Project Development Phase

Sprint – IV

Date	14 November 2022
Team id	PNT2022TMID51172
Project name	Signs with smart connectivity for better road safety

Coding to print the random Road signs, Speed limit, Message and temperature :

randomSensordata.py:

```
import wiotp.sdk.device

import time

import random

import ibmiotf.application

import ibmiotf.device

import requests, json


myConfig = {

  #Configuration

  "identity": {

    "orgId": "q536ty",

    "typeId": "Sample_one",

    "deviceId":"4054"

},

  #API Key

  "auth": {
```

```
    "token": "953719104054"
  }
}

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 = "Bengaluru, IN"
URL = BASE_URL + "q=" + CITY + "&units=metric"+"&appid="
+"76d24dec9915b133df9bdef90b7c215a"

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']

#messge part
msg=random.randint(0,5)
if msg==1:
  message="GO SLOW, SCHOOL ZONE AHEAD"
elif msg==2:
  message="NEED HELP, POLICE STATION AHEAD"
elif msg==3:
  message="EMERGENCY, HOSPITAL NEARBY"
elif msg==4:
  message="DINE IN, RESTAURENT AVAILABLE"
elif msg==5:
  message="PETROL BUNK NEARBY"
else:
  message=""

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

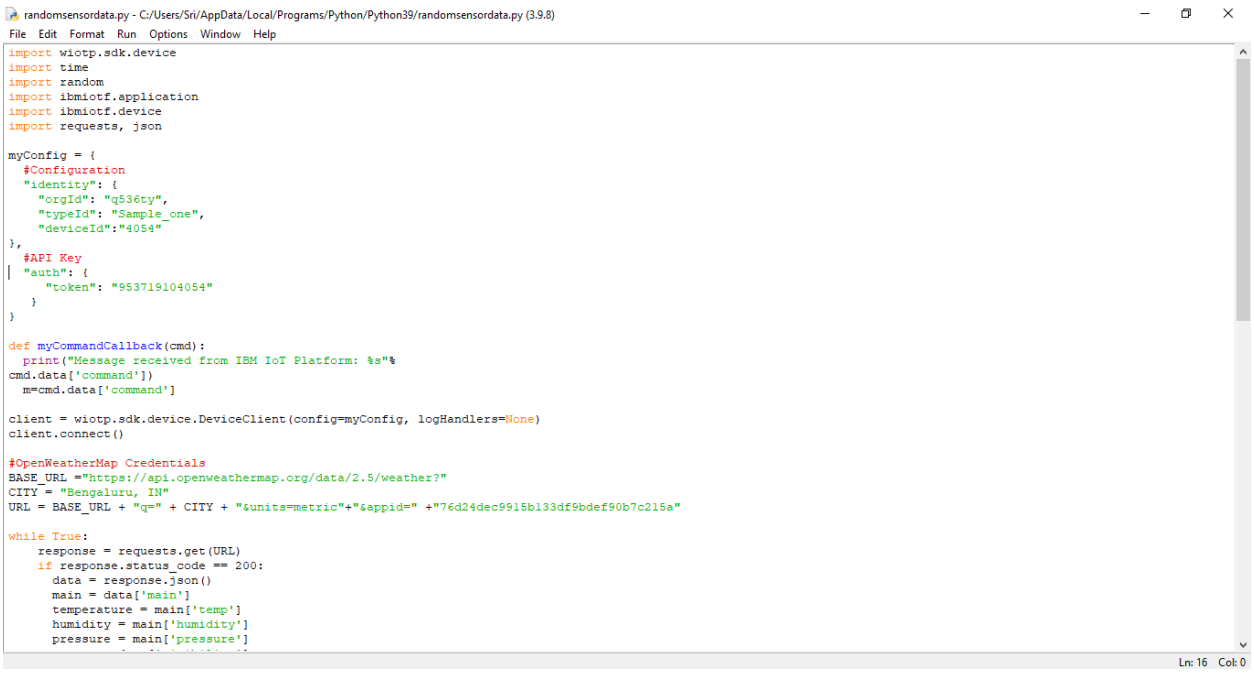
```
        speedMsg="Slow"


#Diversion part
    sign=random.randint(0,5)
    if sign==1:
        signMsg="Right Diversion"
    elif sign==2:
        signMsg="Speed Breaker"
    elif sign==3:
        signMsg="Left Diversion"
    elif sign==4:
        signmsg="U Turn"
    else:
        signMsg=""


#Visibility
    if temperature < 24:
        visibility="Fog Ahead, Drive Slow"
    else:
        visibility="Clear Weather"


    myData={'Temperature':temperature, 'Message':message, 'Sign':signMsg, 'Speed':speedMsg,
'Visibility':visibility}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
onPublish=None) #PUBLISHING TO IOT WATSON
    print("Published data Successfully: ", myData)
```

client.commandCallback = myCommandCallback

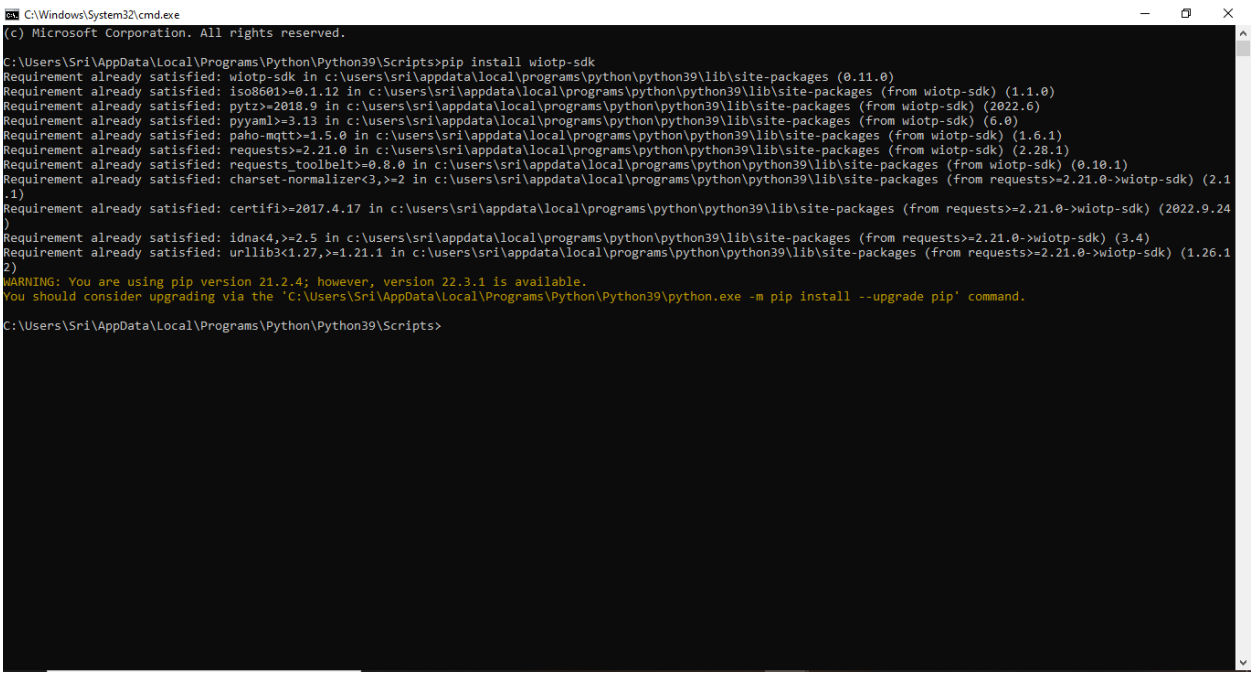
time.sleep(5)

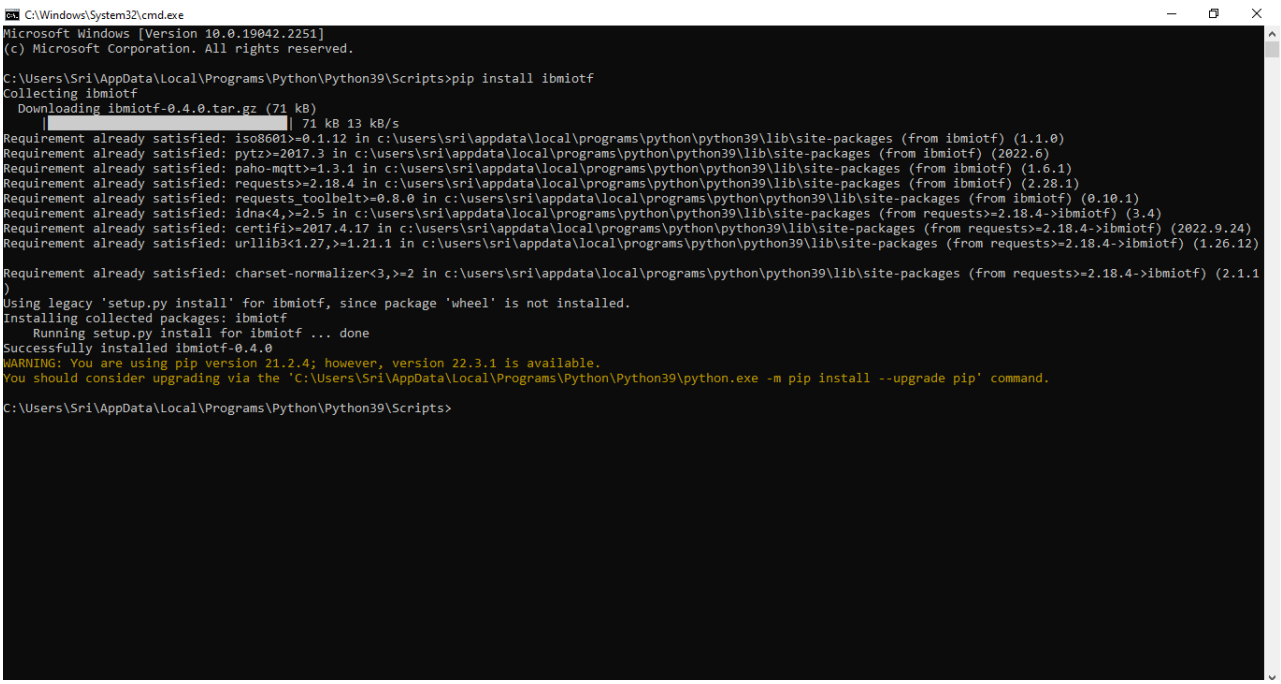
client.disconnect()

Python simulation:

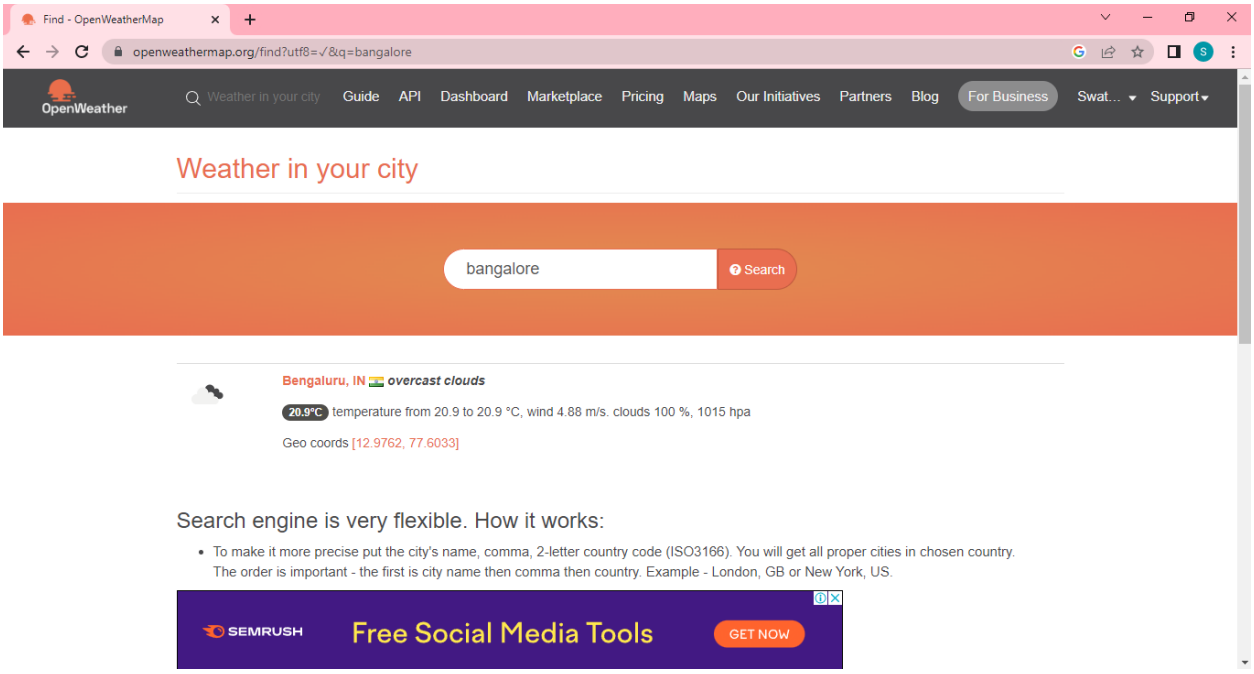


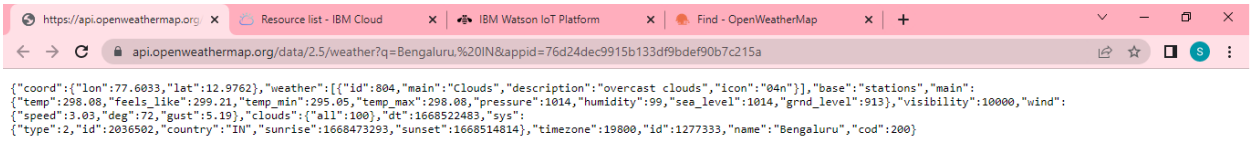
Import wiotp-sdk & ibmiotf :

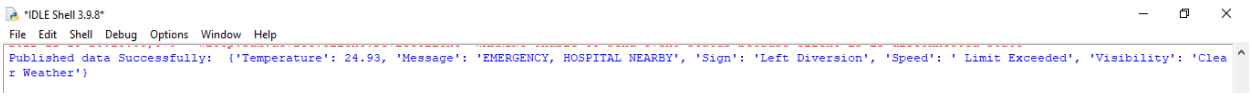




OpenWeatherMap - (Ex., Bengaluru, IN) :





{"coord":{"lon":77.6033,"lat":12.9762},"weather":[{"id":804,"main":"Clouds","description":"overcast clouds","icon":"04n"}],"base":"stations","main":
{"temp":298.08,"feels_like":299.21,"temp_min":295.05,"temp_max":298.08,"pressure":1014,"humidity":99,"sea_level":1014,"grnd_level":913},"visibility":10000,"wind":
{"speed":3.03,"deg":72,"gust":5.19},"clouds":{"all":100},"dt":1668522483,"sys":
{"type":2,"id":2036502,"country":"IN","sunrise":1668473293,"sunset":1668514814},"timezone":19800,"id":1277333,"name":"Bengaluru","cod":200}

Python IDLE Output :