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
```

Platform#defineTOKEN"Q&hrS52r0@Qs5)xh@+" //Token

ine DEVICE_ID "projectid"//Device ID mentioned in ibm watson IOT

Stringdata3;float

h,t;

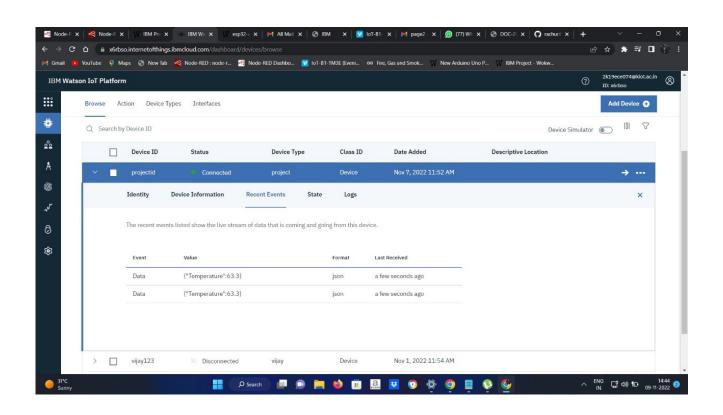
```
//-----Customisetheabovevalues-----
  charserver[]=ORG".messaging.internetofthings.ibmcloud.com";//ServerName
charpublishTopic[]="iot-
2/evt/Data/fmt/json";//topicnameandtypeofeventperformandformatinwhichdatatobesend
  charsubscribetopic∏="iot-
  2/cmd/test/fmt/String";//cmdREPRESENTcommandtypeANDCOMMAND ISTEST
  OFFORMATSTRING
  charauthMethod[]="use-token-
  auth";//authenticationmethodchartoken[]=TOKEN;
  charclientId[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID;//clientid
  WiFiClientwifiClient;//creatingtheinstanceforwificlient
  PubSubClientclient(server,1883,callback,wifiClient);//callingthepredefinedclientidbypassingpara
  meterlikeserverid, portandwific redential
  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);dela
y(1000);
   if(!client.loop()){
    mqttconnect();
   }
  }
  /*....retrievingtoCloud____
  void PublishData(float temp)
   {mqttconnect();//functioncallforconnectingtoibm
   /*
     creating the String in inform JS on toup date the data to ibm cloud\\
   */
   Stringpayload="{\"Temperature\":";payload+
   =temp;
   payload+="}";
   Serial.print("Sendingpayload:");Serial.println(payload);
   if(client.publish(publishTopic,(char*)payload.c_str())){
    Serial.println("Publishok");//ifitsucessfullyuploaddataonthecloudthenitwillprintpublishok
```

```
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("Connec
   tingto");
   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());
  }
voidinitManagedDevice(){
   if (client.subscribe(subscribetopic))
    {Serial.println((subscribetopic));Serial.println("subscri
    betocmdOK");
   }else{
    Serial.println("subscribetocmdFAILED");
   }
  }
  voidcallback(char*subscribetopic,byte*payload,unsignedintpayloadLength)
  {
   Serial.print("callbackinvokedfortopic:");Serial.println(sub
   scribetopic);
   for(inti=0;i<payloadLength;i++){</pre>
    //Serial.print((char)payload[i]);dat
    a3+=(char)payload[i];
   }
   Serial.println("data:"+data3);if(data3=="Alar
   mon")
   {
   Serial.println(data3);digitalWrite(LED,HIGH);
   }
```

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



Testcase:

