

**Assignment -4**  
Ultrasonic sensor simulation in Wokwi

Assignment Date	17 November 2022
Student Name	Suvalasini.RB
Student Roll Number	19BEC08
Maximum Marks	2 Marks

**Question-1:**

Write a code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100cms send an “Alert” to IBM cloud and display in the device recent events.

**CODE:**

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "k2m20e"
#define deviceType = "abcd"
#define deviceId = "16"
#define authMethod = "token"
#define authToken = "12345678"

void setup(){
  Serial.begin(9600);
  pinMode(TRIG_PIN,OUTPUT);
  pinMode(ECHO_PIN,INPUT);
}

float readDistanceCM(){
  digitalWrite(TRIG_PIN,LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN,HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN,LOW);      int
  duration=pulseIn(ECHO_PIN,HIGH);
  return duration*0.034/2;
} void
loop(){
  float distance=readDistanceCM();
```

```

    if(distance<=100)
    {
        Serial.println("person detected");
    }
else{
    Serial.print("Measured distance:");
    Serial.println(readDistanceCM());
}
    delay(1000);
}

```

### Diagram.json:

```

{
  "version": 1,
  "author": "Anonymous maker",
  "editor": "wokwi",
  "parts": [
    { "type": "wokwi-arduino-uno", "id": "uno", "top": 128.34, "left": -37.99, "attrs": {} },
    {
      "type": "wokwi-led",
      "id": "led1",
      "top": -51.17,
      "left": 63.02,
      "attrs": { "color": "red" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": 29.69,
      "left": 63.05,
      "rotate": 90,
      "attrs": { "value": "1000" }
    },
    { "type": "wokwi-hc-sr04", "id": "ultrasonic1", "top": -117.02, "left": 175.77, "attrs": {} }
  ],
  "connections": [

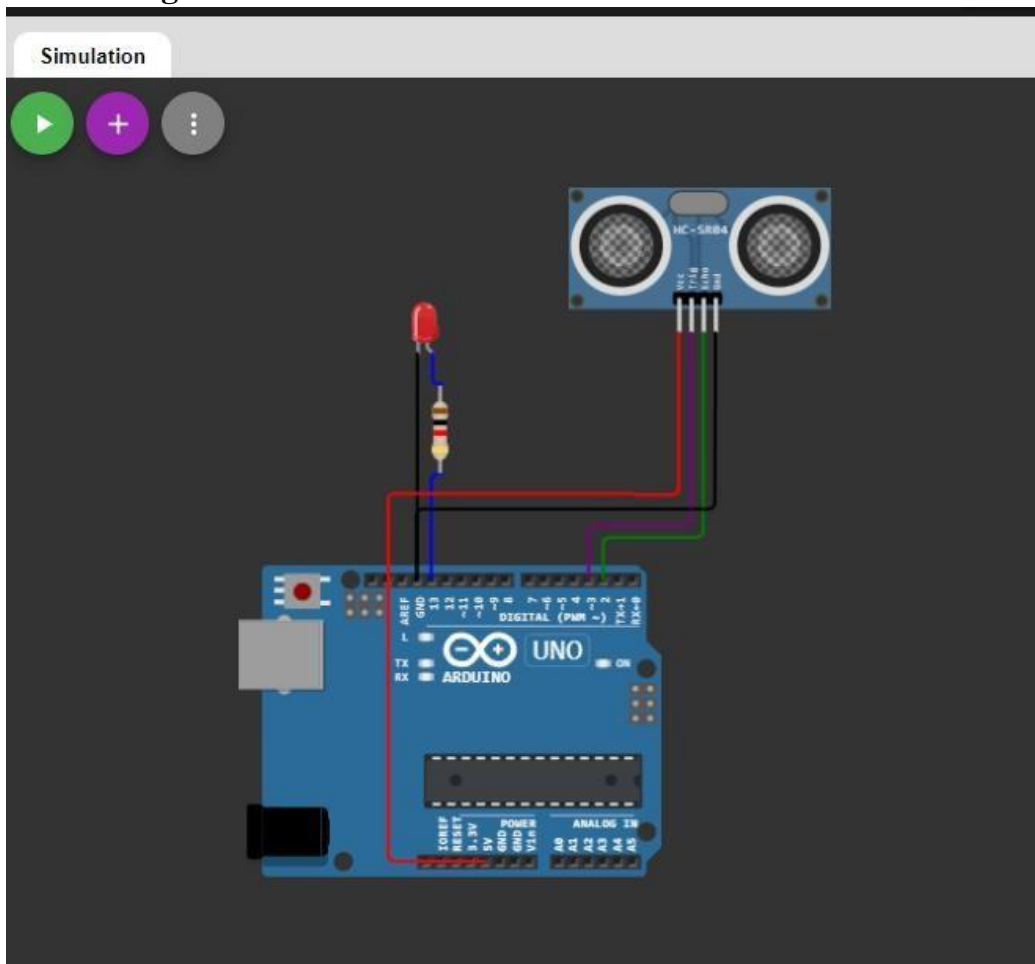
```

```

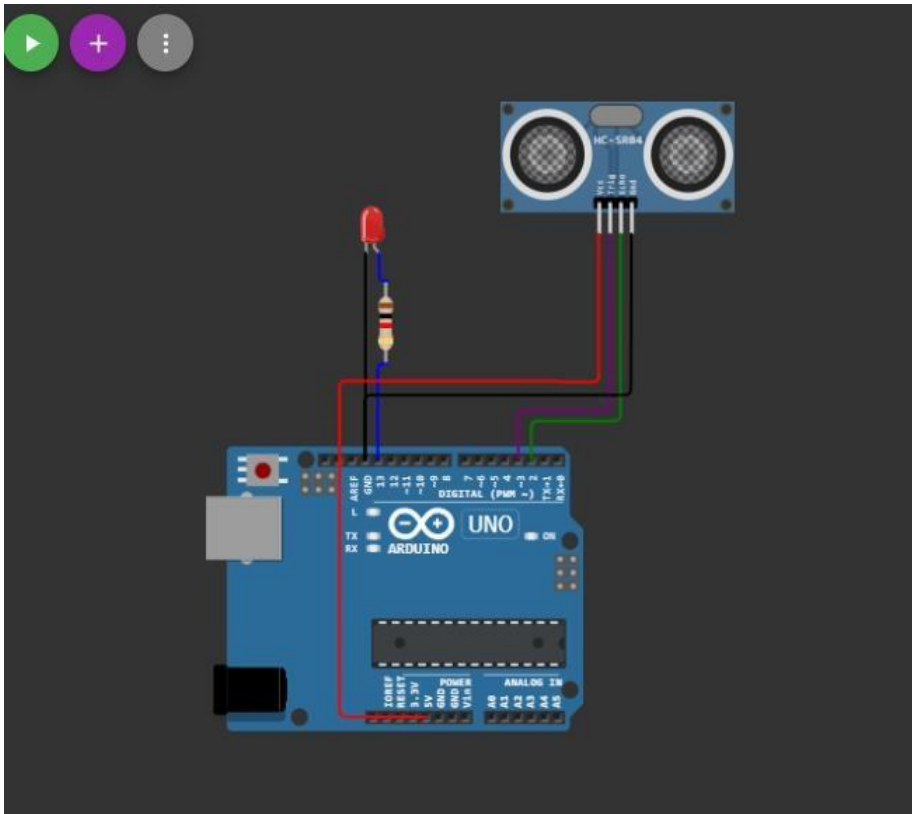
[ "led1:C", "uno:GND.1", "black", [ "v0" ] ],
[ "led1:A", "r1:1", "blue", [ "v0" ] ],
[ "r1:2", "uno:13", "blue", [ "h0" ] ],
[ "ultrasonic1:TRIG", "uno:3", "purple", [ "v125.11", "h-70.38" ] ],
[ "uno:2", "ultrasonic1:ECHO", "green", [ "v-27.25", "h63.19" ] ],
[ "ultrasonic1:GND", "uno:GND.1", "black", [ "v37.64", "h-0.36", "v76.64",
"h194.93" ] ],
[
  "ultrasonic1:VCC",
  "uno:5V",
  "red",
  [ "v105.12", "h-28.34", "v-0.83", "h-159.94", "v236.58" ]
]
]
}

```

### Circuit Diagram:



### Output:



New Arduino Uno Project - Wokwi

wokwi.com/projects/new/arduino-uno

Gmail YouTube Maps Problem Statement...

WOKWI SAVE SHARE Docs SIGN UP

sketch.ino diagram.json Library Manager

```

1  #define ECHO_PIN 2
2  #define TRIG_PIN 3
3  #define organization = "k2m20e"
4  #define deviceType = "abcd"
5  #define deviceId = "16"
6  #define authMethod = "token"
7  #define authToken = "12345678"
8
9  void setup(){
10     Serial.begin(9600);
11     pinMode(TRIG_PIN,OUTPUT);
12     pinMode(ECHO_PIN,INPUT);
13 }
14
15 float readDistanceCM(){
16     digitalWrite(TRIG_PIN,LOW);
17     delayMicroseconds(2);
18     digitalWrite(TRIG_PIN,HIGH);
19     delayMicroseconds(10);
20     digitalWrite(TRIG_PIN,LOW);
21     int duration=pulseIn(ECHO_PIN,HIGH);
22     return duration*0.034/2;
23 }
24 void loop(){
25     float distance=readDistanceCM();
26
27     if(distance<=100)
28     {
29         Serial.println("person detected");
30     }
31 }

```

Simulation

00:10.063 71%

Measured distance:395.39  
Measured distance:395.39  
Measured distance:395.39  
Measured distance:395.39  
Measured distance:395.39  
Measured distance:395.39

Wokwi output

**Wokwi link:** <https://wokwi.com/projects/348554117457642067>

## IBM Cloud

The screenshot displays the IBM Cloud dashboard in a web browser. The browser's address bar shows the URL `cloud.ibm.com`. The dashboard header includes the IBM Cloud logo, a search bar, and navigation links for 'Catalog', 'Manage', and 'Suvalasini RB's Account'. A user profile dropdown menu is open on the right, showing options like 'Profile', 'Log in to CLI and API', 'Privacy', 'Change theme', and 'Log out'. The main content area is titled 'Dashboard' and features a 'For you' section with several recommended actions: 'Build' (a large blue box), 'Build a web app with Watson Speech to Text' (15 min), 'Get Started with Watson Studio' (2 hr), 'Build a Virtual Private Cloud (VPC)' (7 min), and 'Learn about Cloud and control access' (5 min). At the bottom, there are sections for 'User access' (with a 'Manage users' link), 'News' (listing 'IBM Cloud Satellite New Pricing' and 'IBM Cloud Data Shield Deprecation'), and 'Planned maintenance' (with a 'View all' link).