

N.Akshaya Assignment-4

Question : Write code and connection in wokwi for ultrasonic sensor.

Whenever distance is less than 100cms send “alter” to Ibm cloud and display in device recent events.

Solution:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization ="r4qknz"
#define deviceType=" Arduino"
#define deviceId ="55555"
#define authMethod ="use-token-auth"
#define authToken ="P&hOucocMIH9EGVF_t"

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  pinMode(TRIG_PIN,OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}

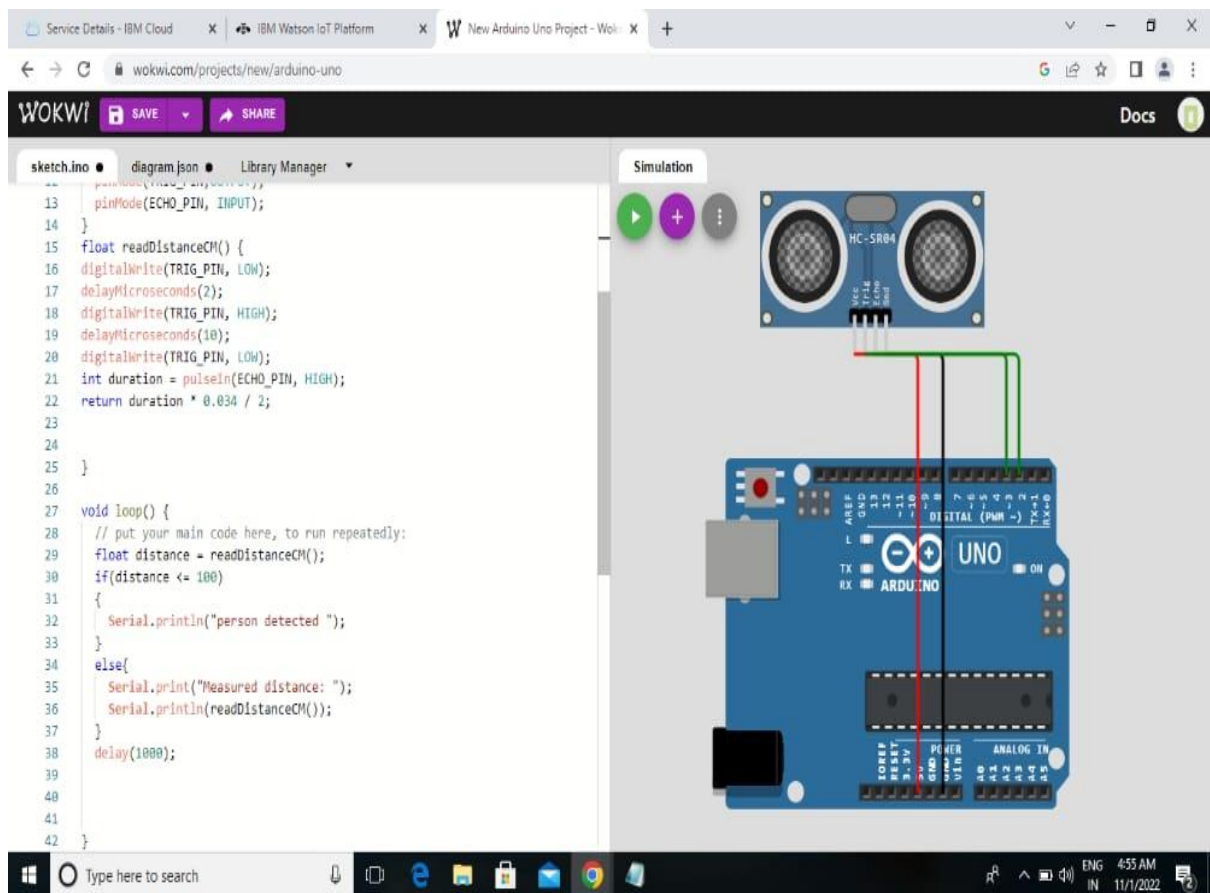
float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
```

```
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);

}
```



OUTPUT:

Service Details - IBM Cloud | IBM Watson IoT Platform | New Arduino Uno Project - Wokwi

wokwi.com/projects/new/arduino-uno

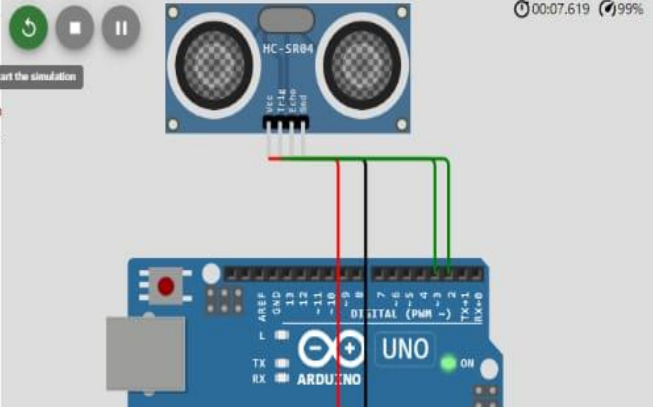
WOKWI SAVE SHARE Docs

sketch.ino diagram.json Library Manager

```
1 {
2   "version": 1,
3   "author": "Anonymous maken",
4   "editor": "wokwi",
5   "parts": [
6     { "type": "wokwi-arduino-uno", "id": "uno", "top": 81.33, "left": 1.33, "a
7     { "type": "wokwi-hc-sr04", "id": "ultrasonic1", "top": -73.04, "left": 42,
8   ],
9   "connections": [
10    [ "uno:GND.3", "ultrasonic1:GND", "black", [ "v0" ] ],
11    [ "uno:5V", "ultrasonic1:VCC", "red", [ "v0" ] ],
12    [ "uno:2", "ultrasonic1:ECHO", "green", [ "v0" ] ],
13    [ "uno:3", "ultrasonic1:TRIG", "green", [ "v0" ] ]
14  ]
15 }
```

Simulation

Restart the simulation



00:07.619 99%

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

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Wokwi Link: <https://wokwi.com/projects/346964780074926676>

IBM CLOUD

Device Recent Events

The screenshot shows the IBM Watson IoT Platform interface. The browser address bar displays the URL: `r4qknz.internetofthings.ibmcloud.com/dashboard/devices/drilldown/arduino:5555?returnTo=/devices/browse`. The page title is "Device Drilldown - 55555". On the left, a sidebar menu lists various options: "Device Credentials" (selected), "Connection Information", "Recent Events", "State", "Device Information", "Metadata", "Diagnostics", "Connection Logs", and "Device Actions". The main content area is titled "Device Credentials" and includes a warning message: "Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token." Below this, a table lists the device's credentials:

Property	Value
Organization ID	r4qknz
Device Type	arduino
Device ID	55555
Authentication Method	use-token-auth
Authentication Token	7cboi4x7_K9UkN/h3w

At the bottom of the page, there is a link: "Find out how to add these credentials to your device". The Windows taskbar at the bottom shows the time as 6:42 AM on 11/1/2022.

IBM Watson IoT Platform

akshaynagvel57@gmail.com
ID: r4qknz

Browse Action Device Types Interfaces

Add Device

Event	Value	Format	Last Received
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago

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1 Simulation running

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