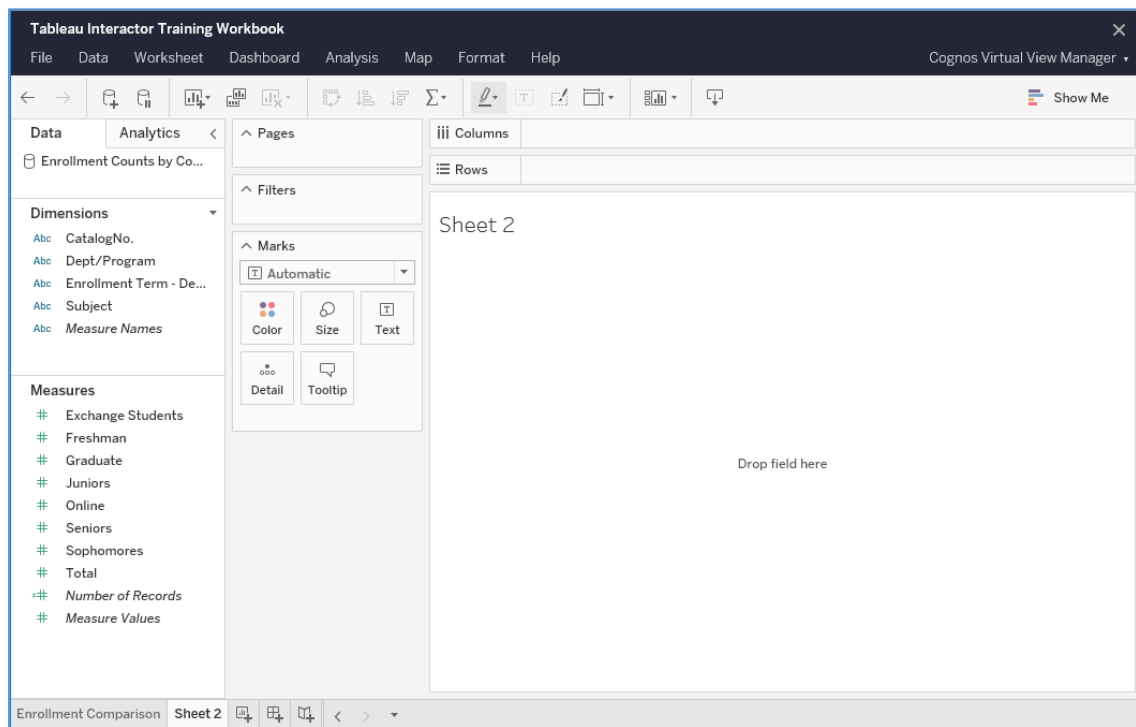
6. Show and change the filter. Right-click **Enrollment Term – Description** on the **Filter** shelf and select **Show Filter**. Then, change the filter to exclude “Fall”.



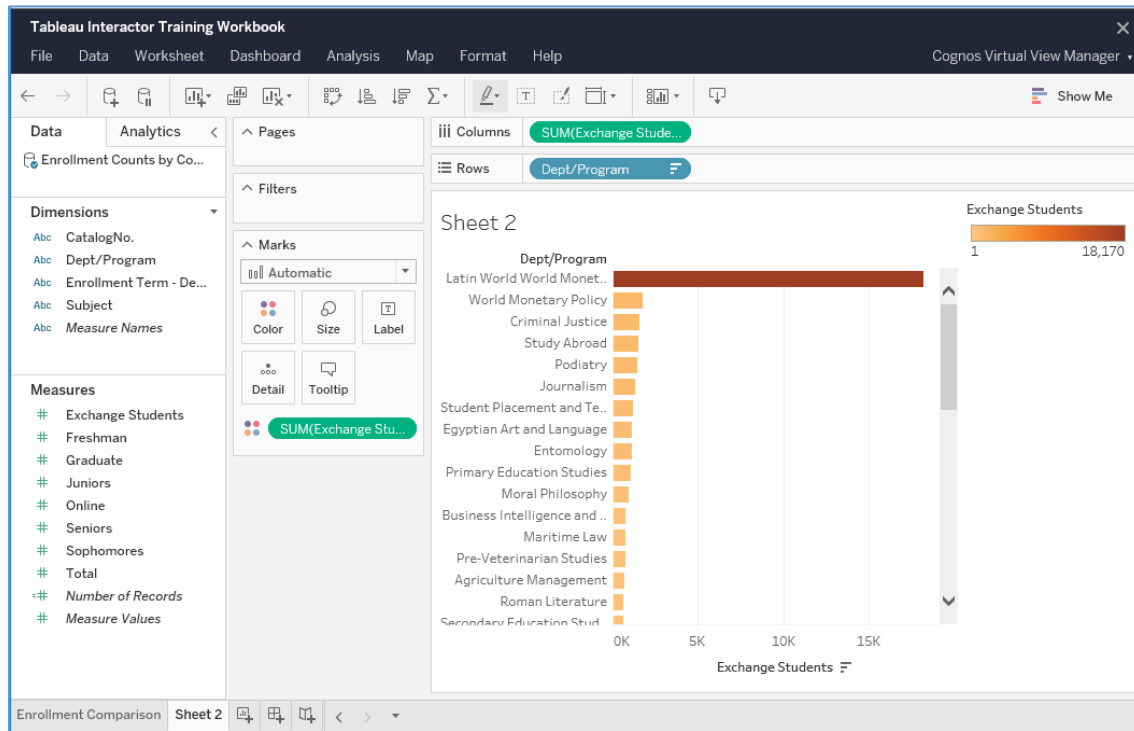
7. Add an Average Line. Click the **Analytics** tab. Click **Average Line** and drag it onto the Worksheet. Place it on **Sum(Total)** for the **Table**.



8. Add a new Worksheet. Either click the **Worksheet** menu selecting **New Worksheet** or click the **New Worksheet** icon at the bottom of the screen.



9. Let's create a **Bar Chart** showing **Exchange Student Enrollment** within **Department/Programs** in descending order. Adjust the color for the display to reflect the **Enrollment** and adjust to **orange**.
 - a. Rename the worksheet **Exchange Student Enrollment**
 - b. Drag **Dept/Program** from Dimensions to Rows
 - c. Drag **Exchange Students** from Measures to Columns
 - d. Click to select the **Dept/Program** pill and click **Sort Descending** on the toolbar
 - e. Drag another instance of **Exchange Students** to Color
 - f. On the Exchange Students filter (docked on the right of your viz), click the drop-down to edit colors. Change to orange.

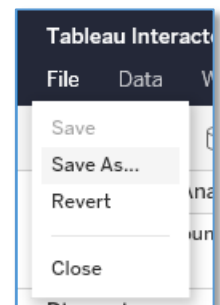


10. Save the changes. Notice that only the original Author has the option to **Save** (overwriting the original). Making edits to a Workbook on the web only includes the **Save As** option for other users.

When saving, you will only be able to save to Projects where permission has been granted. On the Training Site, this is the **Test for Web Authoring Project**.

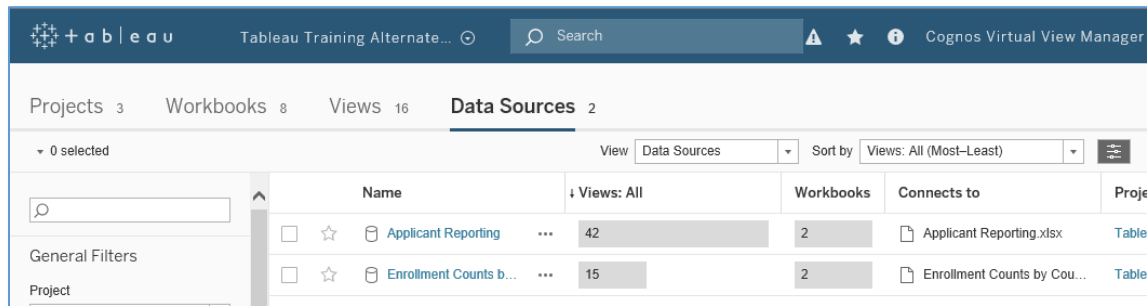
The new Workbook will be saved to and available within the selected Project.

The screenshot shows the 'Save Workbook' dialog box. It has a 'Name' field, a 'Project' dropdown menu, and a checkbox for 'Embed password for data source'. The 'Project' dropdown is open, showing 'Test for Web Authoring' as the selected option. The 'Save' button is highlighted.

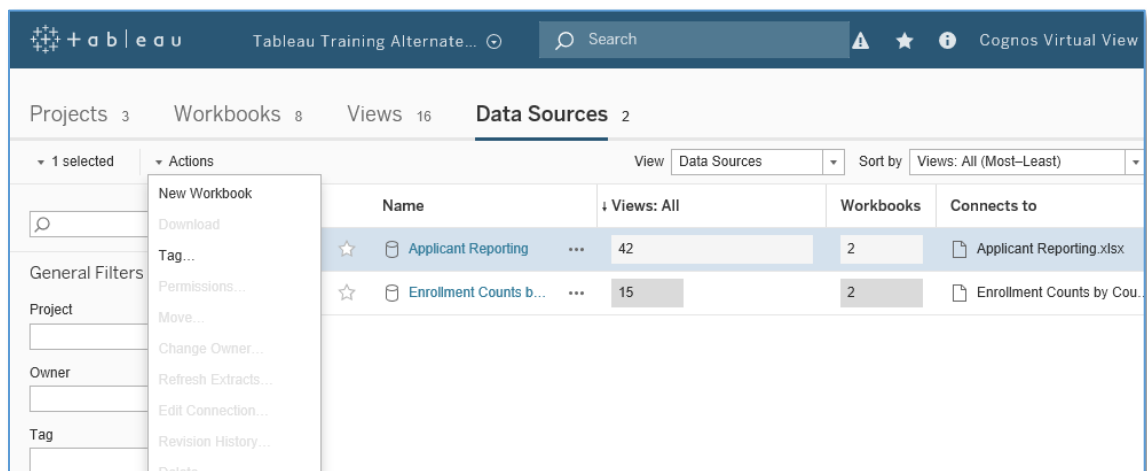


Let's connect to a Data Source on Server to create a new workbook from scratch.

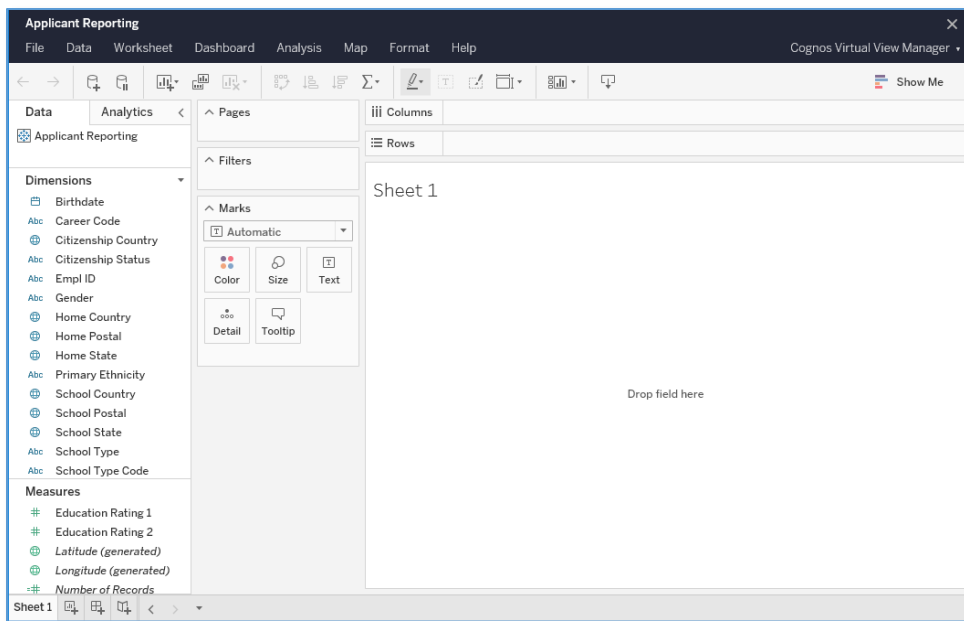
1. **Close** out of your current project
2. Click **Home** on your crumb trail
3. Select **Data Sources**



4. Choose the first Data Source (**Application Reporting**) by placing a check in the checkbox to the left of the name. Then, click the **Action** drop-down. Select **New Workbook**.

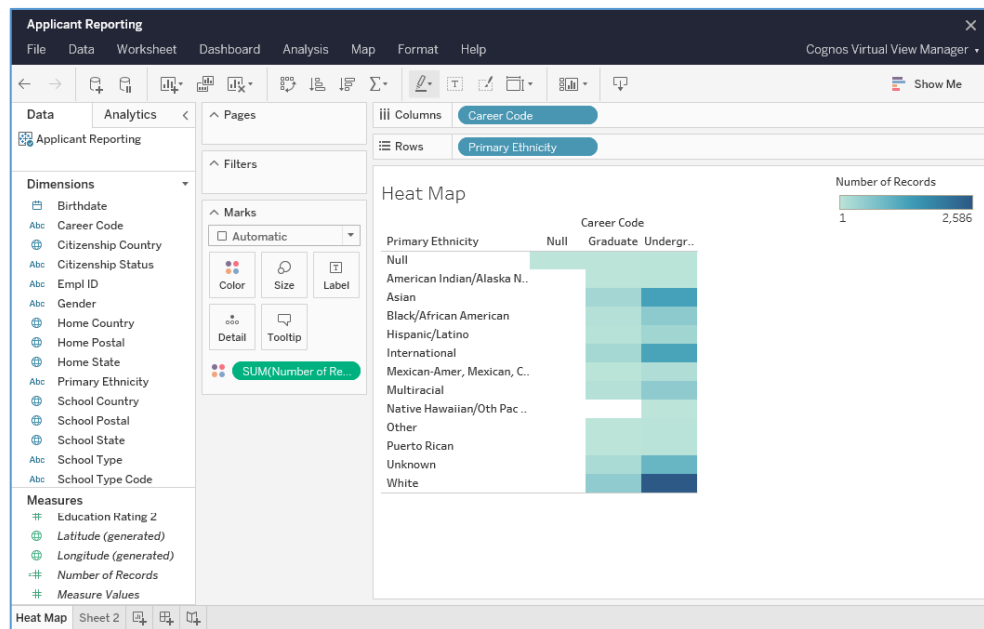


This will open the now familiar Web Editor.

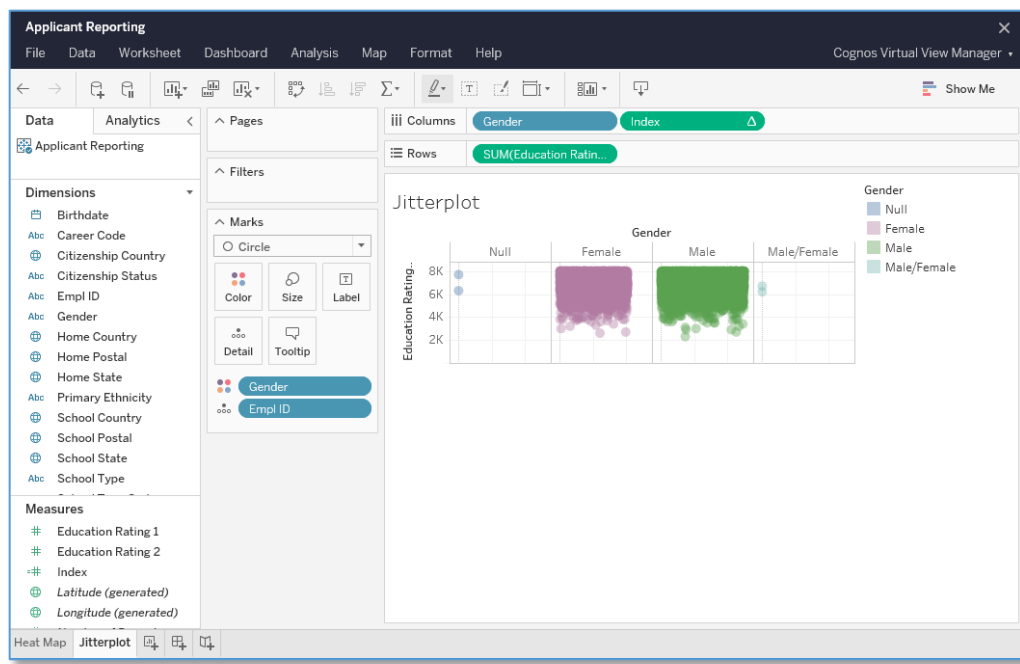


Within the Editor, you may create Worksheets, combine Worksheets in Dashboards, and create Stories. You may also select more than one Data Server Data Source.

5. Let's create a **Heat Map** showing **Primary Ethnicity** against **Career Code** with **Number of Records** on **Color**.
 - a. Rename the Worksheet **Heat Map**
 - b. Drag **Primary Ethnicity** to Rows
 - c. Drag **Career Code** to Columns
 - d. Drag **Number of Records** to Color



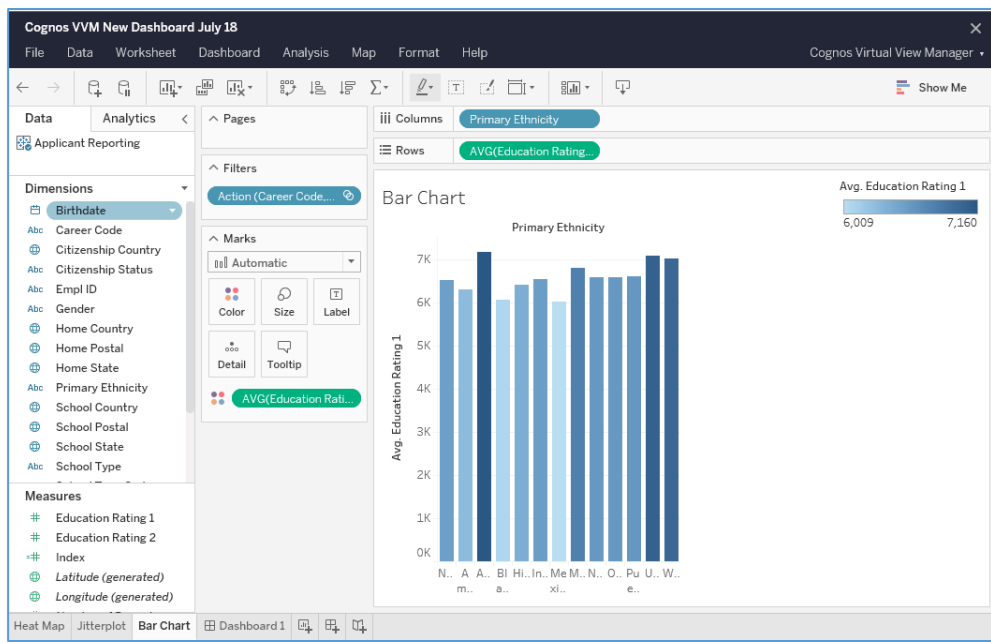
6. Let's create a **Jitterplot** showing **Education Rating** against **Gender** on a new Worksheet.
 - a. Add a new Worksheet
 - b. Rename the Worksheet **Jitterplot**
 - c. Add **Gender** to **Columns** and **Education Rating 1** to **Rows**
 - d. Use **Empl ID** to set the detail
 - e. Change the Mark Type to **Circle**
 - f. Create a **Calculated Field** of **Index** with a calculation of **Index()**
 - g. Pull **Index** onto the View to separate the marks.
 - h. Adjust **Index** so that the table calculation uses **Empl ID**
(Hint: Click the pill's drop-down arrow, select **Compute Using**, Empl ID)
 - i. Hide the Header from **Index**
 - j. Add **Gender** to Color
 - k. Edit colors as desired and adjust the opacity to 40%



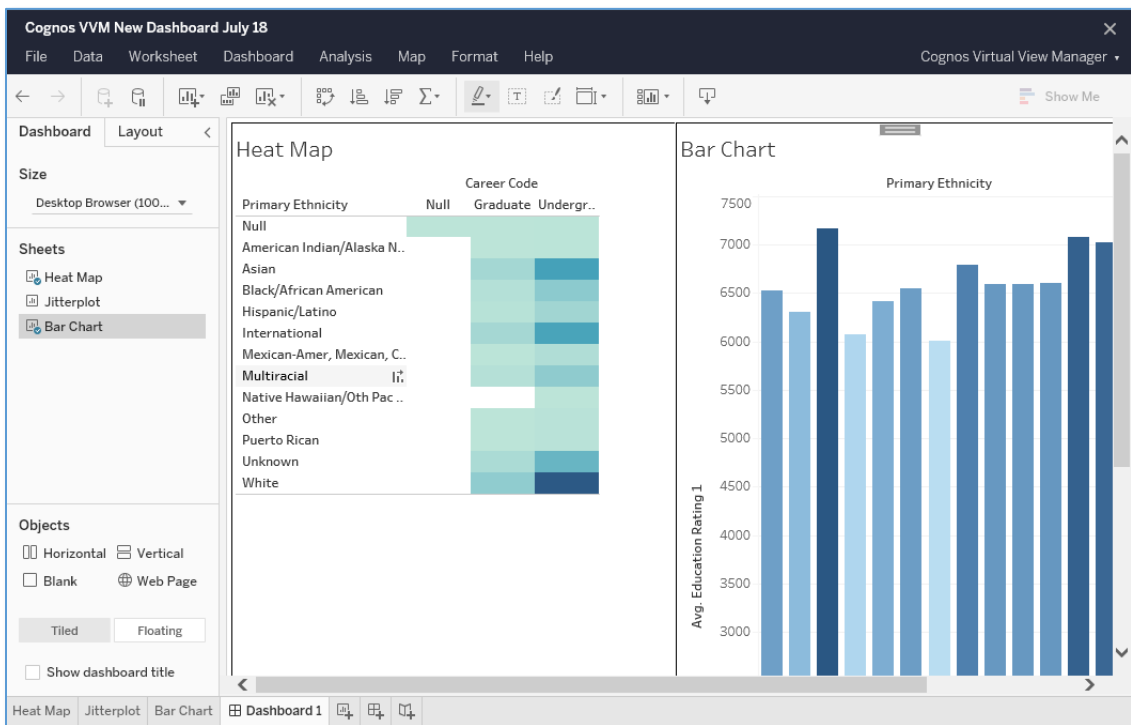
Note: Changes made, including calculated fields, are not added to the original data source. They will only be stored within your saved worksheet.

Worksheets can be combined into Dashboards. Within the Dashboard, worksheets may be designated as filters.

7. Create a new Worksheet with a **Bar Chart** comparing the **Average Education Rating 1** against **Primary Ethnicity**
 - a. Rename the Worksheet **Bar Chart**
 - b. Add **Primary Ethnicity** to Columns.
 - c. Add **Education Rating 1** to Rows and change the **Measure** to **Average**.
 - d. Add **Education Rating 1** to Color and change the **Measure** to **Average**.



8. Create a new **Dashboard** using the **Icon** at the bottom of the page or the **Dashboard** menu.
 - a. Add **Heat Map** and **Bar Chart** to the new Dashboard.
 - b. Set both Worksheets to act as filters. Click the marks on the Dashboard to see how they affect the results.



9. **Save** your new Workbook.

The Tableau Server has become quite versatile. However, there is still a need for Tableau Desktop. All Server data sources must be created using Tableau Desktop. Additionally, there is a great deal more customization available using the Desktop application. As a result, more intensive applications continue to require the Desktop interface.

Helpful Links and Resources

We in CeDAR are here to answer any questions you may have. In addition, we have provided a few links that should prove to be useful.

Princeton's Tableau Production Server	https://tableau.princeton.edu
Princeton's Tableau Development Server	https://tableaud.princeton.edu
Princeton's Tableau Public Server	https://tableaupublic.princeton.edu
Princeton Tableau Desktop Installation	http://www.princeton.edu/kace
Tableau's website	www.tableau.com
Tableau Training and Tutorials	http://www.tableau.com/learn/training
Tableau Knowledge Base	http://kb.tableau.com
CeDAR Contact Details	cedar@princeton.edu
Tableau Support Communities	https://community.tableau.com
Princeton Tableau User Group (TUG)	Tableau_Users@princeton.edu
Tableau: Raising the Bar	cedar.princeton.edu/education-outreach/users-groups

Please contact CeDAR if you would like to be added to the Princeton TUG.

The web is full of information and feedback from others who are currently using Tableau. Simply typing "Tableau" and your question into the search bar of your browser will often return dozens of results. We look forward to helping you to learn and navigate your way as you move along the path of getting the most out of your data.