ASSIGNMENT 4

Ultrasonic sensor simulation in Wokwi

Question :

Write a code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100cms send an “Alert” to IBM cloud and display in the device recent events.

Wokwi simulation link:

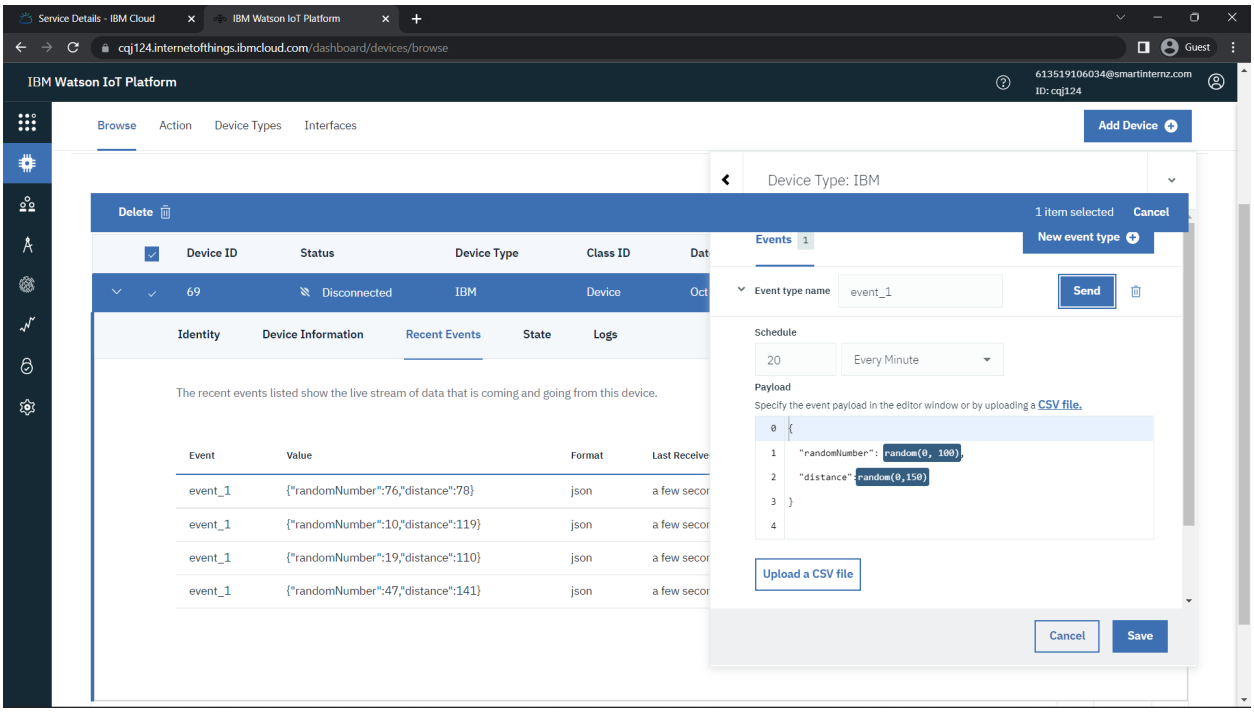
https://wokwi.com/projects/347020199811088980

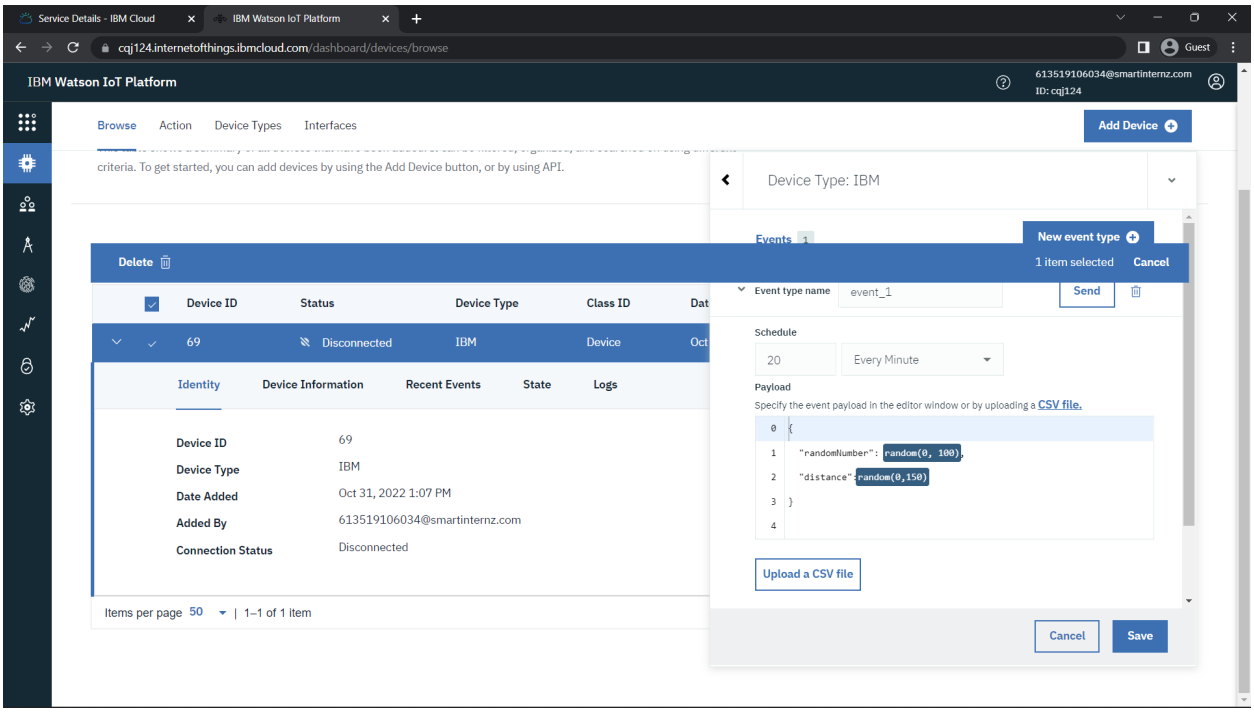
Code:

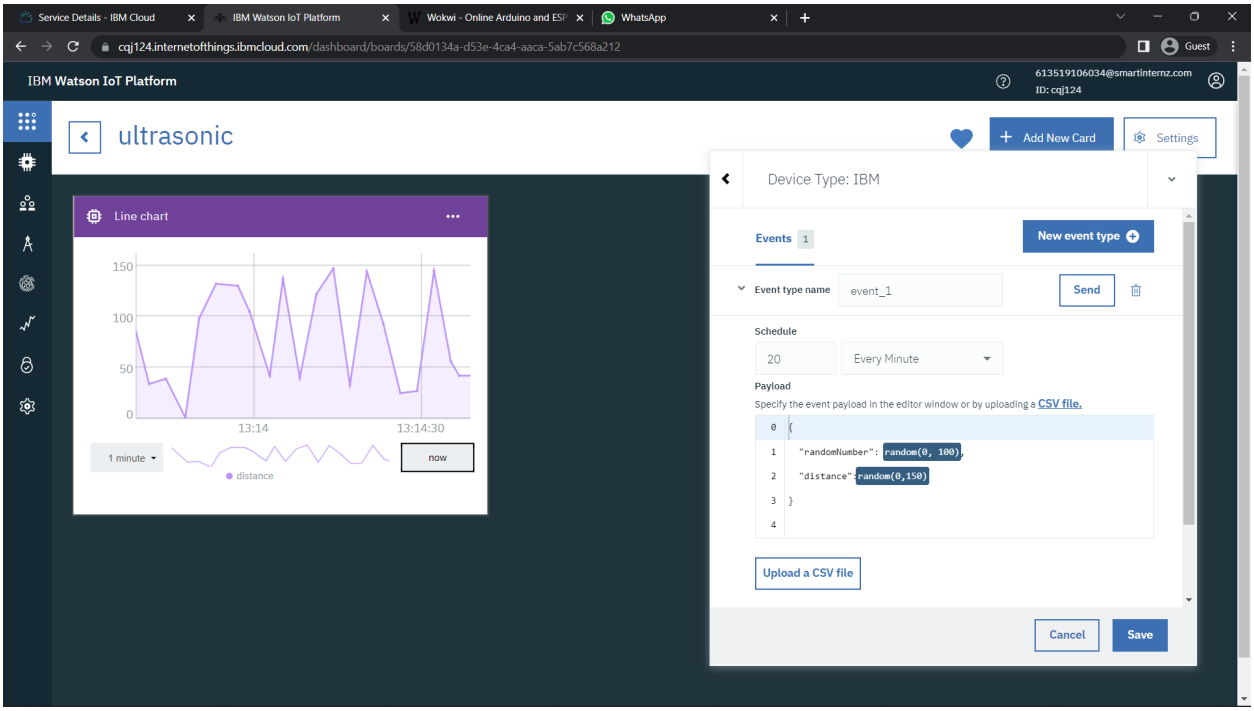
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "cqj124
#define deviceType = "IBM"
#define deviceId = "69"
#define authMethod = "token"
#define authToken = "12345678"

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(){
```

```
25      float distance=readDistanceCM();
26      if(distance<=100)
27      {
28          Serial.println("person detected");
29      }
30      else{
31          Serial.print("Measured distance:");
32          Serial.println(readDistanceCM());
33      }
34      delay(1000);
35 }
```

IBM Cloud:




Service Details - IBM Cloud
IBM Watson IoT Platform
cqj124.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
613519106034@smartinternz.com
ID: cqj124
Browse
Action
Device Types
Interfaces
Add Device
criteria. To get started, you can add devices by using the Add Device button, or by using API.
Delete
1 item selected
Cancel
Device ID
Status
Device Type
Class ID
69
Disconnected
IBM
Device
Identity
Device Information
Recent Events
State
Logs
Device ID 69
Device Type IBM
Date Added Oct 31, 2022 1:07 PM
Added By 613519106034@smartinternz.com
Connection Status Disconnected
Items per page 50 | 1–1 of 1 item
Device Type: IBM
Events 1
New event type
Event type name event_1
Send
Schedule
20
Every Minute
Payload
Specify the event payload in the editor window or by uploading a CSV file.
{
"randomNumber": random(0, 100),
"distance":random(0,150)
}
Upload a CSV file
Cancel
Save


Service Details - IBM Cloud
IBM Watson IoT Platform
Wokwi - Online Arduino and ESP
WhatsApp
cqj124.internetofthings.ibmcloud.com/dashboard/boards/58d0134a-d53e-4ca4-aaca-5ab7c568a212
IBM Watson IoT Platform
613519106034@smartinternz.com
ID: cqj124
ultrasonic
Add New Card
Settings
Line chart
150
100
50
0
13:14
13:14:30
1 minute
now
distance
Device Type: IBM
Events 1
New event type
Event type name event_1
Send
Schedule
20
Every Minute
Payload
Specify the event payload in the editor window or by uploading a CSV file.
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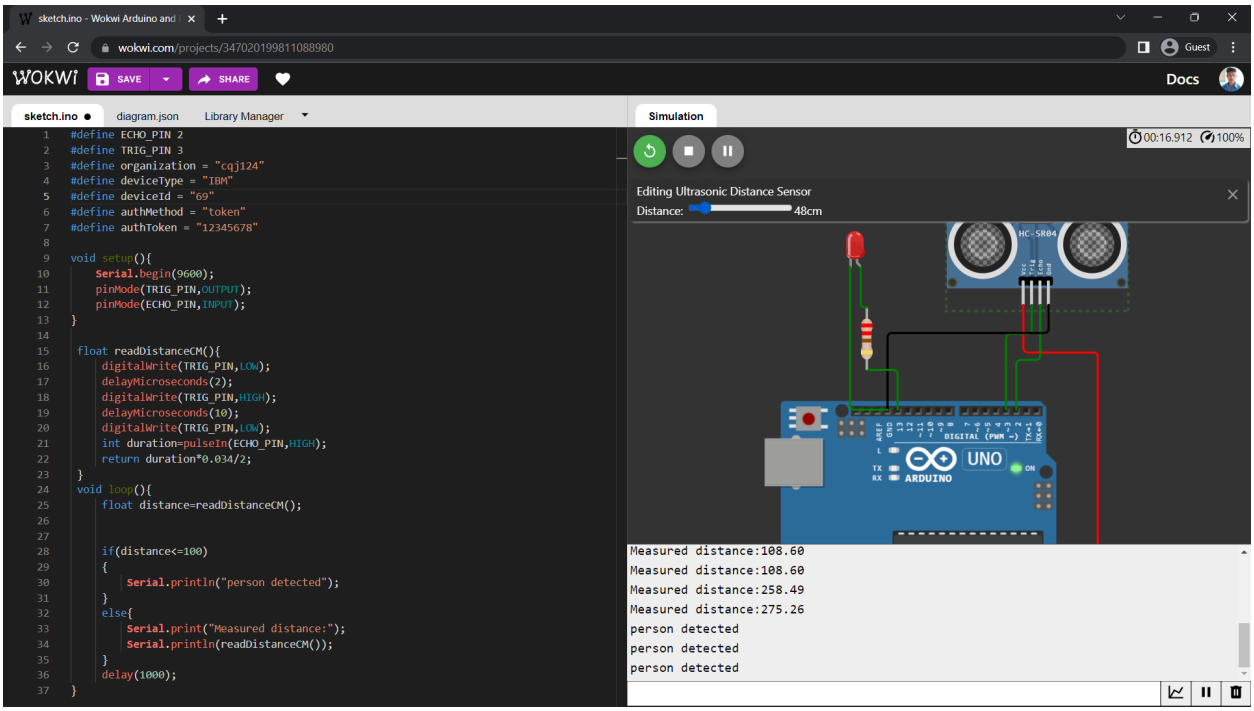
Wokwi Simulation:

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 void loop(){
     float distance=readDistanceCM();


     if(distance<=100)
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