# Ideation Phase
# Define the Problem Statements
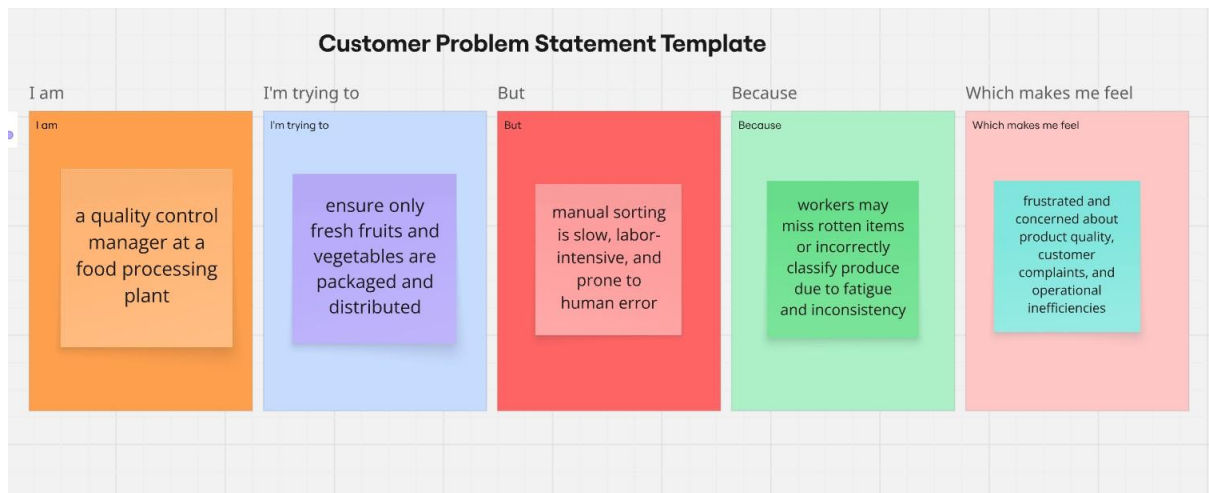
| Date | 27 June 2025 |
|---|---|
| Team ID | LTVIP2025TMID41045 |
| Project Name | Smart Sorting:Transfer Learning for Identifying rotten fruits and vegetables |
| Maximum Marks | 2 Marks |

**Define Problem Statements(Customer Problem Statement Template):**

Rotten fruits and vegetables pose a major challenge in the food industry and households, leading to increased waste, reduced quality, and higher operational costs. Traditional sorting methods rely heavily on manual inspection, which is time-consuming, inconsistent, and prone to human error.

By leveraging transfer learning and computer vision, this project aims to build an automated smart sorting system that accurately identifies and separates rotten produce in real time. This will significantly enhance sorting efficiency, reduce waste, and ensure only fresh produce reaches consumers across industrial, retail, and home settings.

**Example:**



Customer Problem Statement Template

| I am | I'm trying to | But | Because | Which makes me feel |
|---|---|---|---|---|
| a quality control manager at a food processing plant | ensure only fresh fruits and vegetables are packaged and distributed | manual sorting is slow, labor-intensive, and prone to human error | workers may miss rotten items or incorrectly classify produce due to fatigue and inconsistency | frustrated and concerned about product quality, customer complaints, and operational inefficiencies |

| Problem Statement (PS) | I am (Customer) | I'm trying to | But | Because | Which makes me feel |
|---|---|---|---|---|---|
| PS-1 | a quality control manager at a food processing plant | ensure only fresh fruits and vegetables are packaged and distributed | manual sorting is slow, laborintensive, and prone to human error | workers may miss rotten items or incorrectly classify produce due to fatigue and inconsistency | frustrated and concerned about product quality, customer complaints, and operational inefficiencies |
| PS-2 | a supermarket inventory manager | make sure that only fresh produce is placed on shelves | I cannot reliably check the freshness of every item in large shipments | there's no automated system for identifying spoilage at the receiving stage | stressed and dissatisfied, as it can lead to customer dissatisfaction and increased waste |
| PS-3 | a tech-savvy homeowner managing my family's grocery consumption | reduce food waste and save money by using all produce before it spoils | I often forget about items in the fridge until it's too late | I don't have real-time alerts or visual monitoring of produce conditions | guilty and wasteful, wishing for a smarter way to manage food freshness at home |