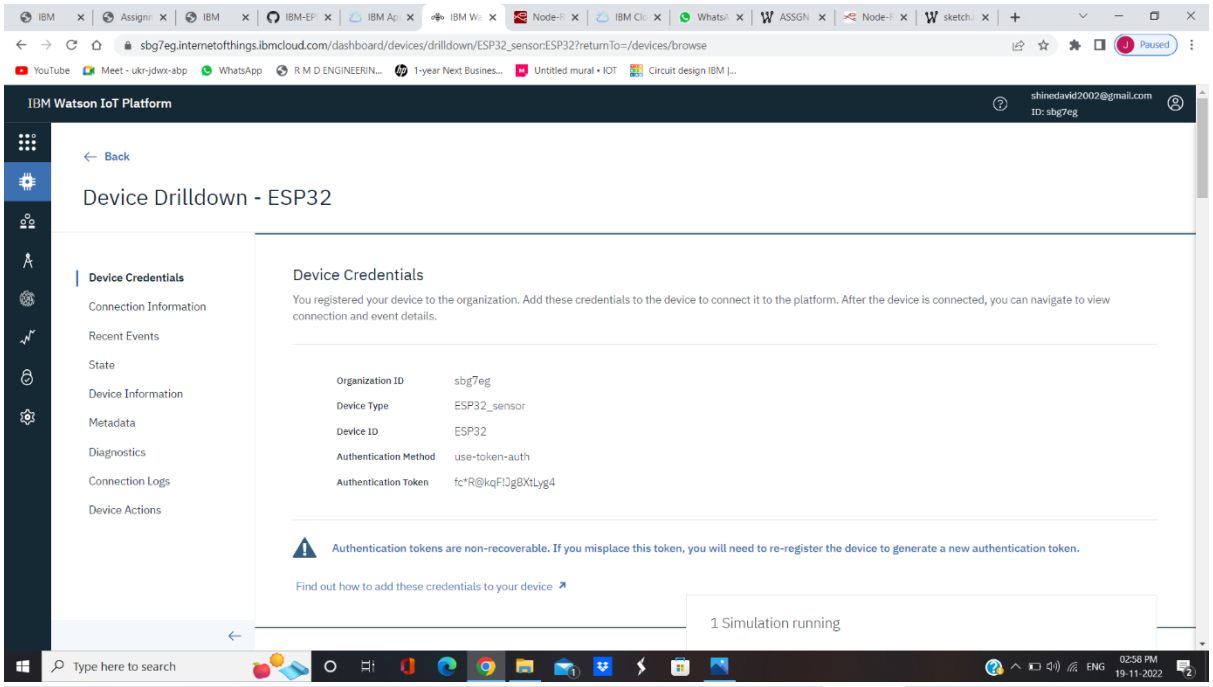
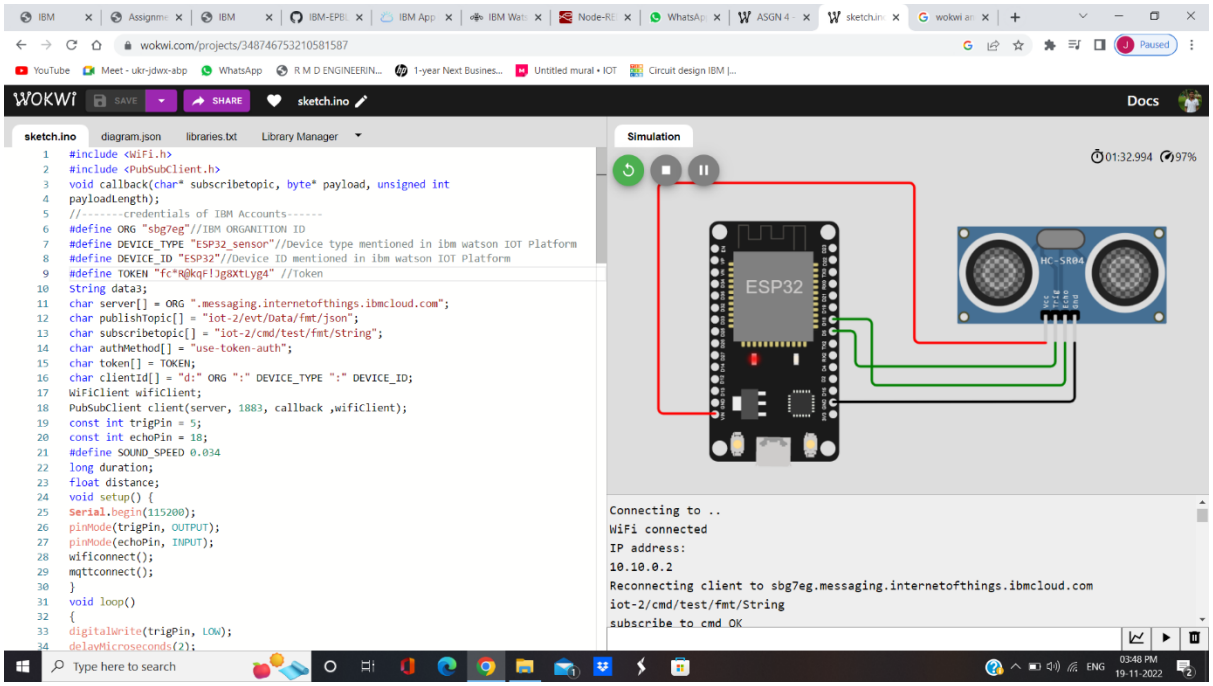
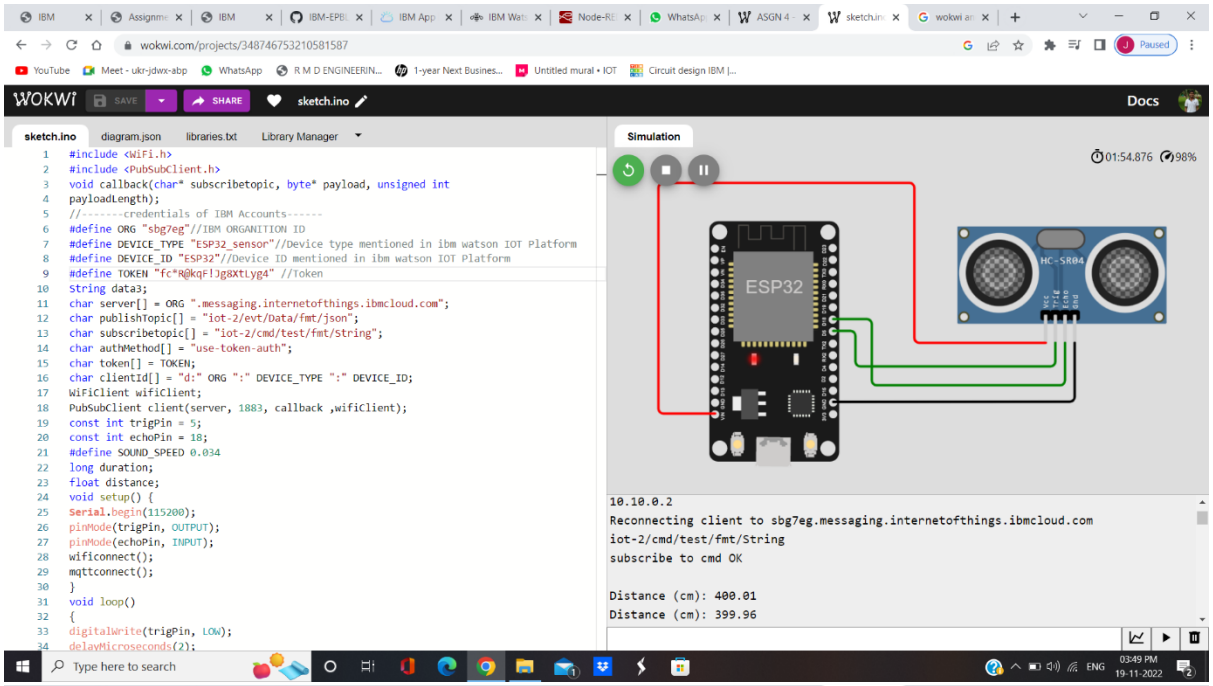
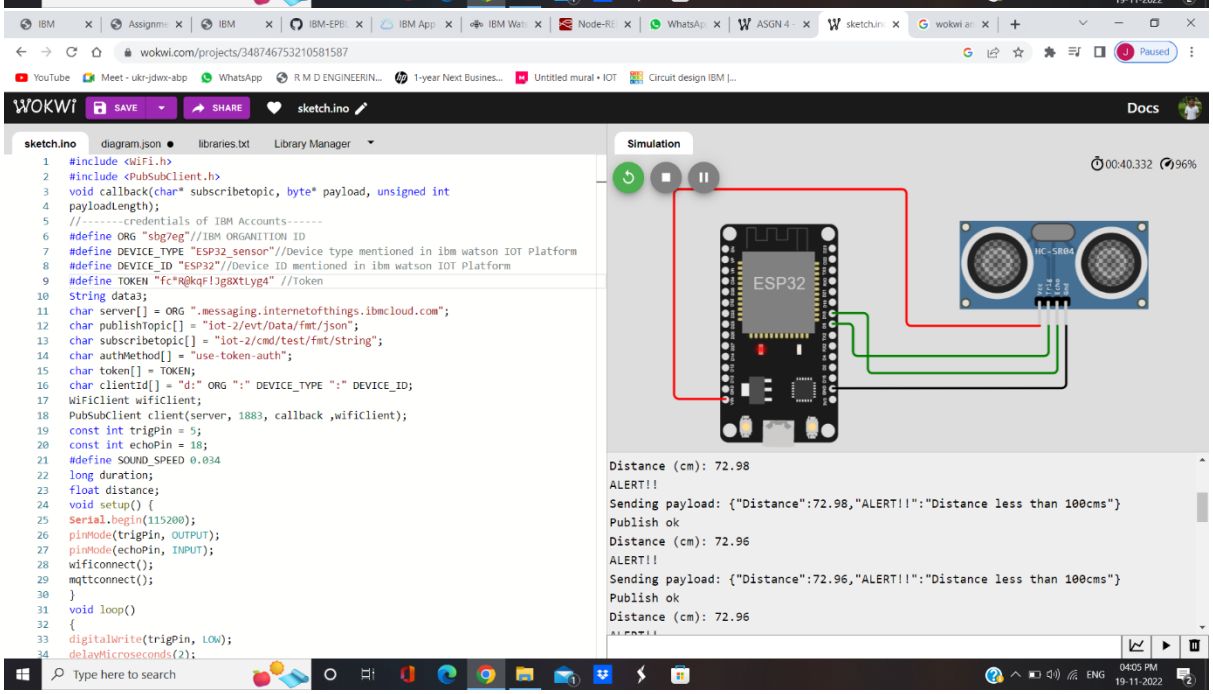
ASSIGNMENT 4

Ultrasonic sensor simulation in wowki






wokwi.com/projects/348746753210581587
WOKWI
SAVE
SHARE
sketch.ino
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
#include <WiFi.h>
#include <PubSubClient.h>
void callback(char* subscribetopic, byte* payload, unsigned int
payloadLength);
//-------credentials of IBM Accounts------
#define ORG "sbg7eg"//IBM ORGANITION ID
#define DEVICE_TYPE "ESP32_sensor"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "ESP32"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "fc*R@kqF!Jg8XtLyg4" //Token
String data3;
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/fmt/json";
char subscribetopic[] = "iot-2/cmd/test/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
WiFiClient wifiClient;
PubSubClient client(server, 1883, callback ,wifiClient);
const int trigPin = 5;
const int echoPin = 18;
#define SOUND_SPEED 0.034
long duration;
float distance;
void setup() {
Serial.begin(115200);
pinMode(trigPin, OUTPUT);
pinMode(echoPin, INPUT);
wificonnect();
mqttconnect();
}
void loop()
{
digitalWrite(trigPin, LOW);
delayMicroseconds(2);
Simulation
01:54.876
98%
ESP32
HC-SR04
10.10.0.2
Reconnecting client to sbg7eg.messaging.internetofthings.ibmcloud.com
iot-2/cmd/test/fmt/String
subscribe to cmd OK
Distance (cm): 400.01
Distance (cm): 399.96
Type here to search
ENG
03:49 PM
19-11-2022


wokwi.com/projects/348746753210581587
WOKWI
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Docs
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Library Manager
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#include <PubSubClient.h>
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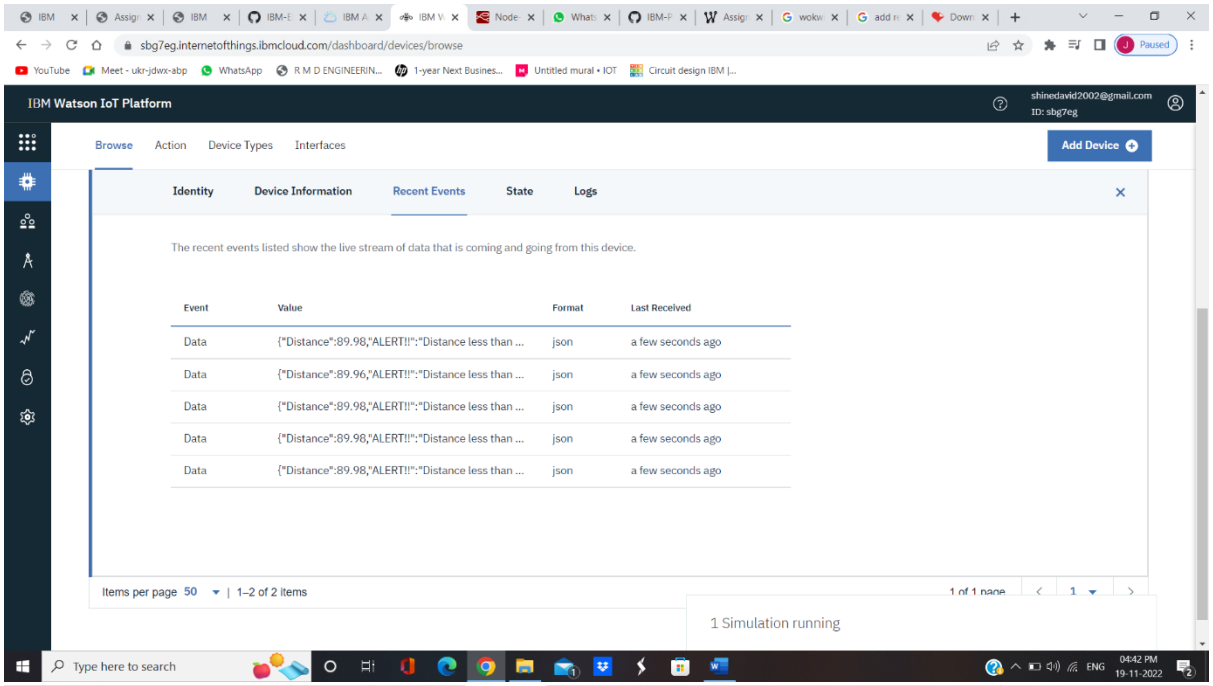
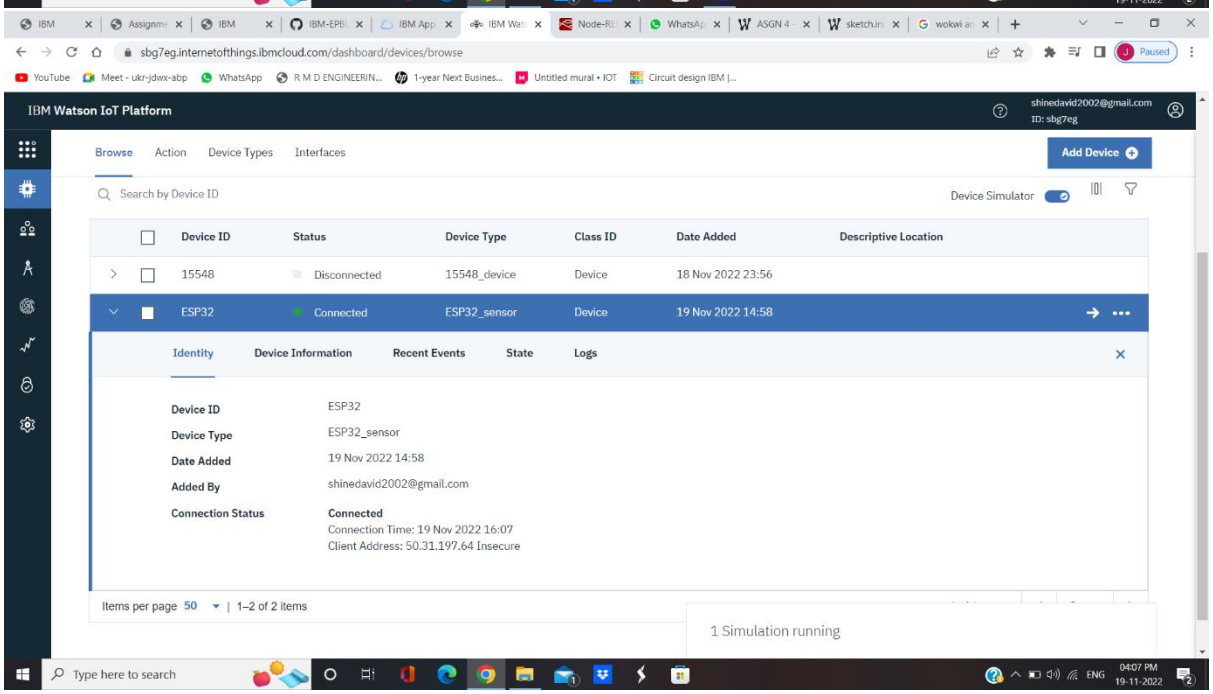
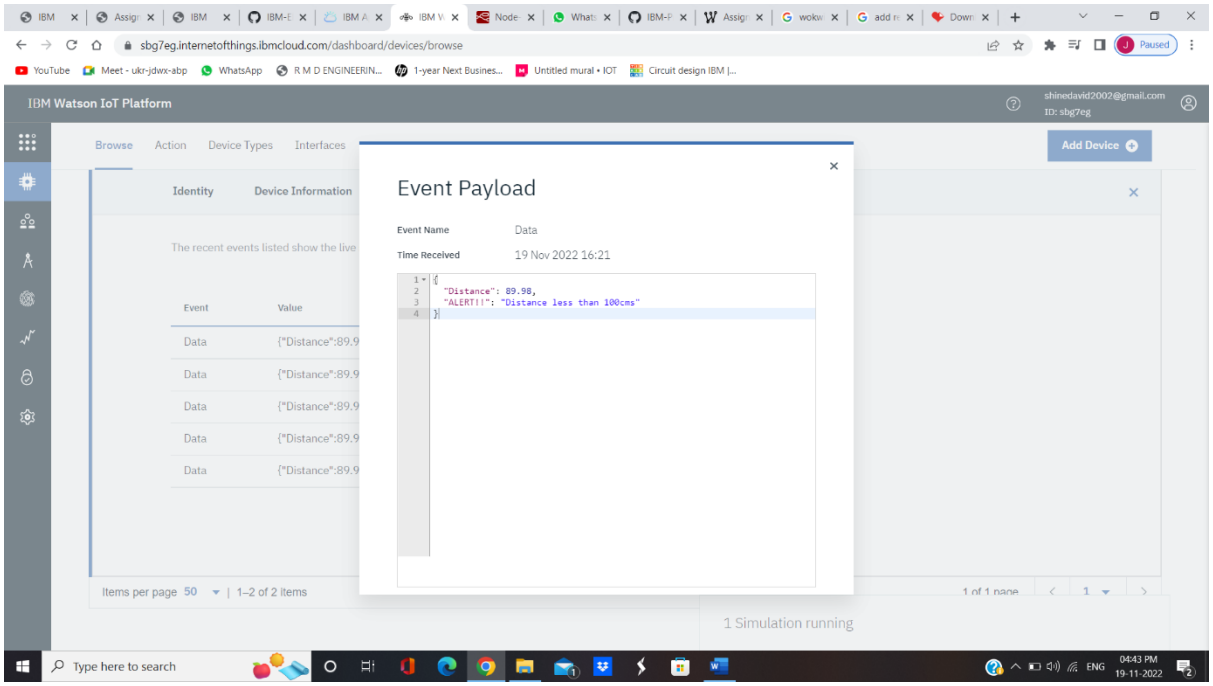
#define DEVICE_ID "ESP32"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "fc*R@kqF!Jg8XtLyg4" //Token
String data3;
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Data/fmt/json";
char subscribetopic[] = "iot-2/cmd/test/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
WiFiClient wifiClient;
PubSubClient client(server, 1883, callback ,wifiClient);
const int trigPin = 5;
const int echoPin = 18;
#define SOUND_SPEED 0.034
long duration;
float distance;
void setup() {
Serial.begin(115200);
pinMode(trigPin, OUTPUT);
pinMode(echoPin, INPUT);
wificonnect();
mqttconnect();
}
void loop()
{
digitalWrite(trigPin, LOW);
delayMicroseconds(2);
Simulation
00:40.332
96%
ESP32
HC-SR04
Distance (cm): 72.98
ALERT!!
Sending payload: {"Distance":72.98,"ALERT!!":"Distance less than 100cms"}
Publish ok
Distance (cm): 72.96
ALERT!!
Sending payload: {"Distance":72.96,"ALERT!!":"Distance less than 100cms"}
Publish ok
Distance (cm): 72.96
Type here to search
ENG
04:05 PM
19-11-2022


IBM Watson IoT Platform
shinedavid2002@gmail.com
ID: sbg7eg
Browse
Action
Device Types
Interfaces
Add 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
Last Received
Data
{"Distance":89.98,"ALERT!!":"Distance less than ...
json
a few seconds ago
Data
{"Distance":89.96,"ALERT!!":"Distance less than ...
json
a few seconds ago
Data
{"Distance":89.98,"ALERT!!":"Distance less than ...
json
a few seconds ago
Data
{"Distance":89.98,"ALERT!!":"Distance less than ...
json
a few seconds ago
Data
{"Distance":89.98,"ALERT!!":"Distance less than ...
json
a few seconds ago
Items per page 50
1–2 of 2 items
1 of 1 page
1 Simulation running
Type here to search
ENG
04:42 PM
19-11-2022


IBM Watson IoT Platform
shinedavid2002@gmail.com
ID: sbg7eg
Browse
Action
Device Types
Interfaces
Add Device
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
15548
Disconnected
15548_device
Device
18 Nov 2022 23:56
ESP32
Connected
ESP32_sensor
Device
19 Nov 2022 14:58
Identity
Device Information
Recent Events
State
Logs
Device ID
ESP32
Device Type
ESP32_sensor
Date Added
19 Nov 2022 14:58
Added By
shinedavid2002@gmail.com
Connection Status
Connected
Connection Time: 19 Nov 2022 16:07
Client Address: 50.31.197.64 Insecure
Items per page 50
1–2 of 2 items
1 Simulation running
Type here to search
ENG
04:07 PM
19-11-2022


sbg7eg.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
shinedavid2002@gmail.com
ID: sbg7eg
Browse
Action
Device Types
Interfaces
Add Device
Identity
Device Information
The recent events listed show the live
Event
Value
Data
{"Distance":89.9
Items per page 50
1–2 of 2 items
1 of 1 page
1 Simulation running
Event Payload
Event Name
Data
Time Received
19 Nov 2022 16:21
{
"Distance": 89.98,
"ALERT!!": "Distance less than 100cms"
}
Type here to search
ENG
04:43 PM
19-11-2022