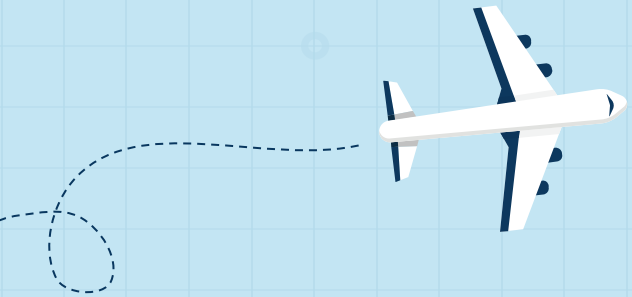

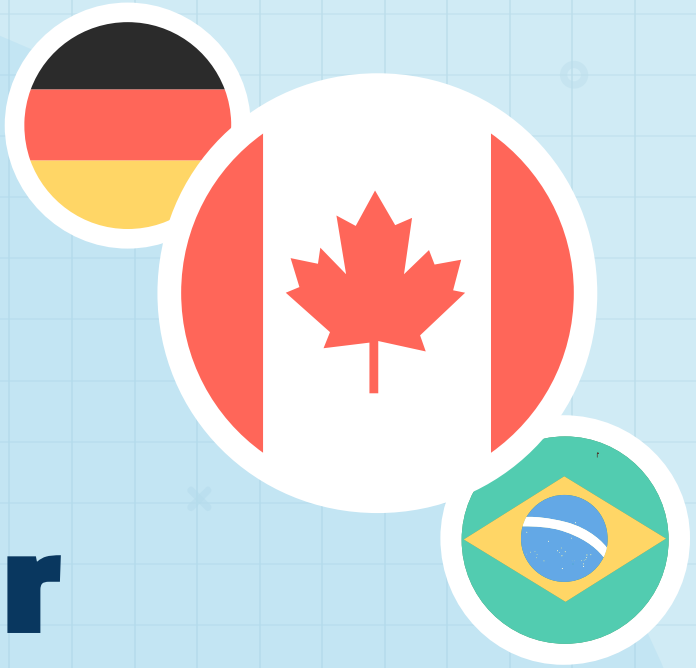

Which Country Would be Better to Live in?

Catherine Wang and Felice Xie

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01
Topic

Development Characteristics of Countries Around the World

By considering characteristics such as:

1. Unemployment Rate
2. Service Employment Rate
3. Industry Employment Rate
4. Agriculture Employment Rate
5. GDP
6. Vaccine Coverage

We gathered and analyzed data from 182 countries to develop a system that determines which country would better suit a person, depending on the number of beneficial characteristics present within the country.

02

Purpose

- Bring together useful indicators about different countries in the world
- Provide users with useful information about each country in an easily accessible format
- Allow users to easily compare two countries and determine the best place for them to move to either at the current time or in the long run (up to 20 years)
- Provide users with a relative percent change trend for GDP, unemployment, employment, and vaccine coverage for each country
- Display visualizations that show correlations between GDP, unemployment, employment, and vaccine coverage
- Display visualizations that depict which countries would be better to live in at the current time and in the long run

03

Data Collection Process

1. Searched through various government websites such as the CDC, WHO, and the CIA to find information about countries' vaccines and vaccine coverage
2. Searched through reliable non-government websites, such as World Bank and UN Data to obtain information about the countries' exchange rate, employment rate by sector, unemployment rate, and GDP
3. Only chose websites and and data sets that we found reliable and relevant
4. Ensured that all data we found contained data from 2010 to 2019 to aid in consistency amongst our data and thorough analysis
5. Carefully assessed all data sets to make sure there were not too many NaN values that would hinder the ability to produce an elaborate and accurate analysis

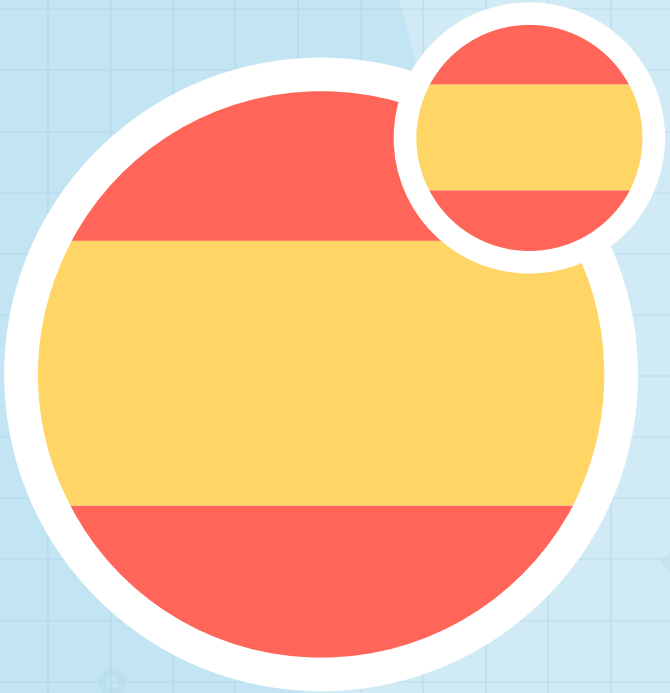
1. Gathered data from international organizations including the CDC, UN Data, World Bank, and WHO
2. Extracted data from websites using the BeautifulSoup, requests, and Pandas modules, then organized the data into separate excel files for further cleaning
3. Utilized the FuzzyWuzzy module to ensure that the countries were consistent throughout all the data
4. Utilized Pandas module to calculate average percent change for GDP, unemployment, vaccine coverage, and employment per sector from 2010 to 2019/2020
5. Utilized Pandas module to ensure that all the data in excel spreadsheets were in the same format to be easily extracted for analysis
6. Exported all the data with consistent countries into one excel spreadsheet
7. Filtered out countries that had greater than 15 unknown characteristics to ensure that all presented countries will contain as much relevant data as possible

04

Data Cleaning Process

05

Analysis



Calculations

Country Scores

2019/2020

1. Averaged the data from 2019/2020 among all the countries
2. Turned average GDP into a percentage by dividing by 100
3. Neutralized average GDP by dividing average GDP by the maximum GDP percentage of 2019
4. Used the following equation to assign each country a score
    a. Score = [(GDP_Percentage/Max_GDP_Percentage 2019) × (Employment in Services 2020) × (Employment in Industry 2020) × (Employment in Agriculture 2020)] / (Unemployment 2019)

countries with a higher score were said to be better to live in

Country Scores

Future Projection

1. Multiplied relative change by x number of years, where x is the number of years into the future we want to predict
2. Added previous result to 2019 data for unemployment, GDP, and employment
3. Averaged newly predicted unemployment, GDP, and employment among all countries
4. Neutralized average GDP
5. Used the following equation to assign each country a score
    a. Score = [(GDP_Percentage/Max_GDP_Percentage 2019) × (Employment in Services 2020) × (Employment in Industry 2020) × (Employment in Agriculture 2020)] / (Unemployment 2019)

EXAMPLE DATA

9.59327

Japan has a score of 9.59327 in 2019

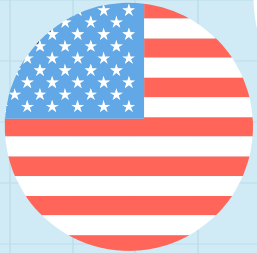
0.25953

Peru has a future score of 0.25953

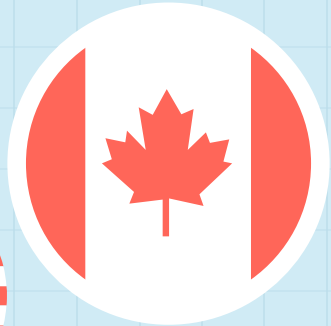
0.51872

Brazil has a score of 0.51872 in 2019

EXAMPLE INSIGHTS

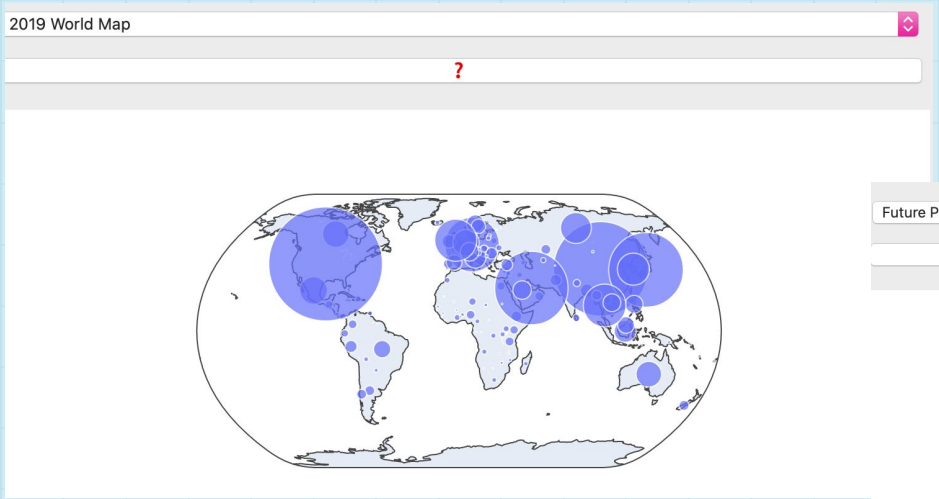


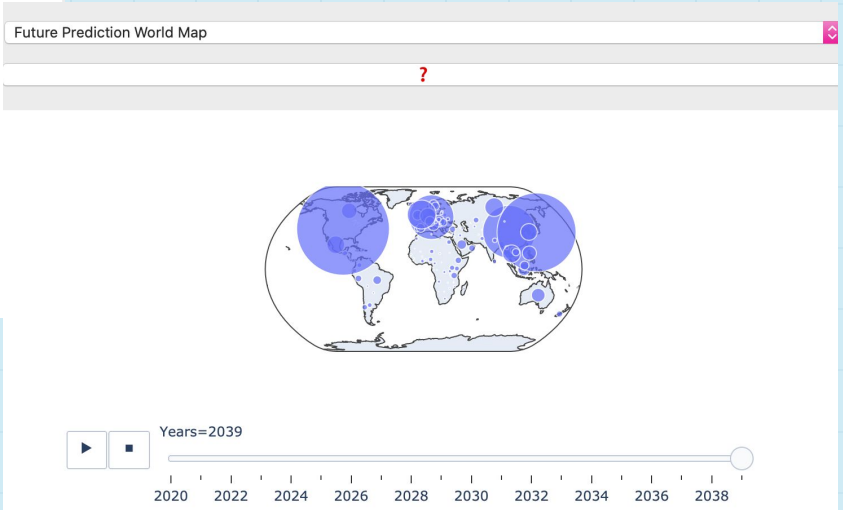
The average relative change in vaccine coverage for United States Of America is -0.00452 with a 20 year projected vaccine coverage of 82.1826, which is higher than Venezuela's 20 year projection of 57.997 with an average relative change in vaccine coverage of -0.0107. Therefore, United States Of America will most likely have more vaccine coverage in the long run.



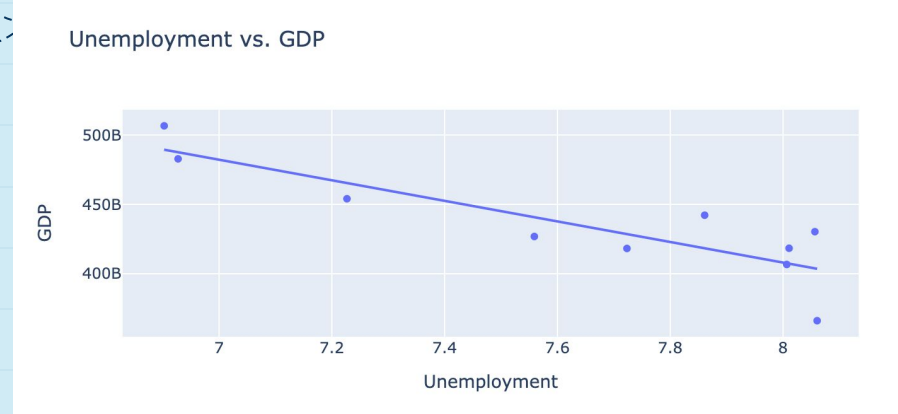
The average relative change in unemployment for Canada is -0.03969 with a 20 year projected unemployment rate of 4.770126963132033, which is higher than Central African Republic's 20 year projected unemployment rate of 3.5371 with average relative change of -0.00714. Therefore, Canada will most likely have more unemployment in the long run.

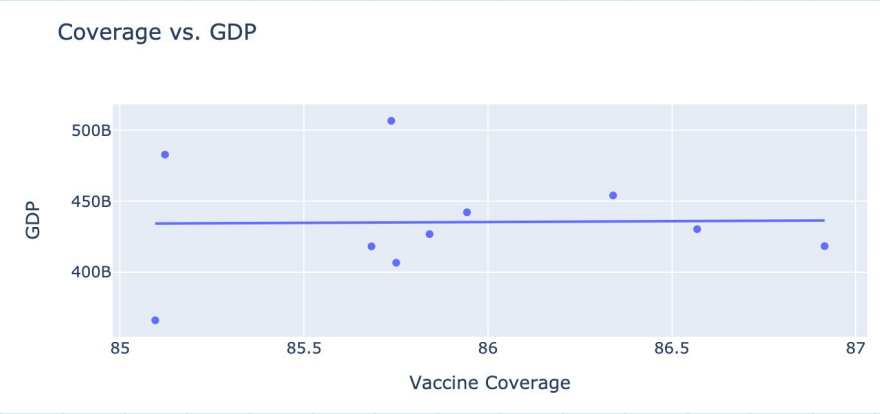
VISUALS

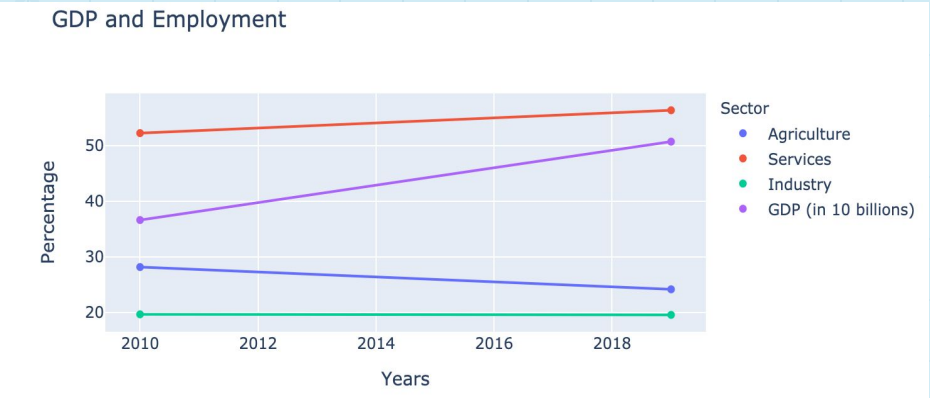

2019 World Map


Future Prediction World Map
Years=2039
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038

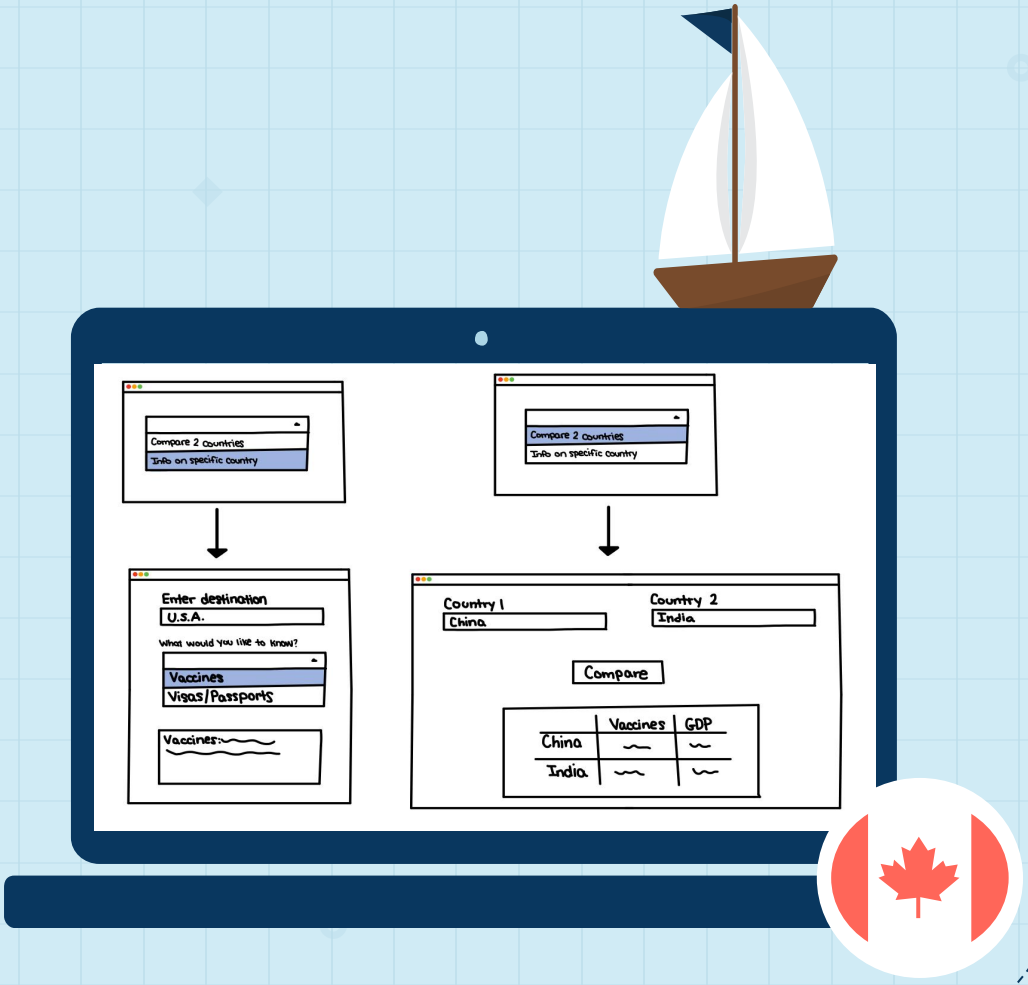
VISUALS


Unemployment vs. GDP
GDP
500B
450B
400B
7
7.2
7.4
7.6
7.8
8
Unemployment


Coverage vs. GDP
GDP
500B
450B
400B
85
85.5
86
86.5
87
Vaccine Coverage


GDP and Employment
Percentage
50
40
30
20
2010
2012
2014
2016
2018
Years
Sector
Agriculture
Services
Industry
GDP (in 10 billions)

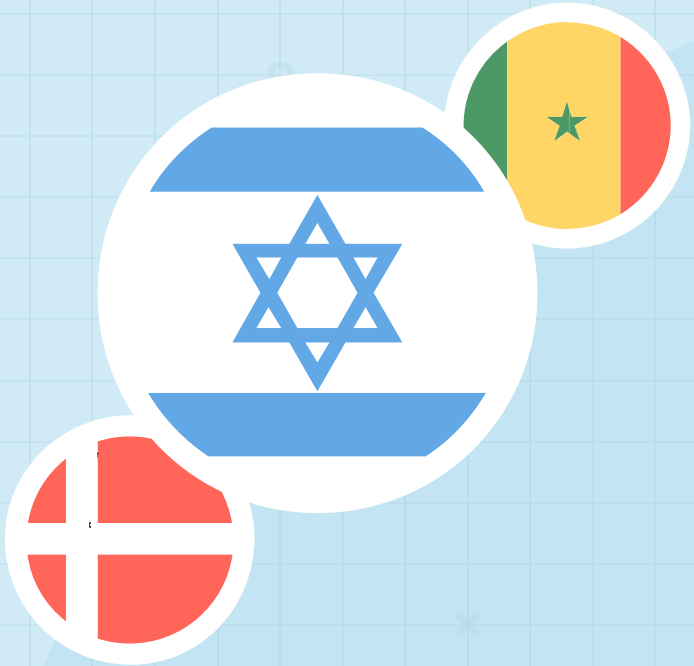
GUI


Compare 2 countries
Info on specific country
Compare 2 countries
Info on specific country
Enter destination
U.S.A.
What would you like to know?
Vaccines
Visas/Passports
Vaccines:
Country 1
China
Country 2
India
Compare
Vaccines
GDP
China
India

07

Results and Conclusion

1. 4 best countries to live in currently: U.S., China, Japan, Qatar
2. 4 best countries to live in in 20 years: U.S., China, Japan, Germany
3. Countries with a higher GDP, employment rate, and a lower unemployment rate have a higher score and are better to live in.
4. Unemployment rate and GDP have a negative correlation. As GDP increases, unemployment decreases.
5. GDP increases, vaccine coverage slightly increases, but GDP and vaccine coverage have little to no correlation.
6. Over time, agriculture employment decreased as service employment and GDP increased, while industry employment stayed relatively steady. GDP has the greatest rate of change over time compared to the three employment sectors.



THANKS!

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