

## PROJECT DEVELOPMENT PHASE

### DELIVERY OF SPRINT-1

Date	7 November 2022
Team ID	PNT2022TMID17224
Project Name	Industry Specific Intelligence Fire Management System

```
#include <WiFi.h>
#include <PubSubClient.h> #define temp_pin 15 void callback(char*
subscribetopic,byte* payload, unsigned int payloadLength);
#define ORG "jesccj"
#define DEVICE_TYPE "ESP32_Controller"
#define DEVICE_ID "PURNI"
#define TOKEN "*Vzh&EwwgbRpqohJd+"
String data3;
char server[] = ORG
".messaging.internetofthings.ibmcloud.com"; char
publishTopic[]="iot-2/evt/Data/fmt/json"; char
subscribeTopic[]="iot-2/cmd/test/fmt/String"; char
authMethod[]="use-token-auth"; char token[]=TOKEN; char
clientID[]="d:"ORG":DEVICE_TYPE":DEVICE_ID;
```

```
WiFiClient wifiClient;
PubSubClient client(server,1883,callback,wifiClient);
```

```
// should match the Beta Coefficient of the thermistor
```

```
void setup() {
Serial.begin(9600);
analogReadResolution(10);
pinMode(32,INPUT);
pinMode(14,OUTPUT);

wificonnect();
mqttconnect();
} void loop() { const float BETA = 3950; // should match the Beta Coefficient of
the thermistor int analogValue = analogRead(A4); float temp = 1 / (log(1 / (1023. /
analogValue - 1)) / BETA + 1.0 / 298.15) - 273.15; //float temp = 1 / (log(1 /
(1023. / analogValue - 1)) / BETA + 1.0 / 298.15) - 273.15;
Serial.print("Temperature: ");
```

```

    Serial.print(temp);
    Serial.println(" °C");
    if(temp>=35){
    PublishData2(temp);
    digitalWrite(14, HIGH);
    }else{
        digitalWrite(14, LOW);
        PublishData1(temp);
    } delay(1000);
    if(!client.loop()){
    mqttconnect();
    }

    //delay(2000);
} void PublishData1(float
tem){  mqttconnect();
    String payload= "{\"temp\":";
    payload += tem;    payload+="}";

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

    if(client.publish(publishTopic,(char*)payload.c_str())){
        Serial.println("publish ok");
    } else{
        Serial.println("publish failed");
    } }
void PublishData2(float tem){
mqttconnect();
    String payload= "{\"ALERT\":";
    payload += tem;    payload+="}";

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

    if(client.publish(publishTopic,(char*)payload.c_str())){
        Serial.println("publish ok");
    } else{
        Serial.println("publish failed");
    }
}
void mqttconnect(){
if(!client.connected()){
    Serial.print("Reconnecting to");
    Serial.println(server);
    while(!!!client.connect(clientID, authMethod, token)){
    Serial.print(".");    delay(500);
    }
    initManagedDevice();
}

```

```

        Serial.println();
    }
}
void wificonnect(){
Serial.println();
    Serial.print("Connecting to");

    WiFi.begin("Wokwi-GUEST","",6);
while(WiFi.status()!=WL_CONNECTED){
delay(500);
    Serial.print(".");
}
    Serial.println("");
    Serial.println("WIFI CONNECTED");
    Serial.println("IP address:");
    Serial.println(WiFi.localIP());
} void
initManagedDevice(){
    if(client.subscribe(subscribeTopic)){
Serial.println((subscribeTopic));
        Serial.println("subscribe to cmd ok");
    }else{
        Serial.println("subscribe to cmd failed");
    }
}
void callback(char* subscribeTopic, byte* payload, unsigned int payloadLength){
    Serial.print("callback invoked for topic:");
Serial.println(subscribeTopic);    for(int i=0;
i<payloadLength; i++){        data3 +=
(char)payload[i];
    }
    Serial.println("data:"+ data3);
if(data3=="lighton"){
Serial.println(data3);
digitalWrite(14,HIGH);
    }else{
        Serial.println(data3);
digitalWrite(14,LOW);
    }
data3="";
}

```

DIAGRAM:



```
Temperature: -11.10 °C  
Sending payload:{"temp":-11.10}  
publish ok  
Temperature: 12.48 °C  
Sending payload:{"temp":12.48}  
publish ok  
Temperature: 46.45 °C  
Sending payload:{"ALERT":46.45}  
publish ok  
Temperature: 46.45 °C  
Sending payload:{"ALERT":46.45}  
publish ok  
Temperature: 46.45 °C  
Sending payload:{"ALERT":46.45}  
publish ok  
Temperature: 46.45 °C  
Sending payload:{"ALERT":46.45}  
publish ok  
Temperature: 46.45 °C  
Sending payload:{"ALERT":46.45}  
publish ok
```

IBM Watson IoT Platform

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Browse

Action

Device Types

Interfaces

Add Device

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PURNI

Disconnected

ESP32\_Controller

Device

Nov 9, 2022 11:31 AM

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Identity

Device Information

Recent Events

State

Logs

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

Event	Value	Format	Last Received
Data	{"ALERT":46.45}	json	a few seconds ago
Data	{"ALERT":46.45}	json	a few seconds ago
Data	{"ALERT":46.45}	json	a few seconds ago
Data	{"ALERT":46.45}	json	a few seconds ago
Data	{"ALERT":46.45}	json	a few seconds ago