ProjectDevelopment

PhaseDeliveryof

Sprint-2

Date	04November2022
TeamID	PNT2022TMID53793
ProjectName	INDUSTRYSPECIFICINTELLIGENTFIRE MANAGEMENTSYSTEM
MaximumMarks	4Marks

Code:

```
#include<WiFi.h>//libraryforwifi

#include<PubSubClient.h>//libraryforMQtt#in clude"DHT.h"//Libraryfordht11

#defineDHTPIN15 //whatpinwe'reconnected to#defineDHTTYPEDHT22//definetypeofsensorDHT

22#defineLED5

DHTdht(DHTPIN,DHTTYPE);//creatingtheinstancebypassingpinandtyprofdhtconnected


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


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


#defineORG"x6rbso"//IBMORGANITIONID

#defineDEVICE_TYPE"project"//DevicetypementionedinibmwatsonIOTPlatform#def

ineDEVICE_ID"projectid"//DeviceIDmentionedinibmwatsonIOT

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

Stringdata3;float h,t; //-

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Customisetheabovevalu

es-------

charserver[]=ORG".mes

saging.internetofthings.

ibmcloud.com";//Server

Name
```
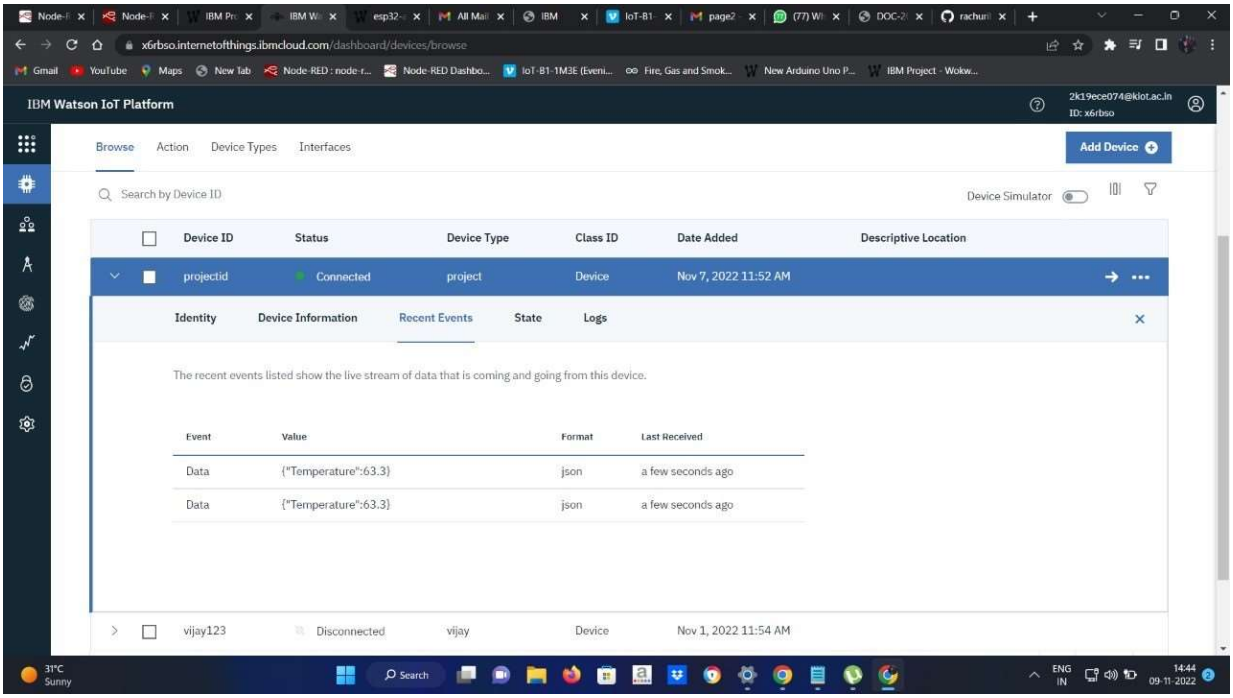

```
charpublishTopic[]="iot-
2/evt/Data/fmt/json";//topicnameandtypeofeventperformandformatinwhichdatatobesend
   charsubscribetopic[]="iot-
   2/cmd/test/fmt/String";//cmdREPRESENTcommandtypeANDCOMMANDISTEST
   OFFORMATSTRING
   charauthMethod[]="use-tokenauth";//authenticationmethodchartoken[]=TOKEN;
   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);dela y(1000);
```

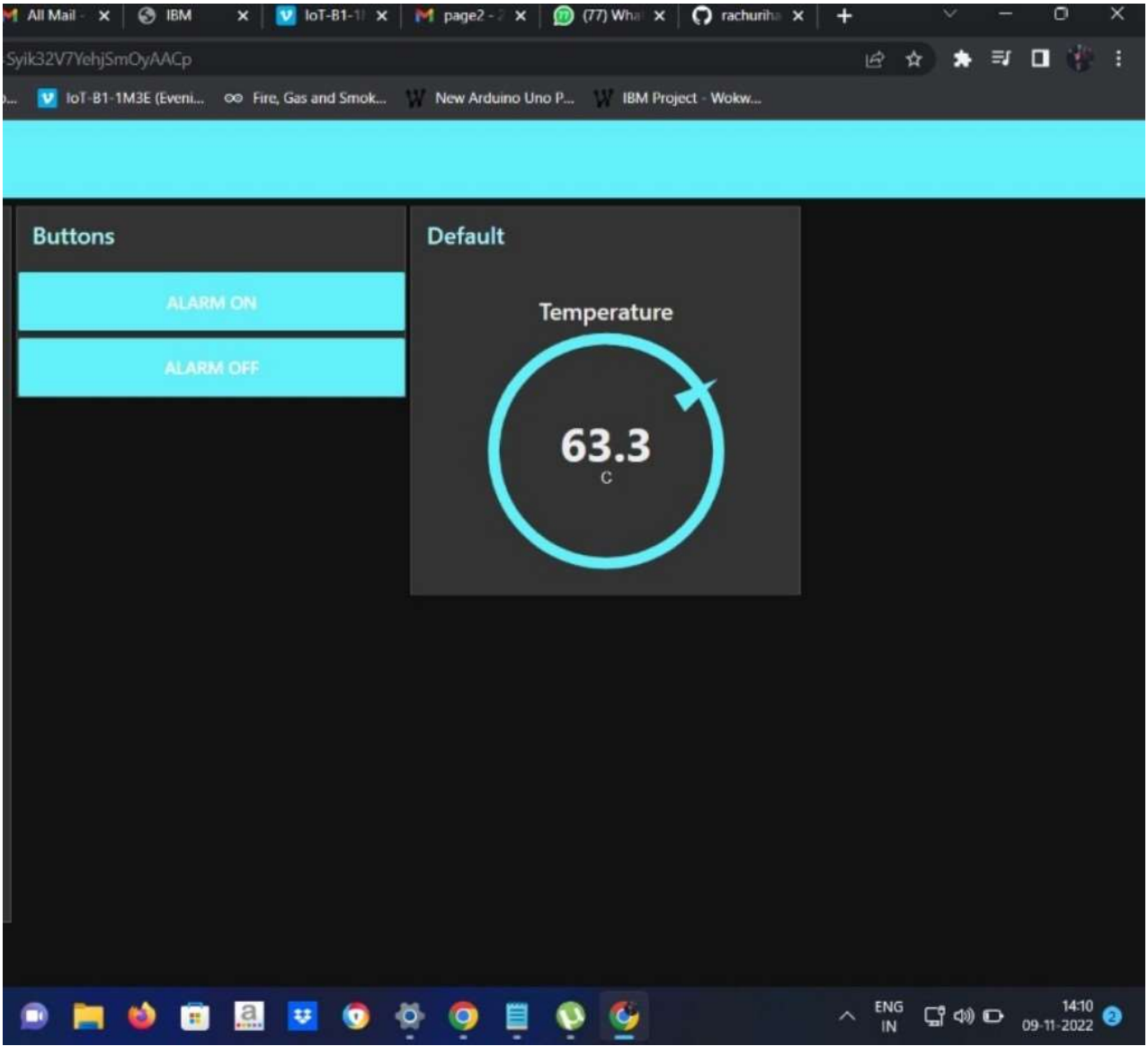
```
    if(!client.loop()){ mqttconnect();
    }
  }



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

  voidPublishData(floattemp)
    {mqttconnect();//functioncallforconnectingtoibm
    /*
      creatingtheStringininformJSontoupdatethedatatoibmcloud
    */
    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++){
    //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="";

   }
```


IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Add Device
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
projectid
Connected
project
Device
Nov 7, 2022 11:52 AM
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
{"Temperature":63.3}
json
a few seconds ago
Data
{"Temperature":63.3}
json
a few seconds ago
vijay123
Disconnected
vijay
Device
Nov 1, 2022 11:54 AM

Testcase:


Buttons
ALARM ON
ALARM OFF
Default
Temperature
63.3
C