Assignment - 4

Ultrasonic Sensor in Wokwi

Assignment Date	26 October 2022
Student Name	Aishwarya S
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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 ultrasound
sensors (liek HC-SC04) and three pins (like PING)))    and
Seeed Studio sensors).

   The circuit:
 * * Module HR-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   |    --------------------
   ---------------------
*/
```

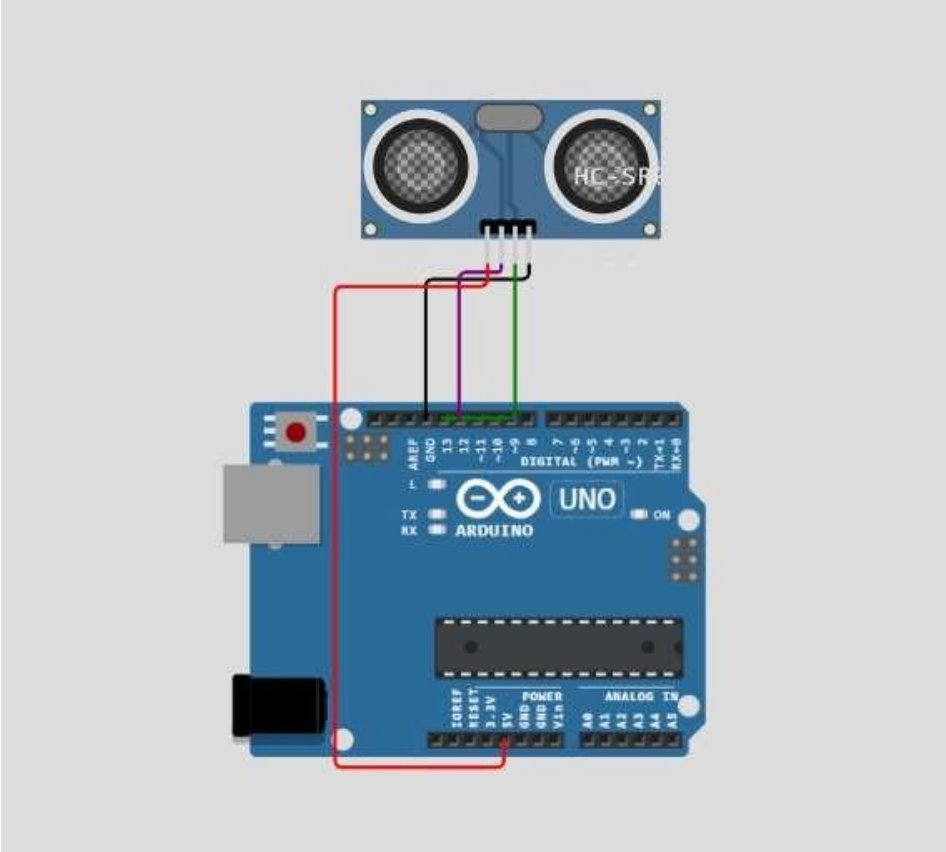
```
#include "Ultrasonic.h"
/*
   Pass as a parameter the trigger and echo pin, respectively,
or only the signal pin (for sensors 3 pins), like:
   Ultrasonic ultrasonic(13);
*/
Ultrasonic ultrasonic(12, 13);
int distance; void setup() {
  Serial.begin(9600);
} void loop()
{
  // Pass INC as a parameter 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

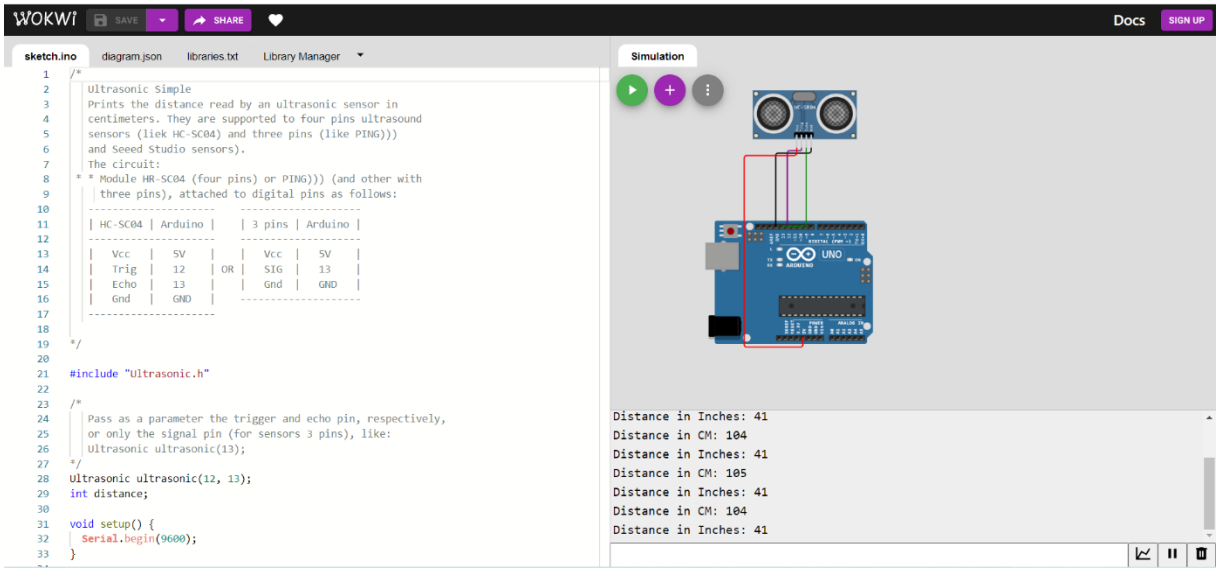
```
{
  "version": 1,
  "author": "Rozen Berg",
  "editor": "wokwi",
  "parts": [
    {
      "type": "wokwi-arduino-uno",
      "id": "uno",
      "top": 259.31,
      "left": 31.06,
"rotate": 0,
      "hide": false,
      "attrs": {}
    },
    {
      "type": "wokwi-hc-sr04",
      "id": "ultrasonic",
      "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
SIGN UP
sketch.ino
diagram.json
libraries.txt
Library Manager
Simulation
/*
Ultrasonic Simple
Prints the distance read by an ultrasonic sensor in
centimeters. They are supported to four pins ultrasound
sensors (liek HC-SC04) and three pins (like PING)))
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The circuit:
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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);
}
UNO
Distance in Inches: 41
Distance in CM: 104
Distance in Inches: 41
Distance in CM: 105
Distance in Inches: 41
Distance in CM: 104
Distance in Inches: 41