

R.SUBITHRA

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 ="y13urg"
#define deviceType=" Arduino"
#define deviceId ="12345"
#define authMethod ="use-token-auth"
#define authToken ="87654321"

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);
```

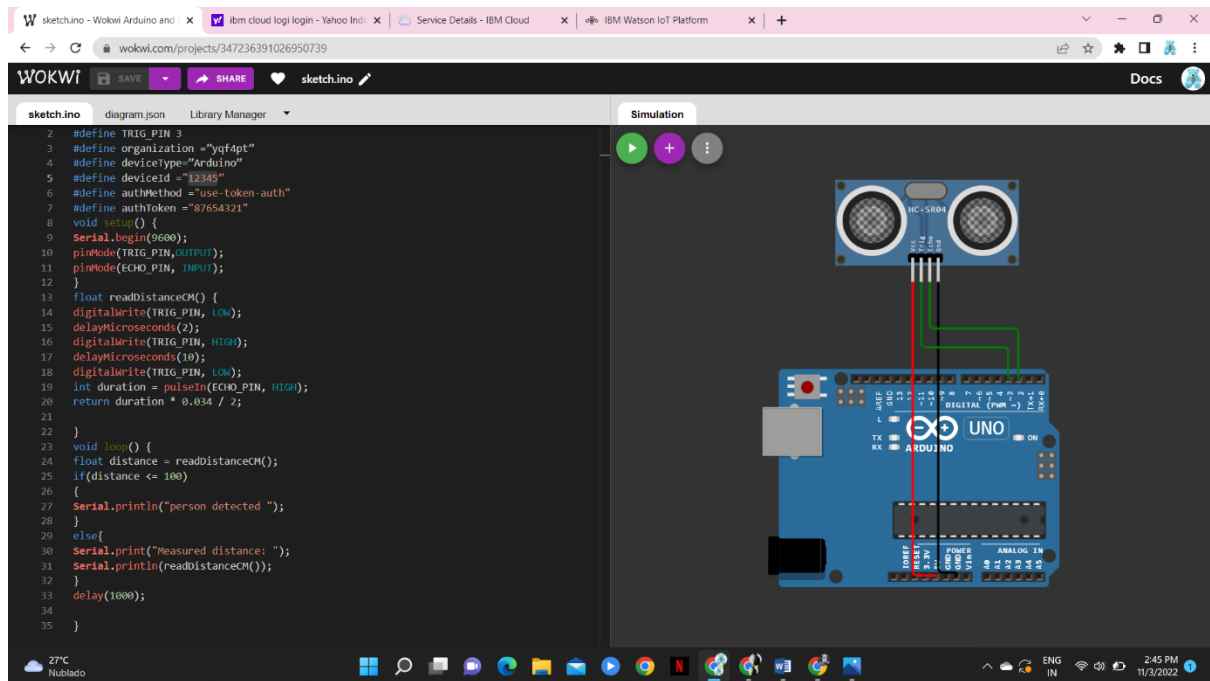
```
int duration = pulseIn(ECHO_PIN, HIGH);  
return duration * 0.034 / 2;
```

```
}
```

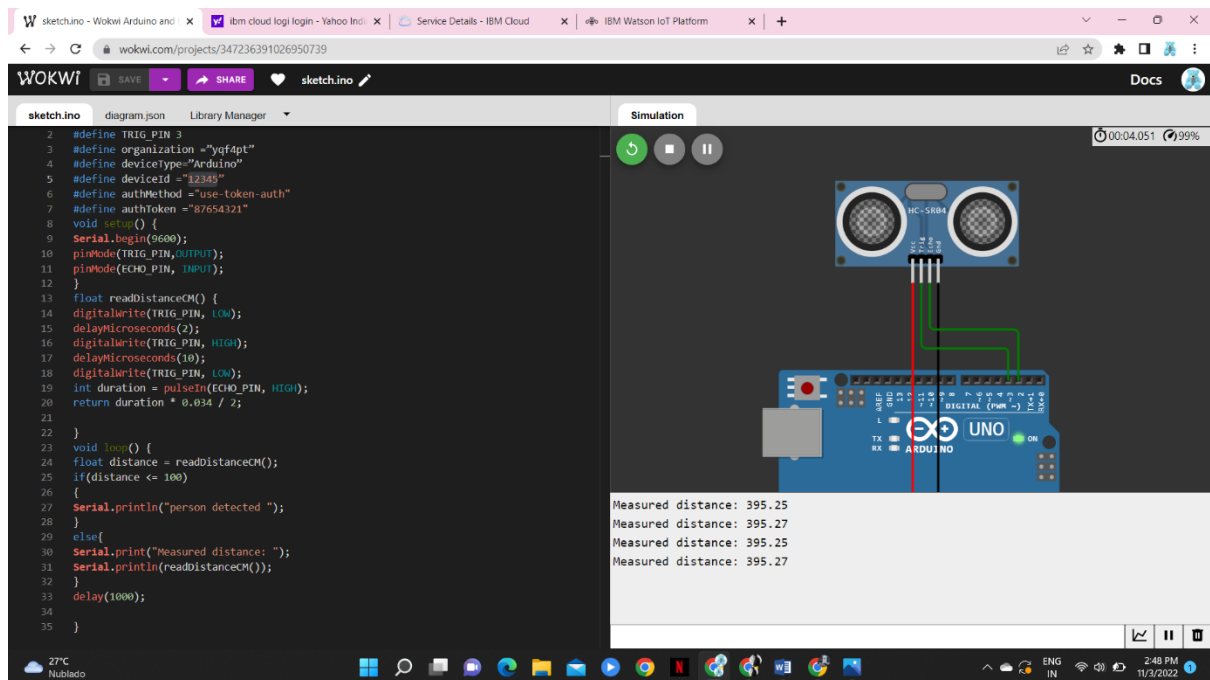
```
void loop() {  
  // put your main code here, to run repeatedly:  
  float distance = readDistanceCM();  
  if(distance <= 100)  
  {  
    Serial.println("person detected ");  
  }  
  else{  
    Serial.print("Measured distance: ");  
    Serial.println(readDistanceCM());  
  }  
  delay(1000);
```

```
}
```

Output:



Wokwi Link: <https://wokwi.com/projects/347236391026950739>



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'. The left sidebar contains icons for various IoT functions. The main content area is titled 'Recent Events' and displays a table of events. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. There are five rows of data, all showing 'event_1' with a JSON value and 'a few seconds ago' as the last received time. Below the table, it indicates 'Items per page 50' and '1-2 of 2 items'. A status bar at the bottom shows '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"version":1,"author":"SUBITHRA.R","editor":"w...	json	a few seconds ago
event_1	{"version":1,"author":"SUBITHRA.R","editor":"w...	json	a few seconds ago
event_1	{"version":1,"author":"SUBITHRA.R","editor":"w...	json	a few seconds ago
event_1	{"version":1,"author":"SUBITHRA.R","editor":"w...	json	a few seconds ago
event_1	{"version":1,"author":"SUBITHRA.R","editor":"w...	json	a few seconds ago

The screenshot shows the IBM Watson IoT Platform dashboard with a 'Device Drilldown - 12345' view. The left sidebar contains a list of navigation options: 'Device Credentials', 'Connection Information', 'Recent Events', 'State', 'Device Information', 'Metadata', 'Diagnostics', 'Connection Logs', and 'Device Actions'. The main content area is titled 'Device Credentials' and contains a table with the following information:

Organization ID	y13urg
Device Type	Arduino
Device ID	12345
Authentication Method	use-token-auth
Authentication Token	87654321

Below the table, there is a warning icon and text: 'Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.' A link 'Find out how to add these credentials to your device' is also present. A status bar at the bottom shows '0 Simulations running'.