Instructions

Close

Overview

This purpose of this project is to demonstrate and assess your knowledge and skills in using data visualization effectively to gain understanding of and insight into data. The assignment is to create a dashboard of two or more charts designed to visualize the data necessary to answer one or more questions about the data.

Data

Any **public** dataset can be used for this assignment. For example, this assignment provides an opportunity to further analyze the spread of the COVID-19 virus. Some datasets include:

- Johns Hopkins University (World): https://github.com/CSSEGISandData/COVID-19
- New York Times (US): https://github.com/nytimes/covid-19-data

You can also find other datasets, or combine these or other datasets, so long as all of the datasets are publicly available.

These datasets have created some comprehensive dashboards as well as some more targeted analyses that focus on a smaller number of charts.

- A comprehensive example: https://coronavirus.jhu.edu/map.html
- A large collection of more focused charts: https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html
- A nice dashboard set up by Illinois professor Wade Fagen-Ulmschneider comparing growth curves: https://91-divoc.com

Platform

The preferred visualization system for this assignment will be Tableau. You can use Tableau Public which makes the dashboard publicly available. You can use Tableau Desktop but you will need to make your dashboard available on some publicly available server so the TAs can grade it. Alternatively, you can use any other visualization system so long as it enables you to complete this assignment without utilizing any tools above what is available in Tableau. The TA's may not be able to provide you with any support for any systems beyond Tableau, so if you choose an alternative, you may need to go it alone.

Required Elements

All students will be required to show a dashboard that includes the following two elements:

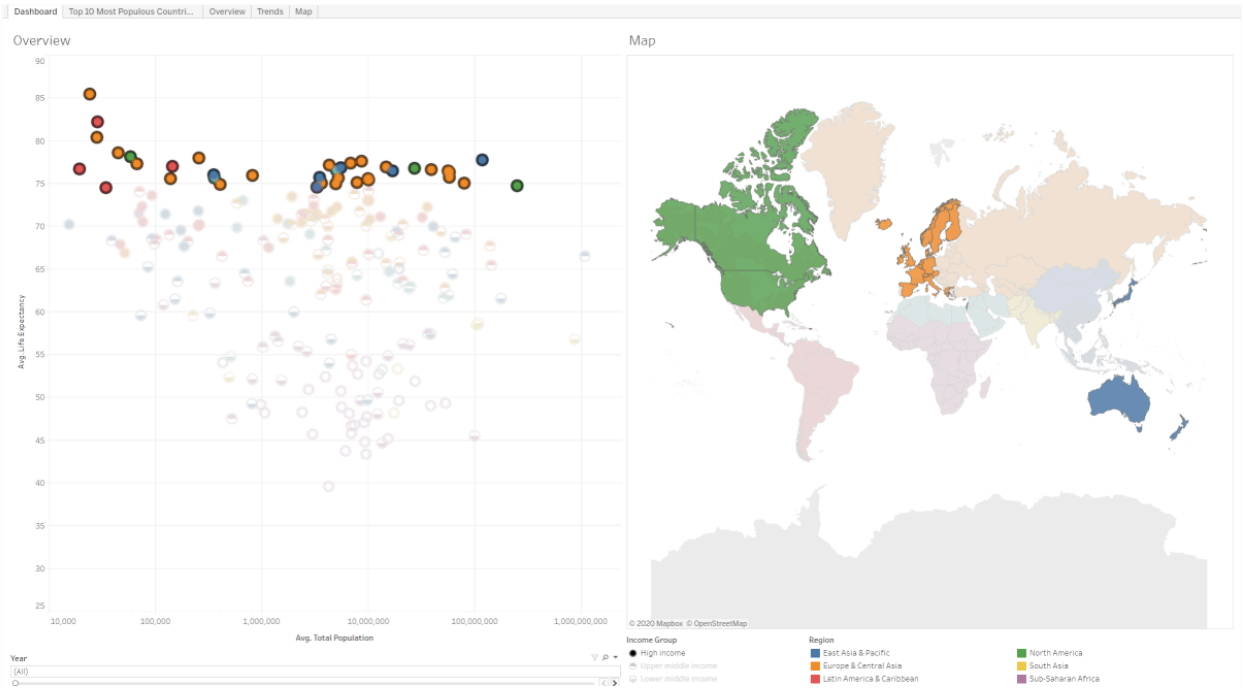
- Multiple charts (at least two) displayed simultaneously on the same screen at the same time.
- The ability to provide details on demand in at least one of the charts.

Students taking the course for **4 credit hours** will be **required** to implement the following third element. Students taking the course for **3 credit hours** have the **option** to implement this third element, and will earn its points as **extra credit** for the assignment.

- The ability to support cross filtering between the two charts. The cross filtering must be bi-directional, such that a selection made in a first chart is reflected in a second chart, and a selection made in the second chart is reflected in the first chart.

An example of such a dashboard is available at:

https://public.tableau.com/profile/john.c.hart#!/vizhome/WorldDataIndicatorsDashboardExample/Dashboard1



This dashboard shows a scatterplot on the left with each datapoint indicating life expectancy vertically and population horizontally, and the right is a simple geographic plot of the counties colored by region. Notice the color scheme is consistent between the plots so that the datapoints in the left chart match the colors used for regions on the right so that regional trends can be seen in clusters on the left. The layout is a simple 50-50 left-right since there are no similarities in the axes of the two plots. As shown below, we can answer the question: which countries have the highest average life expectancy by selecting life expectancy over 75 years on the left and observing the highlighted countries on the right. Notice also this nicely demonstrates cross-filtering. (More on cross filtering in Tableau here.) Also, each datapoint in the scatterplot on the left has a popup that displays further details on demand when the mouse is placed over the datapoint.

Handin

You will hand in this project by submitting the URL of the dashboard. If you use Tableau Public, be sure to press the “Edit Details” button and check the “Other Settings: Show

workbook sheets as tabs” checkbox. The first tab of this workbook, labeled “Dashboard” should be the dashboard.

Review Criteria

Your dashboard will be graded using the following rubric, with point values in brackets.

- [10] Providing a proper URL to the dashboard, and the dashboard appears at that URL without any further user intervention.
- [30] What is one question that the dashboard can answer by utilizing two or more simultaneously displayed charts? What is the answer? How do these two charts indicate the answer? (Spend some time to make sure you have picked a question whose answer is not simply given by just one of the charts, and the combination of the two charts gives a complete answer.)
- [10] Upload a screenshot of your dashboard answering that question by showing two or more simultaneously displayed charts.
- [20] How does the layout of these charts promote visual understanding of the data across multiple charts? Do the charts follow a consistent color scheme and are they well aligned with each other to promote better visual comparisons.
- [10] Indicate which chart should be graded as a "first" chart. Then justify the choice of this chart type, its axes and marks based on the data variables it shows.
- [10] Indicate which chart should be graded as a "second" chart. Then justify the choice of this chart type, its axes and marks based on the data variables it shows.
- [10] How does your dashboard provide details on demand?
- [10] How does your dashboard support cross-filtering between these two charts? **(Required for 4 credit hour students. Optional extra credit for 3 credit hour students.)**