Project Design Phase-I
Proposed Solution

Date	29 September 2022
Team ID	PNT2022TMID01763
Project Name	Project – Smart Farmer-IOT Enabled Smart Farming Application
Maximum Marks	2 Marks

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To provide efficient decision support system using wireless sensor network which handle different activities of farm and gives useful information related to farm. Information related to Soil moisture, Temperature and Humidity content. Due to the weather condition, water level increasing Farmers get lot of distractions which is not good for Agriculture. Water level is managed by farmers in both Automatic/Manual using that mobile application. It will make more comfortable to farmers. Performing agriculture is very much time consuming.
2.	Idea / Solution description	In Internet of Things based smart agriculture, a system is formed to monitor the farmland with the help of sensors, which senses components like temperature, light, humidity, soil moisture, etc. Then, automate the irrigation system and allow farmers to monitor their field conditions from anywhere through IoT Analytics Platform. To make the agricultural process even smarter and accurate, precision agriculture is used. This makes agricultural practice more controlled and precise in terms of raising livestock and farming. The output of the solution will be in the form of an application which gives us the above mentioned features like displaying the temperature, humidity, soil moisture which enables the farmers to know about the exact condition of the soil.
3.	Novelty / Uniqueness	**Monitoring Soil Quality:** Farmers usually use a sampling method to calculate soil fertility, moisture content. Thus, this sampling doesn't give accurate results as chemical decomposition varies from location to location. Meanwhile, this not much helpful. To resolve this thing, it plays an essential role in Farming. Sensors can be installed at a uniform distance across the length and breadth of the farmland to collect the accurate soil data, which can be further used in the

		dashboard or mobile application for the farm monitoring. **Smart Irrigation on Agriculture Land** In smart irrigation, automated sprinkler systems or intelligent pumps are used. Soil moistures sensors are used in different areas to get the moisture of the soil in agricultural land. Based on the results from the soil moisture sensors, the intelligent pumps or intelligent sprinklers are turned On/Off. **Weather Monitoring** Weather plays a very significant role when it comes to the Agriculture sector. In agriculture, there is almost everything dependable upon the climate condition. In smart Farming, temperature humidity, light intensity, and soil moisture can be monitored through various sensors. These are again used by the reactive system to trigger alerts or automate the process such as water and air control. Thus, the data collected from these sensors are sent to the app where it can be used for analysing and decision-making.
4.	Social Impact / Customer Satisfaction	Smart Farming has enabled farmers to reduce waste and enhance productivity with the help of sensors (humidity, temperature, soil moisture) and automation of irrigation systems. Further with the help of these sensors, farmers can monitor the field conditions from anywhere. Internet of Things based smart Farming is highly efficient when compared with the conventional approach. Thus this application helps the farmers to save time, reduce the work.
5.	Business Model (Revenue Model)	By using this application farmers can overcome the over usage and under usage of water, fertilizers, etc. With the help of the sensors used they get an exact notification about the humidity level, moisture content level and temperature level in the soil. This helps them to save the time and cost for labours.
6.	Scalability of the Solution	Here we use the application that gives the exact conditions of the soil and also shows the historical conditions. Once when the threshold value is low the sensors starts working and send the notification to the farmer. It is also used to detect seasonal variations as climate plays a major role in agriculture. This application works best for farmers who do farming as a full time job.