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Green House Monitoring And Control System Using IOT Based

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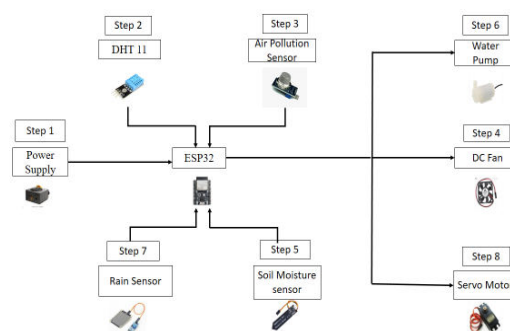
ABSTRACT: This project is based on human less maintenance of agriculture. In this the moisture of the soil, temperature of the place will be maintained automatically. Although we can predict the upcoming weather, there can be changes like sudden rain. These unpredicted changes in weather can destroy the crops. If there is sudden rain and if the temperature is too low for the crops, the system will turn on the heat lamp due to which the temperature will be maintained. If due to high temperature, the moisture of the soils gets reduced, the system will turn on the water pump to maintain the moisture. This system will take care of the maintenance of agriculture, and automated by roof cover.

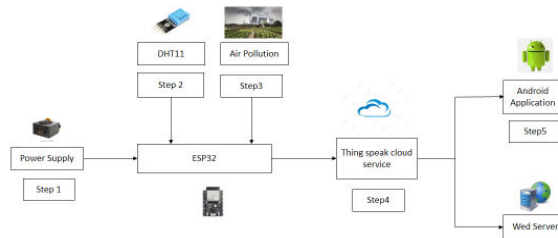
KEYWORD: Greenhouse, IOT, DHT11, Soil moisture, Microcontroller, Temperature, Humidity

I. INTRODUCTION

This project demonstrates the design and implementation of a various sensors for greenhouse monitoring and controlling system. This provides the control system is provided by it consists of temperature sensor, Soil moisture, DC fan, water pump. Temperature sensor senses the level of temperature. DC fan is the when the temperature goes low the fan gets off. Soil moisture sensor, senses the water level as the level decreases the pump gets on. By this way it will become easy to monitor and control the system. And we can automatically by roof cover in Green House.

II. MATERIALS AND METHODS





1. DHT11



Collect the Temperature and Humidity with DHT11 Sensor that comes with a dedicated NTC to measure temperature and an 8-bit microcontroller to output the value of temperature and humidity as serial data.

2. Air Pollution Sensor



The MQ 135 sensor is a signal output indicator instruction. It has two outputs analog output and TTL output The TTL output is low signal light that can be accessed through the IO ports on the Microcontroller. This Temperature, pressure Sensor is an integrated environmental sensor which is very small-sized with low power consumption.

3. Soil Moisture sensor





Soil moisture sensor measure the volumetric water content in soil. Since the direct gravimetric measurement of free soil moisture requires removing, drying, and weighing of a sample, soil moisture sensor.

4. ESP32



ESP32 is a series of low-cost, low-power system on a chip microcontrollers with integrated Wi-Fi and dual-mode Bluetooth.

5. Rain Sensor



A rain sensor or rain switch is a switching device activated by rainfall. There are two main applications for rain sensors. The first is a water conservation device connected to an automatic irrigation system that causes the system to shut down in the event of rainfall.

6. Power supply



A power supply is an electrical device that supplies electric power to an electrical load. The main purpose of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load.

7. Water Pump



A water pump is an electromechanical machine used to increase the pressure of water to move it from one point to another.

8. DC Fan



DC fan are widely regarded as the most efficient type of fans. They consume significantly less power than AC fan.

9. Servo Motor



A servo motor is a type of motor that can rotate with great precision. If motor is powered by a DC power supply then it is called DC servo motor.

▪ Advantages:-

1. Automated greenhouse.
2. Prevention from temperature and rain.
3. Irrigation system.

▪ Disadvantages

1. Costly installation system.

III.CONCLUSION

This Greenhouse project is designed intelligently for the betterment of the crop growth. The system gives the high efficiency plant growth, low cost and effective working. So effective and the data can be stored in cloud for the future use of the system gives the high efficiency plant growth, low cost and effective working. If due to high temperature, the moisture of the soils gets reduced, the system will turn on the water pump to maintain the moisture. And we can automatically by roof cover in Green House. It is a Green House monitoring and control system. For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation

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