

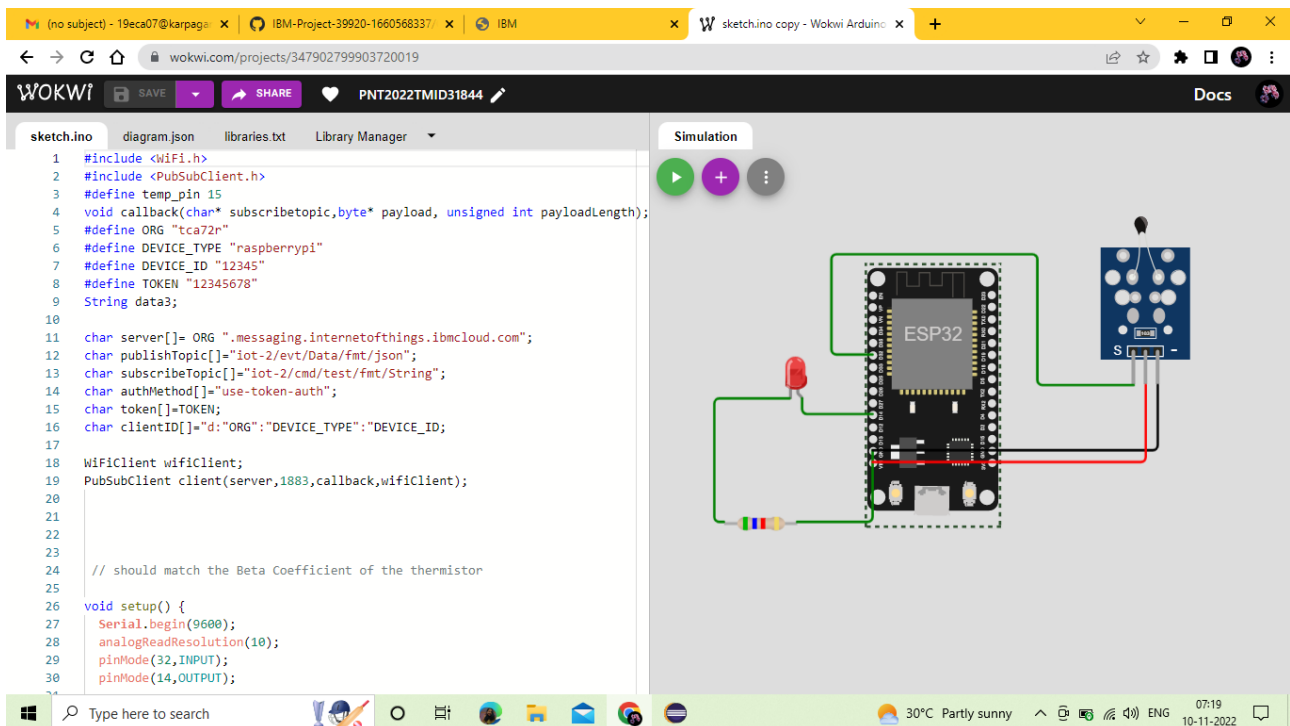
DATE  
TEAM ID  
PROJECT NAME

10-11-2022  
PNT2022TMID31844  
Intelligent Specific fire Management System

**WOKWI WEB URL:**

<https://wokwi.com/projects/347902799903720019>

**Snapshots of Simulation:**



WOKWI

sketch.ino diagram.json libraries.txt Library Manager

```

30 pinMode(14,OUTPUT);
31
32 wificonnect();
33 mqttconnect();
34
35 void loop() {
36   const float BETA = 3950; // should match the Beta Coefficient of the thermis
37   int analogValue = analogRead(A4);
38   float temp = 1 / (log(1 / (1023. / analogValue - 1)) / BETA + 1.0 / 298.15) -
39   //float temp = 1 / (log(1 / (1023. / analogValue - 1)) / BETA + 1.0 / 298.15)
40   Serial.print("Temperature: ");
41   Serial.print(temp);
42   Serial.println(" °C");
43   if(temp>=35){
44     PublishData2(temp);
45     digitalWrite(14, HIGH);
46   }else{
47     digitalWrite(14, LOW);
48     PublishData1(temp);
49   }
50 }
51 delay(1000);
52 if(!client.loop()){
53   mqttconnect();
54 }
55 //delay(2000);
56 }
57 void PublishData1(float tem){
58   mqttconnect();
59   Serial.println("Publishing Data 1");
60 }

```

Simulation

Restart the simulation

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

30°C Partly sunny 07:20 10-11-2022

WOKWI

sketch.ino diagram.json libraries.txt Library Manager

```

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 void PublishData1(float tem){
58   mqttconnect();
59   String payload= "{\"temp\":";
60   payload += tem;
61   payload+="}";
62
63   Serial.print("Sending payload:");
64   Serial.println(payload);
65
66   if(client.publish(publishTopic,(char*)payload.c_str())){
67     Serial.println("publish ok");
68   } else{
69     Serial.println("publish failed");
70   }
71 }
72 }

```

Simulation

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

30°C Partly sunny 07:20 10-11-2022

WOKWI! SAVE SHARE PNT2022TMID31844 Docs

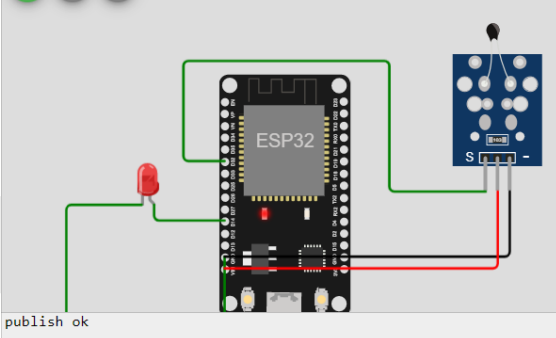
sketch.ino diagram.json libraries.txt Library Manager

```

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
89 void mqttconnect(){
90   if(!client.connected()){
91     Serial.print("Reconnecting to");
92     Serial.println(server);
93     while(!client.connect(clientID, authMethod, token)){
94       Serial.print(".");
95       delay(500);
96     }
97     initManagedDevice();
98     Serial.println();
99   }
100 }
101
102 void wificonnect(){
103   Serial.println();
104   Serial.print("Connecting to");
105   WiFi.begin("Wokwi-GUEST","",6);

```

Simulation 00:32.897 99%



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

Type here to search 30°C Partly sunny 07:20 10-11-2022

WOKWI! SAVE SHARE PNT2022TMID31844 Docs

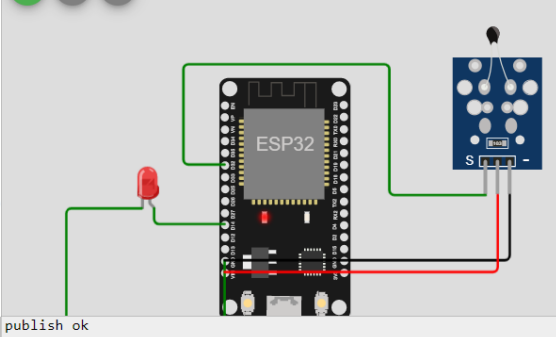
sketch.ino diagram.json libraries.txt Library Manager

```

112 Serial.println("IP address:");
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.print("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 00:38.915 102%



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

Type here to search 30°C Partly sunny 07:20 10-11-2022

Data in IBM CLOUD:

Browse

Action

Device Types

Interfaces

Add Device

12345

Connected

raspberrypi

Device

Oct 28, 2022 9:33 PM

Identity

Device Information

Recent Events

State

Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	["temp":-21.37]	json	a few seconds ago
Data	["temp":-21.37]	json	a few seconds ago
Data	["temp":14.4]	json	a few seconds ago
Data	["ALERT":63.94]	json	a few seconds ago
Data	["ALERT":37.43]	json	a few seconds ago

0 Simulations running