

Assignment - 4
Ultrasonic Sensor in Wokwi

Assignment Date	01NOVEMBER 2022
Student Name	AYYAPPAN M
Student Roll Number	920319106006
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 (liek HC-SC04) and three pins (like PING))) and Seeed Studio sensors).

The circuit:

* * Module HR-SC04 (four pins) or PING))) (and other withthree pins), attached to digital pins as follows:

-----				-----			
	HC-SC04		Arduino		3 pins		Arduino
-----				-----			
	Vcc		5V		Vcc		5V
	Trig		12		OR		SIG
	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 inchesdistance =
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": {}
    },
  ],

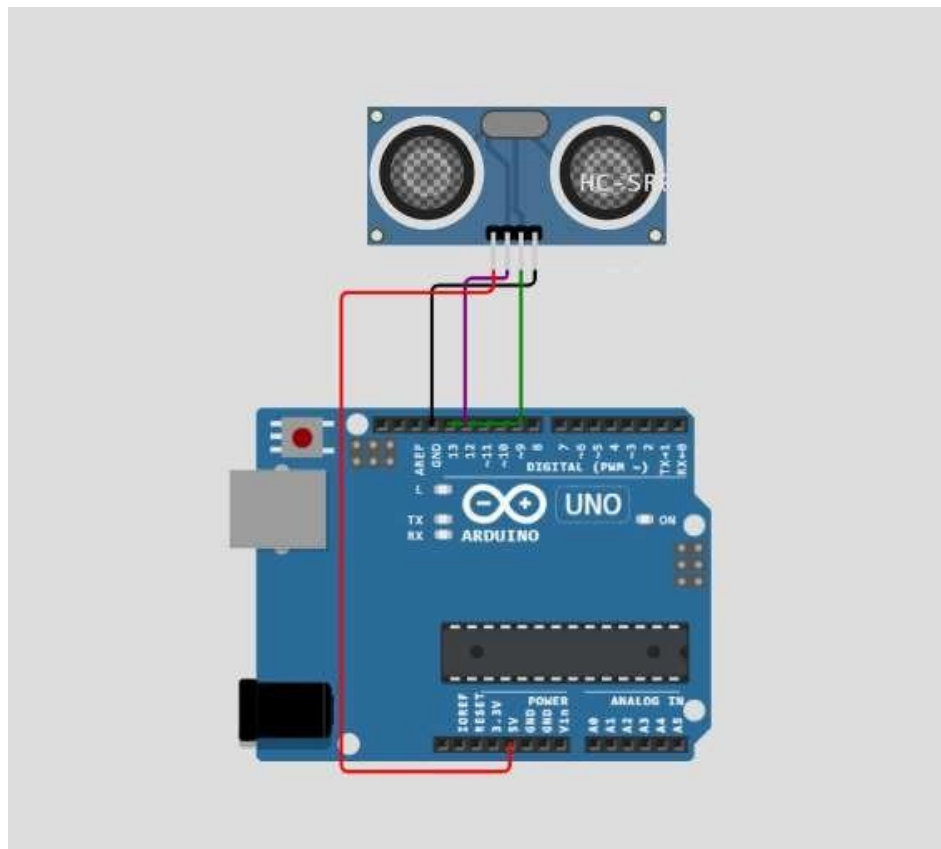
```

```

        {
          "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

simulation

Distance in CM: 184
Distance in Inches: 41
Distance in CM: 185
Distance in Inches: 41
Distance in CM: 184
Distance in Inches: 41
Distance in CM: 184
Distance in Inches: 41
Distance in CM: 185
Distance in Inches: 41
Distance in CM: 184
Distance in Inches: 41
Distance in CM: 185
Distance in Inches: 41

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