

Project Development Phase

Project Development Delivery of Sprint 4

Team ID	PNT2022TMID41963
Project Name	Signs with Smart Connectivity for Better Road Safety

STEP 1: PYTHON CODE STIMULATION

```
File Edit Format Run Options Window Help
message="SLOW DOWN, SCHOOL IS NEAR"
elif msg==2:
    message="NEED HELP, POLICE STATION AHEAD"
elif msg==3:
    message="EMERGENCY, HOSPITAL NEARBY"
elif msg==4:
    message="DINE IN, RESTAURENT AVAILABLE"
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==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"
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.disconnect()
```

PYTHON CODE:

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

```

myConfig = { #Configuration "identity":
    {
        "orgId": "7znh86"
        "typeId": "NODE"
        "deviceId": "1234"},
    #API Key
    "auth": {
        "token": "123456789"
    }
}

#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.commandCallback= myCommandCallback client.connect()

#OpenWeatherMap Credentials
BASE_URL ="https://api.openweathermap.org/data/2.5/weather?"
CITY = "Chennai"
URL = BASE_URL + "q=" + CITY + "&units=metric"&"&appid=" +
"9cca583812b638930cefd580106f6c58"

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 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        Limit        part
    speed=random.randint(0,150)
    if speed>=100:
        speedMsg=" Limit Exceeded"
    elif speed>=60 and speed<100:

```

```

        speedMsg="Moderate" else:
            speedMsg="Slow"

#Diversiion 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"
    else:
        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, onPublish=None)
#PUBLISHING TO IOT WATSON print("Published
data Successfully: %s", myData)
client.disconnect()

```

OUTPUT OF PYTHON CODE:

```
Python 3.7.9 Shell
File Edit Shell Debug Options Window Help
Published data Successfully: {{"Temperature": 27.99, "Message": "", "Sign": "Right Diversion", "Speed": "Limit Exceeded", "Visibility": "Clear Weather"}}
Published data Successfully: {{"Temperature": 27.99, "Message": "NEED HELP, POLICE STATION AHEAD", "Sign": "Right Diversion", "Speed": "Limit Exceeded", "Visibility": "Clear Weather"}}
Published data Successfully: {{"Temperature": 27.99, "Message": "", "Sign": "Right Diversion", "Speed": "Limit Exceeded", "Visibility": "Clear Weather"}}
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```

STEP 2: IOT DEVICE- IOT PLATFORM

By running the code in python IDLE ,the data is published in IBM cloud.

BrowseActionDevice TypesInterfacesAdd Device

The recent events listed show the live stream of data that is coming and going from this device.

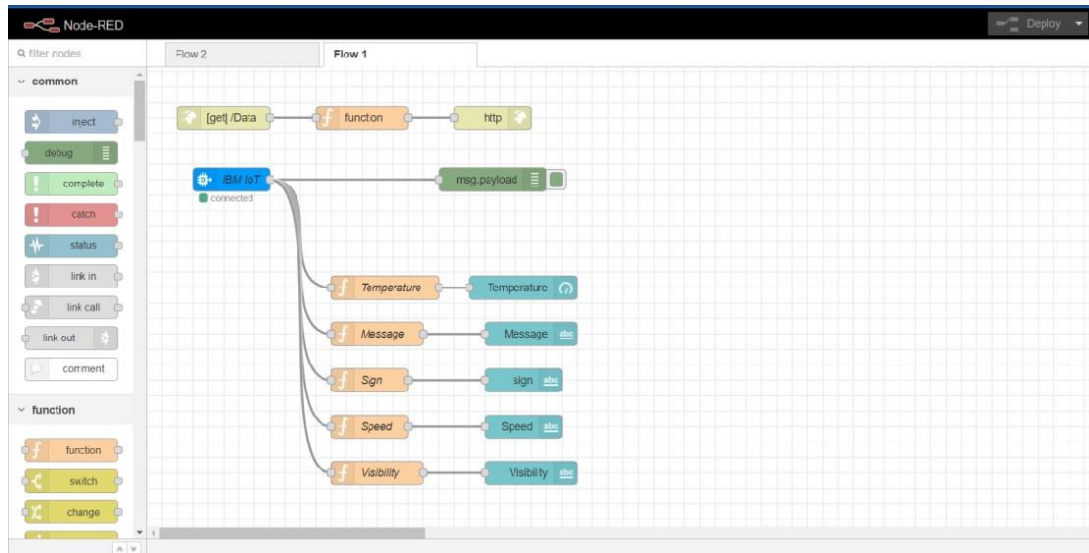
Event	Value	Format	Last Received
status	{\"Temperature\":27.99,\"Message\":\"DINE IN, RES...	json	a few seconds ago
status	{\"Temperature\":27.99,\"Message\":\"DINE IN, RES...	json	a few seconds ago
status	{\"Temperature\":27.99,\"Message\":\"\",\"Sign\":\"Sp...	json	a few seconds ago
status	{\"Temperature\":27.99,\"Message\":\"\",\"Sign\":\"Sp...	json	a few seconds ago
status	{\"Temperature\":27.99,\"Message\":\"SLOW DOWN,...	json	a few seconds ago

> Iotsensore31DisconnectedIotsensors3DeviceNov 16, 2022 9:02 PM

> SMARTCONNECTIVITYDisconnectedSMARTBOARDDevice0 Simulations running

STEP 3:

ESTABLISH NODE RED



STEP 4:OUTPUT

After making the connection between the nodes, the deploy will be enabled and the result will be displayed on the node- red dashboard.

