

Assignment 4
SHALOM

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define Organization ID = "qf6r73"
#define Device Type = "ass"
#define Device ID = "2525"
#define Authentication Method = "use-token-auth"
#define Authentication Token = "4wZNv689qq-YiWyNgN"

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(1000);
}
```

Assignment 4

SHALOM

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes a 'Back' button and the title 'Device Drilldown - 2525'. On the left, a sidebar lists various options: Device Credentials (selected), Connection Information, Recent Events, State, Device Information, Metadata, Diagnostics, and Connection Logs. The main content area is titled 'Device Credentials' and contains a table with the following information:

Organization ID	qf6r73
Device Type	ass
Device ID	2525
Authentication Method	use-token-auth
Authentication Token	4wZNV689qq-YiWyNgN

Below the table, there is a warning icon and the text 'Authentication tokens are non- new authentication token.' and a status indicator '1 Simulation running'.

The screenshot shows the Wokwi IDE interface. The top bar includes 'SAVE' and 'SHARE' buttons. The main workspace is divided into two sections: a code editor on the left and a simulation window on the right. The code editor displays the following C++ code:

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define Organization ID = "qf6r73"
4 #define Device Type = "ass"
5 #define Device ID = "2525"
6 #define Authentication Method = "use-token-auth"
7 #define Authentication Token = "4wZNV689qq-YiWyNgN"
8
9 void setup() {
10 // put your setup code here, to run once:
11 Serial.begin(9600);
12 pinMode(TRIG_PIN, OUTPUT);
13 pinMode(ECHO_PIN, INPUT);
14 }
15 float readDistanceCM() {
16 digitalWrite(TRIG_PIN, LOW);
17 delayMicroseconds(2);
18 digitalWrite(TRIG_PIN, HIGH);
19 delayMicroseconds(10);
20 digitalWrite(TRIG_PIN, LOW);
21 int duration = pulseIn(ECHO_PIN, HIGH);
22 return duration * 0.034 / 2;
23 }
24 void loop() {
25 // put your main code here, to run repeatedly:
26 float distance = readDistanceCM();
27 if(distance <= 100)
```

The simulation window shows an Arduino Uno board connected to an HC-SR04 ultrasonic sensor. The sensor's VCC pin is connected to the 5V pin on the Arduino, and its GND pin is connected to a GND pin. The TRIG pin is connected to digital pin 3, and the ECHO pin is connected to digital pin 2. The simulation is running, as indicated by the green play button icon.

Assignment 4

SHALOM

WOKWI

sketch.ino • diagram.json • Library Manager

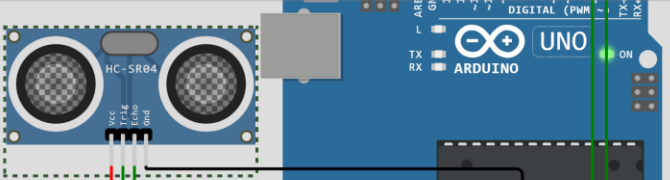
```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define Organization ID = "qf6r73"
4 #define Device Type = "ass"
5 #define Device ID = "2525"
6 #define Authentication Method = "use-token-auth"
7 #define Authentication Token = "4wZNv689qq-YiWyNgN"
8
9 void setup() {
10 // put your setup code here, to run once:
11 Serial.begin(9600);
12 pinMode(TRIG_PIN, OUTPUT);
13 pinMode(ECHO_PIN, INPUT);
14 }
15 float readDistanceCM() {
16 digitalWrite(TRIG_PIN, LOW);
17 delayMicroseconds(2);
18 digitalWrite(TRIG_PIN, HIGH);
19 delayMicroseconds(10);
20 digitalWrite(TRIG_PIN, LOW);
21 int duration = pulseIn(ECHO_PIN, HIGH);
22 return duration * 0.034 / 2;
23 }
24 void loop() {
25 // put your main code here, to run repeatedly:
26 float distance = readDistanceCM();
27 if(distance <= 100)
```

Simulation

00:10.893 88%

Editing Ultrasonic Distance Sensor

Distance: 203cm



Measured distance: 234.86
person detected
Measured distance: 193.43
Measured distance: 174.66
person detected
person detected
Measured distance: 243.73

qf6r73.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

510819106004@smartinternz.com
ID: qf6r73

Browse Action Device Types Interfaces

Add Device +

Event	Value	Format	Last Received
event_1	{"distance":151}	Value json	a few seconds ago
event_1	{"distance":152}	json	a few seconds ago
event_1	{"distance":81}	json	a few seconds ago
event_1	{"distance":52}	json	a few seconds ago
event_1	{"distance":89}	json	a few seconds ago

ass_1 Connected ass

qf6r73 Disconnected smart city

3 Simulations running