

Assignment- 4

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

Question:

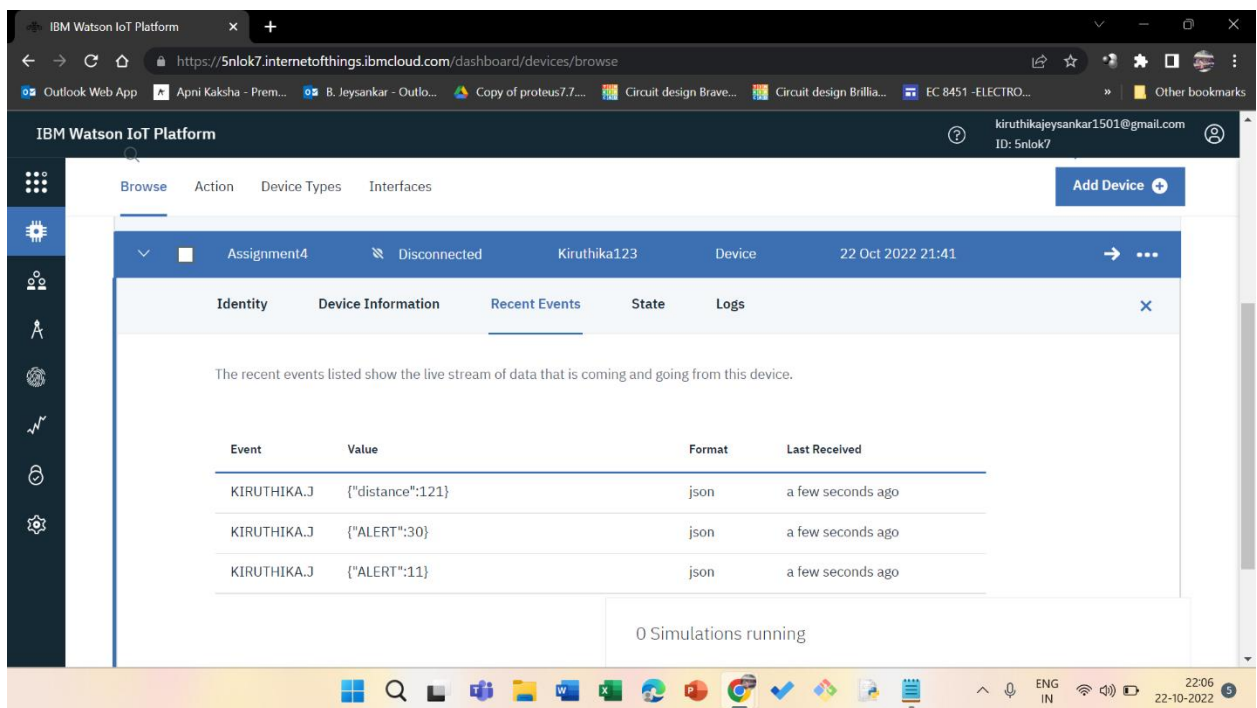
1. Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 cms send "alert" to IBM cloud and display in device recent events.

Solution:

WOKWI SHARE LINK:

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

IMAGE OF IBM CLOUD:



SIMULATION IMAGE:

The screenshot displays the Wokwi web IDE interface. The left pane shows the `sketch.ino` file with the following code:

```
1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 void callback(char* topic, byte* payload, unsigned int payloadLength);
4 #define ORG "5nlok7"
5 #define DEVICE_TYPE "Kiruthika123"
6 #define DEVICE_ID "Assignment4"
7 #define TOKEN "WvZ0TUI&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);
```

The right pane shows the simulation environment with an ESP32 and an HC-SR04 sensor. The output console displays the following log:

```
publish ok
Measured distance: 30.00
Sending payload:{"ALERT":30.00}
publish ok
Measured distance: 121.00
Sending payload:{"distance":121.00}
publish ok
```

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24 void setup() {
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26   Serial.begin(115200);
```

The right pane shows the simulation environment with an ESP32 and an HC-SR04 sensor. The output console displays the following log:

```
publish ok
Measured distance: 48.00
Sending payload:{"ALERT":48.00}
publish ok
Measured distance: 11.00
Sending payload:{"ALERT":11.00}
publish ok
```

