

## PYTHON CODE

TEAM ID	PNT2022TMID23797
PROJECT NAME	REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

```
import ibmiotf.application
import ibmiotf.device
import time
import random
import sys
from twilio.rest import Client
import keys
Client = Client(keys.account_sid, keys.auth_token)

organization = "lwkiec"
deviceType = "NodeMCU"
deviceId = "12345"
authMethod = "token"
authToken = "12345"

pH = random.randint(1, 14)
turbidity = random.randint(1, 1000)
temperature = random.randint(0, 100)

def myCommandCallback(cmd):
    print("Command Received: %s" % cmd.data['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()

deviceCli.connect()

while True:

    pH = random.randint(1, 14)
    turbidity = random.randint(1, 1000)
    temperature = random.randint(0, 100)
```

```

data = {'pH': pH, 'turbid': turbidity, 'temp': temperature}
def SMS():
    message = Client.messages.create(
        body="ALERT!! THE WATER QUALITY IS DEGRADED",
        from_=keys.twilio_number,
        to = keys.target_number)
    print(message.body)

if temperature>70 or pH<6 or turbidity>500:
    SMS()

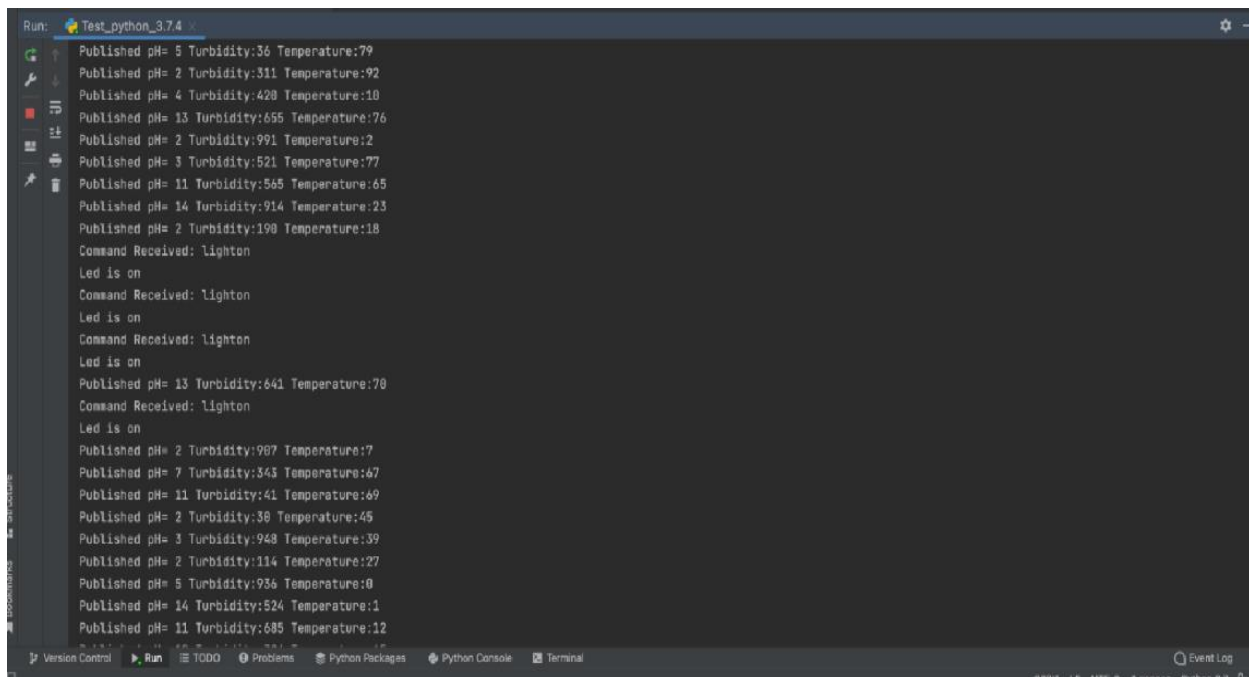
def myOnPublishCallback():
    print("Published pH= %s" % pH, "Turbidity:%s" % turbidity, "Temperature:%s" %
temperature)

    success = deviceCli.publishEvent("demo", "json", data, qos=0,
on_publish=myOnPublishCallback)
    if not success:
        print("Not Connected to ibmiot")
    time.sleep(5)
    deviceCli.commandCallback = myCommandCallback

deviceCli.disconnect()

```

## OUTPUT



```

Run: Test_python_3.7.4
Published pH= 5 Turbidity:36 Temperature:79
Published pH= 2 Turbidity:311 Temperature:92
Published pH= 4 Turbidity:428 Temperature:10
Published pH= 13 Turbidity:655 Temperature:76
Published pH= 2 Turbidity:991 Temperature:2
Published pH= 3 Turbidity:521 Temperature:77
Published pH= 11 Turbidity:565 Temperature:65
Published pH= 14 Turbidity:914 Temperature:23
Published pH= 2 Turbidity:190 Temperature:18
Command Received: lighton
Led is on
Command Received: lighton
Led is on
Command Received: lighton
Led is on
Published pH= 13 Turbidity:641 Temperature:70
Command Received: lighton
Led is on
Published pH= 2 Turbidity:987 Temperature:7
Published pH= 7 Turbidity:343 Temperature:47
Published pH= 11 Turbidity:41 Temperature:69
Published pH= 2 Turbidity:38 Temperature:45
Published pH= 3 Turbidity:948 Temperature:39
Published pH= 2 Turbidity:114 Temperature:27
Published pH= 5 Turbidity:936 Temperature:0
Published pH= 14 Turbidity:524 Temperature:1
Published pH= 11 Turbidity:685 Temperature:12

```