

Assignment Date	22 October 2022
Student Name	Kiruthika J
Student Roll Number	211419106136
Maximum Marks	2 Marks

### Question:

1. Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 cms send "alert" to IBM cloud and display in device recent events.

### Solution:

#### WOKWI SHARE LINK:

<https://wokwi.com/projects/346236896734610003>

#### IMAGE OF IBM CLOUD:

The screenshot displays the IBM Watson IoT Platform interface. At the top, the header reads 'IBM Watson IoT Platform'. Below it, a navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area shows details for a device named 'Assignment 4', which is 'Disconnected'. The device is associated with the user 'Kiruthika123' and was last updated on '22 Oct 2022 21:41'. A table lists recent events, showing three entries for 'KIRUTHIKA.J' with values like '{"distance":121}', '{"ALERT":30}', and '{"ALERT":11}', all in 'json' format, received 'a few seconds ago'. The bottom of the image shows a Windows taskbar with various application icons.

## SIMULATION IMAGE

The image displays two screenshots of the Wokwi IoT simulator interface. The top screenshot shows a code editor with a snippet for a callback function and device definitions. The bottom screenshot shows a more complete code snippet for an IoT client, including server details, topics, and a setup function. The simulation results on the right of the bottom screenshot show the device publishing data and sending payloads.

**WOKWI** SAVE SHARE

sketch.ino diagram.json libraries.txt Library Manager

```
1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 void callback(char* subscribetopic,byte* payload, unsigned int payloadLength);
4 #define ORG "5nlok7"
5 #define DEVICE_TYPE "Kiruthika123"
6 #define DEVICE_ID "Assignment4"
```

**Simulation**

https://wokwi.com/projects/346236896734610003

WOKWI SAVE SHARE

sketch.ino diagram.json libraries.txt Library Manager

```
1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 void callback(char* subscribetopic,byte* payload, unsigned int payloadLength);
4 #define ORG "5nlok7"
5 #define DEVICE_TYPE "Kiruthika123"
6 #define DEVICE_ID "Assignment4"
7 #define TOKEN "WvZOTU1&hM3e!EI*z0"
8 String data3;
9
10 char server[]= ORG ".messaging.internetofthings.ibmcloud.com";
11 char publishTopic[]="iot-2/evt/KIRUTHIKA.J/fmt/json";
12 char subscribeTopic[]="iot-2/cmd/test/fmt/String";
13 char authMethod[]="use-token-auth";
14 char token[]=TOKEN;
15 char clientID[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID";
16
17 WiFiClient wifiClient;
18 PubSubClient client(server,1883,callback,wifiClient);
19
20 #define ECHO_PIN 12
21 #define TRIG_PIN 13
22 #define led 14
23
24 void setup() {
25     // put your setup code here, to run once:
26     Serial.begin(115200);
```

**Simulation**

publish ok  
Measured distance: 48  
Sending payload:{"ALE  
publish ok  
Measured distance: 11  
Sending payload:{"ALE  
publish ok