COVID-19 ANALYSIS

B.TECH 2022-26 4th SEM LEARNING PROJECT-II

Submitted by Group- DS-06

ANUSHKA PALO, ASHOK SWAIN, CH.AYUSHMAN PATRO

22CSEDS005 , 22CSEDS011 , 22CSEDS017

Under the Guidance of Asst. Prof. Bhabani Sankar Panda

BACHELOR IN TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

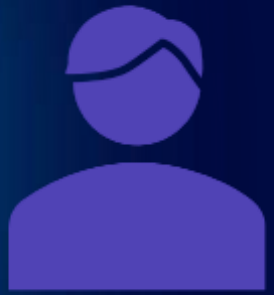
SCHOOL OF ENGINEERING AND TECHNOLOGY

GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY,

GUNUPUR- 765022, ODISHA

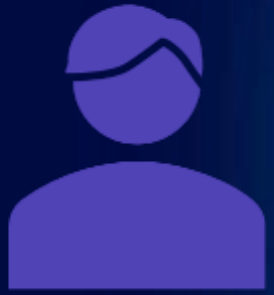
September 2023

TEAM DETAILS



ASHOK SWAIN
22CSEDS005

ANUSHKA PALO
22CSEDS011



CH. AYUSHMAN PATRO
22CSEDS017

CONTENTS

OBJECTIVE

- The fundamental goal of this research is to better comprehend the varied implications of the Covid-19 epidemic on global level.
- Our objective of the project intends to provide valuable informations and significant insights for politicians, economists and healthcare experts as the develop policies for future.

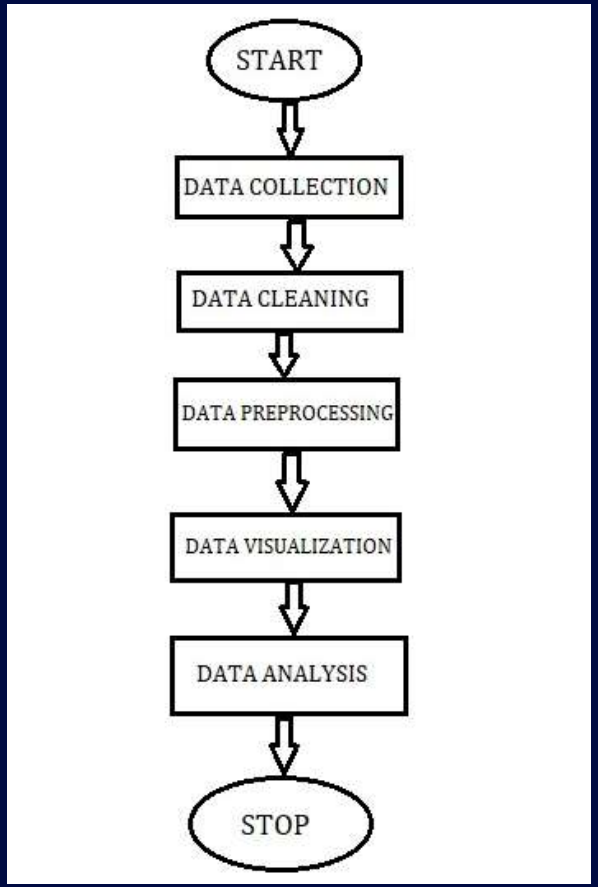
INTRODUCTION

- Our project “Covid-19 Analysis” intends to dive the link between Covid-19 cases and accompanying economic implications.
- Using Python for data analysis and visualization, this project will investigate how different nations have been affected, taking into consideration factors such as the Human Development Index (HDI) and economic indicators and of vaccines as well.
- Data Collection is done from Kaggle website.
- After which Data Cleaning, Aggregation, Analysis with Visualization is done.

SOFTWARE REQUIREMENTS

1. PYTHON (V3.11-V3.12)
2. JUPYTER NOTEBOOK / GOOGLE COLAB
3. VIRTUAL STUDIO CODE
4. MS EXCEL / GOOGLE SPREADSHEETS
5. PYTHON LIBRARIES:-
    I. PANDAS
    II. PLOTLY.EXPRESS
    III. PLOTLY.GRAPH-OBJECTS
    IV. MATPLOTLIB
    V. SEABORN

FLOW CHART


START
DATA COLLECTION
DATA CLEANING
DATA PREPROCESSING
DATA VISUALIZATION
DATA ANALYSIS
STOP

METHODOLOGY

01 DATA COLLECTION AND DATA CLEANING

Here the whole and legit dataset is collected from Kaggle i.e. a online website and cleaning as well as preprocessing is done

02 DATA AGGREGATION

We summarized the whole dataset and summarized it into a more manageable and informative manner

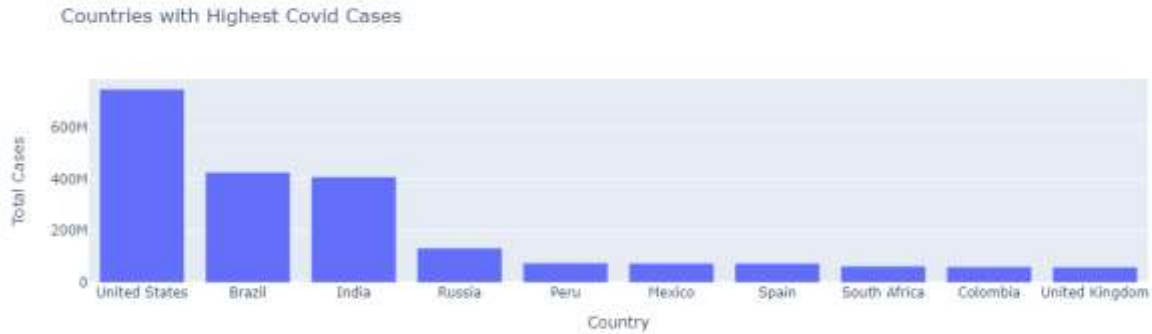
03 DATA VISUALIZATION

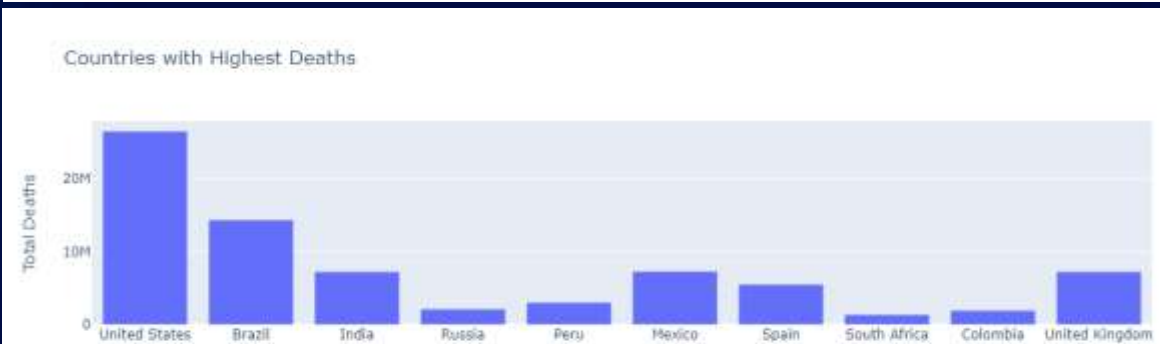
The aggregated data is used here to transform it into different types of graphs and charts to present the data in an understandable way

04 DATA ANALYSIS

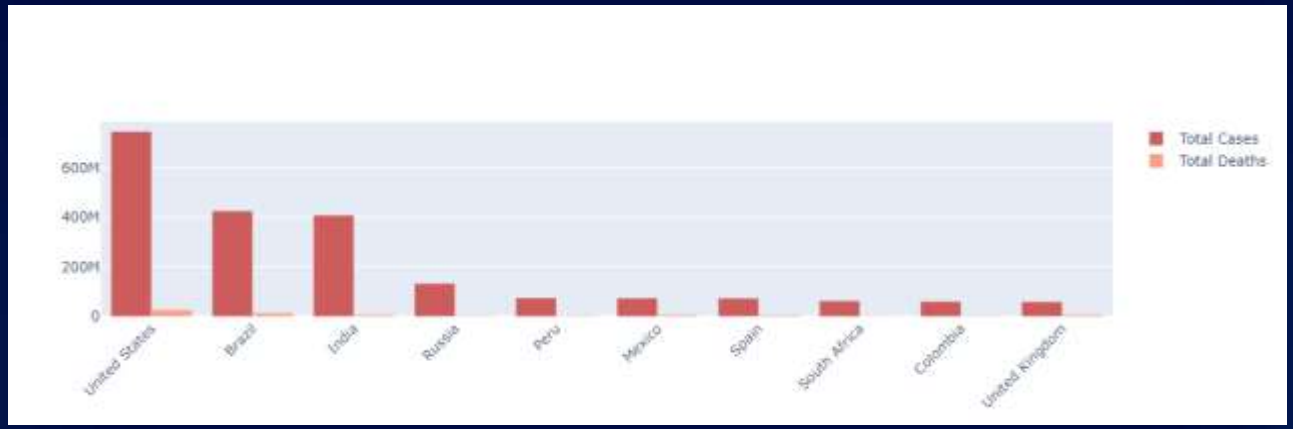
Here we used statistical and visualization techniques to uncover patterns, trends and relationships i.e. hidden within data

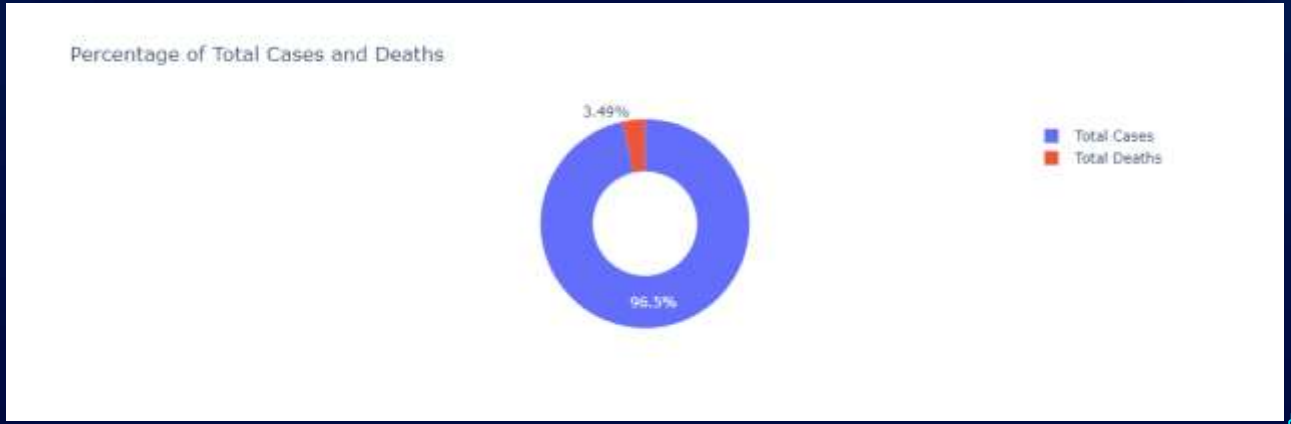
CHARTS


Countries with Highest Covid Cases
Total Cases
600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country

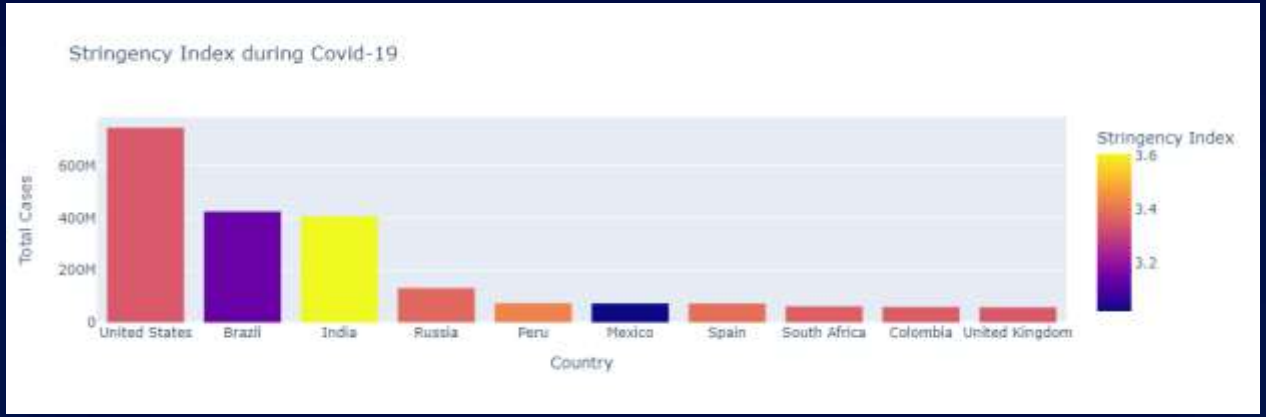

Countries with Highest Deaths
Total Deaths
20M
10M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country

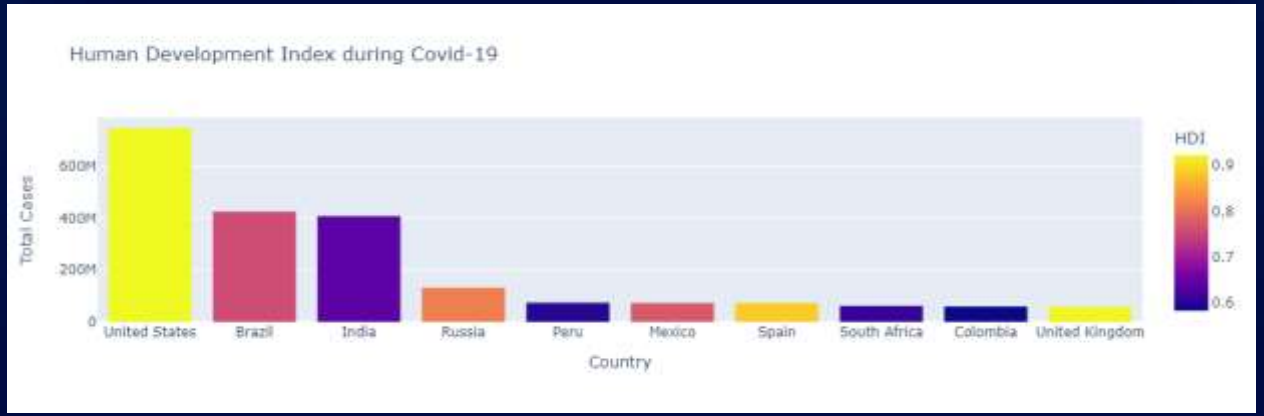
CHARTS


600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Total Cases
Total Deaths

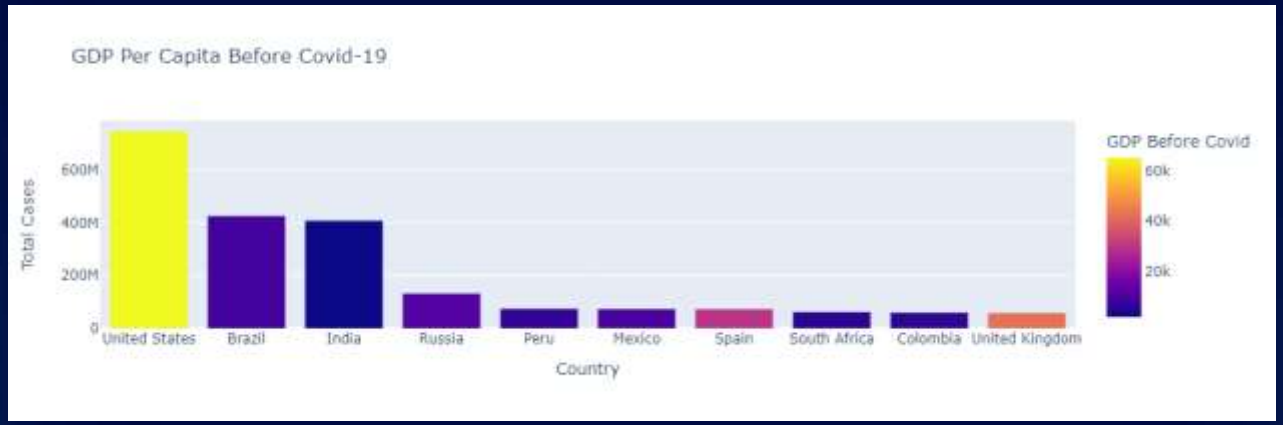

Percentage of Total Cases and Deaths
3.49%
96.5%
Total Cases
Total Deaths

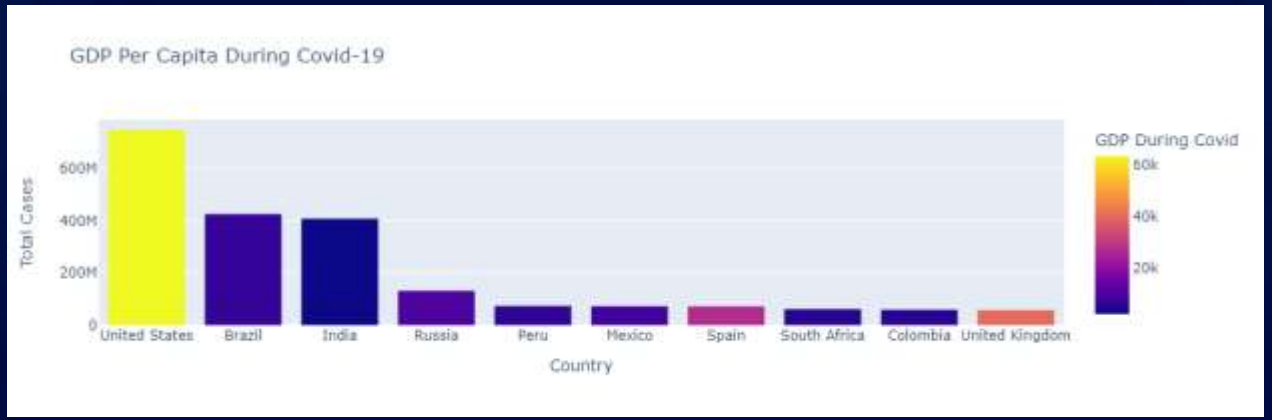
CHARTS


Stringency Index during Covid-19
Total Cases
600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country
Stringency Index
3.6
3.4
3.2


Human Development Index during Covid-19
Total Cases
600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country
HDI
0.9
0.8
0.7
0.6

CHARTS


GDP Per Capita Before Covid-19
Total Cases
600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country
GDP Before Covid
60k
40k
20k


GDP Per Capita During Covid-19
Total Cases
600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country
GDP During Covid
60k
40k
20k

CHARTS

vaccines

- Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing
- Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac, Sputnik V
- Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
- Moderna, Oxford/AstraZeneca, Pfizer/BioNTech
- Oxford/AstraZeneca
- Oxford/AstraZeneca, Pfizer/BioNTech
- Oxford/AstraZeneca, Pfizer/BioNTech, Sputnik V
- CanSino, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sputnik V
- Moderna, Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
- Pfizer/BioNTech
- Johnson&Johnson, Moderna, Novavax, Oxford/AstraZeneca, Pfizer/BioNTech
- Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech
- Johnson&Johnson, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sputnik Light, Sputnik V
- Johnson&Johnson, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinovac
- Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing
- Sinopharm/Beijing, Sputnik V
- Johnson&Johnson, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech
- Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac

Vaccines Distribution over the World Map

INSIGHTS

- United States had the most number of Covid-19 cases and deaths
- Top 3 Countries with Highest cases due to Covid-19 –
  1. United States 2. Brazil 3. India
- Top 3 Countries with Highest deaths due to Covid-19 –
  1. United States 2. Brazil 3. Mexico
- Death Rate during Covid-19 was 3.614
- During Covid-19, countries suffered loss in GDP Per Capita
- Top 3 Countries with major Stringency Index during Covid-19 –
  1. India 2. Peru 3. Spain
- Top 3 Most used Vaccines –
  1. Oxford/AstraZeneca
  2. Pfizer/Bio N Tech
  3. Johnson & Johnson

CONCLUSION

- The goal of this study is to improve knowledge of the intricate relationship between Covid-19's dissemination and economics.
- The project aims to give actionable insights that can improve decision-making processes and help to worldwide efforts to reduce the impact of pandemics on public health and economics by using Python-based approach to data analysis and visualization.

Thanks!!!