

**Project Design Phase**  
**Problem – Solution Fit Template**

Date	26-06-2025
Team ID	LTVIP2025TMID46028
Project Name	<b>Smart-Sorting-Transfer-Learning-for-Identifying-Rotten-Fruits-and-Vegetables</b>
Maximum Marks	2 Marks

**Problem – Solution Fit Overview:**

The **Problem–Solution Fit** ensures that *Smart Sorting* effectively addresses the real-world challenges of freshness inspection in the food industry. This validation is essential before expanding the solution to other domains like retail and smart homes.

**Purpose:**

- ☐ Automate and simplify fruit/vegetable sorting
- ☐ ✓ Reduce labor dependency and human error
- ☐ ✓ Improve efficiency in food quality control
- ☐ ✓ Prevent food wastage through early detection
- ☐ ✓ Provide a low-cost, scalable AI-powered tool

**Problem Statement:**





Workers, retailers, and quality control professionals face several challenges such as:

- ✗ Manual sorting is slow, inconsistent, and prone to human error
- ✗ Difficult to process large quantities of produce efficiently
- ✗ No existing AI-based system in place for small- or mid-scale operations
- ✗ High chances of spoiled items reaching customers
- ✗ Lack of real-time tools for freshness inspection
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**Solution:**

Smart Sorting offers a fast and intelligent image-based detection system:

- ✓ Upload-based interface for fruit/vegetable classification
- ✓ Real-time freshness prediction using a VGG16 model

-  Easy-to-use, lightweight Flask-powered web app
-  Supports use in supermarkets, warehouses, and smart homes
-  Clear visual prediction results to aid sorting decisions
-  Scalable model deployable via cloud platforms