Tableau Server Training

STUDENT WORKBOOK EXERCISES

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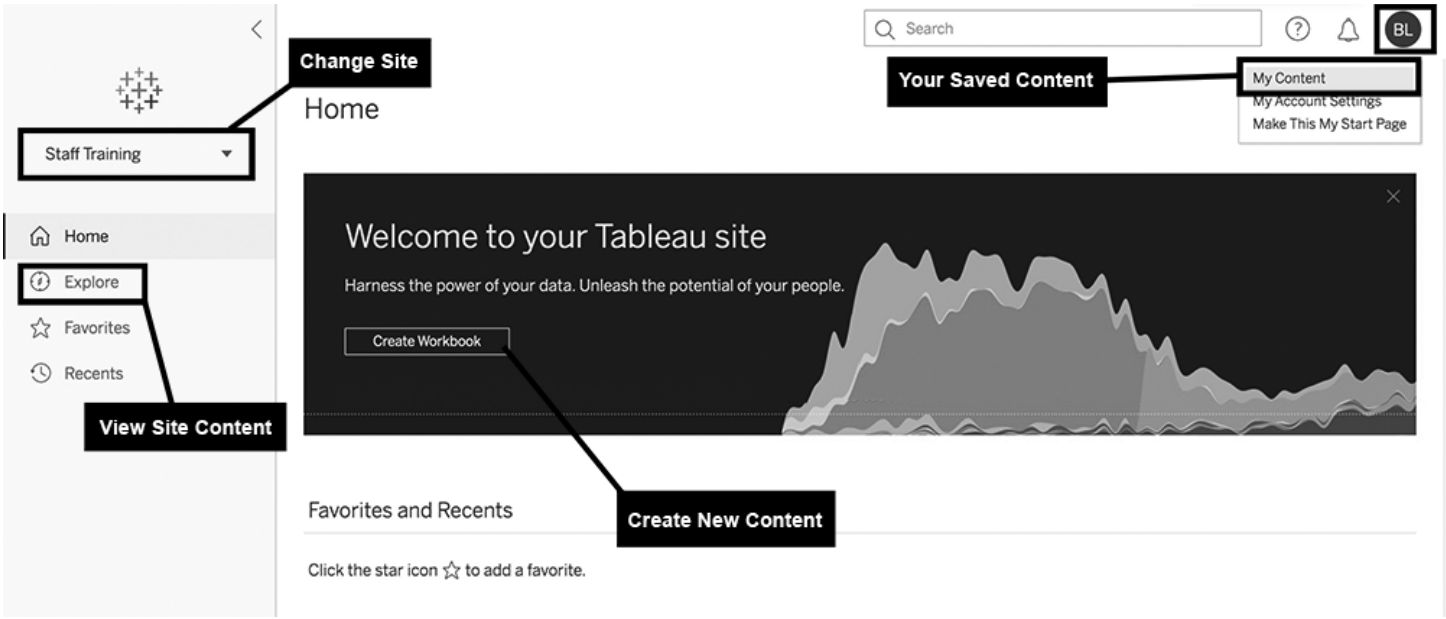
Exercise 1: Log in to Tableau Server

1. Go to **tableau.unc.edu**
2. Log in with your **ONYEN**
3. Authenticate with **DUO**
4. Select **Staff Training** from the menu.

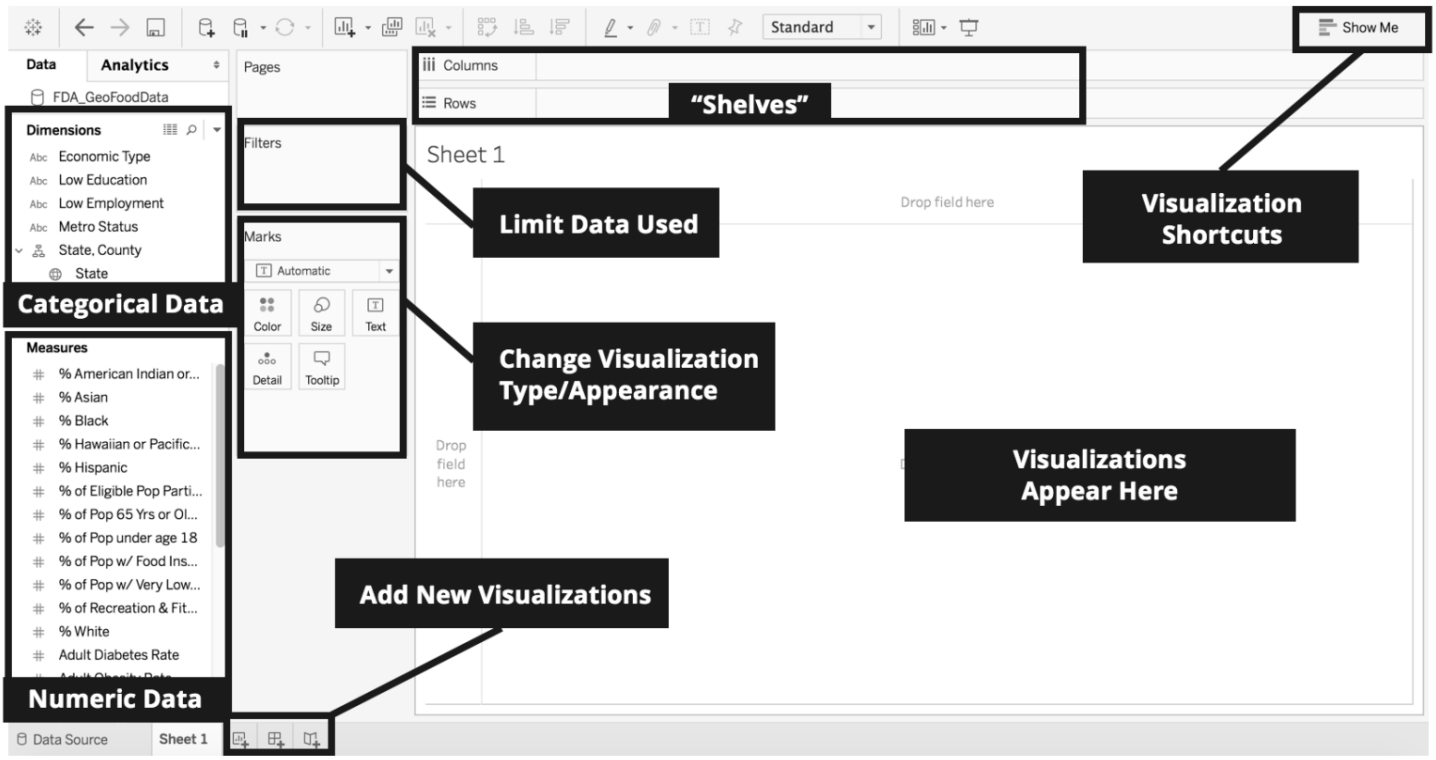
Server Interface



Exercise 2: Connect to a Data Source

1. Click on the **Create Workbook** button.
2. Select **MockUNCData_Students**
3. Click **Add data source**

Workbook Interface



Exercise 2: Create a Bar Chart

1. Drag **Primary Major** from the **Dimensions** pane to the **Columns** shelf.
2. Drag **Number of Records** from the **Measures** pane to the **Rows** shelf. A bar chart appears.
3. The bar chart is difficult to read. At the top, click the **Swap Rows and Columns icon** to make the bar chart **horizontal**.
4. Let's make it easier to see the most **popular** majors in our dataset. Click the **Sort Descending** icon.
5. You now have to scroll for a long time to find a specific major. Let's fix that by dragging **Department Description** to the Filters pane. The filter now appears on the right side of the screen.
6. Click the **down arrow above the filter on the right** and select **Single Value (dropdown)**. Choose a department from the dropdown list. The majors are now filtered to only those in your chosen department.
7. Change the filter to **(All).**
8. Now let's add some more information to the visualization. Drag **MOU Description** from the **Dimensions** pane to the **Color** box in the **Marks** pane. A legend appears on the right.
9. Click on the **Color** box in the **Marks** pane.
10. Click **Edit Colors.**
11. Under **Select Color Palette,** use the dropdown menu to find a palette that you like.
12. Click on **Assign Palette** to automatically use the first colors in the palette.
13. To **select colors individually**, click one of the **Data Items** on the left, then click on the color you want it to use.
14. Click **OK**.
15. **Right click** on the **Sheet 1** tab at the bottom and select **Rename**. Change it to **Majors**.

Exercise 3: Save Your Workbook

1. **Tableau Server does not save your work automatically, so remember to SAVE OFTEN.**
2. Click on File from the menu at the top and select **Save As…**
3. Save your workbook in the **Default** folder as **(Your Name) Student Workbook**.

Exercise 4: Create a Bubble Chart

1. Next to the **Majors** tab, click the **New Worksheet icon.** 
2. Click on **GPA** in the **Measures** pane.
3. Find **Total Units**, also in the **Measures** pane. Hold down the **CTRL key** and click on it. **Both pills** should now be highlighted.
4. Click on the **Show Me** tab in the upper right and select the **Scatterplots graph** which should be outlined with an orange box.
5. Our scatterplot only has one circle! How can we fix it?
6. Drag **Department Description** from the **Dimensions** pane to the **Details** box in the **Marks** pane. We now have a bubble for every department!
7. The plot is small. Make it larger by clicking on the **Fit icon**  at the top right and select **Fit width**.
8. Note that the distribution pattern is **very linear**. What's going on here? **Roll over** one of the bubbles and a **tooltip** appears. What do the numbers tell us? Tableau is **ADDING** up the GPA scores and total units for every student in each department. Is that the type of aggregation we want to use?
9. Right-click **SUM(Total Units)** in the **Columns** shelf and select **Measure > Average**.
10. Right-click **SUM(GPA)** in the **Rows** shelf and select **Measure > Average**.
11. Roll over a bubble again. The numbers now represent the **average** for GPA and Total Units.
12. Let's add some more information to the graph. Drag **Number of Records** from the **Measures** pane to the **Size** box in the Marks pane. A **legend** appears on the right. If you can't see the legend, click on the **Show Me** tab.
13. Click the **Size** box in the **Marks** pane and change the bubble sizes to your liking.
14. Click the **Shape** box and change the symbol to a **filled circle**.
15. Click the **Color** box and reduce the **Opacity** to 50%.
16. Drag **Department Description** from **Dimensions** to the **Label** box.
17. **Right click** on the **Sheet 2** tab at the bottom and select **Rename**. Change it to **GPA**.
18. **REMEMBER TO SAVE YOUR WORK.** Click on **File > Save**.

Exercise 5: Create a Map

1. Next to the **GPA** tab, click the **New Worksheet** icon. 
2. Click on **Country of Origin** in **Dimensions**, then hold down the **CTRL key** and click on **Number of Records** in **Measures** so that both pills are highlighted.
3. Click on the **Show Me** tab. Notice we have two map options: a bubble map and a choropleth map. Let's try the **choropleth map** first.
4. Because our scale is so skewed toward the U.S., it's difficult to see the differences between the number of students coming from other countries. This is not the best type of map to use with this data.
5. Click on the **Show Me** tab again, but this time, pick the **bubble map**.
6. The bubbles for countries outside of the U.S. are so small it's difficult to see them, but we can fix that. Click the **Size** box in the **Marks** pane and **increase the size of the bubbles** until they're big enough to see.

7. Drag **Country of Origin** from **Dimensions** to the **Label** box.
8. Drag **Number of Records** from **Measures** to the **Label** box. Now we can easily see the number of students from each country.
9. **Roll over the map** and click on the **Search icon** in the upper left. Type in the name of a country and press Enter. The map should **zoom** to that country.
10. To return to the original view of the map, click on the **Zoom Home** icon .
11. **Click and drag** on the map. Note that you are **selecting multiple data points** this way. Click on an **empty area** of the map to **deselect**.
12. Click the **Arrow icon** in the **map controls** and select the **Pan icon** . You can now **move the map around** by **clicking and dragging** on it.
13. **Right click** on the **Sheet 3** tab at the bottom and select **Rename**. Change it to **Country of Origin**.
14. **REMEMBER TO SAVE YOUR WORK.** Click on **File > Save**.

Exercise 6: Convert a Measure to a Dimension and Create a Line Chart

1. Next to the **Country of Origin** tab, click the **New Worksheet** icon.
2. Let's create a **line chart** to look at GPA over **time**. Drag **Year Admitted** from **Measures** to **Columns**. Odd…we get a single bar.
3. Drag **GPA** from **Measures** to **Rows**. Now we get a single bubble! What's going on?
4. Tableau thinks Year is a **Measure**, but we actually want to use it like a **Dimension**. **Dates** in Tableau are best represented as **Dimensions**.
5. In the upper left, click the **Undo icon** twice to clear the sheet.
6. Drag **Year Admitted** from Measures into **Dimensions**.
7. Once again, drag **Year Admitted** into **Columns** and **GPA** into **Rows**. Now we have a bar chart again, but at least there is a bar for each year!
8. At the top of the Marks pane, there is a **dropdown menu** which is currently set to **Automatic**. Click on it and select **Line**.
9. Finally we have a line chart, but it's a bit small. Make it larger by clicking on the **Fit icon** at the top right and select **Fit width**.
10. Right click on **SUM(GPA)** in the Rows shelf and select **Measure > Average.** Note that there is not much of a trend here. That will change later!

Exercise 7: Create Two Charts in One Worksheet

1. What if we want to compare GPA to ACT Score? Drag **ACT Score** from **Measures** to **Rows** and drop it **to the right** of your pill for GPA. A **second line graph** appears below the first one.
2. Right click on **SUM(GPA)** in the Rows shelf and select **Measure > Average.**
3. Something has happened to the **Marks** pane. It now has three different tabs inside of it. The **top tab** is labeled **All** and controls the marks for both graphs at the same time. Click on **Color** and change it to green. Both line graphs are now green.
4. Click on the **middle tab** in the **Marks** pane. This tab controls our graph for GPA. Click on **Color** and change it to brown. Now the top graph is brown and the bottom graph is green.
5. Click on the **bottom tab** in the Marks pane. This tab controls our graph for ACT Score. Click on the **dropdown menu** at the top of the pane which is currently set to **Line**, and change it to **Bar**. The bottom graph is now a bar chart.
6. **Right click** on the **Sheet 4** tab at the bottom and select **Rename**. Change it to **By Year**.

Exercise 8: Create a Dashboard

1. Near the tabs at the bottom, click the **New Dashboard icon.** 
2. Drag **Majors** from the **Sheets** pane on the left into the **blank area** at the center.
3. Drag your **By Year** sheet over the bar chart, but **don't release the mouse button**. Watch the **highlighted areas** on the dashboard. **Position the sheet next to** your bar chart.
4. Drag the **GPA** sheet over and position it **below** your **By Year** sheet. Position your **Country of Origin** sheet to the **right** of the **GPA sheet**.
5. Notice that your **legends and filters** appear on the dashboard with your charts. They are located in the **column on the right**.
6. Click on the **down arrow icon**  for the **Department Description filter**. A menu appears. Select **Apply to Worksheets > All Using This Data Source**. Now the filter controls the data in all of your charts on the dashboard.
7. Try selecting different departments using the **Department filter**. Look at what happens to your **By Year** sheet! Not so boring now, is it?
8. Click on each of the charts that are now in your dashboard. Notice that a **grey border** appears around them. Notice you can **click and drag the border** to resize your sheets. Notice there are **icons** attached to the grey border.
9. Let's add another filter. Change your **Department Filter** to **(All)**.
10. Click on one of the **year bars** in the **By Year** sheet. **All data** in the dashboard is now **filtered** based on the year you selected.
11. Select your **By Year** sheet and click on the **use as filter icon**  .
12. **REMEMBER TO SAVE YOUR WORK.** Click on **File > Save**.

Exercise 9: Style Your Dashboard

1. Let's add a title to our dashboard. Find the **Objects** pane on the bottom left. Drag **Text** from the **Objects** pane onto your dashboard.
2. The **Edit Text** window appears, allowing you to **type in a title**. Note that you have options at the top to **change the font** and **style your text**. When you're done, Click the **OK button**.
3. In the upper left, under **Size**, click on the **dropdown menu**. Here you can adjust the size of your dashboard.
4. Click on your **Department Desciption filter**. Click on the **tab** in the **top center** of the **grey border** and **drag** the filter **below the title**. Alter the layout of your dashboard by moving around your sheets and legends.
5. At the top, click the **Format Workbook icon**  . Notice a new pane has appeared on the left. This pane allows you to **change the default fonts and lines** for all sheets in your workbook. When you're done, click on the **X** in the **upper right** of the **Format Workbook** pane to close it.
6. In the **upper left**, to the right of the **Dashboard** tab is the **Layout** tab. **Click on it.**
7. The **Layout tab** allows you to add **borders, a background color and padding** to the selected sheet on your dashboard. Feel free to experiment!
8. **Right click** on the **Dashboard 1** tab at the bottom and select **Rename**. Change it to **Student Dashboard**.
9. **REMEMBER TO SAVE YOUR WORK.** Click on **File > Save**.

Exercise 10: Explore Your Dashboard in Tableau Server

1. At the black bar at the top, find the **X** in the upper right and click on it. The tab will close. Find the tab with **Tableau Server** open on your web browser.
2. Click the **Explore** button on the left.

3. Click on the **Default** folder. Here, you will find all the workbooks we've been creating. Find the **workbook with your name** and **click on it**.
4. Each sheet or dashboard in your workbook appears as a separate view. You can view, download and share a **single sheet** or an **entire dashboard**. Scroll down to find your **Student Dashboard** and **click on it**.
5. Note your options in the grey bar at the top. **Full Screen** provides a nice way to display your dashboard during a presentation.
6. Click on the **Download** button. Here is where you can download:
    a. **Non-interactive** versions of your visualizations as images, PDFs or Powerpoint slides
    b. The **data** used in the workbook (if you have permission)
    c. A **workbook file** that can be opened in **Tableau Desktop** (again, with permission)
7. Click on the **Share** button. You can get a link to your dashboard here. Note that viewers must be **logged in**, **authenticated**, and **have permission** to view the visualization.
8. On the dashboard, change the **Department filter** to **English and Comp Literature**.
9. From the grey bar at the top, click on **View: Original**. In the text box, type **English** and click the **Save** button.
10. In the grey bar at the top, click on **View: English**. Note that this view is now saved under **My Views**. You can also make it your **default** view of this dashboard, or you can make it appear in the **Other Views** list for your colleagues by selecting **Make it public**.
11. Click on the **Manage** button in the lower right. This allows you to **rename, delete and hide** your views.
12. Click the **Done** button.
13. Under **Other Views**, click on **Original**. You are now looking at the original view again.
14. In the grey bar at the top, click **Edit**. This brings us back to the workbook interface. **Click** the **X** in the upper right to return.