R. Soorya Priya Assignment -4

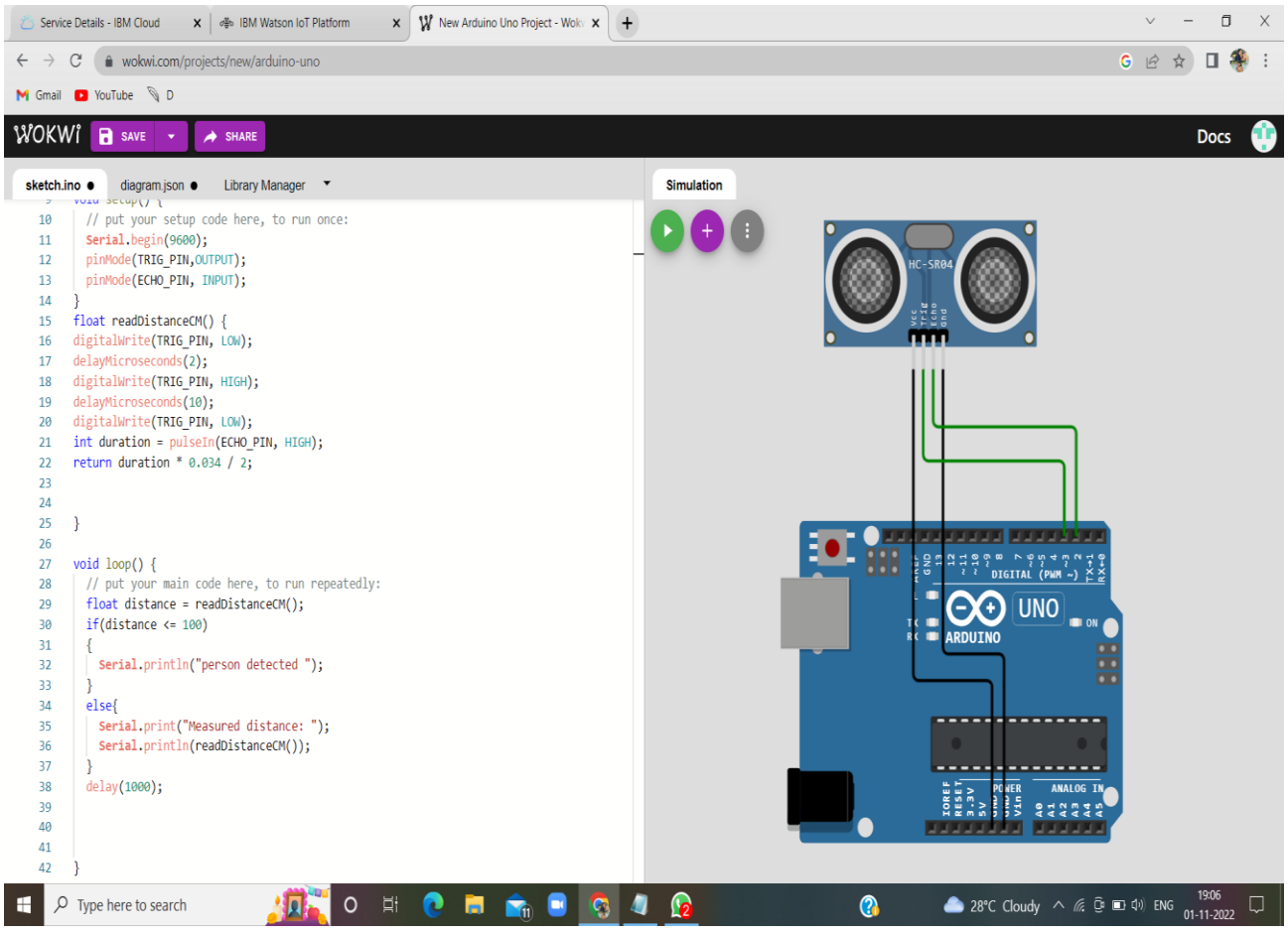
Question-1: **Write code and connection in wokwi for ultrasonic sensor. Whenever distance is less then 100 cms send “alert” to ibm cloud and display in device recent events.**

Solution:

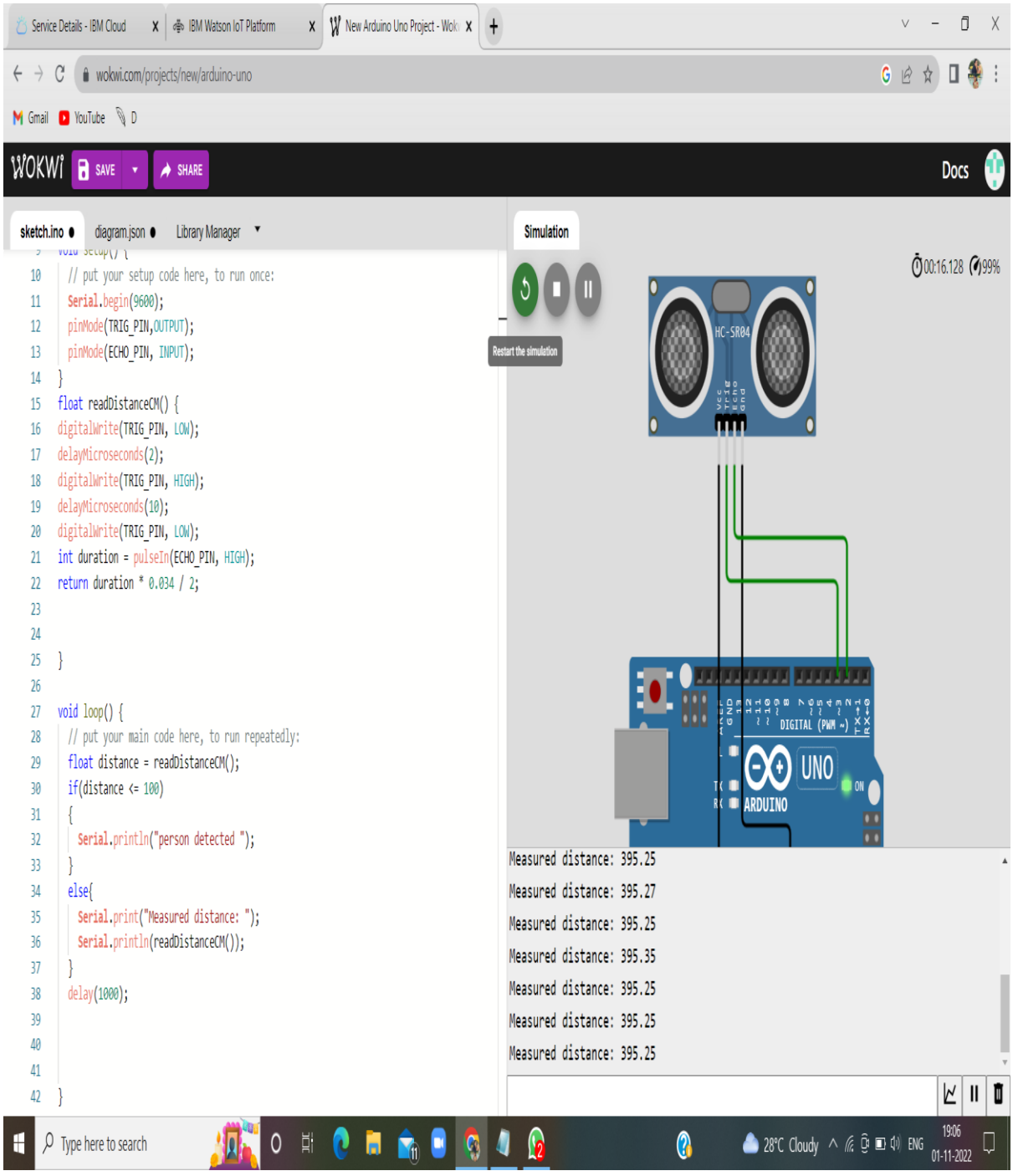
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization =”and2ah”
#define deviceType=” Arduino”
#define deviceId =”90909”
#define authMethod ="use-token-auth"
#define authToken =”Ck3ER+yr8qmwsSZ*Kl”

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:

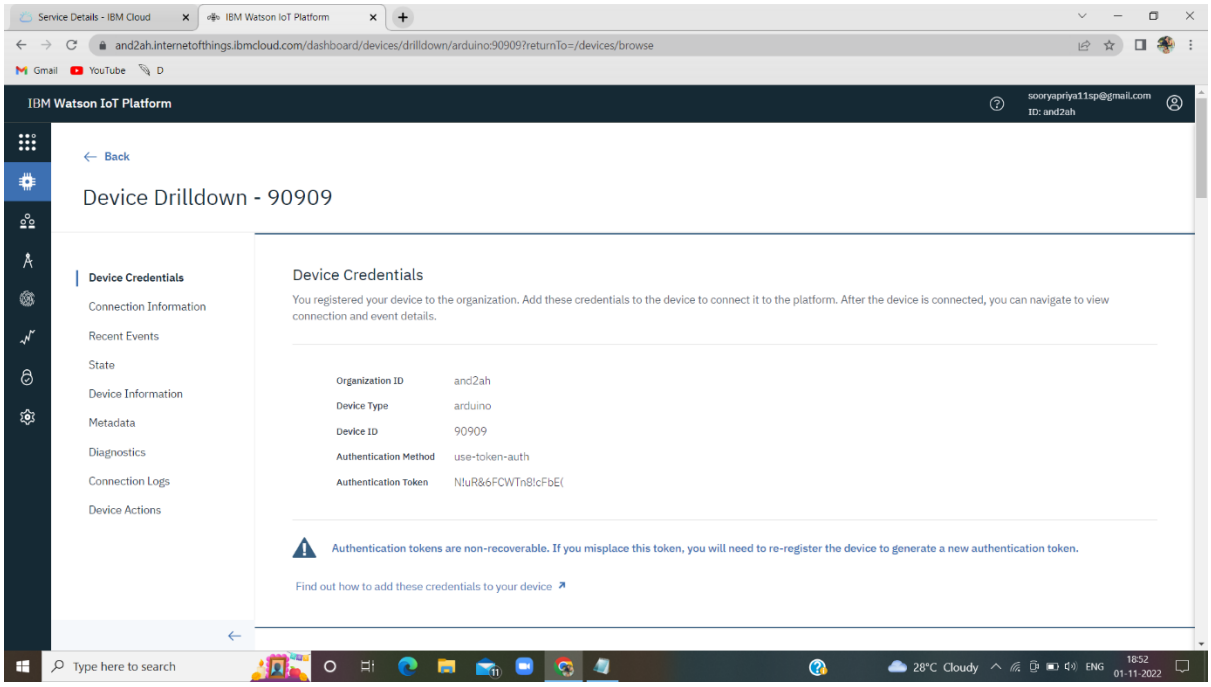

Service Details - IBM Cloud
IBM Watson IoT Platform
New Arduino Uno Project - Woki
wokwi.com/projects/new/arduino-uno
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
Library Manager
// put your setup code here, to run once:
Serial.begin(9600);
pinMode(TRIG_PIN,OUTPUT);
pinMode(ECHO_PIN, INPUT);
}
float 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);
}
Simulation
Restart the simulation
00:16.128
99%
HC-SR04
UNO
ARDUINO
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.35
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.25
Type here to search
28°C Cloudy
ENG
19:06
01-11-2022

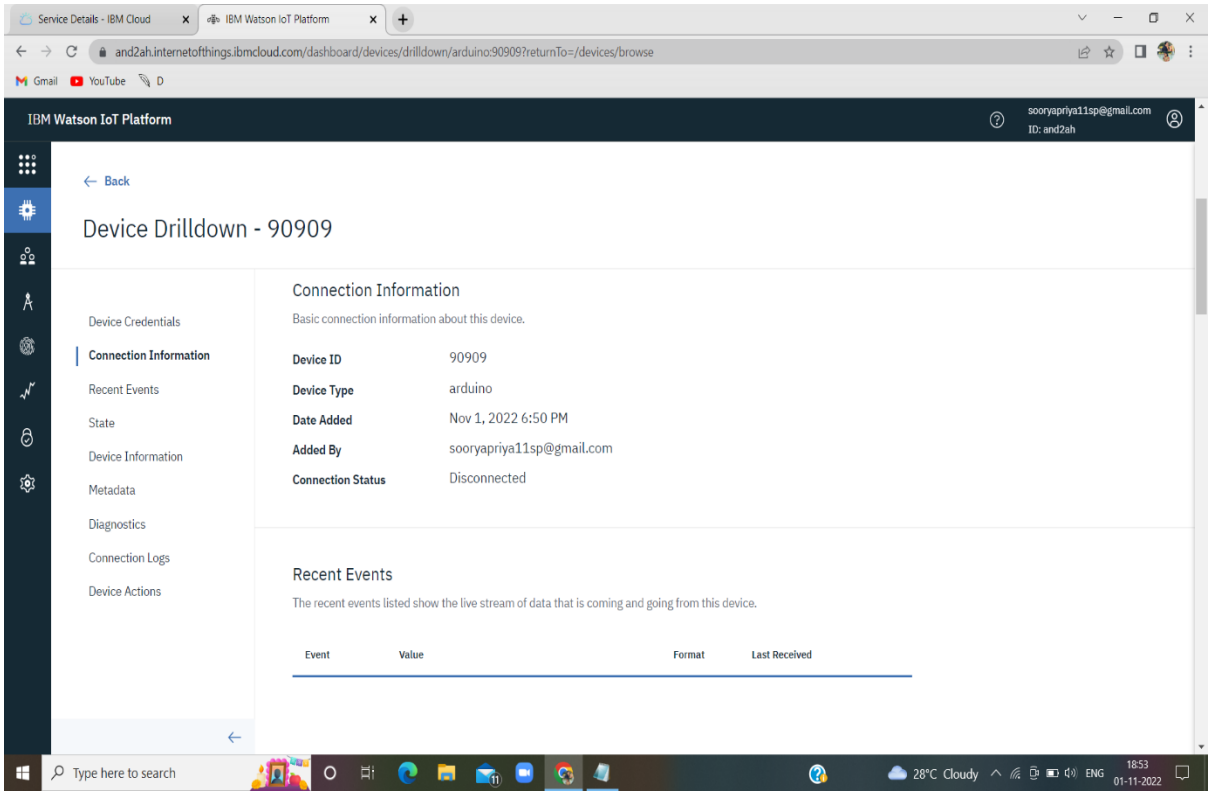
Wokwi link:

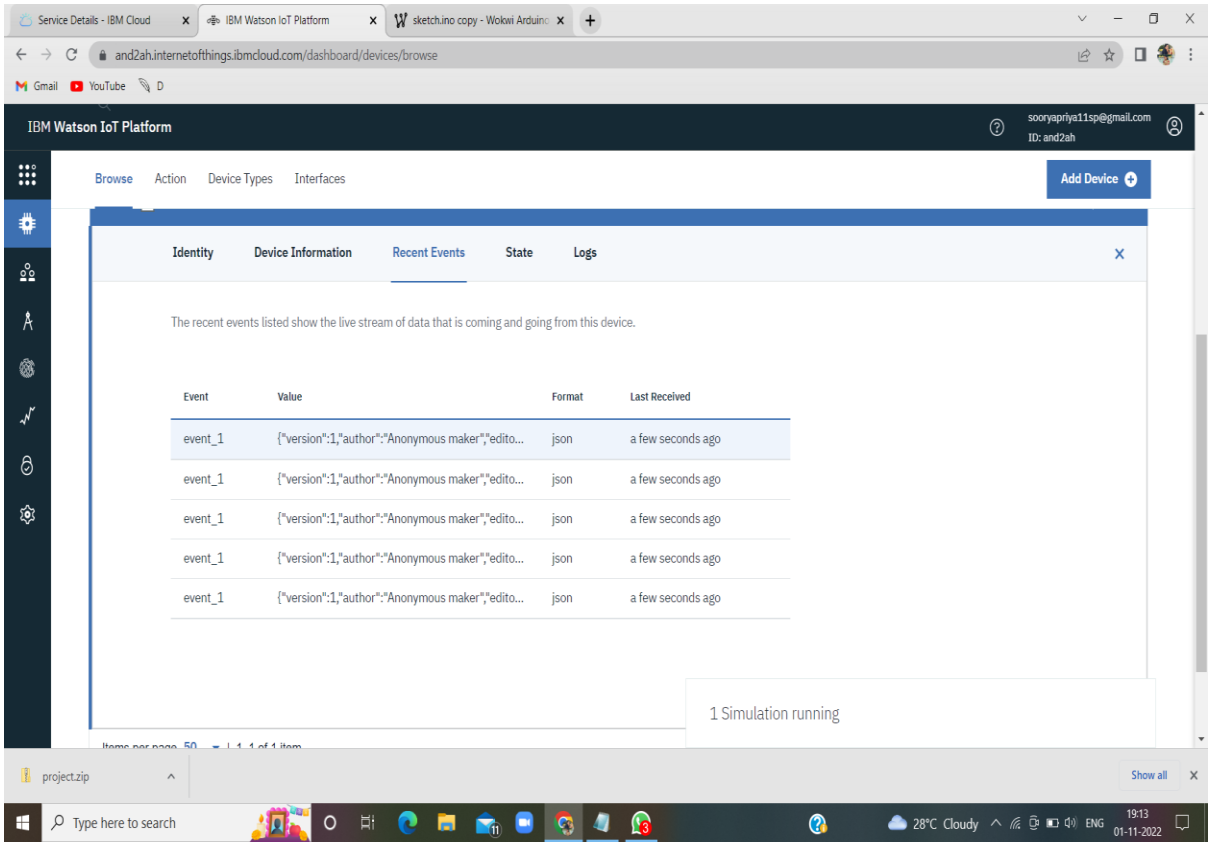
https://wokwi.com/projects/347132134181306963

IBM

Device Recent Events






Service Details - IBM Cloud
IBM Watson IoT Platform
sketch.ino copy - Wokwi Arduino
and2ah.internetofthings.ibmcloud.com/dashboard/devices/browse
Gmail
YouTube
IBM Watson IoT Platform
sooryapriya11sp@gmail.com
ID: and2ah
Browse
Action
Device Types
Interfaces
Add Device
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event_1
{"version":1,"author":"Anonymous maker","edito...
json
a few seconds ago
1 Simulation running
project.zip
Show all
Type here to search
28°C Cloudy
ENG
19:13
01-11-2022