Sethu Institute Of technology

SPRINT-1

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DEPT : CSE

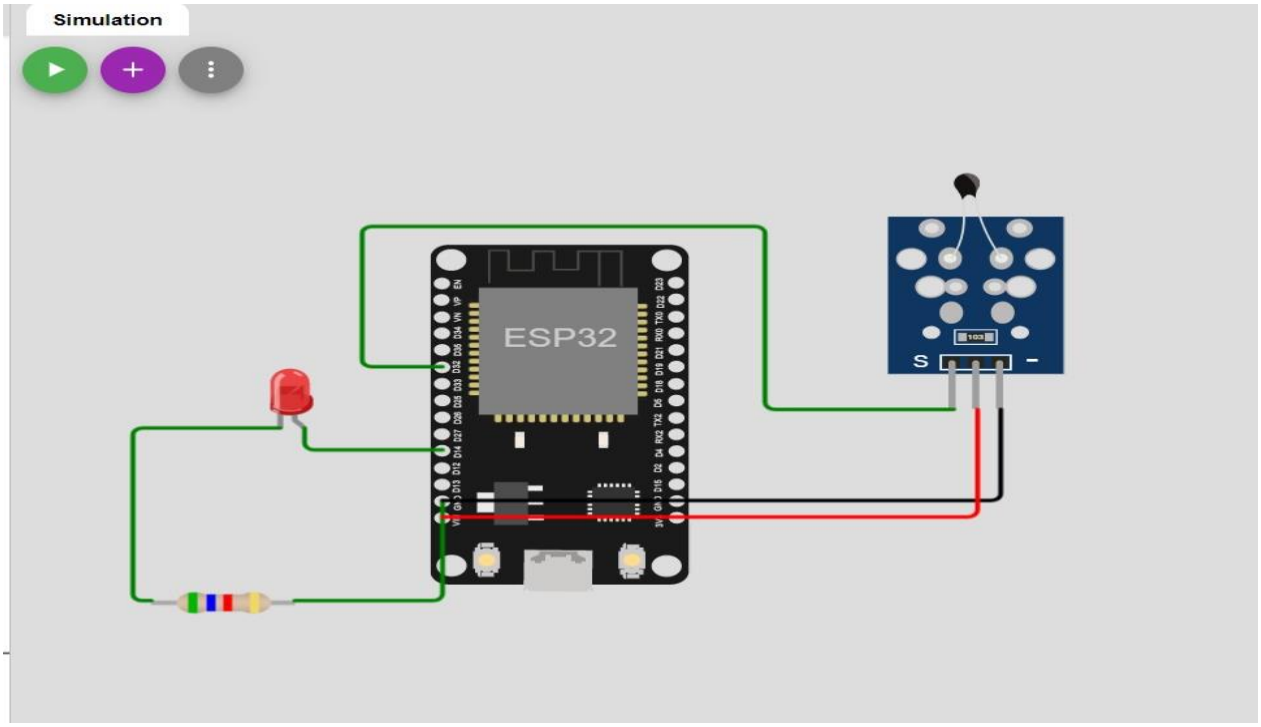
ROLL NO:19CS058

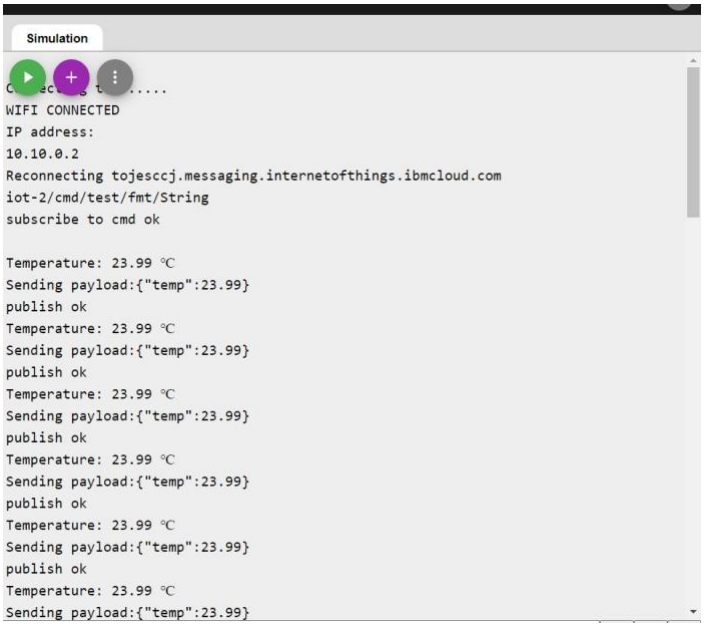
```
#include <WiFi.h>
#include <PubSubClient.h> #define temp_pin 15 void callback(char*
subscribetopic,byte* payload, unsigned int payloadLength);
#define ORG "jesccj"
#define DEVICE_TYPE "ESP32_Controller"
#define DEVICE_ID "PURNI"
#define TOKEN "*Vzh&EwwgbRpqohJd+"
String data3;
 char server[]= ORG
".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(" ℃");
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:





Wowki link:

https://wokwi.com/projects/347829028983407186

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