Project Design Phase
Proposed Solution

Date	26 June 2025
Team ID	LTVIP2025TMID20416
Project Name	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	2 Marks

Proposed Solution :

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Manual identification of rotten fruits and vegetables is time-consuming, and often inaccurate, leading to quality issues, food waste, and financial loss across the food supply chain. Existing methods lack efficiency, scalability, and reliability.
2.	Idea / Solution description	The project proposes an ML-based smart sorting system that uses **transfer learning and computer vision** to detect rotten fruits and vegetables in real time. It can be deployed on mobile devices or integrated with conveyor systems to automate and optimize the quality control process.
3.	Novelty / Uniqueness	Unlike conventional systems, this solution leverages pre-trained models to reduce training time and improve accuracy even with limited data. It offers real-time, image-based classification across multiple types of produce, adapting to various environments with minimal setup.
4.	Social Impact / Customer Satisfaction	The solution enhances food safety, reduces waste, and ensures consistent quality for end consumers. It supports farmers, vendors, and distributors by reducing operational inefficiencies, increasing trust in the supply chain, and promoting sustainable practices.
5.	Business Model (Revenue Model)	The solution can follow a SaaS (Software-as-a-Service) model with licensing for businesses, monthly/annual subscription for updates and support, and optional hardware integration as a one-time or rental service. Additional revenue can come from API integration and enterprise packages.
6.	Scalability of the Solution	The solution can be deployed across various platforms and extended to multiple types of produce and geographic regions. Customization allows adoption by small vendors as well as large-scale warehouses.