

## ASSIGNMENT -4

|                 |                              |
|-----------------|------------------------------|
| DATE            | 28 <sup>TH</sup> OCTOBER2022 |
| STUDENT NAME    | TAMILSELVAM A                |
| STUDENT ROLL NO | 210919106104                 |
| MAXIMUM MARKS   | 2 MARKS                      |
|                 |                              |

### QUESTION:

WRITE A CODE AND CONNECTIONS IN WOKWI FOR ULTRASONIC SENSOR.WHENEVER DISTANCE IS LESS THAN 100 CMS SEND ALERT TO IBM CLOUD AND DISPLAY IN DEVICE EVENTS.

### ANSWER :

### WOKWI :

The screenshot displays the Wokwi IDE interface. On the left, the code for 'hc-sr04-Ultrasonic-Simulation.ino' is shown:

```
1 #include "Ultrasonic.h"
2 Ultrasonic ultrasonic(12, 13);
3 int distance;
4
5 void setup() {
6   Serial.begin(9600);
7   pinMode(6, OUTPUT);
8 }
9
10 void loop() {
11   distance = ultrasonic.read(CM);
12   Serial.print("Distance in CM: ");
13   Serial.println(distance);
14   if(distance<=100)
15   {
16     Serial.println("alert!!!!");
17     digitalWrite(4, HIGH);
18   }
19
20
21   delay(1000);
22 }
```

On the right, the simulation shows an Arduino Uno connected to an HC-SR04 ultrasonic sensor. The sensor's VCC is connected to 5V, GND to GND, Trig to pin 12, and Echo to pin 13. A red LED is connected to pin 4 (HIGH) and GND. The serial monitor at the bottom shows the following output:

```
Distance in CM: 50
alert!!!!
Distance in CM: 50
alert!!!!
Distance in CM: 50
alert!!!!
```

IBM CLOUD

Browse

Action

Device Types

Interfaces

Q

Add Device +

| <input type="checkbox"/>              | Device ID | Status       | Device Type | Class ID | Date Added            | Descriptive Location |
|---------------------------------------|-----------|--------------|-------------|----------|-----------------------|----------------------|
| > <input type="checkbox"/>            | 123       | Disconnected | hp1501      | Device   | Oct 11, 2022 10:32 PM |                      |
| ▼ <input checked="" type="checkbox"/> | 1234      | Disconnected | assign4hp   | Device   | Oct 26, 2022 8:12 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     |
|-----------|-----------------|--------|-------------------|
| event_1hp | {"distance":30} | json   | a few seconds ago |
| event_1hp | {"distance":28} | json   | a few seconds ago |
| event_1hp | {"distance":48} | json   | a few seconds ago |
| event_1hp | {"distance":76} | json   | a few seconds ago |
| event_1hp | {"distance":59} | json   | a few seconds ago |

1 Simulation running

ultrasonic

+ Add New Card

Paste Card

Settings

Line chart

5 minutes

now

distance

1 Simulation running