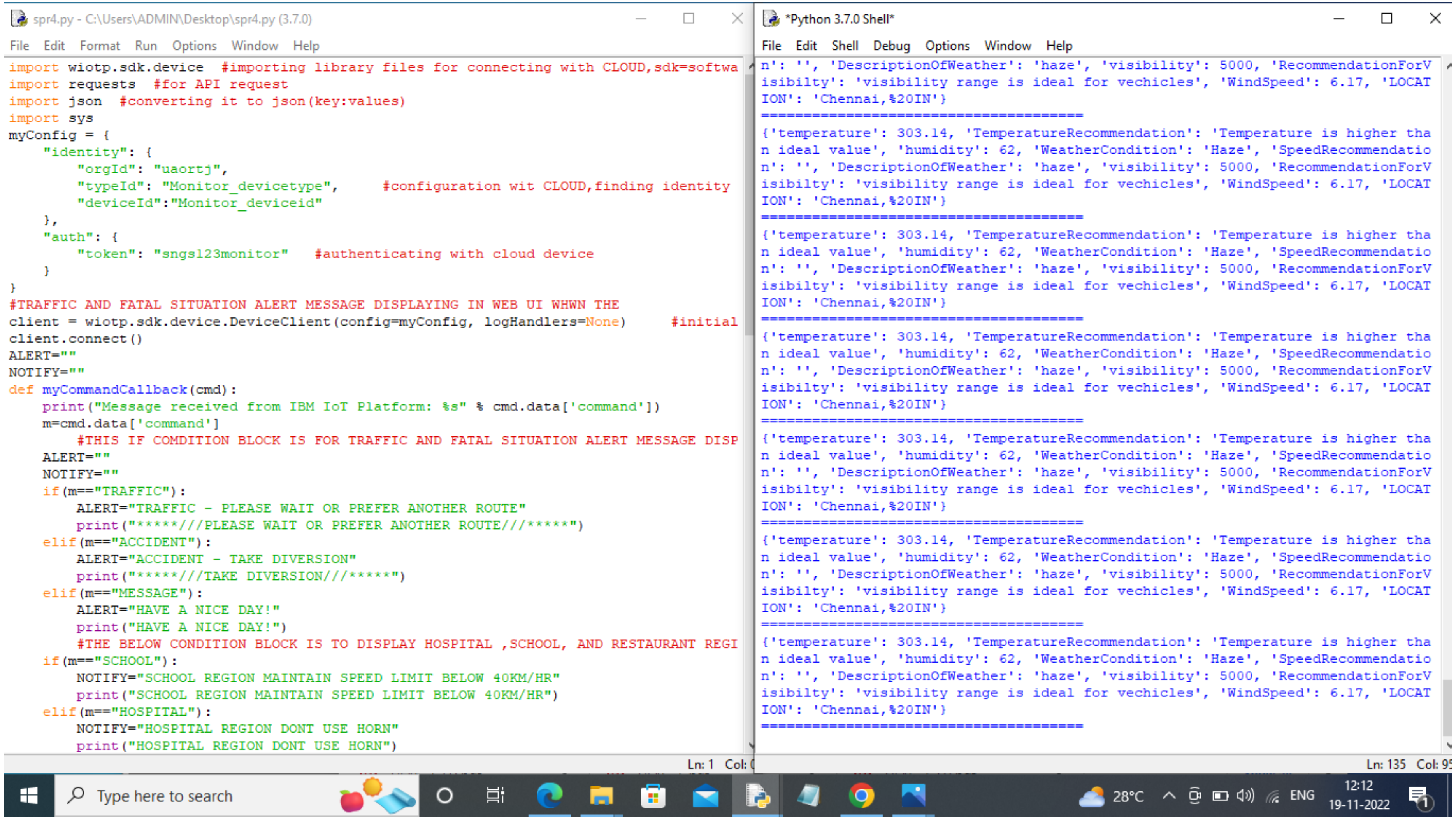
PROJECT DEVELOPMENT – DELIVERY OF SPRINT – 4

Date	**14 November 2022**
Team ID	**PNT2022TMID46406**
Project Title	**Signs With Smart Connectivity for Better RoadSafety**

SPRINT-4 (USN - 6)

- **Information about Traffic around the area is gathered as a data. And the data is further encoded.**
- **Data collected from sprint 2 & sprint 3 is deployed in NodeRed service to link API.**

STEP 1: Developing a python script from Open Weather API.


spr4.py - C:\Users\ADMIN\Desktop\spr4.py (3.7.0)
File Edit Format Run Options Window Help
Ln: 1 Col: (
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Ln: 135 Col: 95
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```
import wiotp.sdk.device  #importing library files for connecting with CLOUD,sdk=softwa
import requests  #for API request
import json  #converting it to json(key:values)
import sys
myConfig = {
    "identity": {
        "orgId": "uaortj",
        "typeId": "Monitor_devicetype",     #configuration wit CLOUD,finding identity
        "deviceId":"Monitor_deviceid"
    },
    "auth": {
        "token": "sngs123monitor"   #authenticating with cloud device
    }
}
#TRAFFIC AND FATAL SITUATION ALERT MESSAGE DISPLAYING IN WEB UI WHWN THE
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)     #initial
client.connect()
ALERT=""
NOTIFY=""
def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']
        #THIS IF COMDITION BLOCK IS FOR TRAFFIC AND FATAL SITUATION ALERT MESSAGE DISP
    ALERT=""
    NOTIFY=""
    if(m=="TRAFFIC"):
        ALERT="TRAFFIC - PLEASE WAIT OR PREFER ANOTHER ROUTE"
        print("*****///PLEASE WAIT OR PREFER ANOTHER ROUTE///*****")
    elif(m=="ACCIDENT"):
        ALERT="ACCIDENT - TAKE DIVERSION"
        print("*****///TAKE DIVERSION///*****")
    elif(m=="MESSAGE"):
        ALERT="HAVE A NICE DAY!"
        print("HAVE A NICE DAY!")
        #THE BELOW CONDITION BLOCK IS TO DISPLAY HOSPITAL ,SCHOOL, AND RESTAURANT REGI
    if(m=="SCHOOL"):
        NOTIFY="SCHOOL REGION MAINTAIN SPEED LIMIT BELOW 40KM/HR"
        print("SCHOOL REGION MAINTAIN SPEED LIMIT BELOW 40KM/HR")
    elif(m=="HOSPITAL"):
        NOTIFY="HOSPITAL REGION DONT USE HORN"
        print("HOSPITAL REGION DONT USE HORN")
```

```
n': '', 'DescriptionOfWeather': 'haze', 'visibility': 5000, 'RecommendationForV
isibilty': 'visibility range is ideal for vechicles', 'WindSpeed': 6.17, 'LOCAT
ION': 'Chennai,%20IN'}
======================================
{'temperature': 303.14, 'TemperatureRecommendation': 'Temperature is higher tha
n ideal value', 'humidity': 62, 'WeatherCondition': 'Haze', 'SpeedRecommendatio
n': '', 'DescriptionOfWeather': 'haze', 'visibility': 5000, 'RecommendationForV
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ION': 'Chennai,%20IN'}
======================================
```
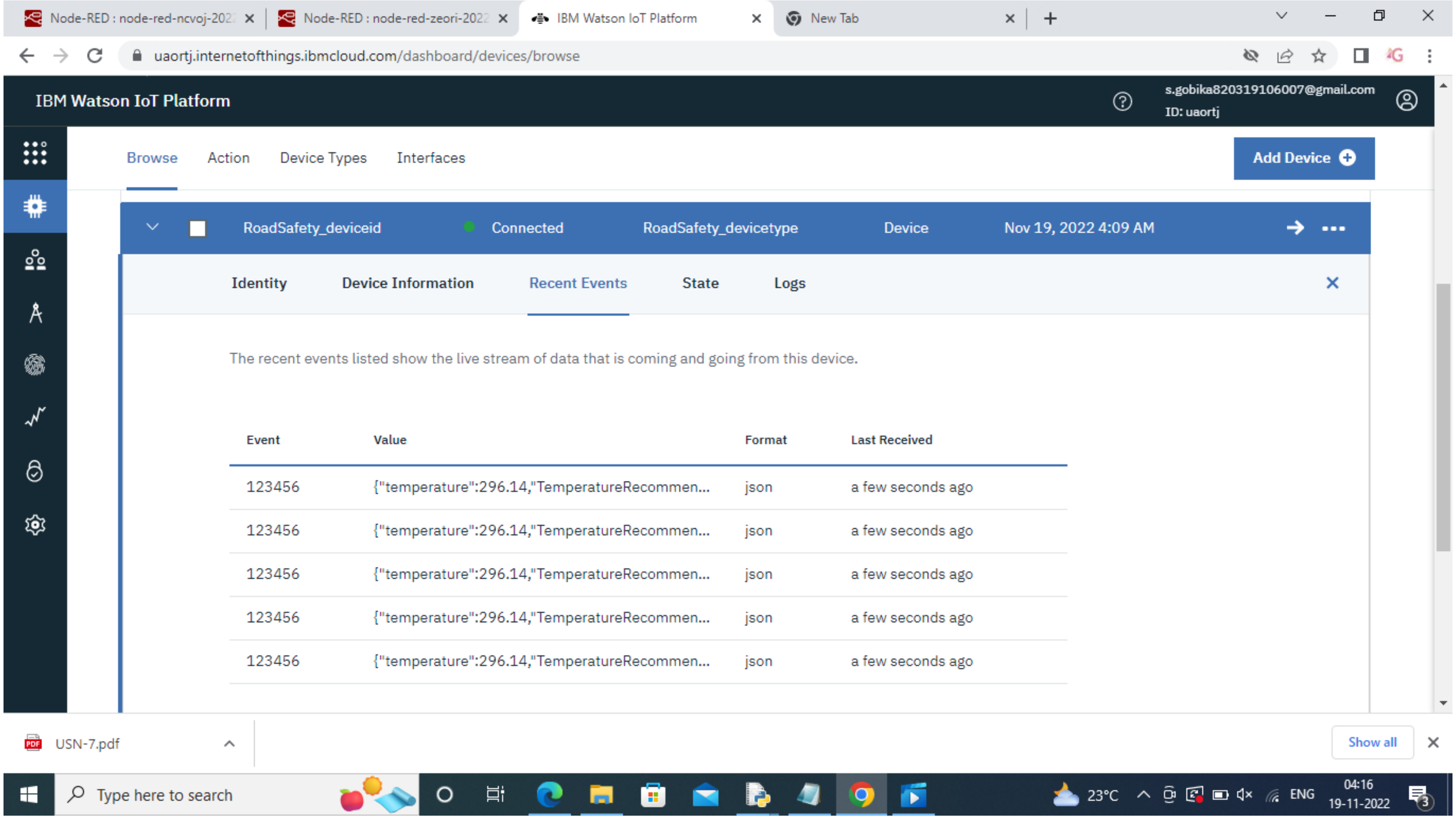
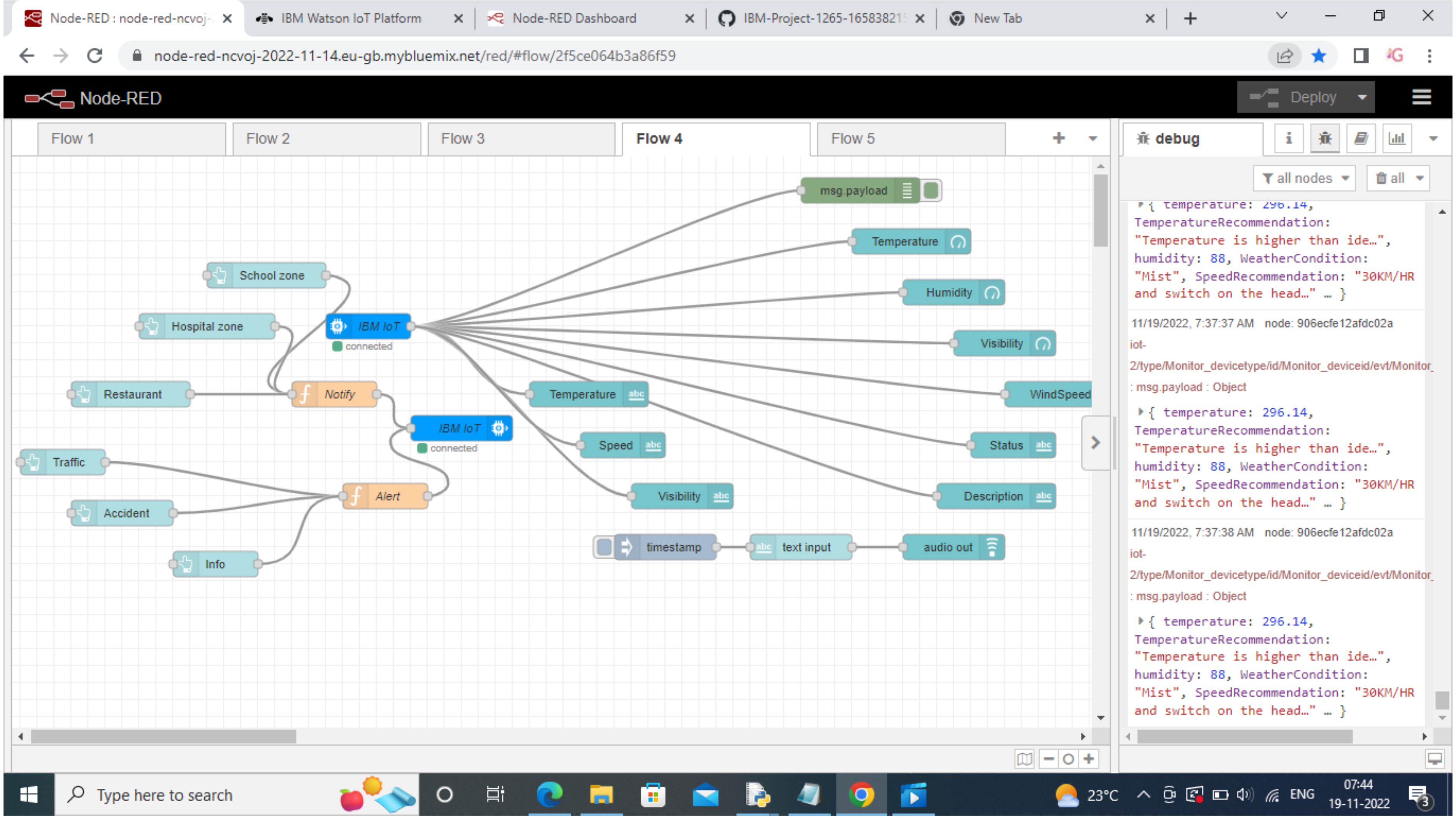

STEP 2: By running the above Python Script, we can see the conditions of the current location using Open Weather API and IBM Cloud.



The recent events listed show the live stream of data that is coming and going from this device.

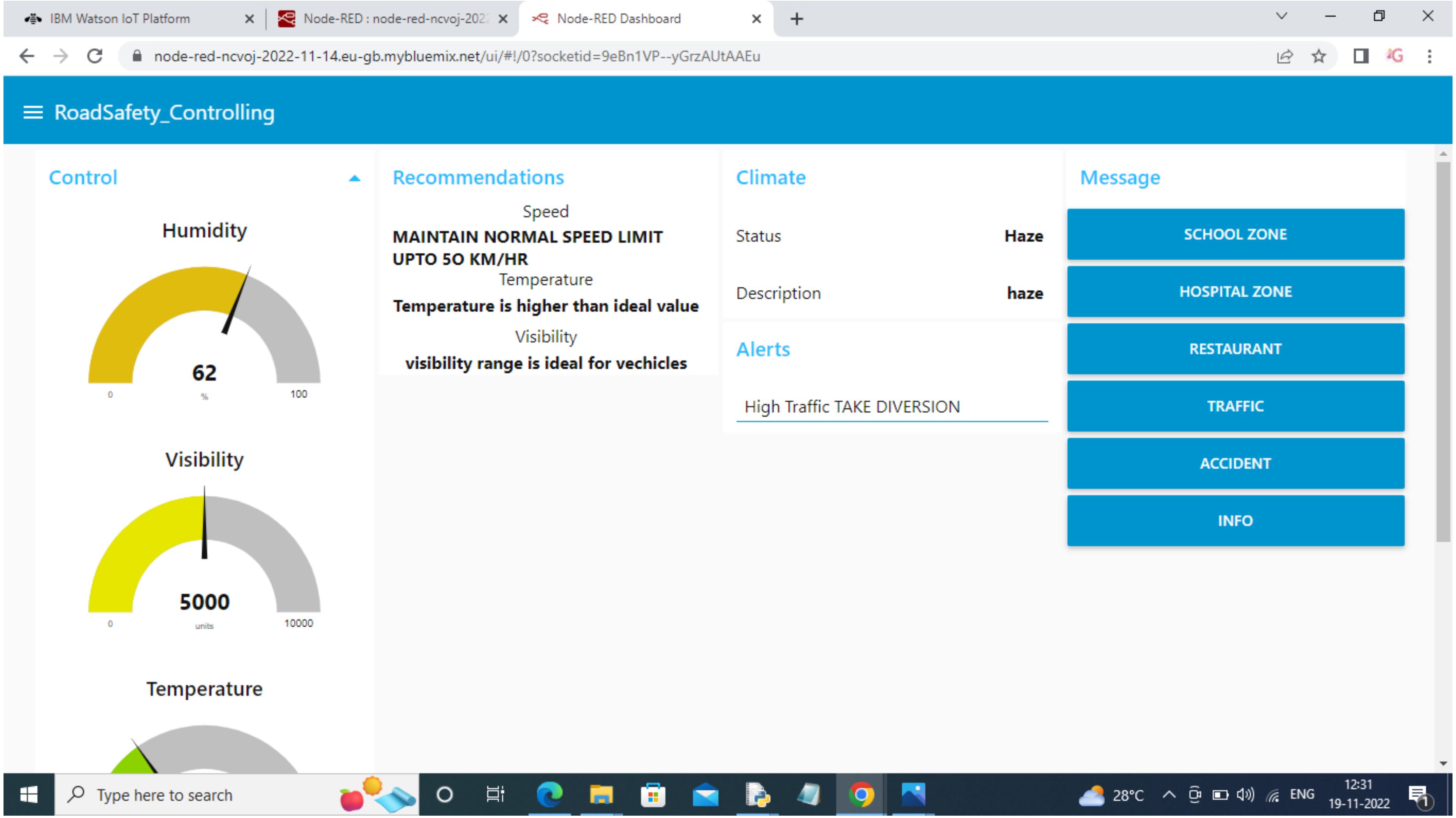
Event	Value	Format	Last Received
123456	{"temperature":296.14,"TemperatureRecommen...	json	a few seconds ago
123456	{"temperature":296.14,"TemperatureRecommen...	json	a few seconds ago
123456	{"temperature":296.14,"TemperatureRecommen...	json	a few seconds ago
123456	{"temperature":296.14,"TemperatureRecommen...	json	a few seconds ago
123456	{"temperature":296.14,"TemperatureRecommen...	json	a few seconds ago

STEP 3: Create a Node – RED flow using the Node – RED Flow Editor.



```
{ temperature: 296.14,
TemperatureRecommendation:
"Temperature is higher than ide…",
humidity: 88, WeatherCondition:
"Mist", SpeedRecommendation: "30KM/HR
and switch on the head…" … }

11/19/2022, 7:37:37 AM   node: 906ecfe12afdc02a
iot-
2/type/Monitor_devicetype/id/Monitor_deviceid/evt/Monitor_
: msg.payload : Object
{ temperature: 296.14,
TemperatureRecommendation:
"Temperature is higher than ide…",
humidity: 88, WeatherCondition:
"Mist", SpeedRecommendation: "30KM/HR
and switch on the head…" … }

11/19/2022, 7:37:38 AM   node: 906ecfe12afdc02a
iot-
2/type/Monitor_devicetype/id/Monitor_deviceid/evt/Monitor_
: msg.payload : Object
{ temperature: 296.14,
TemperatureRecommendation:
"Temperature is higher than ide…",
humidity: 88, WeatherCondition:
"Mist", SpeedRecommendation: "30KM/HR
and switch on the head…" … }
```

STEP 4: We can see the road safety instructions displayed in the Node – RED URL and it can be linked with the digital board



RoadSafety_Controlling

Control

Recommendations

Speed

MAINTAIN NORMAL SPEED LIMIT UPTO 50 KM/HR

Temperature

Temperature is higher than ideal value

Visibility

visibility range is ideal for vechicles

Climate

Status	**Haze**
Description	**haze**

Alerts

High Traffic TAKE DIVERSION