

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	8 June 2025
Team ID	LTVIP2025TMID41277
Project Name	Smart sorting
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Training Data Collection	Collection of fruit and vegetable images Organizing data into folders Labeling data as fresh or rotten
FR-4	Data Preprocessing	Cleaning images Resizing and augmenting images Splitting into train, validation, and test sets
FR-5	Model Training & Storage	Training using VGG16 transfer learning Monitoring accuracy and loss Saving model as .h5 file
FR-6	Image Upload & Prediction	Uploading an image via the web interface Classifying image as fruit/vegetable & freshness
FR-7	Deployment & User Interface	Hosting model using Flask on Render Creating a user-friendly website

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The web interface is simple, clean, and easy to use for all age groups.
NFR-2	Security	User data (emails, images) is handled securely and not stored permanently.
NFR-3	Reliability	The model produces consistent and accurate predictions.
NFR-4	Performance	Fast prediction response; image processed in a few seconds.
NFR-5	Availability	The application is accessible 24/7 after hosting.
NFR-6	Scalability	More fruits/vegetables or features (like ripeness level) can be added later.

