

# **COVID-19 using Cognos**

Cognos is a business intelligence and performance management software suite developed by IBM. While it can be useful for analyzing data related to COVID-19, it is not specifically designed for tracking or managing the virus. However, Cognos can be used to analyse and visualize COVID-19 data, such as infection rates, death rates, testing data, and more.

## **Project Definition:**

The project is defined as utilizing AI technology, specifically IBM Cognos, to analyze COVID-19 data and generate valuable insights. The analysis will encompass various factors such as case numbers, demographics, geographic locations, and socio-economic indicators to identify patterns and trends. By leveraging AI, the project aims to go beyond traditional analysis methods and uncover hidden patterns and correlations that can inform decision-making processes.

- Understanding the spread of COVID-19: Analyzing data to identify patterns and trends in the spread of the virus across different regions or populations.
- Assessing the impact of interventions: Evaluating the effectiveness of various interventions, such as lockdown measures or vaccination campaigns, in reducing COVID-19 cases.
- Predicting future cases: Developing predictive models to estimate the number of future COVID-19 cases and identify potential hotspots or outbreaks.
- Resource planning: Analyzing data to assess the demand for healthcare resources, such as hospital beds or ventilators, to ensure adequate preparedness.

Once the project objectives have been defined, design thinking principles can be applied to ensure that the analysis is focused, user-centric, and actionable. This involves empathizing with the end-users, such as healthcare professionals or policymakers, to understand their specific needs and challenges.

## **Design Thinking:**

- **Analysis objective:**

The objective of the analysis is to gain a comprehensive understanding of the impact of COVID-19 and its potential future implications. This includes identifying patterns and trends in case numbers, identifying high-risk areas, and predicting future case numbers. The analysis aims to provide organizations with valuable insights that can support decision-making processes, resource allocation, and intervention planning. By utilizing IBM Cognos for advanced analytics, organizations can uncover hidden patterns and make more accurate predictions, ultimately contributing to the fight against COVID-19.

- **Data Collection:**

To conduct a comprehensive analysis, a wide range of data sources will be collected. These sources may include official government reports, global databases, healthcare organizations, and research institutions. The collected data will contain various variables such as daily case numbers, hospitalization rates, mortality rates, testing rates, vaccination rates, demographic information, and socio-economic indicators.

Before the analysis can take place, the collected data needs to be cleaned and prepared for analysis. This process involves removing any duplicate or incomplete data, standardizing data formats, and ensuring data quality. Data transformation techniques may be applied to convert raw data into a format suitable for analysis and modeling.

- **Visualization :**

With the data properly collected and prepared, organizations can leverage Cognos to create visualizations and conduct in-depth analysis. Cognos offers a range of tools and features to design interactive dashboards, reports, and charts, allowing users to explore and understand the data. Visualizations can include maps, line graphs, bar charts, or heatmaps, depending on the type of data and the insights sought. For example, a map may be used to illustrate the regional spread of COVID-19, while a line graph may show the trend of cases over time.

Cognos also allows for advanced analytics, such as clustering or machine learning algorithms, to uncover hidden patterns or make more accurate predictions. These techniques can aid in identifying high-risk areas or predicting future case numbers, enabling organizations to allocate resources effectively.

- **Insights Generation:**

Once the analysis is conducted using IBM Cognos, organizations can generate valuable insights that can inform decision-making processes. These insights can provide a deeper understanding of the impact of COVID-19 on various factors such as healthcare systems, economies, and social dynamics.

1. **Healthcare Systems:** By analyzing the data, organizations can identify the areas that are experiencing a high number of cases and strains on healthcare resources. This information can be used to allocate resources effectively and provide targeted support to healthcare facilities in need. Additionally, organizations can identify patterns and trends in the data to better understand the effectiveness of various interventions and healthcare strategies.
2. **Economic Implications:** The analysis can also shed light on the economic impact of COVID-19. By examining data on unemployment rates, business closures, and consumer spending, organizations can identify the industries and regions that are most affected and develop strategies to mitigate the economic consequences. This can include targeted financial support, job creation initiatives, or the development of new industries to fill gaps in the market.
3. **Social Dynamics:** Understanding the social implications of COVID-19 is essential for developing effective interventions and support systems. By analyzing data on mental health, social inequality, and access to essential services, organizations can identify vulnerable populations that require additional support. This can include targeted outreach programs, mental health resources, or community initiatives to address social isolation and promote social cohesion.

## **Conclusion:**

Utilizing IBM Cognos for COVID-19 analysis can provide organizations with valuable insights into the virus's impact, help identify interventions, and support resource planning. By leveraging its capabilities for data integration, predictive analytics, and collaborative analysis, organizations can make informed decisions and develop effective strategies to mitigate the spread of COVID-19. However, it is crucial to emphasize the importance of using reliable and up-to-date data from reputable sources. Organizations must ensure that the data used in the analysis is accurate and trustworthy to ensure the validity of the findings. By defining the project scope, applying design thinking principles, collecting and preparing the data, and utilizing Cognos for visualization and analysis, organizations can leverage the power of data to make informed decisions and contribute to the fight against COVID-19.