

Project Design Phase Solution Architecture

Date	22 June 2025
Team ID	LTVIP2025TMID35526
Project Name	Smart Sorting: identifying rotten fruits and vegetables using transfer learning
Maximum Marks	4 Marks

Solution Architecture:

The solution architecture for Smart Sorting bridges the gap between the real-world agricultural challenge of spoilage detection and an effective AI-powered solution. It outlines how the system will identify rotten fruits and vegetables using transfer learning and computer vision, and ensures its usability for non-technical users like farmers and vendors.

Goals of the Solution Architecture:

- Identify the most suitable AI-based technology stack (e.g., MobileNetV2 with transfer learning) to accurately classify fruits and vegetables as fresh or rotten, while keeping the model lightweight enough for deployment on smartphones or web apps.
- **Define the system's structure and behavior** – including how users upload or capture images, how the model processes them, and how results (classification + confidence score) are returned in real-time – in a way that's understandable for project stakeholders including developers, farmers, and investors.
- **Outline the key features and development phases** – such as data collection, model training, UI development, testing, deployment, and user training – and define technical and business requirements such as offline support, mobile compatibility, and accuracy benchmarks.
- **Deliver clear technical specifications** – including model input/output design, integration with frontend UI, image preprocessing methods, and backend architecture – to ensure the solution can be built, tested, and scaled effectively across different use cases (farms, markets, w

Example - Solution Architecture Diagram:



