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

Date	18 October 2022
Team ID	PNT2022TMID33671
Project Name	SMART FARMER-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	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email
FR-3	Interfacing with hardware	Interface the sensors with the software application so as to alert the farmers in case of any harm for crops
FR-4	Database Connection	Databases are retrieved from IBM Cloud ant
FR-5	Mobile Application	Alarm and motors can be accessed from the mobile app

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The smart crop protection alerts the farmers in case of any obstacles and helps in protecting the crops
NFR-2	**Security**	Smart Agriculture can improve the farming practices and maintain sustainable production of crops especially by preventing the animals into the agricultural lands through internet of things enabled devices.
NFR-3	**Reliability**	With a proper power supply, external storage and programming the processor should be able to run 24/7 for years. The external storage and power supply will likely wear out faster than the Pi. The possible reasons behind Raspberry Pi failure can be power cut, external storage failures, and ineligible environments.

NFR-4	**Performance**	Usage of an SD card module that helps to store a specified sound to scare the animals. Crop damage due to animal attack can be sensed. Network and Design Evaluation
NFR-5	**Availability**	Agriculture for different varieties of crops is based on the monsoon changes, indoor and outdoor climatic temperatures, availability of rainfall and irrigation methods.
NFR-6	**Scalability**	The product shall be made available to everyone especially in remote areas for better efficiency of crop yield with the better safety of crops as well as the farmers.

S.NO	COMPONENT
1.	ARDUINO UNO
2.	WIFI MODULE - ESP
3.	SENSORS
4.	TEMPERATURE SENSOR
5.	SOIL MOISTURE SENSOR
6.	POWER SUPPLY
7.	RECHARGEABLE BATTERY
8.	BATTERY CHARGING CIRCUIT WITH TRANSFORMER
9.	EXTERNAL AC ADAPTER
10.	OVERALL CIRCUIT DESIGN