DEVELOP THE PYTHON CODE

Date	**18 NOVEMBER 2022**
Team ID	**PNT2022TMID11130**
Project Name	**Smart farmer-IOT enabled smart Farming Application**

Python Code:

```
#IBM Watson IOT Platform
#pip install wiotp-sdk
import wiotp.sdk.device
import time
import random
import requests, json


ms=0
api_key = "a0db30a689a774b93ffcb58ef2eddfda"


base_url = "http://api.openweathermap.org/data/2.5/weather?"


city_name = 'Chennai, IN'


complete_url = base_url + "appid=" + api_key + "&q=" + city_name
status='motor off'
myConfig = {
    "identity": {
        "orgId": "17lsro",
"typeId": "MyDeviceType",
"deviceId":"12345"
```

```
    },
    "auth": {
        "token": "GkatKdiUS?UVHKvnAD"
    }
}


def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" %
cmd.data['command'])
    m=cmd.data['command']
    if(m=="MOTOR ON"):
        print("MOTOR  IS ON")
        global status
        status='motor on'
        myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
        client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
        print("Published data Successfully: %s", myData)


        time.sleep(2)


    elif(m=="MOTOR OFF"):
        print("MOTOR IS OFF")
```

```
        status='motor off'
        myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
        client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
        print("Published data Successfully: %s", myData)


        time.sleep(2)



client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()


while True:
    response = requests.get(complete_url)
    x = response.json()
    if x["cod"] != "404":




        y = x["main"]



        api_temperature = y["temp"]
```

```
        api_pressure = y["pressure"]


        api_humidity = y["humidity"]


        z = x["weather"]


        api_weather_description = z[0]["description"]

    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    soilmoisture=random.randint(0,1023)#analog sensor
    sm_percentage=(soilmoisture/1023)*100
    sm_percentage=int(sm_percentage)
    myData={'temperature':temp,
'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':
api_temperature,'api_pressure':api_pressure,'api_humidity':api_humidity,'api
_weather_description':api_weather_description}
    client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
    print("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
```

time.sleep(2) client.disconnect()

api python mit app.py - C:\Users\B.SOMESHWARAN\Desktop\IBM\Project Development Phase\sprint -1\api python mit app.py (3.8.10)

File Edit Format Run Options Window Help

```
#IBM Watson IOT Platform
#pip install wiotp-sdk
import wiotp.sdk.device
import time
import random
import requests, json

ms=0
api_key = "a0db30a689a774b93ffcb58ef2eddfda"

base_url = "http://api.openweathermap.org/data/2.5/weather?"

city_name = 'Chennai, IN'

complete_url = base_url + "appid=" + api_key + "&q=" + city_name

status='motor off'
myConfig = {
    "identity": {
        "orgId": "171sro",
        "typeId": "MyDeviceType",
        "deviceId":"12345"
    },
    "auth": {
        "token": "GkatKdiUS?UVHKvnAD"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']
    if(m=="MOTOR ON"):
        print("MOTOR  IS ON")
        global status
        status='motor on'
        myData={'temperature':temp, 'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':api_temperature,'api_pressure':api_pressure
        client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
        print("Published data Successfully: %s", myData)

        time.sleep(2)
```

Ln: 14 Col: 0

api python mit app.py - C:\Users\B.SOMESHWARAN\Desktop\IBM\Project Development Phase\sprint -1\api python mit app.py (3.8.10)

File Edit Format Run Options Window Help

```
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
    response = requests.get(complete_url)
    x = response.json()
    if x["cod"] != "404":


        y = x["main"]


        api_temperature = y["temp"]


        api_pressure = y["pressure"]


        api_humidity = y["humidity"]


        z = x["weather"]


        api_weather_description = z[0]["description"]

    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    soilmoisture=random.randint(0,1023)#analog sensor
    sm_percentage=(soilmoisture/1023)*100
    sm_percentage=int(sm_percentage)
    myData={'temperature':temp, 'humidity':hum,'soilmoisture':sm_percentage,'status':status,'api_temperature':api_temperature,'api_pressure':api_pressure,'ap
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    print("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)

time.sleep(2)
client.disconnect()
```

Ln: 15 Col: 0

Running of Python Code: