BIOST 2094 Project Proposal

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Due: March. 26, 2021, 11:59pm

Project title: Shiny App on Vaccine Progress Around the World

**Background:**

SARS-CoV-2 has impacted the world in an unprecedented way, with the world having changed significantly since H2N2/H3N2 pandemics in the mid 1900’s and even more since the major comparison point, the 1918 flu pandemic. The world is much more global now. Adjusted for inflation, the value of goods shipped internationally in 2014 was six times higher than the value of shipped goods in 1969, the last year of the H3N2 pandemic. In comparison to 1919, that number goes all the way to 53 times as much shipped in 2014 (Beltekian).1 As such, returning to normalcy is a worldwide goal. Right now, the main indicator we have is the vaccination rate for each country, each of which has its own unique situation and challenges to account for, so viewing that data quickly and clearly is an important piece to know how close we are to the end of the pandemic.

**Proposed project:**

Our proposed project is inspired by the *Covid-19 EDA: Man vs Disease* workbook (Bhandarkar, 2021). Our project is focused on the COVID-19 World Vaccination Progress data (Assaker, 2021). Since the Covid-19 Global dataset (Preda, 2021) provides information on the status of COVID-19, we decide to merge two datasets. Two datasets have different naming conventions, thus we utilized the “countrycode” R package to formulate the country’s ISO code, which is used as a key to merge two datasets. In the Shiny App, we will have multiple tabs features:

1. Interactive map using Leaflet on vaccination status
2. Region plots on vaccination status by country and by time period.
3. Comparison plots between number of vaccinated people and total number of COVID-19 cases by country.
4. Preview of data, which gives an option of download as a CSV file.
5. Background information about the Shiny App, which includes authors, data sources, and a link to the GitHub repository

**Description of dataset:**

This project will use two data sets, Covid-19 Global Dataset (Assaker, 2021) and Covid-19 World Vaccination Progress data (Preda, 2021), both of them were downloaded from Kaggle. The Covid-19 Global Dataset was consisted of two sections: coronavirus\_daily was the up-to-data numbers of daily confirmed, death and active cases, coronavirus\_summary was the summary and aggregate numbers of coronavirus\_daily. 218 Countries were represented in this data set. All countries had records between 2020-2-15 and 2021-3-23 except China, which had records from 2021-1-22 to 2021-03-23.

The Covid-19 World Vaccination Progress data (Preda, 2021) consisted of one file detailing country vaccination progress and contained information on multiple countries around the world. The data was sourced from the country’s respective national authority, international organization, local organization, etc. The file contained 15 columns, but we will only be using the following: country, country ISO code, date, total number of vaccinations, total number of people fully vaccinated, daily vaccinations, number of vaccinations per day, vaccinations used in country, total number of people fully vaccinated per hundred, daily vaccinations per million, and total vaccinations per hundred. The dates that correspond to the data range from December 2020 to March 2021, but the dates vary depending on the country.

Citations

Assaker, J. (2021, March 24). Covid-19 global Dataset. Retrieved March 26, 2021, from [https://www.kaggle.com/josephassaker/covid19-global-dataset?select=worldometer\_coronavirus \_summary\_data.csv](https://www.kaggle.com/josephassaker/covid19-global-dataset?select=worldometer_coronavirus_summary_data.csv)

Beltekian, E. (n.d.). Trade and globalization. Retrieved March 26, 2021, from <https://ourworldindata.org/trade-and-globalization>

Bhandarkar, P. (2021, February 21). Covid-19 EDA: Man vs Disease. Retrieved March 26, 2021, from <https://www.kaggle.com/pawanbhandarkar/covid-19-eda-man-vs-disease>

Preda, G. (2021, March 25). Covid-19 world vaccination progress. Retrieved March 26, 2021, from <https://www.kaggle.com/gpreda/covid-world-vaccination-progress>