

**Project Development**  
**Phase Delivery of**  
**Sprint-2**

Date	04 November 2022
TeamID	PNT2022TMID30309
ProjectName	INDUSTRY SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM
MaximumMarks	4 Marks

**Code:**

```
#include<WiFi.h>//libraryforwifi
#include<PubSubClient.h>//libraryforMQtt#in
clude"DHT.h"//Libraryfordht11
#defineDHTPIN15    // what pin we're connected
to#define DHTTYPE DHT22// define type of sensor DHT
22#defineLED 5
DHTdht(DHTPIN,DHTTYPE);//creatingtheinstancebypassingpinandtyprofdhtconnected

voidcallback(char*subscribetopic,byte*payload,unsignedintpayloadLength);

//-----credentialsofIBMAccounts-----

#defineORG"x6rbso"//IBMORGANITIONID
#defineDEVICE_TYPE"project"//DevicetypementionedinibmwatsonIOTPlatform#def
ine DEVICE_ID "projectid"//Device ID mentioned in ibm watson IOT
Platform#defineTOKEN"Q&hrS52r0@Qs5)xh@+"    //Token
Stringdata3;float
h,t;
```

```
//-----Customisetheabovevalues-----
```

```
charserver[]="ORG".messaging.internetofthings.ibmcloud.com";//ServerName
```

```
charpublishTopic[]="iot-
```

```
2/evt/Data/fmt/json";//topicnameandtypeofeventperformandformatinwhichdatatobesend
```

```
charsubscribetopic[]="iot-
```

```
2/cmd/test/fmt/String";//cmdREPRESENTcommandtypeANDCOMMAND ITEST  
OFFORMATSTRING
```

```
charauthMethod[]="use-token-
```

```
auth";//authenticationmethodchartoken[]=TOKEN;
```

```
charclientId[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID";//clientid
```

```
// .....
```

```
WiFiClientwifiClient;//creatingtheinstanceforwificlient
```

```
PubSubClientclient(server,1883,callback,wifiClient);//callingthepredefinedclientidbypassingpara  
meterlikeserverid,portandwificredential
```

```
voidsetup()//configureingtheESP32
```

```
{
```

```
  Serial.begin(115200);dht.
```

```
  begin();pinMode(LED,OU
```

```
  TPUT);delay(10);Serial.pr
```

```
  intln();wificonnect();mqt
```

```
  tconnect();
```

```
}
```

```
voidloop()//RecursiveFunction
```

```
{
```

```
  //h=dht.readHumidity();
```

```
  t =
```

```

dht.readTemperature();Serial.print
("Temperature:");Serial.println(t);
//Serial.print("Humidity:");
//Serial.println(h);
PublishData(t);delay(1000);
if(!client.loop()){
    mqttconnect();
}
}

```

```

/*.....retrievingtoCloud.....*/

```

```

void PublishData(float temp)
{mqttconnect();//functioncallforconnectingtoibm
/*
    creatingtheStringinformJSontoupdatethedatatobmcloud
*/
Stringpayload="{\"Temperature\":";payload+
=temp;
payload+="}";

```

```

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

```

```

if(client.publish(publishTopic,(char*)payload.c_str())){
    Serial.println("Publishok");//ifitsuccessfullyuploaddataonthecloudthenitwillprintpublishok
}

```

```

inSerialmonitororelseitwillprintpublishfailed
    }else{
        Serial.println("Publishfailed");
    }
}

voidmqttconnect(){
    if (!client.connected())
        {Serial.print("Reconnectingclientto");Serial.
        println(server);
        while(!client.connect(clientId,authMethod,token)){Serial.
        print(".");
        delay(1000);
        }

        initManagedDevice();Se
        rial.println();
    }
}

voidwificonnect();//functiondefinationforwificonnect
{
    Serial.println();Serial.print("Conne
    ctingto");

    WiFi.begin("Wokwi-GUEST","",6);//passingthewificredentialstoestablishtheconnection
    while(WiFi.status()!==WL_CONNECTED){del
        ay(1000);
        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("subscri
```

```
        betocmdOK");
```

```
    }else{
```

```
        Serial.println("subscribetocmdFAILED");
```

```
    }
```

```
}
```

```
void callback(char*subscribetopic,byte*payload,unsigned intpayloadLength)
```

```
{
```

```
    Serial.print("callbackinvokedfortopic:");Serial.println(sub
```

```
    scribetopic);
```

```
    for(int i=0;i<payloadLength;i++){
```

```
        //Serial.print((char)payload[i]);dat
```

```
        a3+=(char)payload[i];
```

```
    }
```

```
    Serial.println("data:"+data3);if(data3=="Alar
```

```
    mon")
```

```
    {
```

```
        Serial.println(data3);digitalWrite(LED,HIGH);
```

```
    }
```

```
else
```

```

{
Serial.println(data3);di
gitalWrite(LED,LOW);
}

data3="";

}

```

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area shows a list of devices. The first device, 'projectid', is highlighted and its details are expanded. The details view includes a 'Recent Events' tab, which shows a stream of data events. The events table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events listed are 'Data' with a value of '{"Temperature":63.3}' in 'json' format, received 'a few seconds ago'.

Event	Value	Format	Last Received
Data	{"Temperature":63.3}	json	a few seconds ago
Data	{"Temperature":63.3}	json	a few seconds ago

Testcase:

