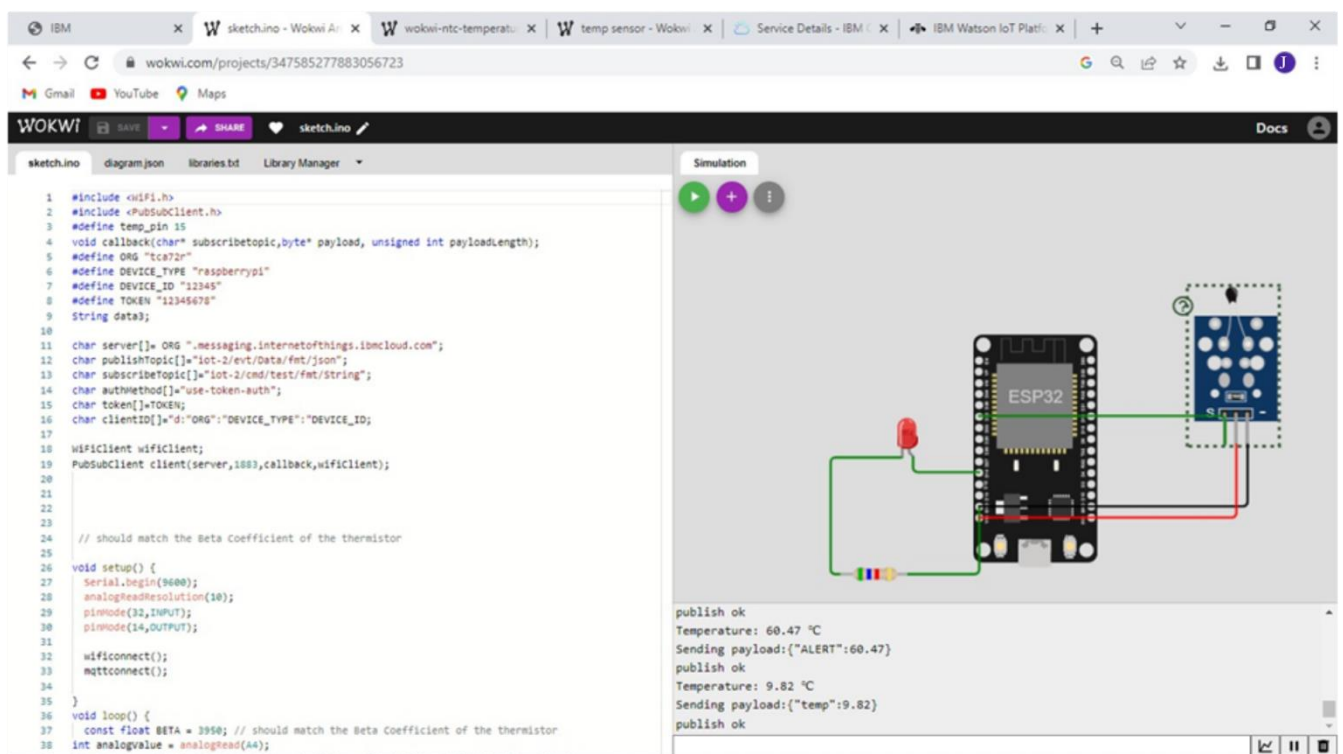


Date	01 November 2022
Team ID	PNT2022TMID42331
Project Name	Industry specific intelligent fire management system

WOKWI WEB URL:

<https://wokwi.com/projects/347585277883056723>

SIMULATION:



The screenshot displays the Wokwi web interface for a project simulation. The left pane shows the Arduino sketch code, which includes the following key sections:

```

1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 #define temp_pin A5
4 void callback(char* topic, byte* payload, unsigned int payloadLength);
5 #define ORG "tca72r"
6 #define DEVICE_TYPE "raspberrypi"
7 #define DEVICE_ID "12345"
8 #define TOKEN "12345678"
9 String data;
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();
33   mqttConnect();
34
35 }
36
37 void loop() {
38   const float BETA = 3950; // should match the Beta Coefficient of the thermistor
39   int analogValue = analogRead(A4);

```

The right pane shows the simulation environment with an ESP32 microcontroller, a red LED, and a temperature sensor module. The output log at the bottom of the simulation window shows the following sequence of events:

```

publish ok
Temperature: 60.47 °C
Sending payload:{"ALERT":60.47}
publish ok
Temperature: 9.82 °C
Sending payload:{"temp":9.82}
publish ok

```

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```

113 Serial.println(WiFi.localIP());
114 }
115
116 void initManagedDevice(){
117   if(client.subscribe(subscribeTopic)){
118     Serial.println(subscribeTopic);
119     Serial.println("subscribe to cmd ok");
120   }else{
121     Serial.println("subscribe to cmd failed");
122   }
123 }
124
125 void callback(char* subscribeTopic, byte* payload, unsigned int payloadLength){
126   Serial.println("callback invoked for topic:");
127   Serial.println(subscribeTopic);
128   for(int i=0; i<payloadLength; i++){
129     data3 += (char)payload[i];
130   }
131   Serial.println("data: " + data3);
132   if(data3=="lighton"){
133     Serial.println(data3);
134     digitalWrite(14,HIGH);
135   }else{
136     Serial.println(data3);
137     digitalWrite(14,LOW);
138   }
139   data3="";
140 }

```

Simulation

publish ok
Temperature: 60.47 °C
Sending payload:{"ALERT":60.47}
publish ok
Temperature: 9.82 °C
Sending payload:{"temp":9.82}
publish ok

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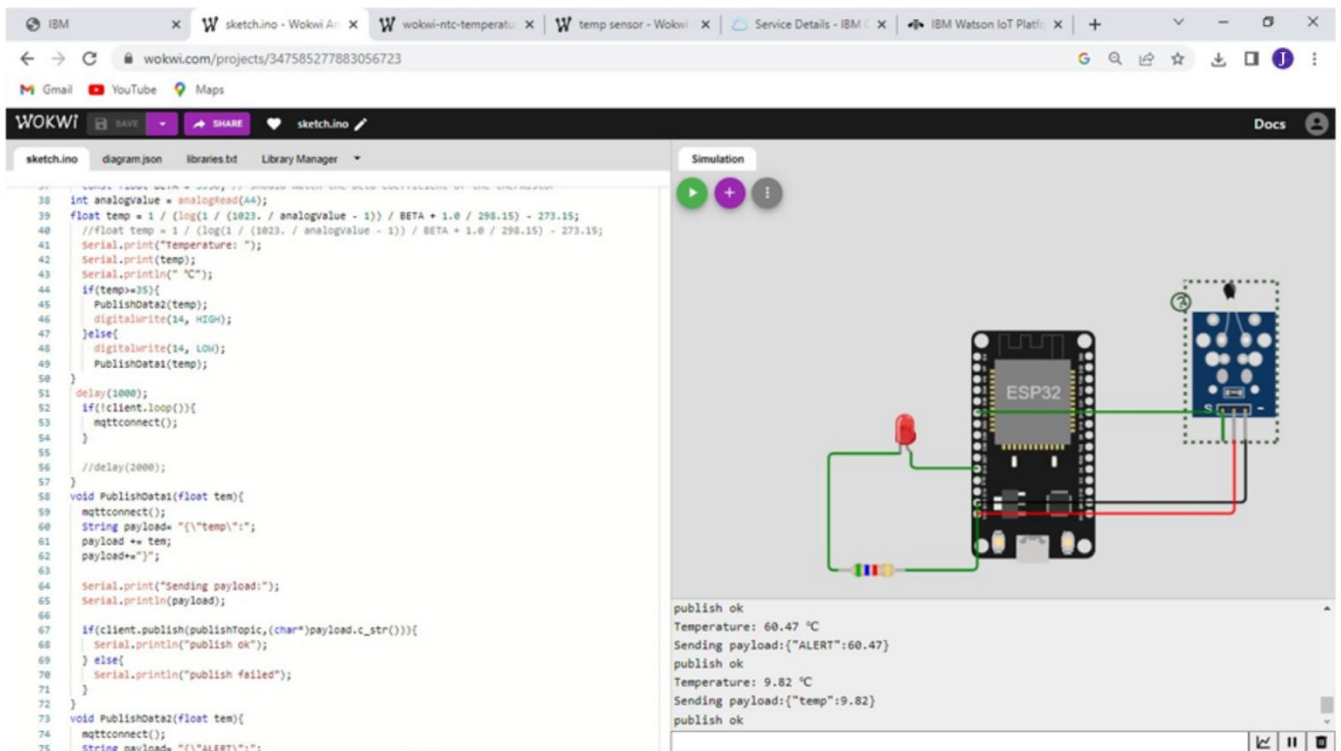
```

76 payload += tem;
77 payload+=" ";
78
79 Serial.println("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.println("Reconnecting to");
91     Serial.println(server);
92     while(!client.connect(clientID, authMethod, token)){
93       Serial.println(".");
94       delay(500);
95     }
96     initManagedDevice();
97     Serial.println();
98   }
99 }
100
101 void wificonnect(){
102   Serial.println();
103   Serial.println("Connecting to");
104
105   WiFi.begin("wokwi-GUEST","");
106   while(WiFi.status()!=WL_CONNECTED){
107     delay(500);
108     Serial.println(".");
109   }
110   Serial.println("");
111   Serial.println("WiFi CONNECTED");
112   Serial.println("IP address:");
113   Serial.println(WiFi.localIP());

```

Simulation

publish ok
Temperature: 60.47 °C
Sending payload:{"ALERT":60.47}
publish ok
Temperature: 9.82 °C
Sending payload:{"temp":9.82}
publish ok



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