Assignment - 4
Ultrasonic Sensor in Wokwi

Assignment Date	26 October 2022
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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.
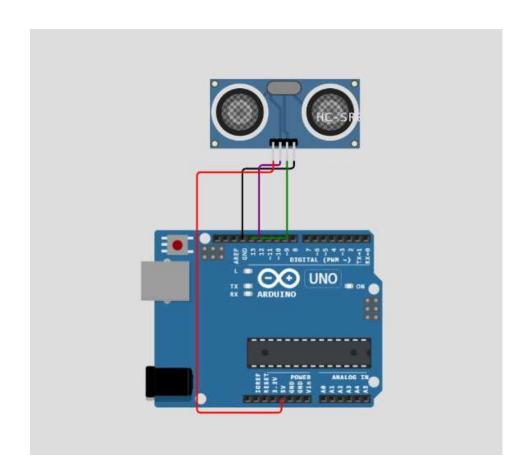
CODE:

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   |     --------------------

   --------------------

*/
```

```cpp
#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

```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: