Project 27:

IOT based Smart Irrigation System using wemos

Introduction

IOT solution for irrigation to the gardens or agriculture using automatic control via soil moisture sensor and manual control using an app. Soil moisture values and on off times are also recorded on IOT platforms which can moniterd around any corner of the world.

IoT-Based-Smart-Irrigation-System

Here we have to build an IoT based Irrigation System using the ESP8266 NodeMCU Module and DHT11 Sensor. It will not only automatically irrigate the water based on the moisture level in the soil but also send the data to a dedicated server to keep track of the land condition.

The goals of the project are:

- Control the drip irrigation system in an automated fashion, but still, turn on individual zones manually when needed.
- No reliance on the cloud should work over the local network.
- Be extendable to any number of zones relatively easy.
- Should work Autonomously by sensing soil moisture levels.
- Should be Inexpensive to build, but must be reliable.

COMPONENTS: -

1. WEMOS
2. SOIL MOISTURE
3. DHT11

4. 1 CHANNAL RELAY

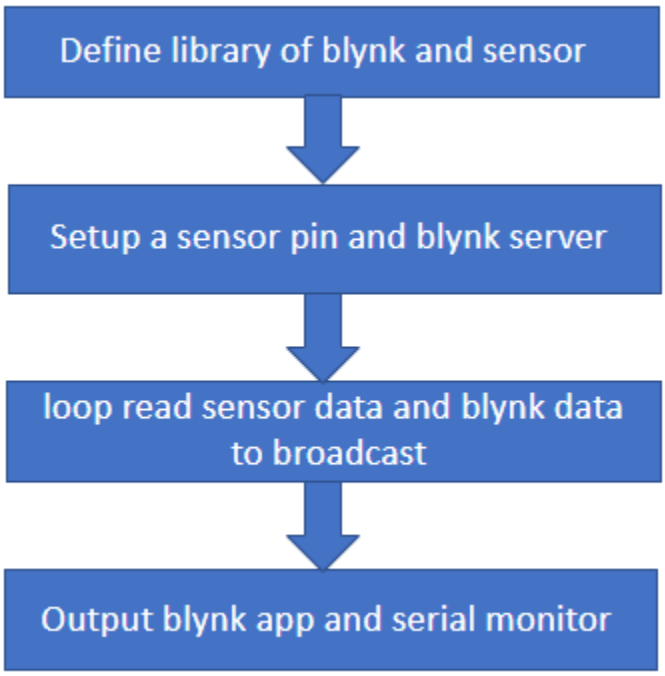
APPLICATIONS: -

Here we are building an IoT-based Irrigation System using the ESP8266 NodeMCU Module and DHT11 Sensor. It will not only automatically irrigate the water based on the moisture level in the soil but also send the Data to Blynk Application to keep track of the land condition.

OBJECTIVES: -

As water supply is becoming scarce in today's world there is an urgency of adopting smart ways of irrigation. The project describes how irrigation can be handled smartly using IOT. ... The objective of this system is to detect the moisture content of the soil and depending on it sprinkle water.

FLOW CHART :-



PROGRAMMING: -

```
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include <OneWire.h>
#include <DallasTemperature.h>
#define ONE_WIRE_BUS D2
OneWire oneWire(ONE_WIRE_BUS);
DallasTemperature sensors(&oneWire);
char auth[] ="abab24c5192144fda436a63b7d6aeb64";
char ssid[] ="CORALIN";
char pass[] ="4f855jm5";
int sensor=0;
void setup()
{
Serial.begin(115200);
Blynk.begin(auth, ssid, pass);
sensors.begin();
}
void sendTemps()
{
sensor=analogRead(A0);
sensors.requestTemperatures();
float temp = sensors.getTempCByIndex(0);
Serial.println(temp);
Serial.println(sensor);
Blynk.virtualWrite(V1, temp);
Blynk.virtualWrite(V2,sensor);
delay(1000);
}
void loop() {
Blynk.run();
sendTemps();
}
```

HARDWARE CONNECTION: -

1. Connect DHT11 data pin to D4
2. Connect relay signal pin to D3
3. **Connect soil moisture data A0 to A0**
4. **Connect pin vcc to vcc**
5. **Connect pin GND to GND**

DIRCUIT DAIGRAM: -