

Problem Statement

During the COVID-19 pandemic, India experienced a rapid increase in infections, recoveries, and deaths, varying significantly across different states. However, the impact was not uniform, and there was a **lack of clear, data-driven understanding** of which states were most affected, how the disease spread over time, and how effective recovery and vaccination efforts were.

Therefore, there was a need to **analyze the COVID-19 data** to identify trends, compare state-level severity, evaluate recovery and mortality rates, and visualize patterns for better public health decision-making.

Deliverables

1. **Cleaned and Pre-Processed Dataset**

COVID-19 datasets were cleaned, formatted, and enhanced by creating new calculated fields such as *Active Cases* for further analysis.

2. **Python-Based Exploratory Data Analysis**

Visual charts and summaries were generated to identify top affected states, case trends, recovery patterns, and mortality behavior.

3. **SQL Analytical Reports**

State-wise comparisons, total case statistics, recovery and mortality rates, and vaccination distribution were derived using structured SQL queries.

4. **Interactive Tableau Dashboard**

A visual dashboard was created displaying key metrics, state-wise severity, case trends over time, and vaccination insights for easy interpretation.

5. **Final Project Documentation & Report**

A complete report explaining methodology, analysis, visuals, key findings, and conclusion.

Objectives

1. To collect, clean, and preprocess COVID-19 data for accurate analysis.
2. To calculate and analyze key indicators such as **active cases, recovery rate, and mortality rate**.
3. To identify and compare **state-wise trends** to determine the most and least affected regions.
4. To visualize the spread and progression of COVID-19 over time using **Python and Tableau**.
5. To analyze vaccination distribution and understand its impact on recovery trends.
6. To provide meaningful insights that support public health decision-making.