SPRINT 1

Date	18 November 2022
Team ID	PNT2022TMID19620
Project Name	Smart Farmer-IoT Enabled smart Farming Application

Connecting Sensors with Arduino using C/ C++ code

```
#include <DHT.h>

#include <ESP8266WiFi.h>

String apiKey = "X5AQ3EGIKMBYW31H";

const char* server = "xxxxxxxxxxxx";

const char *ssid =  "xxxxxxx";    // Enter your WiFi Name

const char *pass =  "yyyyyyyy"; // Enter your WiFi Password

#define DHTPIN D3

DHT dht(DHTPIN, DHT11);

WiFiClient client;

const int moisturePin = A0;

const int motorPin = D0;

unsigned long interval = 10000;
```

```cpp
unsigned long previousMillis = 0;

unsigned long interval1 = 1000;

unsigned long previousMillis1 = 0;

float h;

float t;

void setup()

{

  Serial.begin(115200);

  delay(10);

  pinMode(motorPin, OUTPUT);

  digitalWrite(motorPin, LOW);

  dht.begin();

  Serial.println("Connecting to ");

  Serial.println(ssid);

  WiFi.begin(ssid, pass);
```

```
  while (WiFi.status() != WL_CONNECTED)

  {

    delay(500);

    Serial.print(".");

  }

  Serial.println("");

  Serial.println("WiFi connected");

}


void loop()

{

  unsigned long currentMillis = millis();

  h = dht.readHumidity();

  t = dht.readTemperature();

  if (isnan(h) || isnan(t))

  {
```

```arduino
    Serial.println("Failed to read from DHT sensor!");

    return;

  }


  moisturePercentage = ( 100.00 - ( (analogRead(moisturePin) / 1023.00) * 100.00 ) );


  if ((unsigned long)(currentMillis - previousMillis1) >= interval1) {

    Serial.print("Soil Moisture is  = ");

    Serial.print(moisturePercentage);

    Serial.println("%");

    previousMillis1 = millis();

  }


if (moisturePercentage < 50) {

  digitalWrite(motorPin, HIGH);

}


if (moisturePercentage > 50 && moisturePercentage < 55) {
```

```
    digitalWrite(motorPin, HIGH);

}

if (moisturePercentage > 56) {

  digitalWrite(motorPin, LOW);

}

if ((unsigned long)(currentMillis - previousMillis) >= interval) {

  sendThingspeak();        //send data to thing speak

  previousMillis = millis();

  client.stop();

}

}

void sendThingspeak() {

  if (client.connect(server, 80))

  {
```

```
String postStr = apiKey;          // add api key in the postStr string

postStr += "&field1=";

postStr += String(moisturePercentage);    // add mositure readin

postStr += "&field2=";

postStr += String(t);            // add tempr readin

postStr += "&field3=";

postStr += String(h);            // add humidity readin

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());        //send lenght of the string
```

```
    client.print("\n\n");


      // send complete string


    Serial.print("Moisture Percentage: ");


    Serial.print(moisturePercentage);


    Serial.print("%. Temperature: ");


    Serial.print(t);


    Serial.print(" C, Humidity: ");


    Serial.print(h);


    Serial.println("%. .");


  }


}
```

Circuit Diagram