Ideation Phase

Defining the Problem Statement

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COVID 19 Case Analysis Using Data Analytics Tool

Problem Definition and Design Thinking

Introduction

The task at hand is to design and implement a comprehensive COVID-19 case analysis system for tracking, visualizing, and deriving insights from pandemic data.

The COVID-19 pandemic has had a profound impact on societies, healthcare systems, and economies worldwide. As the pandemic continues to evolve, it is crucial to conduct a comprehensive case analysis to better understand, manage, and mitigate its effects. This problem statement outlines the key aspects of the analysis required to address the on going challenges posed by COVID-19.

Problem Statement

Objective: Analyze the COVID19 cases, including infection rates, mortality rates, and vaccine distribution. The objective is to compare and contrast mean and standard deviations of cases. This project is to designing relevant visualization and deriving insights from data.

Data: Gather data from reliable sources, such as government health departments, research institutions, and international organizations like the World Health Organization (WHO).Collect data on the number of cases, deaths, recoveries, testing rates, vaccination rates, and other relevant variables.

Key Challenges:

1. Data Quality: Ensuring accurate and reliable data is essential.
2. Data Volume: The sheer volume of COVID-19 data can cause storage and processing a challenge.
3. Rapid Data Updates: Frequent updates and changes in data can require constant adjustments to analysis pipelines.
4. Visualization Complexity: Creating meaningful visualizations that convey information accurately.
5. Deployment: Creating a user-friendly interface.

Design Thinking Approach

Empathize

Before diving into solving the problem, it's crucial to empathize with the users and understand their needs. In this case, our primary users are common peoples ,healthcare professionals and government officials who take decision of lockdowns and measures . We need to gather insights into what factors are most important to them and what are the information they need regarding covid crisis.

Actions:

1. Empathizing: Conduct surveys or interviews with potential users to gather their perspectives.
2. Data Collection: Collect data on the number of cases, deaths, recoveries, testing rates, vaccination rates, and other relevant variables .
3. Data Cleaning: Clean and preprocess the data to handle missing values, outliers, and inconsistencies.Standardize data formats and units

Define

Based on our understanding of the problem and the users' needs, we will define clear objectives and success criteria for our project.

Action:

1. Clearly define the problem or challenge related to COVID-19 that you want to address.
2. Use the insights gathered during the empathize stage to articulate the needs and pain points of the people affected by COVID-19.
3. The problem is the lack of reliable and consistent information about the covid trends which may affect proper decision making.

Ideate:

Brainstorm potential solutions and approaches to address the problem. This phase involves thinking creatively and considering various algorithms and techniques for covid 19 case analysis

Action

1. Visualization: Create visualizations (charts, maps, dashboards) to make the data more understandable.
2. Spatial Analysis: Identify hotspots and areas with higher transmission rates.
3. Healthcare Resource Allocation: Use the analysis to recommend resource allocation strategies, such as where to set up additional testing centers etc.

Prototype

create a prototype of the covid 19 case analysis project and the user interface for obtaining necessary information.

Action:

1. Create a prototypes or mockups of dashboards or reports to get feedback from stakeholders or users.
2. Utilize features like drag-and-drop interface, data modeling, and interactive filtering.
3. Design an intuitive and user-friendly interface for users to interact with the system, explore data, and gain insights.

Test

Evaluate the project using appropriate metrics and gather feedback from users.

Action:

1. Share your prototypes with stakeholders and gather their feedback.
2. Pay attention to how well the visualizations meet their needs and whether they find the insights actionable.
3. Be prepared to make adjustments and refinements based on their input.

Implement

Once the prototype meets the defined objectives and receives positive feedback, proceed with full implementation.

Action:

1. Once iteration on prototype is completed and received approval from stakeholders, proceed to build the final visualizations and analytical models using IBM Cognos.
2. Ensure that the data is up-to-date and properly integrated into the system.

Iterate

Continuous improvement is essential. Gather user feedback and iterate on the model and interface to enhance accuracy and usability.

Action:

1. Set up a system for ongoing monitoring of COVID-19 data and updating the visualizations as new data becomes available.
2. Regularly communicate your findings and insights to stakeholders. Consider automated reports or scheduled updates.
3. Continuously gather feedback and make improvements based on user experience and changing requirements.

Conclusion:

In conclusion, the COVID-19 case analysis data analytics project has been a critical endeavor in understanding and responding to the challenges posed by the pandemic. This project aimed to provide insights by comparing and contrasting the mean and standard deviations of COVID-19 cases and deaths. It proves to be useful for health officials and policy makers in imposing lockdowns and preventive measures according to insights gained from visualizations and analytical model.