3. REQUIREMENT ANALYSIS

Date	7 Jul 2025
Team ID	LTVIP2025TMID40710
Project Name	Grain Palette
Maximum Marks	4

3.1 Customer Journey Map

STEP	WHAT THE USER DOES	WHAT THE USER WANTS
Awareness	Learns about the app from friends or training	To know how to identify rice types easily
Visit app	Opens the website	To check if the app is easy to use
Upload image	Uploads a rice grain photo	To get the rice type instantly
See results	Sees the predicted rice type and tips	To make decisions about watering/fertilizer

3.2 Solution Requirement

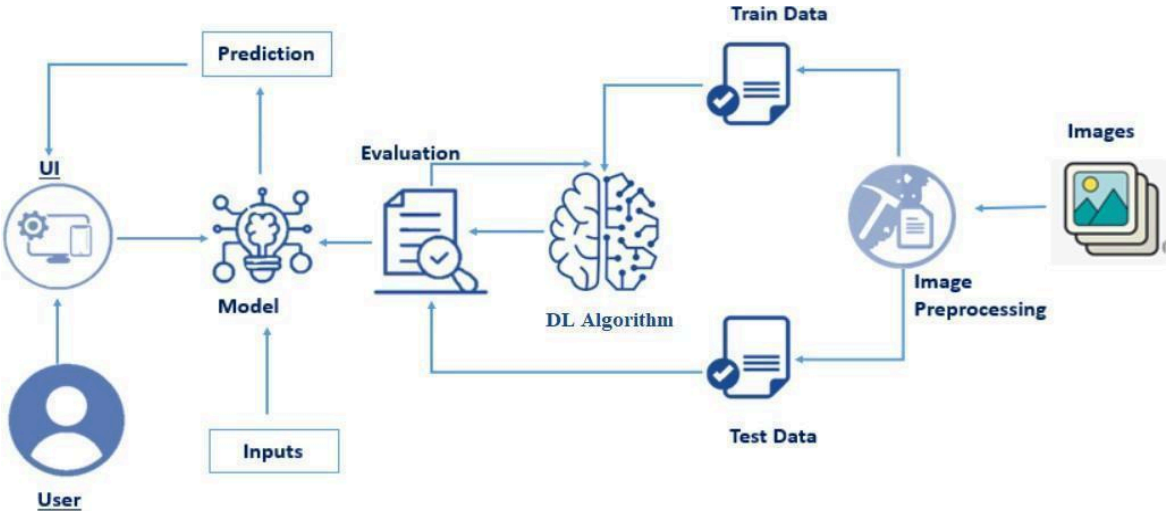
Functional Requirements:

- Let users upload a rice grain image
- Predict the type of rice using AI
- Show the result (rice name) on the screen
- Have a simple and easy-to-use design

Non-Functional Requirements:

- Give results quickly (within 2–3 seconds)
- Work on both phones and computers
- Be correct most of the time (90% or more)
- Keep user images safe and private
- Work even with slow internet

3.3 Data Flow Diagram



3.4 Technology Stack

Component	Technology Used	Purpose
Frontend	HTML, CSS, JavaScript	To create the web page and user interface
Backend	Python, Flask	To handle image upload and connect to model
Machine Learning	TensorFlow, Keras	To build and run the AI model
Model	MobileNetV4	To classify rice types from images
Deployment	Localhost	To run the app and make it available online
Dataset	Kaggle Rice Image Dataset	To train the model with rice grain images