Project Design Phase-II

Solution Requirements (Functional & Non-functional)

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| Date | 07 October 2022 |
| Team ID | PNT2022TMID51631 |
| 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.

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| **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.

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| **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. |

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