

Project 18:

Weather Station Using WeMos

1. Introduction

**This system is used to Measure Weather of Atmosphere
And help to protect a farm from damage from Unknown
Weather**

COMONENTS: -

1.WEMOS

2.DHT 11

3.RELAY

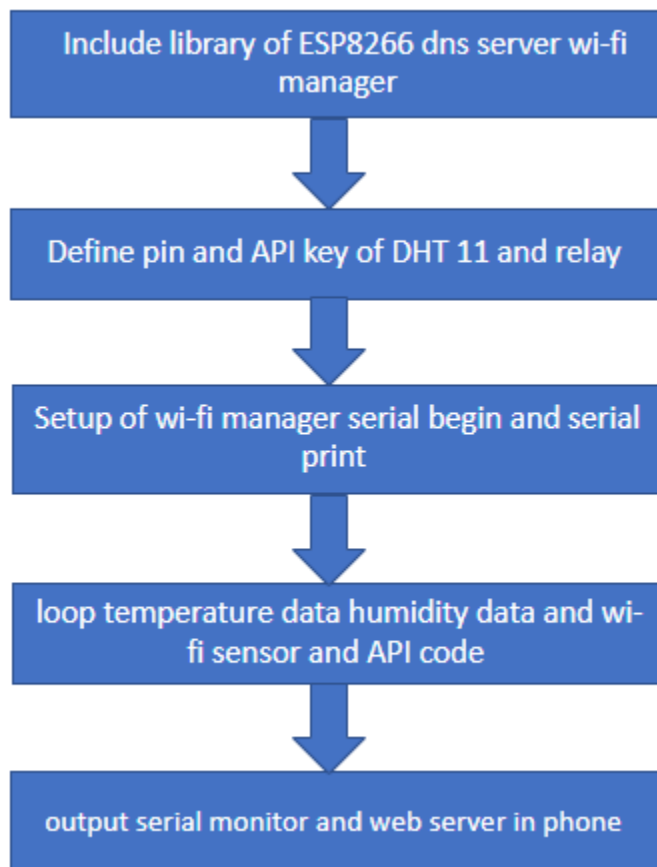
APPLICATIONS: -

In applications like flood lines, reservoirs, hydroelectricity, water treatment, and urban drainage a weather station to measure rainfall, soil moisture, and other conditions is crucial. You can rest easy knowing that the information you're receiving is current, accurate, and relevant.

OBJECTIVES: -

Weather stations record climatic conditions including air temperature, wind speed, wind direction and barometric pressure. They record water temperatures at various depths and the amount of above-water photosynthetically active radiation.

FLOW CHART :-



PROGRAMMING: -

```
#include <ESP8266WiFi.h>      //https://github.com/esp8266/Arduino
#include <DNSServer.h>
#include <ESP8266WebServer.h>
#include <WiFiManager.h>
//https://github.com/tzapu/WiFiManager
#include <SimpleDHT.h>
#include <Wire.h>
#include <Adafruit_BMP085.h>
```

```
String apiKey = "APIKEY DE SU CUENTA THINGSPEAK";
const char* server = "api.thingspeak.com";
int pinDHT11 = D0;
int timeOut = 0;
SimpleDHT11 dht11;
WiFiClient client;
Adafruit_BMP085 bmp;
```

```
void setup(){
  WiFiManager wifiManager;
  Serial.begin(115200);
  delay(10);
  wifiManager.resetSettings();
  wifiManager.autoConnect("WS-Electgpl");
```

```
Serial.println("Estacion Conectada a Internet");
if(!bmp.begin()){
    Serial.println("Error en BMP085");
    while(1){}
}
}

void loop(){
    byte temperatura = 0;
    byte humedad = 0;
    float luminosidad = analogRead(A0);
    if(dht11.read(pinDHT11, &temperatura, &humedad, NULL)){
        Serial.print("Error en DHT11");
        return;
    }
    if(timeOut==300){
        if(client.connect(server,80)){
            String postStr = apiKey;
            postStr += "&field1=";
            postStr += String(luminosidad);
            postStr += "&field2=";
            postStr += String((float)bmp.readTemperature());
            postStr += "&field3=";
            postStr += String((int)humedad);
            postStr += "&field4=";
```

```
    postStr += String((float)bmp.readPressure()/100);
    postStr += "\r\n\r\n";
    client.print("POST /update HTTP/1.1\n");
    client.print("Host: api.thingspeak.com\n");
    client.print("Connection: close\n");
    client.print("X-THINGSPEAKAPIKEY: "+apiKey+"\n");
    client.print("Content-Type: application/x-www-form-
urlencoded\n");
    client.print("Content-Length: ");
    client.print(postStr.length());
    client.print("\n\n");
    client.print(postStr);
    Serial.println("% send to Thingspeak");
}
client.stop();
Serial.print("luminosidad: ");
Serial.print(luminosidad);
Serial.print(" | temperatura: ");
Serial.print((float)bmp.readTemperature());
Serial.print(" | humedad: ");
Serial.print(humedad);
Serial.print(" | presion: ");
Serial.println((float)bmp.readPressure()/100);
timeOut=0;
}
delay(1000);
```

```
timeOut++;  
Serial.print("timeOut");  
Serial.println(timeOut);  
}
```

HARDWARE CONNECTION: -

1. Connect relay to DHT 11 to wemos
2. Connect pin D0 to D1
3. Connect pin vcc to vcc
4. Connect pin GND to GND

CIRCUIT DIAGRAM: -

