

## DEVELOP THE PYTHON SCRIPT

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PROJECT	Smart Waste Management System For Metropolitan Cities

### PYTHON SCRIPT :

```
import time
```

```
import sys
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import random
```

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

```
organization = "znsc13"
```

```
deviceType = "SENSOR"
```

```
deviceId = "SENSOR-23"
```

```
authMethod = "use-token-  
auth"
```

```
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 image shows a Python 3.7.0 IDE window with a script titled 'ibmiotpublishsubscribe (1).py'. The script imports necessary modules and defines a command callback function. It then attempts to connect to an IBM Watson IoT device using provided credentials. The output in the console shows a successful connection and a series of sensor data readings (Temperature and Humidity) being received from the device.

```
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 (v3.7.0:1b9cc5093, 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

Python 3.7.0 (v3.7.0:1b9cc5093, 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