Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	26-05-2025
Team ID	LTVIP2025TMID46028
Project Name	**Smart-Sorting-Transfer-Learning-for-Identifying-Rotten-Fruits-and-Vegetables**
Maximum Marks	4 Marks

Technical Architecture:

Smart Sorting is designed using a modular and scalable 3-tier architecture optimized for real-time image classification and user interactionPresentation Layer (Frontend): User-friendly interface for patients and healthcare providers to book and manage appointments.

1. Presentation Layer (Frontend)

A clean, responsive user interface that allows users to upload an image and view results in real-time. It handles:

- File input (image upload)

- Result display (Fresh / Rotten)

- Error messages or prediction feedback

2. Business Logic Layer (Backend)

Handles all application logic including:

- File handling

- Image preprocessing

- Model prediction using a trained .h5 file (VGG16)

- Routing between frontend and backend (Flask**)**

3. Data & Model Storage Layer

- Temporarily stores uploaded image files

- Loads trained deep learning model from storage

- Optionally stores image predictions (in advanced versions)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web and mobile-friendly interface for patients and providers	HTML, CSS, JavaScript / React Js etc.
2.	Application Logic-1	Upload processing, file handling, image prediction	Python, Flask
3.	Application Logic-2	Model loading and classification logic	TensorFlow, Keras, VGG16
4.	Deployment and hotsing	Web application hosting and live server	GitHub,

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
5.	Open-Source Frameworks	Lightweight, customizable backend + frontend tools	Flask, HTML, CSS
6.	Transfer Learning	Uses pre-trained model for high accuracy predictions	TensorFlow + VGG16 (Keras)
7.	Scalable Deployment	Easily deployable on cloud platforms	Render.com, Gunicorn