

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

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| Date | 03 October 2022 |
| Team ID | PNT2022TMID05114 |
| Project Name | SmartFarmer - 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 Gmail Registration by creating a new username and password |
| FR-2 | User Confirmation | Confirmation via Email Confirmation via OTP |
| FR-3 | User login | Login using the credentials we have used during registration |
| FR-4 | ESP8266 | To interface temperature, humidity, soil moisture sensors and irrigation system (motor) |
| FR-5 | IBM cloud | To Store and display sensor parameters and control irrigation using internet |
| FR-6 | Node-RED | For Programming, Integration and Management |
| FR-7 | MIT app inventor | To create app to display sensor parameters and to control irrigation system |

Non-functional Requirements:

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

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|--|
| NFR-1 | Usability | <ul style="list-style-type: none"> • User friendly guidelines for users to avail the features. • Most simplistic user interface for ease of use. |
| NFR-2 | Security | <ul style="list-style-type: none"> • All the details about the user are protected from unauthorized access. • Detection and identification of any malfunctions of sensors. |
| NFR-3 | Reliability | <ul style="list-style-type: none"> • Implementing Mesh IoT Networks • Building a Multi-layered defence for IoT Networks. |

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|-------|---------------------|---|
| NFR-4 | Performance | The use of modern technology solutions helps to achieve the maximum performances thus resulting in better quality and quantity yields. |
| NFR-5 | Availability | This app is available for all platforms |
| NFR-6 | Scalability | Scalability refers to the ability to increase available resources and system capability without the need to go through a major system redesign or implementation. |