

S.Jayalakshmi 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

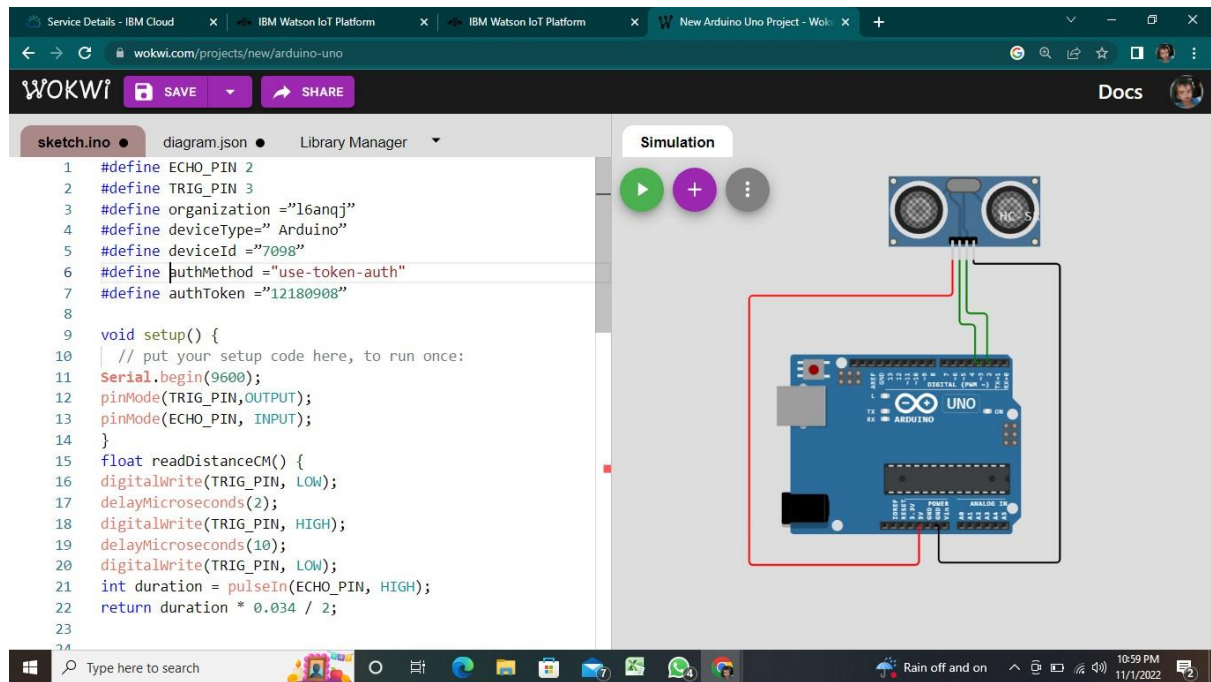
#define organization ="vrdv5o"
#define deviceType=" Arduino"
#define deviceId ="7098"
#define authMethod ="use-token-auth"
#define authToken ="12180908"

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
```

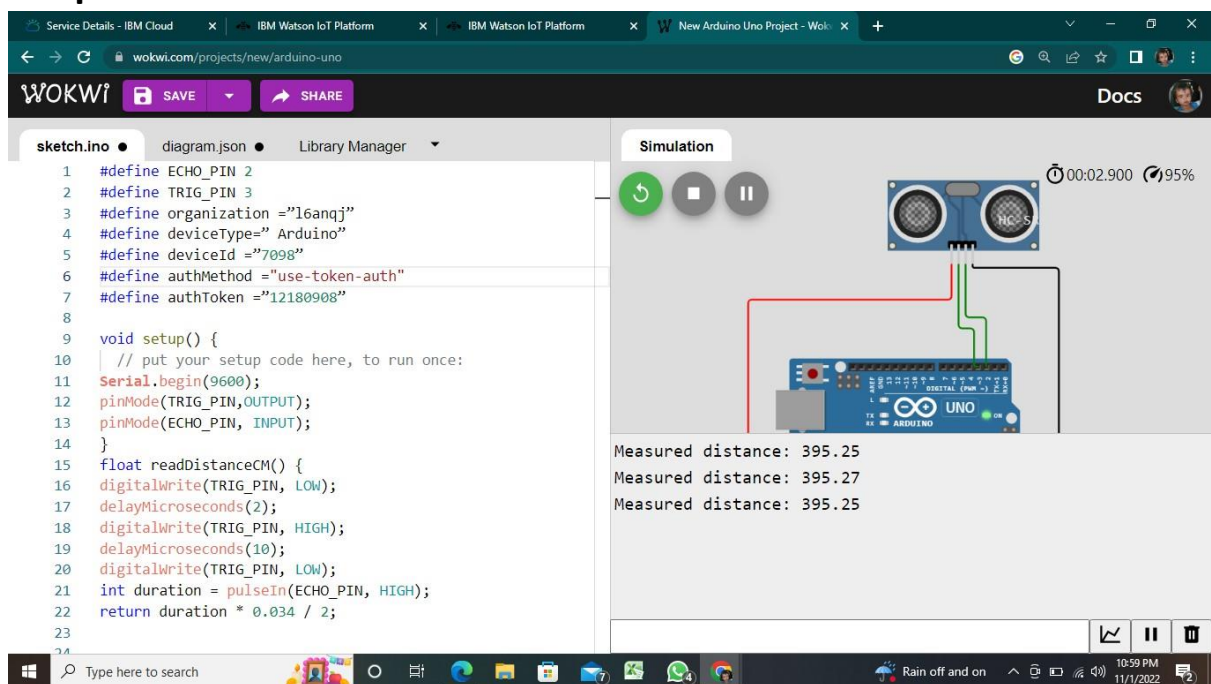
```
duration = pulseIn(ECHO_PIN, HIGH);  
return duration * 0.034 / 2;
```

```
}
```

```
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/347148243498435155>

IBM CLOUD

Device Recent Events

The screenshot shows the 'Device Drilldown - 7098' page in the IBM Watson IoT Platform. The left sidebar contains a navigation menu with 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 includes a warning message: 'Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.' Below this, a table lists device details:

Property	Value
Organization ID	vrdv5o
Device Type	Arduino
Device ID	7098
Authentication Method	use-token-auth
Authentication Token	12180908

At the bottom of the main content area, a status bar indicates '1 Simulation running'.

The screenshot shows the 'Recent Events' page for device 7098. The page displays a table of recent events, with columns for Event, Value, Format, and Last Received. The table shows five events, all labeled 'event_1', with values in JSON format and a 'Last Received' time of 'a few seconds ago'. The page also includes a pagination bar at the bottom indicating '1 of 1 page' and '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"version":1,"author":"JAYALAKSHMI S","editor":...}	json	a few seconds ago
event_1	{"version":1,"author":"JAYALAKSHMI S","editor":...}	json	a few seconds ago
event_1	{"version":1,"author":"JAYALAKSHMI S","editor":...}	json	a few seconds ago
event_1	{"version":1,"author":"JAYALAKSHMI S","editor":...}	json	a few seconds ago
event_1	{"version":1,"author":"JAYALAKSHMI S","editor":...}	json	a few seconds ago