**Design Thinking Process for Analysing COVID-19 Cases and Deaths Data Using IBM Cognos**

**Problem Understanding and Project Definition:**

Project Objective: The primary goal of this project is to analyse COVID-19 cases and deaths data for countries in the European Union and European Economic Area (EU/EEA) using IBM Cognos.  This project encompasses defining analysis objectives, collecting COVID-19 data, designing relevant visualizations in IBM Cognos, and deriving insights from the data.

**Design Thinking**:

1.**Analysis Objectives:**

Define specific analysis objectives, such as comparing mean values and standard deviations of cases and deaths, identifying trends, and deriving actionable insights.

2. **Data Collection:**

Data Source: Obtain the COVID-19 cases and deaths dataset from the provided source, which is the Kaggle dataset: COVID-19 Cases and Deaths Dataset.

**Columns in the dataset:**

**Date:** represents the date in which cases were recorded

**Month, day, year** :components of date

**Cases**: represents number of cases active on that particular date

**Deaths**: No of deaths due to COVID

**Country**: Represents country in which the data was recorded

3. **Data Preparation:**

Data Cleaning: Perform data cleaning to handle any missing values, duplicates, or inconsistencies in the dataset.

Data Transformation: Format the data appropriately, ensuring it includes necessary attributes like date, country, daily cases, and daily deaths.

4. **Data Analysis and Visualization:**

Exploratory Data Analysis (EDA): Conduct an EDA to gain insights into the data. Visualize the distribution of cases and deaths, identify outliers, and explore temporal trends.

Visualization Strategy: Plan how to visualize the mean values and standard deviations using IBM Cognos. Consider using line charts, bar charts, or other relevant visualizations.

5. **Insights Generation:**

Statistical Analysis: Calculate the mean values and standard deviations of daily cases and deaths for each country and overall.

Temporal Analysis: Analyse temporal trends and patterns in cases and deaths.

Intervention Assessment: If applicable, explore the impact of interventions or vaccination campaigns.

Insights Documentation: Document key findings and actionable insights.

6. **IBM Cognos Integration:**

Data Integration: Import the cleaned and transformed data into IBM Cognos for further analysis.

Visualization Design: Create informative visualizations within IBM Cognos, ensuring clarity and interactivity.

7. **Model Evaluation:**

The performance of the statistical models used for prediction or analysis can be evaluated and interpreted.

8. **Reporting and Presentation:**

Create detailed reports and presentations to communicate the findings effectively to stakeholders.

9. **Continuous Monitoring:**

Set up a system for continuous monitoring and updating of the data and analysis to ensure insights remain current.

10. **Interpretation and Action:**

a)Provide actionable insights to relevant stakeholders, such as policymakers or public health authorities.

b)Identify strategies for managing and responding to COVID-19 based on the analysis.