

Assignment -4

Assignment Date	30 OCTOBER 2022
Student Name	V. Harshini
Student Roll Number	913119106032
Maximum Marks	2 Marks

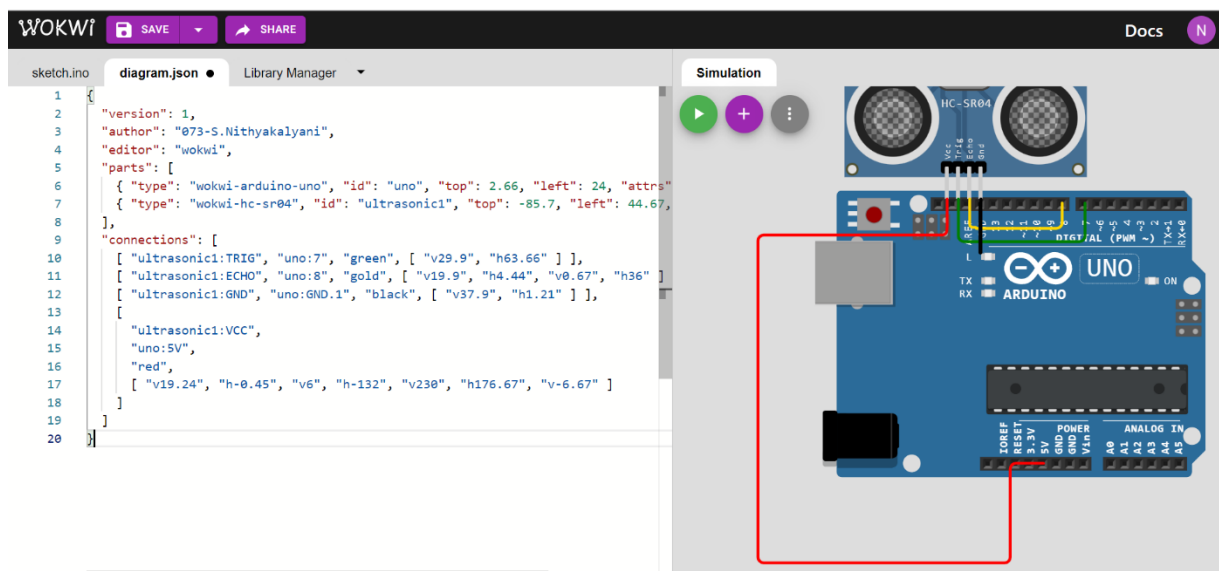
PROBLEM STATEMENT: IOT BASED Signs With Smart Connectivity For Better Road

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/347620137102213714>



IBM-EPBL/IBM-Project-441-1658 x W Welcome to Wokwi | Wokwi Do: x W sketch.ino - Wokwi Arduino and x IBM Watson IoT Platform x +

wokwi.com/projects/346468993421279827

WOKWI SAVE SHARE

Docs

sketch.ino diagram.json Library Manager

```

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

IBM-EPBL/IBM-Project-441-1658 x W Welcome to Wokwi | Wokwi Do: x W sketch.ino - Wokwi Arduino and x IBM Watson IoT Platform x +

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```

Simulation

00:10.433 57%

Editing Ultrasonic Distance Sensor

Distance: 75cm

Alert

Alert

76.07 cm



IBM CLOUD:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area shows a table of devices. The first device listed has ID 123, status 'Disconnected', and type 'ultrasonic'. Below the device list, there is a section for 'Recent Events' which shows a live stream of data. The events table has columns for 'Event', 'Value', 'Format', and 'Last Received'.

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

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

