

DEVELOP A PYTHON SCRIPT TO PUBLISH AND SUBSCRIBE TO IBM IOT PLATFORM

Team id : PNT2022TMID33893

Project Name : Gas Leakage Monitoring and Alerting System

Develop python code :

```
import time
```

```
import sys
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import random
```

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

```
organization = "u9pz01"
```

```
deviceType = "abcd"
```

```
deviceId = "temphum"
```

```
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")

elif status == "lightoff":

    print ("led is off")

else:

    print("please send proper command")


#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(90,110)

Humid=random.randint(60,100)


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 IoT")

    time.sleep(10)


deviceCli.commandCallback = myCommandCallback


# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

Publish data to IBM Cloud:

Step 1 : Open IBM WATSON IOT PLATFORM from IBM catalog.

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Add Device

Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator

	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
>	123	Disconnected	ultrasensor	Device	Oct 25, 2022 7:45 PM	
>	dist	Disconnected	distance	Device	Nov 7, 2022 10:28 PM	
>	temphum	Disconnected	abcd	Device	Nov 2, 2022 6:59 PM	

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Step 2 : Open IDLE Python 3.7.0 and Run the Python code.

```
ibmiotpublishsubscribe.py - C:\Users\DELL\Downloads\ibmiotpublishsubscribe.py (3.7.0)
File Edit Format Run Options Window Help
import time
import sys
import random
import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "u9pz01"
deviceType = "abcd"
deviceId = "temphum"
authMethod = "token"
authToken = "12345678"

# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
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    #print(cmd)

try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-token": authToken}
    deviceCli = ibmiotf.device.Client(deviceOptions)
```

Step 3 : The random values for Temperature and Humidity are produced in the output. And the data is send to the IBM Watson IOT Platform.

```
ibmiotf - Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
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\DELL\Downloads\ibmiotpublishsubscribe.py =====
2022-11-13 11:34:08,322 ibmiotf.device.Client INFO Connected successfully: d:u9pz01:abcd:temphum
#Provide your IBM Watson Device Credentials
Published Temperature = 93 C Humidity = 76 % to IBM Watson
Published Temperature = 107 C Humidity = 69 % to IBM Watson
Published Temperature = 104 C Humidity = 98 % to IBM Watson
Published Temperature = 96 C Humidity = 76 % to IBM Watson
Published Temperature = 90 C Humidity = 72 % to IBM Watson
Published Temperature = 110 C Humidity = 60 % to IBM Watson
Published Temperature = 102 C Humidity = 86 % to IBM Watson
Published Temperature = 96 C Humidity = 63 % to IBM Watson

# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
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        print("please send proper command")

    #print(cmd)

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

Step 4 : In IBM Watson IOT Platform the status shows connected when the python code is made to run.

IBM Watson IoT Platform

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> <input type="checkbox"/>	temphum	Connected	abcd	Device	Nov 2, 2022 6:59 PM	→ ...

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Step 5 : On clicking Recent Events we can see the Temperature and Humidity values from Python code is published to the IBM Watson IOT Platform.

Service Details - IBM CloudIBM Watson IoT PlatformIBM

https://u9pz01.internetofthings.ibmcloud.com/dashboard/devices/browse

950819106071@smartinternz.comID: u9pz01

IBM Watson IoT Platform

BrowseActionDevice TypesInterfaces

Add Device

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
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▼	temphum	Connected	abcd	Device	Nov 2, 2022 6:59 PM	

IdentityDevice InformationRecent EventsStateLogs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
IoTSensor	{"temp":107,"Humid":83}	json	a few seconds ago
IoTSensor	{"temp":96,"Humid":63}	json	a few seconds ago

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Type here to search

25°C Cloudy11:3513-11-2022