

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

## PROGRAM:

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

#vishnu IBM
organization = "ya34u6"
deviceType = "ABCD"
deviceId = "1234"
authMethod = "token"
authToken = "12345678"

#Gpio

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")
    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
deviceCli.connect()

while True:
    temperature=random.randint(0,100)
```

```
turbidity=random.randint(0,25)
```

```
ph=random.randint(0,14)
```

```
data={'temperature':temperature,'turbidity':turbidity,'ph':ph}
```

```
def myOnPublishCallback():
```

```
    print("Published Temperature = %s C"%temperature,"turbidity = %s %%"  
%turbidity,"ph = %s %%" %ph, "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
```

```
#Disconnect
```

```
deviceCli.disconnect()
```

OUTPUT :

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
2022-11-17 12:21:12.455 INFO Connected successfully: dny346eABCD:1234
Published Temperature = 23 C turbidity = 4 % ph = 4 % to IBM Watson
Published Temperature = 58 C turbidity = 21 % ph = 13 % to IBM Watson
Published Temperature = 12 C turbidity = 21 % ph = 0 % to IBM Watson
Published Temperature = 2 C turbidity = 3 % ph = 2 % to IBM Watson
Published Temperature = 71 C turbidity = 21 % ph = 11 % to IBM Watson
Published Temperature = 82 C turbidity = 0 % ph = 7 % to IBM Watson
Published Temperature = 44 C turbidity = 0 % ph = 0 % to IBM Watson
Published Temperature = 21 C turbidity = 9 % ph = 13 % to IBM Watson
Published Temperature = 42 C turbidity = 24 % ph = 2 % to IBM Watson
Published Temperature = 23 C turbidity = 22 % ph = 10 % to IBM Watson
Published Temperature = 93 C turbidity = 9 % ph = 11 % to IBM Watson
Published Temperature = 15 C turbidity = 9 % ph = 12 % to IBM Watson
Command Received: motoroff
MOTOR is OFF
Published Temperature = 45 C turbidity = 16 % ph = 4 % to IBM Watson
Published Temperature = 15 C turbidity = 0 % ph = 1 % to IBM Watson
Published Temperature = 84 C turbidity = 17 % ph = 14 % to IBM Watson
Published Temperature = 24 C turbidity = 23 % ph = 7 % to IBM Watson
Command Received: motoren
MOTOR is ON
Published Temperature = 28 C turbidity = 10 % ph = 9 % to IBM Watson
Published Temperature = 10 C turbidity = 9 % ph = 13 % to IBM Watson
Published Temperature = 24 C turbidity = 15 % ph = 6 % to IBM Watson
Published Temperature = 9 C turbidity = 13 % ph = 12 % to IBM Watson
Published Temperature = 92 C turbidity = 20 % ph = 12 % to IBM Watson
Published Temperature = 25 C turbidity = 3 % ph = 8 % to IBM Watson
Command Received: motoroff
MOTOR is OFF
Published Temperature = 22 C turbidity = 12 % ph = 11 % to IBM Watson
Published Temperature = 27 C turbidity = 23 % ph = 8 % to IBM Watson
Published Temperature = 76 C turbidity = 14 % ph = 9 % to IBM Watson
Published Temperature = 36 C turbidity = 15 % ph = 9 % to IBM Watson
Command Received: motoren
MOTOR is ON
Published Temperature = 90 C turbidity = 15 % ph = 5 % to IBM Watson
Published Temperature = 44 C turbidity = 16 % ph = 8 % to IBM Watson
Published Temperature = 93 C turbidity = 14 % ph = 14 % to IBM Watson
Published Temperature = 66 C turbidity = 24 % ph = 5 % to IBM Watson
Published Temperature = 52 C turbidity = 10 % ph = 10 % to IBM Watson
Command Received: motoroff
MOTOR is OFF
Published Temperature = 2 C turbidity = 23 % ph = 4 % to IBM Watson
Published Temperature = 57 C turbidity = 9 % ph = 10 % to IBM Watson
Published Temperature = 55 C turbidity = 3 % ph = 5 % to IBM Watson
Published Temperature = 57 C turbidity = 4 % ph = 3 % to IBM Watson
Command Received: motoren
MOTOR is ON
Published Temperature = 41 C turbidity = 3 % ph = 5 % to IBM Watson
Published Temperature = 80 C turbidity = 24 % ph = 6 % to IBM Watson
Published Temperature = 56 C turbidity = 10 % ph = 4 % to IBM Watson
Published Temperature = 99 C turbidity = 5 % ph = 3 % to IBM Watson
Published Temperature = 71 C turbidity = 12 % ph = 2 % to IBM Watson
Published Temperature = 20 C turbidity = 20 % ph = 13 % to IBM Watson
Published Temperature = 11 C turbidity = 12 % ph = 11 % to IBM Watson
Published Temperature = 80 C turbidity = 7 % ph = 4 % to IBM Watson
Published Temperature = 93 C turbidity = 2 % ph = 1 % to IBM Watson
Published Temperature = 60 C turbidity = 19 % ph = 2 % to IBM Watson
Published Temperature = 44 C turbidity = 5 % ph = 7 % to IBM Watson
Published Temperature = 74 C turbidity = 8 % ph = 6 % to IBM Watson
```

PUBLISHING DATA TO IBM CLOUD :

IBM Watson IoT Platform

navanthan9710@gmail.com ID: yc34u6

Browse Action Device Types Interfaces

Add Device

Q Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By	Device Class
1234	Connected	ABCD	Device	Nov 16, 2022 10:43 AM		navanthan9710@gmail.com	

Identity

Device Information

Recent Events

State

Logs

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

Event	Value	Format	Last Received
IoT Sensor	("temperature":11,"turbidity":6,"ph":7)	json	a few seconds ago
IoT Sensor	("temperature":37,"turbidity":23,"ph":9)	json	a few seconds ago
IoT Sensor	("temperature":19,"turbidity":5,"ph":4)	json	a few seconds ago
IoT Sensor	("temperature":40,"turbidity":24,"ph":9)	json	a few seconds ago

>

1234

Disconnected

vish

Device

Nov 16, 2022 11:53 AM

navanthan9710@gmail.com

>

12345

Disconnected

NodeMcu

Device

Nov 14, 2022 2:13 PM

navanthan9710@gmail.com

>

NodeMcu\_1

Disconnected

NodeMcu

Device

Nov 16, 2022 10:15 PM

navanthan9710@gmail.com

Items per page 50 | 1-4 of 4 items

1 of 1 page

0 Simulations running