Project Design Phase
Problem – Solution Fit

Date	29 June 2025
Team ID	LTVIP2025TMID41462
Project Name	Smart Sorting : Transfer Learning For Identifying Rotten Fruits And Vegetables
Maximum Marks	

Customer Problem Identified

Consumers and vendors often struggle to manually identify whether fruits or vegetables are fresh or spoiled, leading to wastage, economic losses, and health hazards.

Observed Behavior

People rely on visual inspection or touch, which is inconsistent, time-consuming, and often unreliable — especially in markets and grocery stores.

Proposed Solution

An AI-powered image classification tool that allows users to upload a fruit or vegetable image and instantly get a prediction on its quality: Fresh or Rotten, and whether it is a Fruit or Vegetable.

Why This Solution Works

The model is trained on a balanced dataset of over 2,500 high-quality images across 4 categories and uses MobileNetV2 with 72%+ validation accuracy. This solution provides fast, consistent, and reliable results that eliminate human error.

Unique Value Proposition

Enables quick, mobile-compatible detection with minimal user interaction; helps reduce waste, improve purchase decisions, and support smart inventory sorting in markets and grocery chains.

Impact of the Solution

Saves time, reduces health risk from spoiled items, improves trust in vendors, and encourages better food quality practices. Can be integrated into mobile/web platforms or retail POS systems.