

## ASSIGNMENT 4

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

Program code:

```
#define ECHO_PIN2
#define TRIG_PIN3
#define organization = "7h1h3h"
#define deviceType = "DK"
#define deviceId = "5"
#define authMethod = "token"
#define authToken = "9876543210"

void setup(){
    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(){  
    float distance=readDistanceCM();  
  
    if(distance<=100)  
    {  
        Serial.println("person detected");  
    }  
    else{  
        Serial.print("Measured distance:");  
        Serial.println(readDistanceCM());  
    }  
    delay(1000);  
}
```

## IBM CLOUD

The screenshot displays the IBM Watson IoT Platform interface. The main dashboard shows a list of devices with columns for Device ID, Status, and Device Type. A device with ID 5 is highlighted, showing details such as Device ID, Device Type, Date Added, Added By, and Connection Status.

On the right, a modal window titled "Device Type: DK" is open, showing the configuration for a new event type. The event type name is "event\_1". The schedule is set to "Every Minute". The payload is configured with a JSON structure:

```
{
  "randomlumber": random(0,100),
  "distance": random(50,100)
}
```

The interface includes a sidebar with navigation options and a top navigation bar with tabs for Service Details, IBM Watson IoT Platform, and New Incognito Tab. The bottom of the screen shows a Windows taskbar with various application icons and the system clock.

Service Details - IBM Cloud x IBM Watson IoT Platform x New Incognito Tab x

7hlh3h.internetofthings.ibmcloud.com/dashboard/boards/69e08d82-6275-4403-b2c0-75c1e706a998

Gmail YouTube Maps

### IBM Watson IoT Platform

DA

Line chart

10:46:30 10:47

1 minute now

distance

Device Type: DK

Events 1

New event type +

Event type name event\_1 Send

Schedule 20 Every Minute

Payload

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

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

Upload a CSV file

Type here to search

10:47 AM 10/29/2022

Service Details - IBM Cloud

IBM Watson IoT Platform

New Incognito Tab

7hlh3h.internetofthings.ibmcloud.com/dashboard/devices/browse

GmailYouTubeMaps

IBM Watson IoT Platform

Browse

Action

Device Types

Interfaces

Device ID

Status

Device Type

5

Disconnected

DK

Identity

Device Information

Recent Events

State

The recent events listed show the live stream of data that is coming and going

Event	Value
event_1	{"randomNumber":5,"distance":88}
event_1	{"randomNumber":31,"distance":97}
event_1	{"randomNumber":58,"distance":59}
event_1	{"randomNumber":24,"distance":64}
event_1	{"randomNumber":54,"distance":61}

JSONa few seconds ago

Device Type: DK

Events1

New event type

Event type name

event\_1

Send

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(50,100)

3

}

4

Upload a CSV file

Type here to search

10:48 AM

10/29/2022

WOKWI **SAVE** **SHARE** **hc-sr04.ino** by urish **Docs** **SIGN UP**

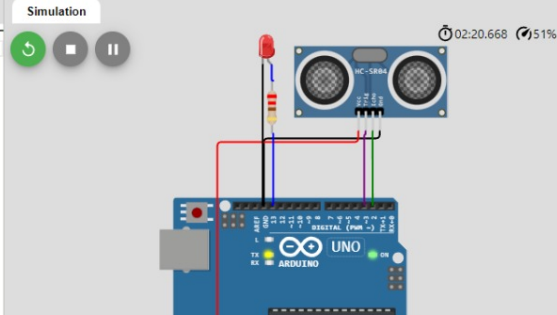
hc-sr04.ino • diagram.json Library Manager

```

1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization = "7h1h3h"
4 #define deviceType = "DK"
5 #define deviceId = "S"
6 #define authMethod = "token"
7 #define authToken = "9876543210"
8
9 void setup(){
10   Serial.begin(9600);
11   pinMode(TRIG_PIN,OUTPUT);
12   pinMode(ECHO_PIN,INPUT);
13 }
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 void loop(){
26   float distance=readDistanceCM();
27
28   if(distance<=100)
29   {

```

Simulation



Measured distance:197.32  
 Measured distance:197.42  
 Measured distance:197.42  
 Measured distance:197.32  
 Measured distance:197.42  
 Measured distance:197.42  
 Measured distance:197.32

02:20.668 51%

WOKWI **SAVE** **SHARE** **hc-sr04.ino** by urish **Docs** **SIGN IN**

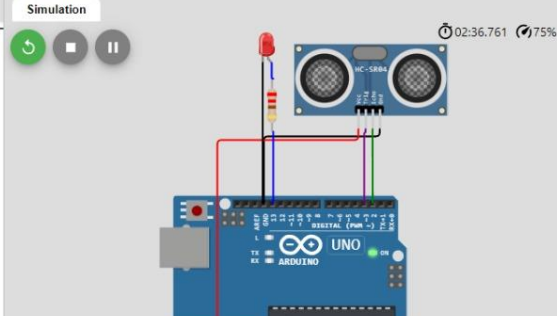
hc-sr04.ino • diagram.json Library Manager

```

10   Serial.begin(9600);
11   pinMode(TRIG_PIN,OUTPUT);
12   pinMode(ECHO_PIN,INPUT);
13 }
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 void loop(){
26   float distance=readDistanceCM();
27
28   if(distance<=100)
29   {
30     Serial.println("person detected");
31   }
32   else{
33     Serial.print("Measured distance:");
34     Serial.println(readDistanceCM());
35   }
36   delay(1000);
37 }

```

Simulation



Measured distance:158.90  
 Measured distance:158.90  
 Measured distance:158.90  
 Measured distance:158.80  
 Measured distance:158.90  
 Measured distance:158.90  
 person detected

02:36.761 75%