# PROJECT DEVELOPMENT PHASE
## SPRINT 2

| Date | 11 November 2022 |
|------|------------------|
| Team ID | PNT2022TMID18907 |
| Project Name | IOT Based Smart Crop Protection System for Agriculture |
| Maximum Marks | 8 Marks |

**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):**

```cpp
#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);
```

```cpp
// 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                                                        —    □    ×

|                                                                [ Send ]

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




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```