

TEAM ID	PNT2022TMID11512
PROJECT	Smart Waste Management System For Metropolitan Cities

### **DEVELOP THE PYTHON SCRIPT**

#### **PYTHON SCRIPT :**

```
import time
```

```
import sys
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import random
```

```
#Provide your IBM Watson Device Credentials
```

```
organization = "cbseji"
```

```
deviceType = "abcd"
```

```
deviceId = "1234"
```

```
authMethod = "token"
```

```
authToken = "12345678"
```

```
# Initialize GPIO
```

```
def myCommandCallback(cmd):
```

```
    print("Command received: %s" % cmd.data['command'])
```

```
    status=cmd.data['command']
```

```
    if status=="lighton":
```

```
        print ("led is on")
```

```
    else :
```

```
        print ("led is off")
```

```
#print(cmd)
```

try:

```
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method":  
authMethod, "auth-token": authToken}
```

```
    deviceCli = ibmiotf.device.Client(deviceOptions)
```

```
    #.....
```

except Exception as e:

```
    print("Caught exception connecting device: %s" % str(e))
```

```
    sys.exit()
```

```
# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type  
"greeting" 10 times
```

```
deviceCli.connect()
```

while True:

```
    #Get Sensor Data from DHT11
```

```
    temp=random.randint(0,100)
```

```
    Humid=random.randint(0,100)
```

```
    data = { 'temp': temp, 'Humid': Humid }
```

```
    #print data
```

```
    def myOnPublishCallback():
```

```
        print ("Published Temperature = %s C" % temp, "Humidity = %s %" % Humid, "to IBM  
Watson")
```

```
    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,  
on_publish=myOnPublishCallback)
```

```
    if not success:
```

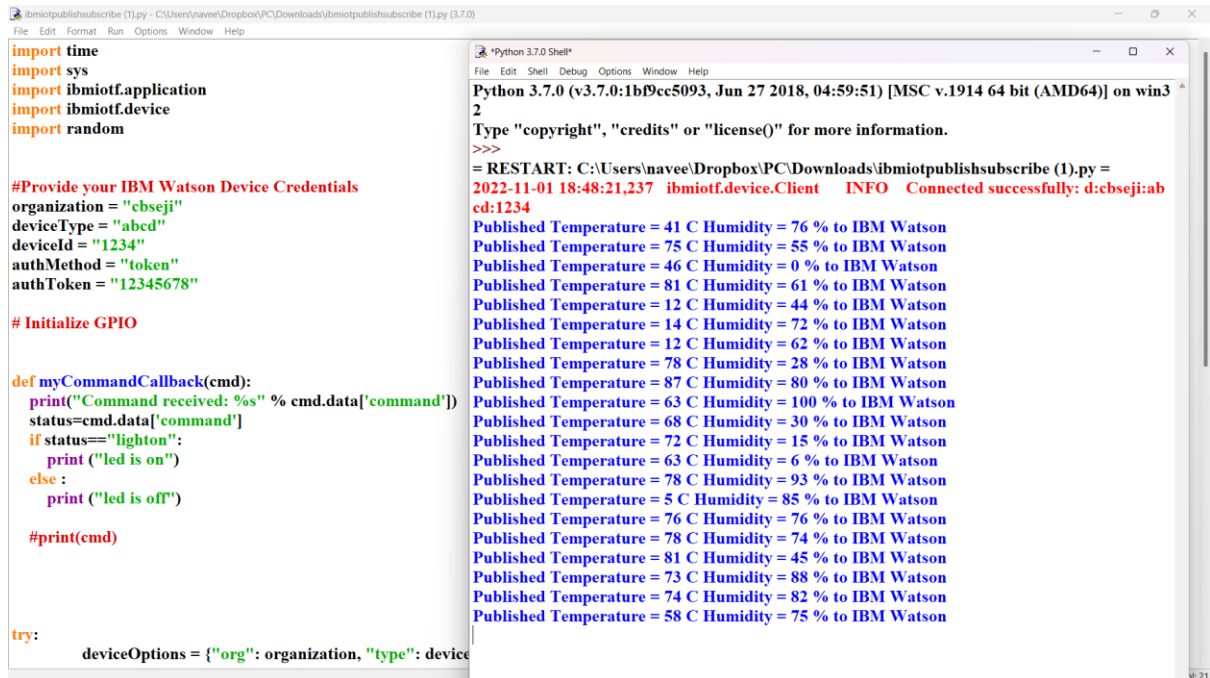
```
        print("Not connected to IoTF")
```

```
    time.sleep(1)
```

```
deviceCli.commandCallback = myCommandCallback
```

```
# Disconnect the device and application from the cloud
```

```
deviceCli.disconnect()
```



The screenshot shows a Python IDE with two windows. The left window displays the source code of a script named `ibmiotpublishsubscribe (1).py`. The code imports `time`, `sys`, `ibmiotf.application`, `ibmiotf.device`, and `random`. It defines a `myCommandCallback` function that prints command data and toggles an LED status. The script then initializes GPIO and sets up the command callback. The right window shows the execution output, which includes the Python version, date, and time, followed by a successful connection message and a series of temperature and humidity readings from IBM Watson.

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "cbseji"
deviceType = "abcd"
deviceId = "1234"
authMethod = "token"
authToken = "12345678"

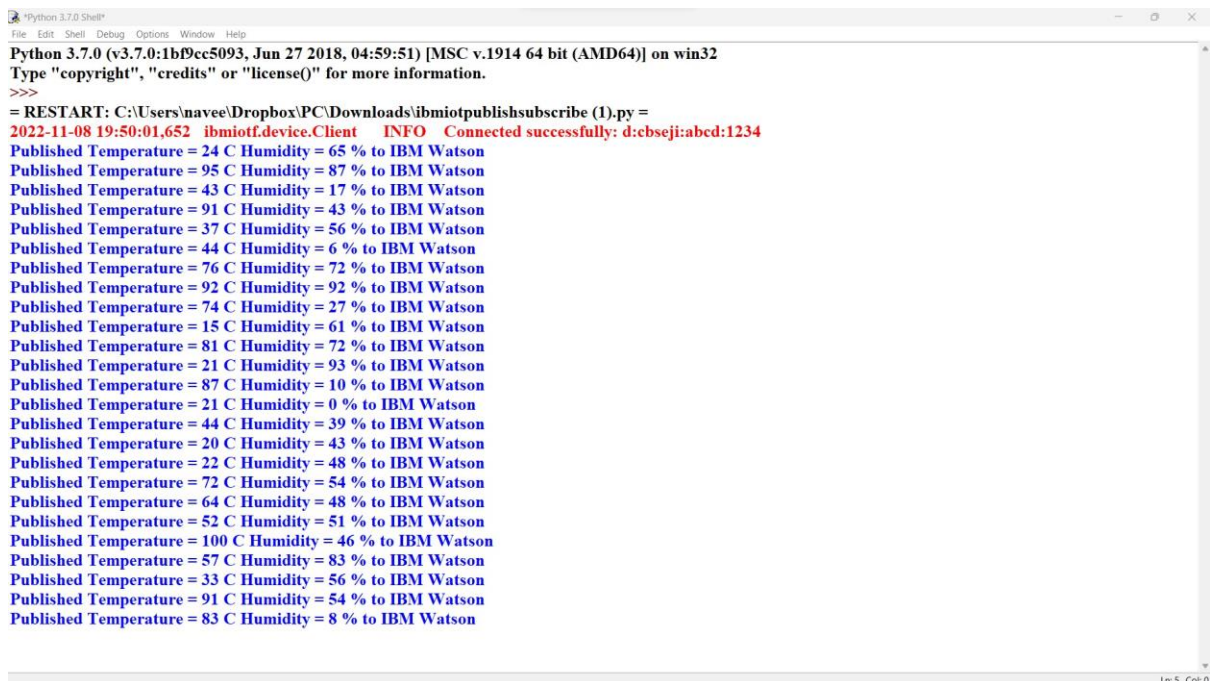
# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
        print ("led is on")
    else :
        print ("led is off")

    #print(cmd)

try:
    deviceOptions = {"org": organization, "type": device
```

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\navee\Dropbox\PC\Downloads\ibmiotpublishsubscribe (1).py =
2022-11-01 18:48:21,237  ibmiotf.device.Client  INFO  Connected successfully: d:cbseji:ab
cd:1234
Published Temperature = 41 C Humidity = 76 % to IBM Watson
Published Temperature = 75 C Humidity = 55 % to IBM Watson
Published Temperature = 46 C Humidity = 0 % to IBM Watson
Published Temperature = 81 C Humidity = 61 % to IBM Watson
Published Temperature = 12 C Humidity = 44 % to IBM Watson
Published Temperature = 14 C Humidity = 72 % to IBM Watson
Published Temperature = 12 C Humidity = 62 % to IBM Watson
Published Temperature = 78 C Humidity = 28 % to IBM Watson
Published Temperature = 87 C Humidity = 80 % to IBM Watson
Published Temperature = 63 C Humidity = 100 % to IBM Watson
Published Temperature = 68 C Humidity = 30 % to IBM Watson
Published Temperature = 72 C Humidity = 15 % to IBM Watson
Published Temperature = 63 C Humidity = 6 % to IBM Watson
Published Temperature = 78 C Humidity = 93 % to IBM Watson
Published Temperature = 5 C Humidity = 85 % to IBM Watson
Published Temperature = 76 C Humidity = 76 % to IBM Watson
Published Temperature = 78 C Humidity = 74 % to IBM Watson
Published Temperature = 81 C Humidity = 45 % to IBM Watson
Published Temperature = 73 C Humidity = 88 % to IBM Watson
Published Temperature = 74 C Humidity = 82 % to IBM Watson
Published Temperature = 58 C Humidity = 75 % to IBM Watson
```



The screenshot shows a Python IDE with a single window displaying the execution output of the script. The output includes the Python version, date, and time, followed by a successful connection message and a series of temperature and humidity readings from IBM Watson.

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\navee\Dropbox\PC\Downloads\ibmiotpublishsubscribe (1).py =
2022-11-08 19:50:01,652  ibmiotf.device.Client  INFO  Connected successfully: d:cbseji:abcd:1234
Published Temperature = 24 C Humidity = 65 % to IBM Watson
Published Temperature = 95 C Humidity = 87 % to IBM Watson
Published Temperature = 43 C Humidity = 17 % to IBM Watson
Published Temperature = 91 C Humidity = 43 % to IBM Watson
Published Temperature = 37 C Humidity = 56 % to IBM Watson
Published Temperature = 44 C Humidity = 6 % to IBM Watson
Published Temperature = 76 C Humidity = 72 % to IBM Watson
Published Temperature = 92 C Humidity = 92 % to IBM Watson
Published Temperature = 74 C Humidity = 27 % to IBM Watson
Published Temperature = 15 C Humidity = 61 % to IBM Watson
Published Temperature = 81 C Humidity = 72 % to IBM Watson
Published Temperature = 21 C Humidity = 93 % to IBM Watson
Published Temperature = 87 C Humidity = 10 % to IBM Watson
Published Temperature = 21 C Humidity = 0 % to IBM Watson
Published Temperature = 44 C Humidity = 39 % to IBM Watson
Published Temperature = 20 C Humidity = 43 % to IBM Watson
Published Temperature = 22 C Humidity = 48 % to IBM Watson
Published Temperature = 72 C Humidity = 54 % to IBM Watson
Published Temperature = 64 C Humidity = 48 % to IBM Watson
Published Temperature = 52 C Humidity = 51 % to IBM Watson
Published Temperature = 100 C Humidity = 46 % to IBM Watson
Published Temperature = 57 C Humidity = 83 % to IBM Watson
Published Temperature = 33 C Humidity = 56 % to IBM Watson
Published Temperature = 91 C Humidity = 54 % to IBM Watson
Published Temperature = 83 C Humidity = 8 % to IBM Watson
```