

Assignment 4

- 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.

ASSIGNMENT DATE	24/10/2022
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STUDENT ROLL NUMBER	917719C059
MAXIMUM MARKS	2 MARKS

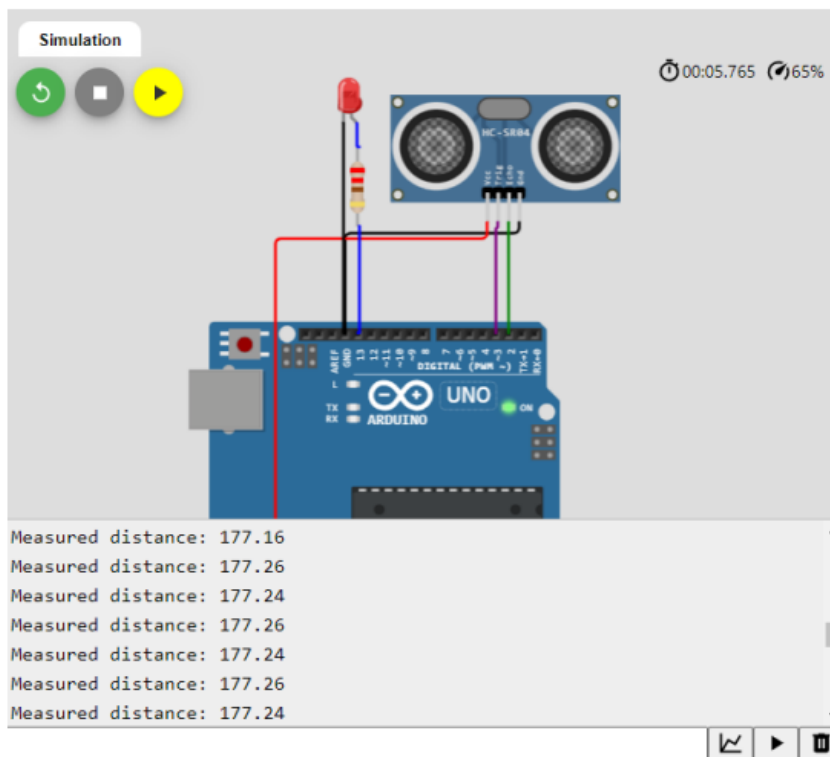
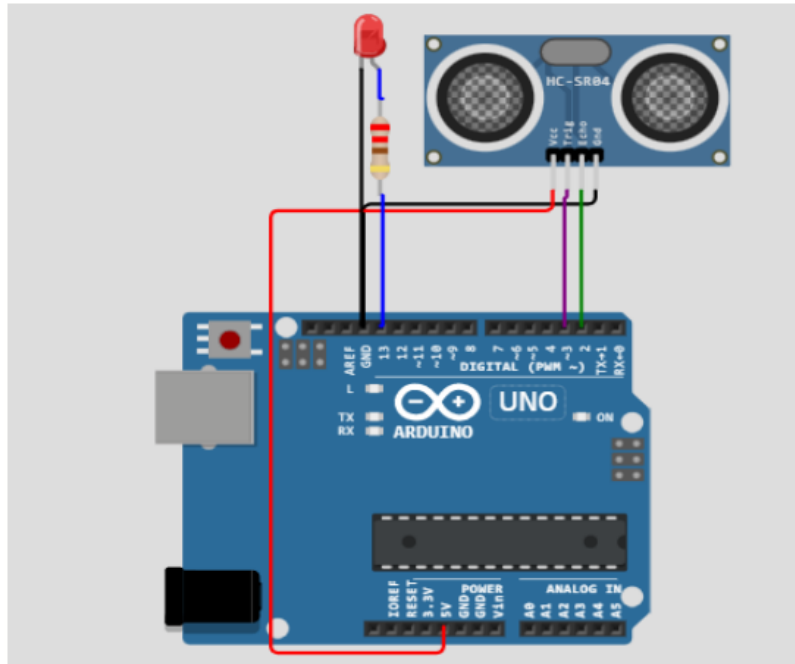
SOLUTION:

```
#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);
}

```



WOKWI diagram json Library Manager hc-arduino by wib Docs Sign Up

```

4  Turn the LED on when an object is within 100cm range.
5
6  Copyright (C) 2021, U-I 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

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 Simulation Code 00:00.300 48%

 The Measured Distance in cm : 57.79
 Alert it !!
