ASSIGNMENT-4

Student name	SARAVANASUDHAN.S
Assignment date	25October2022
Student Roll number	621319106082
Maximum marks	**2 marks**

ASSIGNMENT 4:

Writecodeandconnectionsinwokwiforultrasonicsensors.

Wheneverdistanceislessthan100cmssend"alert"toibmcloudanddisplayindevicerecentevents.

Uploaddocumentwithwokwisharelinkandimagesofibmcloud

CODE:

```
#include<WiFi.h>#include
<PubSubClient.h>WiFiClien
twifiClient;

#defineORG "o1z9pr"
#define DEVICE_TYPE
"raspberrypi"#define DEVICE_ID
"USE YOUR ID"#defineTOKEN"USE
YOURTOKEN"
#definespeed0.034

char server[] =
ORG".messaging.internetofthings.ibmcloud.com";charpubli
shTopic[] = "iot-
2/evt/raspberrypi_1/fmt/json";chartopic[]="iot-
2/cmd/home/fmt/String";
char authMethod[] = "use-token-
auth";chartoken[] = TOKEN;
```

```
charclientId[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID;
PubSubClient client(server, 1883,
wifiClient);voidpublishData();

const int
trigpin=5;constintechop
in=18;
Stringcommand;
Stringdata="";

long
duration;float
dist;


voidsetup()
{
  Serial.begin(115200);pinMode(tr
  igpin, OUTPUT);pinMode(echopin,
  INPUT);wifiConnect();
  mqttConnect();
}

voidloop() {

  publishData();
  delay(500);

  if (!client.loop())
    {mqttConnect();
  }
}

voidwifiConnect(){
  Serial.print("Connecting to ");
  Serial.print("Wifi");WiFi.begin("Wokwi-GUEST","", 6);
  while (WiFi.status() != WL_CONNECTED)
    {delay(500);
    Serial.print(".");
  }
  Serial.print("WiFi connected, IP address:
");Serial.println(WiFi.localIP());}
```

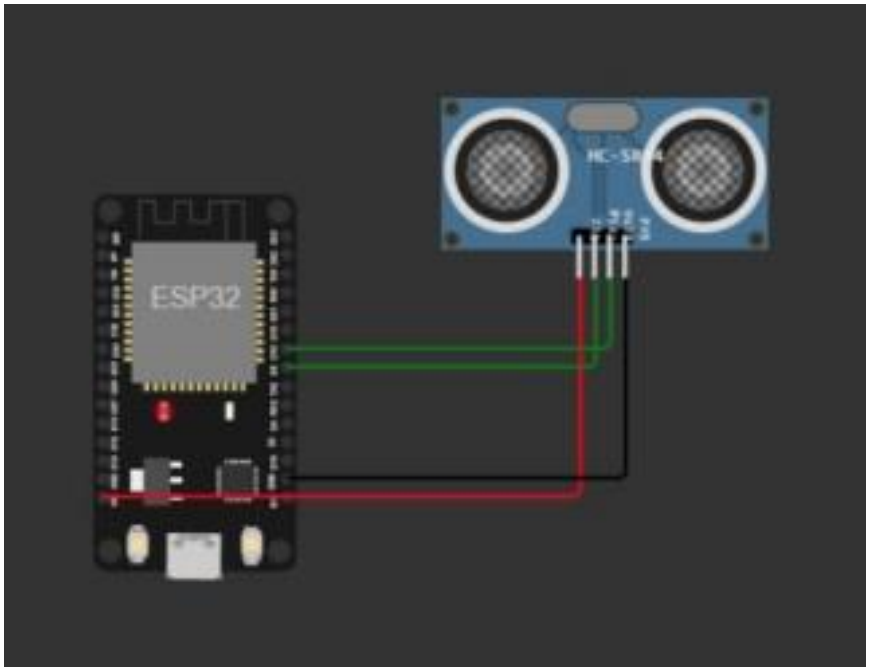
```
voidmqttConnect(){
    if (!client.connected())
      {Serial.print("Reconnecting MQTT client to
      ");Serial.println(server);
      while(!client.connect(clientId,authMethod,token)){
        Serial.print(".");
        delay(500);
      }
      initManagedDevice();
      Serial.println();
    }
  }

  voidinitManagedDevice(){
    if(client.subscribe(topic)){
      //Serial.println(client.subscribe(topic));
      Serial.println("subscribetocmdOK");
    }
    else {
      Serial.println("subscribetocmdFAILED");
    }
  }
  voidpublishData()
  {
    digitalWrite(trigpin,LOW);
    digitalWrite(trigpin,HIGH);dela
    yMicroseconds(10);digitalWrite(
    trigpin,LOW);
    duration=pulseIn(echopin,HIGH);dis
    t=duration*speed/2;if(dist<100){
      Stringpayload="{\"Alertdistance\":";
      payload +=
      dist;payload+=
      "}";

      Serial.print("\n");Serial.print("Sen
      ding payload:
      ");Serial.println(payload);
      if(client.publish(publishTopic,(char*)payload.c_str()))
        {Serial.println("PublishOK");
      } else {
        Serial.println("PublishFAILED");
      }
    }
```

}

CONNECTIONS:



OUTPUT :