CS7DS4 / CSU44065 Data Visualization 2019-20
Assignment 3
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1 Introduction

COVID 19 outbreak is caused by the newly discovered virus which has impacted more than 300 countries.

COVID 19 Dashboard is an interactive visualization dashboard that provides details about the latest number of global cases of COVID-19 on daily basis and measures taken by the government to ensure the public health safety and the prevention steps taken to avoid the spread of the virus and flatten the cases.

2 Description

Data visualization is explanatory where we already know the data and provide the visualization to get the insights of the data.

1.The complexity of Data:

Two sets of data which provides details of global impact Covid 19 and the measures taken by the government for each country.

1. The global impact of the COVID-19 data set is a multidimensional data set that is dynamic changes over a given period of time. It has large volumes of data. Here CSV files are provided for each date which is combined into a single table before using the data. I am using tableau public to show the visualisation which doesn't support automatic update of data from web connector.
2. The government measures data set static data set which gives the different measures taken by each country to reduce the cases where the measures are divided into different categories.

Both sets of data are in a table format. which fulfils different criteria of complexity.

Volume: Both the datasets have large volumes of data.

Variety: Heterogeneous data which combine continuous and categorical attributes(i.e. combining countries which is a categorical attribute with date, number of cases, deaths which are quantitative attributes).

Structure: Both the data sets have one common categorical attribute i.e. country. Clustering of data is done using one attribute i.e. country.
filtering of certain attributes that provides similar details will only give better structure to the data we need to visualise.

2.Tasks:
By using this visualization, we are effectively providing output to the user to query, search, compare to analyse and interact with data to know more about the target

Analyse: Distributed values (such as total number of deaths cases, the total number of recoveries, mortality rate, etc) spatially. It helps in analysing the values of selected mode od cases (i.e. death cases, recovered cases, confirmed case) for different countries

Search: Intermediate goal where we look up the location find the targets (i.e. number of deaths, number of recoveries, measures, categories, etc for selected country).

Identify: We are identifying Number of cases in a particular region.

Query: We identify the total number of recoveries, deaths, confirmed, measures taken, categories of measures cases in that particular country.

Comparison: Help in comparing (the death rate, mortality rate, number of deaths.) by using ranking between the countries

3.Encoding:
Used different encoding techniques like spatial encoding based on the country, position or placement encoding, text labels, colour encoding based on the type of cases and measures, bubble size icon based on the number of measures taken. the colour saturation of measures for each category which used stacked bar charts. Length encoding for proving the rank of each country based on the selected choice.

Visualization Interactions:
Data value space interaction: Here using date field the data has been changed
Used filters for knowing details about attribute. User can interact by using pull down menu and slider

3 Citing third party resources

Data provided by the tableau data hub which gives the details of number of global covid-19 cases on daily basis. The data provided by the tableau data hub can be accessed using web data connector from data.world. Tableau data hub utilized the data Provided by Johns Hopkins University Centre for Systems Science and Engineering (JHU CSSE).Here we can only use tableau online to update data on daily basis .However, if we use tableau public it only supports google sheets to automatically update data.

- https://www.tableau.com/covid-19-coronavirus-data-resources
- https://data.world/covid-19-data-resource-hub/covid-19-case-counts
- https://raw.githubusercontent.com/datasets/covid-19/master/data/time-series-19-covid-combined.csv

Used above links as reference and created a web connector

For Cases details (dynamic Data)(created my me) .
https://data.world/spaaaaaaaaaandy/covid19/workspace/query?queryid=1b a5e1c8-a534-41b4-806f-8ef81aa9b595

The given link provided the data which gives the details of the government measures taken by each country so as to reduce the effect of the pandemic.it is taken as the static data

- https://data.humdata.org/dataset/acaps-covid19-government-measures-dataset

For creating visualisation, I have used tableau and also its community forum to understand few mathematical calculations and other tableau specifications which I have used to create the visualization.

Online link to the visualization dashboard:

This provides the interactive dashboard link to the tableau public which can be changed by the user to get the insights of the data .

https://public.tableau.com/profile/spandynull#!/vizhome/Assignment_3_BanalaSpandana/MainDashboard?publish=yes

4 References

[1] tableau community forum

[2] N. Iliinsky & J. Steele. “Designing Data Visualizations” O’Reilly Press. 2011

[3 Visualisation dashboard provided by World Health Organization (WHO): https://www.who.int/