

**Final Deliverables**  
**Final Code and Solutions**

Date	19 November 2022
Team ID	PNT2022TMID41539
Project Name	Project-Signs with Smart Connectivity for Better Road Safety
Maximum marks	10 Marks

**Python code**

```
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 = "Nagercoil"
URL = BASE_URL + "q=" + "Chennai" + "&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==3:
    message="SLOW DOWN, HOSPITAL NEARBY"
elif msg==5:
    message="NEED HELP, POLICE STATION NEARBY"
else:
    message=""

#Speed part
speed=random.randint(0,150)
if speed>=100:
    speedMsg=" SLOW DOWN, speed Limit Exceeded"
elif speed>=60 and speed<100:
    speedMsg="Moderate"
else:
    speedMsg="Slow"

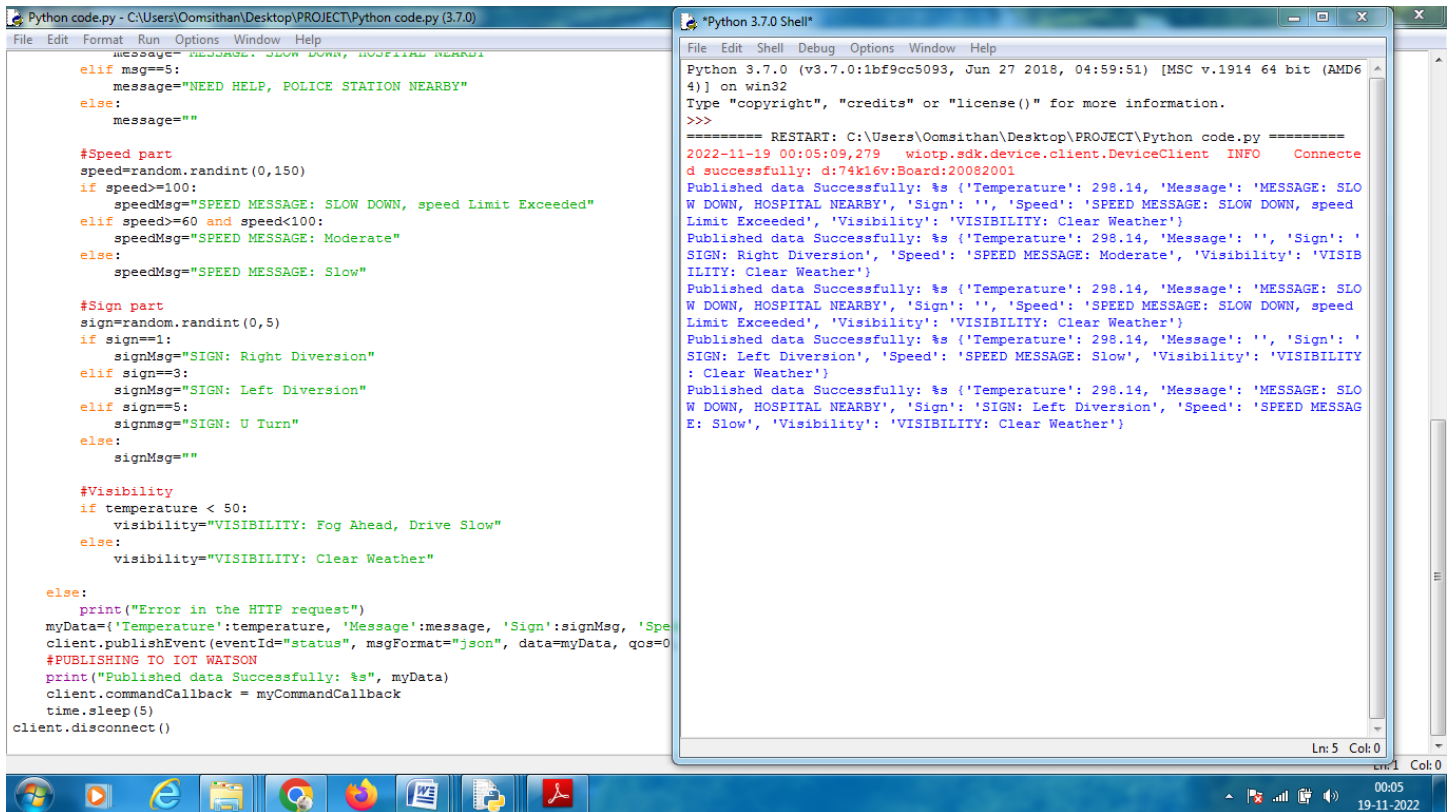
#Sign part
sign=random.randint(0,5)
if sign==1:
    signMsg="Right Diversion"
elif sign==3:
    signMsg="Left Diversion"
elif sign==5:
    signmsg="U Turn"
else:
    signMsg=""

#Visibility
if temperature < 50:
    visibility="Fog Ahead, Drive Slow"
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: %s", myData)
client.commandCallback = myCommandCallback
time.sleep(5)
client.disconnect()

```

## Python Output:



```
Python code.py - C:\Users\Oomsithan\Desktop\PROJECT\Python code.py (3.7.0)
File Edit Format Run Options Window Help

message="MESSAGE: SLOW DOWN, HOSPITAL NEARBY"
elif msg==5:
    message="NEED HELP, POLICE STATION NEARBY"
else:
    message=""

#Speed part
speed=random.randint(0,150)
if speed>=100:
    speedMsg="SPEED MESSAGE: SLOW DOWN, speed Limit Exceeded"
elif speed>=60 and speed<100:
    speedMsg="SPEED MESSAGE: Moderate"
else:
    speedMsg="SPEED MESSAGE: Slow"

#Sign part
sign=random.randint(0,5)
if sign==1:
    signMsg="SIGN: Right Diversion"
elif sign==3:
    signMsg="SIGN: Left Diversion"
elif sign==5:
    signMsg="SIGN: U Turn"
else:
    signMsg=""

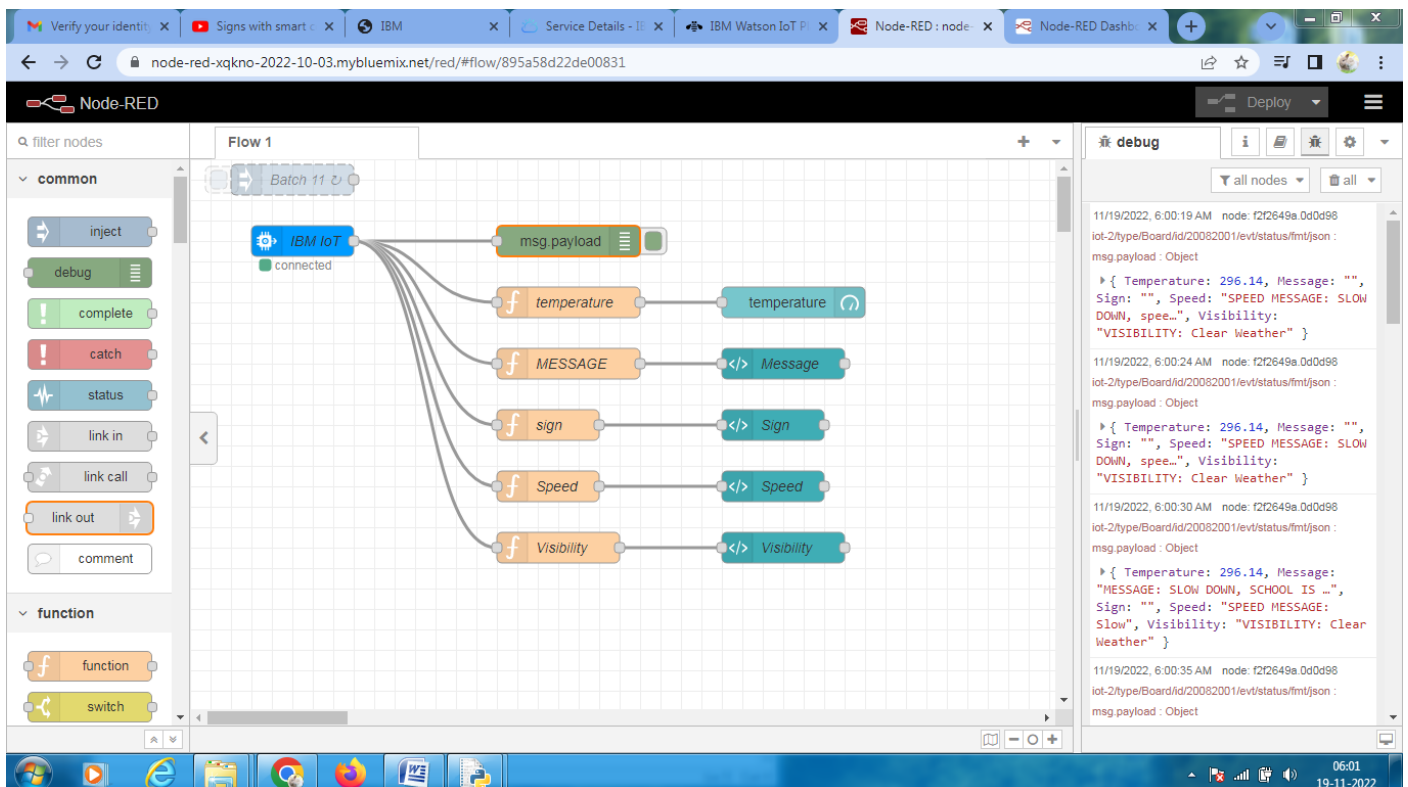
#Visibility
if temperature < 50:
    visibility="VISIBILITY: Fog Ahead, Drive Slow"
else:
    visibility="VISIBILITY: Clear Weather"

else:
    print("Error in the HTTP request")
myData={'Temperature':temperature, 'Message':message, 'Sign':signMsg, 'Speed':speedMsg, 'Visibility':visibility}
client.publish(eventId="status", msgFormat="json", data=myData, qos=0)
#PUBLISHING TO IOT WATSON
print("Published data Successfully: %s" % myData)
client.commandCallback = myCommandCallback
time.sleep(5)
client.disconnect()
```

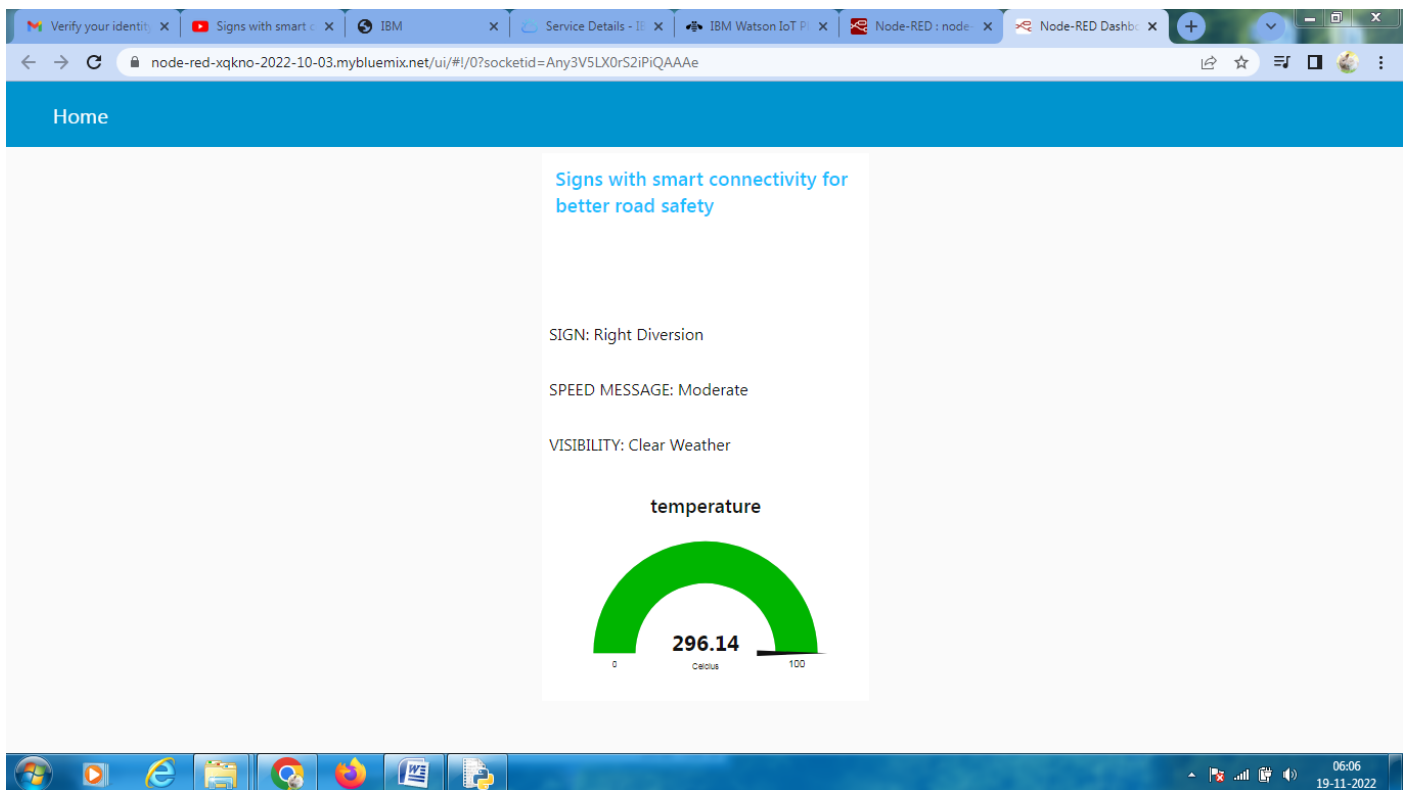
```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help

Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Oomsithan\Desktop\PROJECT\Python code.py =====
2022-11-19 00:05:09,279 wiotp.sdk.device.client.DeviceClient INFO Connect
d successfully: d:74k16v:Board:20082001
Published data Successfully: %s {'Temperature': 298.14, 'Message': 'MESSAGE: SLO
W DOWN, HOSPITAL NEARBY', 'Sign': '', 'Speed': 'SPEED MESSAGE: SLOW DOWN, speed
Limit Exceeded', 'Visibility': 'VISIBILITY: Clear Weather'}
Published data Successfully: %s {'Temperature': 298.14, 'Message': '', 'Sign': '
SIGN: Right Diversion', 'Speed': 'SPEED MESSAGE: Moderate', 'Visibility': 'VISIB
ILITY: Clear Weather'}
Published data Successfully: %s {'Temperature': 298.14, 'Message': 'MESSAGE: SLO
W DOWN, HOSPITAL NEARBY', 'Sign': '', 'Speed': 'SPEED MESSAGE: SLOW DOWN, speed
Limit Exceeded', 'Visibility': 'VISIBILITY: Clear Weather'}
Published data Successfully: %s {'Temperature': 298.14, 'Message': '', 'Sign': '
SIGN: Left Diversion', 'Speed': 'SPEED MESSAGE: Slow', 'Visibility': 'VISIBILI
TY: Clear Weather'}
Published data Successfully: %s {'Temperature': 298.14, 'Message': 'MESSAGE: SLO
W DOWN, HOSPITAL NEARBY', 'Sign': 'SIGN: Left Diversion', 'Speed': 'SPEED MESSAG
E: Slow', 'Visibility': 'VISIBILITY: Clear Weather'}
```

## Node-Red Output:



## Node User Interface Output:



## MIT AI2 Mobile Companion Application Output:

