

Project Design Phase-I

Proposed Solution

Date	24 September 2022
Team ID	PNT2022TMID02415
Project Name	IOT Based Smart Crop Protection System for Agriculture

Proposed Solution Template

S.No.	Parameter	Description
1.	Problem Statement	The majority of farmers plant crops without knowing the ideal temperature and humidity. So, using sensors, this crop system displays the temperature and humidity. It would also suggest which crops are best suited to that temperature. Moreover, most of the time, animals and birds damage the crops. This crop system assists farmers in protecting their crops from animals and birds that prey on them.
2.	Idea description	The Dht11 sensor is used in our project to detect temperature and humidity. The ground sensor detects soil moisture and recommends which crop is best suited to that temperature via an LCD display. Crops in farms are frequently ravaged by local animals such as buffaloes, cows, goats, birds, and so on. Farmers suffer huge losses as a result of this. Farmers cannot barricade entire fields or stay on the field 24 hours a day, seven days a week. As a result, we propose an automatic crop protection system against animals. This is a microcontroller-based arduino Uno system. A motion sensor is used in this system to detect wild animals approaching the field. In this case, the sensor instructs the microcontroller to act. The microcontroller now sounds an alarm to entice the animals away from the field, so that the farmer is aware of the problem and can respond.

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3.	Novelty	The crop system measures humidity and temperature. It is distinctive in that it uses an LCD display to suggest the crop that is most appropriate for that temperature.
4.	Customer Satisfaction	The farmers benefit greatly from automatic temperature and humidity detection. It also cut down on time because farmers didn't have to spend hours protecting crops from animals and birds.
5.	Business Model	With the use of sensors (humidity, temperature, soil moisture, etc.) and irrigation system automation, this crop protection system has allowed farmers to increase output. Furthermore, farmers may check on the state of their fields from anywhere with the aid of these sensors. When compared to the traditional method, crop protection systems based on the Internet of Things are far more effective. Intelligent agriculture uses are not limited to conventional, large-scale farming. With operations, but there may also be new levers to support other emerging or well-established agricultural trends, such as organic farming, family farming (complex or constrained spaces, specific cattle and/or cultures, preservation of particular or high-quality varieties, etc.), and enhancement of highly transparent farming.

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6.	Scalability of the Solution	In the future, if any update is required either on the hardware or software side, it can be easily implemented. The hardware components can be directly interfaced with the microcontroller and small modifications can be made in the programming of the existing product. In case of the software, the website application has to be updated with the additional functionality by creating a new section for the updated hardware. So this will not affect the existing functionality of the product and new functionality can be easily integrated.