

ASSIGNMENT-4

WOKWI PROGRAM

ASSIGNMENT DATE	26 OCT
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STUDENT ROOL NUMBER	732319106023
MAXIMUM MARK	2 MARK

CODE

```
#include <WiFi.h>
#include <PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "tvzyv8"
#define DEVICE_TYPE "YUVARAJ"
#define DEVICE_ID "1434"
#define TOKEN "1234567890"
#define speed 0.034
#define led 14
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/SAKTHIVEL/fmt/json";
char topic[] = "iot-2/cmd/home/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient);
void publishData();

const int trigpin = 5;
const int echopin = 18;
String command;
String data = "";

long duration;
float dist;
```

```

void setup()
{
    Serial.begin(115200);
    pinMode(led, OUTPUT);
    pinMode(trigpin, OUTPUT);
    pinMode(echopin, INPUT);
    wifiConnect();
    mqttConnect();
}

void loop() {
    bool isNearby = dist < 100;
    digitalWrite(led, isNearby);

    publishData();
    delay(500);

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

void wifiConnect() {
    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());
}

void mqttConnect() {
    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();
    }
}

void initManagedDevice() {

```

```

    if (client.subscribe(topic)) {
        // Serial.println(client.subscribe(topic));
        Serial.println("IBM subscribe to cmd OK");
    } else {
        Serial.println("subscribe to cmd FAILED");
    }
}

void publishData()
{
    digitalWrite(trigpin, LOW);
    digitalWrite(trigpin, HIGH);
    delayMicroseconds(10);
    digitalWrite(trigpin, LOW);
    duration = pulseIn(echopin, HIGH);
    dist = duration * speed / 2;
    if (dist < 100) {
        String payload = "{\"Normal Distance\":";
        payload += dist;
        payload += "}";

        Serial.print("\n");
        Serial.print("Sending payload: ");
        Serial.println(payload);
        if (client.publish(publishTopic, (char*) payload.c_str())) {
            Serial.println("Publish OK");
        }

    }
    if (dist > 101 ) {
        String payload = "{\"Alert distance\":";
        payload += dist;
        payload += "}";

        Serial.print("\n");
        Serial.print("Sending payload: ");
        Serial.println(payload);
        if (client.publish(publishTopic, (char*) payload.c_str())) {
            Serial.println("Warning crosses 110cm -- it automatically of the loop");
            digitalWrite(led, HIGH);
        } else {
            Serial.println("Publish FAILED");
        }
    }

}

}

void callback(char* subscribeTopic, byte* payload, unsigned int payloadLength)
{

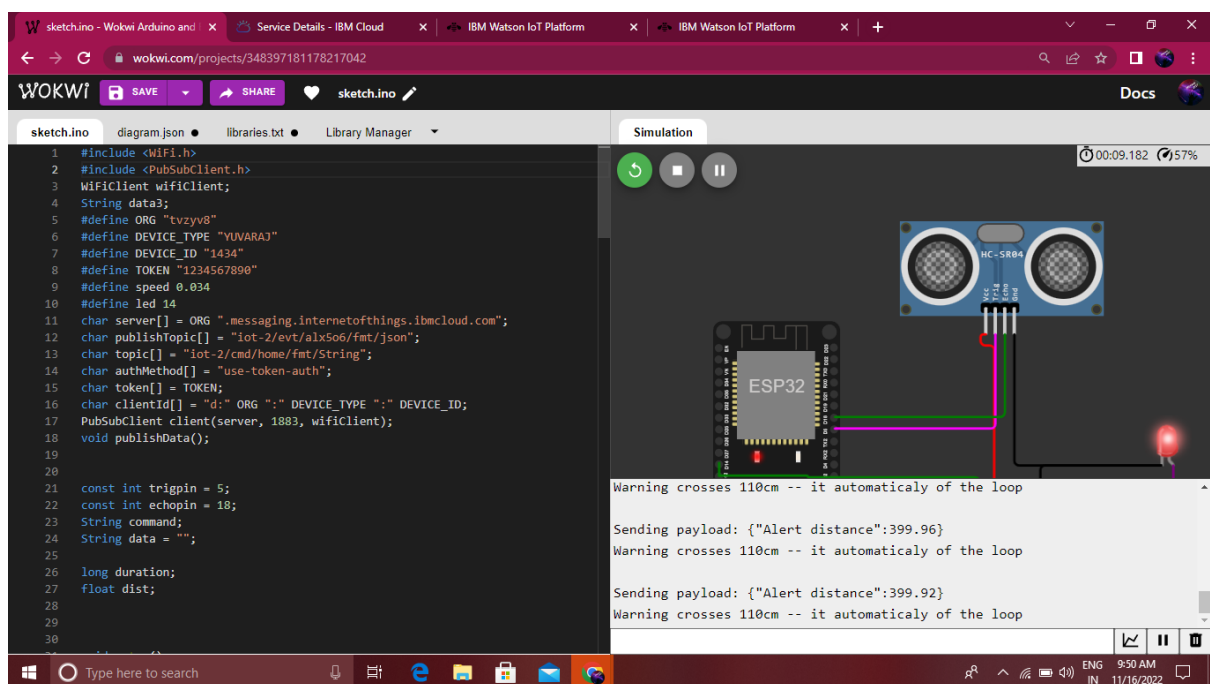
```

```

Serial.print("callback invoked for topic:");
Serial.println(subscribeTopic);
for (int i = 0; i < payloadLength; i++) {
    dist += (char)payload[i];
}
Serial.println("data:" + data3);
if (data3 == "lighton") {
    Serial.println(data3);
    digitalWrite(led, HIGH);
}
data3 = "";
}

```

OUTPUT



W sketchino - Wokwi Arduino and X Service Details - IBM Cloud X IBM Watson IoT Platform X IBM Watson IoT Platform X +

tvzyv8.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform 732319106023@smartinfernz.com ID: tvzyv8

Browse Action Device Types Interfaces Add Device +

1434 Connected YUVARAJ Device Nov 15, 2022 5:50 PM

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
alx5o6	{"Alert distance":399.96}	json	a few seconds ago
alx5o6	{"Alert distance":400.01}	json	a few seconds ago

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0 Simulations running

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1.LESS THAN 100

