PROJECT DEVELOPENT PHASE
SPRINT – 2 (USN-3)

DATE	**05 – NOVEMBER-2022**
TEAM ID	**PNT2022TMID24018**
PROJECT NAME	**SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY**

PYTHON CODE :

```
#OPENWEATHER MAP(SPRINT 2)

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": "7f5hee",

      "typeId": "testdevicetype",     #configuration wit CLOUD,finding identity

"deviceId":"12345"

   },

   "auth": {

      "token": "AQCLi6rYJrcoiDpW6?"   #authenticating with cloud device

   }

} client = wiotp.sdk.device.DeviceClient(config=myConfig,

logHandlers=None)

#initialising device client with above myconfig detail

client.connect() while True:

   print("=====================================")

   weatherData =
requests.get('https://api.openweathermap.org/data/2.5/weather?q=Chennai,%20I
```

```
N&appid=b966927276060e981c650a5ca4409f8b&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"]



    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")


    #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":hum
i,"WeatherCondition":main,"SpeedRecommendation":SpeedRecommendation
,"DescriptionOfWeather":description,"visibility":visibility,"RecommendationFo
rVisibilty":RecommendationForVisibilty}      print(mydata)
client.publishEvent("12345","json",mydata)
```

CODE IN PYTHON IDLE

openweatherupdate.py - D:\IBM\python\openweatherupdate.py (3.9.0)

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```
#OPENWEATHER MAP(SPRINT 1)
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": "7f5hee",
        "typeId": "testdevicetype",     #configuration wit CLOUD,finding identity
        "deviceId":"12345"
    },
    "auth": {
        "token": "AQCLi6rYJrcoiDpW6?"   #authenticating with cloud device
    }
}
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)     #initialising device client with above myconfig detail
client.connect()
while True:
    print("==================================")
    weatherData = requests.get('https://api.openweathermap.org/data/2.5/weather?q=Chennai,%20IN&appid=b966927276060e981c650a5ca4409f8b&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"]



    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"):
```

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```
    TemperatureRecommendation =""
    SpeedRecommendation = ""
    RecommendationForVisibilty= ""

    #print("Temperature(celcius) :",b["main"]["temp"])
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    #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")

    #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":humi,"WeatherCondition":main,"SpeedRecommendation":SpeedRecommendation ,"DescriptionOfWea
    print(mydata)
    client.publishEvent("12345","json",mydata)
```
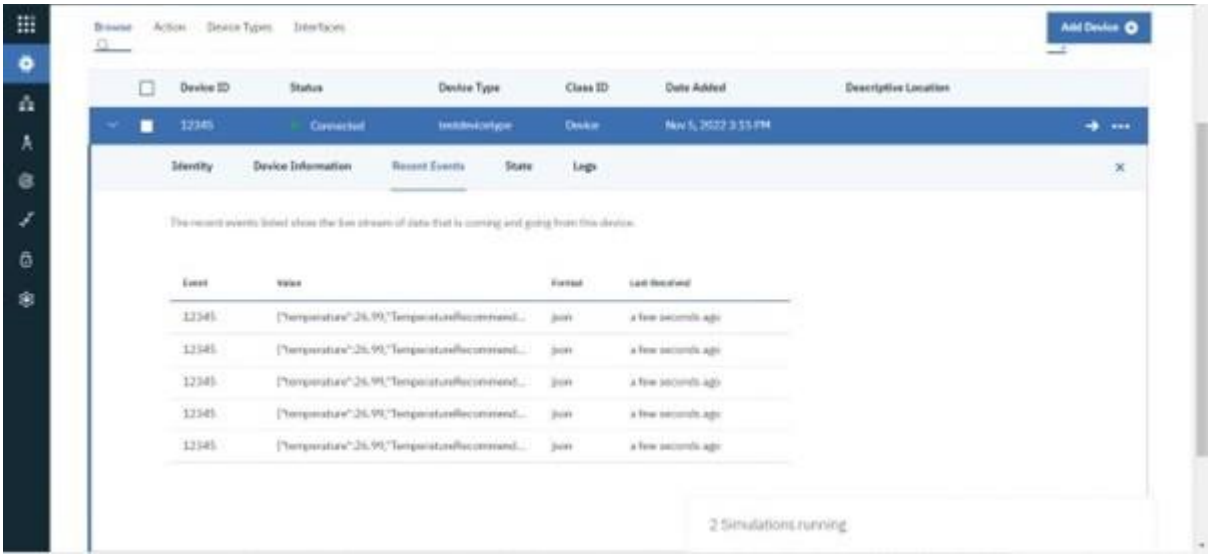
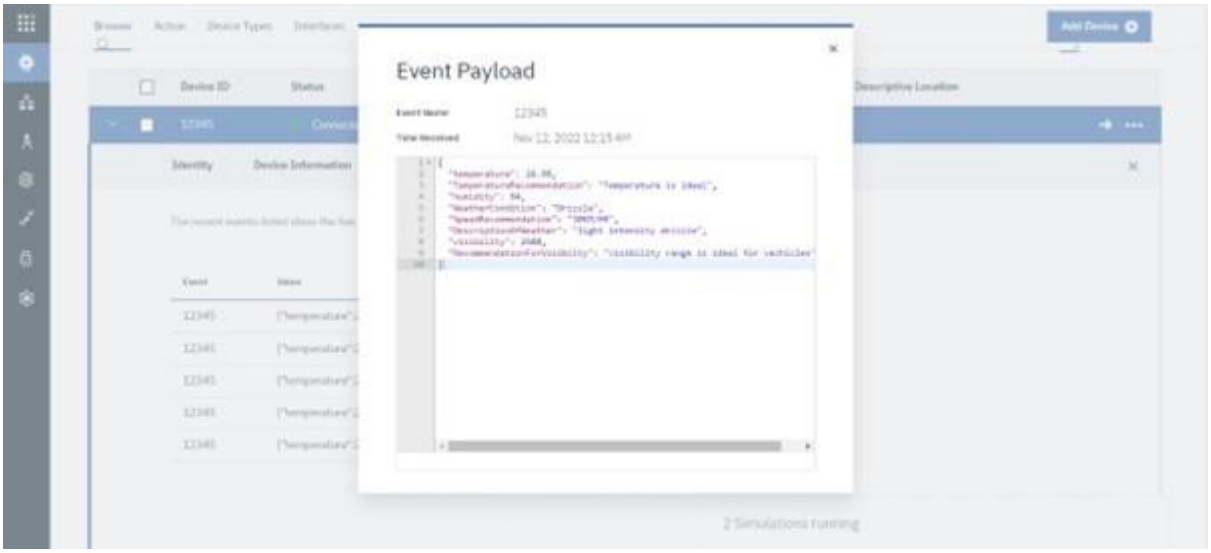

OUTPUT (TAKEN IN PYTHON)

ESTABLISHING THE OPENWEATHERMAP CODE TO CLOUD TO EASY ACCESSING BY CREATING A DEVICE IN IBM WATSON WITH THE CONFIGURATION DETAILS :



REQUIRED DATA COLLECTED FROM THE OPEN WEATHER MAP API :


Event Payload
2 Simulations running