

## Assignment -4

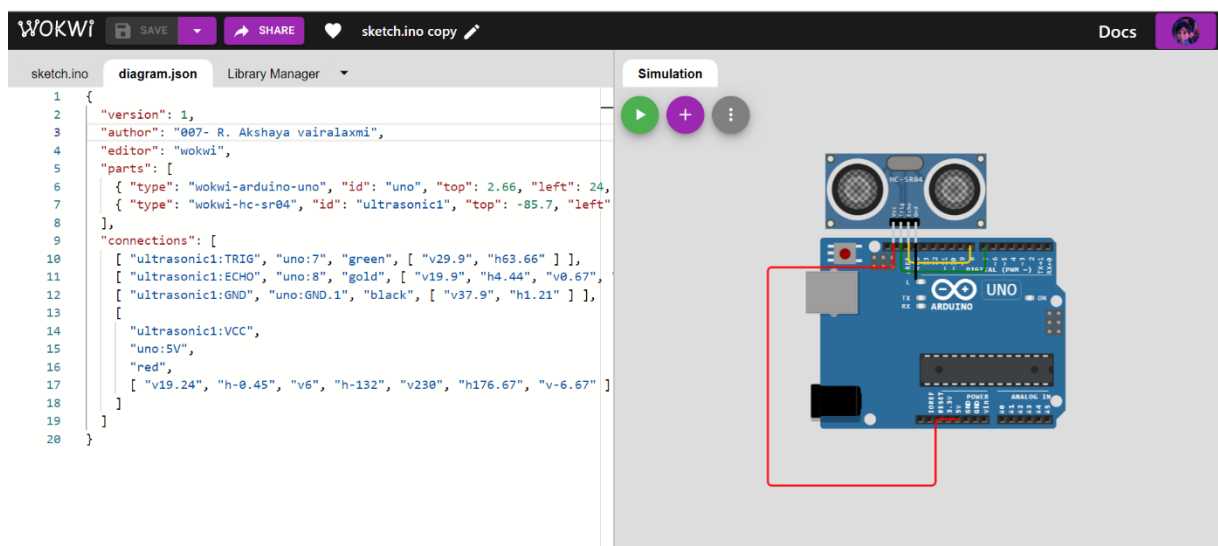
Assignment Date	30 OCTOBER 2022
Student Name	R. Akshaya vairalaxmi
Student Roll Number	913119106007
Maximum Marks	2 Marks

### PROBLEM STATEMENT: IOT BASED Signs With Smart Connectivity For Better Road Safety

QUESTION: Write code and connection in wokwi for ultrasonic sensor. Whenever distance is less than 100cm and send "alert" to ibm cloud and display in device recent events.

#### WOKWI LINK:

<https://wokwi.com/projects/347642749475881554>



WOKWI

sketch.ino

```

1  const int TRIG_PIN = 7;
2  const int ECHO_PIN = 8;
3
4  // Anything over 400 cm (5800 us pulse) is "out of range"
5  const unsigned int MAX_DIST = 5800;
6
7  void setup() {
8
9      pinMode(TRIG_PIN, OUTPUT);
10     digitalWrite(TRIG_PIN, LOW);
11     pinMode(ECHO_PIN, INPUT);
12     Serial.begin(9600);
13 }
14
15 #define ORG "bb2bpw"
16 #define DEVICE_TYPE "ultrasonic"
17 #define DEVICE_ID "123"
18 #define TOKEN "12345678"
19
20 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
21 char pubTopic1[] = "iot-2/evt/status1/fmt/json";
22 char pubTopic2[] = "iot-2/cmd/test/fmt/string";
23 char authMethod[] = "use-token-auth";
24 char token[] = TOKEN;
25 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
26 void loop() {
27
28     unsigned long t1;
29     unsigned long t2;
30     unsigned long pulse_width;

```

Simulation

00:04.900 49%

Editing Ultrasonic Distance Sensor

Distance: 244cm

Alert

WOKWI

sketch.ino

```

1  const int TRIG_PIN = 7;
2  const int ECHO_PIN = 8;
3
4  // Anything over 400 cm (5800 us pulse) is "out of range"
5  const unsigned int MAX_DIST = 5800;
6
7  void setup() {
8
9      pinMode(TRIG_PIN, OUTPUT);
10     digitalWrite(TRIG_PIN, LOW);
11     pinMode(ECHO_PIN, INPUT);
12     Serial.begin(9600);
13 }
14
15 #define ORG "bb2bpw"
16 #define DEVICE_TYPE "ultrasonic"
17 #define DEVICE_ID "123"
18 #define TOKEN "12345678"
19
20 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
21 char pubTopic1[] = "iot-2/evt/status1/fmt/json";
22 char pubTopic2[] = "iot-2/cmd/test/fmt/string";
23 char authMethod[] = "use-token-auth";
24 char token[] = TOKEN;
25 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
26 void loop() {
27
28     unsigned long t1;
29     unsigned long t2;
30     unsigned long pulse_width;

```

Simulation

00:10.433 57%

Editing Ultrasonic Distance Sensor

Distance: 75cm

Alert

Alert

76.07 cm

IBM CLOUD:



Edit with WPS Office

IBM-EP&L/IBM-Project-441-1658Welcome to Wokwi | Wokwi Devsketch.ino - Wokwi Arduino andIBM Watson IoT Platform

bb2bpw.internetofthings.ibmcloud.com/dashboard/devices/browse

913119106121@smartinternz.comID: bb2bpw

IBM Watson IoT Platform

BrowseActionDevice TypesInterfaces

Add Device

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added
123	Disconnected	ultrasonic	Device	Oct 25, 2022 11:32 AM

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	{\"dist\":286,\"message\":\"alert\"}	json	a few seconds ago
event_1	{\"dist\":89,\"message\":\"in range\"}	json	a minute ago
event_1	{\"dist\":78,\"message\":\"in range\"}	json	a minute ago