

DEVELOP A PYTHON SCRIPT

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Project Name	IOT based Real -Time River Water Quality Monitoring and Control System

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

```
#Provide your IBM Watson Device Credentials organization
org = "awb990" deviceType = "NodeMCU" deviceId = "12345"
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(90,100)
```

```
    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:
```

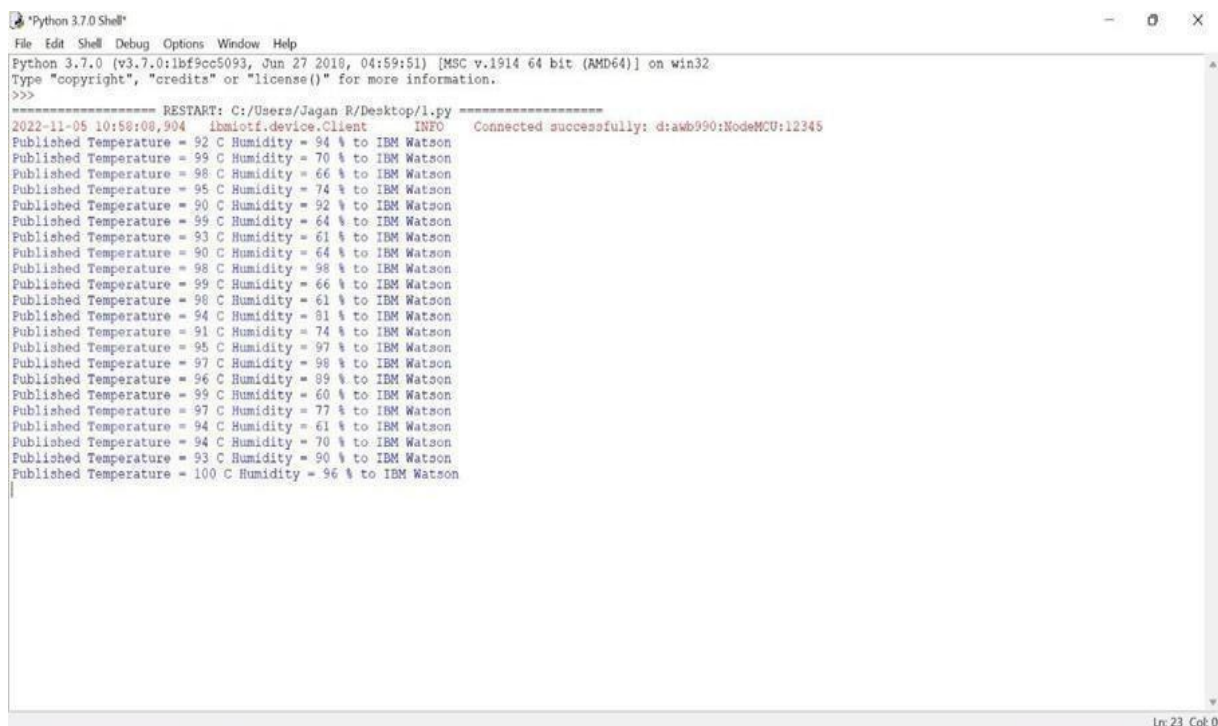
```
print("Not connected to
```

```
IoT") time.sleep(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 [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\Jagan R\Desktop\l.py =====
2022-11-05 10:58:08,904 ibmiotf.device.Client INFO Connected successfully: d:awb990:NodeMCU:12345
Published Temperature = 92 C Humidity = 94 % to IBM Watson
Published Temperature = 99 C Humidity = 70 % to IBM Watson
Published Temperature = 98 C Humidity = 66 % to IBM Watson
Published Temperature = 95 C Humidity = 74 % to IBM Watson
Published Temperature = 90 C Humidity = 92 % to IBM Watson
Published Temperature = 99 C Humidity = 64 % to IBM Watson
Published Temperature = 93 C Humidity = 61 % to IBM Watson
Published Temperature = 90 C Humidity = 64 % to IBM Watson
Published Temperature = 98 C Humidity = 98 % to IBM Watson
Published Temperature = 99 C Humidity = 66 % to IBM Watson
Published Temperature = 98 C Humidity = 61 % to IBM Watson
Published Temperature = 94 C Humidity = 81 % to IBM Watson
Published Temperature = 91 C Humidity = 74 % to IBM Watson
Published Temperature = 95 C Humidity = 97 % to IBM Watson
Published Temperature = 97 C Humidity = 98 % to IBM Watson
Published Temperature = 96 C Humidity = 89 % to IBM Watson
Published Temperature = 99 C Humidity = 60 % to IBM Watson
Published Temperature = 97 C Humidity = 77 % to IBM Watson
Published Temperature = 94 C Humidity = 61 % to IBM Watson
Published Temperature = 94 C Humidity = 70 % to IBM Watson
Published Temperature = 93 C Humidity = 90 % to IBM Watson
Published Temperature = 100 C Humidity = 96 % to IBM Watson
```