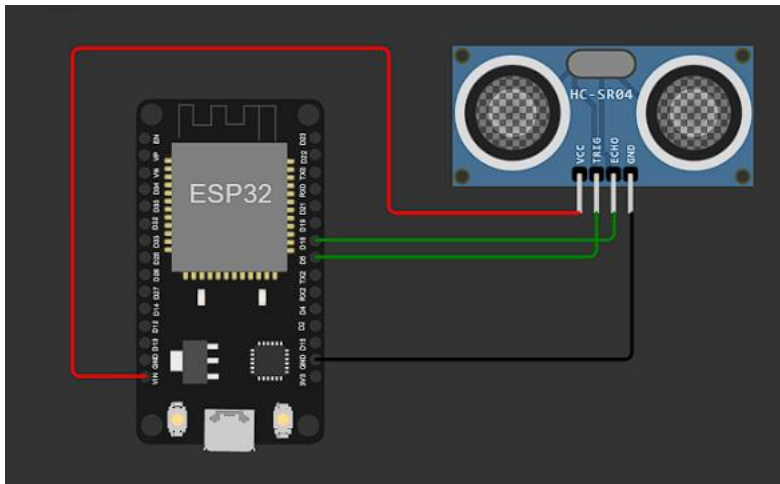


Naan Mudhalvan Assignment – 3

Wokwi link: <https://wokwi.com/projects/364984964803134465>

Wokwi connections image:



Source code:

```
#include <WiFi.h>

#include <PubSubClient.h>

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

//-----credentials of IBM Accounts- - -

#define ORG "yzoyjz"//IBM ORGANITION ID

#define DEVICE_TYPE "test"//Device type mentioned in ibm watson IOTPlatform

#define DEVICE_ID "1234"//Device ID mentioned in ibm watson IOTPlatform

#define TOKEN "123456789" //Token

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);
const int trigPin = 5;
const int echoPin = 18;
#define SOUND_SPEED 0.034
long duration;
float distance;
void setup() {
  Serial.begin(115200);
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  wificonnect();
  mqttconnect();
}
void loop() {
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  distance = duration * SOUND_SPEED/2;
  Serial.print("Distance (cm): ");
  Serial.println(distance);
  if(distance<100){
    Serial.println("ALERT!!");
  }
}
```

```

    delay(1000);
    PublishData(distance);
    delay(1000);
    if (!client.loop()) {
        mqttconnect();
    }
}

delay(1000);
}

void PublishData(float dist) {
    mqttconnect();

    String payload = "{\"Distance\":\"";

    payload += dist;

    payload += "\",\"PUBLISHING\":\"\"\"Distance less than 100cms\"\"\"";

    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 client 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++){
    //
    Serial.print((char)payload[i]);

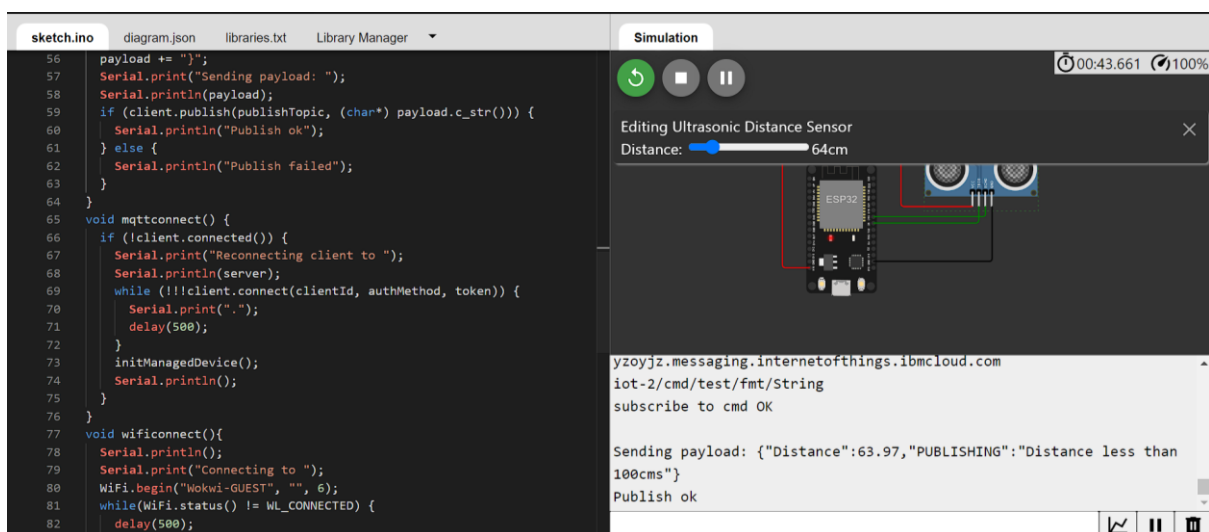
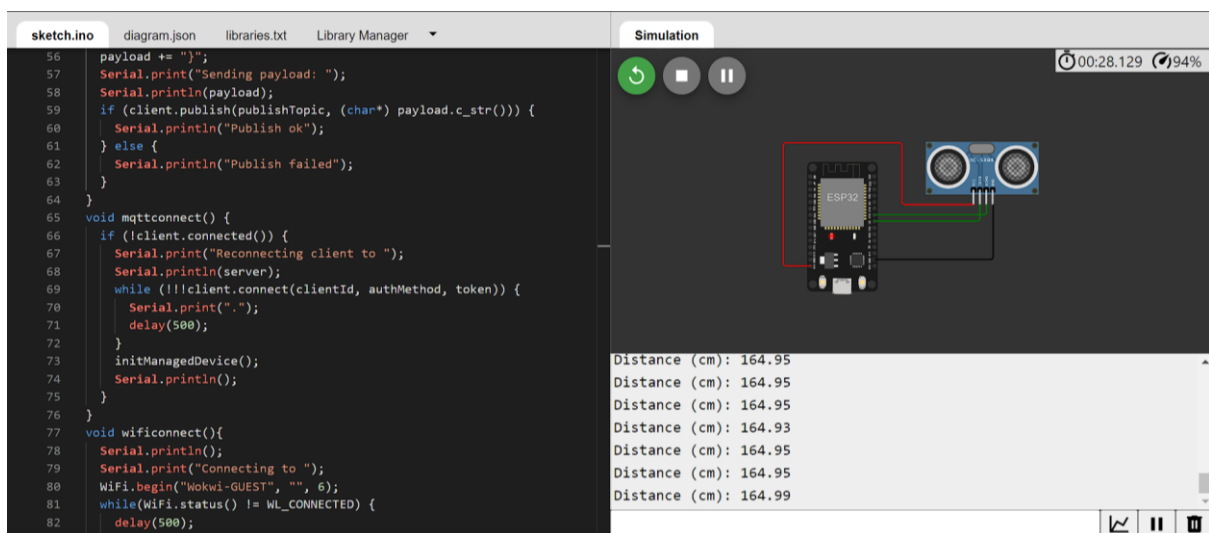
    data3 += (char)payload[i];
}

Serial.println("data: "+ data3);

data3="";
}

```

Screenshots:



Browse Action Device Types Interfaces
Add Device +

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
event_1	{"randomNumber":7}	json	a few seconds ago
Data	{"Distance":63.97,"PUBLISHING":"Distance less ...	json	a few seconds ago
event_1	{"randomNumber":68}	json	a few seconds ago
event_1	{"randomNumber":3}	json	a few seconds ago
event_1	{"randomNumber":24}	json	a few seconds ago

1 Simulation running