

#### Assignment -4

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Assignment Date	01 November 2022
Team ID	PNT2022TMID18146
Project Name	Project – SMART SIGN CONNECTIVITY FOR ROAD SAFETY
Maximum Marks	2 Marks

WRITE CODE AND CONNECTIONS IN WOKWI FOR ULTRASONIC. WHENEVER DISTANCE IS LESS THAN 100 CMS SEND "ALERT" TO IBM CLOUD AND DISPLAY IN DEVICE RECENT EVENTS.

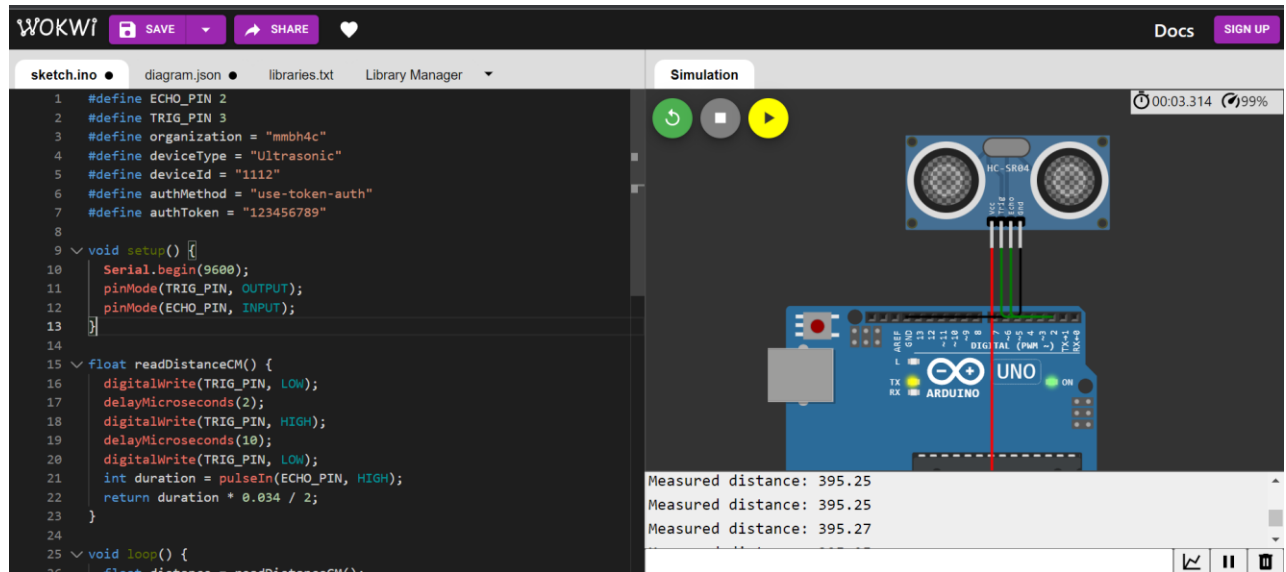
#### **SOLUTION:**

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "mmbh4c"
#define deviceType = "Ultrasonic"
#define deviceId = "1112"
#define authMethod = "use-token-auth"
#define authToken = "123456789"

void setup() {
  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() {
  float distance = readDistanceCM();
  if(distance <= 100)
  {
    Serial.println("person detected ");
  }
  else{
    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());
  }
  delay(100);
}
```



Wokwi Link: <https://wokwi.com/projects/345395196387656275>

#### OUTPUT:

```
Measured distance: 395.25
Measured distance: 395.35
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.
```

The screenshot displays the AWS IoT Core console interface. At the top, there's a navigation bar with 'Browse', 'Action', 'Device Types', and 'Interfaces'. A blue 'Add Device' button is on the right. Below this, a header bar shows the selected device 'Ultrasonic\_1' with a status of 'Connected', the device name 'Ultrasonic', and the timestamp 'Oct 26, 2022 7:54 PM'. The main content area has tabs for 'Identity', 'Device Information', 'Recent Events' (which is active), 'State', and 'Logs'. A close button 'X' is in the top right of the main area. Below the tabs, a text block states: 'The recent events listed show the live stream of data that is coming and going from this device.' Underneath is a table with four columns: 'Event', 'Value', 'Format', and 'Last Received'. The table contains four rows of data, all showing 'event\_1' with a JSON status of 'Person Detected' in 'json' format, received 'a few seconds ago'. At the bottom right, a white box with a blue border indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago

1 Simulation running

Event	Value	Format	Last Received
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago