CODE :

Date	19 November 2022
Team ID	PNT2022TMID12305
Project Name	Project - Signs with smart connectivity for Better road safety

CODING & SOLUTIONING:

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


myConfig = {
#Configuration
"identity": {
"orgId": "3dpjnk",
"typeId": "Sign_Board",
"deviceId":"Board_1"},
#API Key
"auth": {
"token": "1234567890"
}
}


#Receiving callbacks from IBM IOT


platformdefmyCommandCallback(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

CITY = "Nagercoil"
URL = BASE_URL + "q=" + CITY + "&units=metric"+"&appid=" +
"01df65417ab3968e3fc2a38c4aee27bb"

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

#speedLimit 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"
elif temperature >24:
   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.commandCallback=myCommandCallbacktime.sleep(5)
client.disconnect()
```

Output:

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

myConfig = { #Configuration
    "identity": {
"orgId": "3dpjnk",
"typeId": "Sign_Board",
"deviceId":"Board_1"
},
#API Key
"auth": {
"token": "1234567890"
}
}

#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 = "Chennai"
URL = BASE_URL + "q=" + CITY + "&units=metric"+"&appid=" + "01df65417ab3968e3fc2a38c4aee27bb"

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
        temperature=random.randint(0,100)
        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"
        else:
            message="DINE IN, RESTAURENT AVAILABLE"
```

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```
*Python 3.7.9 Shell*
File Edit Shell Debug Options Window Help
>>>
======= RESTART: C:\Users\Madhu Sundaran Nair\OneDrive\Desktop\project.py ======
2022-11-14 19:07:23,504   wiotp.sdk.device.client.DeviceClient  INFO    Connecte
d successfully: d:3dpjnk:Sign_Board:Board_1
Published data Successfully: %s {'Temperature': 77, 'Message': 'SLOW DOWN, SCHOO
L IS NEAR', 'Sign': 'U Turn', 'Speed': 'Slow', 'Visibility': 'Clear Weather'}
Published data Successfully: %s {'Temperature': 47, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'Right Diversion', 'Speed': 'Slow', 'Visibility': 'Clear
 Weather'}
Published data Successfully: %s {'Temperature': 0, 'Message': 'NEED HELP, POLICE
 STATION AHED', 'Sign': 'Left Diversion', 'Speed': 'Moderate', 'Visibility': 'Fo
g Ahead, Drive Slow'}
Published data Successfully: %s {'Temperature': 84, 'Message': 'NEED HELP, POLIC
E STATION AHED', 'Sign': 'Right Diversion', 'Speed': ' Limit Exceeded', 'Visibil
ity': 'Clear Weather'}
Published data Successfully: %s {'Temperature': 14, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'U Turn', 'Speed': ' Limit Exceeded', 'Visibility': 'Fog
 Ahead, Drive Slow'}
Published data Successfully: %s {'Temperature': 100, 'Message': 'EMERGENCY, HOSP
ITAL NEARBY', 'Sign': 'U Turn', 'Speed': 'Moderate', 'Visibility': 'Clear Weathe
r'}
Published data Successfully: %s {'Temperature': 55, 'Message': 'NEED HELP, POLIC
E STATION AHED', 'Sign': 'Right Diversion', 'Speed': 'Slow', 'Visibility': 'Clea
r Weather'}
Published data Successfully: %s {'Temperature': 66, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'U Turn', 'Speed': 'Moderate', 'Visibility': 'Clear Weat
her'}
Published data Successfully: %s {'Temperature': 29, 'Message': 'DINE IN, RESTAUR
ENT AVAILABLE', 'Sign': 'Right Diversion', 'Speed': ' Limit Exceeded', 'Visibili
ty': 'Clear Weather'}
Published data Successfully: %s {'Temperature': 2, 'Message': 'DINE IN, RESTAURE
NT AVAILABLE', 'Sign': 'Left Diversion', 'Speed': 'Slow', 'Visibility': 'Fog Ahe
ad, Drive Slow'}
Published data Successfully: %s {'Temperature': 93, 'Message': 'EMERGENCY, HOSPI
TAL NEARBY', 'Sign': 'Left Diversion', 'Speed': 'Moderate', 'Visibility': 'Clear
 Weather'}
Published data Successfully: %s {'Temperature': 62, 'Message': 'EMERGENCY, HOSPI
TAL NEARBY', 'Sign': 'Left Diversion', 'Speed': 'Slow', 'Visibility': 'Clear Wea
ther'}
```

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GitHub Link :

https://github.com/IBM-EPBL/IBM-Project-14017-1659538968