SPRINT 1-DEVELOP THE PYTHON SCRIPT

Date	7 November 2022
Team ID	PNT2022TMID43374
Project Name	River Water Quality Monitoring and Control System

Python script:

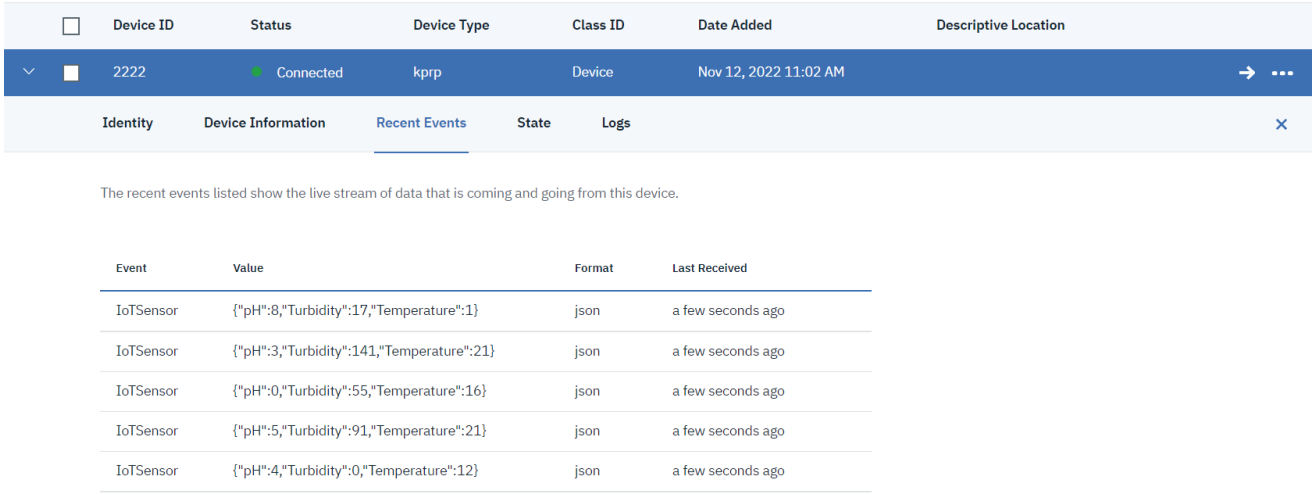
```
import ibmiotf.application
import ibmiotf.device
import time
import random
import sys

#ibm watson device credentials

organization="gdkgkx"
deviceType="kprp"
deviceid="2222"
authMethod="token"
authToken="na)UXp4FWOjf1iJhOn"

#generate random values for pH and turbity


def myCommandCallback(cmd):
    print ("command received: %s" % cmd.data)
    if(cmd.data['command']=="MOTOR_ON"):
        print('motoron')
    elif(cmd.data['command']=="MOTOR_OFF"):
        print('motoroff')
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 sending data

deviceCli.connect()

while True:
    pH=random.randint(0,14)
    turb=random.randint(0,250)
    temp=random.randint(0,40)

    data={'pH':pH,'Turbidity':turb,'Temperature':temp}
```

```
    print(data)
    def myOnPublishCallBack():
        print("pH Value of Water %s " %pH)
        print("Turbidity Value of Water %s " %turb)
        print("Temperature Value of Water %s " %temp)

success=deviceCli.publishEvent("IoTSensor","json",data,qos=0,on_publish=myOnPublishCallBac
k)
    if not success:
        print ("Not connected to IoTF")
    time.sleep(2)

    deviceCli.commandCallback=myCommandCallback


#disconnect the device from the cloud

deviceCli.connect()
```

PYTHON OUTPUT:

```
{'pH': 14, 'Turbidity': 15, 'Temperature': 28}2022-11-18 16:59:54,392   ibmiotf.
device.Client      INFO    Connected successfully: d:gdkgkx:kprp:2222

pH Value of Water 14
Turbidity Value of Water 15
Temperature Value of Water 28
{'pH': 8, 'Turbidity': 207, 'Temperature': 26}
pH Value of Water 8
Turbidity Value of Water 207
Temperature Value of Water 26
{'pH': 0, 'Turbidity': 40, 'Temperature': 33}
pH Value of Water 0
Turbidity Value of Water 40
Temperature Value of Water 33
{'pH': 8, 'Turbidity': 101, 'Temperature': 14}
pH Value of Water 8
Turbidity Value of Water 101
Temperature Value of Water 14
{'pH': 4, 'Turbidity': 43, 'Temperature': 9}
pH Value of Water 4
Turbidity Value of Water 43
Temperature Value of Water 9
{'pH': 10, 'Turbidity': 180, 'Temperature': 24}
pH Value of Water 10
Turbidity Value of Water 180
Temperature Value of Water 24
{'pH': 8, 'Turbidity': 89, 'Temperature': 7}
pH Value of Water 8
Turbidity Value of Water 89
Temperature Value of Water 7
```

OUTPUT IN IBM CLOUD:



Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
2222	Connected	kprp	Device	Nov 12, 2022 11:02 AM	

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
IoTSensor	{"pH":8,"Turbidity":17,"Temperature":1}	json	a few seconds ago
IoTSensor	{"pH":3,"Turbidity":141,"Temperature":21}	json	a few seconds ago
IoTSensor	{"pH":0,"Turbidity":55,"Temperature":16}	json	a few seconds ago
IoTSensor	{"pH":5,"Turbidity":91,"Temperature":21}	json	a few seconds ago
IoTSensor	{"pH":4,"Turbidity":0,"Temperature":12}	json	a few seconds ago