Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)
Department of Computer Science and Engineering (Data Science)

Subject: Foundations of Data Analysis Laboratory (DJ19DSL303)

Semester: III

Experiment 3

(Data Visualization)

DATE: 30-11-2021
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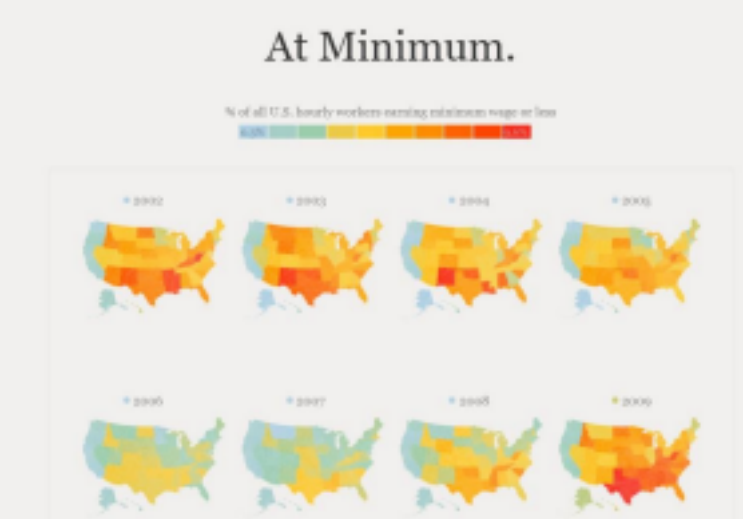
Aim: Apply maps, scatter plots on a given dataset and create a dashboard

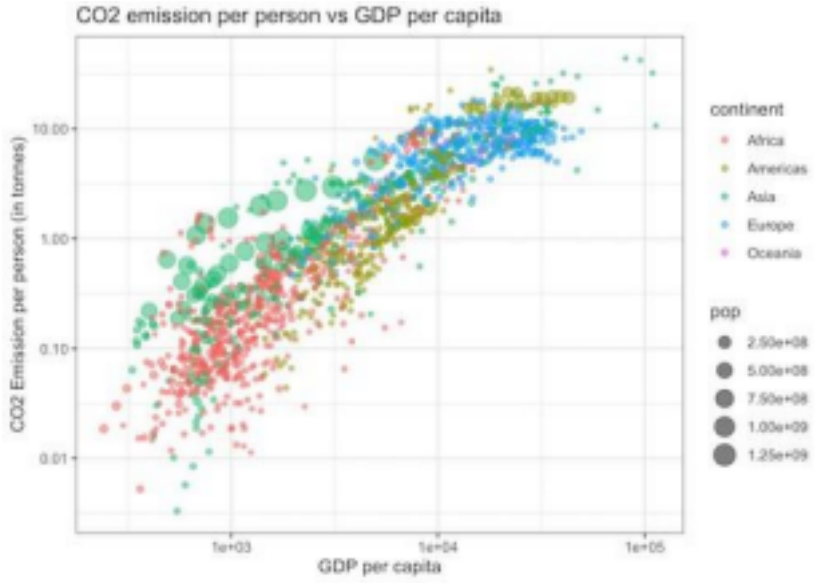
Theory:

With technology advancements, content on maps and the maps themselves became digital, interactive, and more appealing as they're incorporated in data analysis and reporting. Seeing location data mapped and included in visualizations has both enhanced understanding by more audiences and offered a valuable, new context. Maps share geographic context that can be important to visualize results, something traditional bar charts and graphs fail to depict.



The scatter diagram graphs pairs of numerical data, with one variable on each axis, to look for a relationship between them. If the variables are correlated, the points will fall along a line or curve. The better the correlation, the tighter the points will hug the line.

Scatter Plots are often used to show additional numeric data in the form of Colors and Sizes, in which case they plot up to 4-dimensional data.



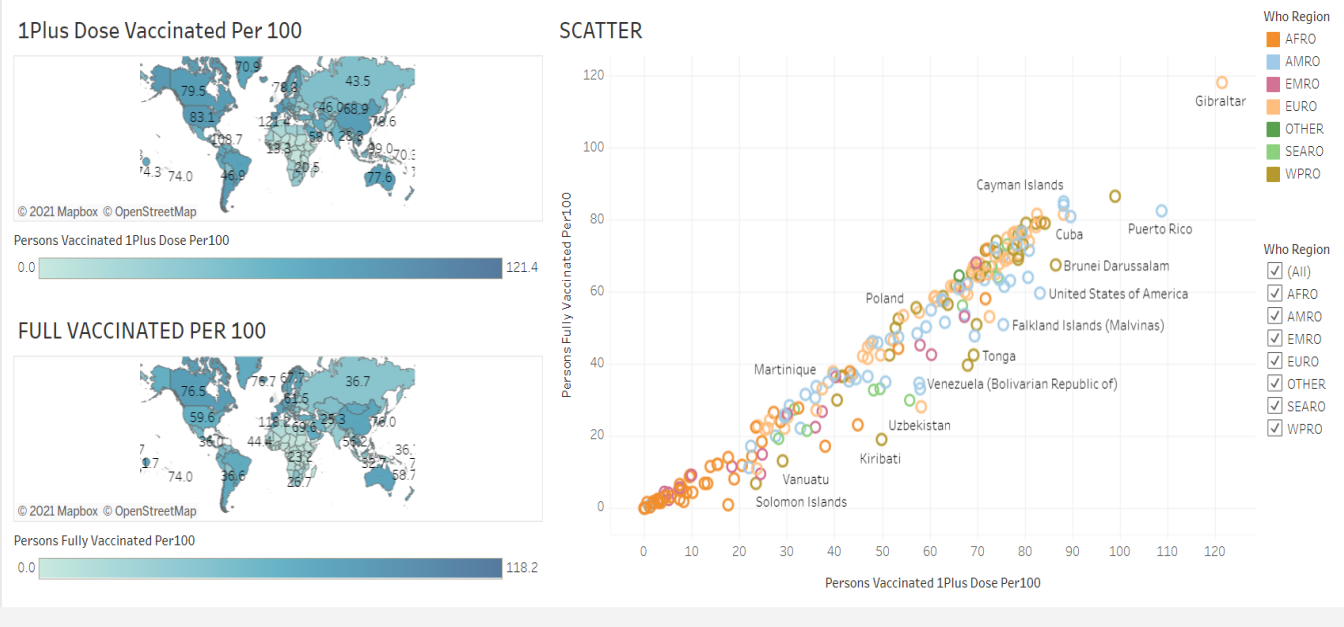
Lab Assignments to complete in this session

Use the given dataset and perform the following tasks:

Dataset:

https://covid19.who.int/who-data/vaccination-data.csv

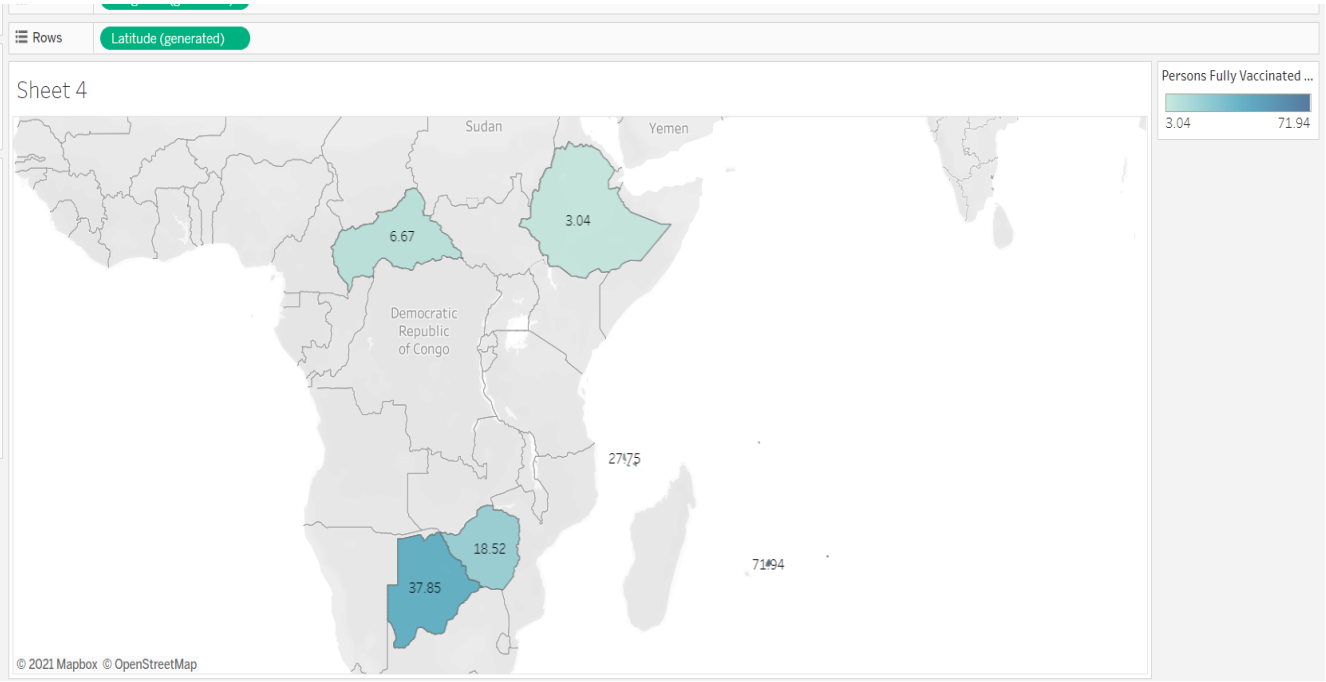
a) The United Nations wants you to build a dashboard containing an overview of the vaccination progress, specifically 1+ doses and fully vaccinated individuals, as a percentage of population vaccinated.



To build a dashboard, we need to first plot a map showing vaccinated individuals having received just 1 dose per 100 according to each country and WHO region.
Along with this , we need to plot a map showing the fully vaccinated population per 100 in each country and WHO region.
Then to create a dashboard , we need to drag both the both the maps on the dashboard screen .
With the help of this , we can analyse the the vaccinated population in various countries and region as well.

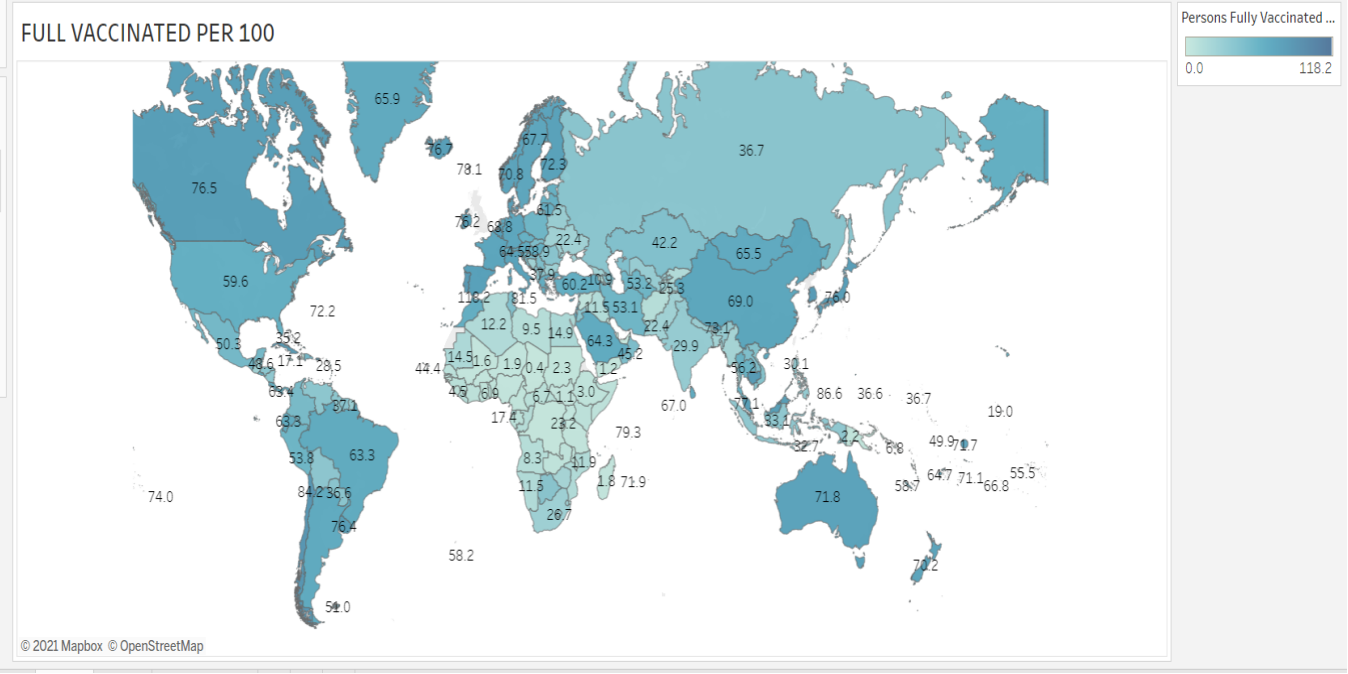
b) The Covax vaccine scheme was used to supply vaccines to poorer countries like Africa. Has the scheme proven to be effective? -

https://www.bbc.com/news/56100076



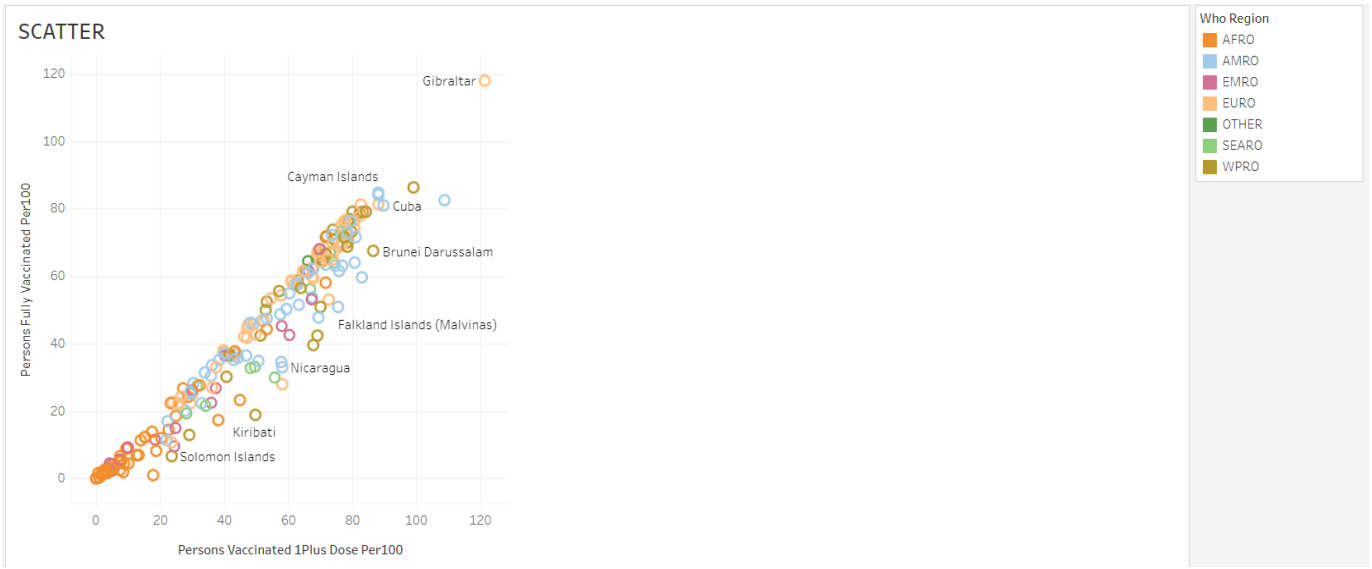
As per above data, the scheme is not proven to be very effective in Africa. At first only 4 states in whole region received vaccine from the covax vaccine scheme. Also the percentage of people benefited is also comparatively very less than other continents of the world. Though in the southern part of Africa the scheme is compariteviy more effective than the middle region of Africa

c) Use Maps to visualize the number of people vaccinated per 100 population to visualize the countries and regions in dire need of vaccines. It should be noted that the data only covers WHO approved vaccines.



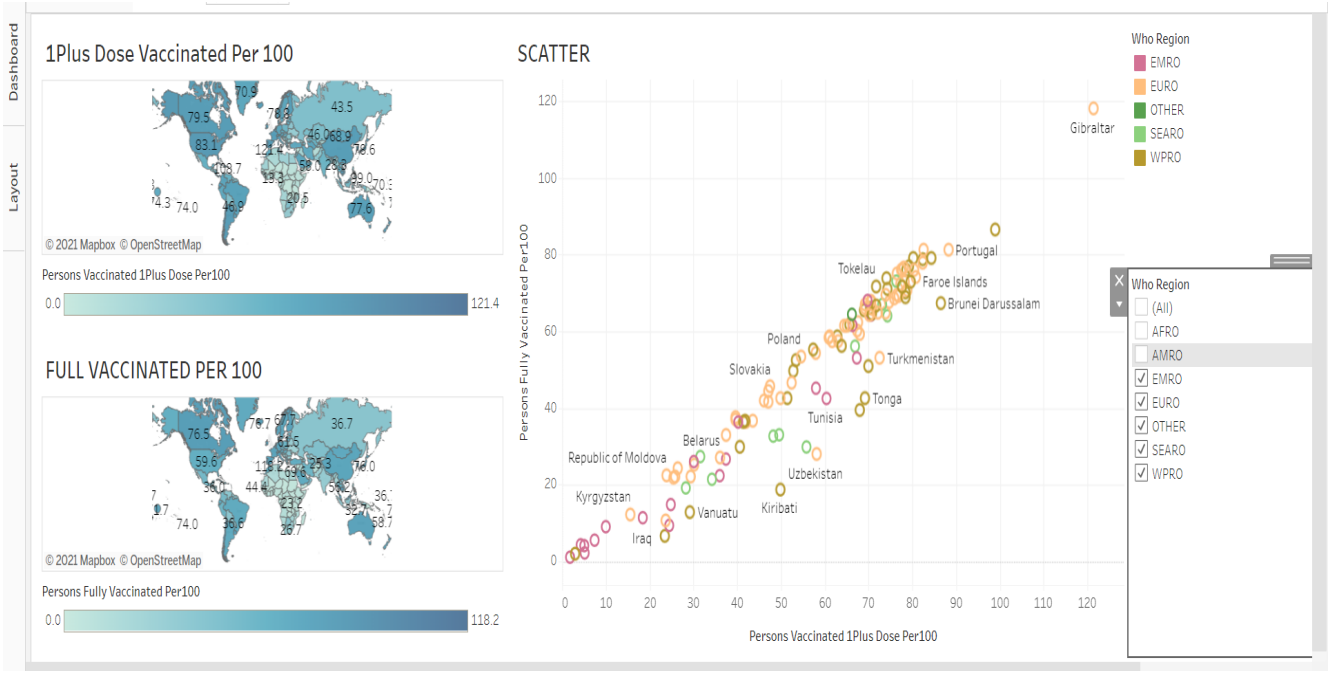
The map shows the total number of persons vaccinated per 100 to visualize the countries and WHO regions in dire need of vaccines.We can see that the percentage of people vaccinated in Africa is very less than compared to other regions of the world.By the whole predict we can visualize the African continent is the one which is in dire need of vaccination.

d) Build a scatter plot to view the trend between 1+ Dose vaccinated and fully vaccinated population, so the UN can advise countries that deviate from the recommended values to focus on getting a higher percentage of population fully vaccinated, or vice versa.



A Scatter plot is a representation of all the discrete points about a particular category (in this example various WHO regions and the countries in those regions) showing some measured value (in this example Fully vaccinated population and First dose vaccinated population.)
We have prepared a scatter plot showing Fully vaccinated population and First dose vaccinated population in all the WHO regions.
We have taken fully vaccinated population on the Y-axis and the first dose vaccinated population on the X-axis.

e) The Dashboard should allow vaccine monitoring and filtering via WHO regions, allowing filtering for multiple regions.



As seen in the dashboard , we are able to filter the visualization according to WHO regions .