

ASSIGNMENT 4

ASSIGNMENT DATE	17/10/2022
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MAXIMUM MARKS	2 MARKS

QUESTION:

Write code and connections in wokwi for the ultrasonic sensor.

Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events. Upload document with wokwi share link and images of IBM cloud.

SOLUTION:

```
#define ECHO_PIN 2
#define TRIG_PIN 3

void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  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;
}

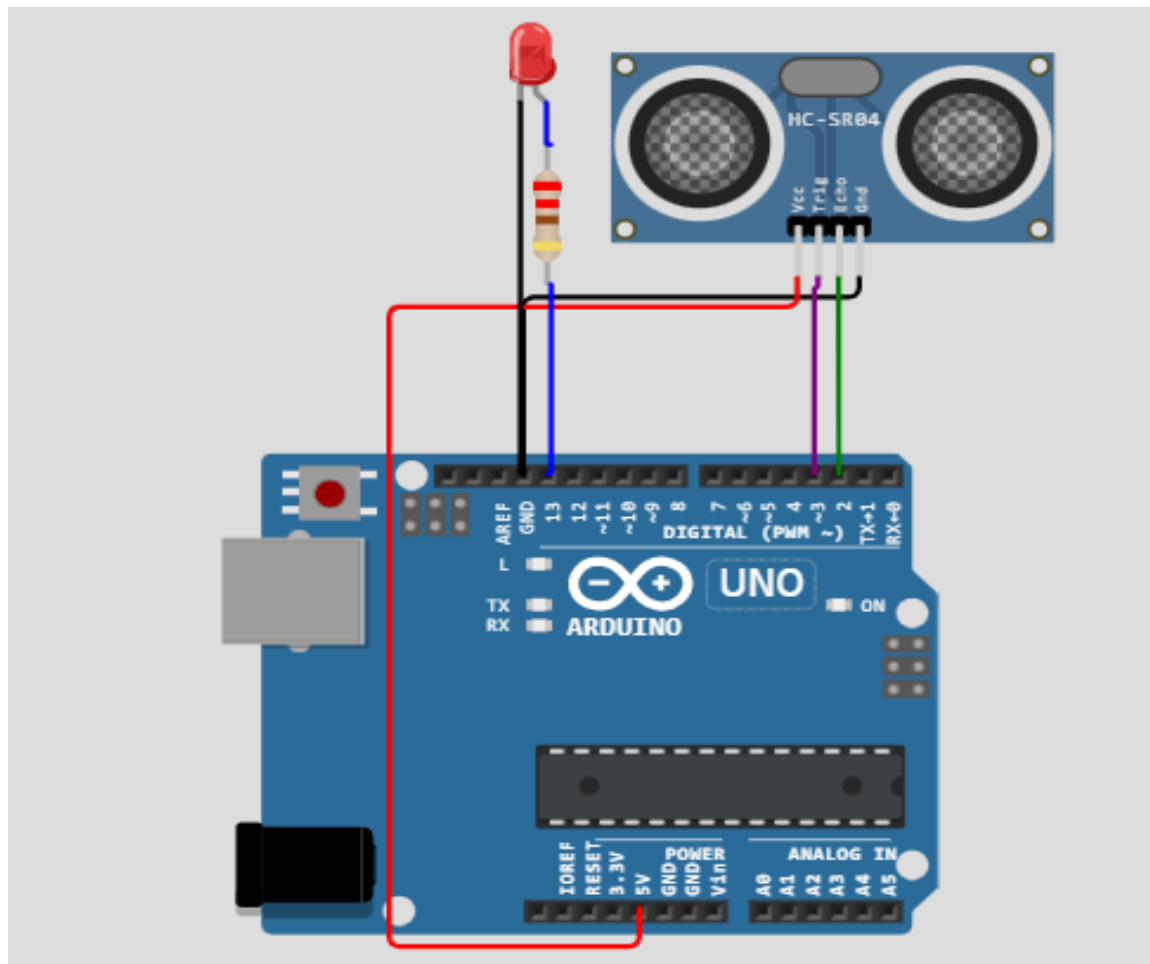
void loop() {
    float distance = readDistanceCM();

    bool isNearby = distance < 100;
    digitalWrite(LED_BUILTIN, isNearby);

    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());

    delay(100);
}

```



Simulation

00:05.765 65%

Measured distance: 177.16
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24

WOKWI

SAVE

SHARE

hc-sr04.ino by urish

Docs

SIGN UP

hc-sr04.ino

diagram.json

Library Manager

```
4  Turn the LED on when an object is within 100cm range.
5
6  Copyright (C) 2021, Uri Shaked
7  */
8
9  #define ECHO_PIN 2
10 #define TRIG_PIN 3
11
12 void setup() {
13   Serial.begin(115200);
14   pinMode(LED_BUILTIN, OUTPUT);
15   pinMode(TRIG_PIN, OUTPUT);
16   pinMode(ECHO_PIN, INPUT);
17 }
18
19 float readDistanceCM() {
20   digitalWrite(TRIG_PIN, LOW);
21   delayMicroseconds(2);
22   digitalWrite(TRIG_PIN, HIGH);
23   delayMicroseconds(10);
24   digitalWrite(TRIG_PIN, LOW);
25   int duration = pulseIn(ECHO_PIN, HIGH);
26   return duration * 0.034 / 2;
27 }
28
29 void loop() {
30   float distance = readDistanceCM();
31
32   bool isNearby = distance < 100;
33   digitalWrite(LED_BUILTIN, isNearby);
34 }
```

Simulation

00:05.765 65%

Measured distance: 177.16
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24

OUTPUT SHOWING ALERT FOR DISTANCE LESS THAN 100 cm:

