Project Development Phase Sprint IV

Date	14 November 2022
Team ID	PNT2022TMID38165
Project Name	Project - Signs with smart connectivity for Better road safety

Code for print the random temperature, Road signs, Speed limit, Message :

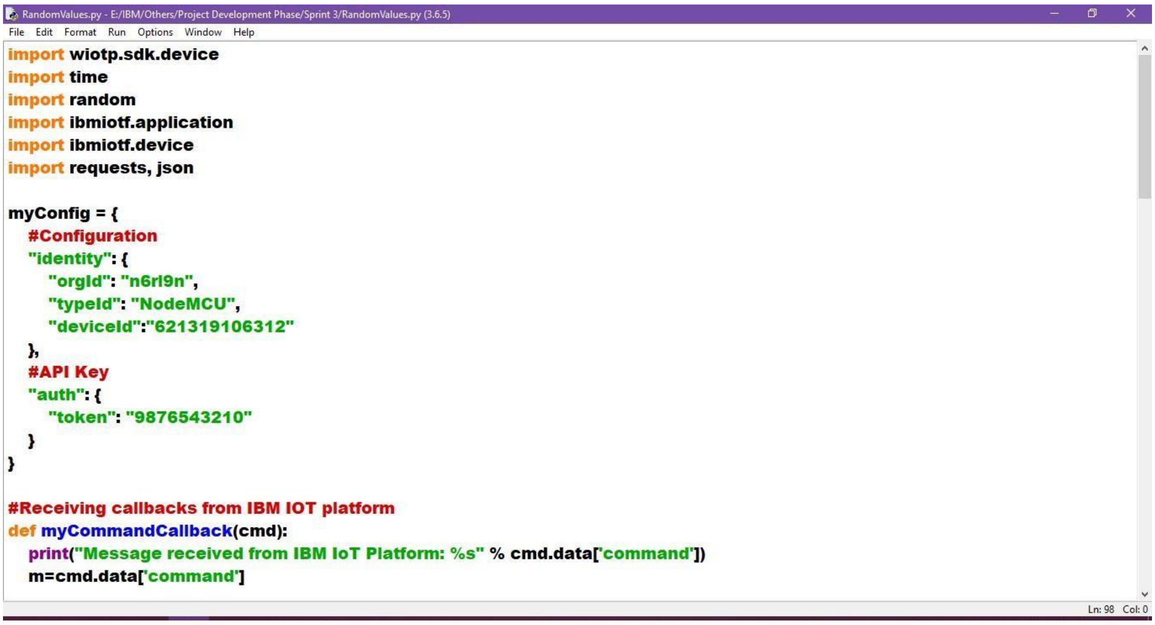
(RandomValues.py)

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

myConfig = {
    #Configuration
    "identity": {
        "orgId": "n6rl9n",
        "typeId": "NodeMCU",
        "deviceId":"621319106312"
    },
    #API Key
    "auth": {
        "token": "9876543210"
    }
}

#Receiving callbacks from IBM IOT platform
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()
```

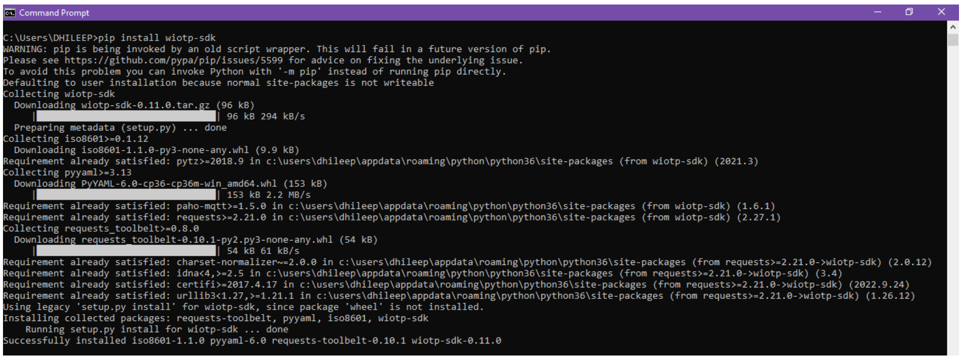
```
#OpenWeatherMap Credentials
BASE_URL = "https://api.openweathermap.org/data/2.5/weather?"
CITY = "Salem, IN"
URL = BASE_URL + "q=" + CITY + "&units=metric"+"&appid=" + "f58e4720c739a54c439aba9b05176839"

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"
        elif temperature < 20:
            visibility="Bad Weather"
        else:
            visibility="Clear Weather"
    else:
       print("Error in the HTTP request")
```

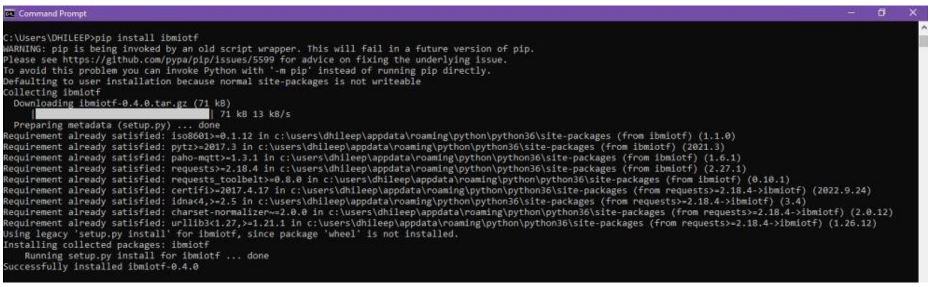
```
    myData={'Temperature':temperature, 'Message':message, 'Sign':signMsg, 'Speed':speedMsg,
'Visibility':visibility}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
#PUBLISHING TO IOT WATSON
    print("Published data Successfully: ", myData)
    print("------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------")
    client.commandCallback = myCommandCallback
    time.sleep(5)
client.disconnect()
```

Python Simulation :

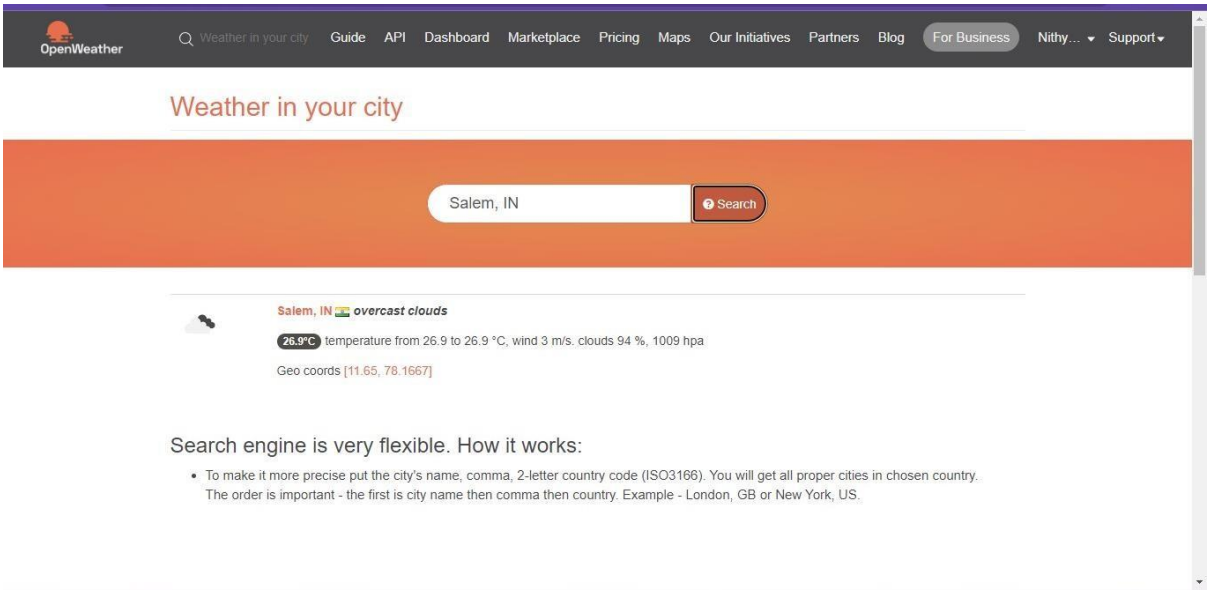


Import wiotp-sdk & ibmiotf :





OpenWeatherMap - (Ex., Salem, IN) :



Python IDLE Output :