D210 Task 1 (Data Dashboard and Storytelling) Performance Assessment

Hillary Osei (Student ID #011039266)

Western Governors University, College of Information Technology

Program Mentor: Dan Estes

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Part I: Interactive Dashboard

Section A1) Interactive Data Dashboard

Workbook titled "D210-Updated.twbx" attached. It can also be accessed at this link: https://public.tableau.com/views/D210-Updated/D210Presentation?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Section A2) Datasets

Internal dataset "d210_churn_cleaned.csv" and external dataset "census_cleaned.csv" are attached.

Section A3) Installation Instructions

The dashboard can be viewed by downloading the desktop app Tableau Public using the following instructions:

1. Go to Tableau Public at https://www.tableau.com/products/public/download
2. Fill out the registration form with your name, email address, role, country, and country.
3. Click the "Download the app" button.
4. Select the version of Tableau Public that is compatible with your computer's operating system (Windows, Mac - Intel, or Mac - Silicon).
5. When the download is complete, click on the installer package file to begin the installation process.
6. Once the installation is complete, launch Tableau Desktop Public Edition.
7. On the star page, click on the "Open Workbook" button.
8. A dialog box will pop up, prompting you to select the workbook file. Navigate to the folder where the file is saved.
9. Select "D210-Updated" and click the "Open" button.
10. The application will then open the workbook file.

Section A4) Navigation Instructions

Once the dashboard is loaded, the story titled "D210 Presentation" can be viewed. The first tab shows the title page for the presentation ("Who Churns and Why?") and the row of tabs following it can be clicked to navigate between dashboards. Users can navigate through each tab using the left and right arrows or simply clicking on each tab.

The second tab "Summary of Datasets" gives an overview of the internal and external datasets. It includes information on each dataset's variables and what is covered in each, such as location info, economic data, demographics, and more.

The third tab “Visualizations” shows the important visualizations in the analysis. At the very top is a table of key KPIs for the WGU dataset. Below that are the filters. The one on the left is for the KPI table and the one on the right is for the Tenure vs Monthly Charge line graph. Beneath the filters is the line graph that compares tenure and monthly charges. Below the line graph is a map showing churn rate according to state. On the right side of the worksheet are two bar graphs showing average income by state, one from the census dataset and the other from the WGU dataset.

The final tab gives an overview on insights from the datasets as a whole when it comes to who’s likely to churn plus recommendations to increase customer retention.

Part II: Storytelling with Data

Section B) Panopto Storytelling with Data

Link to the Panopto presentation is here:
https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=10348d42-50bd-4c89-8b29-b2c70098289d

Part III: Reflection Paper

Section C1) Dashboard Alignment

The dashboard is designed to help executives understand who is churning and why by exploring customer demographics and churn behavior. This aligns with the variables present in the data dictionary, which includes churn status, income, age, and tenure. The dashboard highlights trends and compares important metrics such as monthly charge, tenure, state, outages, bandwidth GB per year.

Section C2) Additional Data Set Insights

The external dataset from the U.S. Census provides state-level and economic information. The visualizations comparing average income by state from the census vs. the internal churn datasets offers a meaningful contrast. For example, Connecticut and Rhode Island have similar average incomes, however Connecticut has the highest churn rate at 35.21% and Rhode Island has the lowest at 10.53%. This shows that income isn’t the sole predictor when it comes to churn.

Section C3) Decision-Making Support

The “Tenure vs Monthly Charge” line graph helps executives identify an early churn pattern, where customers paying high monthly charges often churn in the first 2 months. Knowing this information can result in new pricing and onboarding strategies. The “Churn Rate by State” map aids in pinpointing states with higher and lower churn rates, potentially influencing customer retention efforts in specific states.

Section C4) Interaction Controls

The dashboard includes a churn filter, which allows users to toggle between “yes” and “no” churn outcomes. This allows decision-makers to compare tenure and monthly charge between churned and retained customers. There is also a gender filter for the KPI summary table, helping users to see differences in average income, bandwidth GB/year, monthly charge, outages in seconds per week, and tenure.

Section C5) Colorblindedness

To make the dashboard accessible for all, especially individuals with colorblindness, Tableau’s color blind-friendly palette “Color Blind 10” is used (Shaffer, 2016). Orange and blue are used to represent churned and retained customers respectively, making it easy to tell apart. For the map chart, labels and tooltips are added so the data is understood without relying on color alone.

Section C6) Data Representations

Each chart in the dashboard is designed to help answer the main question “Who churns and why?” The KPI summary table shows that churned customers earn more yet pay more, have less internet usages, and usually stay for a little more than a year regardless of gender. The line graph shows that high spenders churn early.

Section C7) Audience Analysis

The dashboard is designed for non-technical high-level executives. Simple visuals such as bar graph, line graph, and table are used to make the data easy to interpret. All visuals include a title, clear axes, and a legend. Filters are placed above and below visuals for easy access. The story is broken into sections (dataset summary, visualizations, and insights & recommendations) so it is easy to follow.

Section C8) Universal Access

The dashboard layout uses a fixed-size format to make sure charts are aligned. Font sizes are easy to read and visualizations are spaced out to prevent overcrowding. All charts include

legends, titles, and axes labels. This makes the dashboard easy to navigate. Additionally, alternative text is used for logo images.

Section C9) Effective Storytelling

Two strategies are used to make the dashboard engaging. First, the entire story is focused around the question: who churns and why? Every visual connects back to this theme and helps explain part of the answer by addressing questions such as “Which state is likely to churn?” and “What demographics churn most?” Second, interactive features, mainly filters, allow users to explore specific groups.

Section D) Sources

Shaffer, J. (2016, April 20). *5 Tips on Designing Colorblind-Friendly Visualizations*. Tableau. Retrieved April 16, 2025, from https://www.tableau.com/blog/examining-data-viz-rules-dont-use-red-green-together

US Census Demographic Data. (n.d.). Kaggle. Retrieved April 16, 2025, from https://www.kaggle.com/datasets/muonneutrino/us-census-demographic-data