

B. Anjali Assignment -4

Question-1: Write code and connections in wokwi for ultrasonic sensor.
Whenever distance is less than 100 cms send “alert” to ibm cloud and display in device recent events.

Solution:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization ="4guc97"
#define deviceType=" arduino"
#define deviceId ="67890"
#define authMethod ="use-token-auth"
#define authToken ="95783535"

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);
```

```
}
```

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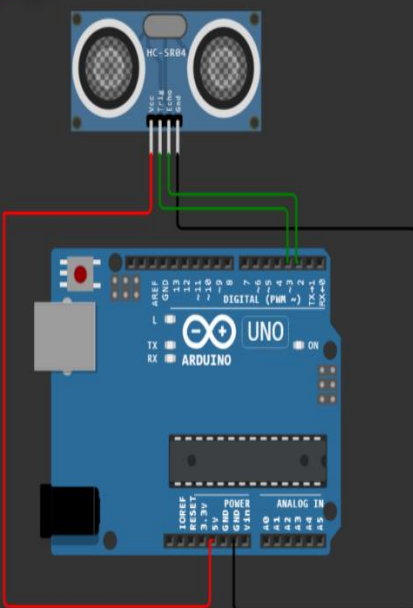
wokwi.com/projects/new/arduino-uno

WOKWI SAVE SHARE Docs

sketch.ino diagram.json Library Manager

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization "16angj"
4 #define deviceId "98765"
5 #define authMethod "use-token-auth"
6 #define authToken "?pf11HBck7TX438hBz"
7
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
16 float readDistanceCM() {
17   digitalWrite(TRIG_PIN, LOW);
18   delayMicroseconds(2);
19   digitalWrite(TRIG_PIN, HIGH);
20   delayMicroseconds(10);
21   digitalWrite(TRIG_PIN, LOW);
22   int duration = pulseIn(ECHO_PIN, HIGH);
23   return duration * 0.034 / 2;
24 }
25
26 void loop() {
27   // put your main code here, to run repeatedly:
28   float distance = readDistanceCM();
29   if(distance <= 100)
30   {
31     Serial.println("person detected ");
32   }
33   else{
34     Serial.print("Measured distance: ");
35   }
```

Simulation



27°C Rain

Search

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Output:

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sketch.ino diagram.json Library Manager

Simulation

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization ="4guc97"
4 #define deviceType="arduino"
5 #define deviceId ="67890"
6 #define authMethod ="use-token-auth"
7 #define authToken ="95783535"
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   {
32     Serial.println("person detected ");
33   }
34   else{
35     Serial.print("Measured distance: ");
```

Restart the simulation

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Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395

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Wokwi Link: <https://wokwi.com/projects/347292086795502163>

IBM CLOUD

Device Recent Events

Service Details - IBM Cloud

IBM Watson IoT Platform

Enrollment successful

sketchuino - Wokwi Arduino and

4guc97.internetofthings.ibmcloud.com/dashboard/devices/browse

anjalib082001@gmail.com
ID: 4guc97

IBM Watson IoT Platform

Browse

Action

Device Types

Interfaces

Add Device

Search by Device ID

Device Simulator

Device ID

Status

Device Type

Class ID

Date Added

Descriptive Location

>

67890

Disconnected

arduino

Device

Nov 3, 2022 12:57 PM

▼

arduino_1

Connected

arduino

Device

Nov 3, 2022 1:35 PM

→ ...

Identity

Device Information

Recent Events

State

Logs

×

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":"ANJALI B","editor":"wokwi..."}

json

a few seconds ago

event_1

{"version":1,"author":"ANJALI B","editor":"wokwi..."}

json

a few seconds ago

event_1

{"version":1,"author":"ANJALI B","editor":"wokwi..."}

json

a few seconds ago

event_1

{"version":1,"author":"ANJALI B","editor":"wokwi..."}

json

a few seconds ago

event_1

{"version":1,"author":"ANJALI B","editor":"wokwi..."}

json

a few seconds ago

1 Simulation running

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Cloudy

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Service Details - IBM Cloud

IBM Watson IoT Platform

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4guc97.internetofthings.ibmcloud.com/dashboard/devices/drilldown/arduino:67890?returnTo=/devices/browse

IBM Watson IoT Platform

anjali082001@gmail.com
ID: 4guc97

Back

Device Drilldown - 67890

Device Credentials

Connection Information

Recent Events

State

Device Information

Metadata

Diagnostics

Connection Logs

Device Actions

Device Credentials

You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details.

Organization ID

4guc97

Device Type

arduino

Device ID

67890

Authentication Method

use-token-auth

Authentication Token

95783535

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

Find out how to add these credentials to your device

Connection Information

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