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 = "m89nt2"
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}
```

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```
    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)
```

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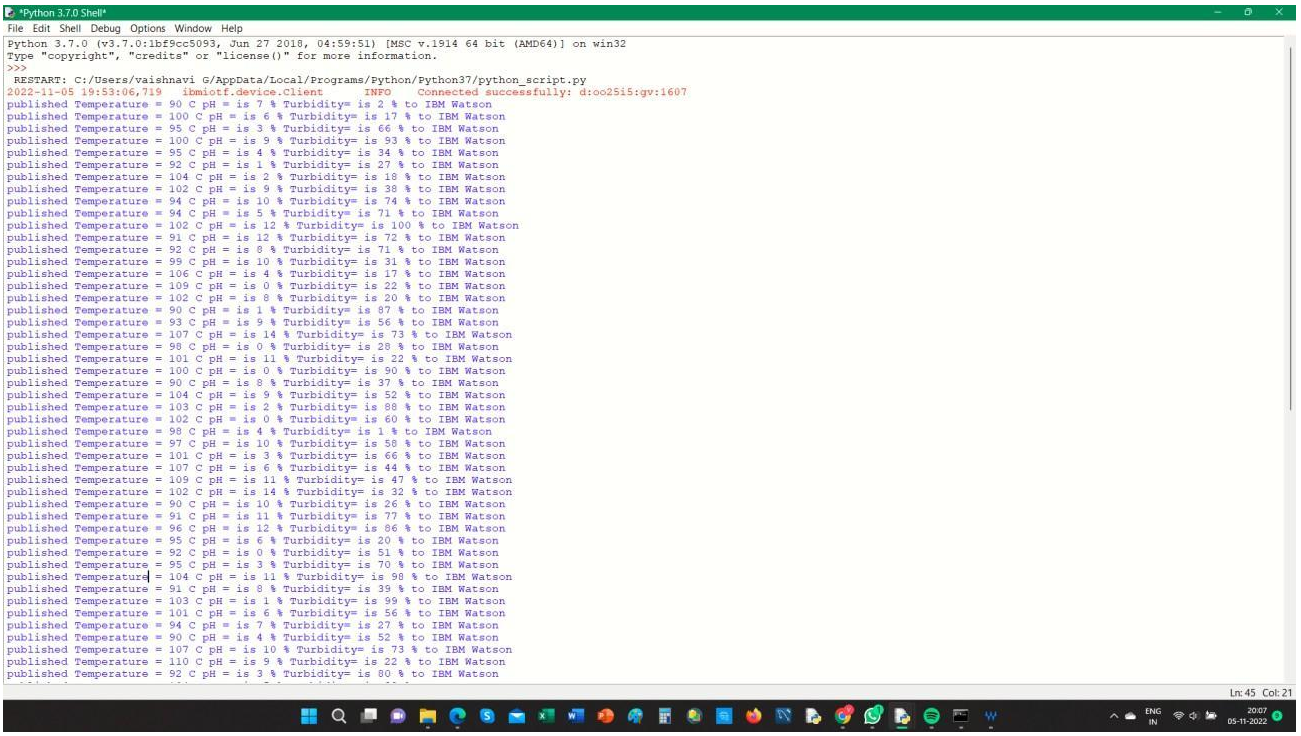
```
deviceCli.commandCallback = myCommandCallback
deviceCli.disconnect()
```

OUTPUT:



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PUBLISHING DATA TO IBM CLOUD: