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

Date	26 June 2025
Team ID	LTVIP2025TMID38828
Project Name	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2
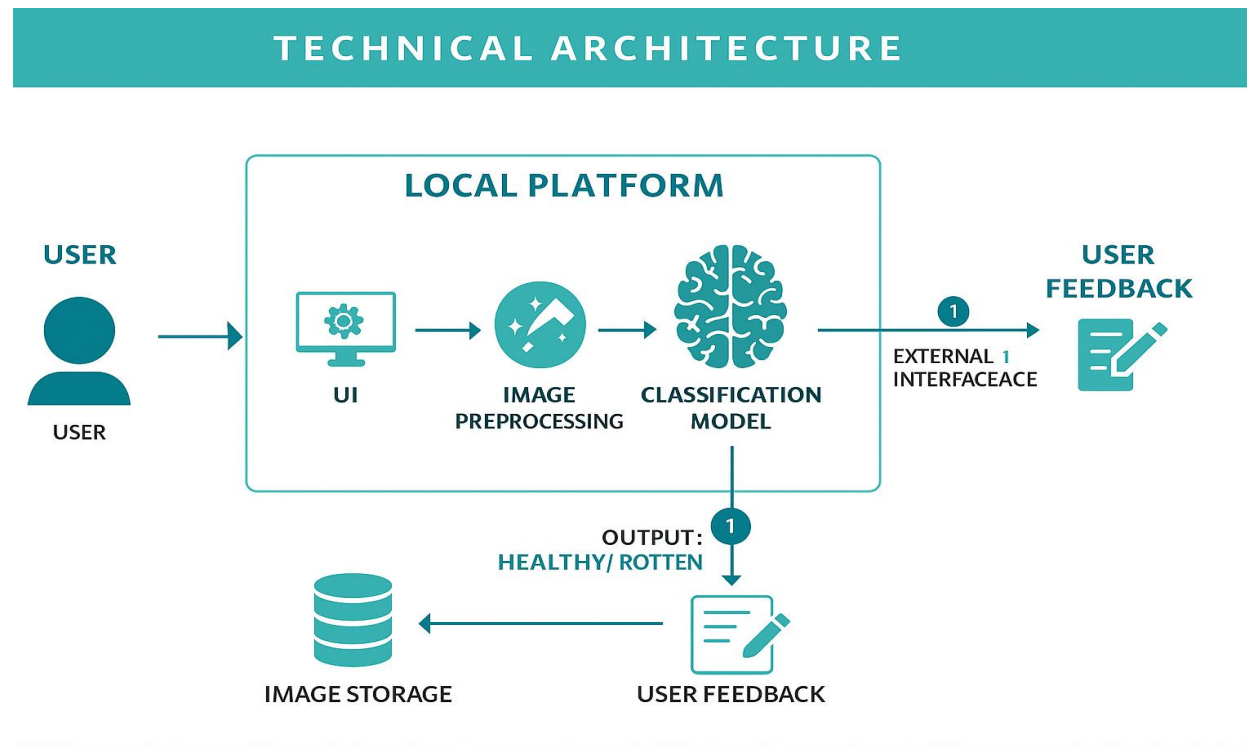
Table-1 : Components & Technologies:

S.No	Component	Description	Technology Used
1.	User Interface	Web UI for uploading images & displaying results	HTML, CSS, Jinja2 Templates (Flask)
2.	Application Logic-1	Handles routing, image upload, prediction, and feedback	Python (Flask)
3.	Application Logic-2	Image preprocessing before prediction	Keras utilities (load_img, img_to_array)
4.	Application Logic-3	AI model prediction logic	TensorFlow / Keras with VGG16
5.	Local File Storage	Saves uploaded images and feedback locally	Local filesystem (static/, .json files)
6.	Machine Learning Model	VGG16 model for fruit/vegetable classification	.keras or .h5 model (TensorFlow/Keras)
7.	Infrastructure	Application hosted locally for development/testing	Flask via Anaconda, running on Localhost

Table-2: Application Characteristics:

S.No	Characteristic	Description	Technology
1.	Open-Source Frameworks	Uses only free and open-source libraries	Python, Flask, Keras, TensorFlow
2.	Scalable Architecture	Can be scaled later; currently a simple local Flask app	3-tier: UI → Logic → Model
3.	Availability	Runs on a local system only	Flask server on localhost
4.	Performance	Uses pre-trained VGG16, good prediction speed	TensorFlow/Keras