Project Design Phase-I

Date	24 September 2022
Team ID	PNT2022TMID52856
Project Name	Smart Farmer - IOT Enabled Smart Farming Application
Maximum Marks	2 Marks

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	• Farmers can't continuously & remotely monitor parameters like soil moisture, pH level, temperature etc. • They have difficulty in predicting most suitable and beneficial crop variety that can be cultivated • Can't remotely control irrigation pumps according to the crop water requirements
2.	Idea / Solution description	• Plant various sensors(pH, NPK, soil moisture etc.,) to monitor the conditions continuously and use IoT to integrate and observe them remotely. • Warn the farmer regarding any undesirable change in the weather conditions and suggest pre-emptive measures. • Can compare sensor readings, scientific research data and market demand to suggest most suitable crop for cultivation. • Can use mobile application to monitor and control the irrigation pumps that are actuated using relays and integrated with the help of IoT.
3.	Novelty / Uniqueness	• It can guide in performing **crop rotation** with the help of NPK and other sensor readings by suggesting the most suitable crop variety. • It can aid in remote irrigation and prevent water scarcity. • It helps in improving crop quality by regulating the parameters to the optimum levels.

4.	Social Impact / Customer Satisfaction	• Growth of Economy: Agriculture constitutes about 60% of the production sector in India. Thus , maximizing throughputs in this sector will directly boost the GDP of the country. • Proper guidance can be provided with respect to the fertiliser usage and chemical levels in the soil , thus reducing soil degradation. • Water conservation: water can be irrigated to the crops only when water level in the soil goes below optimal level thus helping in preventing wastage of water.
5.	Business Model (Revenue Model)	• Usage of these technologies can help reduce extravagant expenses, conserve resources, improve crop quality and maximise yield thus leading to higher profits for the farmer. • The cost of implementation is very less when compared to the returns/ maximised profits • Increase in production: the optimisation of all the processes related to agriculture and livestock rearing increases production rates and improves the turnover.
6.	Scalability of the Solution	• Smart Farming systems uses modern technology to increase the quantity and quality of agricultural products. • Sensors are relatively inexpensive and the installation of the setup is very easy. Hence, it can be installed at multiple new locations and the integration of the nodes are fairy straight forward. • Thus, the system can be adopted in large numbers easily and securely. • Livestock tracking and Geo fencing. Smart logistics and warehousing. Smart pest management.