

## CODE :

Date	26 November 2022
Team ID	PNT2022TMID13679
Project Name	Signs with Smart Connectivity for Better Road Safety

## CODING & SOLUTIONING:

```
import wiotp.sdk.device
import time
import random

import
ibmiotf.application
import ibmiotf.device
import requests, json
```

```
myConfig = {
#Configuration
"identity": {
"orgId": "3dpjnk",
"typeId":
"Sign_Board",
"deviceId":"Board_1"},
#API Key
"auth": {
"token": "1234567890"
}
}
#Receiving callbacks from IBM IOT
```

```
platformdefmyCommandCallback(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

CITY = "Nagercoil"

URL = BASE\_URL + "q=" + CITY + "&units=metric"+"&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']

#messge part

msg=random.randint(0

,5) if msg==1:

message="SLOW DOWN, SCHOOL IS NEAR"

elif msg==2:

message="NEED HELP, POLICE STATION AHED"

elif msg==3:

message="EMERGENCY, HOSPITAL NEARBY"

elif msg==4:

message="DINE IN, RESTAURENT AVAILABLE"

else:

message=""

#Speed

#speedLimit part

speed=random.randint(0,1

50) 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==3:
signMsg="Left Diversion"
elif sign==5:
signmsg="U Turn"
else:
    signMsg=""
```

```
#Visibility
```

```
if temperature < 24:
    visibility="Fog Ahead, Drive Slow"
elif temperature < 20:
    visibility="Bad Weather"
elif temperature >24:
    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:%s",myData)
client.commandCallback=myCommandCallbacktime.sleep(5)
client.disconnect()
```

## Output:

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

myConfig = { #Configuration
    "identity": {
        "orgId": "3dpjnk",
        "typeId": "Sign_Board",
        "deviceId": "Board_1"
    },
    $API Key
    "auth": {
        "token": "1234567890"
    }
}

#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 = "Chennai"
URL = BASE_URL + "q=" + CITY + "&units=metric"&appid=" + "01df65417ab3960e3fc2a38c4aee27bb"

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
    temperature=random.randint(0,100)
    msg=random.randint(0,5)
    if msg==1:
        message="SLOW DOWN, SCHOOL IS NEAR"
    elif msg==2:
        message="NEED HELP, POLICE STATION AHED"
    elif msg==3:
        message="EMERGENCY, HOSPITAL NEARBY"
    else:
        message="DINE IN, RESTAURENT AVAILABLE"
```

\*Python 3.7.9 Shell\*

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```
>>>
===== RESTART: C:\Users\Madhu Sundaran Nair\OneDrive\Desktop\project.py =====
2022-11-14 19:07:23.504 wiotp.sdk.device.client.DeviceClient INFO Connecte
d successfully: d:3dpjnk:Sign_Board:Board_1
Published data Successfully: %s ('Temperature': 77, 'Message': 'SLOW DOWN, SCHOO
L IS NEAR', 'Sign': 'U Turn', 'Speed': 'Slow', 'Visibility': 'Clear Weather')
Published data Successfully: %s ('Temperature': 47, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'Right Diversion', 'Speed': 'Slow', 'Visibility': 'Clear
Weather')
Published data Successfully: %s ('Temperature': 0, 'Message': 'NEED HELP, POLICE
STATION AHED', 'Sign': 'Left Diversion', 'Speed': 'Moderate', 'Visibility': 'Fo
g Ahead, Drive Slow')
Published data Successfully: %s ('Temperature': 84, 'Message': 'NEED HELP, POLIC
E STATION AHED', 'Sign': 'Right Diversion', 'Speed': 'Limit Exceeded', 'Visibil
ity': 'Clear Weather')
Published data Successfully: %s ('Temperature': 14, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'U Turn', 'Speed': 'Limit Exceeded', 'Visibility': 'Fog
Ahead, Drive Slow')
Published data Successfully: %s ('Temperature': 100, 'Message': 'EMERGENCY, HOSP
ITAL NEARBY', 'Sign': 'U Turn', 'Speed': 'Moderate', 'Visibility': 'Clear Weathe
r')
Published data Successfully: %s ('Temperature': 55, 'Message': 'NEED HELP, POLIC
E STATION AHED', 'Sign': 'Right Diversion', 'Speed': 'Slow', 'Visibility': 'Clea
r Weather')
Published data Successfully: %s ('Temperature': 66, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'U Turn', 'Speed': 'Moderate', 'Visibility': 'Clear Weat
her')
Published data Successfully: %s ('Temperature': 29, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'Right Diversion', 'Speed': 'Limit Exceeded', 'Visibili
ty': 'Clear Weather')
Published data Successfully: %s ('Temperature': 2, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'Left Diversion', 'Speed': 'Slow', 'Visibility': 'Fog Ahe
ad, Drive Slow')
Published data Successfully: %s ('Temperature': 93, 'Message': 'EMERGENCY, HOSPI
TAL NEARBY', 'Sign': 'Left Diversion', 'Speed': 'Moderate', 'Visibility': 'Clear
Weather')
Published data Successfully: %s ('Temperature': 62, 'Message': 'EMERGENCY, HOSPI
TAL NEARBY', 'Sign': 'Left Diversion', 'Speed': 'Slow', 'Visibility': 'Clear Wea
ther')
```

Ln: 5 Col: 0

Ln: 1 Col: 4