

Develop A Python Script To Publish And Subscribe To IBM IoT Platform-**Develop The Python Code**

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Team ID	PNT2022TMID01028
Project Name	Project – Smart Farmer-IoT Enabled smart Farming Application

Python code:

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

#Provide your IBM Watson Device Credentials
organization = "1xl08d"
deviceType = "abcd"
deviceId = "12"
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 IoTTF")
```

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

```
        deviceCli.commandCallback = myCommandCallback
```

Disconnect the device and application from the cloud

deviceCli.disconnect()

Output:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (tags/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\Sneha\AppData\Local\Programs\Python\Python37\sum.py ====
2022-11-04 21:24:31.213 ibmiotf.device.Client INFO Connected successfully: d:ixi00dabcd:12
Published Temperature = 24 C Humidity = 6 % to IBM Watson
Published Temperature = 90 C Humidity = 77 % to IBM Watson
Published Temperature = 86 C Humidity = 6 % to IBM Watson
Published Temperature = 73 C Humidity = 88 % to IBM Watson
Published Temperature = 83 C Humidity = 57 % to IBM Watson
Published Temperature = 84 C Humidity = 62 % to IBM Watson
Published Temperature = 60 C Humidity = 98 % to IBM Watson
Published Temperature = 5 C Humidity = 71 % to IBM Watson
Published Temperature = 15 C Humidity = 3 % to IBM Watson
Published Temperature = 16 C Humidity = 36 % to IBM Watson
Published Temperature = 96 C Humidity = 51 % to IBM Watson
Published Temperature = 59 C Humidity = 46 % to IBM Watson
Command received: lighton
led is on
Published Temperature = 59 C Humidity = 88 % to IBM Watson
Published Temperature = 16 C Humidity = 81 % to IBM Watson
Published Temperature = 58 C Humidity = 1 % to IBM Watson
Published Temperature = 47 C Humidity = 19 % to IBM Watson
Published Temperature = 81 C Humidity = 25 % to IBM Watson
```