Assignment - 4

Assignment Date	24 October 2022
Student Name	Gopika S
Student Roll Number	620119104024
Maximum Marks	2 Marks
Project	Smart Farmer – IOT Enabled Smart Farming Application

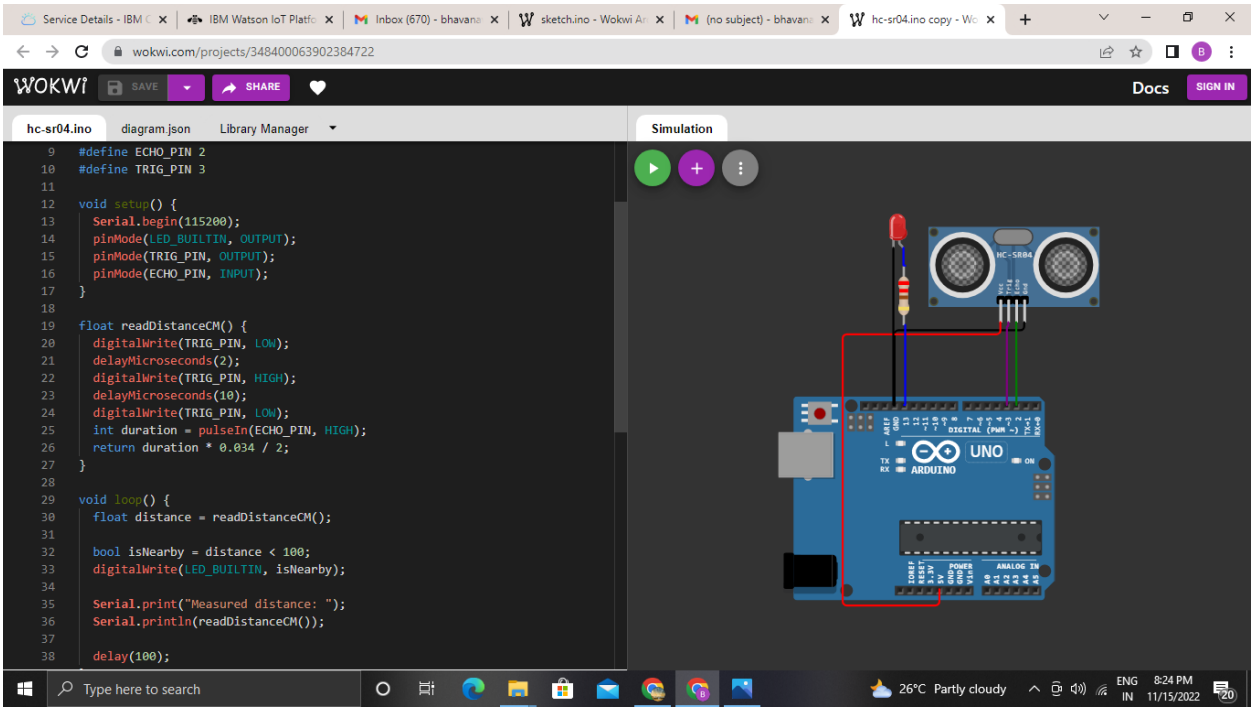
Write code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.

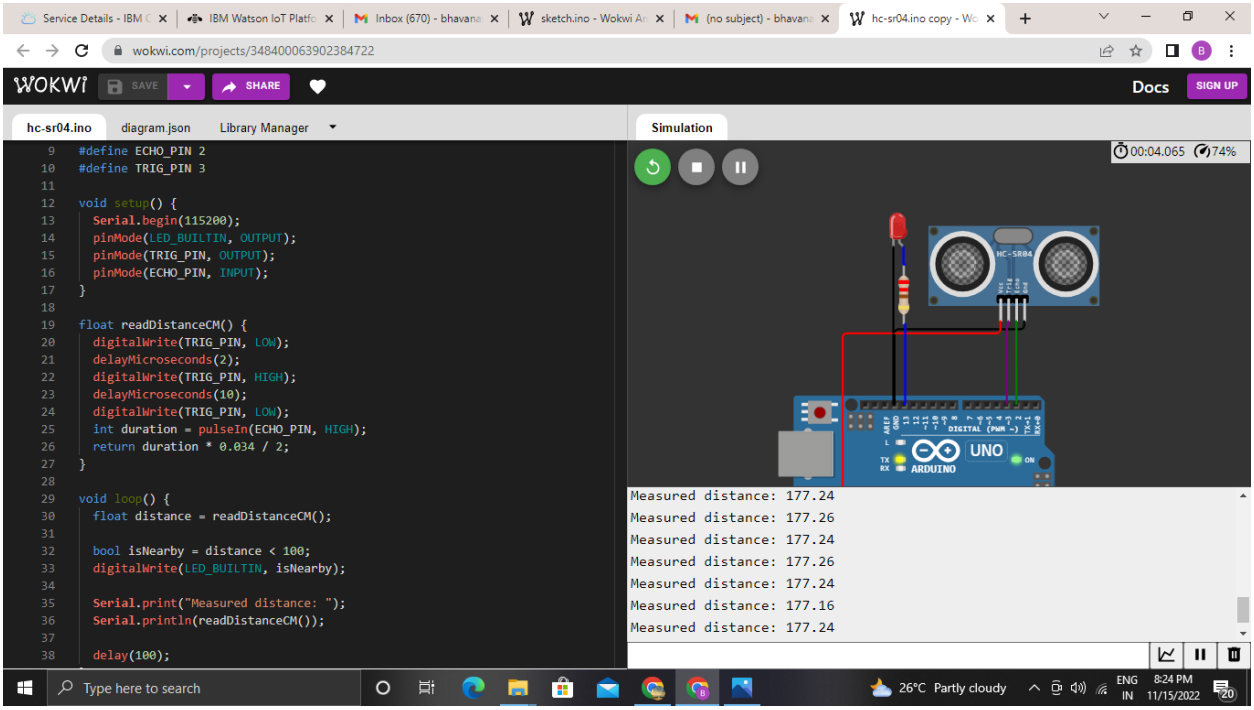
Code:

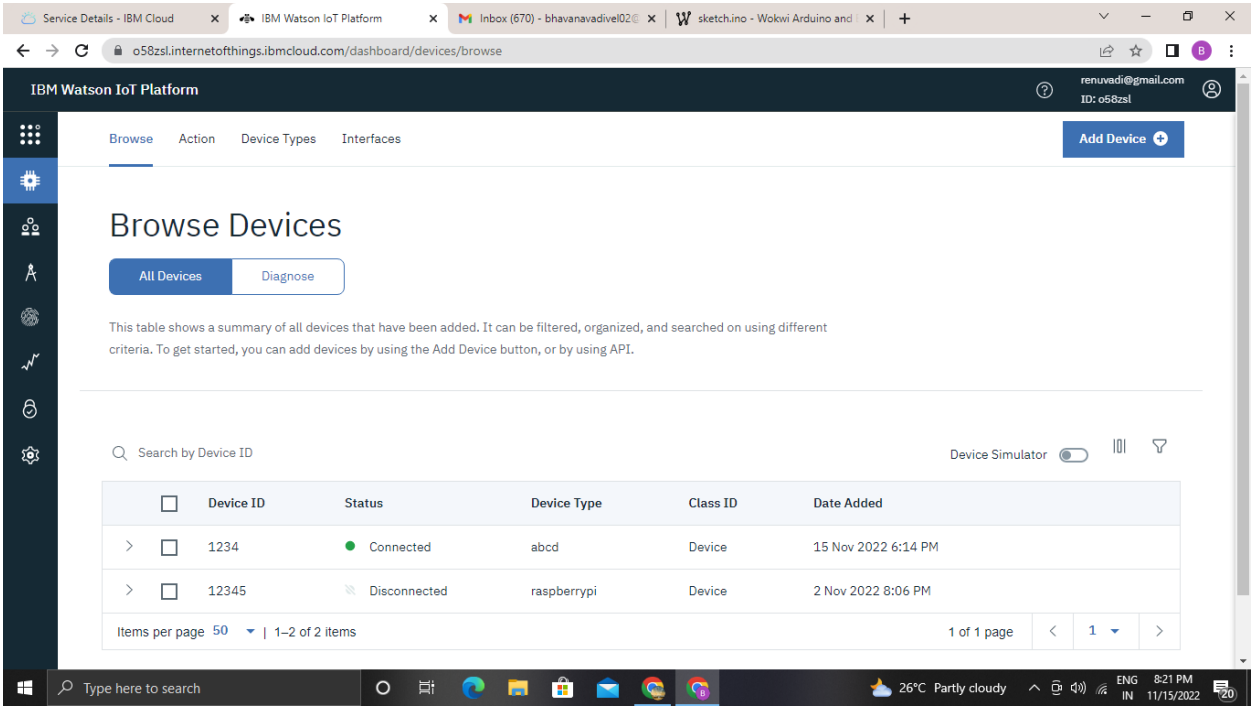
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization ="o58zsl "
#define device type ="abcd"
#define device Id="1234"
#define auth_method="token"
#define auth_Token="12345678"
void setup() {
Serial.begin(115200);
pinMode(LED_BUILTIN, OUTPUT);
pinMode(TRIG_PIN, OUTPUT);
pinMode(ECHO_PIN, INPUT);
}
float readDistanceCM() {
digitalWrite(TRIG_PIN, LOW);
delayMicroseconds(2);
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);
```

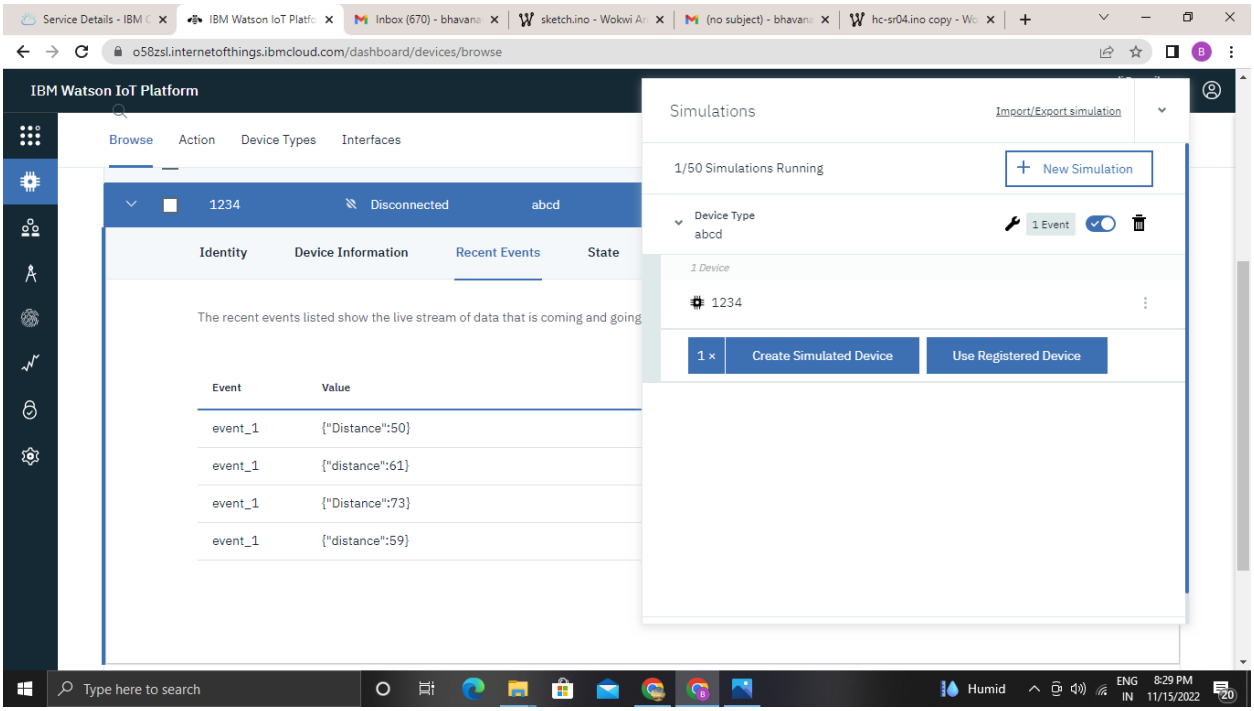
```
int duration = pulseIn(ECHO_PIN, HIGH);
return duration * 0.034 / 2;
}
void loop(){
float distance=readDistanceCM();
if(distance<=100)
{
Serial.println("person detected");
}
else{
Serial.print("Measured distance:");
Serial.println(readDistanceCM());
}
delay(1000);
}
```

Wokwi link : https://wokwi.com/projects/348400063902384722




wokwi.com/projects/348400063902384722
WOKWI
SAVE
SHARE
Docs
SIGN UP
hc-sr04.ino
diagram.json
Library Manager
Simulation
00:04.065
74%
#define ECHO_PIN 2
#define TRIG_PIN 3
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();
bool isNearby = distance < 100;
digitalWrite(LED_BUILTIN, isNearby);
Serial.print("Measured distance: ");
Serial.println(readDistanceCM());
delay(100);
HC-SR04
UNO
ARDUINO
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.26
Measured distance: 177.24
Measured distance: 177.16
Measured distance: 177.24
Type here to search
26°C Partly cloudy
ENG IN
8:24 PM 11/15/2022


o58zsl.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
renuvadi@gmail.com
ID: o58zsl
Browse
Action
Device Types
Interfaces
Add Device
Browse Devices
All Devices
Diagnose
This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
1234
Connected
abcd
Device
15 Nov 2022 6:14 PM
12345
Disconnected
raspberrypi
Device
2 Nov 2022 8:06 PM
Items per page 50
1–2 of 2 items
1 of 1 page
Type here to search
26°C Partly cloudy
ENG IN
8:21 PM 11/15/2022


Service Details - IBM C
IBM Watson IoT Platfo
Inbox (670) - bhavana
sketch.ino - Wokwi Ar
(no subject) - bhavana
hc-sr04.ino copy - Wo
o58zsl.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
1234
Disconnected
abcd
Identity
Device Information
Recent Events
State
The recent events listed show the live stream of data that is coming and going
Event
Value
event_1
{"Distance":50}
event_1
{"distance":61}
event_1
{"Distance":73}
event_1
{"distance":59}
Simulations
Import/Export simulation
1/50 Simulations Running
New Simulation
Device Type
abcd
1 Event
1 Device
1234
1 ×
Create Simulated Device
Use Registered Device
Type here to search
Humid
ENG
IN
8:29 PM
11/15/2022