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

Date	20 February 2026
Team ID	LTVIP2026TMID583775
Project Name	Exploratory Analysis of Rain Fall Data in India for Agriculture
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	Enter Weather Parameters	User can enter weather details (MinTemp, MaxTemp, Rainfall, Humidity9am, Humidity3pm) Validate numeric input values Ensure no empty fields before submission
FR-2	Data Preprocessing	Convert input values into structured format Apply StandardScaler to normalize data Prepare data in model-required format
FR-3	Rainfall Prediction	Load trained machine learning model (Random Forest Classifier) Predict whether it will rain tomorrow Return prediction result (Rain / No Rain)
FR-4	Model & Scaler Loading	Load trained model file (rainfall.pkl) Load saved scaler file (scale.pkl) Initialize model and scaler during application startup

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system should provide a simple and user-friendly web interface for entering weather parameters.
NFR-2	**Security**	The system should securely handle user inputs and prevent invalid data submission.
NFR-3	**Reliability**	The system should provide consistent and accurate rainfall predictions based on the trained ML model.
NFR-4	**Performance**	The system should generate prediction results within a few seconds after input submission.
NFR-5	**Availability**	The web application should be accessible whenever users visit the site.