Assignment 4

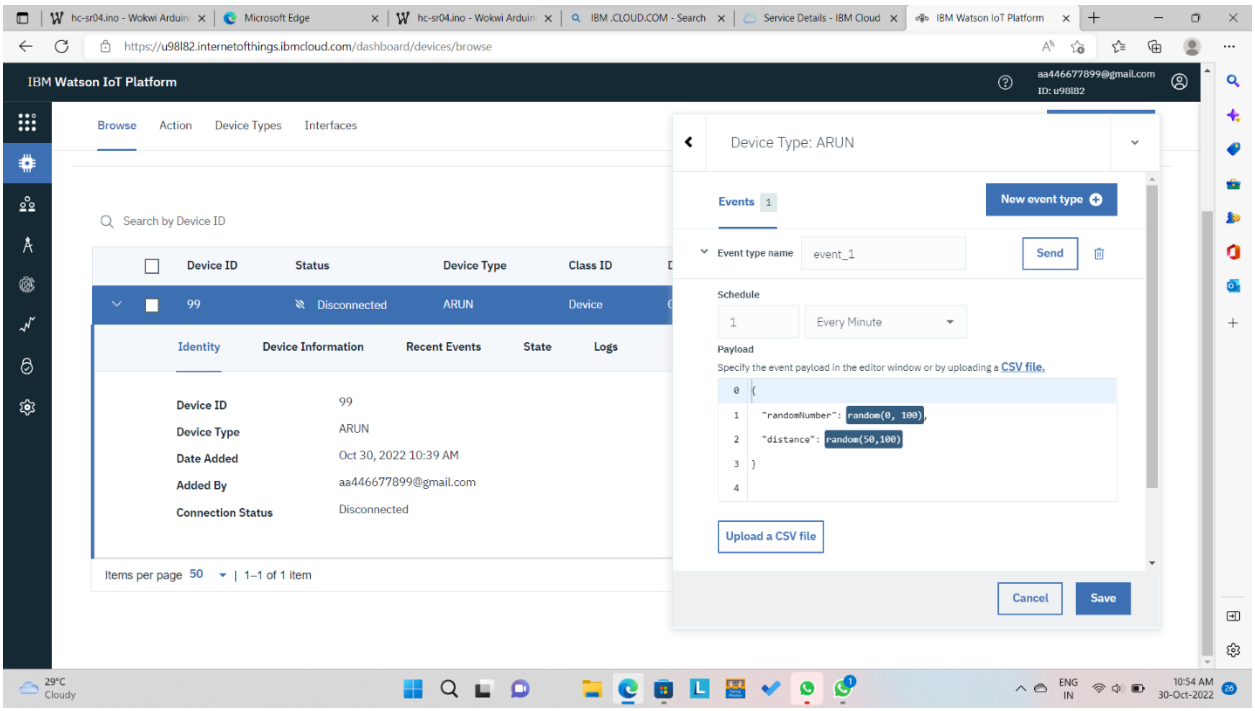
Wokwi link:

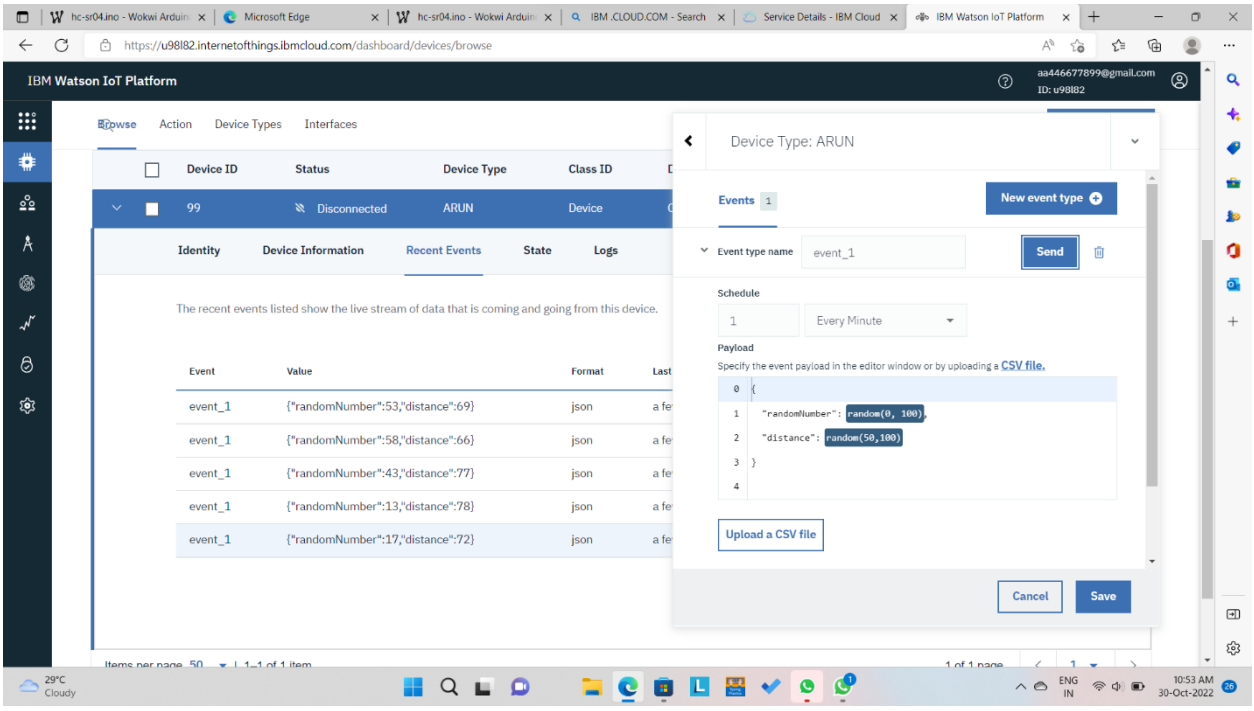
https://wokwi.com/projects/346920837610209874

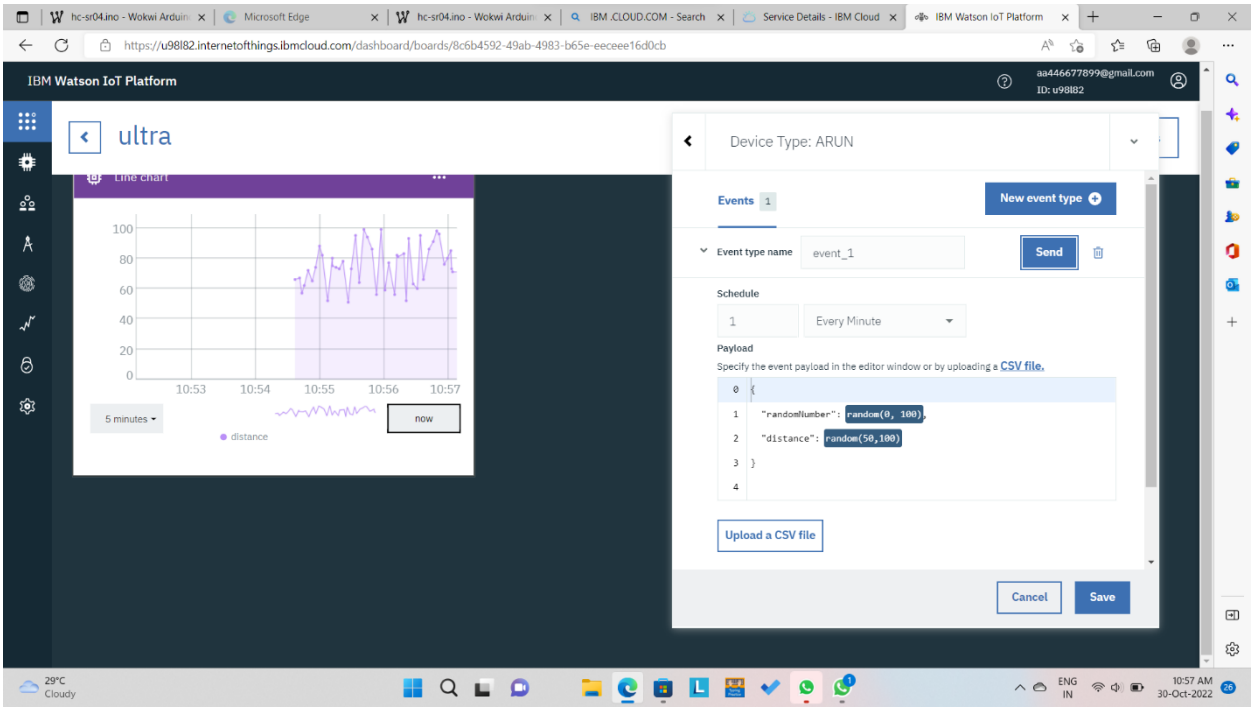
Program code:

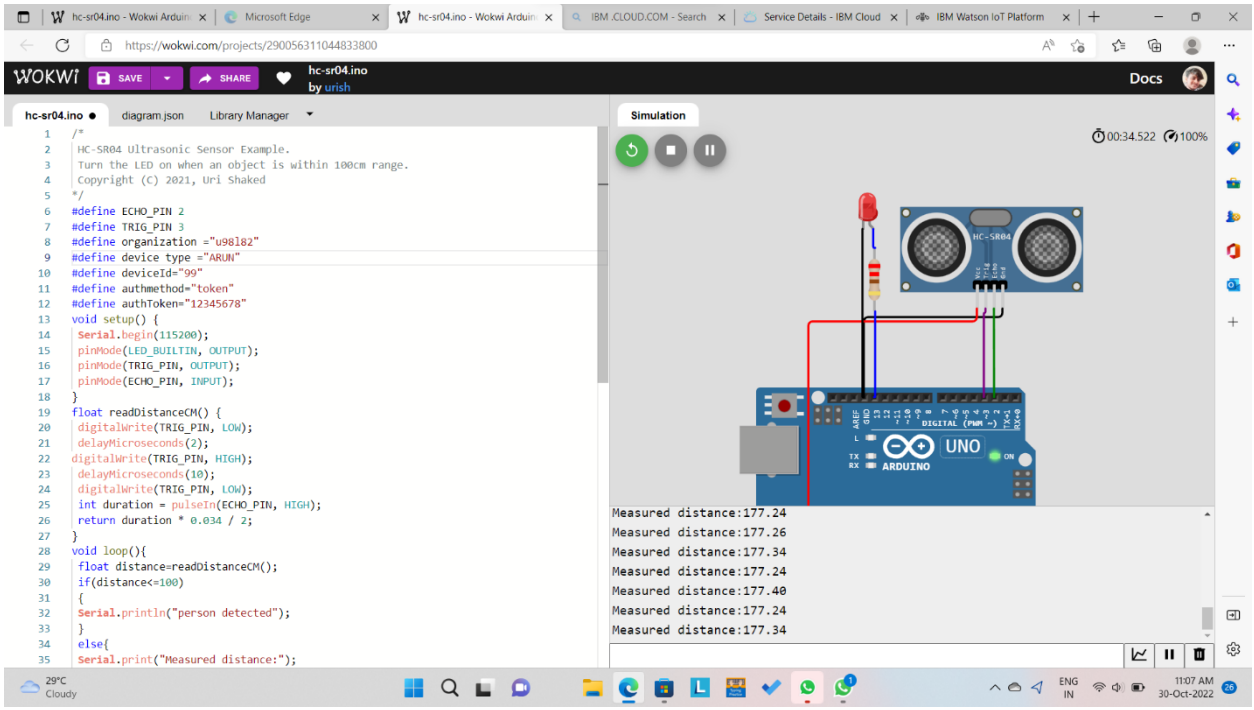
```
/*
 HC-SR04 Ultrasonic Sensor Example.
 Turn the LED on when an object is within 100cm range.
 Copyright (C) 2021, Uri Shaked
*/


#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization ="u98l82"
#define device type ="ARUN"
#define deviceId="99"
#define authmethod="token"
#define authToken="12345678"

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
Device Type
Class ID
99
Disconnected
ARUN
Device
Identity
Device Information
Recent Events
State
Logs
Device ID 99
Device Type ARUN
Date Added Oct 30, 2022 10:39 AM
Added By aa446677899@gmail.com
Connection Status Disconnected
Items per page 50
1–1 of 1 item
Device Type: ARUN
Events 1
New event type
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(50,100)
}
Upload a CSV file
Cancel
Save


IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Device ID
Status
Device Type
Class ID
99
Disconnected
ARUN
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
event_1 {"randomNumber":53,"distance":69} json
event_1 {"randomNumber":58,"distance":66} json
event_1 {"randomNumber":43,"distance":77} json
event_1 {"randomNumber":13,"distance":78} json
event_1 {"randomNumber":17,"distance":72} json
Device Type: ARUN
Events 1
New event type
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(50,100)
}
Upload a CSV file
Cancel
Save


IBM Watson IoT Platform
ultra
Line chart
100
80
60
40
20
0
10:53
10:54
10:55
10:56
10:57
5 minutes
now
distance
Device Type: ARUN
Events 1
New event type
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(50,100)
}
Upload a CSV file
Cancel
Save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Microsoft Edge
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https://wokwi.com/projects/290056311044833800
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hc-sr04.ino
diagram.json
Library Manager
/*
HC-SR04 Ultrasonic Sensor Example.
Turn the LED on when an object is within 100cm range.
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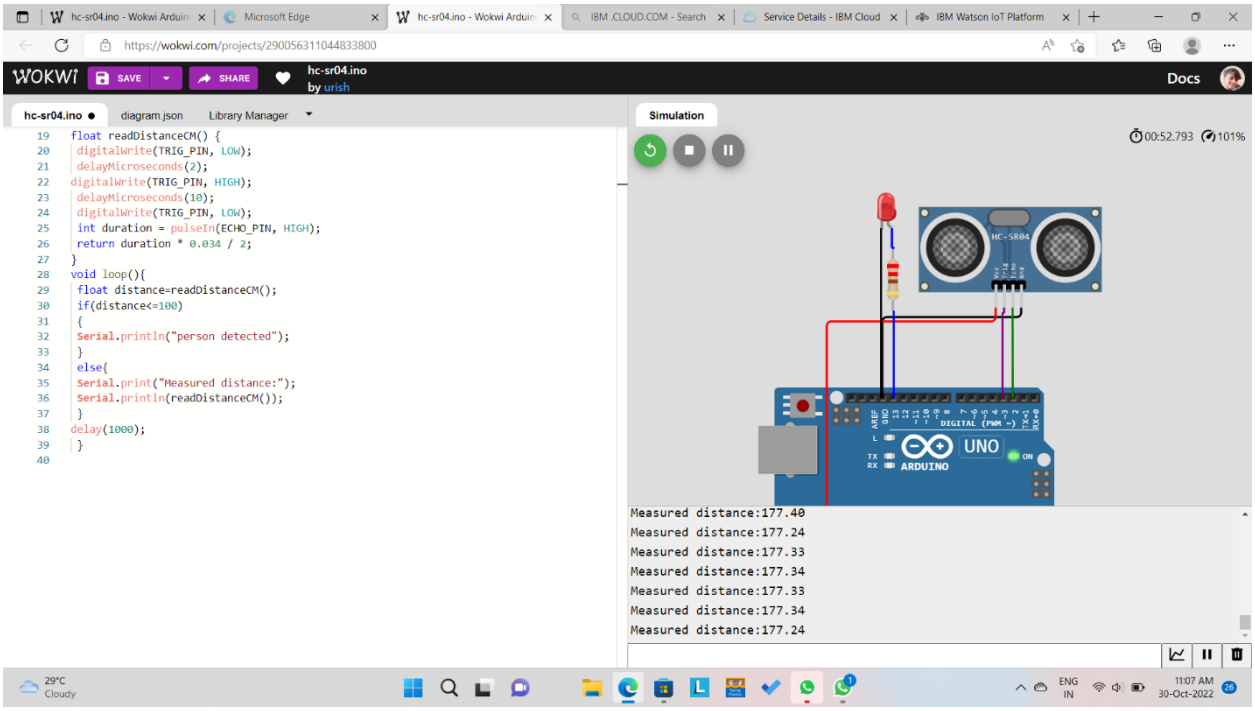
*/
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization "u98182"
#define device type "ARUN"
#define deviceId="99"
#define authmethod="token"
#define authToken="12345678"
void setup() {
Serial.begin(115200);
pinMode(LED_BUILTIN, OUTPUT);
pinMode(TRIG_PIN, OUTPUT);
pinMode(ECHO_PIN, INPUT);
}
float 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:");
Simulation
00:34.522
100%
HC-SR04
UNO
ARDUINO
Measured distance:177.24
Measured distance:177.26
Measured distance:177.34
Measured distance:177.24
Measured distance:177.40
Measured distance:177.24
Measured distance:177.34
29°C
Cloudy
ENG
IN
11:07 AM
30-Oct-2022


hc-sr04.ino - Wokwi Arduin
Microsoft Edge
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IBM .CLOUD.COM - Search
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SAVE
SHARE
hc-sr04.ino
by urish
Docs
hc-sr04.ino
diagram.json
Library Manager
19 float readDistanceCM() {
20 digitalWrite(TRIG_PIN, LOW);
21 delayMicroseconds(2);
22 digitalWrite(TRIG_PIN, HIGH);
23 delayMicroseconds(10);
24 digitalWrite(TRIG_PIN, LOW);
25 int duration = pulseIn(ECHO_PIN, HIGH);
26 return duration * 0.034 / 2;
27 }
28 void loop(){
29 float distance=readDistanceCM();
30 if(distance<=100)
31 {
32 Serial.println("person detected");
33 }
34 else{
35 Serial.print("Measured distance:");
36 Serial.println(readDistanceCM());
37 }
38 delay(1000);
39 }
40
Simulation
00:52.793
101%
HC-SR04
UNO
ARDUINO
Measured distance:177.40
Measured distance:177.24
Measured distance:177.33
Measured distance:177.34
Measured distance:177.33
Measured distance:177.34
Measured distance:177.24
29°C
Cloudy
ENG
IN
11:07 AM
30-Oct-2022