

## ASSIGNMENT 4

Write code and connections in wokwi for ultrasonic. Whenever distance is less than 100 cm's send

“alert” to IBM cloud and display in device recent events.

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization =" eyd78v"
#define deviceType=" Arduino"
#define deviceId ="93458"
#define authMethod ="use-token-auth"
#define authToken ="(URe9sYZLCd*)tqZAP"

void setup() {
  // put your setup code here, to run once:
  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() {
  // put your main code here, to run repeatedly:
  float distance = readDistanceCM();
  if(distance <= 100)
  {
    Serial.println("person detected ");
  }
  else{
    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());
  }
  delay(1000);
}
```

## WOKWI ASSIGNMENT LINK:

<https://wokwi.com/projects/347223905047413332>

The screenshot displays the Wokwi web interface for an Arduino Uno simulation. The left pane shows the sketch code, and the right pane shows the simulation of the hardware.

**Sketch Code:**

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization "eyd78v"
4 #define deviceType "Arduino"
5 #define deviceId "93458"
6 #define authMethod "use-token-auth"
7 #define authToken "(UR9sYZLCd*)tqZAP"
8
9 void setup() {
10   // put your setup code here, to run once:
11   Serial.begin(9600);
12   pinMode(TRIG_PIN, OUTPUT);
13   pinMode(ECHO_PIN, INPUT);
14 }
15 float readDistanceCH() {
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
25 }
26
27 void loop() {
28   // put your main code here, to run repeatedly:
```

**Simulation:** The simulation shows an Arduino Uno board connected to an HC-SR04 ultrasonic sensor. The sensor's VCC pin is connected to the Arduino's 5V pin, and its GND pin is connected to the Arduino's GND pin. The TRIG pin is connected to digital pin 3, and the ECHO pin is connected to digital pin 2. The simulation output shows the following measured distances:

- Measured distance: 395.25
- Measured distance: 395.27
- Measured distance: 395.25
- Measured distance: 395.27

IBM Watson IoT Platform

Device Drilldown - 93458

Connection Information

Recent Events

1 Simulation running

gerijashreej2001@gmail.com  
ID: eyd78v

eyd78v  
ID: eyd78v  
Bluemix Free

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07:29 PM  
02-11-2022

IBM Watson IoT Platform

Device Drilldown - 93458

Recent Events

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"version":1,"author":"Gerija Shree. J 19_019","e...	json	a few seconds ago
event_1	{"version":1,"author":"Gerija Shree. J 19_019","e...	json	a few seconds ago
event_1	{"version":1,"author":"Gerija Shree. J 19_019","e...	json	a few seconds ago
event_1	{"version":1,"author":"Gerija Shree. J 19_019","e...	json	a few seconds ago
event_1	{"version":1,"author":"Gerija Shree. J 19_019","e...	json	a few seconds ago

1 Simulation running

gerijashreej2001@gmail.com  
ID: eyd78v

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