

BIRUNTHIKA S 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 ="I6anqj"
#define deviceType=" Arduino"
#define deviceId ="98765"
#define authMethod ="use-token-auth"
#define authToken ="?pf11HBck7TX43BhBZ"

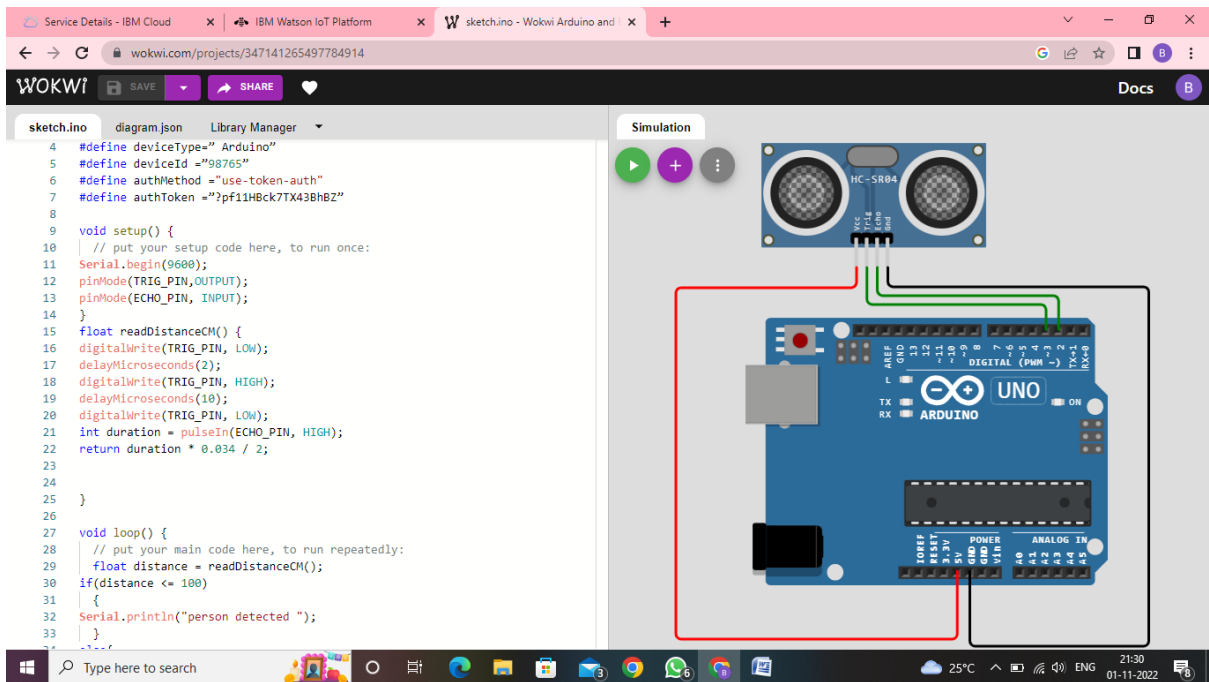
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
  pinMode(TRIG_PIN,OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}

float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
```

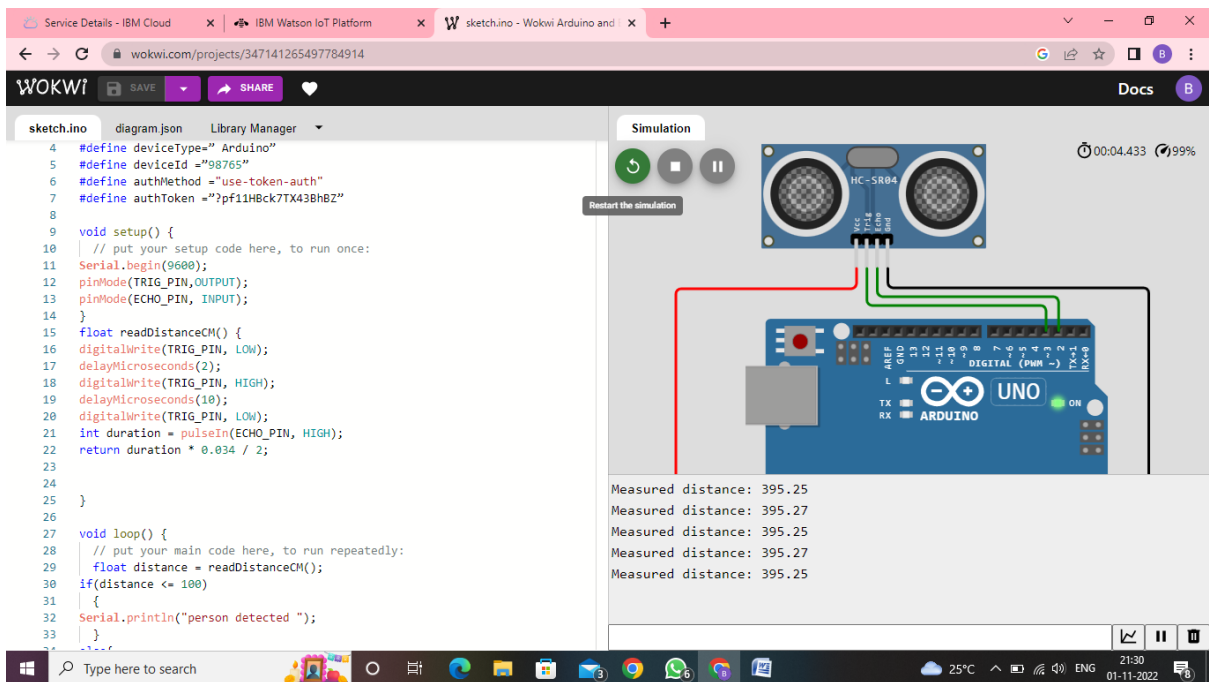
```
int duration = pulseIn(ECHO_PIN, HIGH);  
return duration * 0.034 / 2;
```

```
}
```

```
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:



Wokwi Link: <https://wokwi.com/projects/347141265497784914>

IBM CLOUD

Device Recent Events

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various functions. The main content area displays a table of devices. The first device, 'Arduino', is 'Disconnected'. The second device, 'Arduino_1', is 'Connected' and is selected. A modal window titled 'Identity' is open, showing details for 'Arduino_1':

Property	Value
Device ID	Arduino_1
Device Type	Arduino
Date Added	Nov 1, 2022 9:34 PM
Added By	birunthikasomu2002@gmail.com
Connection Status	Connected Connection Time: Nov 1, 2022 9:34 PM Client Address: 157.49.195.4 SecureToken

At the bottom of the modal, it says 'Items per page 50' and '1-2 of 2 items'. Below the modal, a status bar indicates '1 Simulation running'.

The screenshot shows the IBM Watson IoT Platform dashboard with the 'Recent Events' tab selected for the 'Arduino_1' device. The tab is highlighted in blue. Below the tab, a message states: '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":"Birunthika somu","editor":...	json	a few seconds ago
event_1	{"version":1,"author":"Birunthika somu","editor":...	json	a few seconds ago
event_1	{"version":1,"author":"Birunthika somu","editor":...	json	a few seconds ago

At the bottom of the modal, it says 'Items per page 50' and '1-2 of 2 items'. Below the modal, a status bar indicates '1 Simulation running'.