

SmartFarmer - IoT Enabled Smart Farming Application

Problem Statement:

Farming is one of the most important sectors of every nation, it requires utmost precision and dedication to achieve a better yield and earn a good income. In these modern world peoples focus has been driven towards modern technology such as computers, mobile phones this drastically reduces the number of people towards agriculture. In the next few years the number of people towards agriculture will reduce to a greater extent which in turn affects the food circulation among the different parts of the world. Due to increase in population and industrial expansion there is a great change in environmental conditions that adversely reduces the rainfall which leads to lower crop yields which further leads to low prices of agricultural produce and poor nutritional content. This prevailing situation can be controlled to a certain extent using IoT based farming which constantly monitors the environment and the crop leading to a better way for farmers.

Abstract:

The aim of this project is to make the life and work of the farmer much easier. This can be achieved using the technique - Precision Farming, this involves autonomous monitoring of crops and other environmental parameters which has an effect on the crop, these environmental conditions are:

1. Environmental Humidity
2. Environmental Temperature.
3. Soil Moisture.
4. Rain Sensing.
5. Pest Control Recommendation.

Above mentioned are some of the conditions monitored autonomously, threshold parameters for various crops are automatically set upon user input of crop variety to be monitored. By this system one could achieve a good yield and better nutritional crops in their agricultural produce.

Tool Required:

Software Requirements:

1. Python IDLE
2. Arduino IDE

Hardware Requirements (Based on the given problem statement):

1. ESP32 - Micro controller.
2. DHT11 - Humidity and temperature sensor.
3. BMP280 - Barometric sensor.
4. LCD display - Display sensor readings.

5. DS3231 - Real time clock module.
6. Capacitive Soil Moisture Sensor.
7. Rain sensor.

Note : (The mentioned sensors mainly use the I2C communication protocol and some output analog readings.)

Schedule/Meeting Dates

Sno	Batch	Technology Track	Day	Date	Time Slot	Attended
1.	B3-3M5 E	Internet of Things (IoT)	Day 1	02-09-20 22	6:00pm - 9:00pm	YES
2.	B3-3M5 E	Internet of Things (IoT)	Day 2	07-09-20 22	9:00am - 12:00pm	YES
3.	B3-3M5 E	Internet of Things (IoT)	Day 3	09-09-20 22	6:00pm - 9:00pm	YES
4.	B3-3M5 E	Internet of Things (IoT)	Day 4	14-09-20 22	9:00am - 12:00pm	YES
5.	B3-3M5 E	Internet of Things (IoT)	Day 5	16-09-20 22	6:00pm - 9:00pm	
6.	B3-3M5 E	Internet of Things (IoT)	Day 6	21-09-20 22	9:00am - 12:00pm	
7.	B3-3M5 E	Internet of Things (IoT)	Day 7	23-09-20 22	6:00pm - 9:00pm	
8.	B3-3M5 E	Internet of Things (IoT)	Day 8	28-09-20 22	9:00am - 12:00pm	

9.	B3-3M5 E	Internet of Things (IoT)	Day 9	30-09-20 22	6:00pm - 9:00pm
10.	B3-3M5 E	Internet of Things (IoT)	Day 10	07-10-20 22	6:00pm - 9:00pm
11.	B3-3M5 E	Internet of Things (IoT)	Day 11	12-10-20 22	9:00am - 12:00pm
12.	B3-3M5 E	Internet of Things (IoT)	Day 12	14-10-20 22	6:00pm - 9:00pm
13.	B3-3M5 E	Internet of Things (IoT)	Day 13	19-10-20 22	9:00am - 12:00pm
14.	B3-3M5 E	Internet of Things (IoT)	Day 14	21-10-20 22	6:00pm - 9:00pm

College Mentor : Pushpalatha S

Industry Mentor:

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Contact Details : N/A

Project Status:

Working on prototype and data collection.

