PYTHON SCRIPT

TOPIC : SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY.

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SOFTWARE USED:

- Python
- IBM Watson IOT.

Developing a python script to communicate between openweather API with IOT platform.

PYTHON CODE:

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

myConfig = {
   "identity": {
      "orgId": "e4jrbo",
      "typeId": "SignsWithSmartConnectivity",
      "deviceId":"12345"
   },
   "auth": {
```

```
        "token": "1234567890"
    }
}

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

URL =
        "http://api.openweathermap.org/data/2.5/weather?q=Kāraikkudi,IN&units=m
        etric&appid=76e08ef85f6173baed5302d8d21a6d24"



while True:
    response = requests.get(URL)
    if response.status_code == 200:
        data = response.json()


        main = data['main']
        temperature = main['temp']
        humidity = main['humidity']
```

```
vis = (data['visibility'])/1000
place=data['name']
wea= data['weather'][0]['main']

vis_ms=""
if vis>=10:
    vis_ms+="Road is visible"
else:
    vis_ms+="Visiblity is Low, Drive safely"

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=random.randint(0,150)
if speed>=100:
    speedMsg="Speed Limit Exceeded"
```

```
elif speed>=60 and speed<100:
    speedMsg="Moderate Speed"
else:
    speedMsg="Slow and steady"


if temperature < 24:
    visibility="cold weather, Drive Slow"
elif temperature < 20:
    visibility="Bad Weather, Be Careful"
else:
    visibility="Clear Weather, Safe Journey"


sign=random.randint(0,6)
if sign==1:
    signMsg="Right Diversion"
elif sign==2:
    signMsg="Speed Breaker"
elif sign==3:
    signMsg="Left Diversion"
elif sign==4:
    signmsg="U Turn"
elif sign==5:
    signMsg="Under Repair"
else:
    signMsg=""
```

```
    myData={'Temperature':temperature, 'Visibility':vis, 'temp-msg':visibility,
      'Sign_msg':signMsg, 'Vis_msg':vis_ms, 'LM_msg':message,
      'Speed_msg':speedMsg, 'Humidity':humidity, 'Place':place, 'Weather':wea}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
      onPublish=None)
    print("Published data Successfully:", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
client.disconnect()
```