Project Development Phase
Project Development Delivery of Sprint 3

Date	08 November 2022
Team ID	PNT2022TMID35120
Project Name	Project - Signs with smart connectivity for Better road safety
Marks	8 Marks

Signs with smart connectivity for Better road safety

Objective :

>> Write a python code for print the random temperature, Road signs, Speed limit, Message

>> Simulate and Generate the data

>> Display the published data in IBM Watson IOT Platform

Code for print the random temperature, Road signs, Speed limit, Message :

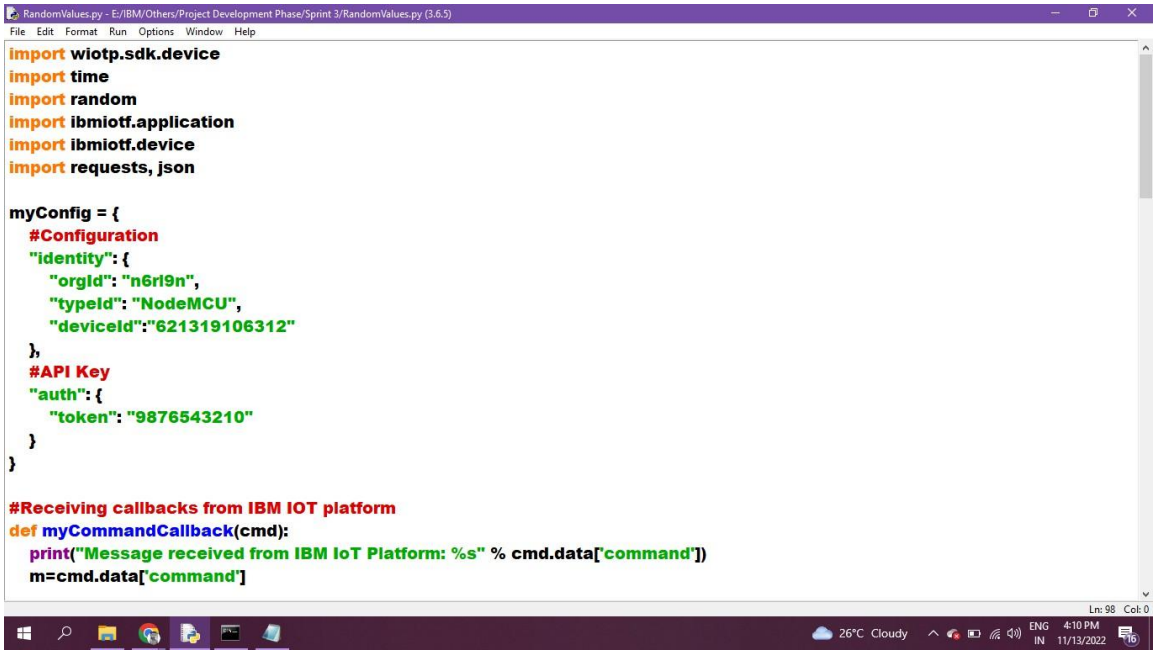
(RandomValues.py)

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

myConfig = {
    #Configuration
    "identity": {
        "orgId": "dh6erm",
        "typeId": "NodeMCU",
        "deviceId":"09876"
    },
    #API Key
    "auth": {
        "token": "12345678"
    }
}

#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.connect()

#OpenWeatherMap Credentials
BASE_URL = "https://api.openweathermap.org/data/2.5/weather?"
CITY = "Salem, IN"
URL = BASE_URL + "q=" + CITY + "&units=metric"+"&appid=" + "f58e4720c739a54c439aba9b05176839"

while True:
```

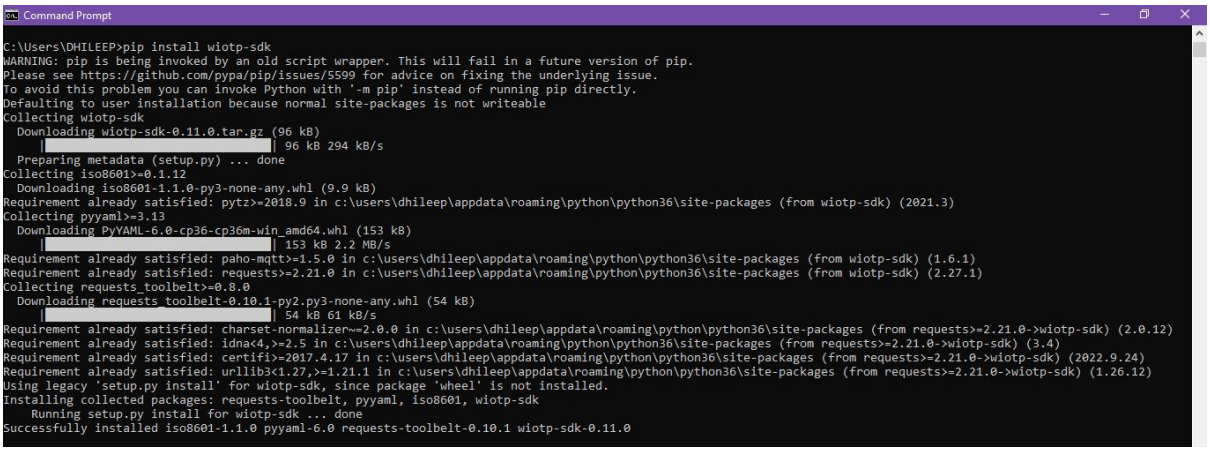
```
   response  =  requests.get(URL)
   if response.status_code == 200:
      data  =  response.json()
      main = data['main']
      temperature = main['temp']
      humidity = main['humidity']
      pressure = main['pressure']
      report = data['visibility']

      #messge part
      msg=random.randint(0,5)
      if msg==1:
          message="GO SLOW, SCHOOL / COLLEGE ZONE AHEAD"
      elif msg==2:
          message="NEED HELP, POLICE STATION AHEAD"
      elif msg==3:
          message="EMERGENCY, HOSPITAL NEARBY"
      elif msg==4:
          message="DINE IN, RESTAURENT AVAILABLE"
      elif msg==5:
          message="PETROL BUNK NEARBY"
      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==2:
          signMsg="Speed Breaker"
      elif sign==3:
          signMsg="Left Diversion"
      elif sign==4:
          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: ", myData)
```

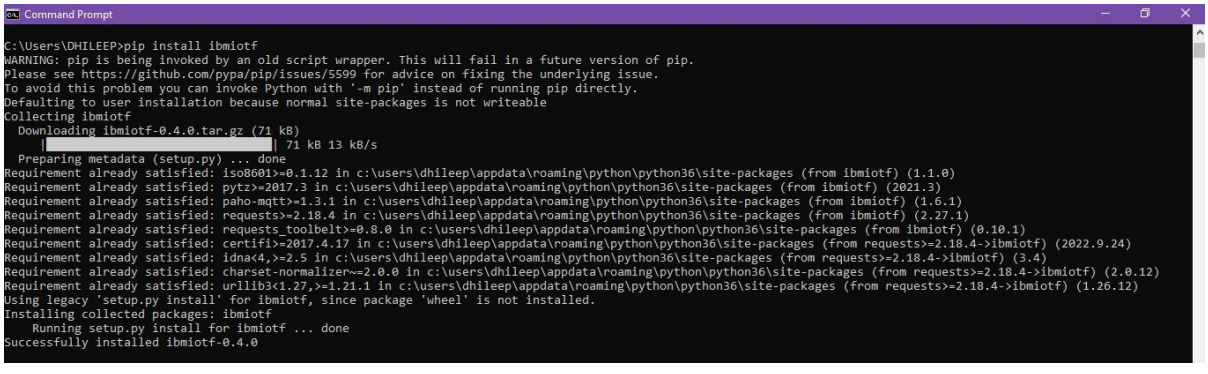
```
    print("-----------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------
-----------------------------------------")
    client.commandCallback = myCommandCallback
    time.sleep(5)
client.disconnect()
```

Python Simulation :

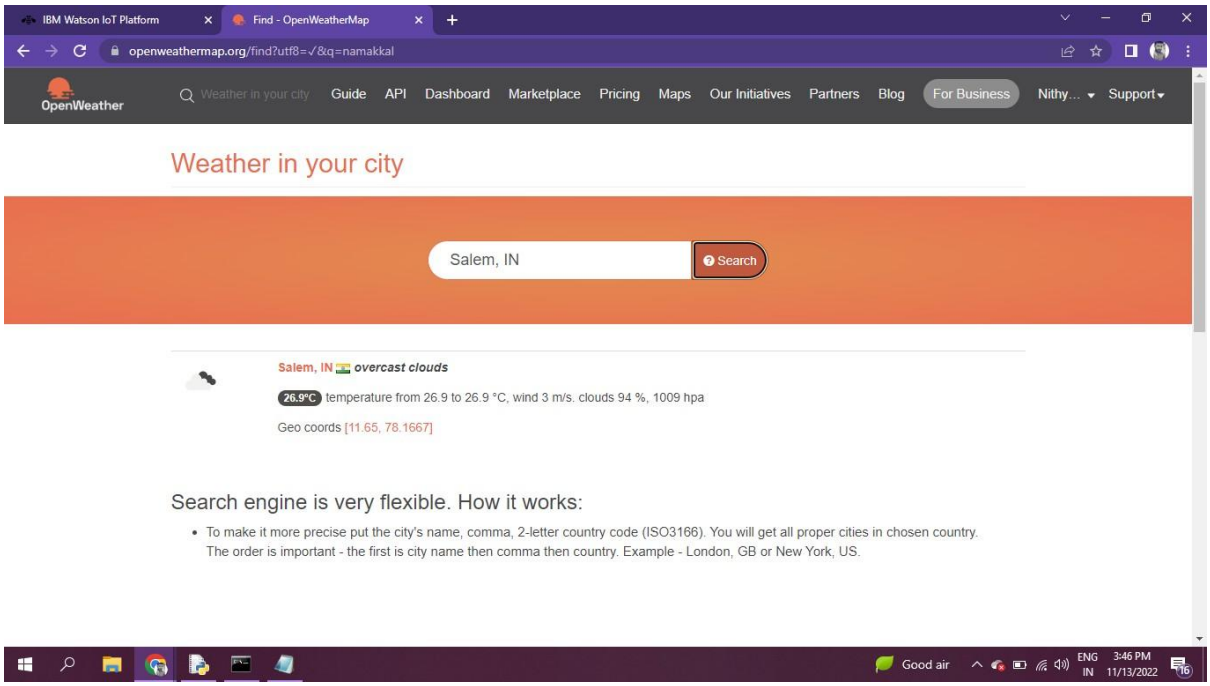


Import wiotp-sdk & ibmiotf :

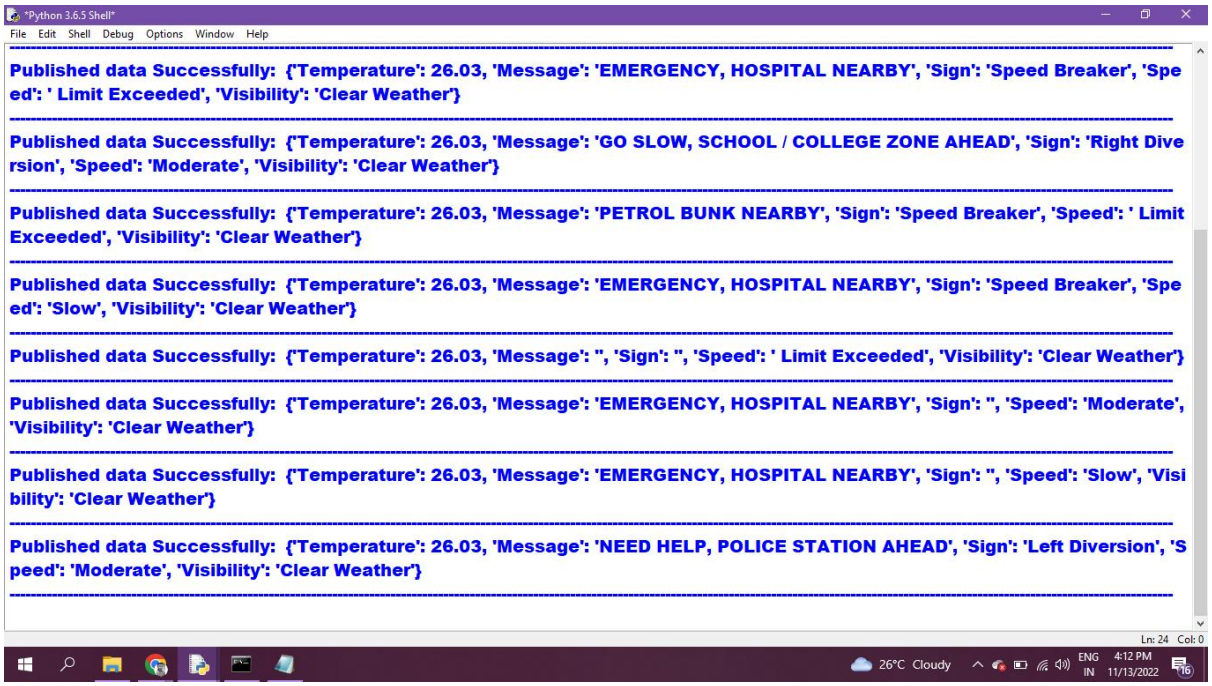




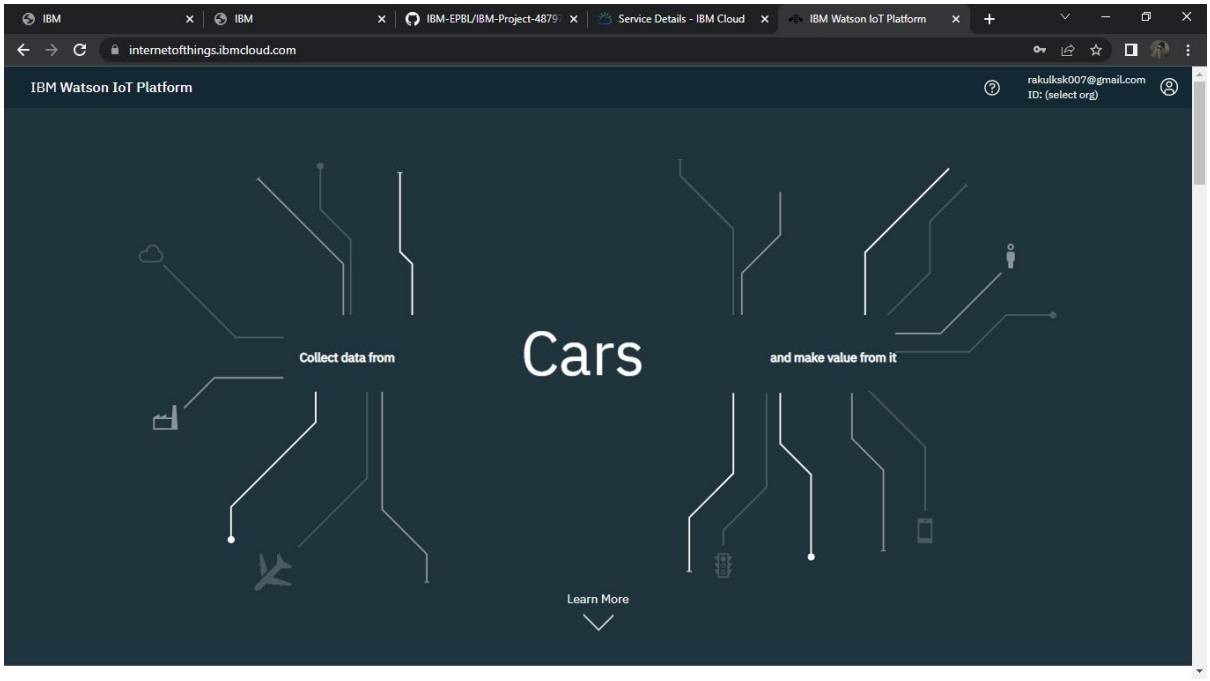
OpenWeatherMap - :



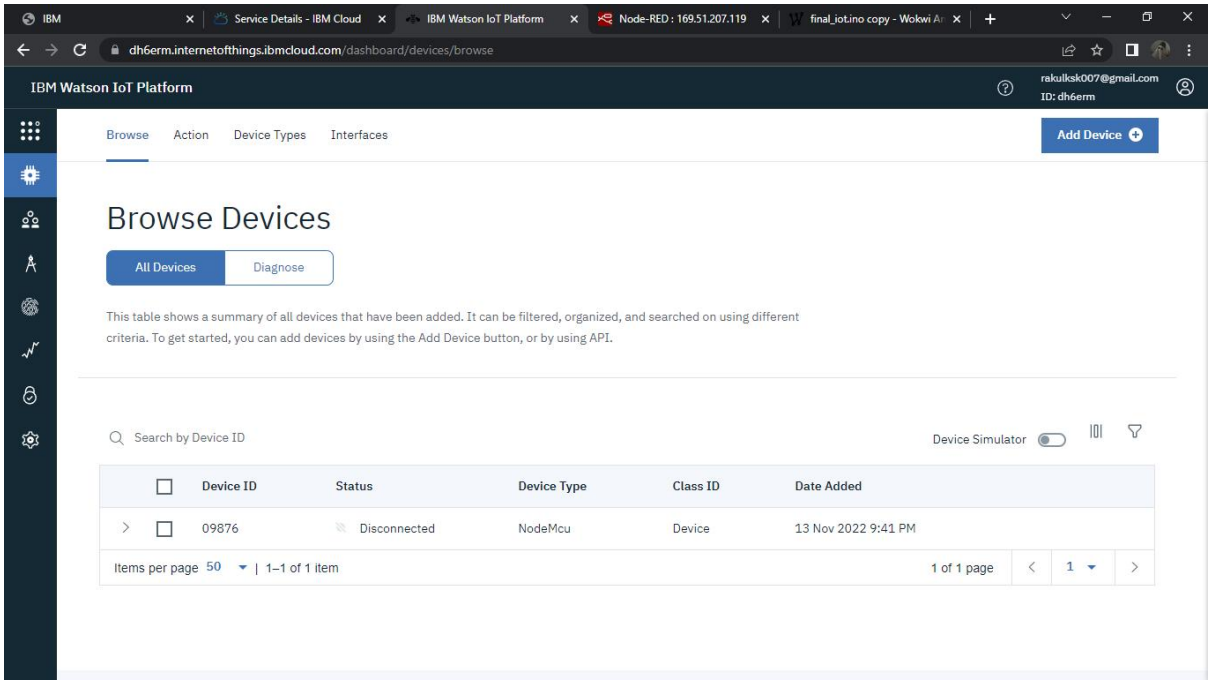
Python IDLE Output :



IBM Watson IOT Platform :



IBM Watson IOT Platform - Device Creation :



IBM Watson IOT Platform - Display the published data :