

Assignment - 4
Ultrasonic Sensor in Wokwi

Assignment Date	01NOVEMBER 2022
Student Name	SETHU KANNAN M
Student Roll Number	920319106021
Maximum Marks	2 Marks

Question-1:

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

CODE:

Sketch.ino

/*

Ultrasonic Simple

Prints the distance read by an ultrasonic sensor in centimeters. They are supported to four pins ultrasoundsensors (like HC-SC04) and three pins (like PING))) and Seeed Studio sensors).

The circuit:

* * Module HC-SC04 (four pins) or PING))) (and other with three pins),
attached to digital pins as follows:

HC-SC04	Arduino		3 pins	Arduino
Vcc	5V		Vcc	5V
Trig	12	OR	SIG	13
Echo	13		Gnd	GND
Gnd	GND			

*/

```

#include "Ultrasonic.h"
/*
Pass as a parameter the trigger and echo pin, respectively, or only the signal
pin (for sensors 3 pins), like: Ultrasonic ultrasonic(13);
*/
Ultrasonic ultrasonic(12, 13); int distance;
void setup() { Serial.begin(9600);
}
void loop() {
// Pass INC as a parameter to get the distance in inches distance =
ultrasonic.read(CM);
Serial.print("Distance in CM: "); Serial.println(distance); distance =
ultrasonic.read(INC);
Serial.print("Distance in Inches: "); Serial.println(distance); delay(1000);
}

```

Diagram.json

```

{
  "version": 1,
  "author": "Rozen Berg", "editor": "wokwi", "parts": [
    {
      "type": "wokwi-arduino-uno", "id": "uno",
      "top": 259.31,
      "left": 31.06,
      "rotate": 0,
      "hide": false,
      "attrs": {}
    },
  ],

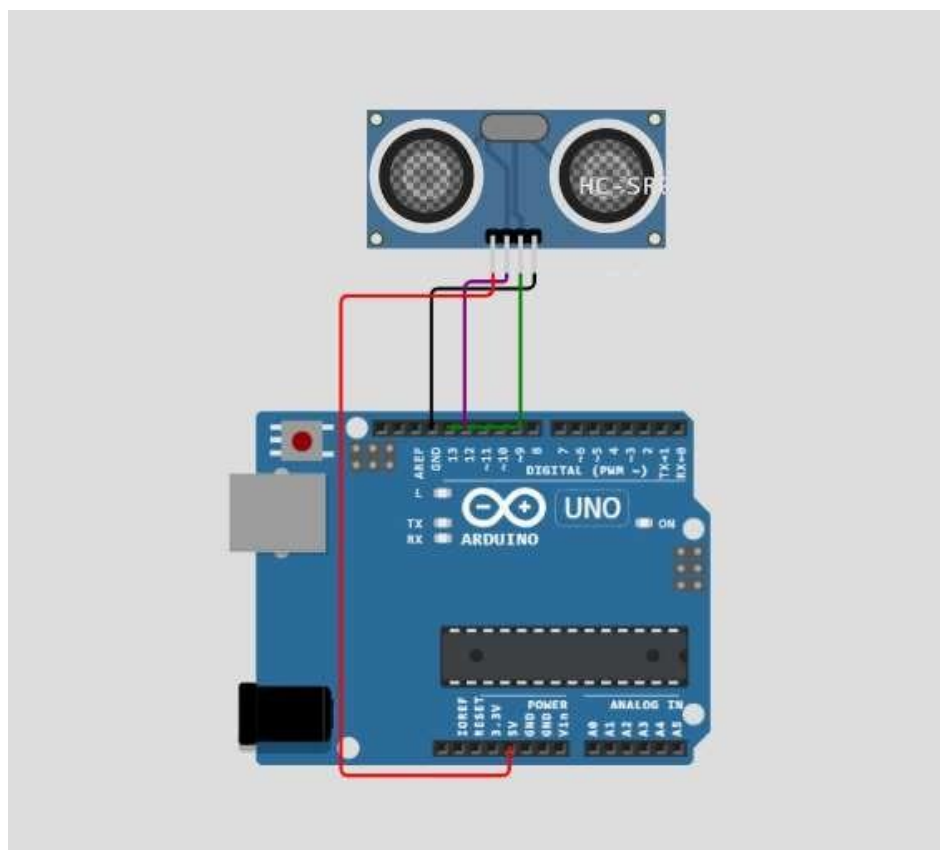
```

```

    {
      "type": "wokwi-hc-sr04",
      "id": "ultrasonic",
      "top": 86.99,
      "left": 109.89,
      "rotate": 0,
      "hide": false,
      "attrs": { "distance": "100" }
    },
    "connections": [
      [ "uno:GND.1", "ultrasonic:GND", "black", [ "v-8", "*", "v8" ] ],
      [ "uno:13", "ultrasonic:ECHO", "green", [ ] ],
      [ "uno:12", "ultrasonic:TRIG", "purple", [ "*", "v4" ] ],
      [ "uno:5V", "ultrasonic:VCC", "red", [ "v16", "h-96", "*", "v12" ] ]
    ]
  }

```

Circuit Diagram




Output:

WOKWI **SAVE** **SHARE** Docs **WOKWI**

sketch.ino • Diagram view • **Arduino IDE** • Library Manager

```
1 //
2 // Ultrasonic Single
3 // Prints the distance read by an ultrasonic sensor in
4 // centimeters. They are supported in four pins ultrasonic
5 // sensors (like HC-SR04) and three pins (like PING)))
6 // and beed studio sensors.
7 //
8 // The circuit:
9 // - module HC-SR04 (four pins) or PING))) (and other with
10 // three pins), attached to digital pins as follows:
11 //
12 // | HC-SR04 | Arduino | | 3 pins | Arduino |
13 //
14 // | VCC | 5V | | VCC | 5V |
15 // | Trig | D3 | | Trig | D3 |
16 // | Echo | D2 | | Echo | D2 |
17 // | Gnd | GND | | Gnd | GND |
18 //
19 //
20 //
21 //
22 #include "Ultrasonic.h"
23 //
24 //
25 // Pass as a parameter the trigger and echo pin, respectively,
26 // or only the signal pin (for sensors 3 pins), like:
27 Ultrasonic ultrasonic(D3, D2)
28 //
29 //
30 ultrasonic ultrasonic(D3, D2);
31 int distance;
32 //
33 void setup() {
34   Serial.begin(9600);
35 }
36 //
37 void loop() {
```

Simulation



Distance in CM: 164
Distance in Inches: 41
Distance in CM: 165
Distance in Inches: 41
Distance in CM: 164
Distance in Inches: 41
Distance in CM: 165
Distance in Inches: 41
Distance in CM: 164
Distance in Inches: 41
Distance in CM: 165
Distance in Inches: 41