PROJECT DEVELOPENT PHASE
SPRINT – 3

DATE	19– NOVEMBER-2022
TEAM ID	PNT2022TMID22305
PROJECT NAME	SIGNS WITH SMART CONNECTIVITYFOR BETTER ROAD SAFETY

OPENWEATHER MAP (SPRINT 3)

```
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)
  myConfig = {
    "identity":   {
    "orgId":  "c0mbt9",
      "typeId": "Smartsigns",   #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 WHWNTHE
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
#initialising device client with above myconfig detail
client.connect()
def myCommandCallback(cmd):
   print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
   m=cmd.data['command']
   ALERT=""                        #THIS IF COMDITION BLOCK IS FOR
TRAFFIC AND FATAL SITUATION ALERT MESSAGE DISPLAYING IN
WEB UI WHEN THE MESSAGEWAS RECEIVED FROM THE ROAD
SAFETY OFFICE
   if(m=="TRAFFIC"):
      ALERT="TRAFFIC - TAKE DIVERSION"
      print("*****///TAKE
   DIVERSION///*****")
   elif(m=="ACCIDENT"):
      ALERT="ACCIDENT - TAKE DIVERSION"
      print("*****///TAKE
   DIVERSION///*****")else:
       ALERT="HAVE A NICE
    DAY!" print("HAVE A NICE
                  DAY!")
   mydata1={"SITUATION":ALER
                      T,}
   client.publishEvent("SS","json",mydata1)
while True:
   print("====================================")
```

```
    weatherData =
requests.get('https://api.openweathermap.org/data/2.5/weather?q=Chennai,%2
0IN&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:
```

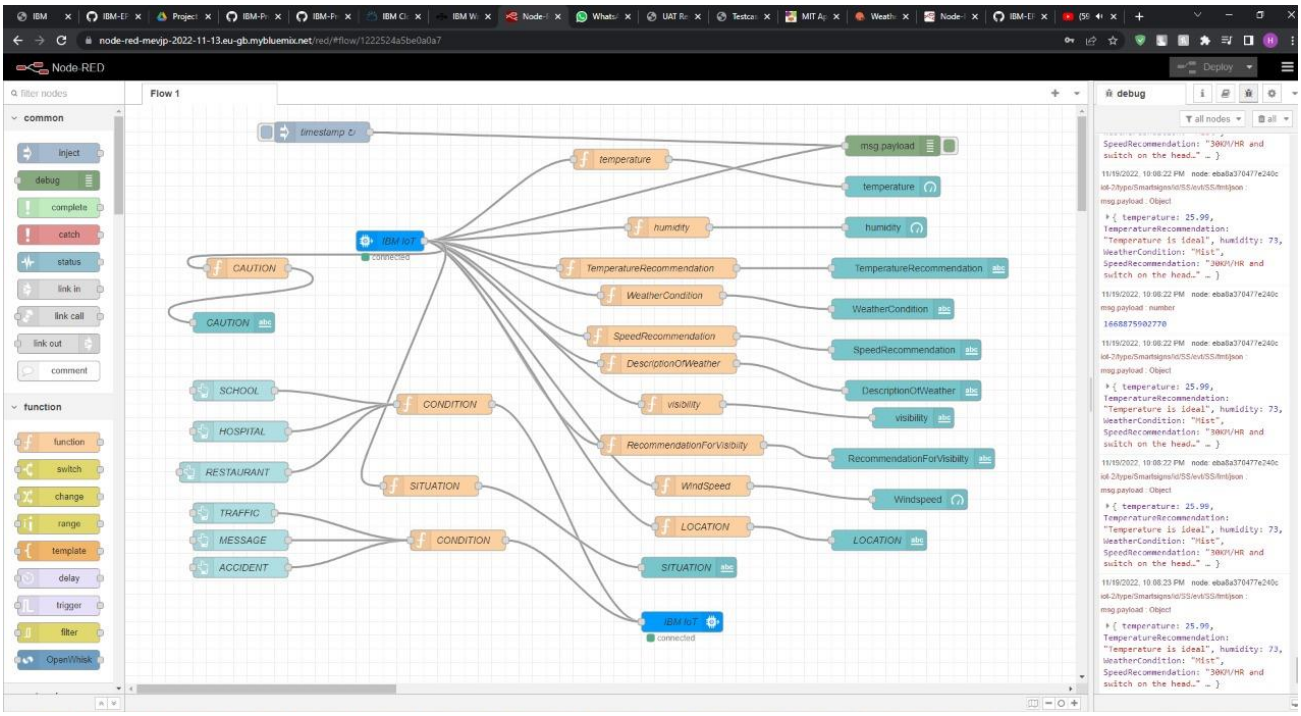
```
        TemperatureRecommendation="Temperature is ideal"
        #print("Temperature is ideal ")
    #print("Humidity :",b["main"]["humidity"])
    #print("WeatherCondition",(b["weather"][0]["main"]))
    if (main == "Rain"):
        rain = b["rain"]["1h"]
        SpeedRecommendation = "30KM/HR ,ROAD 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")
    #print("Description of weather :",(b["weather"][0]["description"]))
    #print("visibility",(b["visibility"]))
    if (visibility<1000):
        RecommendationForVisibilty = "SPEED RECOMMENDATION : 30KM/HR
andSWITCH ON THE HEAD LIGHT"
    else:
```

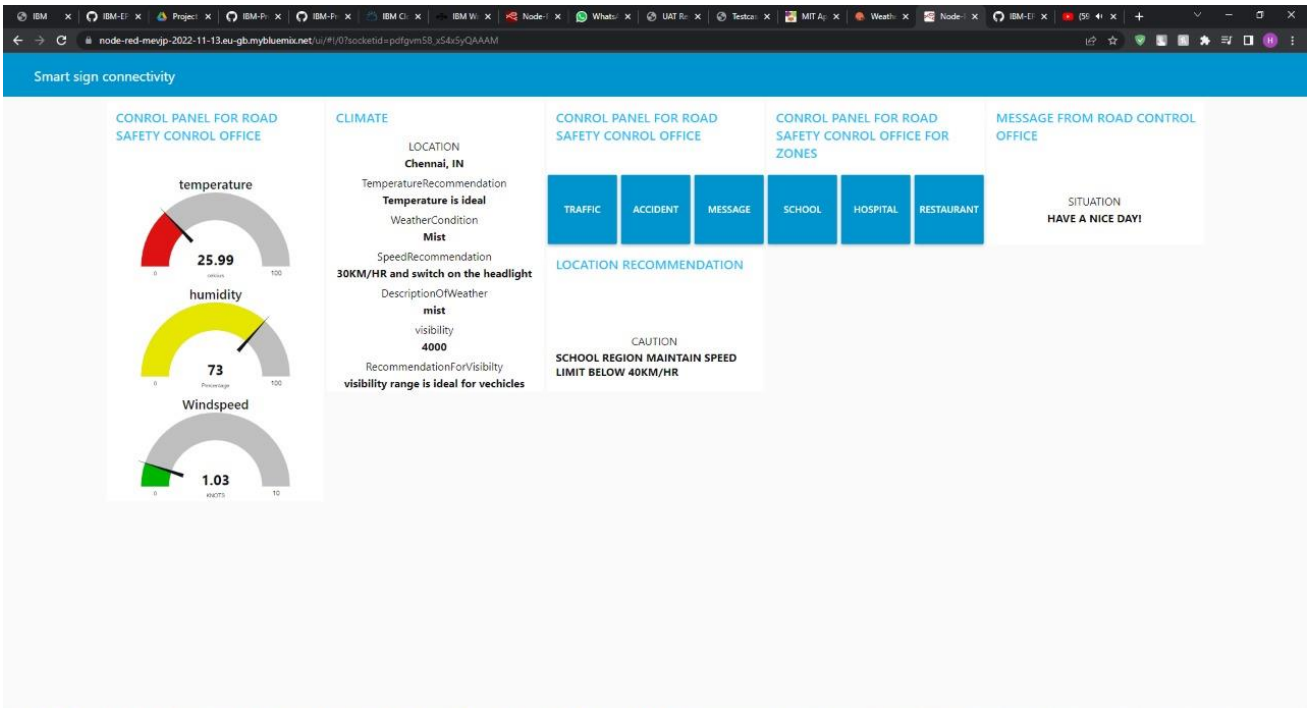
```
RecommendationForVisibilty = "visibility range is ideal for vechicles"
#print("SPEED RECOMMENDATION : 30KM/HR and SWITCH ON THE HEADLIGHT")
mydata={"temperature":temp, "TemperatureRecommendation":TemperatureRecommendation,"humidity":humi ,"WeatherCondition":main,"SpeedRecommendation":SpeedRecommendation ,"DescriptionOfWeather":description,"visibility":visibility,"RecommendationForVis ibilty":RecommendationForVisibilty,"WindSpeed":Windspeed}
print(mydata)
client.publishEvent("SS","json",mydata)
client.commandCallback = myCommandCallback
```

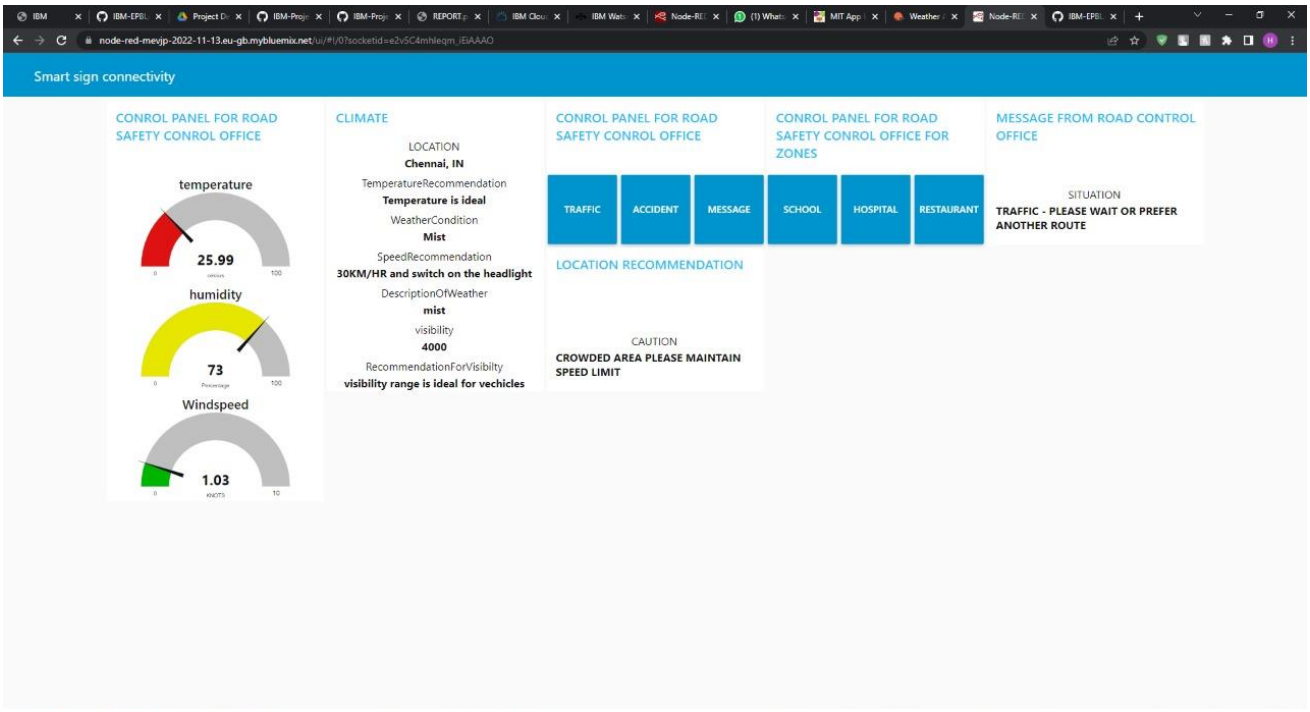
PYTHON OUTPUT:

NODE RED INTERFACES:

WEB UI OUTPUT:






node-red-mevjp-2022-11-13.eu-gb.mybluemix.net/ui/#!/0?socketid=e2vSC4mhleqm_iEiAAAO
Smart sign connectivity
CONROL PANEL FOR ROAD SAFETY CONROL OFFICE
temperature
25.99
humidity
73
Windspeed
1.03
CLIMATE
LOCATION
Chennai, IN
TemperatureRecommendation
Temperature is ideal
WeatherCondition
Mist
SpeedRecommendation
30KM/HR and switch on the headlight
DescriptionOfWeather
mist
visibility
4000
RecommendationForVisibilty
visibility range is ideal for vechicles
CONROL PANEL FOR ROAD SAFETY CONROL OFFICE
TRAFFIC
ACCIDENT
MESSAGE
LOCATION RECOMMENDATION
CAUTION
CROWDED AREA PLEASE MAINTAIN SPEED LIMIT
CONROL PANEL FOR ROAD SAFETY CONROL OFFICE FOR ZONES
SCHOOL
HOSPITAL
RESTAURANT
MESSAGE FROM ROAD CONTROL OFFICE
SITUATION
TRAFFIC - PLEASE WAIT OR PREFER ANOTHER ROUTE