Project Initialization and Planning Phase

Date	23 June 2025
Team ID	NA
Project Title	Global Food Production Trends and Analysis: A Comprehensive Study from 1961 to 2023 Using Power BI
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	The objective of this project by **ABC Company** was to conduct a comprehensive analysis of global food production trends from **1961 to 2023**, focusing on key agricultural commodities.
Scope	These insights are intended to support strategic decision-making in the **agri-business and food security sectors**.
Problem Statement	
Description	Identify, analyze, and visualize the production patterns of key agricultural commodities across different regions and time periods to uncover trends, regional strengths, and opportunities for strategic planning in the global agri-food sector.
Impact	Using **Power BI**, the project aimed to visualize and interpret production data to uncover patterns, regional strengths, and long-term shifts in global agriculture.
Proposed Solution	
Approach	**Data Collection & Cleaning** • Import the dataset (1961–2023) into Power BI. • Perform data cleaning: handle null values, standardize units, correct region/crop names.

	Data Modeling • Create relationships between fields such as *Entity*, *Year*, *Item*, and *Production (tonnes)*. • Build calculated measures for totals, averages, and year-over-year growth. **Interactive Visualizations** • Design intuitive charts: bar, line, area, stacked bar, donut, and gauge charts. • Use filters/slicers for year, region, and crop type to allow dynamic exploration. **Insight Generation** • Highlight key findings such as leading crops, rising production trends, and dominant regions. • Provide exportable insights for stakeholders and strategic decision-making.
Key Features	**Visual Dashboards:** Clear, engaging visuals for different crop categories (staples, beverages, fruits). **Regional Comparison:** Visual representation of production across continents and countries. **Trend Analysis (1961–2023):** Time-series graphs to showcase the evolution of crop production. **Commodity-wise Insights:** Drill-down visuals for individual crops like wheat, maize, rice, grapes, etc. **Highlight of Key Contributors:** Identification of top producers (e.g., Africa for coffee, Asia for rice). **Interactive Filters:** Allow users to customize views based on year, region, or commodity.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	4 x NVIDIA GTX 1650TI
Memory	RAM specifications	16 GB
Storage	Disk space for data, models,	1 TB SSD

	and logs	
Software		
Frameworks	Python frameworks	NA
Libraries	Additional libraries	NA
Development Environment	IDE, version control	Power bi desktop
Data		
Data	Source, size, format	Kaggle dataset, 2.14mb, csv