India’s Agricultural Crop Production Analysis(1997-2021)

Define Problem / Problem Understanding

Specify the business problem

Refer Project Description Activity 2: Business requirements The primary business requirements for this report are to visualize and analyze business expenses, provide industry-specific insights, identify cost drivers, highlight outliers, and offer interactive functionality. Stakeholders need a visual representation of expenses to compare and analyze spending patterns across different businesses and industries. The report should facilitate the identification of key cost drivers, enabling stakeholders to understand the primary factors contributing to expenses. Additionally, it should flag any outliers or anomalies for further investigation. The report should provide a user-friendly and intuitive experience that empowers stakeholders to make data-driven decisions and drive positive change in the agricultural sector.

Activity 3: Literature Survey The literature survey section of the report provides a concise overview of India's agricultural sector, focusing on key aspects and insights from existing studies and publications. It examines the historical context of agricultural practices in India and highlights the role of government policies and initiatives in supporting the sector's growth and development. The survey explores the diversity of crops cultivated across different regions, along with trends in production and the impact of climate variability. It also addresses the adoption of technology and innovation in agriculture, along with the challenges faced by farmers and potential research gaps. Additionally, the section showcases best practices and success stories that have contributed to improved productivity and sustainability in Indian agriculture. This literature review forms the basis for the subsequent analysis and visualization of agricultural data in the report.

Activity 4: Social or Business Impact. Social Impact: On the social front, agriculture serves as a vital source of livelihood for a large portion of the population, especially in rural areas. It plays a crucial role in ensuring food security and alleviating poverty by providing employment opportunities and income generation. Moreover, agricultural activities contribute to the overall socio-economic development of rural communities, fostering social cohesion and preserving cultural traditions. Business Impact: From a business perspective, the agricultural sector plays a pivotal role in India's economy. It contributes to the country's GDP and serves as a source of raw materials for various industries, such as food processing, textile, and pharmaceuticals. The growth and productivity of the agricultural sector have direct implications for the overall economic performance and stability of the nation. Furthermore, advancements in agricultural practices and technology have the potential to enhance productivity, optimize resource utilization, and promote sustainable practices. This, in turn, can lead to increased profitability and competitiveness for agricultural businesses.

Milestone 2: Data Collection & Extraction Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

Activity 1.1: Understand the data Data consists of 345409 rows and 10 columns that correspond to different values. Column Description of the Dataset: State : The name of the Indian states. District : The name of the districts of Indian states. Crop : Name of different crops grown in India Year : Date Season : India has 5 seasons for crop cultivation: kharif, rabi, autumn, winter and summer. Area: Area for crop cultivation in acres Production : Production of crops in tonnes Yield : Yield by the crops under cultivation

Milestone 3: Data Preparation Activity 1: Prepare the Data for Visualization Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

Milestone 4: Data Visualization Data visualization is the process of creating graphical representations of data to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data. Activity 1: No of Unique Visualizations The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyse the performance and efficiency of banks include bar charts, line charts, heat maps, scatter plots, pie charts, Maps etc.

Milestone 5: Dashboard A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Milestone 6: Story A data story is a way of presenting data and analysis in a narrative format, intending to make the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis logically and systematically, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos. Activity 1: Number of scenes in a story The number of scenes in a storyboard for a data visualization analysis of the performance of banks will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.







