Tableau
Interactor Training
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.

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.

![Tableau Training](image)

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

**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.

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.
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.

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.

![Image of Tableau interface]

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.

![Education Ratings Across Teaching Tracks filter]

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

![Test Scores and Birthdates filter]

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

![Where do the students come from? filter]

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”.

![Tableau Interactor Training Workbook](image)
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.
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%

![Jitterplot](image)

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.