To: Amy Bell

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Date:04.02.2023

Re: Data Dashboard Memo

In this Memo, we will discuss about Covid-19 Surveillance Data Dashboard. There are three sections, in the first section we will discuss about Data Visualizations in which we will explain about covid-19 graphs. In the second section, we will talk about Audience & Justifications,and third section is about conclusion.

**Data Visualizations:**

The world map shows that top five countries who has highest number of deaths till March 2023. These numbers of people death updated on daily basis and may change in the upcoming days as per source. USA is topmost country where we can see 1155069 deaths. Purpose of this map will get the information which countries in red radar so we can stop interchange of travelling. It is important that we always need to take mandatory precautions such as avoiding gatherings, wearing masks, practicing social distancing.

In the first bar chart graph we showed the increasing number of Covid-19 cases by two sources such as Johns Hopkins and WHO. The bar chart is showing us that exact number of people who got Covid positives in 2020. We can see that Germany has the highest number of cases as compared to Bangladesh as per john Hopkins. In other hand, India has the lowest covid rate on 17th March when the lockdown has been started. We used the bar chart to indicate total confirmed numbers of Covid cases by the sources in 2020 because bar charts are used for discrete data over some selected countries.

We used second bar chart graph to present the total deaths of people over the countries by Covid-19 in 2022. The horizontal bar chart is showing to us the total number of people who are dead due to Corona Virus in China, Bangladesh, Russia, India and USA. We can observe that China has the least number of deaths in 2022. In the contrary, USA was on top position in regarding deaths. We applied this bar chart because number of total deaths over the countries is also discrete data, not continuous data.

The third horizontal bar chart graph is about total number of people who got recovered successfully from Covid-19 from 2021 to 2022. We can see the highest recovered countries from Covid-19 due to vaccination. About 101322779 people of USA people fight against Covid and recovered fortunately. From the dataset we got the total number of recovered people over the time, and we used the data as a bar chart because the data is not continuous data. Data of the number of people is discrete data.

In the last line graph, we showed the three types of vaccination which is distributed in Michigan from 2020 to 2023. We presented most used three vaccines in Michigan state such as Janssen, Moderna and Pfizer vaccines. The data we got from the source is continuous data, so we used line graph to show many doses of vaccinations are allocated in Michigan over the continuous time.

**Audience & Design Justification**

Our data dashboard shows the detailed analysis of the COVID phase through 3 years, which will show how deadly this virus was and the number of casualties it has caused. This dashboard helps the people track the spread of virus in the most populated countries, understand how COVID is rapidly spreading across all countries, and take necessary precautions regarding that. Overall, this COVID dashboard gives valuable information regarding the virus spread across the entire world.

We want our data dashboard to have serious tone, as this virus was so dangerous and deadly. Many people across entire world have suffered because of it. This dashboard helps them to understand the seriousness of this virus.

As our topic has a serious tone, we are representing our data dashboard with a red color, which represents deaths due to the COVID virus, and an orange color, which represents the recovery and vaccination rate. The images in our dashboard depict the seriousness of the situation, and we added callouts in the bar graphs indicating which countries have the highest number of deaths and recovery rates.

**Conclusion**

While creating this data dashboard, we learned how to collect the data from various sources, analyze the collected data, find trends in the data, and then visualize the data with real-time graphs to them. In addition to that, dashboard design is a more creative skill that we learned while designing our dashboard. This is an important phase because we have shown effective visualizations in our dashboard in a way that suits the requirements of the audience watching it. It is an experience for us to improve our data management and analysis skills in this way.

We would like to learn a lot of skills like data analysis with tools like Excel and R programming, where we can learn how to work with a larger amount of data and how to analyze it. R programming helps to make the data analysis easier. There are lot of data visualization tools in which tableau is the one software which we want to work in future, it helps to make the data visualization easier.