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The COVID-19 Pandemic Analysis

Github link : https://github.com/anayatawais/visualization

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1. Introduction

In this work, the developed code is a Python script that analyzes and visualizes data related to the COVID-19 pandemic using the Pandas, Matplotlib, and Plotly libraries. The code begins by importing the required libraries: pandas, matplotlib, plotly, numpy, and datetime. It also imports several classes and functions from the Plotly library.

Next, the code retrieves data from a web service using the requests library and converts the data into a pandas DataFrame. The data is then transformed and cleaned to remove any missing values and convert the Last Update column from Unix timestamps to datetime objects.

2. Data Visualization

2.1. Bar Plot

The second chart is a horizontal bar plot that shows the top 10 countries with the most deaths due to COVID-19. The bars are colour-coded based on the number of deaths, with a blue-to-red colour scale.

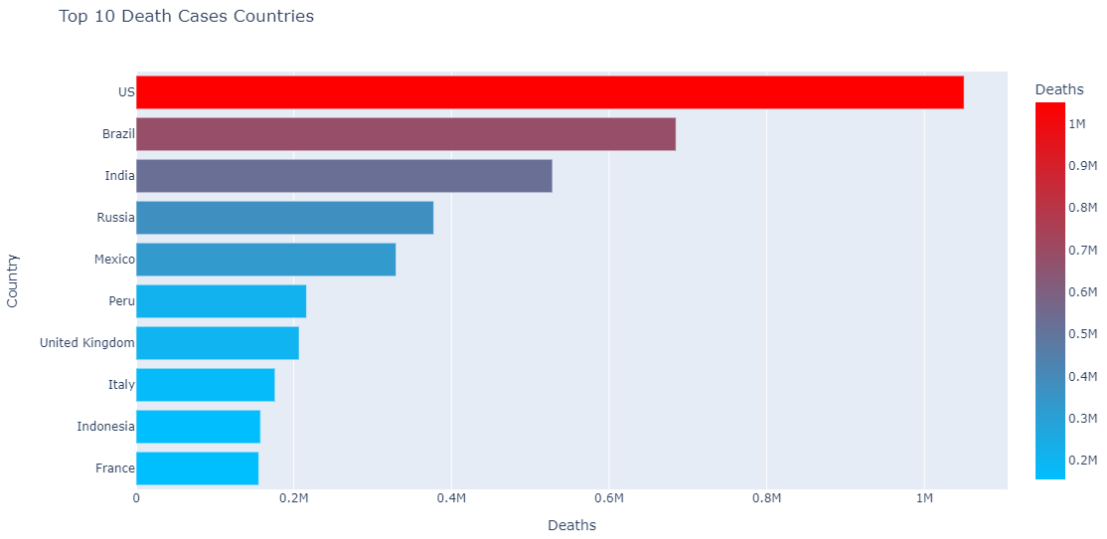

Figure 1: Top 10 Death Cases Countries

2.2. Vertical Bar plot

The third chart is a vertical bar plot that shows the top 10 countries with the most recovered cases of COVID-19. The bars are colour-coded based on the number of recovered cases, with a green-to-yellow colour scale.

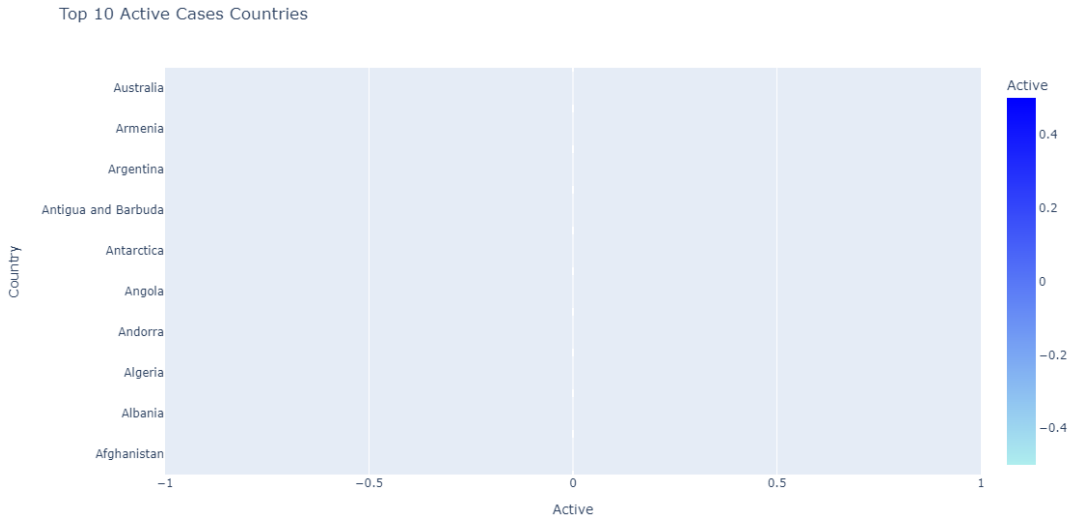

Figure 2: Top 10 Active Cases Countries

2.3. Horizontal Bar Plot

The fourth chart is a horizontal bar plot that shows the top 10 countries with the most active cases of COVID-19. The bars are colour-coded based on the number of active cases, with a blue-to-green colour scale.

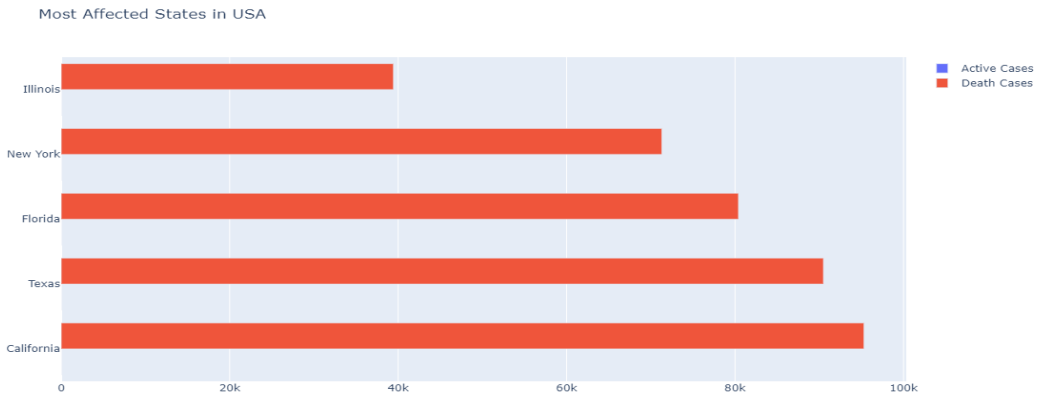

Figure 3: Most Affected States in the USA

2.4. Stacked Bar Chart

The code then proceeds to visualize the most affected states in four specific countries: the United States, Brazil, India, and Russia. For each country, the code identifies the top 5 states with the most confirmed cases of COVID-19 and creates a stacked bar chart that shows the number of active, recovered, and death cases for each state.

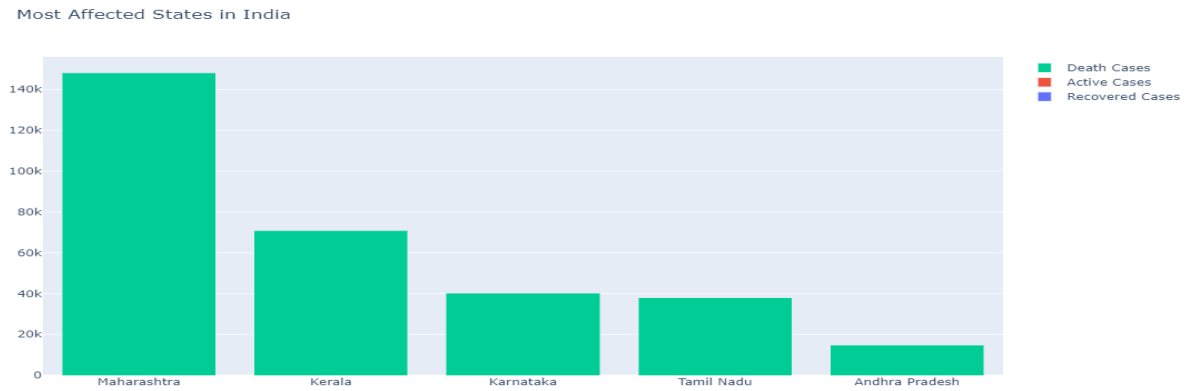

Figure 4: Most Affected States in India

Finally, each chart is displayed using the Plotlyshow () function.

Summary

In conclusion, the provided code demonstrates how to use Pandas, Matplotlib, and Plotly libraries to retrieve, transform, and visualize COVID-19 data. The code produces informative and visually appealing charts that provide insights into the pandemic's impact on various countries and regions.