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

Date	15 October 2022
Team ID	PNT2022TMID53609
Project Name	Project - IOT ENABLED SMART FARMING APPLICATION
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	Sensors	Rain sensor, DHT11–Temperature and Humidity sensor, Soil Moisture sensor
FR-2	Actuators	Water pumps, Motors, Servos
FR-3	MCUs (Microcontroller Units)	Raspberry Pi, ESP-8266
FR-4	Software Components	Web UI, Node red, IBM Watson as the cloud platform, Mobile application using MIT App inventor

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Can be used for both large scale agricultural farms and domestic gardens for soil monitoring and watering of plants.
NFR-2	**Security**	Since the user uses his/her own cloud account to store and process sensor data, data privacy is maintained to a significant extent.
NFR-3	**Reliability**	Inclusion of real-time monitoring of sensor data and interactive mobile application makes the product more reliable.
NFR-4	**Performance**	Performance of the system is significantly high as MCUs with high processing capability such as Raspberry Pi are being used.
NFR-5	**Availability**	After successful completion of the design, the model will be available in the market, and people can purchase the product according to their requirements.
NFR-6	**Scalability**	The design can be scaled to be used for large sized farms by including sophisticated hardware components and sensors like TDS sensor, according to the requirements and physical parameters.