Final Source Code

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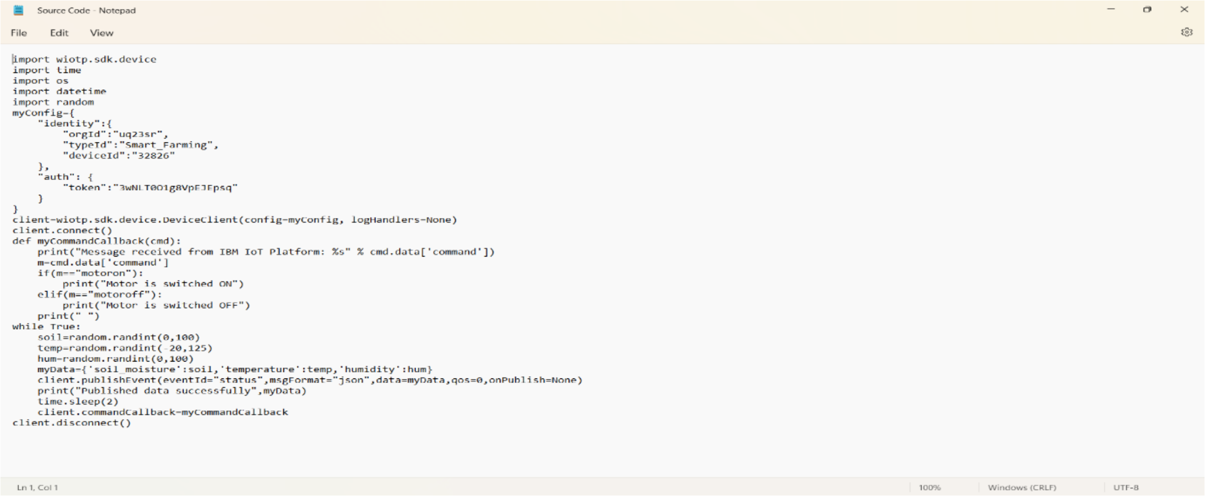
PROJECT NAME: SMARTFARMER-IOT ENABLED SMART FARMING APPLICATION.

Source Code Image:



```
import wiotp.sdk.device
import time
import os
import datetime
import random
myConfig={
    "identity":{
        "orgId":"uq23sr",
        "typeId":"Smart_Farming",
        "deviceId":"32826"
    },
    "auth": {
        "token":"3wNLT0O1g8VpEJEpsq"
    }
}
client=wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()
def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']
    if(m=="motoron"):
        print("Motor is switched ON")
    elif(m=="motoroff"):
        print("Motor is switched OFF")
    print(" ")
while True:
    soil=random.randint(0,100)
    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    myData={'soil_moisture':soil,'temperature':temp,'humidity':hum}
    client.publishEvent(eventId="status",msgFormat="json",data=myData,qos=0,onPublish=None)
    print("Published data successfully",myData)
    time.sleep(2)
    client.commandCallback=myCommandCallback
client.disconnect()
```

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```
#IBM Watson IOT Platform
#pip install wiotp-sdk
import wiotp.sdk.device
import time
import random
import requests, json
ms=0
# Enter your API key here
api_key = "a0db30a689a774b93ffcb58ef2eddfda"
# base_url variable to store url
base_url = "http://api.openweathermap.org/data/2.5/weather?"
```

```
# Give city name
city_name = 'Chennai, IN'
# complete_url variable to store
# complete url address
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"):#if motor is 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"):#if motor is 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:
# get method of requests module
# return response object
response = requests.get(complete_url)
# json method of response object
# convert json format data into
# python format data
x = response.json()
# Now x contains list of nested dictionaries
# Check the value of "cod" key is equal to
# "404", means city is found otherwise,
# city is not found
if x["cod"] != "404":
y = x["main"]
```

```
api_temperature = y["temp"]#getting api temperature data
api_pressure = y["pressure"]#getting api pressure data
api_humidity = y["humidity"] #getting api humidity data
z = x["weather"]
api_weather_description = z[0]["description"]#getting api weather condition data
temp=random.randint(-20,125)#geneating ranom values for temperature
hum=random.randint(0,100)#geneating ranom values for humidity
soilmoisture=random.randint(0,1023)#analog sensor
sm_percentage=(soilmoisture/1023)*100
sm_percentage=int(sm_percentage)#geneating ranom values for soilmoisture
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()
```