Project Development -Delivery of Sprint-1

Date	29 Oct 2022
Team ID	PNT2022TMID39327
Project Name	Project -Smart farmer-IOT enabled smart Farming Application

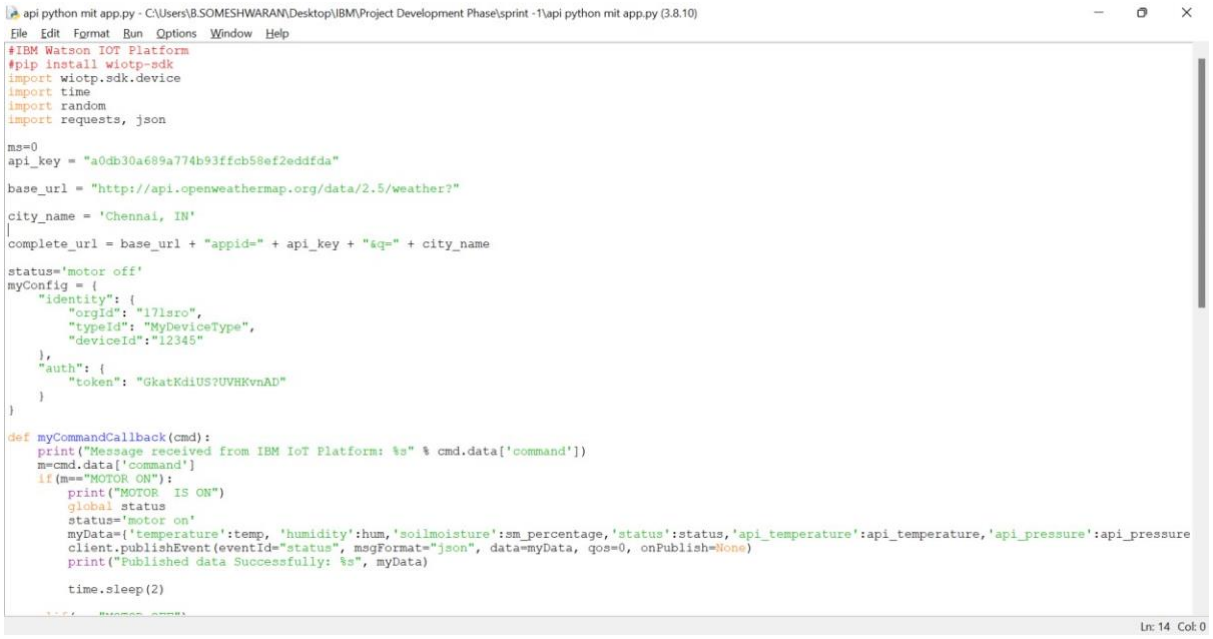
Python Code:

```
#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)
```

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```
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()
```

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Running of Python Code


IDLE Shell 3.8.10
File Edit Shell Debug Options Window Help
Python 3.8.10 (tags/v3.8.10:3d8993a, May 3 2021, 11:48:03) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\B.SOMESHWARAN\Desktop\IBM\Project Development Phase\sprint -1\api python mit app.py
2022-11-13 10:02:58,056 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:171sro:MyDeviceType:12345
Published data Successfully: %s {'temperature': 122, 'humidity': 88, 'soilmoisture': 11, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -17, 'humidity': 4, 'soilmoisture': 97, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 29, 'humidity': 36, 'soilmoisture': 96, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 81, 'humidity': 68, 'soilmoisture': 90, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 10, 'humidity': 4, 'soilmoisture': 3, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'Temperature': 32, 'humidity': 53, 'soilmoisture': 35, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -17, 'humidity': 99, 'soilmoisture': 81, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 116, 'humidity': 58, 'soilmoisture': 52, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 21, 'humidity': 4, 'soilmoisture': 77, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
= RESTART: C:\Users\B.SOMESHWARAN\Desktop\IBM\Project Development Phase\sprint -1\api python mit app.py
2022-11-13 10:03:19,663 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:171sro:MyDeviceType:12345
Published data Successfully: %s {'temperature': 59, 'humidity': 13, 'soilmoisture': 36, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -20, 'humidity': 40, 'soilmoisture': 54, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': -9, 'humidity': 74, 'soilmoisture': 24, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 27, 'humidity': 96, 'soilmoisture': 17, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 18, 'humidity': 76, 'soilmoisture': 96, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 28, 'humidity': 69, 'soilmoisture': 94, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
Published data Successfully: %s {'temperature': 6, 'humidity': 72, 'soilmoisture': 98, 'status': 'motor off', 'api_temperature': 298.14, 'api_pressure': 1014, 'api_humidity': 94, 'api_weather_description': 'light intensity drizzle'}
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