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

Date	11 October 2022
Team ID	PNT2022TMID47651
Project Name	Project - 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	User Registration	• Registration through Form • Registration through Gmail • Registration through LinkedIN
FR-2	User Confirmation	• Confirmation via Email • Confirmation via OTP
FR-3	App installation	• Installation through link • Installation through play store
FR-4	Settings geofence	• Setting by user to analysis rainfall
FR-5	User Interface	• User Login Form. • Admin Login Form.
FR-6	Analysis Rainfall Data	• Analyzing data via app • Analyzing data via SMS
FR-7	Dataset	• Data collection for Rainfall prediction is taken from both the weather prediction website and contains several atmospheric parameters. • That values be held under such limits for good data analysis performance.
FR-8	Preprocessing of dataset	• Ensures the consistency of extraction performance. • The collection of data used in this system includes rainfall data from many regions within India.
FR-9	APC	• APC used for compensate the rainfall attenuation.
FR-10	Satellite	• Satellite connection has ensured the connection

		of remotest areas.
FR-11	Data collection	• The meteorology station records the values of the environmental variable every day for each year directly from the devices in the station.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• The prediction helps people to take preventive measures and moreover the prediction should be accurate.
NFR-2	**Security**	• Model is essential for an early warning that can minimize risks to life and property and also managing the agricultural farms. • It reduce the impacts like destruction of crops and farms, damage of property.
NFR-3	**Reliability**	• Portable • Easy to access • Flexibility • Scalablity
NFR-4	**Dynamicity**	• Every ML application is a case of Dynamical Machine Learning.
NFR-5	**Availability**	• Exactly determine the rainfall for effective use of water resources, crop productivity and pre-planning of water structures. • Get rainfall details at anytime. • Know the current weather.
NFR-6	**Scalability**	• Farmers need not worry about their crops.
NFR-7	**Valuability**	• The system should be able to delivery promptly to the financing authority.
NFR-8	**Desirability**	• Navigation should be made easy. • The user should be able to search and find the information he needs without much hassle.

NFR-9	**Performance**	• The rainfall prediction performance of each machine learning algorithm that was using Root Mean Squared Error (RMSE) and Mean Absolute Error (MAE). • The MAE and the RMSE can be used together to diagnose the variation in the errors in a set of forecasts.