Ideation Phase
Define the Problem Statements

Date	17 February 2026
Team ID	LTVIP2026TMIDS50375
Project Name	Smart Sorting: Identifying rotten fruits and vegetables using transfer learning
Maximum Marks	2 Marks

Smart Sorting – Problem Statement Template

Statement	Content
I am (Customer)	A farmer, seller, or supply chain worker handling large quantities of fruits and vegetables.
I'm trying to	Ensure only fresh produce reaches customers by sorting out the rotten ones.
But	Manual sorting is slow, inconsistent, and prone to human error.
Because	It's difficult to visually detect rot, especially under time pressure.
Which makes me feel	Frustrated, anxious about product quality, and worried about food wastage.

PS-1 (Farmer/Seller View)

Element	Content
I am	A local vendor trying to maintain produce quality.
I'm trying to	Quickly sort fresh and rotten items to meet daily sales.
But	It takes too much time and some rotten items go unnoticed.
Because	Manual inspection isn't reliable.
Which makes me feel	Stressed and concerned about losing customers.

PS-2 (Tech Developer/Team View)

Element	Content
I am	A developer solving real-world agriculture problems.
I'm trying to	Build an accurate and efficient model for detecting rotten produce.
But	Real-time classification with high accuracy is challenging.
Because	Fruit defects vary a lot and datasets are limited.
Which makes me feel	Determined to improve automation using AI.

Project Title: Smart Sorting – Identifying Rotten Fruits and Vegetables Using Transfer Learning.

Manual sorting of fruits and vegetables is time-consuming and often inaccurate, leading to food waste and reduced quality. Supermarkets and supply chains lack efficient tools to automatically detect and separate rotten produce.

Problem Statement:

There is a need for an intelligent, automated solution that can accurately detect rotten fruits and vegetables using computer vision. This would reduce human error, improve sorting efficiency, and enhance overall food quality in the supply chain.

Proposed Solution:

Our project leverages transfer learning to develop a smart classification system capable of distinguishing between fresh and rotten produce. By fine-tuning pre-trained deep learning models on a custom dataset of fruits and vegetables, we aim to build a real-time system for efficient sorting.

Target Outcome: - Achieve high accuracy in classification (>90%).

- Enable real-time inference suitable for use in sorting lines.

- Minimize food wastage and improve supply chain quality control.