

S.Valarmathi 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 ="46x7xk"
#define deviceType=" arduino"
#define deviceId ="0504"
#define authMethod ="use-token-auth"
#define authToken ="dv*uK8y__X4O5m!V(K"

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

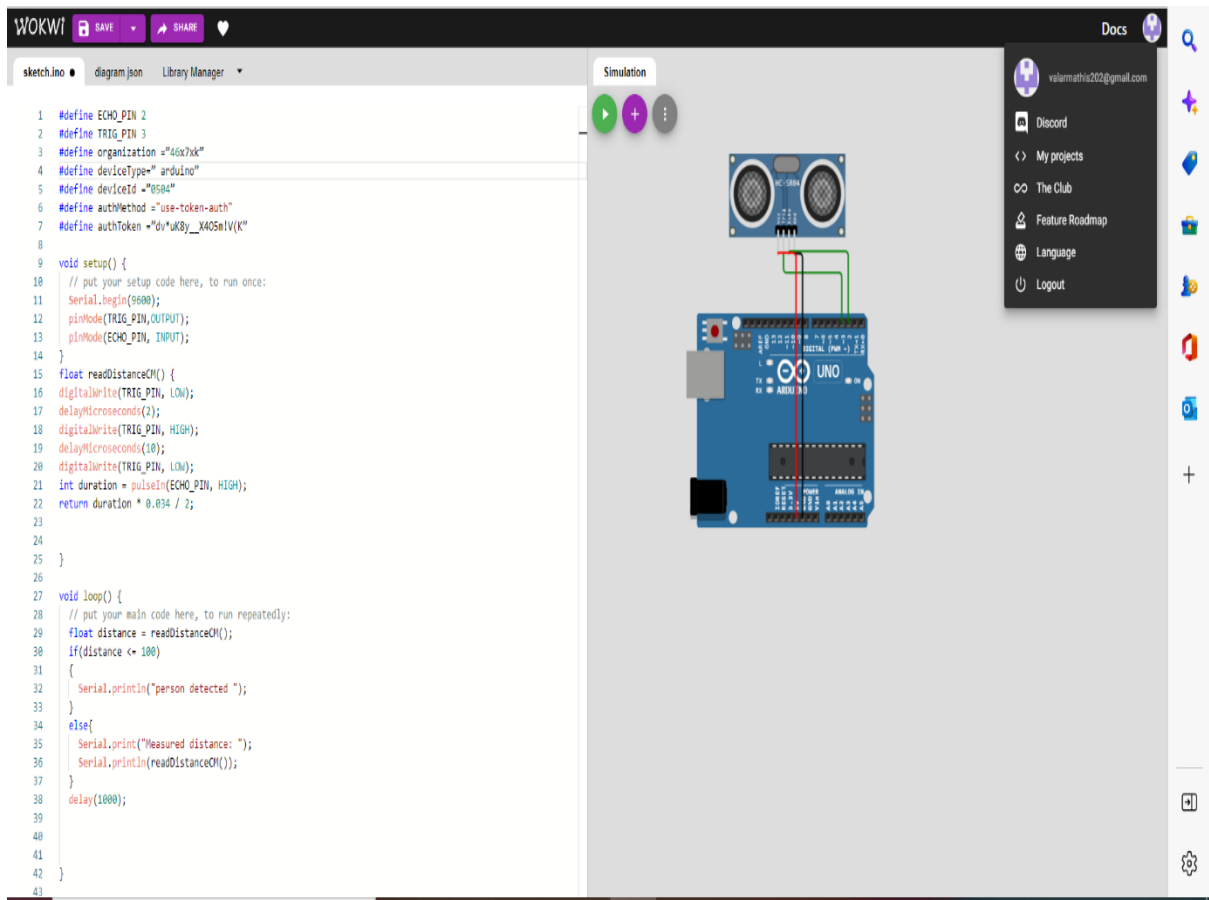
float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
```

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

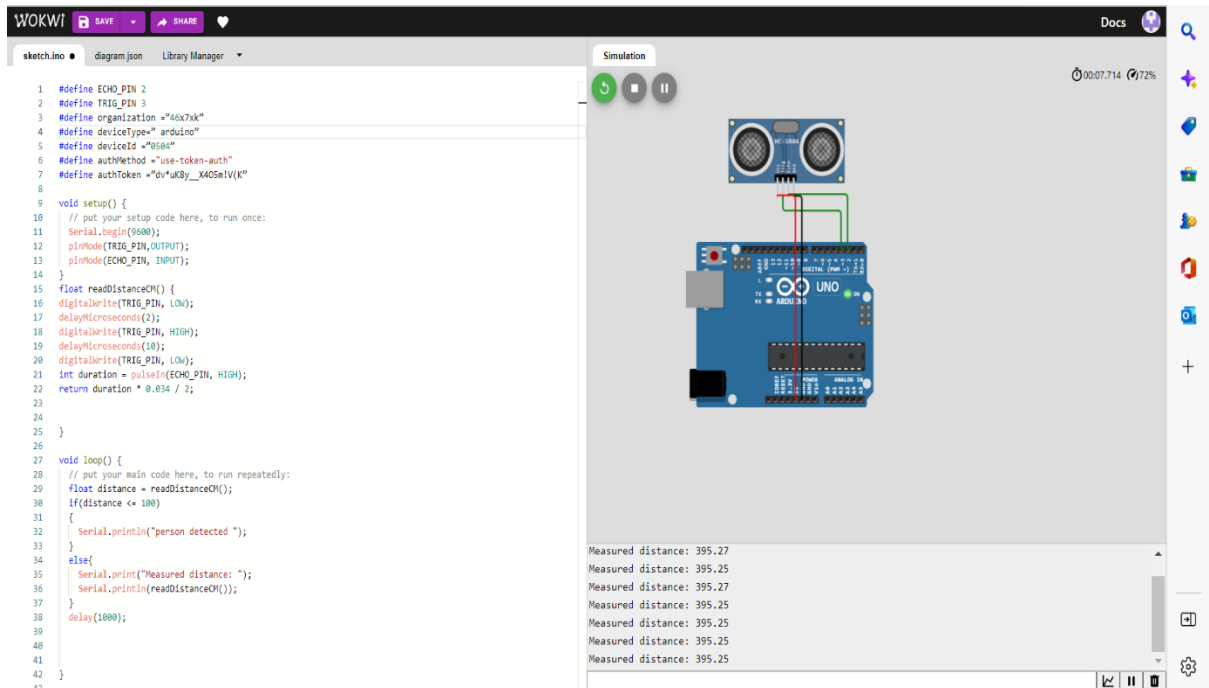
```
}
```

```
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/347484942224065107>

IBM CLOUD

Device Recent Events

The screenshot shows the 'Device Drilldown - 0504' page in the IBM Watson IoT Platform. The left sidebar contains a navigation menu with options: Device Credentials, Connection Information (selected), Recent Events, State, Device Information, Metadata, Diagnostics, Connection Logs, and Device Actions. The main content area is divided into two sections. The top section, 'Connection Information', provides basic details about the device: Device ID (0504), Device Type (arduino), Date Added (Nov 5, 2022 4:30 PM), Added By (valarmathis202@gmail.com), and Connection Status (Disconnected). The bottom section, 'Recent Events', includes a description: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this description is a table with columns for Event, Value, Format, and Last Received, though it currently appears empty.

This screenshot shows the 'Recent Events' modal window for device 0504. The modal is titled 'Recent Events' and contains the same description as the previous view: 'The recent events listed show the live stream of data that is coming and going from this device.' Below the description is a table with the following data:

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

At the bottom of the modal, it indicates 'Items per page 50' and '1-1 of 1 item'. A status bar at the bottom of the screen shows '3 Simulations running'.

