

Project Design Phase-I

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| Date | 02 October 2022 |
| Team ID | PNT2022TMID13531 |
| Project Name | Smartfarmer-IOT enabled smart Farming Application |
| Maximum Marks | 2 Marks |

Proposed Solution Template:

| S.No. | Parameter | Description |
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| 1. | Problem Statement (Problem to be solved) | <p>Agriculture is extremely dependent on the climate. Temperature increases and carbon dioxide can boost some crop yields depending on the location; but other conditions must also exist, such as humidity, pressure, and water availability. Although slight warming and more carbon dioxide in the atmosphere could benefit some plants to grow faster, severe warming, floods, and drought would reduce yields. Farmer need to spend a lot of time to maintain these. Heat is not the only extreme weather. Extreme cold can benefit farmers by freezing the soil deep beneath the ground. In parts of the upper Midwest, frost depths exceed 40 inches. A deep frost depth can aid farmers in diverse ways. The cold helps nitrogen that is applied in the fall from vaporizing during the winter. The cycle of freezing and thawing of water helps soften the soil after the thaw. Extreme cold and frozen soils also reduce the survival rate of some insects. Severe weather other than heat and cold can cause loss and devastation to a farm. Most farmers can't avoid the results of extreme weather. Diverse extreme weather can affect farms in different ways. Because of this, it's important that farmers have a proper system and need a mobile application to monitor the weather changes and to control the motor.</p> |
| 2. | Idea / Solution description | <p>As the climates are changing rapidly and weather is unpredictable, so farmers are facing difficulties so they need a system to tackle this, here we use "open weather API" to get weather information such as temperature, pressure, humidity and weather description at their current location. Based on which they can decide whether to turn on the motors or turn off the motor if needed temperature and moisture sensors from IBM simulator is displayed on UI for monitoring the weather. An algorithm developed with threshold values of</p> |

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| | | temperature, pressure, humidity is programmed to intimate the farmer if weather conditions go bad. He can control motors remotely from any place through IoT. Internet interface that allow data inspection and irrigation scheduling to be programmed through mobile application or Node-RED UI. The technological development in software and hardware make it easy to develop this which can make better monitoring and wireless network made it possible to use in monitoring and control of greenhouse parameter in precision agriculture. |
| 3. | Novelty / Uniqueness | In this project We have developed a mobile application using which a farmer can monitor the temperature, humidity, pressure and soil moisture parameters along with weather forecasting details. Based on these details he can water the crops by controlling the motors through the app and the app gives an alert message if temperature or humidity goes beyond a threshold value. |
| 4. | Social Impact / Customer Satisfaction | It is a helpful and useful system is built for farmers to assist them in farming and also prevent them from natural calamities. It also saves farmers time to maintain all these things as this is working on cloud he can turn on/off motor from anywhere so basically it helps farmers and make them relieved thus helping our economy to grow. |
| 5. | Business Model (Revenue Model) | A more complex approach to IoT products in agriculture can be represented by the so-called farm productivity management systems. They usually include a number of agriculture IoT devices and sensors, installed on the premises as well as a powerful dashboard with analytical capabilities and in-built accounting/reporting features. |
| 6. | Scalability of the Solution | Threshold values are set any anomalies will be reported to the farmer. User friendly and efficient . Low cost. |