

PYTHON SCRIPT TO MONITOR TEMPERATURE, PH, TURBIDITY IN RIVER WATER

PROGRAM:

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

#provide Your IBM Watson Device Credentials
organization = "m89nts"
deviceType = "arduino"
deviceId = "123"
authMethod = "token"
authToken = "87654321"

#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")
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" info the cloud as an event of
type"greetings"10 times

deviceCli.connect()

while True:

    #Get sensor Data from DHT11

    temp=random.randint(90,110)
    pH=random.randint(0,14)
    turbidity=random.randint(0,100)

    data = { 'Temperature' : temp, 'pH': pH, 'Turbidity':turbidity }

    #print data

    def myOnPublishCallback():

        print ("published Temperature = %s C" % temp, "pH = is %s %" % pH, "Turbidity= is %s
        %" % turbidity,"to IBM Watson")

    success = deviceCli.publishEvent("IOTSensor",
    "json",data,qos=0,on_publish=myOnPublishCallback)

    if not success:

        print("Not connected to IOTF")

```

```
time.sleep(10)
```

```
deviceCli.commandCallback = myCommandCallback
```

```
deviceCli.disconnect()
```

OUTPUT:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (tags/v3.7.0:2448fbb28, Jun 27 2019, 04:09:01) [AMD64] on win32
Type "copyright", "credits()" or "license()" for more information.
>>>
RESTART: c:\python\python\python.exe
2022-11-08 18:13:09,718 [main]: deviceCli.connect()
published Temperature = 90 C pH = 14.9 % Turbidity= 14.2 % to 1000 Watson
published Temperature = 100 C pH = 14.8 % Turbidity= 14.1 % to 1000 Watson
published Temperature = 95 C pH = 14.7 % Turbidity= 14.0 % to 1000 Watson
published Temperature = 100 C pH = 14.6 % Turbidity= 13.9 % to 1000 Watson
published Temperature = 95 C pH = 14.5 % Turbidity= 13.8 % to 1000 Watson
published Temperature = 104 C pH = 14.4 % Turbidity= 13.7 % to 1000 Watson
published Temperature = 102 C pH = 14.3 % Turbidity= 13.6 % to 1000 Watson
published Temperature = 94 C pH = 14.2 % Turbidity= 13.5 % to 1000 Watson
published Temperature = 102 C pH = 14.1 % Turbidity= 13.4 % to 1000 Watson
published Temperature = 92 C pH = 14.0 % Turbidity= 13.3 % to 1000 Watson
published Temperature = 99 C pH = 13.9 % Turbidity= 13.2 % to 1000 Watson
published Temperature = 104 C pH = 13.8 % Turbidity= 13.1 % to 1000 Watson
published Temperature = 109 C pH = 13.7 % Turbidity= 13.0 % to 1000 Watson
published Temperature = 102 C pH = 13.6 % Turbidity= 12.9 % to 1000 Watson
published Temperature = 90 C pH = 13.5 % Turbidity= 12.8 % to 1000 Watson
published Temperature = 93 C pH = 13.4 % Turbidity= 12.7 % to 1000 Watson
published Temperature = 107 C pH = 13.3 % Turbidity= 12.6 % to 1000 Watson
published Temperature = 98 C pH = 13.2 % Turbidity= 12.5 % to 1000 Watson
published Temperature = 101 C pH = 13.1 % Turbidity= 12.4 % to 1000 Watson
published Temperature = 100 C pH = 13.0 % Turbidity= 12.3 % to 1000 Watson
published Temperature = 96 C pH = 12.9 % Turbidity= 12.2 % to 1000 Watson
published Temperature = 104 C pH = 12.8 % Turbidity= 12.1 % to 1000 Watson
published Temperature = 97 C pH = 12.7 % Turbidity= 12.0 % to 1000 Watson
published Temperature = 101 C pH = 12.6 % Turbidity= 11.9 % to 1000 Watson
published Temperature = 107 C pH = 12.5 % Turbidity= 11.8 % to 1000 Watson
published Temperature = 109 C pH = 12.4 % Turbidity= 11.7 % to 1000 Watson
published Temperature = 102 C pH = 12.3 % Turbidity= 11.6 % to 1000 Watson
published Temperature = 90 C pH = 12.2 % Turbidity= 11.5 % to 1000 Watson
published Temperature = 91 C pH = 12.1 % Turbidity= 11.4 % to 1000 Watson
published Temperature = 94 C pH = 12.0 % Turbidity= 11.3 % to 1000 Watson
published Temperature = 95 C pH = 11.9 % Turbidity= 11.2 % to 1000 Watson
published Temperature = 92 C pH = 11.8 % Turbidity= 11.1 % to 1000 Watson
published Temperature = 95 C pH = 11.7 % Turbidity= 11.0 % to 1000 Watson
published Temperature = 104 C pH = 11.6 % Turbidity= 10.9 % to 1000 Watson
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published Temperature = 103 C pH = 11.4 % Turbidity= 10.7 % to 1000 Watson
published Temperature = 101 C pH = 11.3 % Turbidity= 10.6 % to 1000 Watson
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published Temperature = 94 C pH = 11.1 % Turbidity= 10.4 % to 1000 Watson
published Temperature = 90 C pH = 11.0 % Turbidity= 10.3 % to 1000 Watson
published Temperature = 107 C pH = 10.9 % Turbidity= 10.2 % to 1000 Watson
published Temperature = 120 C pH = 10.8 % Turbidity= 10.1 % to 1000 Watson
published Temperature = 92 C pH = 10.7 % Turbidity= 10.0 % to 1000 Watson
```