

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING****IBM NALAIYA THIRAN PROJECT****Project Development Phase**

Date	21 Oct 2022
Team ID	PNT2022TMID03552
Project Name	IoT Based Smart Crop Protection System for Agriculture
Maximum Marks	8 Marks

**Sprint 2:**

**Display the image and pre-process the level of the Node-RED web UI and display the temperature, humidity, and soil moisture levels. Integrate the buttons in the UI to control the Motors.**

**Solution Coding C++(Approach):**

```
#include <ESP8266WiFi.h>

const char *wifissid = "SSID";
const char *wifipass = "Password";

void setup() {
    // put your setup code here, to run once:
    Serial.begin(115200);
}

void loop() {
    // put your main code here, to run repeatedly:
    delay(1000);
    reconnectWiFi();
}

void reconnectWiFi(){
    WiFi.mode(WIFI_STA);
    delay(200);
    WiFi.begin(wifissid,wifipass);
    while(WiFi.status() != WL_CONNECTED){
        Serial.print(".");
        delay(500);
    }
    Serial.println("Connected to: \t");
    Serial.println(WiFi.localIP());
}

#include <Wire.h>

#define Addr 0x40

Wire.beginTransmission(Addr);

// Send humidity measurement command, NO HOLD master
Wire.write(0xF5);
```

```

// Stop I2C transmission

Wire.endTransmission();

delay(500);

// Request 2 bytes of data

Wire.requestFrom(Addr, 2);

// Read 2 bytes of data

// humidity msb, humidity lsb

if(Wire.available() == 2)

{

    data[0] = Wire.read();

    data[1] = Wire.read();

}

float humidity = (((data[0] * 256.0 + data[1]) * 125.0) / 65536.0) - 6;

float cTemp = (((data[0] * 256.0 + data[1]) * 175.72) / 65536.0) - 46.85;

float fTemp = (cTemp * 1.8) + 32;

void reconnect()

{

    // Loop until we're reconnected

    while (!client.connected()) {

        Serial.print("Attempting MQTT connection...");

        if (client.connect("ESP8266Client")) {

            Serial.println("connected");

        }

        else {

            Serial.print("failed, rc=");

            Serial.print(client.state());

            Serial.println(" try again in 5 seconds");

            // Wait 5 seconds before retrying

            delay(5000);

        }

    }

}

void loop()

{

    if (!client.connected()) {

        reconnect();

    }

    client.publish(Topic to publish, Payload(message to publish), Return value (true or false));

    client.loop();

}

```

## Console Output (Based on Approach):

```
COM3
Attempting MQTT connection...connected
Degree C temperature:20.56
Degree F temperature:69.00
New humidity:68.85
Attempting MQTT connection...connected
Degree C temperature:20.60
Degree F temperature:69.08
New humidity:68.79
```

☒ Autoscroll ☐ Show timestamp Newline 115200 baud Clear output

