

# Hazardous Area Monitoring for Industrial Plant Powered By IOT

## Coding:

```
#include <ESP8266WiFi.h>

#include <WiFiClient.h>

#include <PubSubClient.h>

#include <ESP8266WebServer.h>

#include <ESP8266HTTPClient.h>

#include "DHT.h"

const char* ssid = "SMART-G";

const char* password = "10112019";

#define DHTPIN D6

#define G D0

#define DHTTYPE DHT11

DHT dht(DHTPIN, DHTTYPE);

int i =0;

#define ID "duozdv"

#define DEVICE_TYPE "ESP8266"

#define DEVICE_ID "TEST"

#define TOKEN "TEST-12345"

char server[] = ID ".messaging.internetofthings.ibmcloud.com";

char publish_Topic1[] = "iot-2/evt/Data1/fmt/json";

char publish_Topic2[] = "iot-2/evt/Data2/fmt/json";

char publish_Topic3[] = "iot-2/evt/Data2/fmt/json";

char publish_Topic4[] = "iot-2/evt/Data2/fmt/json";

char authMethod[] = "use-token-auth";

char token[] = TOKEN;

char clientId[] = "d:" ID ":" DEVICE_TYPE ":" DEVICE_ID;

WiFiClient wifiClient;
```

```
PubSubClient client(server, 1883, NULL, wifiClient);
```

```
void setup() {  
  pinMode(D0,OUTPUT);  
  digitalWrite(D0,HIGH);  
  Serial.begin(115200);  
  dht.begin();  
  Serial.println();  
  WiFi.begin(ssid, password);  
  while (WiFi.status() != WL_CONNECTED) {  
    delay(500);  
    Serial.print(".");  
  }  
  Serial.println("");  
  Serial.println(WiFi.localIP());  
  
  if (!client.connected()) {  
    Serial.print("Reconnecting client to ");  
    Serial.println(server);  
    while (!client.connect(clientId, authMethod, token)) {  
      Serial.print(".");  
      delay(500);  
    }  
    Serial.println("Connected TO IBM IoT cloud!");  
  }  
}
```

```
long previous_message = 0;  
void loop() {  
  client.loop();  
  long current = millis();  
  if (current - previous_message > 3000) {
```

```

previous_message = current;

float hum = dht.readHumidity();

float temp = dht.readTemperature();

float MOI = map(analogRead(A0), 0, 1023, 100, 0);

float bi = map(digitalRead(D1), 0, 1, 100, 0 );

if (isnan(hum) || isnan(temp) ){
Serial.println(F("Failed to read from DHT sensor!"));

return;
}

```

```

Serial.print("Temperature: ");
Serial.print(temp);
Serial.print("°C");
Serial.print(" Humidity: ");
Serial.print(hum);
// Serial.print("%");
// Serial.print("SOIL MOITURE: ");
// Serial.print(MOI);
// Serial.print("ANIMAL AND BIRD: ");
// Serial.print(bi);
// if(MOI<=10)
// {
//   digitalWrite(D0,LOW);
//   delay(100);
//   digitalWrite(D0,HIGH);
// }
// else
// {
//   digitalWrite(D0,HIGH);
// }

```

```

String payload = "{\"d\":{\"Name\":\"\" DEVICE_ID \"\"";
    payload += "\",\"Temperature\":";
    payload += temp;
    payload += "\"}";

Serial.print("Sending payload: ");
Serial.println(payload);

if (client.publish(publish_Topic1, (char*) payload.c_str())) {
    Serial.println("Published successfully");
} else {
    Serial.println("Failed");
}

String payload1 = "{\"d\":{\"Name\":\"\" DEVICE_ID \"\"";
    payload1 += "\",\"Humidity\":";
    payload1 += hum;
    payload1 += "\"}";
    Serial.print("Sending payload: ");
    Serial.println(payload1);
    Serial.println('\n');

if (client.publish(publish_Topic2, (char*) payload1.c_str())) {
    Serial.println("Published successfully");
} else {
    Serial.println("Failed");
}

//
//
// String payload3 = "{\"d\":{\"Name\":\"\" DEVICE_ID \"\"";
//     payload3 += "\",\"Moiture\":";
//     payload3 += MOI;
//     payload3 += "\"}";

```

```

//
//    Serial.print("Sending payload: ");
//    Serial.println(payload3);
//
//    if (client.publish(publish_Topic3, (char*) payload3.c_str())) {
//        Serial.println("Published successfully");
//    } else {
//        Serial.println("Failed");
//    }
//
//
//
//String payload4 = "{\"d\":{\"Name\":\"\" DEVICE_ID \"\"";
//    payload4 += ", \"Animal&Bird\"";
//    payload4 += bi;
//    payload4 += "}}";
//
//    Serial.print("Sending payload: ");
//    Serial.println(payload4);
//
//    if (client.publish(publish_Topic4, (char*) payload4.c_str())) {
//        Serial.println("Published successfully");
//    } else {
//        Serial.println("Failed");
//    }
//
//
//
HTTPClient http;
String postData;
//String key = Serial.readString();
//Serial.print(key);
if(temp >= 35)//8870599026

```

```

{

    i++;

    if(i<=1)
    {

        postData =
"username=fantasy&password=596692&to=9361692114&from=FSSMSS&message=Dear user your
msg is ABNORMAL TEMPERATURE DETECTED LEVEL IS "+String(temp)+" C H is"+String(hum)+ " Sent
By FMSG FSSMSS&PEID=1501563800000030506&templateid=1507162882948811640";

        Serial.print(postData);

        http.begin("http://smsserver9.creativepoint.in/api.php");
        http.addHeader("Content-Type", "application/x-www-form-urlencoded");
        int httpCode = http.POST(postData);
        String payload = http.getString();
        Serial.println(payload);
        http.end();
        delay(1000);
    }
}

if(temp<35)
{

    i=0;}

}
}

```