

Project Initialization and Planning Phase

Date	18 July 2024
Team ID	SWTID1721319573
Project Title	Blueberry Yield Prediction
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

Project Overview	
Objective	To create a machine learning model that predicts blueberry yield based on factors like weather, insect populations, and soil conditions, aiding farmers in optimizing their crop management.
Scope	This project includes data collection, preprocessing, model training, evaluation, and deploying the solution via a Flask web application. It does not cover real-time data integration or field validation.
Problem Statement	
Description	Farmers face difficulties predicting blueberry yield due to variable weather, insect populations, and soil conditions, impacting their harvest planning and resource management.
Impact	Solving this issue will enable precise yield predictions, helping farmers optimize harvesting schedules, reduce waste, and improve profitability and resource management.
Proposed Solution	
Approach	Develop a predictive model using historical data, perform preprocessing and exploratory analysis, train multiple machine learning algorithms, and integrate the best-performing model into a Flask web application.
Key Features	<ul style="list-style-type: none"> • Accurate Predictions: Employ advanced machine learning to forecast yield reliably. • User-Friendly Interface: Provide an intuitive web interface for easy data input and result display.

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		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Kaggle dataset, Historical agricultural data on blueberry yield (size varies, format: CSV)