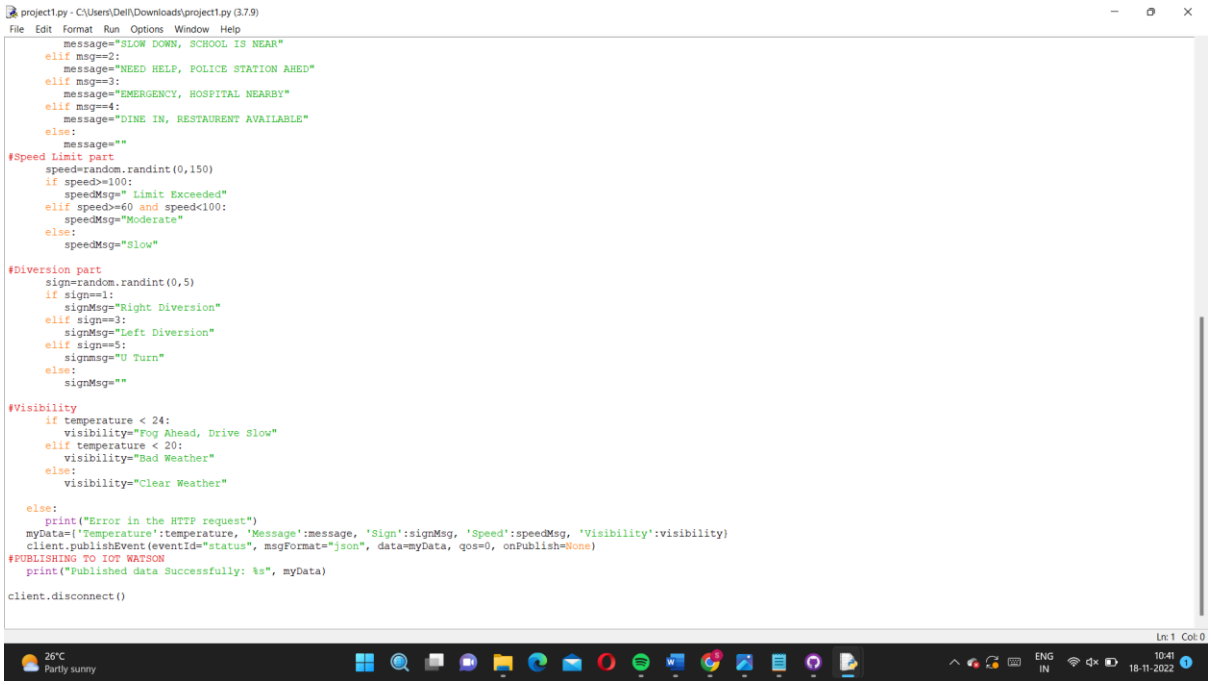
SPRINT 4

Date	18 November 2022
Team ID	PNT2022TMID16188
Project Name	Project – Signs with Smart Connectivity for Better Road Safety

SPRINT	FUNCTIONAL REQUIREMENT (EPIC)	USER STORY/TASK	STORY POINTS	PRIORITY	TEAM MEMBERS
Sprint-4	Local server/software run	Write a python program that outputs results given the inputs like weather and location.	1	LOW	SOWMYA B, SHAMYUKDHA PV, VIJAYALAKSHMI C V, VAISHNAVI N
Sprint 4	Push the server/software to cloud.	Push the code from Sprint 1 to cloud so it can be accessed from anywhere.	2	MEDIUM	SOWMYA B, SHAMYUKDHA PV, VIJAYALAKSHMI C V, VAISHNAVI N.

STEP 1:
PYTHON CODE STIMULATION



PYTHON CODE:

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

myConfig = { #Configuration
    "identity": {
"orgId": "d5zx56",
"typeId": "Connectivity123", "deviceId":"ESP32"},
#API Key
"auth": {
"token": "9514598766"
}
}

#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']

#messge 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"

#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"
```

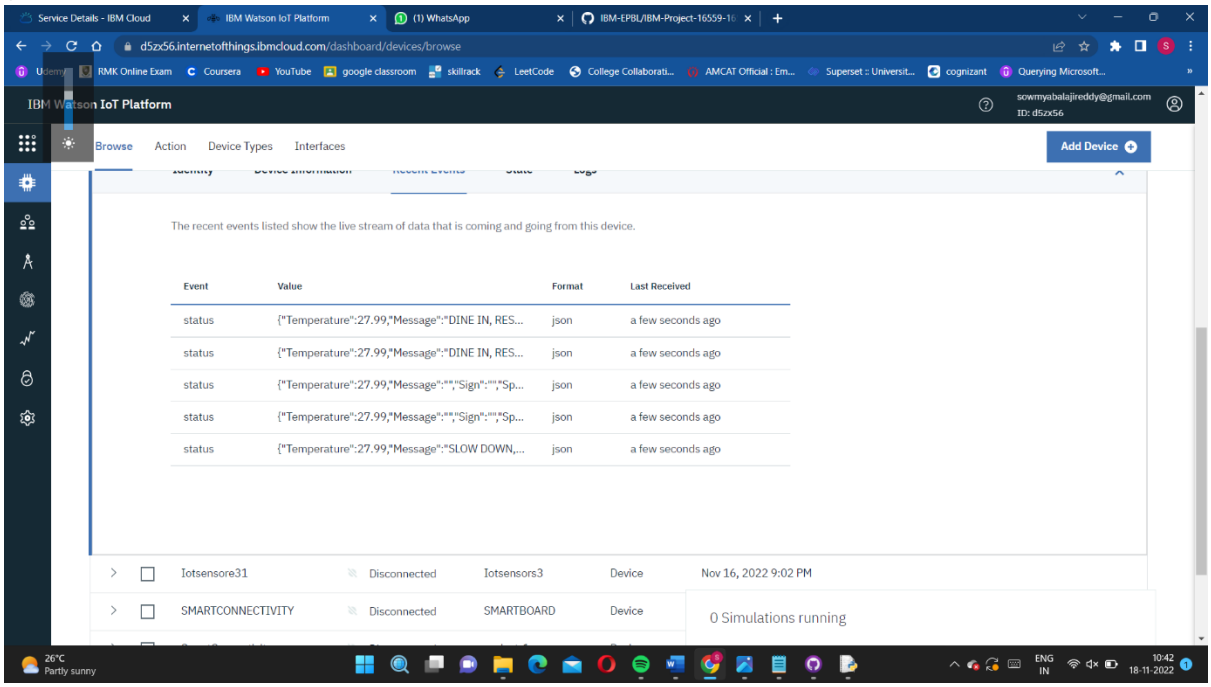
```
    else:
      signMsg=""

#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()
```

OUTPUT OF PYTHON CODE:

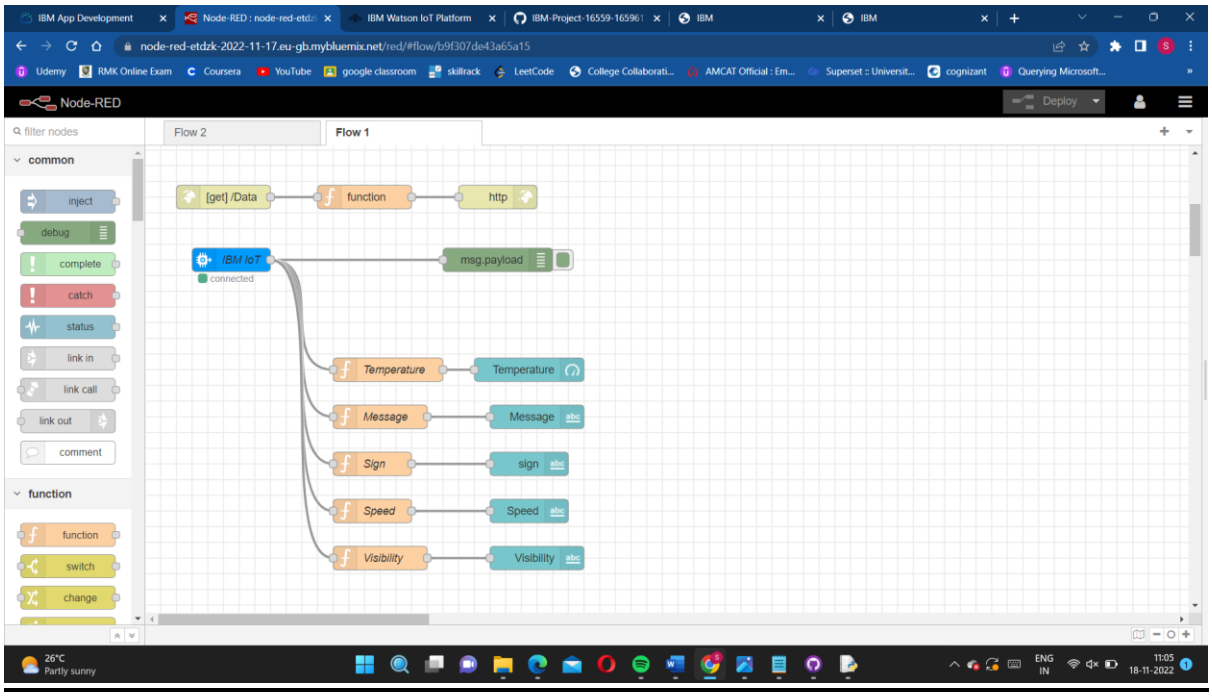
STEP 2:

IOT DEVICE- IOT PLATFORM

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

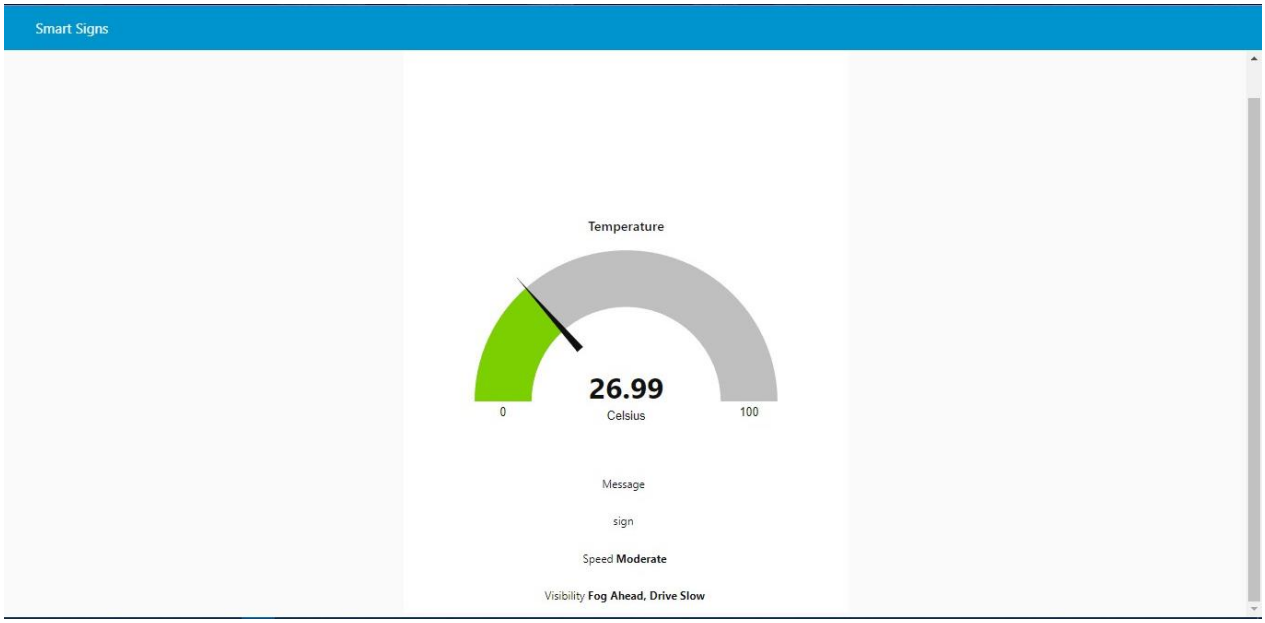


STEP 3:
ESTABLISH NODE RED



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.



Thank you