Ideation Phase
Problem Statements

Date	28 june 2025
Team Id	LTVIP2025TMID37473
Project Name	Smart Sorting : Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	4 Marks

Customer Problem Statement

Problem Statement

Local vendors, farmers, and distributors often face difficulty in identifying spoiled fruits and vegetables early. This leads to food waste, health risks, and financial loss. They need a simple, low-cost solution to detect spoilage quickly and accurately.

Target Users

- Small fruit & vegetable vendors
- Farmers
- Grocery store workers
- Warehouse & cold storage managers

Objective

To develop a machine learning model (image-based or sensor-based) that can accurately detect rotten fruits and vegetables and alert users through a mobile app or system.

PROJECT TITLE

Rotten Fruit & Vegetable Detection Using AI and Machine Learning

PROBLEM STATEMENT

Local vendors, farmers, and distributors have difficulty in identifying spoiled fruits and vegetables early, resulting send for a simple, low-cost solution to detect spoilage quickly and accurately.

TARGET USERS

- Small fruit & vegetable vendors Farmers, Grocery store
- warheouse? Cold storage manag

APPROACH (AI/ML TECHNIQUES)

- Data Collection Images of fresh vs rotten fruits/vegetables
- Preprocessing Resizing, normalization, noise removal
- Model Type CNN, YOLO or MobileNet
- Training On labeled dataset (fresh vs rotten
- Evaluation Using accuracy, precision recall
- Deployment TensorFlow Lite for mobile or wb dashboard

TOOLS & TECHNOLOGIES

- Python Kaggle (e.g. Fruits Fresh and Cla٢٧ɔk)
- TensorrFlow/Pytorch Deep leaning framework
- OpenCV Image preprocessing
- Jupyter Notebook Google Colab Model development
- TensorFlow Lite Stremtiit Model deployment
- Android Studie Flutter Mobile app interface

EVALUATION METRICS

- Accuracy F1-Score Confusion Ma٪rix
- F1-Score Precision/Recall (for conveyor automalon)
- Allerts or sorıngsignals (for conveyor automation)