

# ASSIGNMENT 4

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1. 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

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization ="1vtv vx"
#define deviceType=" Arduino"
#define deviceId ="062001"
#define authMethod ="use-token-auth"
#define authToken ="987654321"

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 PROJECT LINK: <https://wokwi.com/projects/347133043913261650>

The screenshot displays the Wokwi IDE interface. On the left, the 'sketch.ino' file contains the following code:

```

1  #define ECHO_PIN 2
2  #define TRIG_PIN 3
3  #define organization "1vtvvx"
4  #define deviceType " Arduino"
5  #define deviceId "062001"
6  #define authMethod "use-token-auth"
7  #define authToken "987654321"
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 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
25 }
26
27 void loop() {
28   // put your main code here, to run repeatedly:
29   float distance = readDistanceCM();
30   if(distance <= 100)
31

```

On the right, the 'Simulation' window shows an Arduino Uno board connected to an HC-SR04 ultrasonic sensor. The sensor's VCC pin is connected to the 5V pin on the Arduino, GND to GND, TRIG to digital pin 3, and ECHO to digital pin 2. The simulation output at the bottom shows the following 'Measured distance' values:

```

Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.35
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.27

```

IBM Watson IoT Platform

shanimathi6110@gmail.com  
ID: 1vltvxx

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Device Drilldown - arduino\_1

Connection Information

Recent Events

State

Device Information

Metadata

Diagnostics

Connection Logs

Device Actions

Connection Information

Basic connection information about this device.

Device ID

arduino\_1

Device Type

arduino

Date Added

Nov 1, 2022 7:17 PM

Added By

shanimathi6110@gmail.com

Connection Status

Connected

Connection Time: Nov 1, 2022 7:18 PM

Client Address: 157.46.78.109 SecureToken

IBM Watson IoT Platform

shanimathi6110@gmail.com  
ID: 1vltvxx

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Device Drilldown - 062001

Connection Information

Recent Events

State

Device Information

Metadata

Diagnostics

Connection Logs

Device Actions

| Event   | Value   | Format | Last Received     |
|---------|---|--------|-------------------|
| event_1 | {"version":1,"author":"shanimathi","editor":"wok... | json   | a few seconds ago |
| event_1 | {"version":1,"author":"shanimathi","editor":"wok... | json   | a few seconds ago |
| event_1 | {"version":1,"author":"shanimathi","editor":"wok... | json   | a few seconds ago |
| event_1 | {"version":1,"author":"shanimathi","editor":"wok... | json   | a few seconds ago |
| event_1 | {"version":1,"author":"shanimathi","editor":"wok... | json   | a few seconds ago |

State