

Link to the VISUALIZATION ARTEFACT:

<https://visualizationcovid19dashboardproject.000webhostapp.com/>

Link to the PRESENTATION:

<https://www.youtube.com/watch?v=sCGKWb52iZc&feature=youtu.be>

1 Introduction

Here we are using an interactive explanatory data visualization to better analyze COVID 19 dataset. We are using the D3.js JavaScript library for implementing an interactive and dynamic web visualization.

Hypotheses: According to the Virology experts, [1] the COVID 19 pandemic will also follow an epidemiological model, which follows a normal distribution (bell curve). So when we perform our visualization over a period of time either for infected cases or death, it should follow a bell curve. Also, [2] it's proposed by the experts that COVID 19 also has a fatality rate of 3.4% which we will visualize. Also, we will be visualizing the COVID situation of some of the countries on a map.

2 Description

To validate our hypotheses we have done three visualization, a bar chart, pie chart and a interactive world map.

For this visualization we have taken raw data from two dat sources and have processed it for better visualization. Also we have done proper scaling with appropriate scaling methods in the d3 library to better represent the data, thus leaving out chances of range distortion and unbalanced scaling.

VISUAL ENCODING CHANNELS USED HERE

- Size Encoding
- Brightness Encoing
- Color Encoing

a) Bar Graph:

The beautifully animated bar graph here represents the total number of corvirous infected cases all around the world. The X-axis here represents the days in which the infection was recorded. The y axis here represents the total count of cased recorded on that perticular day around the world. We have taken only the last 30 days of data to make the visual experience more clear.

As it can be seen from the graph, the number of cases first steeply increases and reach a peak value after which it starts declining, just like a normal distribution bell curve. Ths behavioral can also be seen for total death cases.

brightness encoding

Here we are using a brightness encoding to represent the intensive of new cases.

b) Pie Chart:

Here we have implemented a pie chart, with color encoding which represents active cases, total death and total recovered. The area of the whole pie chart represents total infected people around the world.

Total infected report = active cases + total death + total recovered.

Color Encoding

The green color here represent total active cases.

The blue the color here represents total active cases.

The crimson brown the color here represents total active cases.

As it can be seen from the pie chart, we have a death rate close to the 6.9 a percentage as per the current data, which is contradicting the hypothesis fatality rate proposed by WHO.

c) Word Coronavirus Map:

As it can be seen from the map, it can be seen that we have used the size encoding and locate to represent the bubbles that's placed around the countries. The radius of the bubbles is proportional to the total number of cases in that country.

We can get the details about that country COVID details by just hovering the mouse on that circle.

References

- [1] "Mathematical modelling of infectious disease". Available: https://en.wikipedia.org/wiki/Mathematical_modelling_of_infectious_disease
- [2] "fatality rate". Available: <https://www.worldometers.info/coronavirus/coronavirus-death-rate/>
- [3] "data source 1". Available: <https://documenter.getpostman.com/view/10808728/SzS8rjbc?version=latest>
- [4] "data source 2". Available: <https://www.worldometers.info/coronavirus/>