ASSIGNMENT 4

Ultrasonic sensor simulation in Wokwi

PROJECT NAME: Real-Time River Water Quality Monitoring and Control System

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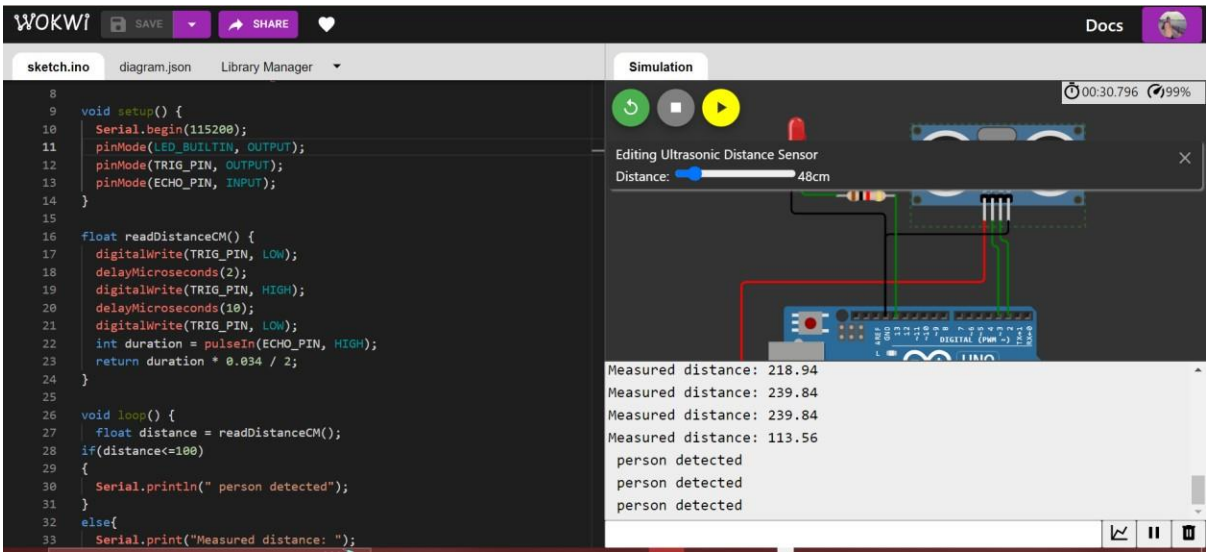
Question : Write a code and connections in wokwi for the ultrasonic sensor. Whenever the distanceis less than 100cms send an “Alert” to IBM cloud and display in the device recent events.

Wokwi simulation link: https://wokwi.com/projects/347124503089775188

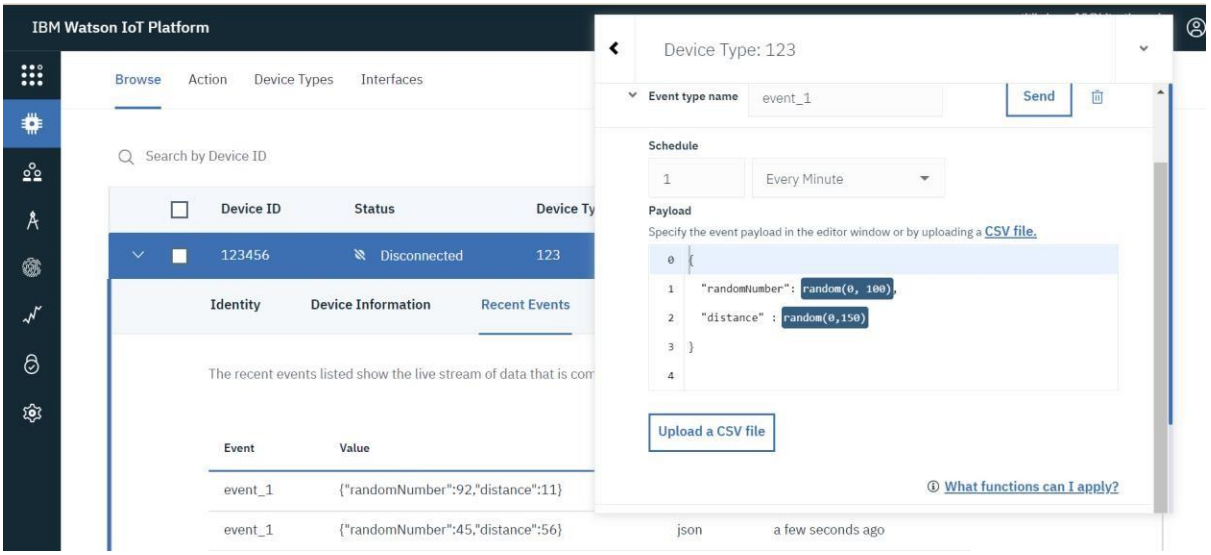
WOKWI OUTPUT SCREENSHOT:

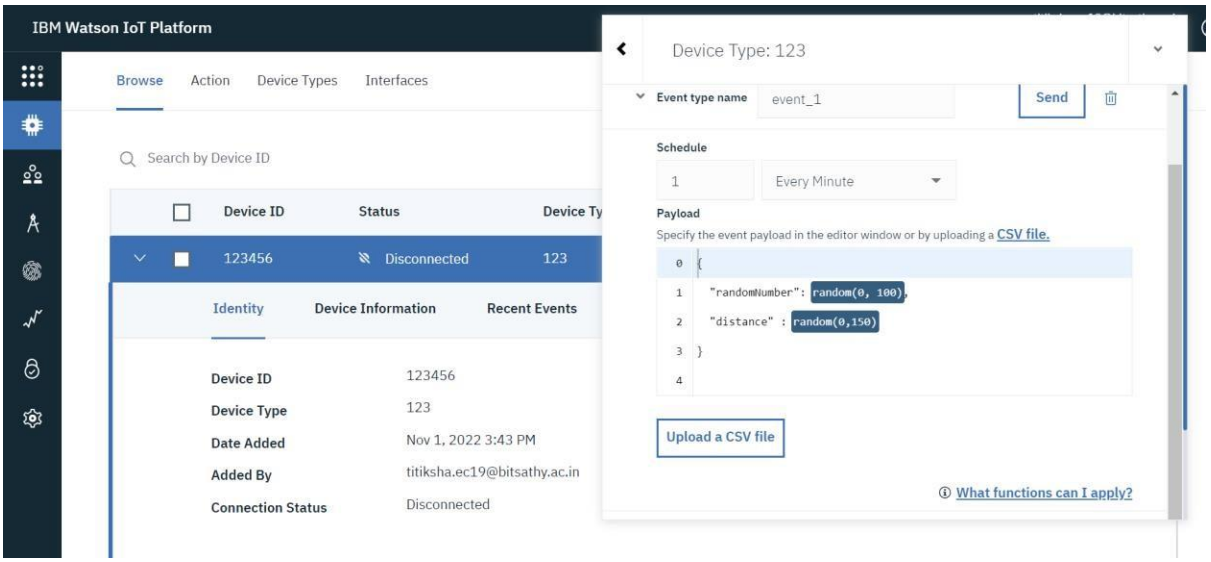


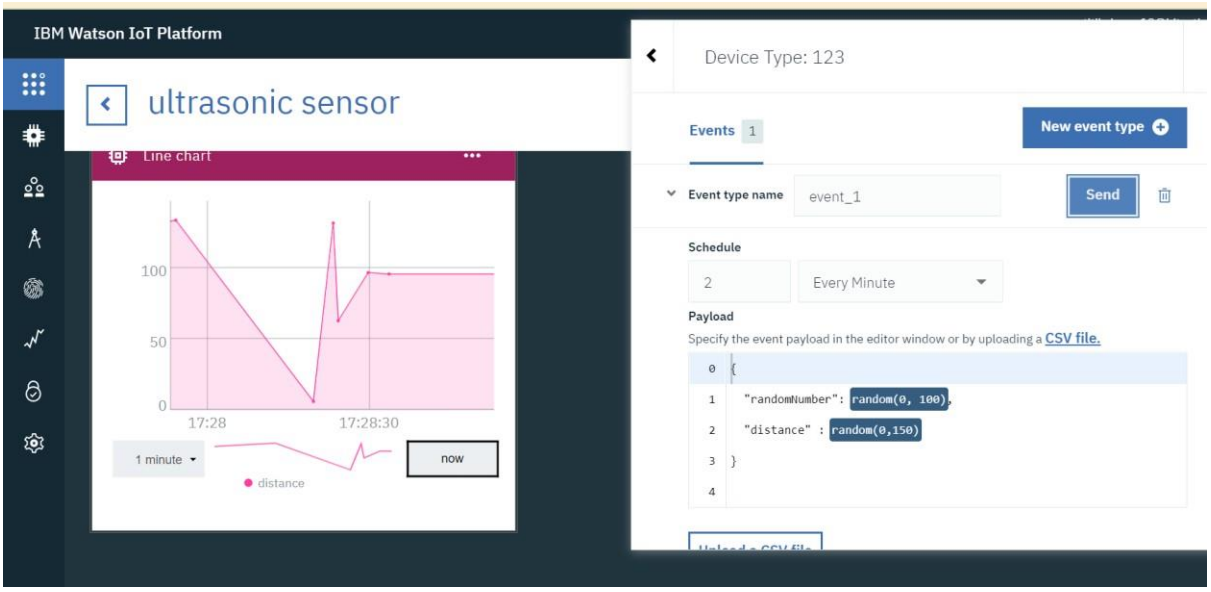
CODE:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "md8rdq"
#define deviceType = "123"
#define deviceId = "123456"
#define authMethod = "token"
#define authToken = "Titik@2002"

void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  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);
}
```




IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Search by Device ID
Device ID
Status
123456
Disconnected
123
Identity
Device Information
Recent Events
Device ID
123456
Device Type
123
Date Added
Nov 1, 2022 3:43 PM
Added By
titiksha.ec19@bitsathy.ac.in
Connection Status
Disconnected
Device Type: 123
Event type name
event_1
Send
Schedule
1
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
What functions can I apply?


IBM Watson IoT Platform
ultrasonic sensor
Line chart
100
50
0
17:28
17:28:30
1 minute
now
distance
Device Type: 123
Events 1
New event type
Event type name
event_1
Send
Schedule
2
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)
}