

## Develop a Python Script to Publish and Subscribe to IBM IoT Platform

Team ID	PNT2022TMID14459
Project Name	SmartFarmer – IoT Enabled Smart Farming Application

### Develop the Python Code

```
#IBM Watson IOT Platform
```

```
#pip install wiotp-sdk
```

```
import wiotp.sdk.device
```

```
import time
```

```
import random
```

```
ms=0
```

```
status='light off'
```

```
myConfig = {
```

```
    "identity": {
```

```
        "orgId": "62bxw0",
```

```
        "typeId": "Smartfarming",
```

```
        "deviceId": "123"
```

```

},
"auth": {
"token": "98122123129"
}
}

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")
        status='motor on'
        myData={'temperature':temp, 'humidity':hum,'soilmoisture':sm_percentage,'status':status}
        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}
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:
    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    soilmoisture=random.randint(0,1023)
    sm_percentage=(soilmoisture/1023)*100
    sm_percentage=int(sm_percentage)
    myData={'temperature':temp, 'humidity':hum,'soilmoisture':sm_percentage}
    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()
```

IBM Watson IoT Platform

vaish.v@ibm.com  
ID: 62bxw0

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Device Drilldown - 123

Device Credentials

Connection Information

Recent Events

State

Device Information

Metadata

Diagnostics

Connection Logs

Device Actions

Device Credentials

You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details.

Organization ID	62bxw0
Device Type	Smartfarming
Device ID	123
Authentication Method	use-token-auth
Authentication Token	98122123129

⚠ Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

[Find out how to add these credentials to your device](#)

\*smartfarm.py - C:/Users/hp/smartfarm.py (3.9.6)\*

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```
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import wiotp.sdk.device
import time
import random
ms=0
status='light off'
myConfig = {
    "identity": {
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        "typeId": "Smartfarming",
        "deviceId": "123"
    },
    "auth": {
        "token": "98122123129"
    }
}
def myCommandCallback(cmd):
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while True:
    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    soilmoisture=random.randint(0,1023)#analog sensor
```

Ln: 42 Col: 0

Windows taskbar showing search bar, task view, and various application icons. System tray on the right displays weather (29°C Cloudy), language (ENG IN), and date/time (2:45 PM 13-Nov-22).