

ASSIGNMENT 4

wokwi link:

<https://wokwi.com/projects/290056311044833800>

Program code:

```
/*  
  
  HC-SR04 Ultrasonic Sensor Example.  
  
  Turn the LED on when an object is within 100cm range.  
  
  Copyright (C) 2021, Uri Shaked  
  
*/  
  
#define ECHO_PIN 2  
  
#define TRIG_PIN 3  
  
#define organization ="zwx6lb"  
  
#define device type ="dhars"  
  
#define deviceId="75"  
  
#define authmethod="token"  
  
#define authToken="12345678"  
  
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();  
  
    if(distance<=100)  
  
    {  
  
        Serial.println("person detected");  
  
    }  
  
    else{  
  
        Serial.print("Measured distance:");  
  
        Serial.println(readDistanceCM());  
  
    }  
  
    delay(1000);  
  
}
```

IBM CLOUD:

zwx6lb.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

Device Type: dhars

Device ID	Status	Device Type
75	Disconnected	dhars

Identity | Device Information | Recent Events | State

Device ID: 75
Device Type: dhars
Date Added: Oct 14, 2022 7:48 PM
Added By: 613519106013@smartinternz.com
Connection Status: Disconnected

Items per page: 50 | 1-1 of 1 item

Events: 1

Event type name: event_1

Schedule: 20 Every Minute

Payload: Specify the event payload in the editor window or by uploading a CSV file.

```
0 {  
1   "randomNumber": random(0, 100),  
2   "distance": random(50, 200)  
3 }  
4
```

Upload a CSV file

ultrasonic

Line chart

1 minute | now

1 Simulation running

zwx61b.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

Device ID: 75, Status: Disconnected, Device Type: dhars

Recent Events

Event	Value
event_1	{"randomNumber":48,"distance":68}
event_1	{"randomNumber":96,"distance":73}
event_1	{"randomNumber":42,"distance":96}
event_1	{"randomNumber":57,"distance":100}
event_1	{"randomNumber":26,"distance":77}

Device Type: dhars

Event type name: event_1

Schedule: 20 Every Minute

Payload

```

0 {
1   "randomNumber": random(0, 100),
2   "distance": random(50, 200)
3 }
4

```

Upload a CSV file

Cancel Save

wokwi.com/projects/290056311044833800

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hc-sr04.ino by urish

```

1  /*
2  HC-SR04 Ultrasonic Sensor Example.
3
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 #define organization "zwx61b"
12 #define device type "dhars"
13 #define deviceId "75"
14 #define authmethod "token"
15 #define authToken "12345678"
16
17 void setup() {
18   Serial.begin(115200);
19   pinMode(LED_BUILTIN, OUTPUT);
20   pinMode(TRIG_PIN, OUTPUT);
21   pinMode(ECHO_PIN, INPUT);
22 }
23
24 float readDistanceCM() {
25   digitalWrite(TRIG_PIN, LOW);
26   delayMicroseconds(2);
27   digitalWrite(TRIG_PIN, HIGH);

```

Simulation

Measured distance:182.24
Measured distance:182.24
Measured distance:182.24
Measured distance:182.24
Measured distance:182.24
person detected
person detected

WOKWI

hc-sr04.ino

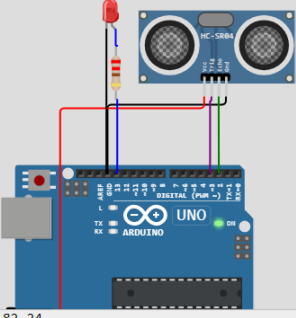
SAVE SHARE

hc-sr04.ino by urish

diagram.json Library Manager

```
20 pinMode(TRIG_PIN, OUTPUT);
21 pinMode(ECHO_PIN, INPUT);
22 }
23
24 float readDistanceCM() {
25   digitalWrite(TRIG_PIN, LOW);
26   delayMicroseconds(2);
27   digitalWrite(TRIG_PIN, HIGH);
28   delayMicroseconds(10);
29   digitalWrite(TRIG_PIN, LOW);
30   int duration = pulseIn(ECHO_PIN, HIGH);
31   return duration * 0.034 / 2;
32 }
33
34 void loop(){
35   float distance=readDistanceCM();
36
37   if(distance<=100)
38   {
39     Serial.println("person detected");
40   }
41   else{
42     Serial.print("Measured distance:");
43     Serial.println(readDistanceCM());
44   }
45   delay(1000);
46 }
47
```

Simulation



00:28.066 83%

Measured distance:182.24
Measured distance:182.24
Measured distance:182.24
Measured distance:182.24
Measured distance:182.24
person detected
person detected