**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 15 October 2022 |
| Team ID | PNT2022TMID31434 |
| Project Name | Project - Smart farmer-IOT enabled smart Farming Application |
| 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 | raspberry pi | To interface temperature, humidity, soil moisture sensors and irrigation system(motor) |
| FR-2 | IBM cloud | To Store and display sensor parameters and control irrigation using internet |
| FR-3 | Node-RED | TO program raspberry pi and integrate it to cloud |
| FR-4 | MIT app inventor | To create app to display sensor parameters and to control irrigation systems |
| FR-5 | Open Weather API | Get the data and access the resource. |

**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 temperature sensor, humidity sensor, soil moisture sensor and irrigation system(motor) is connected to raspberry pi which is connected to IBM cloud ,the farmer can view temperature ,humidity and soil moisture in his smart phone and can also control irrigation using his smart phone connected to internet |
| NFR-2 | **Security** | User id and password is provided to farmer to prevent third party access |
| NFR-3 | **Reliability** | It specifies how likely the system or its element would run without a failure. |
| NFR-4 | **Performance** | Every 10 seconds to raspberry pi will update sensor parameters to cloud |
| NFR-5 | **Scalability** | IOT enabled smart farming system can be automated autonomously without farmers input and disease detection can be implemented using OpenCV |