```
#include <DHT.h>
#include <ESP8266WiFi.h>
String apiKey = "X5AQ3EGIKMBYW31H";
const char* server = "api.thingspeak.com";
const char *ssid =  "CircuitLoop";
const char *pass =  "circuitdigest101";
#define DHTPIN D3
DHT dht(DHTPIN, DHT11);
WiFiClient client;
const int moisturePin = A0;
const int motorPin = D0;
unsigned long interval = 10000;
unsigned long previousMillis = 0;
unsigned long interval1 = 1000;
unsigned long previousMillis1 = 0;
float moisturePercentage;
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();     // read humiduty
  t = dht.readTemperature();     // read temperature
  if (isnan(h) || isnan(t))
  {
    Serial.println("Failed to read from DHT sensor!");
```

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    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();
  previousMillis = millis();
  client.stop();
}
}
void sendThingspeak() {
  if (client.connect(server, 80))
  {
    String postStr = apiKey;
    postStr += "&field1=";
    postStr += String(moisturePercentage);
    postStr += "&field2=";
    postStr += String(t);
    postStr += "&field3=";
    postStr += String(h);
    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.print("Moisture Percentage: ");
    Serial.print(moisturePercentage);
    Serial.print("%. Temperature: ");
    Serial.print(t);
    Serial.print(" C, Humidity: ");
    Serial.print(h);
    Serial.println("%. Sent to Thingspeak.");
  }
}
```