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

Date	03 October 2022
Team ID	PNT2022TMID52016
Project Name	IOT Based Smart Crop Protection System 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
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	openweathermap.org App	From this application we are going to read the weather information using arduino via the API key.
FR-4	Humidity sensor	Moisture level will be detected using the humidity sensor placed in the soil . Then the farmers will get an alert to drain off the excess water from the field.
FR-5	PIR sensor and Ultra sonic sensor	PIR sensor will be used to detect the motion and ultra sonic sensor for measuring the distance of that animal from crop. The farmers will get an alert if the animal is within the range.
FR-6	Servomotor	The scarecrow toy attached to the servomotor will be triggered. The major use of servomotor is to change position of an object etc.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The farmers will be able to control the operations in the field even from a longer distance.
NFR-2	**Security**	This is used to protect farm lands from animals and birds and also climatic changes.
NFR-3	**Reliability**	The farmers are capable of predicting and planning their farming practices in a more efficient way.
NFR-4	**Performance**	It sends SMS to farmers when sensor detects the animal or birds movements and also alert them about the moisture in the soil.
NFR-5	**Availability**	Through the development and deployment of software, we empower farmers to manage farmland.

NFR-6	**Scalability**	This project is very much efficient because it is based on IOT.