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

Date	03 October 2022
Team ID	PNT2022TMID14876
Project Name	Project - Smart farmer-IoT Based 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	Data Collection	The parameters like temperature, humidity, and soil moisture is measured and collected.
FR-2	Device Communication	The device will subscribe to the commands from the mobile application and control the motors accordingly
FR-3	API development	APIs are developed using Node-RED service for communicating with Mobile Application
FR-4	Mobile App	A mobile application is developed using the MIT App inventor to monitor the sensor parameters and control the motors.
FR-5	IBM Cloud services Configuration	Create IBM Watson IoT Platform Create a device & configure the IBM IoT Platform Create Node-RED service Create a database in Cloudant DB to store all the sensor parameters.
FR-6	Mobile Application Requirements	The mobile app should have the following features Display the sensor parameters Buttons for controlling the motors Should communicate with the IBM cloud using APIs to get the sensor data and send the commands.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The application must be useful to all sorts of people, Its complexity level should be low and should be usable by uneducated farmers. It should be simple rather than confusing.
NFR-2	**Security**	Since it involves cloud storage of gathered sensor data, which could be misused, Data handling must be highly secure.
NFR-3	**Reliability**	Since it is used for remote monitoring, It can be used in cases where a single farmer is managing the entire farm, Data should be more accurate and should not be misleading.
NFR-4	**Performance**	Highly effective monitoring, tracking, and recovery of farm assets, tracking range should be greater than at least 5km. Continuous readings on temperature,gas,humidity,pH,smoke detection ,water and fuel levels are necessary.
NFR-5	**Availability**	It should monitor water level, fuel level, electric fence-theft monitoring, temperature, humidity, tractor guidance, GPS tags, soil moisture, and toxic gases.
NFR-6	**Scalability**	It should be made used in remote areas where technological advancements have not even been raised and should deliver a more productive and sustainable form of agriculture.