Project development
Phase sprint-4

Team id	PNT2022TMID48884
Project name	Smart solution for railway

Code for (random temperature,road signs , speed limit , message):

```
import wiotp.sdk.device
import time
import random
import ibmiotf.application
import ibmiotf.device
import requests, json
myConfig = {
   #Configuration
   "identity": {
      "org Id": "prs76q",
      "type Id": "Ramya16",
      "device Id":"9629553721"
      },
   #API Key
   "auth": {
      "token": "Ramyag06"
      }
}
```

```
#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 = "Dindigul, 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 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:

File Edit Format Run Options Window Help

```
import wiotp.sdk.device import time
import random
import ibmiotf.application import ibmiotf.device import requests, json myConfig
#Configuration "identity": {
"org Id": "prs76q",
"type Id": "Ramya16",
"device Id":"9629553721"
}, #API Key
"auth": {
"token": "Ramyag06"
}
}

#Receiving callbacks from IBM IOT platform def myCommandCallback(cmd):
print("Message received from IBM IoT Platform: %s" % cmd.data['command']) m=cmd.
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None) client

#OpenWeatherMap Credentials
BASE_URL = "https://api.openweathermap.org/data/2.5/weather?" CITY = "Dindigul,
URL = BASE_URL + "q=" + CITY + "&units=metric"+"&appid=" + "f58e4720c739a54c439a


while True:
response = requests.get(URL)
if response.status_code == 200: data = response.json()
main = data['main'] temperature = main['temp'] humidity = main['humidity'] press
if msg==1:
message="GO SLOW, SCHOOL 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
```

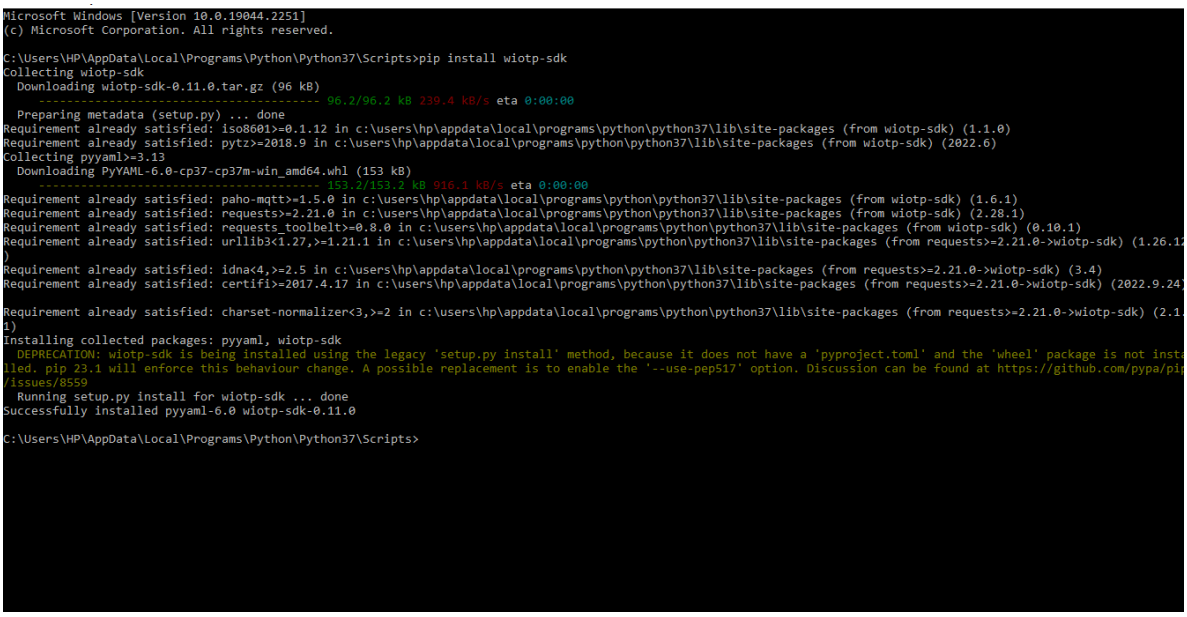
```
speed=random.randint(0,150) if speed>=100:
speedMsg=" Limit Exceeded" elif speed>=60 and speed<100:
speedMsg="Moderate" else:
speedMsg="Slow"


#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':sp
client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPu
print("Published data Successfully: ", myData) print("")
client.commandCallback = myCommandCallback time.sleep(5)
client.disconnect()
```

Import wiotp-sdk and ibm iot :



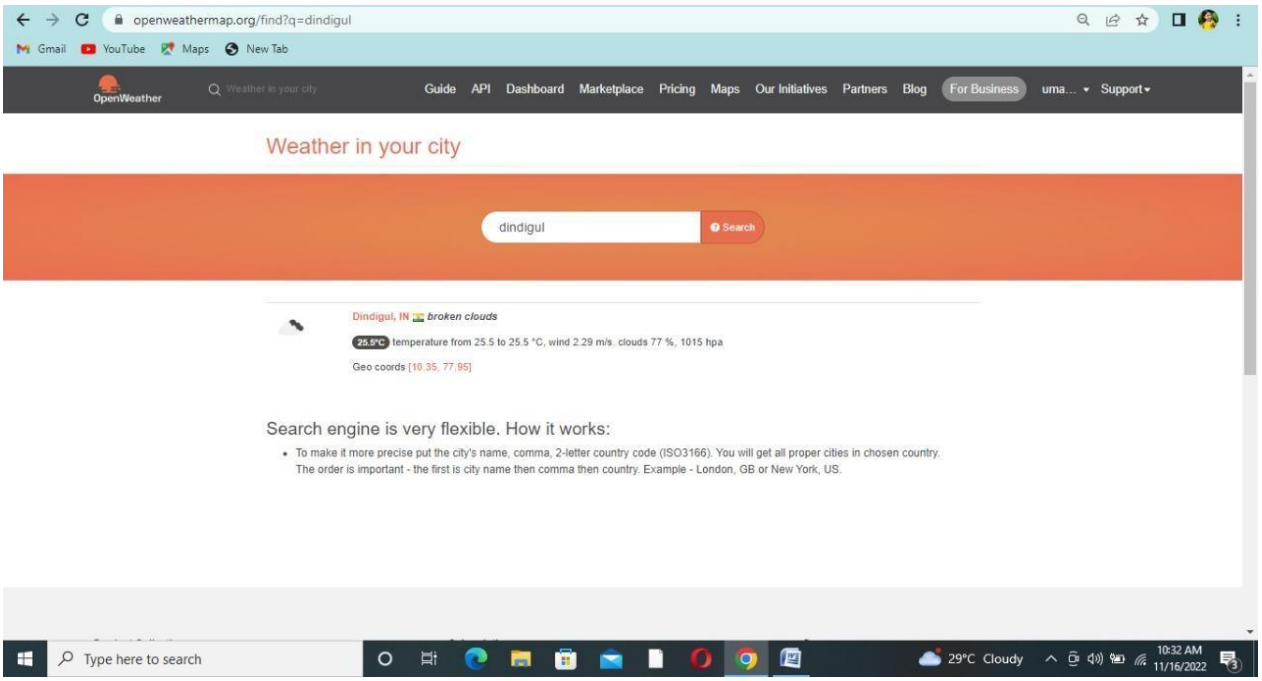
```
icrosoft Windows [Version 10.0.19044.2251]
c) Microsoft Corporation. All rights reserved.

:\Users\HP\AppData\Local\Programs\Python\Python37\Scripts>pip install ibmiotf
equirement already satisfied: ibmiotf in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (0.4.0)
equirement already satisfied: iso8601>=0.1.12 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from ibmiotf) (1.1.0)
equirement already satisfied: pytz>=2017.3 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from ibmiotf) (2022.6)
equirement already satisfied: paho-mqtt>=1.3.1 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from ibmiotf) (1.6.1)
equirement already satisfied: requests>=2.18.4 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from ibmiotf) (2.28.1)
equirement already satisfied: requests_toolbelt>=0.8.0 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from ibmiotf) (0.10.1)
equirement already satisfied: idna<4,>=2.5 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from requests>=2.18.4->ibmiotf) (3.4)
equirement already satisfied: charset-normalizer<3,>=2 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from requests>=2.18.4->ibmiotf) (2.1.1)

equirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from requests>=2.18.4->ibmiotf) (1.26.12)
equirement already satisfied: certifi>=2017.4.17 in c:\users\hp\appdata\local\programs\python\python37\lib\site-packages (from requests>=2.18.4->ibmiotf) (2022.9.24)

:\Users\HP\AppData\Local\Programs\Python\Python37\Scripts>
```

OpenWeatherMap – (Ex : Dindigul,IN):



Python IDLE Output: