

**Team id:** PNT2022TMID05726

## **Project title:** Real-Time River Water Quality Monitoring and Control System

**Python code:**

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

organization = "maci0x"
deviceType = "raspberrypi"
deviceId = "123"
authMethod = "token"
authToken = "12345678"

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

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

deviceCli.connect()
```

while True:

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

```
data = {'pH': pH, 'turbid': turbidity, 'temp': temperature}
```

```
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:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains various icons for device management. The main content area shows a device named '123' (raspberrypi) with a status of 'Connected'. Below this, the 'Recent Events' tab is active, displaying a table of live data events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events are JSON objects containing pH, turbidity, and temperature data.

Event	Value	Format	Last Received
demo	{"pH":3,"turbid":89,"temp":29}	json	a few seconds ago
demo	{"pH":9,"turbid":35,"temp":47}	json	a few seconds ago
demo	{"pH":4,"turbid":57,"temp":68}	json	a few seconds ago
demo	{"pH":7,"turbid":93,"temp":100}	json	a few seconds ago
demo	{"pH":13,"turbid":7,"temp":100}	json	a few seconds ago