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

Date	26 June 2025
Team ID	LTVIP2025TMID20416
Project Name	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	4 Marks

Technical Architecture:

Example:

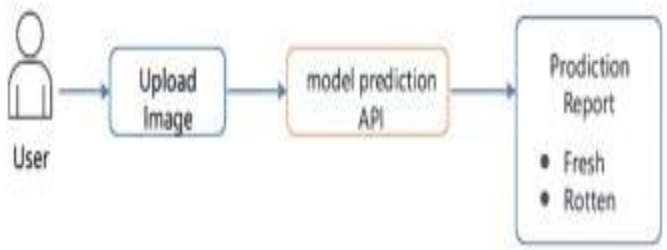

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web interface for uploading images and displaying predictions	HTML
2.	Application Logic-1	Image upload and displaying result	Python + Flask

3.	Application Logic-2	Backend logic for preprocessing and model prediction	TensorFlow / Keras
4.	Application Logic-3	Integration with ML model for image classification	Transfer learning
5.	Data Collection	Datasets for training the model	Kaggle

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	TensorFlow, Flask, OpenCV, Pandas	Python, Flask, TensorFlow
2.	Security Implementations	Ensures safe image handling and protects against unauthorized access or code manipulation.	Flask
3.	Scalable Architecture	Modular setup supports easy integration of future features like batch processing, Grad-CAM, or multilingual UI.	Layered architecture (Frontend–Backend–Model), reusable Python modules, transfer learning-based design
4.	Availability	Designed to operate smoothly in offline or low-connectivity environments.	PyInstaller-generated executable, local Flask server, no internet dependency.
5.	Performance	Lightweight model for fast inference, caching predictions (if needed)	MobileNetV2