# Covid-19 Data Analysis, Part-1

**You can download the dataset from following link:**

https://raw.githubusercontent.com/datasets/covid-19/main/data/countries-aggregated.csv

This project involves analysing the global spread of COVID-19 using the dataset provided.

## Project Tasks

1. Load and Pre-process the Dataset

    - Use Pandas to load the dataset from the provided URL.
    - Inspect the data for any missing values and handle them appropriately.
    - Convert the date column to a 'datetime' format for easier manipulation.

2. Data Exploration and Cleaning

    - Display basic information about the dataset, such as the number of rows and columns, data types, and a sample of the first few rows.
    - Identify and handle any outliers or inconsistencies in the data.

3. Visualize Global Trends

    - Plot the total number of confirmed cases, deaths, and recoveries over time using 'Matplotlib' and 'Seaborn'.
    - Use line plots to visualize these trends globally.

4. Country-Specific Analysis

    - Allow the user to specify a country and visualize the COVID-19 trends for that specific country.
    - Compare the trends of multiple countries on the same plot to see differences and similarities.

5. Comparative Analysis

    - Create bar plots to compare the total number of confirmed cases, deaths, and recoveries between the top 10 most affected countries.
    - Analyse the growth rate of cases and deaths using moving averages.

6. Correlation Analysis

    - Analyse the correlation between different variables, such as confirmed cases and deaths.
    - Use 'heatmaps' to visualize the correlation matrix.

# Covid-19 Data Analysis, Part-2

Answer following questions visually through data:

1. What is the trend of confirmed cases, deaths, and recoveries globally over time? Draw plots separately.
2. Which country has the highest number of confirmed cases, deaths, and recoveries as of the latest date in the dataset?
3. How do the trends of confirmed cases differ between the top 5 most affected countries?
4. What is the growth rate of confirmed cases, deaths, and recoveries globally?
5. What are the cumulative confirmed cases, deaths, and recoveries for the top 10 most affected countries?
6. How does the recovery rate compare across different countries?
7. What is the correlation between confirmed cases, deaths, and recoveries globally?
8. How do lockdown measures impact the trend of confirmed cases in different countries?
9. How does the number of tests conducted relate to the number of confirmed cases in various countries?
10. What is the distribution of confirmed cases, deaths, and recoveries by continent?