D210 Representation and Reporting Performance Task 1

Instructions

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MSDA D210

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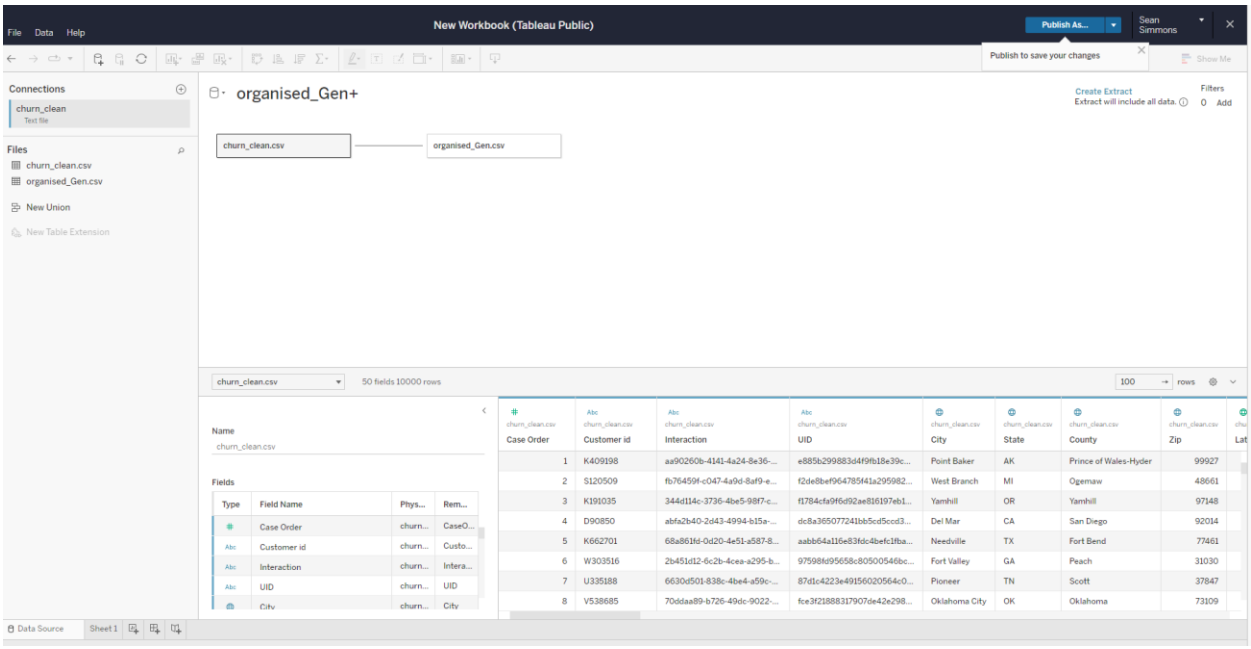
Part 1 A: Instructions

2. Provide step-by-step instructions to guide users through the dashboard installation.

The step-by-step instructions to guide users through the dashboard installation are as follows:

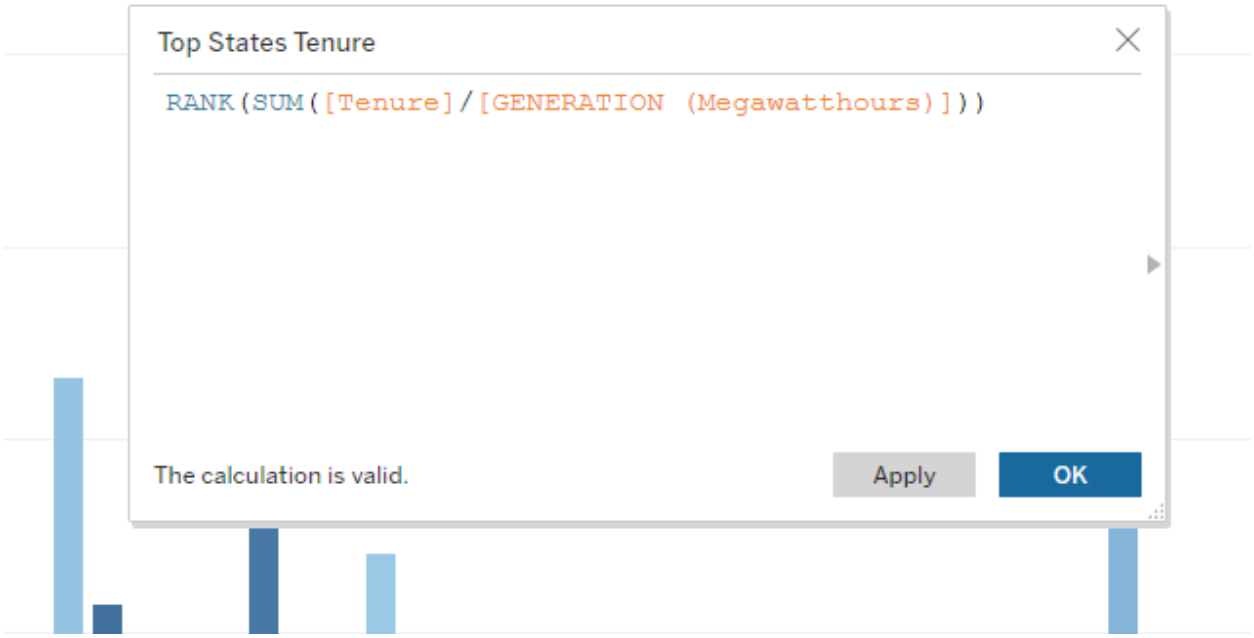
1. Go to public.tableau.com and sign into an account
2. Navigate to the create to menu and select web authoring
3. Download the two files, churn_clean and organised_Gen to your machine.
4. Click and drag the two data files, churn_clean and internet-usage into the window, loading them into our environment as a connection.
5. On the left side of the screen under connections, click churn_clean. There should be a text box named churn_clean at the center of the screen. If not, click churn_clean under files and drag it to the center. If there is already the text box, click and drag organised_Gen from under files on the screen.
6. Follow the prompts and connect the data through State name as a relationship.

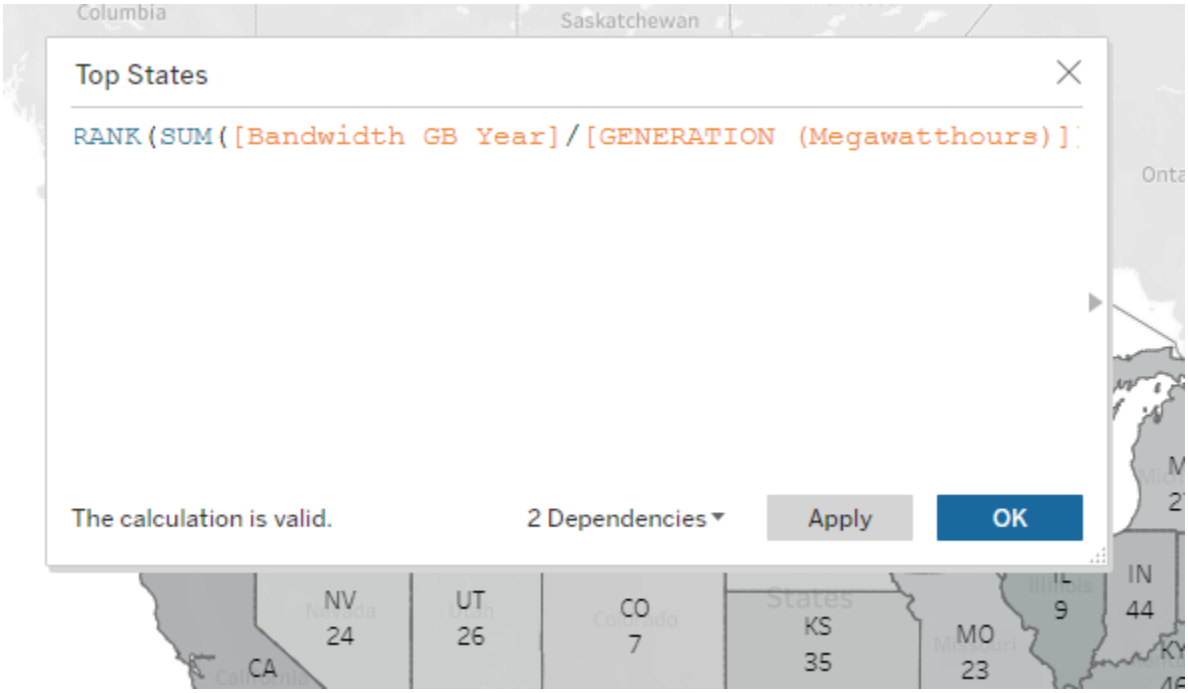


7. Exclude null values for states in all processes and filters throughout the dashboard. We have now set our data source and can create the four visualizations. Start by navigating to sheet 1.
8. 1st representation: Create a heatmap of the United States with energy per state. Drag the variables generation (megawatthours) and bandwidth into the rows section. Drag states into the column section. Click “Show me” on the top right of the screen and find the option for the geographic visualization. Choose the gray color from the color-blind accessible color palette. We will add the ranking calculation and tool tip described later in this instruction guide.
9. 2nd representation: Create sheet 2. Drag the state variable into the column, drag generation (megawatthours) and outage seconds per week into the columns. Go to show me and choose the size graph. Select a color from the color-blind accessible color palette.
10. 3rd representation: Create sheet 3. This time, we are going to put Tenure and generation (megawatthours) in the rows, while we still put states in the column. We go back to show all and choose the bar graph histogram. Add Tenure as a color choosing any color from the color-blind accessibility palette. We will add the ranking calculation and tool tip described later in this instruction guide.
11. 4th representation: Create the 4th and final sheet. Add churn to the column and monthly charge to the row. Go to show all and choose the pie chart, it will automatically move both variables to the correct locations. Add an average monthly charge label and make sure to choose colors from the color-blind accessibility palette. We are now done making the representations, it is time to add the labels and interfaces.

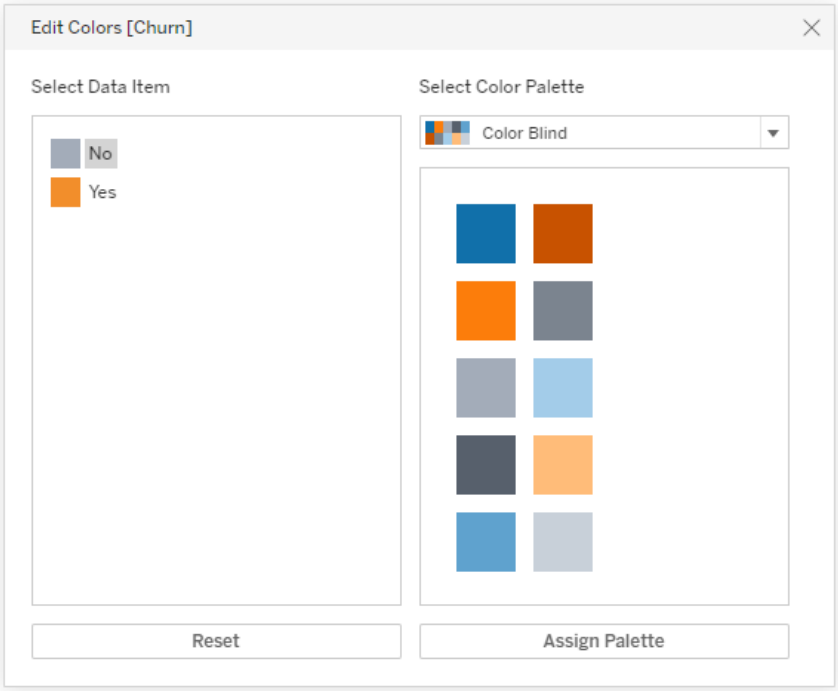
    Interfaces:

12. Create the following two calculations and drag them into the tool tip to serve as the ranking systems for representations 1 and 2, respectively





13. For color blindness accessibility, bring up the color-blind color palette seen below and choose colors from the list with high contrast:

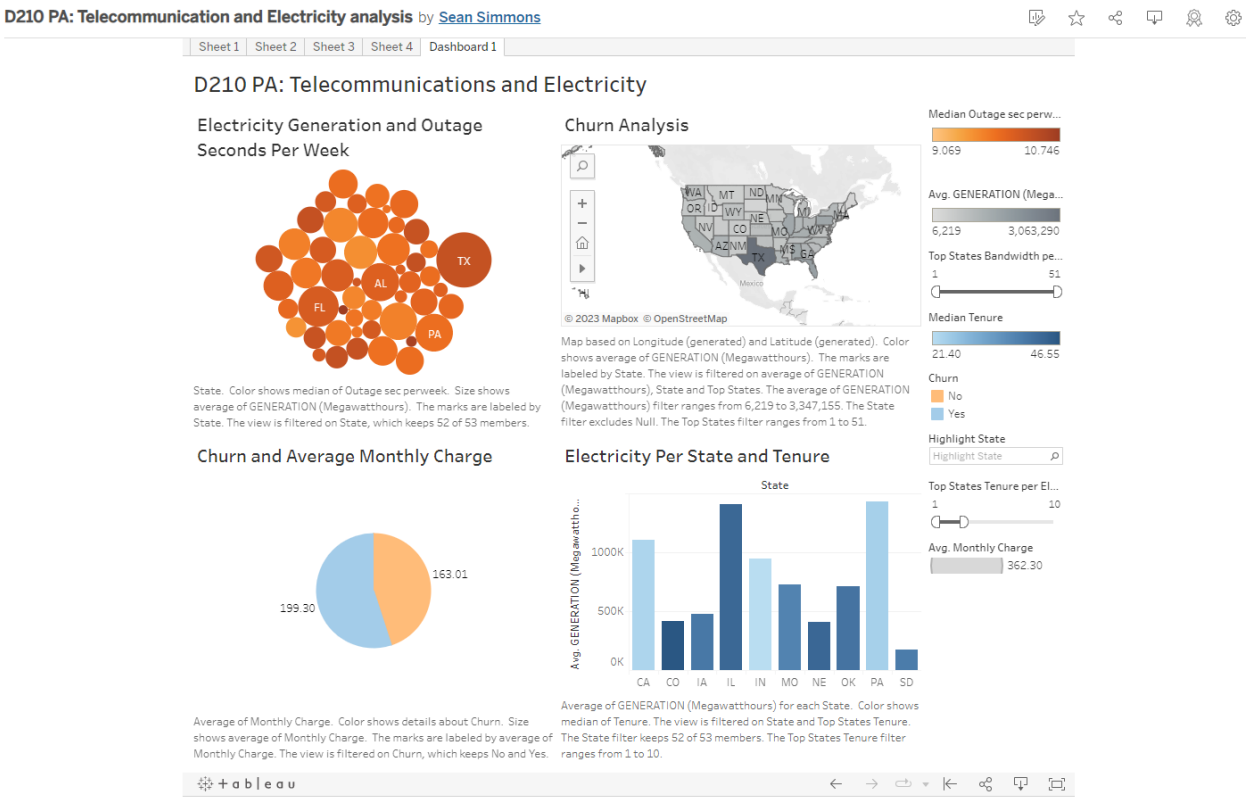


14. Drag the corresponding legends from the list of variables to the tooltip option to create the legends.
15. Take the target columns, average monthly charge, bandwidth, and outage seconds per week for our various representations and drag them to the tool top section to create legends. For the pie chart turn the filter's show option on.
16. Click create a dashboard and then double click all of the sheets we have created to automatically bring them into the dashboard.
17. Finally, run the optimizer to resolve any issues, publish and share the dashboard.

3. Provide instructions to help users navigate the dashboard.

The step-by-step instructions to help users navigate are as follows:

- When you first look at the dashboard, allow yourself to digest the entire image. It is made of 4 different representations in 4 squares. On the very right is a panel of legends and interfaces that can change the view of the dashboard:



- The image on the top left is a size map where the size represents the electricity generated by the state and the darkness of color shows the median outage seconds per week of the state. Darker means a higher median and larger means more electricity. Hovering your mouse over the state will show the exact information of that state. The legend on the right shows the median scale with color intensity.

- The image on the bottom left is the churn and average monthly charge for each value of churn. The legend on the right shows which color responds to which value and hovering your mouse over each part will also give you that information.
- The representation on the top right shows a map of the United States, broken up by state, with gray color intensity to show average electricity generation and number to show ranking system of bandwidth per year per electricity generated. There is an interface you can change to show how states rank in this regard. You can click and drag to move your view and scroll (or use the plus and minus symbols) to change the zoom of the map.
- The representation on the bottom right is a histogram showing tenure per electricity generated. The intensity of blue shows the median tenure length (per the legend on the right) and the height shows the electricity generated. There is also an interface showing a ranking system of how the 50 states compare to each other, which can be adjusted to show a ranking of any number of states.
- Finally, we have the legend to the right of all 4 representations. The median outage corresponds to the size map and shows the range and intensity. The next down is the legend showing the average electricity generation of the geography map and the range. Third down we have the interface for the ranking system of the geography map. You can click and drag either edge of the range to shrink the range down to the desired number of states. Fourth down is the legend for the histogram showing the range of the median tenures.

Next, we have the color legend corresponding to the churn pie chart. Below that, we have an interface to narrow down our dashboard focus to a specific state. If you click into the highlight state search bar, type in the two-letter abbreviation for the state, and it

will show the state in the top two representations and dim the other states out of view. Second to last, we have the interface ranking system for the bar histogram to narrow down the focus to any desired range. Here it has been changed to only show the top 10 ranking states of Tenure per electricity for an example. Finally, we see the average monthly charge scale showing the total monthly charge of the pie chart so we can compare it to the breakdown.