PROJECT DEVELOPMENT PHASE

DELIVERY OF SPRINT-1

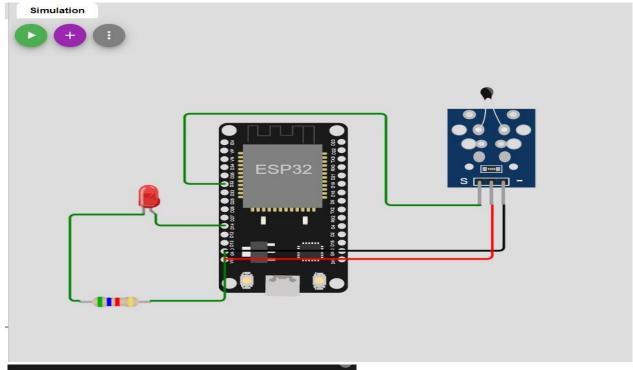
Date	7 November 2022
Team ID	PNT2022TMID17224
Project Name	Industry Specific Intelligence Fire Management System

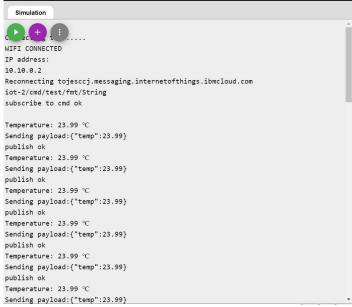
```
#include <WiFi.h>
#include <PubSubClient.h> #define temp pin 15 void callback(char*
subscribetopic,byte* payload, unsigned int payloadLength);
#define ORG "jesccj"
#define DEVICE_TYPE "ESP32_Controller"
#define DEVICE ID "PURNI"
#define TOKEN "*Vzh&EwwgbRpqohJd+"
String data3;
char server[]= ORG
".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. / 1000)))
analogValue - 1)) / BETA + 1.0 / 298.15) - 273.15; //float temp = 1 / (\log(1 / 2))
(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+="}";
payload += tem;
 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++){</pre>
                           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:





Wowki link:

https://wokwi.com/projects/347829028983407186

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

