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:

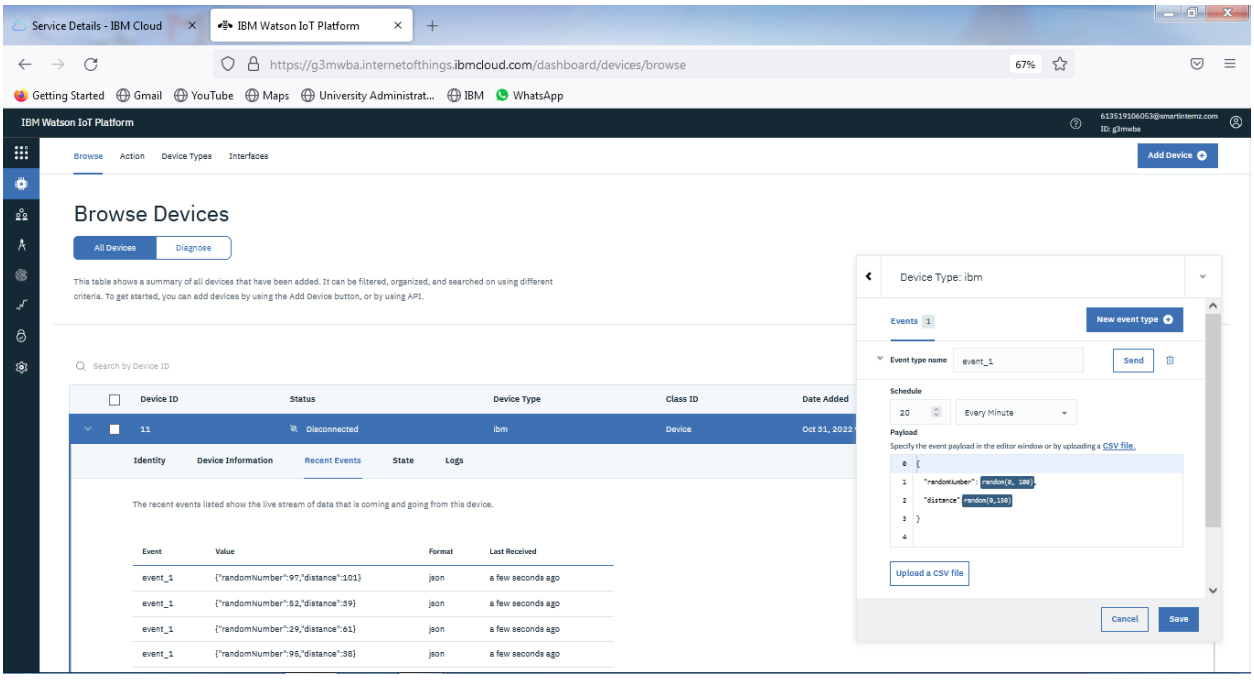
https://wokwi.com/projects/290056311044833800

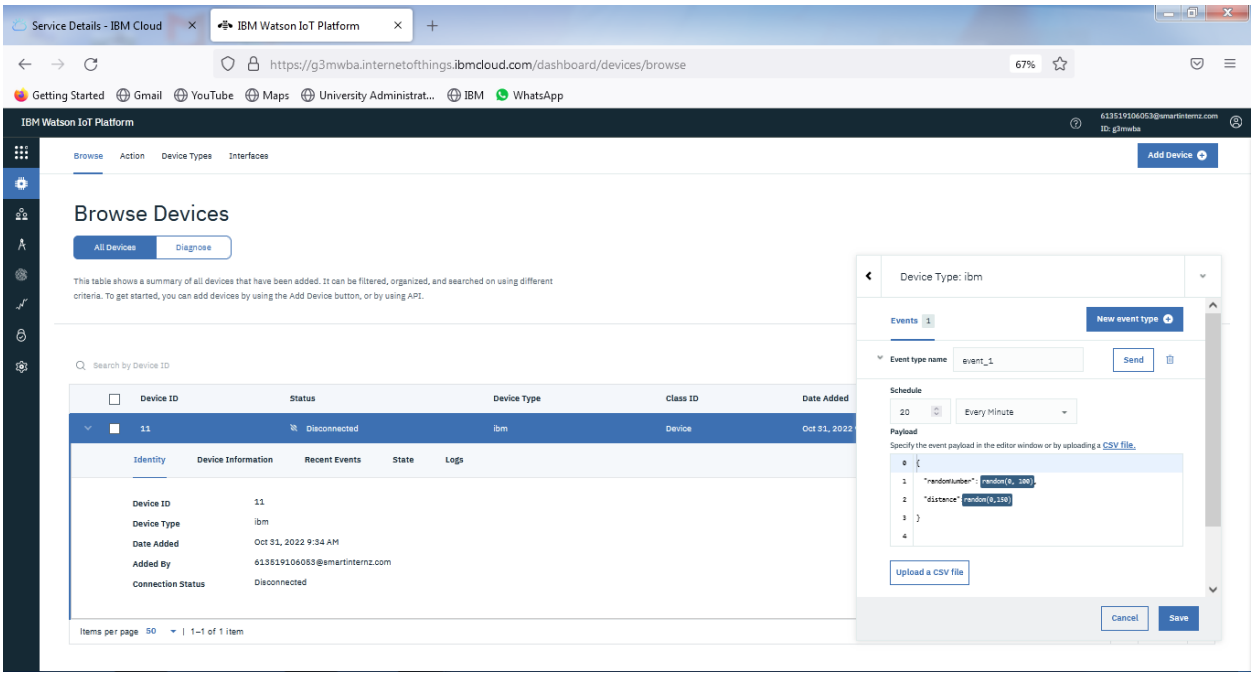
Code:

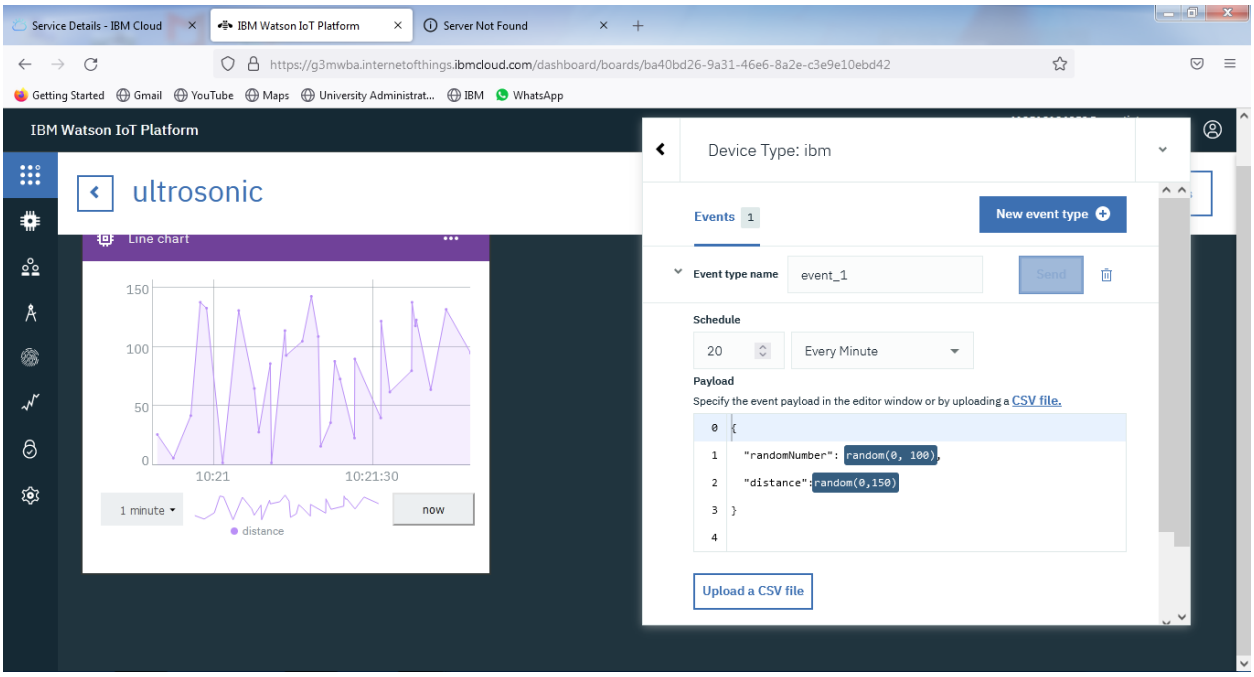
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "g3mwba"
#define deviceType = "abcd"
#define deviceId = "16"
#define authMethod = "token"
#define authToken = "12345678"

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
https://g3mwba.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Add Device
Browse Devices
All Devices
Diagnose
Device ID
Status
Device Type
Class ID
Date Added
11
Disconnected
ibm
Device
Identity
Device Information
Recent Events
State
Logs
Device ID 11
Device Type ibm
Date Added Oct 31, 2022 9:34 AM
Added By 613519106053@smartinternz.com
Connection Status Disconnected
Device Type: ibm
Events 1
New event type
Event type name
event_1
Send
Schedule
20
Every Minute
Payload
Upload a CSV file
Cancel
Save


Service Details - IBM Cloud
IBM Watson IoT Platform
Server Not Found
https://g3mwba.internetofthings.ibmcloud.com/dashboard/boards/ba40bd26-9a31-46e6-8a2e-c3e9e10ebd42
IBM Watson IoT Platform
ultrosonic
Line chart
150
100
50
0
10:21
10:21:30
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.
{
"randomNumber": random(0, 100),
"distance":random(0,150)
}
Upload a CSV file

Wokwi Simulation: