Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID53630
Project Name	Smart Farmer
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Smart Farmer - IoT Enabled Smart Farming Application
2.	Idea / Solution description	Our objective is to design a **IoT Enabled Smart Farming Application** which generates messages on different platforms to notify farmers. Our product will assist farmers by obtaining the real-time data from the farmland to take necessary steps during unfavorable conditions. Our proposed product uses NodeMCU, DHT11 Temperature and Humidity Sensor, Soil Moisture Sensor, Relay Coil, AC Motor Pump, Buzzer. Farmers can monitor all the sensor parameters by using a web **/** mobile application **/** dashboard even if the farmer is not near his field. Watering the crop is one of the important tasks for the farmers. They can make the decision whether to water the crop or postpone it by monitoring the sensor parameters and control the motor pumps from the mobile application itself.
3.	Novelty / Uniqueness	• Our proposed system provides a solution for secure transmission of the real time data obtained from the sensors to the IBM cloud rather than using the networking devices like Zigbee, LORA, GSM modules which causes the interference of data obtained from multiple users. • Our product is cost effective, since for communication to farmers we have a web dashboard rather using hardware devices. • Design and implementation of highly scalable product. • All the IOT end devices are controlled using standalone rechargeable batteries so that the product would last for a long span.

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- The farmer can control his farm irrespective of his place/location

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<tr><td>4.</td><td>Social Impact / Customer Satisfaction</td><td>

- Optimization of Energy Resources
- Conservation of Water
- Preventing Pollution

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<tr><td>5.</td><td>Business Model (Revenue Model)</td><td>
<table>
<tr><th>COMPONENTS</th><th>SPECIFICATION</th><th>COST</th></tr>
<tr><td>Nodemcu</td><td>ESP8266 WIFI Module</td><td>₹ 375</td></tr>
<tr><td>DHT11</td><td>0 °C to 50 °C</td><td>₹ 175</td></tr>
<tr><td>Soil Moisture Sensor</td><td>0 to 45% volumetric water content in soil</td><td>₹120</td></tr>
<tr><td>Buzzer</td><td>95 dB</td><td>₹ 75</td></tr>
<tr><td>Relay</td><td>5 V</td><td>₹ 50</td></tr>
<tr><td>Electric Motor Pump</td><td>12 V</td><td>₹ 200</td></tr>
<tr><td>Battery</td><td>9 V / 3.7V</td><td>₹ 225</td></tr>
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TOTAL COST: ₹ 1220
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<tr><td>6.</td><td>Scalability of the Solution</td><td>Our product enables automatic real time decision-making in an environment composed of dozens of thousands of sensors continuously transmitting data through the web dashboard without causing any interference.</td></tr>
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