

## Project Development Phase Sprint 4

Date	17 November 2022
Team ID	PNT2022TMID27330
Project Name	Project - Signs with smart connectivity for better road safety

```
randomSensorData.py - C:\Users\paulj\OneDrive\Desktop\randomSensorData.py (3.7.0)
File Edit Format Run Options Window Help

import wiotp.sdk.device
import time
import random
import ibmiotf.application
import ibmiotf.device
import requests, json

myConfig = {
    #Configuration
    "identity": {
        "orgId": "xfxok9",
        "typeId": "NodeMCU",
        "deviceId": "6385476388"
    },
    #API Key
    "auth": {
        "token": "9384731286"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

#OpenWeatherMap Credentials
BASE_URL = "https://api.openweathermap.org/data/2.5/weather?"
CITY = "Nagercoil"
URL = BASE_URL + "q=" + "chennai" + "&appid=" + "01df65417ab3968e3fc2a38c4aee27bb"

while True:
    response = requests.get(URL)
    if response.status_code == 200:
        data = response.json()
        main = data['main']
        temperature = main['temp']
        humidity = main['humidity']
        pressure = main['pressure']
        report = data['visibility']

        #message part
        msg=random.randint(0,5)

File Edit Format Run Options Window Help
```

```
File Edit Format Run Options Window Help

msg=random.randint(0,5)
if msg==1:
    message="SLOW DOWN , SCHOOL IS NEAR"
elif msg==3:
    message="SLOW DOWN , HOSPITAL NEARBY"
elif msg==5:
    message="NEED HELP, POLICE STATION NEARBY"
else:
    message=""

#Speed part
speed=random.randint(0,150)
if speed>100:
    speedMsg="SLOW DOWN , Speed Limit Exceeded"
elif speed>60 and speed<100:
    speedMsg="Moderate Speed"
else:
    speedMsg=""

#Sign part
sign=random.randint(0,5)
if sign==1:
    signMsg="Right Diversion ->"
elif sign==3:
    signMsg="Left Diversion <-"
elif sign==5:
    signMsg="U Turn"
else:
    signMsg=""

#Visibility
if temperature<=50:
    visibility="Fog Ahead, Drive Slow"
else:
    visibility="Clear Weather"

else:
    print("Error in the HTTP request")
myData={'Temperature':temperature, 'Message':message, 'Sign':signMsg, 'Speed':speedMsg, 'Visibility':visibility}
client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
print("Published data Successfully: %s", myData)
client.commandCallback = myCommandCallback
time.sleep(5)
client.disconnect()
```

gkg1c.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

anupama.hemu@gmail.com  
ID: gkg1c

Browse Action Device Types Interfaces

## 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.

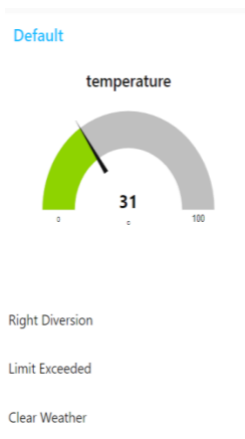
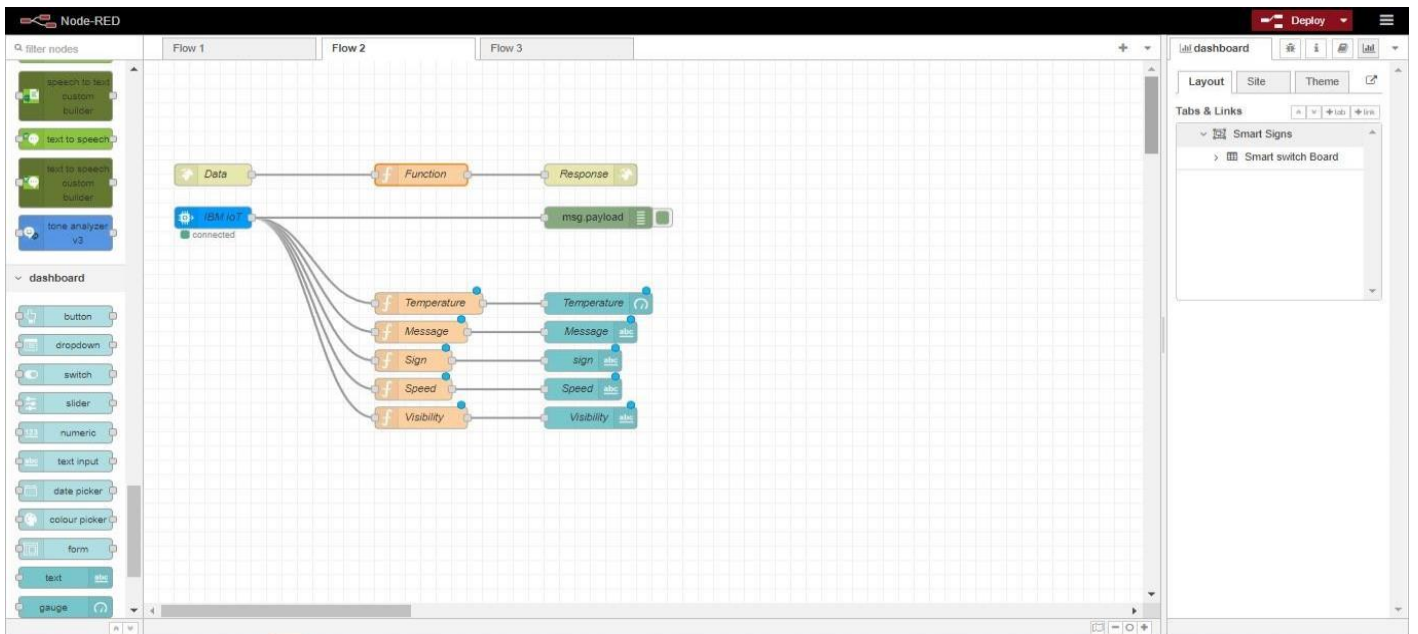
Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Disconnected	NodeMCU	Device	Oct 20, 2022 2:25 PM	
Board_1	Disconnected	Sign_Board	Device	Nov 17, 2022 5:04 PM	

Identity Device Information Recent Events State Logs

Device ID Board\_1  
Device Type Sign\_Board  
Date Added Nov 17, 2022 5:04 PM  
Added By anupama.hemu@gmail.com



## Program used :

```
import wiotp.sdk.device importtti
import random
importibmiotf.application
imrt ibmiotf.device
importrequests,json

myConfig = {
#Configuration
"identity":{
    "orgId":"xfxok9",
    "typeId":"NodeMCU",
    "deviceId":"6385476358"
},
#APIKey
"auth":{
    "token":"9384731286"
}
}

defmyCommandCallback(cmd): print("MessagereceivedfromIBMIoTPlatform:%s"%
cmd.data['command'])
m=cmd.data['command']

client=wiotp.sdk.device.DeviceClient(config=myConfig,
logHandlers=None)
client.connect()

#OpenWeatherMap Credentials
BASE_URL=
"https://api.openweathermap.org/data/2.5/weather?"
CITY="Chennai"
URL=BASE_URL+"q="+"chennai"+"&appid="+
"01df65417ab3968e3fc2a38c4aee27 bb"

whileTrue:
    response=requests.get(URL)
    ifresponse.status_code==200:
        data=r response.json()
        main = data['main']
        temperature = main['temp']
        humidity = main['humidity']
        pressure=main['pressure']
        report=data['visibility']

        #messge part
        msg=random.randint(0,5)
        i fmsg==1:
            message="SLOWDOWN,SCHOOLISNEAR"
            elifmsg==3:
                message="SLOWDOWN,HOSPITALNEARBY"
                elifmsg==5:
                    message="NEEDHELP,POLICESTATIONNEARBY"
                else:
                    message=""

        #Speed part
```

```

speed=random.randint(0,150)
if speed>=100:
    speedMsg="SLOW DOWN,Speed Limit Exceeded"
elif speed>=60 and speed<100:
    speedMsg="Moderate Speed"
else:
    speedMsg=""

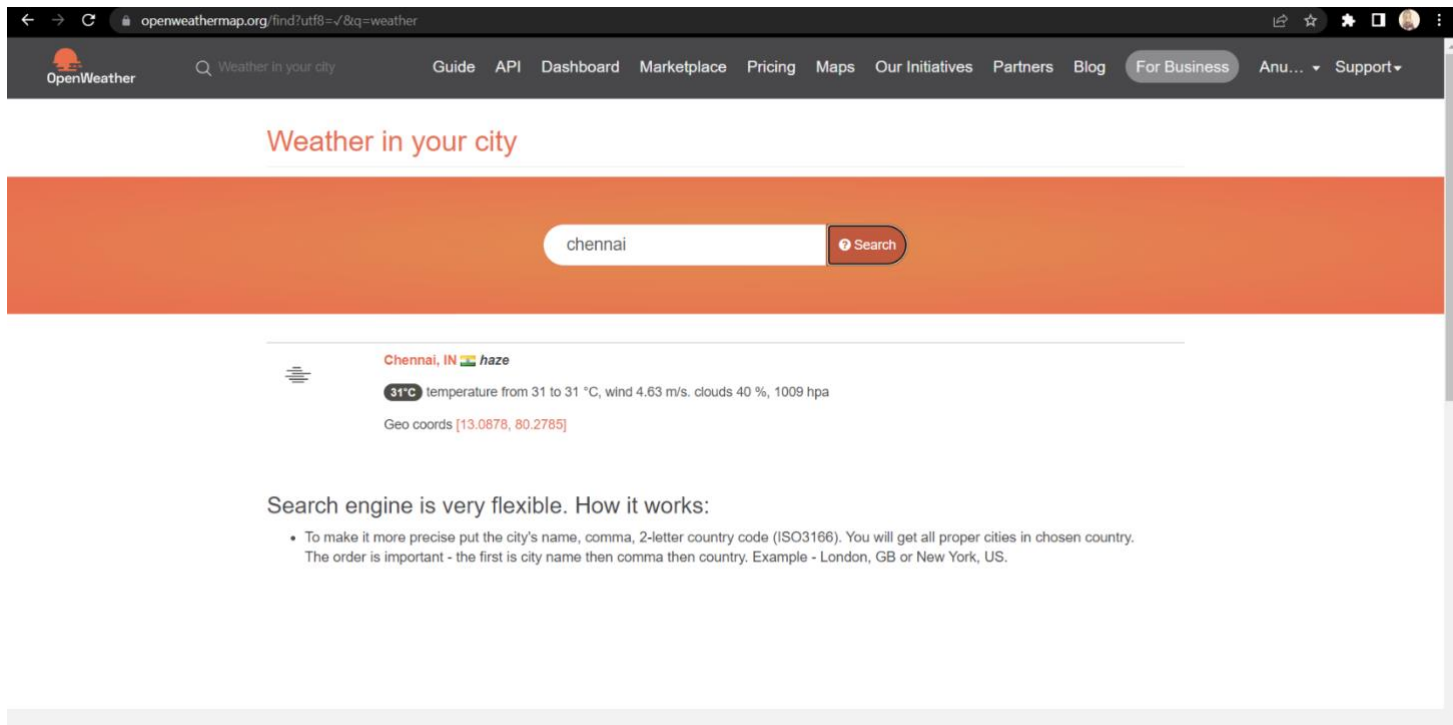
#Sign part
sign=random.randint(0,5)
if sign==1:
    signMsg="Right Diversion >"
elif sign==3:
    signMsg="Left Diversion <"
elif sign==5:
    signMsg="UTurn"
else:
    signMsg=""

#Visibility
if temperature<=50:
    visibility="Fog Ahead, Drive Slow"
else:
    visibility="Clear Weather"

else:
    print("Error in the HTTP request")
    myData={'Temperature':temperature, 'Message':message,
'Sign':signMsg, 'Speed':speedMsg, 'Visibility':visibility}
    client.publishEvent(eventId="status",msgFormat="json",
        data=myData, qos=0, onPublish=None)
    print("Published data Successfully: %s", myData)
    client.commandCallback=myCommandCallback
    time.sleep(5)
client.disconnect()

```

## OpenWeatherMap - (Ex., Chennai, IN) :



openweathermap.org/find?utf8=✓&q=weather

OpenWeather

Weather in your city

Guide API Dashboard Marketplace Pricing Maps Our Initiatives Partners Blog For Business Anu... Support

Weather in your city

chennai Search

Chennai, IN haze

31°C temperature from 31 to 31 °C, wind 4.63 m/s, clouds 40 %, 1009 hpa

Geo coords [13.0878, 80.2785]

Search engine is very flexible. How it works:

- To make it more precise put the city's name, comma, 2-letter country code (ISO3166). You will get all proper cities in chosen country. The order is important - the first is city name then comma then country. Example - London, GB or New York, US.

## Python IDLE Output :

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published data Successfully: %s {'Temperature': 300.14, 'Message': '', 'Sign': '', 'Speed': 'SLOW DOWN , Speed Limit Exceeded', 'Visibility': 'Clear Weather'}
Published data Successfully: %s {'Temperature': 300.14, 'Message': '', 'Sign': '', 'Speed': 'SLOW DOWN , Speed Limit Exceeded', 'Visibility': 'Clear Weather'}
Published data Successfully: %s {'Temperature': 300.14, 'Message': 'NEED HELP, POLICE STATION NEARBY', 'Sign': 'Left Diversion <-', 'Speed': 'Moderate Speed', 'Visibility': 'Clear Weather'}
Published data Successfully: %s {'Temperature': 300.14, 'Message': 'SLOW DOWN , HOSPITAL NEARBY', 'Sign': '', 'Speed': 'SLOW DOWN , Speed Limit Exceeded', 'Visibility': 'Clear Weather'}
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