MINI PROJECT 1(GEO)

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Visualization 1:

I created a bar chart that shows the amount donated and amount received by each country. Green is used to represent amount donated whereas red is used to donated amount received. Furthermore, I have also sorted the countries based on the net difference so as to add to the aesthetics of the graph and help read it better. I have also appended the bar chart to represent the amount donated/received when you hover your mouse over the bar. I have done data pre-processing in observable and python where I consolidated the amount into millions and also found the net difference and saved it as **data_diff.csv** file in the data folder.

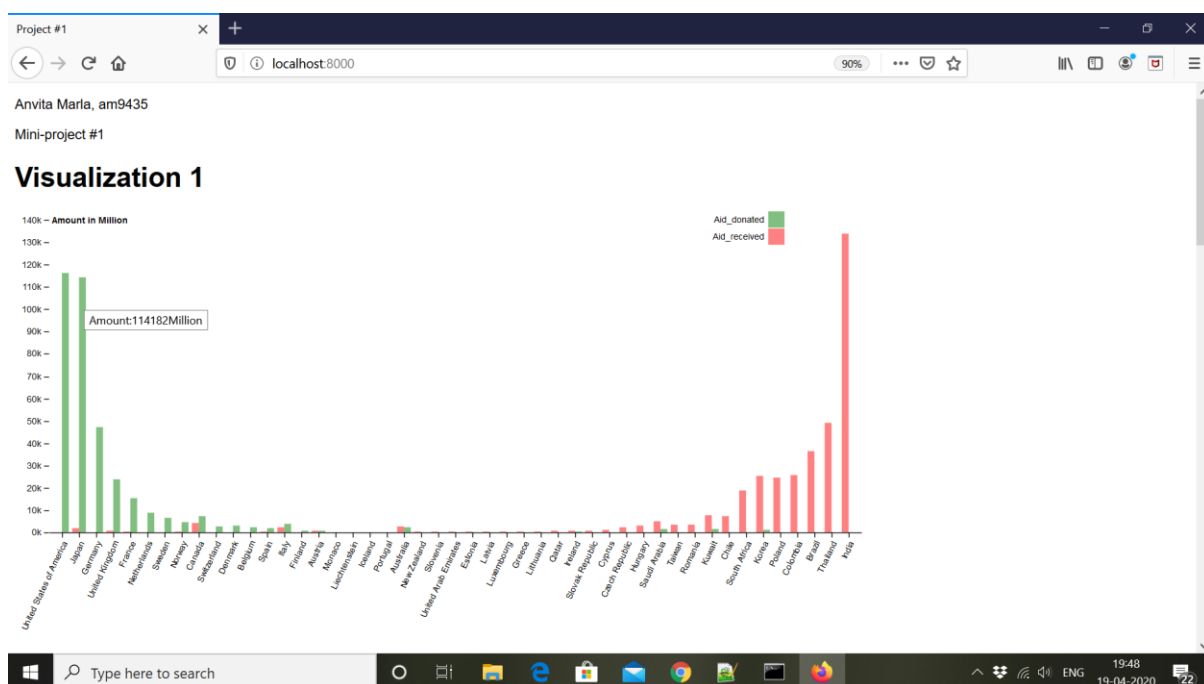- *How do the countries compare in terms of how much they receive and donate from other countries?*

    By looking at the graph we can easily answer this, sorting really helps answer such questions easily.

- *Are there countries that donate much more than they receive or receive much more than they donate?*

    We can clearly answer this. The countries on the extreme ends are the ones that donate much more than they receive or receive much more than they donate. More specifically, the ones on the left extreme donate more than they receive and the ones on the right extreme receive more than they donate.

Since I was able to answer these questions with ease, I think this is a good solution.

Screenshot:

Visualization 2:

I created a pie chart over the world map that shows the amount donated and received among different countries geographically and to observe if there are any geographical patterns that are interesting. Orange is used to represent the amount received and blue is used to represent the amount donated. Furthermore, I have also appended the pie charts to contain a text that shows the specific country, the amount donated and the amount received if you hover your mouse over the pie chart. Additionally, I have also mapped the radius of the pie charts to the total amount (donated + received). I have done data pre-processing in observable and python, where I mapped each country to its centroid coordinates(latitude and longitude) and saved it as **DATA_VIS2.csv** file.

- ***Do the countries that mostly receive or mostly donate tend to cluster around specific geographical areas of the world?***
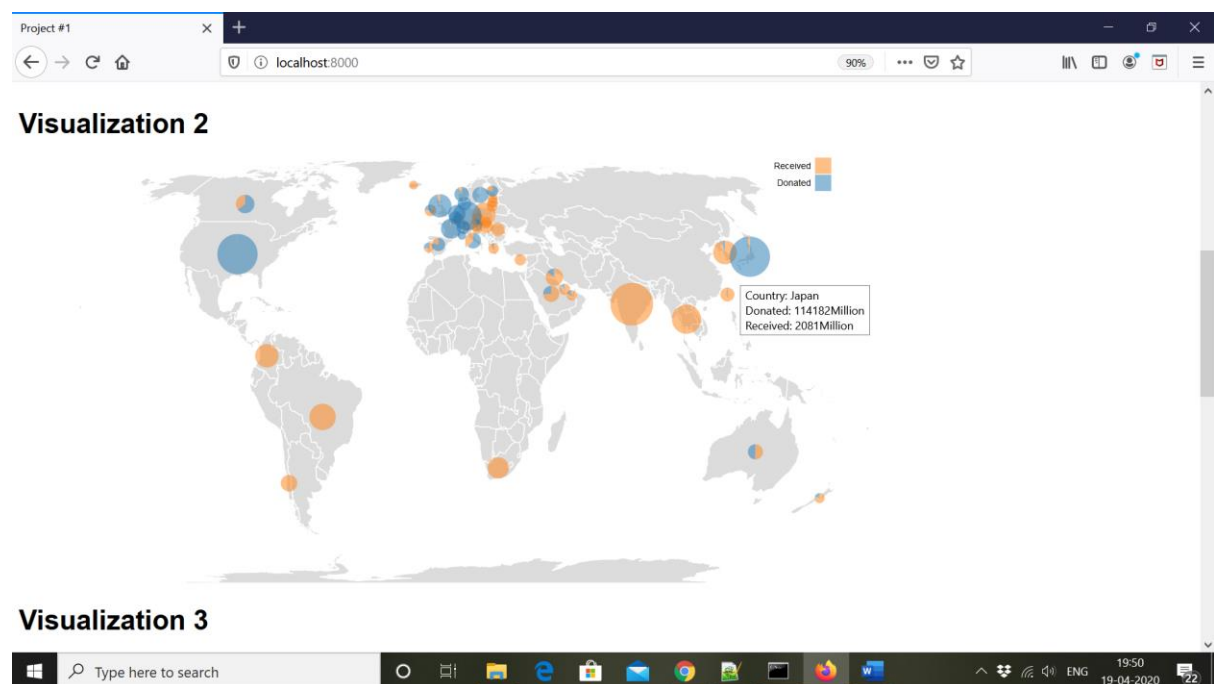
  By looking at our visualization we can clearly answer this. Yes, the countries that mostly receive or mostly donate tend to cluster around specific geographical areas of the world. North America, Japan(part of Asia), and most countries in Europe donate the most whereas South America, Asia, New Zealand receive the most.

- ***Are there neighboring countries that have radically different patterns in terms of how much they receive vs. how much they donate?***

  We can clearly answer this if we simply look at the visualization. Neighbouring countries such as countries in Europe, countries in Asia, Canada, North America, and South America have radically different patterns in terms of how much they receive vs. how much they donate.

Hence, I feel this visualization is a good solution.

Screenshot:

Visualization 3:

I created yet another pie chart over the world map that shows how the top 5 most frequent purposes of disbursements vary among different countries geographically and to observe if there are any geographical patterns that are interesting. Furthermore, I have also appended the pie charts to contain a text that shows the frequency of the top 5 purposes for the specific country if you hover your mouse over its pie chart. I have done data pre-processing in observable and python, where I mapped each country to its centroid coordinates(latitude and longitude) and also consolidated the top 5 most frequent purposes and their frequency and saved it as **DATA_VIS3.csv** file.

- *Are there any major differences in how the top 5 most frequent purposes of disbursements distribute geographically in terms of countries that receive donations?*

  From our visualization we can clearly answer this. Most of the countries in Europe and Asia have a wide distribution of the top 5 most frequent purposes.

- *Are there countries that tend to receive more of certain types of donations than others?*

  When we look at out visualization we can see that most countries in Europe receive more donations for Air transport and Industrial development than the remaining ones. Canada, Japan, Australia receive more aid for Air transport. South America, Thailand, India, Korea, Taiwan, UAE, etc receive mostly for Industrial development.

Since I was able to answer many questions based on this visualization, I feel this is a good solution. Only downside is that- since the countries in Europe are very small and are close to each other, they tend to be cluttered which hinders with readability.

Screenshot: