

## 1. Data Understanding

- **Data Preprocessing:** Are there any missing values or duplicates in columns like **Confirmed**, **Deaths**, **Recovered**, **Tests**, or **Date**?
- **Data Types:** What data types are assigned to columns such as **Confirmed**, **Deaths**, **Recovered**, and **Date**? Are they correct?
- **Time-Series Data:** Is the dataset structured in a time-series format with the **Date** column? Can you analyze trends over time based on this column?

## 2. Descriptive Analysis

- **Total Cases & Deaths:** What is the total number of Covid-19 cases (**Confirmed**) and deaths (**Deaths**) in each country (**Country**)? Which country has the highest values?
- **Trend Analysis:** What is the trend in the number of Covid-19 cases (**Confirmed**) and deaths (**Deaths**) over time (**Date**) in each country (**Country**)?
- **Geographical Distribution:** Which countries (**Country**) have the highest number of confirmed cases (**Confirmed**) and deaths (**Deaths**)?
- **Cases per Population:** What is the number of Covid-19 cases (**Confirmed**) per 1,000 people for each country (**Country**), using the **Population** column?

## 3. Comparative Analysis

- **Country-wise Comparison:** Which countries (**Country**) have the highest and lowest number of confirmed Covid-19 cases (**Confirmed**) and deaths (**Deaths**)?
- **Testing & Positivity Rates:** What is the correlation between the number of tests (**Tests**) and the number of confirmed cases (**Confirmed**)? Does a higher number of tests correlate with a higher positivity rate?
- **Recovery vs. Death Rate:** How does the recovery rate (**Recovered/Confirmed**) compare to the death rate (**Deaths/Confirmed**) across countries (**Country**)?

## 4. Predictive Modeling

- **Prediction of Future Cases:** Can we predict future Covid-19 cases (**Confirmed**) in a country (e.g., **India**) using a time-series forecasting model with the **Date** column?
- **Prediction of Deaths:** Can a regression model predict the number of deaths (**Deaths**) in a country (e.g., **USA**) based on the current number of confirmed cases (**Confirmed**)?
- **Impact of Vaccination:** If vaccination rate data is available, is there a relationship between the number of vaccinations and the number of cases (**Confirmed**) or deaths (**Deaths**) in a country (**Country**)?

- **Machine Learning Model:** Can we build a machine learning model to classify countries (**Country**) based on the severity of Covid-19, using features such as **Confirmed**, **Deaths**, and **Population**?

## 5. Correlation and Causality

- **Correlation between Cases & Deaths:** Is there a correlation between the number of confirmed cases (**Confirmed**) and deaths (**Deaths**) across different countries (**Country**)? What is the Pearson correlation coefficient?
- **Effect of Social Distancing or Lockdown:** Is there a significant change in the number of cases (**Confirmed**) before and after lockdown measures were implemented? Can you compare this based on **Date** and the government's lockdown date?

## 6. Visualization

- **Heatmap for Geographical Spread:** Can you create a heatmap that shows the spread of Covid-19 across countries (**Country**) with values of confirmed cases (**Confirmed**) and deaths (**Deaths**)?
- **Line Charts for Trends:** Can you visualize the trend of new Covid-19 cases (**Confirmed**) and deaths (**Deaths**) over time (**Date**) for a specific country (**Country**) using a line chart?
- **Bar Charts:** Can you create bar charts that compare Covid-19 cases (**Confirmed**), deaths (**Deaths**), and recovery rates (**Recovered**) across different countries (**Country**)?
- **Pie Chart for Cases Distribution:** Can you show the proportion of total cases (**Confirmed**), recoveries (**Recovered**), and deaths (**Deaths**) across countries (**Country**) using a pie chart?

## 7. Advanced Analysis

- **Clustering of Countries:** Can you apply K-means clustering or another clustering technique to group countries (**Country**) based on the severity of Covid-19 cases (**Confirmed**), deaths (**Deaths**), and population (**Population**)?
- **Risk Factor Analysis:** Is there a correlation between population density (if available in **Population** or another column) and the number of Covid-19 cases (**Confirmed**)? Does population density explain the spread of Covid-19 in certain countries (**Country**)?
- **Sentiment Analysis:** If there is a column for social media sentiment or news articles related to Covid-19, can you perform sentiment analysis to assess public opinion over time (**Date**) and correlate it with the number of cases (**Confirmed**) or deaths (**Deaths**)?

## Example Questions (with Columns):

1. **Descriptive Analysis:** "What is the trend of daily Covid-19 cases (**Confirmed**) and deaths (**Deaths**) in **India** over the last 6 months (using **Date**)?"
2. **Predictive Modeling:** "Can we predict the number of Covid-19 cases (**Confirmed**) in **Brazil** for the next 30 days using a time-series model (based on **Date**)?"
3. **Visualization:** "Can you create a heatmap to visualize the spread of Covid-19 (**Confirmed**) in different regions (**Country**) over time (**Date**)?"
4. **Correlation Analysis:** "Is there a significant correlation between the number of Covid-19 cases (**Confirmed**) and the number of tests (**Tests**) conducted in **USA**?"