

### Project Development Phase Sprint IV

Date	18 November 2022
Team ID	<b>PNT2022TMID17542</b>
Project Name	Project - Signs with smart connectivity for better road safety

**Code for printing the random temperature, Road signs, Speed limit, and Message :**

**( RandomValues.py )**

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

myConfig = {
    #Configuration
    "identity": {
        "orgId": "fvh76j",
        "typeId": "NodeMCU",
        "deviceId": "621319106312"
    },
    #API Key
    "auth": {
        "token": "9876543210"
    }
}

#Receiving callbacks from IBM IOT platformdef
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, RESTAURANT 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:

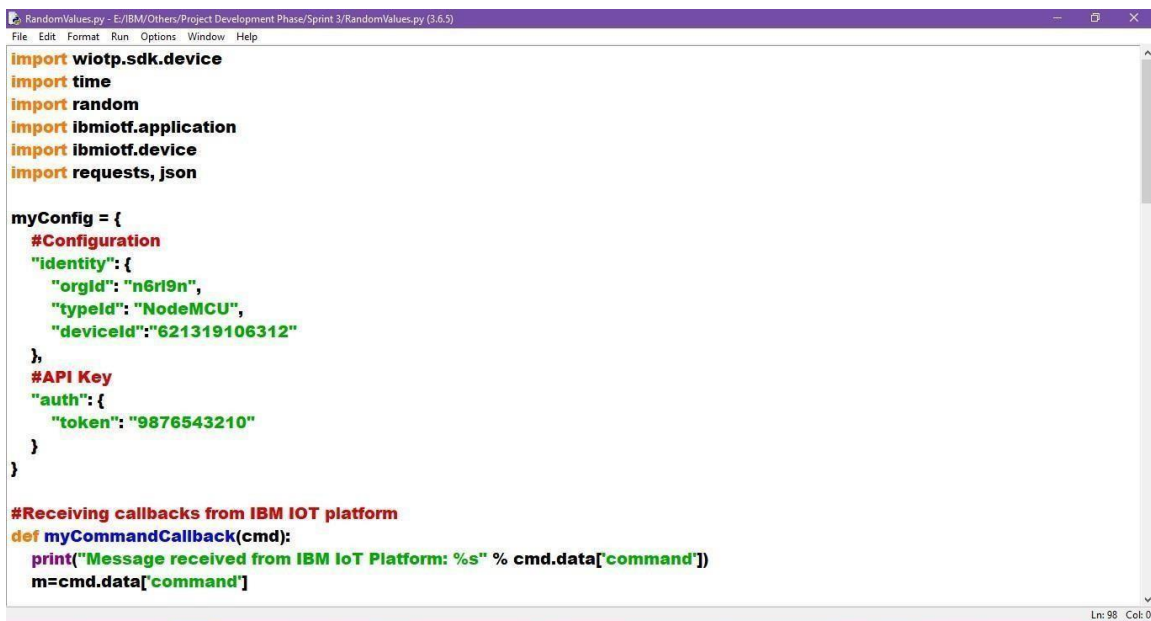
```
    print("Error in the HTTP request")
```

```

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 :



```

RandomValues.py - E:/IBM/Other/Project Development Phase/Sprint 3/RandomValues.py (3.6.5)
File Edit Format Run Options Window Help

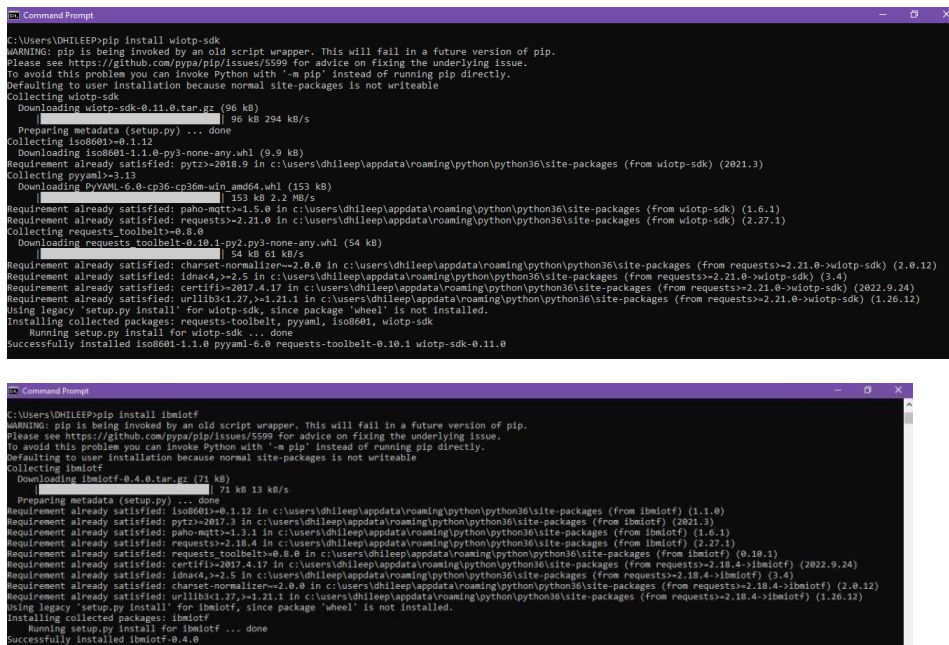
import wiotp.sdk.device
import time
import random
import ibmiotf.application
import ibmiotf.device
import requests, json

myConfig = {
    #Configuration
    "identity": {
        "orgId": "n6r19n",
        "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]

```

## Import wiotp-sdk & ibmiotf :



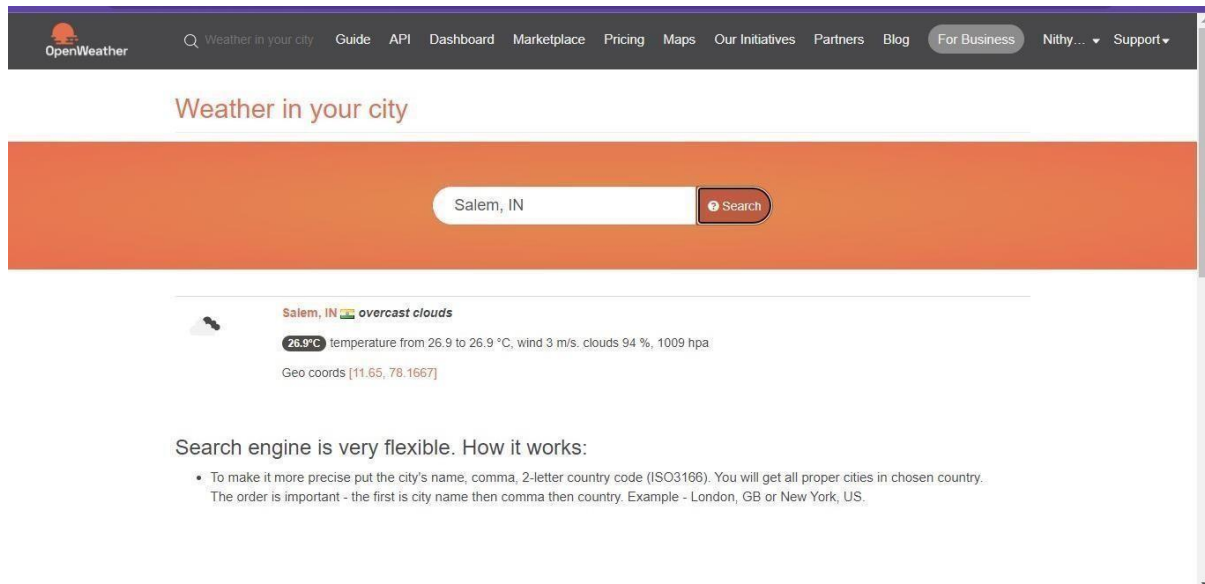
```

C:\Users\DHILEEP>pip install wiotp-sdk
WARNING: pip is being invoked by an old script wrapper. This will fail in a future version of pip.
Please see https://github.com/pypa/pip/issues/5599 for advice on fixing the underlying issue.
To avoid this problem you can invoke Python with '-m pip' instead of running pip directly.
Defaulting to user installation because normal site-packages is not writeable
Collecting wiotp-sdk
  Downloading wiotp-sdk-0.11.0.tar.gz (96 kB)
    | 96 kB 294 kB/s
    Preparing metadata (setup.py) ... done
Collecting iso8601>=1.1.2
  Downloading iso8601-1.1.0-py3-none-any.whl (9.9 kB)
Requirement already satisfied: pty>=2018.9 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from wiotp-sdk) (2021.3)
Collecting pyyaml>=3.13
  Downloading PyYAML-6.0-cp36-cp36m-win_amd64.whl (153 kB)
    | 153 kB 2.2 MB/s
Requirement already satisfied: paho-mqtt>=1.5.0 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from wiotp-sdk) (1.6.1)
Requirement already satisfied: requests>=2.21.0 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from wiotp-sdk) (2.27.1)
Collecting requests-toolbelt>=0.8.0
  Downloading requests-toolbelt-0.10.1-py2.py3-none-any.whl (54 kB)
    | 54 kB 61 kB/s
Requirement already satisfied: charset-normalizer<=2.0.0 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.21.0->wiotp-sdk) (2.0.12)
Requirement already satisfied: idna<=2.5 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.21.0->wiotp-sdk) (3.4)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.21.0->wiotp-sdk) (2022.9.24)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.21.0->wiotp-sdk) (1.26.12)
Using legacy 'setup.py install' for wiotp-sdk, since package 'wheel' is not installed.
Installing collected packages: requests-toolbelt, pyyaml, iso8601, wiotp-sdk
Running setup.py install for wiotp-sdk ... done
Successfully installed iso8601-1.1.0 pyyaml-6.0 requests-toolbelt-0.10.1 wiotp-sdk-0.11.0

C:\Users\DHILEEP>pip install ibmiotf
WARNING: pip is being invoked by an old script wrapper. This will fail in a future version of pip.
Please see https://github.com/pypa/pip/issues/5599 for advice on fixing the underlying issue.
To avoid this problem you can invoke Python with '-m pip' instead of running pip directly.
Defaulting to user installation because normal site-packages is not writeable
Collecting ibmiotf
  Downloading ibmiotf-0.4.0.tar.gz (71 kB)
    | 71 kB 13 kB/s
    Preparing metadata (setup.py) ... done
Requirement already satisfied: iso8601>=1.1.2 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from ibmiotf) (1.1.0)
Requirement already satisfied: pty>=2017.3 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from ibmiotf) (2021.3)
Requirement already satisfied: paho-mqtt>=1.3.1 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from ibmiotf) (1.6.1)
Requirement already satisfied: requests>=2.18.4 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from ibmiotf) (2.27.1)
Requirement already satisfied: requests-toolbelt>=0.8.0 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from ibmiotf) (0.10.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.18.4->ibmiotf) (2022.9.24)
Requirement already satisfied: idna<=2.5 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.18.4->ibmiotf) (3.4)
Requirement already satisfied: charset-normalizer<=2.0.0 in c:\users\dhileep\appdata\roaming\python\python36\site-packages (from requests>=2.18.4->ibmiotf) (2.0.12)
Using legacy 'setup.py install' for ibmiotf, since package 'wheel' is not installed.
Installing collected packages: ibmiotf
Running setup.py install for ibmiotf ... done
Successfully installed ibmiotf-0.4.0

```

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



## Python IDLE Output :

