Project Initialization and Planning Phase

Date	13-01-2026
Team ID	
Project Title	Predicting Plant Growth Stages with Environmental and Management Data Using Power BI
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address challenges in understanding and optimizing plant growth using data analytics and visualization. With a clear objective, defined scope, and a concise problem statement, the proposed solution leverages Power BI to analyze environmental and management factors affecting plant growth milestones.

Project Overview	
Objective	The primary objective of this project is to analyze plant growth data using Power BI in order to identify optimal environmental and management conditions that enhance plant growth milestones and support data-driven agricultural decision-making.
Scope	The scope of this project includes loading and analyzing plant growth data, creating calculated columns and measures using DAX, developing interactive visualizations, and designing a responsive Power BI dashboard. The analysis focuses on soil type, water frequency, sunlight hours, fertilizer type, temperature, and humidity.
Problem Statement	
Description	Inconsistent plant growth across different environmental and management conditions makes it difficult for farmers and greenhouse managers to identify optimal growth practices. Without effective visualization and analytical tools, understanding the impact of these factors on plant growth milestones is challenging.
Impact	Addressing this problem helps improve crop yield, optimize the use of resources such as water and fertilizer, and promote sustainable agricultural practices through informed, data-driven decisions.

Proposed Solution	
Approach	The proposed solution uses Power BI to load and analyze plant growth data. DAX calculations are applied to generate meaningful measures and derived columns. Interactive dashboards and a decomposition tree are used to visualize growth milestone patterns and identify key influencing factors.
Key Features	• Interactive Power BI dashboard • KPI cards showing average temperature, humidity, and sunlight hours • Visual analysis of growth milestones by soil type, fertilizer, and watering frequency • Decomposition tree for detailed factor-based analysis • Filters for dynamic data exploration

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	2 x NVIDIA V100 GPUs
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Development Environment	Windows	Windows OS
Visualization App	Framework	Power BI Desktop
Tools	IDE, version control	Github
Data		
Data	Data	Plant Growth Dataset from Kaggle (CSV format)