

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

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Team ID	PNT2022TMID41919
Project Name	Smart Farmer-IOT Enabled Smart Farming Application

PROGRAM CODE:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "5myh1a" #replace the ORG ID
deviceType = "iot_device"#replace the Device type wi
deviceId = "12344321"#replace Device ID
authMethod = "token"
authToken = "9894976519" #Replace the authtoken
# Initialize GPIO
#Receives Command from Node-red
def myCommandCallback(cmd):
    print ("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("motor is on")
    elif status == "motoroff" :
        print ("motor is off")
    elif status == "motor30" :
        print ("motor is on for 30 minutes")
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)
    soilmoisture=random.randint(0,100)
    data = { 'temp' : temp, 'Humid': Humid, 'soilmoisture': soilmoisture }
#print data
    def myOnPublishCallback():
        print ("Published Temperature = %s C" % temp, "Humidity = %s %% " %
Humid, "soilmoisture = %s %% "%soilmoisture, "to IBM Watson")
        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoT")
            time.sleep(5)
        deviceCli.commandCallback = myCommandCallback
# Disconnect the device and application from the cloud
deviceCli.disconnect()

```

OUTPUT:

Develop a python code:

The screenshot displays the IBM Watson IoT Platform dashboard on the left and a Python 3.7.6 Shell terminal window on the right.

IBM Watson IoT Platform Dashboard:

- Page Title:** IBM Watson IoT Platform
- URL:** 5myh1a.internetofthings.ibmcloud.com/dashboard/devices/browse
- Navigation:** Browse, Action, Device Types, Interfaces
- Table:**

Event	Value
IoTSensor	{"temp":42,"Humid":44,"soilmoisture":98}
IoTSensor	{"temp":1,"Humid":25,"soilmoisture":94}
IoTSensor	{"temp":80,"Humid":26,"soilmoisture":66}
IoTSensor	{"temp":33,"Humid":2,"soilmoisture":56}
IoTSensor	{"temp":85,"Humid":89,"soilmoisture":47}
- Device Details:** 998877, Disconnected, DEVICE_1
- Footer:** Items per page 50 | 1-2 of 2 items

Python 3.7.6 Shell Terminal:

```

Python 3.7.6 (tags/v3.7.6:43364a7ae0, Dec 18 2019, 23:46:00) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/prakeesh/Documents/asfa.py =====
2022-11-20 21:47:42,562 ibmiotf.device.Client INFO Connected successfully: d:5myh1a:iot_device:12344321
Published Temperature = 46 C Humidity = 46 % soilmoisture = 71 % to IBM Watson
Published Temperature = 17 C Humidity = 32 % soilmoisture = 66 % to IBM Watson
Published Temperature = 93 C Humidity = 88 % soilmoisture = 10 % to IBM Watson
Published Temperature = 73 C Humidity = 91 % soilmoisture = 34 % to IBM Watson
Published Temperature = 19 C Humidity = 6 % soilmoisture = 80 % to IBM Watson
Published Temperature = 48 C Humidity = 69 % soilmoisture = 32 % to IBM Watson
Published Temperature = 28 C Humidity = 88 % soilmoisture = 23 % to IBM Watson
Published Temperature = 4 C Humidity = 0 % soilmoisture = 4 % to IBM Watson
Published Temperature = 87 C Humidity = 89 % soilmoisture = 6 % to IBM Watson
Published Temperature = 85 C Humidity = 89 % soilmoisture = 47 % to IBM Watson
Published Temperature = 33 C Humidity = 2 % soilmoisture = 56 % to IBM Watson
Published Temperature = 80 C Humidity = 26 % soilmoisture = 66 % to IBM Watson
Published Temperature = 1 C Humidity = 25 % soilmoisture = 94 % to IBM Watson
Published Temperature = 42 C Humidity = 44 % soilmoisture = 98 % to IBM Watson

```

Publish data to the IBM cloud: