**Project Title:** COVID-19 using Cognos

**Dataset Link:**[**https://www.kaggle.com/datasets/chakradharmattapalli/covid-19-cases**](https://www.kaggle.com/datasets/chakradharmattapalli/covid-19-cases)

**Phase 1: Project Definition and Design Thinking**

**Project Definition:** The COVID-19 pandemic has had a profound impact on global health. This study aims to assess the spread and impact of COVID-19 cases. This document outlines the procedures for analyzing COVID-19 case data, including setting analysis objectives, gathering relevant data, creating informative visualizations, and extracting valuable insights. Ultimately, the project aims to provide a comprehensive understanding of the pandemic's effects and contribute to effective solutions.

**Design Thinking:**

**Monitoring and analyzing COVID-19 cases are crucial for pandemic management. Assessment is the process by which case data is transformed into actionable information. This information is essential for policymakers and health authorities to make informed decisions.**

**1. Analyzing Objectives:**

**COVID-19 cases are analyzed using various metrics, including infection rates, mortality rates, and vaccination coverage. A critical tool for this purpose is the COVID-19 Severity Index (CSI). This index summarizes complex case data into understandable terms, aiding decision-making. The objective is to provide clear, actionable information to the public.**

2. Data Collection:

We obtain COVID-19 case data, including infection counts, mortality figures, testing rates, and vaccination data.

3. Visualization Strategy:

The COVID-19 Severity Index (CSI) model is employed to assess the severity of the pandemic. CSI involves four stages: (1) selection of relevant case parameters, (2) generation of sub-indices for each parameter, (3) assignment of parameter weight values, and (4) computation of the overall severity index. This approach categorizes the pandemic's severity based on the index value, providing a clear picture of the situation.

4. Predictive Modeling:

Predictive modeling plays a crucial role in anticipating and managing the course of the COVID-19 pandemic. This phase involves using historical case data and various statistical and machine-learning techniques to make informed projections about future trends. By analyzing factors such as vaccination rates, public health measures, and population demographics, predictive models can help policymakers prepare for potential surges in cases and optimize resource allocation.

The objectives of predictive modeling include:

- Forecasting future COVID-19 case numbers and identifying potential hotspots.

- Evaluating the impact of different intervention strategies, such as lockdowns or vaccination campaigns.

- Estimating healthcare resource requirements, including hospital beds and ventilators, to ensure preparedness.

Data-driven predictive models, such as SIR models, SEIR models, and machine learning algorithms, are employed to achieve these objectives. These models can provide decision-makers with valuable insights to guide timely and effective responses to the evolving pandemic situation.