

SPRINT 4

TEAM ID	PNT2022TMID22305
PROJECT NAME	SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY

PYTHON CODE

```
import wiotp.sdk.device #importing library files for connecting with
CLOUD,sdk=software developement kit

import requests #for API request

import json #converting it to json(key:values)

import sys

myConfig = {
    "identity": {
        "orgId": "c0mbt9",
        "typeId": "Smartsings", #configuration wit CLOUD,finding identity
        "deviceId":"SS"
    }
}

"auth": {
    "token": " Hrtme!0y*FQT-s@HKf #authenticating with cloud device
}
}

#TRAFFIC AND FATAL SITUATION ALERT MESSAGE DISPLAYING IN
WEB UI WHWN THE

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
#initialising device client with above myconfig detail

client.connect()

ALERT=""

NOTIFY=""

def myCommandCallback(cmd):

    print("Message received from IBM IoT Platform: %s" %
```

```
cmd.data['command'])
```

```
m=cmd.data['command']
```

```
#THIS IF COMDITION BLOCK IS FOR TRAFFIC AND FATAL  
SITUATION ALERT MESSAGE DISPLAYING IN WEB UI WHEN THE  
MESSAGE WAS RECEIVED FROM THE ROAD SAFETY OFFICE
```

```
ALERT=""
```

```
NOTIFY=""
```

```
if(m=="TRAFFIC"):
```

```
    ALERT="TRAFFIC - PLEASE WAIT OR PREFER ANOTHER  
ROUTE"
```

```
    print("*****//PLEASE WAIT OR PREFER ANOTHER  
ROUTE//*****")
```

```
elif(m=="ACCIDENT"):
```

```
    ALERT="ACCIDENT - TAKE DIVERSION"
```

```
    print("*****//TAKE DIVERSION//*****")
```

```
elif(m=="MESSAGE"):
```

```
    ALERT="HAVE A NICE DAY!"
```

```
    print("HAVE A NICE DAY!")
```

```
#THE BELOW CONDITION BLOCK IS TO DISPLAY HOSPITAL  
,SCHOOL, AND RESTAURANT REGIONED AREA AND SPEED  
RECOMMENDATION
```

```
if(m=="SCHOOL"):
```

```
    NOTIFY="SCHOOL REGION MAINTAIN SPEED LIMIT BELOW  
40KM/HR"
```

```
    print("SCHOOL REGION MAINTAIN SPEED LIMIT BELOW  
40KM/HR")
```

```
elif(m=="HOSPITAL"):
```

```
    NOTIFY="HOSPITAL REGION DONT USE HORN"
```

```
    print("HOSPITAL REGION DONT USE HORN")
```

```
elif(m=="RESTAURANT"):
```

```
    NOTIFY="CROWDED AREA PLEASE MAINTAIN SPEED LIMIT"
```

```
    print("CROWDED AREA PLEASE MAINTAIN SPEED LIMIT")
```

```

mydata1={ }
if(m=="TRAFFIC" or m=="ACCIDENT" or m=="MESSAGE"):
    mydata1={ "SITUATION":ALERT }
elif(m=="SCHOOL" or m=="HOSPITAL" or m=="RESTAURANT" ):
    mydata1={ "CAUTION":NOTIFY }
client.publishEvent("SS","json",mydata1)while
True:
    print("=====")
    AREA = "Chennai,%20IN"
    weatherData =
requests.get("https://api.openweathermap.org/data/2.5/weather?q=" + AREA +
"&appid= cd23e4f9eaf0ba585b85986244415b4aeb &units=metric")
    a=weatherData.text
    b=json.loads(a)

    temp = b["main"]["temp"]
    humi = b["main"]["humidity"]
    main = b["weather"][0]["main"]    #0th index is taken from the object
    description = b["weather"][0]["description"]
    visibility = b["visibility"]
    Windspeed = b["wind"]["speed"]

    TemperatureRecommendation = ""

    SpeedRecommendation = ""

    RecommendationForVisibilty = ""
    #print("Temperature(celcius) :",b["main"]["temp"])
    if (temp>33):
        TemperatureRecommendation="Temperature is higher than ideal value"
        #print("Temperature is higher than ideal value")

```

```

elif (temp<19):
    TemperatureRecommendation="Temperature is lower than ideal value"
    #print("Temperature is lower than ideal value")
else:
    TemperatureRecommendation="Temperature is ideal"
    #print("Temperature is ideal ")
#print("Humidity :",b["main"]["humidity"])
#print("WeatherCondition",(b["weather"][0]["main"]))
if (main == "Rain"):
    rain = b["rain"]["1h"]
    SpeedRecommendation = "30KM/HR ,ROAD WILL BE SLIPPERY"
    #print("Rain:",b["rain"]["1h"])

    #print("SPEED RECOMMENDATION : 30KM/HR ,ROAD WILL BE
SLIPPERY")
elif (main == "Drizzle"):
    SpeedRecommendation = "30KM/HR"
    #print("SPEED RECOMMENDATION : 30KM/HR")
elif (main == "Mist"):
    SpeedRecommendation = "30KM/HR and switch on the headlight"
    #print("SPEED RECOMMENDATION : 30KM/HR and switch on the
Headlight")
elif (main == "Thunderstorm"):
    SpeedRecommendation = "30KM/HR and stay away in the open place"
    #print("SPEED RECOMMENDATION : 30KM/HR and stay away in the
open place")
elif (main == "Clouds"):
    SpeedRecommendation = "MAINTAIN NORMAL SPEED LIMIT UPTO
50 KM/HR"
    #print("SPEED RECOMMENDATION : 30KM/HR and stay away in the
open place")
#print("Description of weather :", (b["weather"][0]["description"]))

```

```

#print("visibility",(b["visibility"]))

if (visibility<1000):

    RecommendationForVisibilty = "SPEED RECOMMENDATION :
30KM/HR and SWITCH ON THE HEAD LIGHT"

else:

    RecommendationForVisibilty = "visibility range is ideal for vechicles"

#print("SPEED RECOMMENDATION : 30KM/HR and SWITCH ON THE
HEAD LIGHT")

mydata={"temperature":temp,
"TemperatureRecommendation":TemperatureRecommendation,"humidity":hui,"
WeatherCondition":main,"SpeedRecommendation":SpeedRecommendation
,"DescriptionOfWeather":description,"visibility":visibility,"RecommendationFor
Visibilty":RecommendationForVisibilty,"WindSpeed":Windspeed,"LOCATION":
AREA}

print(mydata) client.publishEvent("SS","json",mydata)

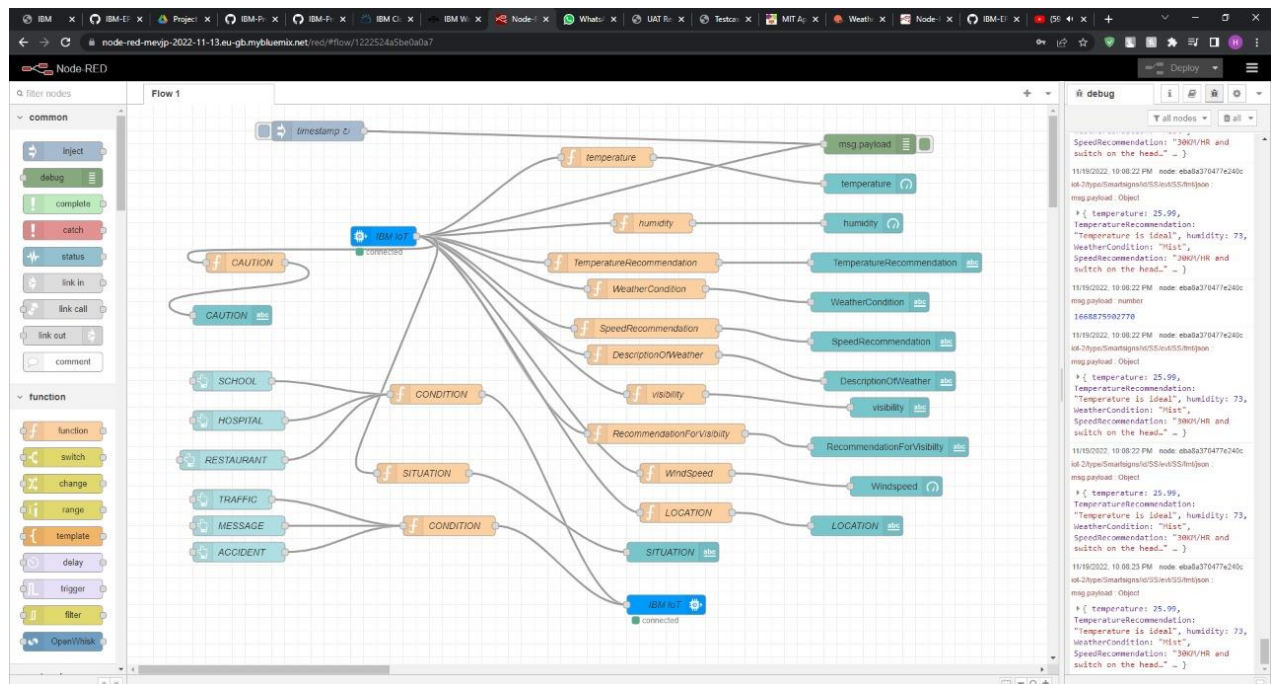
client.commandCallback = myCommandCallback

```

OUTPUT

[illegible]

Node red Interface:



RESULT:

