

8. CODING AND SOLUTIONS

CODE

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

myConfig = {
    "identity": {
        "orgId": "h99ntm",
        "typeId": "Vss",
        "deviceId": "321"
    },
    "auth": {
        "token": "6369435045 "
    }
}

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()

BASE_URL = "https://api.openweathermap.org/data/2.5/weather?"
```

```
CITY = "Coimbatore"
```

```
URL = BASE_URL + "q=" + "Coimbatore" + "&appid=" +  
"fbc52a2a6c7bbea1396de2b6b17ea8a"
```

```
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']
```

```
        repo=random.randint(0,5)
```

```
        if repo==1:
```

```
            prt="SLOW DOWN , SCHOOL IS NEAR"
```

```
        elif repo==3:
```

```
            prt="SLOW DOWN , HOSPITAL NEARBY"
```

```
        elif repo==5:
```

```
            prt="NEED HELP, POLICE STATION NEARBY"
```

```
        else:
```

```
            prt=""
```

```
        speed=random.randint(0,150)
```

```
        if speed>=100:
```

```
prt3="SLOW DOWN , Speed Limit Exceeded"
elif speed>=60 and speed<100:
    prt3="Moderate Speed"
else:
    prt3=""
    sign=random.randint(0,5)
    if sign==1:
        prt2="Right Diversion ->"
    elif sign==3:
        prt2="Left Diversion <-"
    elif sign==5:
        prt2="U Turn"
    else:
        prt2=""
    if temperature<=50:
        prt4="Fog Ahead, Drive Slow"
    else:
        prt4="Clear Weather"

print("Error in the HTTP request")

myData={'Temperature':temperature,'Humidity':humidity,'Pressure':pressure,
'Message':prt,
'Sign':prt2, 'Speed':prt3, 'Visibility':prt4}
```

```
client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
onPublish=None)
```

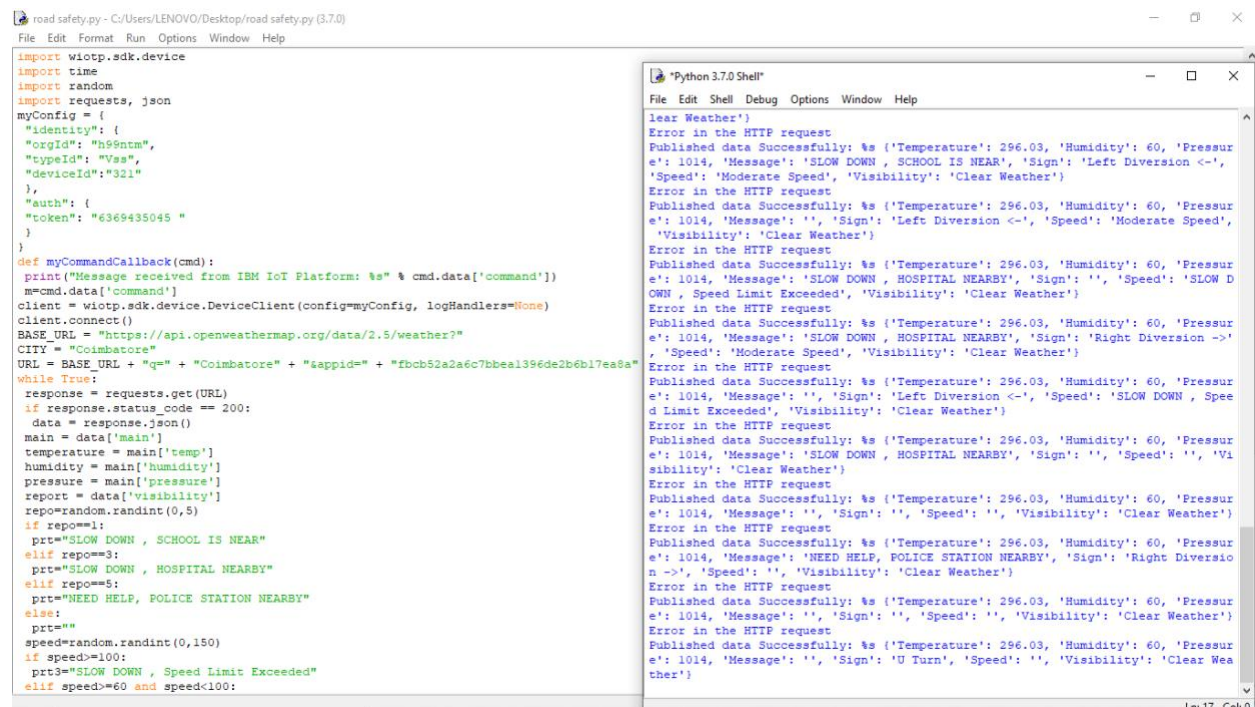
```
print("Published data Successfully: %s", myData)
```

```
client.commandCallback = myCommandCallback
```

```
time.sleep(5)
```

```
client.disconnect()
```

OUTPUT



The image shows a screenshot of a Python script and its output. The script, named `road_safety.py`, is located at `C:\Users\LENOVO\Desktop\road_safety.py (3.7.0)`. It uses the `wiotp.sdk.device` module to connect to an IBM IoT Platform. The script defines a `myConfig` dictionary with fields for `identity` (orgId, typeId, deviceId), `auth` (token), and a `myCommandCallback` function. The function sends weather data to the IoT Platform and publishes it to a MQTT topic. The output shows the script running successfully, publishing data to the topic `/1014/status` with a message containing weather information for Coimbatore.

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

myConfig = {
    "identity": {
        "orgId": "h99ntm",
        "typeId": "Vsa",
        "deviceId": "321"
    },
    "auth": {
        "token": "6369435045 "
    }
}

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()
    BASE_URL = "https://api.openweathermap.org/data/2.5/weather?"
    CITY = "Coimbatore"
    URL = BASE_URL + "q=" + "Coimbatore" + "&appid=" + "fbc652a2a6c7bbea1396de2b6b17ea8a"
    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']
            repo=random.randint(0,5)
            if repo==1:
                prt="SLOW DOWN , SCHOOL IS NEAR"
            elif repo==3:
                prt="SLOW DOWN , HOSPITAL NEARBY"
            elif repo==5:
                prt="NEED HELP, POLICE STATION NEARBY"
            else:
                prt=""
            speed=random.randint(0,150)
            if speed>=100:
                prt3="SLOW DOWN , Speed Limit Exceeded"
            elif speed>=60 and speed<100:
                prt3=""

    client.publishEvent(eventId="status", msgFormat="json", data={"temp": temperature, "humidity": humidity, "pressure": pressure, "visibility": report, "speed": speed, "sign": prt, "diversion": prt3}, qos=0, onPublish=None)
    time.sleep(5)
    client.disconnect()
```

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help

lear Weather')
Error in the HTTP request
Published data Successfully: %s {'Temperature': 296.03, 'Humidity': 60, 'Pressur
e': 1014, 'Message': 'SLOW DOWN , SCHOOL IS NEAR', 'Sign': 'Left Diversion <-',
'Speed': 'Moderate Speed', 'Visibility': 'Clear Weather'}
Error in the HTTP request
Published data Successfully: %s {'Temperature': 296.03, 'Humidity': 60, 'Pressur
e': 1014, 'Message': '', 'Sign': 'Left Diversion <-', 'Speed': 'Moderate Speed',
'Visibility': 'Clear Weather'}
Error in the HTTP request
Published data Successfully: %s {'Temperature': 296.03, 'Humidity': 60, 'Pressur
e': 1014, 'Message': 'SLOW DOWN , HOSPITAL NEARBY', 'Sign': '', 'Speed': 'SLOW D
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```