**Project Initialization and Planning Phase**

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| Date | 01 October 2025 |
| Team ID | SWUID20250215169 |
| 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.

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| **Project Overview** | |
| Objective | The primary objective of this project is to analyze and visualize global food production trends from 1961 to 2023 using Power BI. The aim is to identify key growth patterns, crop performance, and regional contributions to global food production. |
| Scope | The project focuses on global food production data collected from FAO (Food and Agriculture Organization) between 1961–2023. It covers countries, regions, and crop types, emphasizing production trends, year-over-year growth, and comparative insights across regions. The scope includes data preprocessing, measure creation, and dashboard/report design. |
| **Problem Statement** | |
| Description | Global food production data is vast, complex, and scattered across multiple regions and time periods. Without proper visualization, it is difficult to identify patterns, trends, or areas of concern such as regional disparities or declining crop yields. |
| Impact | Solving this problem enables policymakers, researchers, and stakeholders to make data-driven decisions to improve agricultural productivity, sustainability, and food security. It also helps identify leading and lagging regions in production efficiency. |
| **Proposed Solution** | |
| Approach | The solution involves collecting global food production data, preprocessing and cleaning it, and using Power BI for interactive visualization. DAX measures are created for key KPIs such as Total Production, Year-over-Year Growth, and Crop Share. A comprehensive dashboard and static report are developed to present trends and insights effectively. |
| Key Features | - Interactive Power BI dashboard with filters for Year, Crop, and Region  - KPIs highlighting production, YoY growth, and crop share  - Static report summarizing insights and patterns  - Region-wise and crop-wise performance visualizations  - Data-driven storytelling for easy interpretation of global trends |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | e.g., 2 x NVIDIA , I5 Core |
| Memory | RAM specifications | e.g., 8 GB |
| Storage | Disk space for data, models, and logs | e.g., 512 GB SSD |
| **Software** | | |
| Development Environment | Tools required for analysis and visualization | Power BI Desktop, Microsoft Excel |
| **Data** | | |
| Data | Source, size, format | e.g., Kaggle dataset, 11,912 rows and 24 columns. |