

Date	01 November 2022
Team ID	PNT2022TMID17751
Project Name	Industry specific intelligent fire management system

WOKWI WEB URL:

<https://wokwi.com/projects/348021685670117971>

SNAPSHOTS OF SIMULATION:

The screenshot displays the Wokwi web interface for a project titled "Industry-specific intelligent fire management system.ino". The interface is split into two main sections: a code editor on the left and a simulation environment on the right.

Code Editor (Left Pane): The sketch.ino file contains the following code:

```

1  #include <WiFi.h>
2  #include <PubSubClient.h>
3  #define temp_pin 15
4  void callback(char* subscribetopic,byte* payload, unsigned int payloadlength);
5  #define ORG "ova7j8"
6  #define DEVICE_TYPE "esp32"
7  #define DEVICE_ID "1234"
8  #define TOKEN "12345678"
9  String data3;
10
11 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
12 char publishTopic[] = "iot-2/evt/data/fmt/json";
13 char subscribeTopic[] = "iot-2/cmd/test/fmt/String";
14 char authMethod[] = "use-token-auth";
15 char token[] = TOKEN;
16 char clientId[] = "d:" + ORG + ":" + DEVICE_TYPE + ":" + DEVICE_ID;
17
18 WiFiClient wifiClient;
19 PubSubClient client(server,1883,callback,wifiClient);
20
21
22
23
24 // should match the Beta Coefficient of the thermistor
25
26 void setup() {
27   Serial.begin(9600);
28   analogReadResolution(10);
29   pinMode(32,INPUT);
30   pinMode(14,OUTPUT);
31
32   wificonnect();

```

Simulation Environment (Right Pane): The simulation shows a breadboard with an ESP32 module and a blue sensor module. A red LED is connected to the breadboard. The serial monitor at the bottom displays the following output:

```

Temperature: 23.99 °C
Sending payload:{"temp":23.99}
publish ok
Temperature: 23.99 °C
Sending payload:{"temp":23.99}
publish ok
Temperature: 23.99 °C

```

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sketch.ino diagram.json libraries.txt Library Manager

```

24 // should match the beta coefficient of the thermistor
25
26 void setup() {
27   Serial.begin(9600);
28   analogReadResolution(10);
29   pinMode(32, INPUT);
30   pinMode(14, OUTPUT);
31
32   wifiConnect();
33   mqttConnect();
34 }
35
36 void loop() {
37   const float BETA = 3950; // should match the Beta Coefficient of the thermistor
38   int analogValue = analogRead(A4);
39   float temp = 1 / (log(1 / (1023. / analogValue - 1)) / BETA + 1.0 / 298.15) - 273.15;
40   //float temp = 1 / (log(1 / (1023. / analogValue - 1)) / BETA + 1.0 / 298.15) - 273.15;
41   Serial.print("Temperature: ");
42   Serial.print(temp);
43   Serial.println(" °C");
44   if(temp >= 35){
45     PublishData2(temp);
46     digitalWrite(14, HIGH);
47   }else{
48     digitalWrite(14, LOW);
49     PublishData1(temp);
50   }
51   delay(1000);
52   if(!client.loop()){
53     mqttConnect();
54   }
55   //delay(2000);
56 }
57
58 void PublishData1(float tem){

```

Simulation 01:41.643 99%

Temperature: 23.99 °C
 Sending payload:{"temp":23.99}
 publish ok
 Temperature: 23.99 °C
 Sending payload:{"temp":23.99}
 publish ok
 Temperature: 23.99 °C

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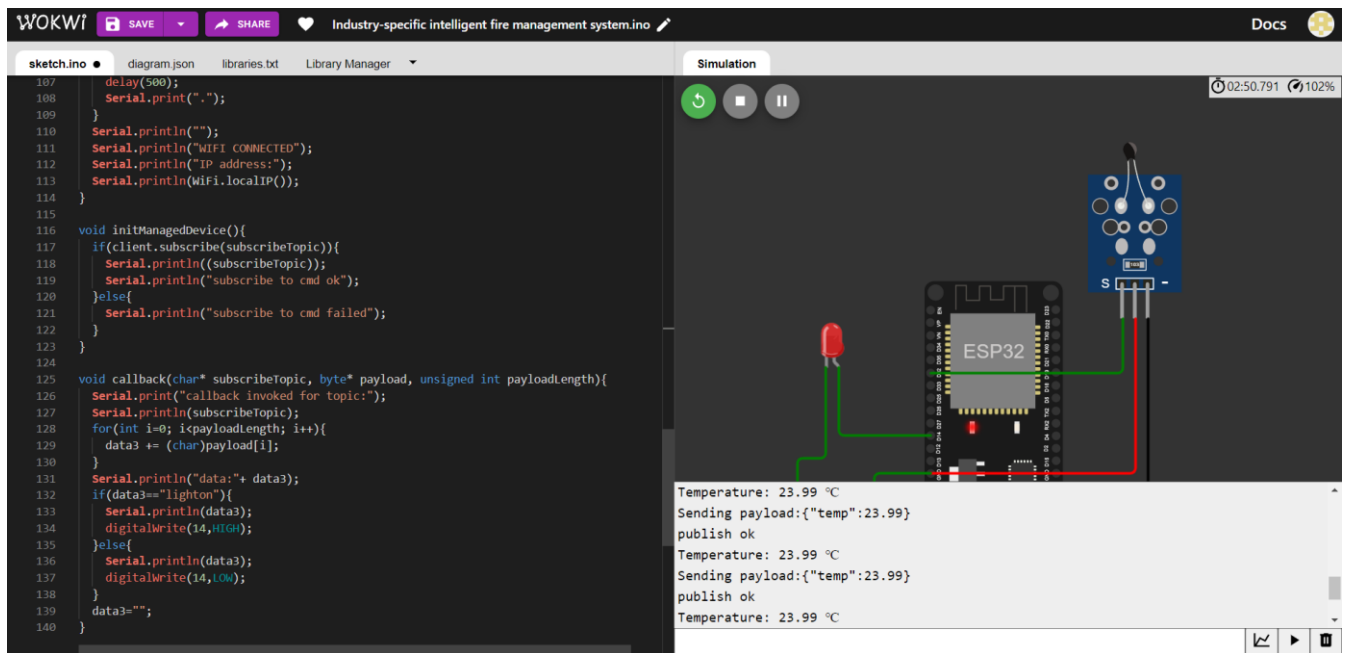
```

58 void PublishData1(float tem){
59   mqttConnect();
60   String payload= "{\"temp\":\"";
61   payload += tem;
62   payload += "\"}";
63
64   Serial.print("Sending payload:");
65   Serial.println(payload);
66
67   if(client.publish(publishTopic,(char*)payload.c_str())){
68     Serial.println("publish ok");
69   } else{
70     Serial.println("publish failed");
71   }
72 }
73 void PublishData2(float tem){
74   mqttConnect();
75   String payload= "{\"ALERT\":\"";
76   payload += tem;
77   payload += "\"}";
78
79   Serial.print("Sending payload:");
80   Serial.println(payload);
81
82   if(client.publish(publishTopic,(char*)payload.c_str())){
83     Serial.println("publish ok");
84   } else{
85     Serial.println("publish failed");
86   }
87 }
88 void mqttConnect(){
89   if(!client.connected()){
90     Serial.print("Reconnecting to");
91     Serial.println(server);

```

Simulation 02:17.060 100%

Temperature: 23.99 °C
 Sending payload:{"temp":23.99}
 publish ok
 Temperature: 23.99 °C
 Sending payload:{"temp":23.99}
 publish ok
 Temperature: 23.99 °C



Images of IBM Watson IoT Platform Recent events:

