2023年07月13日08:46:08

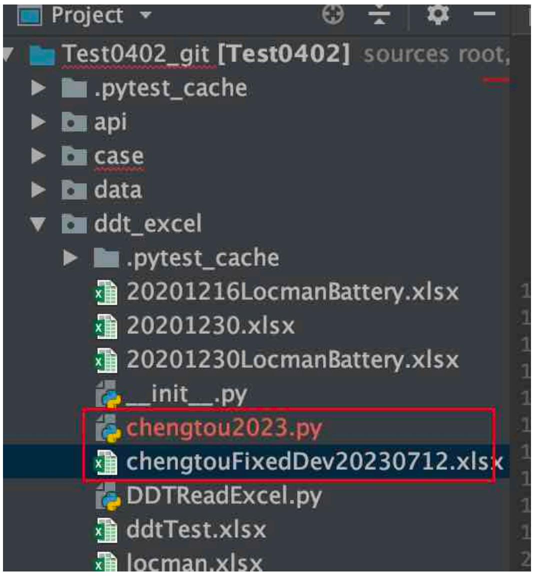
需求1：（对已维修设备和拆回设备每天监测上报情况）

需求：城投维修了71个设备，外面拆回了36个设备，需要对这两批设备分别进行每天在线情况的监控

基本功能实现

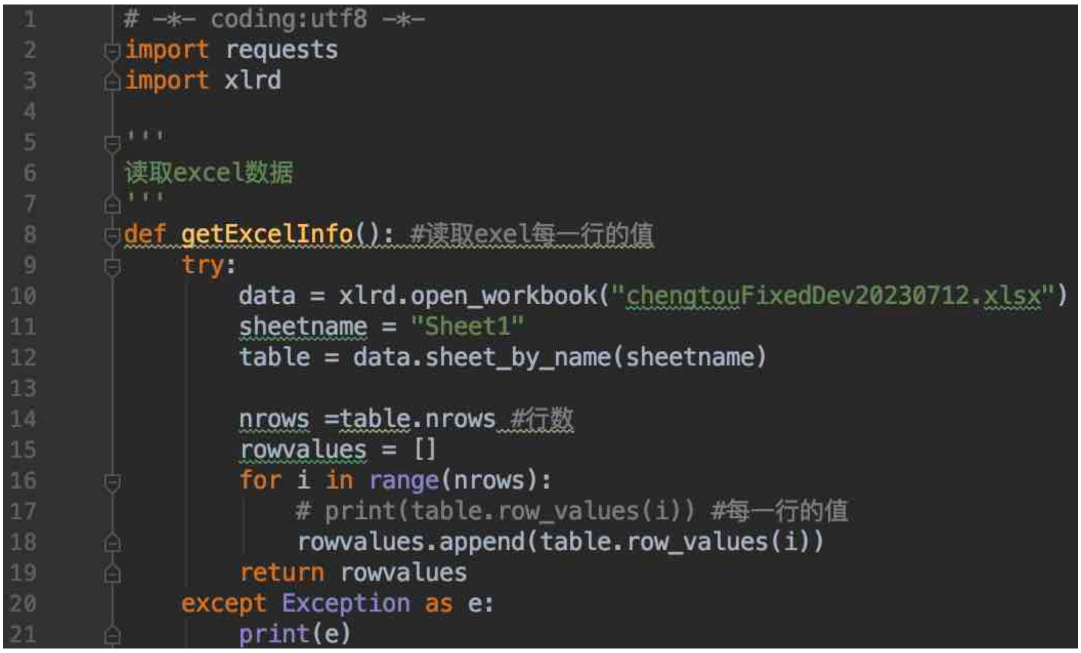
实现：思路还是按照以前用过的读取excel方法

新建2个文件

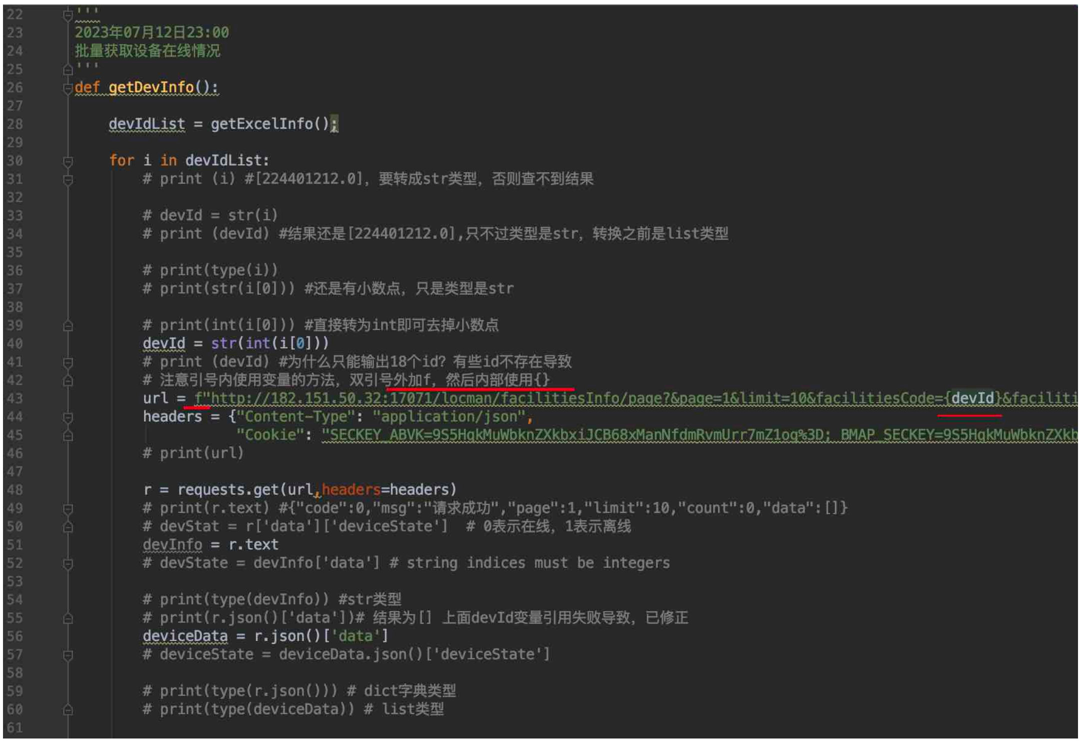


```
Project
▼ Test0402_git [Test0402]  sources root,
  ▶ .pytest_cache
  ▶ api
  ▶ case
  ▶ data
  ▼ ddt_excel
    ▶ .pytest_cache
      20201216LocmanBattery.xlsx
      20201230.xlsx
      20201230LocmanBattery.xlsx
      __init__.py
      chengtou2023.py
      chengtouFixedDev20230712.xlsx
      DDTReadExcel.py
      ddtTest.xlsx
      locman.xlsx
```

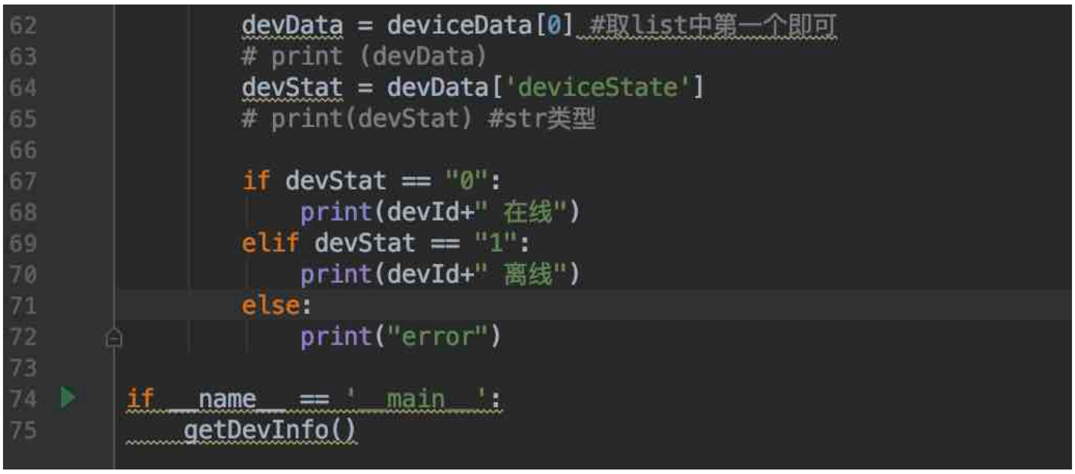
读取excel方法没变：



```python
# -*- coding:utf8 -*-
import requests
import xlrd

'''
读取excel数据
'''
def getExcelInfo(): #读取exel每一行的值
    try:
        data = xlrd.open_workbook("chengtouFixedDev20230712.xlsx")
        sheetname = "Sheet1"
        table = data.sheet_by_name(sheetname)

        nrows =table.nrows #行数
        rowvalues = []
        for i in range(nrows):
            # print(table.row_values(i)) #每一行的值
            rowvalues.append(table.row_values(i))
        return rowvalues
    except Exception as e:
        print(e)
```

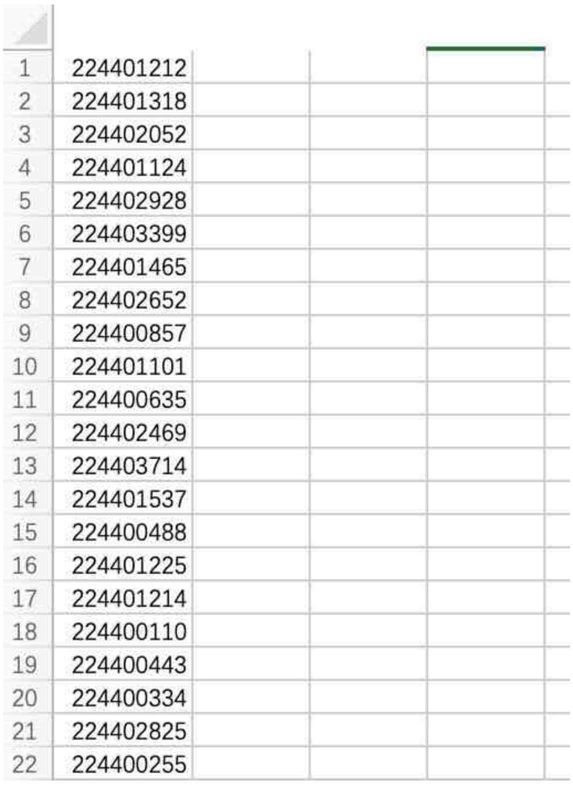


```
'''
2023年07月12日23:00
批量获取设备在线情况
'''
def getDevInfo():

    devIdList = getExcelInfo();

    for i in devIdList:
        # print (i) #[224401212.0], 要转成str类型, 否则查不到结果

        # devId = str(i)
        # print (devId) #结果还是[224401212.0],只不过类型是str, 转换之前是list类型

        # print(type(i))
        # print(str(i[0])) #还是有小数点, 只是类型是str

        # print(int(i[0])) #直接转为int即可去掉小数点
        devId = str(int(i[0]))
        # print (devId) #为什么只能输出18个id? 有些id不存在导致
        # 注意引号内使用变量的方法, 双引号外加f, 然后内部使用{}
        url = f"http://182.151.50.32:17071/locman/facilitiesInfo/page?&page=1&limit=10&facilitiesCode={devId}&faciliti
        headers = {"Content-Type": "application/json",
                   "Cookie": "SECKEY_ABVK=9S5HqkMuWbknZXkbxiJCB68xManNfdmRvmUrr7mZ1oq%3D; BMAP_SECKEY=9S5HqkMuWbknZXkb
        # print(url)

        r = requests.get(url,headers=headers)
        # print(r.text) #{"code":0,"msg":"请求成功","page":1,"limit":10,"count":0,"data":[]}
        # devStat = r['data']['deviceState']  # 0表示在线, 1表示离线
        devInfo = r.text
        # devState = devInfo['data'] # string indices must be integers

        # print(type(devInfo)) #str类型
        # print(r.json()['data'])# 结果为[] 上面devId变量引用失败导致, 已修正
        deviceData = r.json()['data']
        # deviceState = deviceData.json()['deviceState']

        # print(type(r.json())) # dict字典类型
        # print(type(deviceData)) # list类型

```



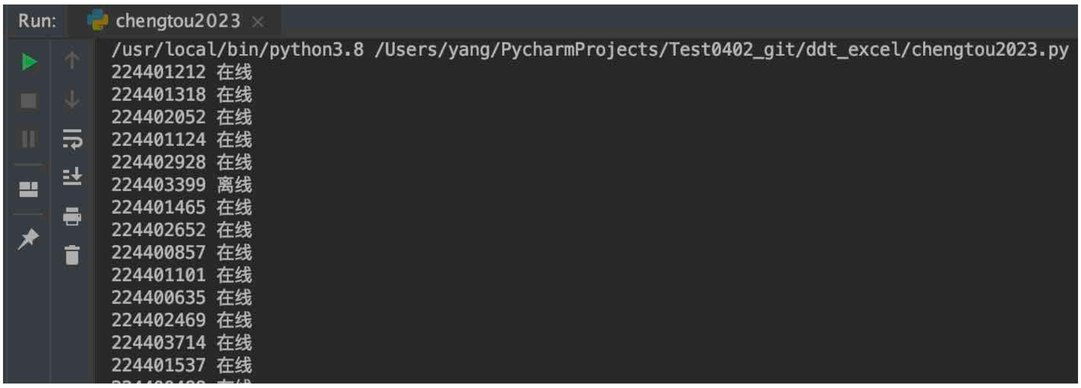
```
        devData = deviceData[0] #取list中第一个即可
        # print (devData)
        devStat = devData['deviceState']
        # print(devStat) #str类型

        if devStat == "0":
            print(devId+" 在线")
        elif devStat == "1":
            print(devId+" 离线")
        else:
            print("error")

if __name__ == '__main__':
    getDevInfo()
```

这是excel的内容，只有设备id：一共71个



1	224401212
2	224401318
3	224402052
4	224401124
5	224402928
6	224403399
7	224401465
8	224402652
9	224400857
10	224401101
11	224400635
12	224402469
13	224403714
14	224401537
15	224400488
16	224401225
17	224401214
18	224400110
19	224400443
20	224400334
21	224402825
22	224400255

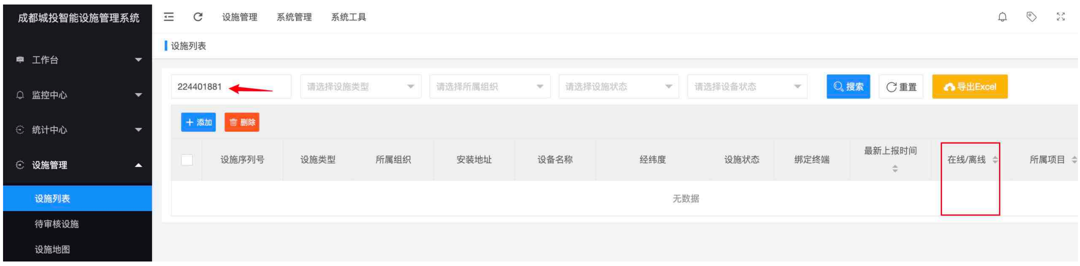
运行效果：



```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py
224401212 在线
224401318 在线
224402052 在线
224401124 在线
224402928 在线
224403399 离线
224401465 在线
224402652 在线
224400857 在线
224401101 在线
224400635 在线
224402469 在线
224403714 在线
224401537 在线
```

优化1：解绑设备无法得知在线离线情况

有几个设备是解绑了的，在设施列表搜不出来，所以无法得知在线情况：

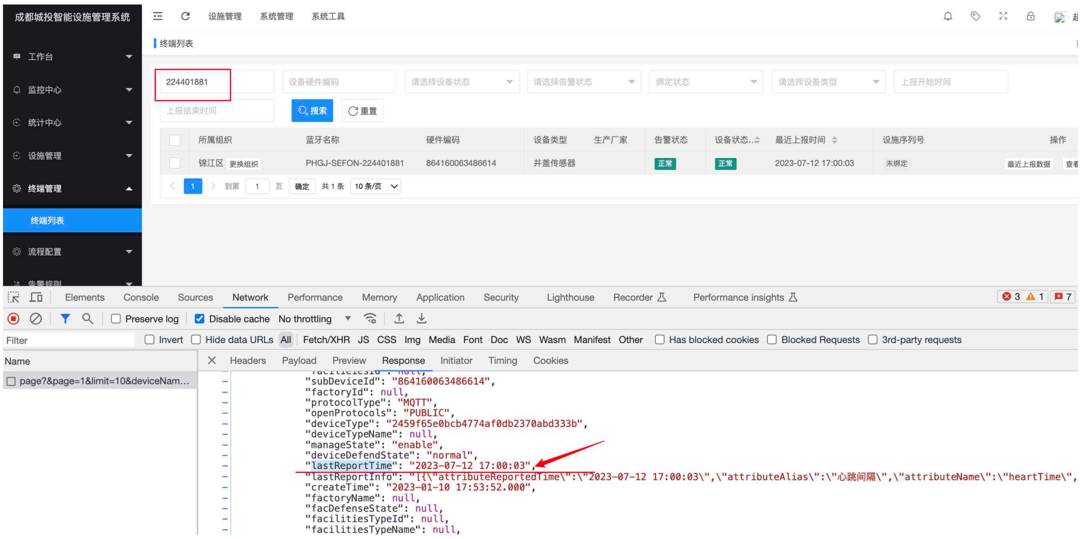


224401881

□	设施序列号	设施类型	所属组织	安装地址	设备名称	经纬度	设施状态	绑定终端	最新上报时间	在线/离线	所属项目

无数据

但是可以在终端列表搜出来：不过属于另外一个接口了



☐	所属组织	蓝牙名称	硬件编码	设备类型	生产厂家	告警状态	设备状态…	最近上报时间	设施序列号	操作
☐	锦江区 更换组织	PHGJ-SEFON-224401881	864160063486614	井盖传感器		正常	正常	2023-07-12 17:00:03	未绑定	最近上报数据 查看

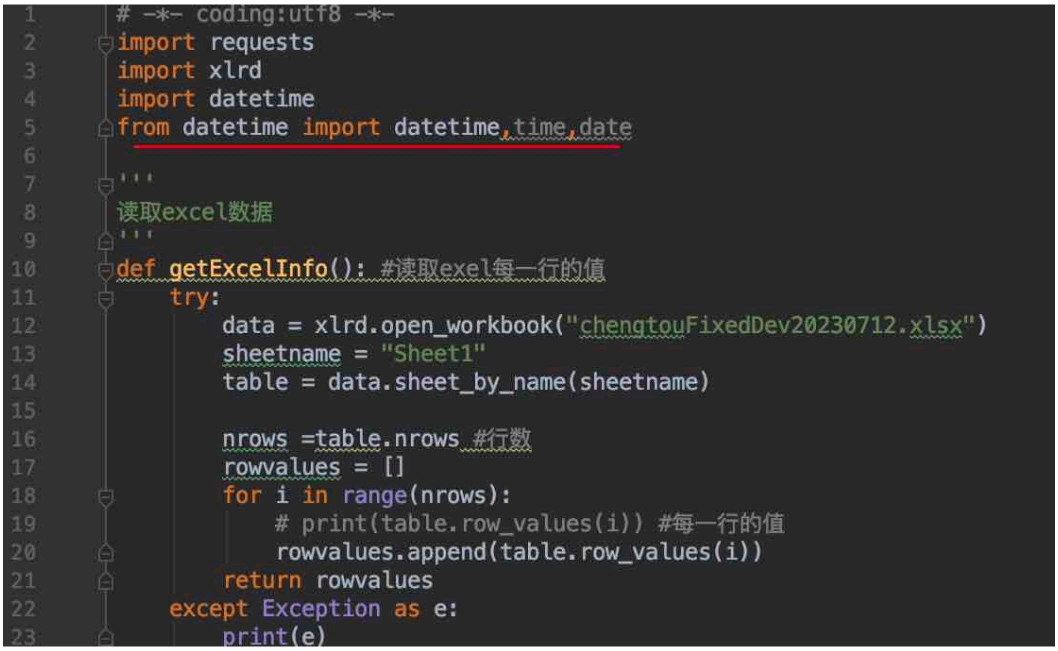
1 到第 1 页 确定 共 1 条 10 条/页

```
"subDeviceId": "864160063486614",
"factoryId": null,
"protocolType": "MQTT",
"openProtocols": "PUBLIC",
"deviceType": "2459f65e0bcb4774af0db2370abd333b",
"deviceTypeName": null,
"manageState": "enable",
"deviceDefendState": "normal",
"lastReportTime": "2023-07-12 17:00:03",
"lastReportInfo": "[{\"attributeReportedTime\":\"2023-07-12 17:00:03\",\"attributeAlias\":\"心跳间隔\",\"attributeName\":\"heartTime\",
"createTime": "2023-01-10 17:53:52.000",
"factoryName": null,
"facDefenseState": null,
"facilitiesTypeId": null,
"facilitiesTypeName": null,
```

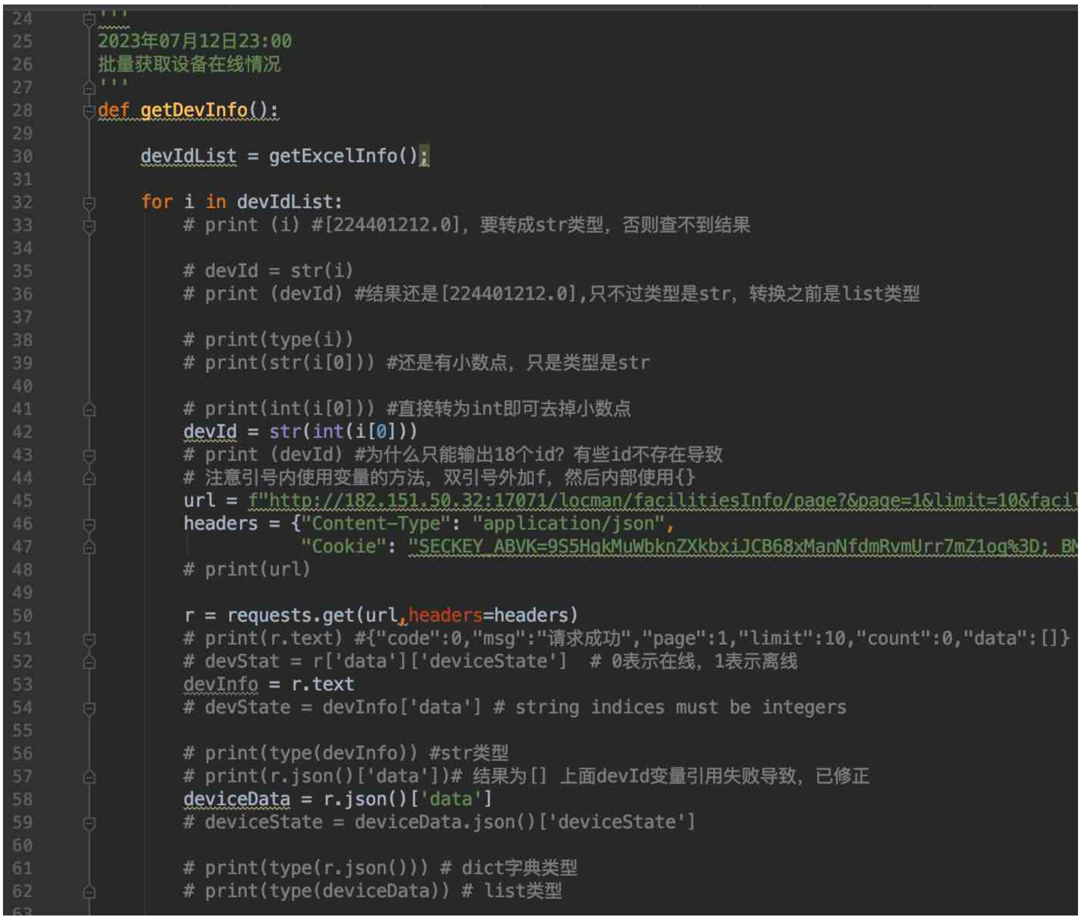
可是没有在线的标志，只有最近上报时间，因此可以用当前时间减去它，得到的结果超过24就表示离线，实现如下：

还有个问题就是需要注意日期类型的转换，函数得到的当前时间类型是datetime.datetime，而lastReportTime字段类型是str

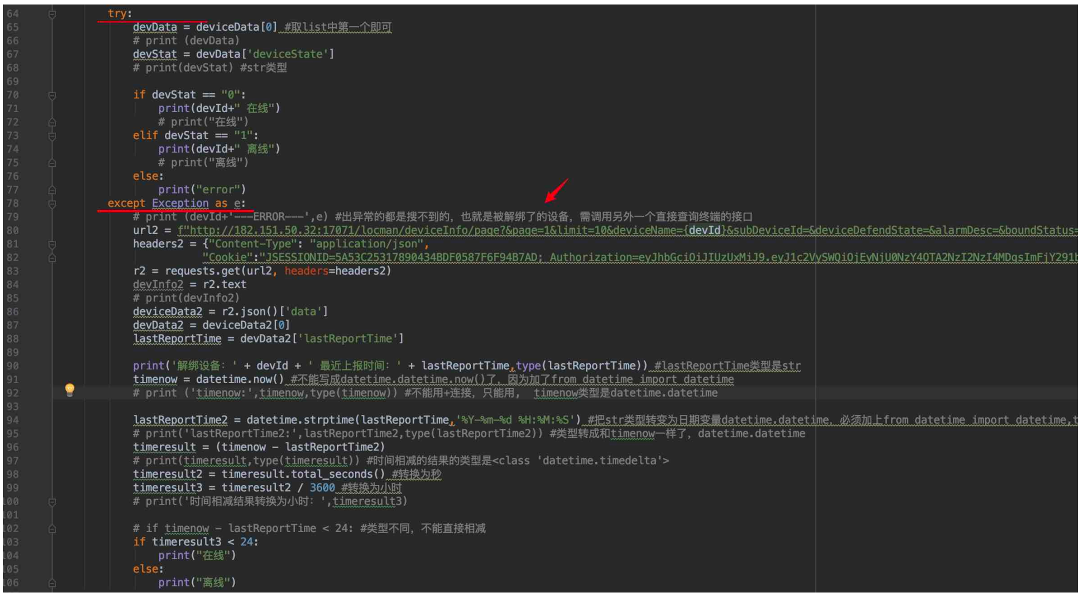
重新汇总一下：



```python
# -*- coding:utf8 -*-
import requests
import xlrd
import datetime
from datetime import datetime,time,date

'''
读取excel数据
'''
def getExcelInfo(): #读取exel每一行的值
    try:
        data = xlrd.open_workbook("chengtouFixedDev20230712.xlsx")
        sheetname = "Sheet1"
        table = data.sheet_by_name(sheetname)

        nrows =table.nrows #行数
        rowvalues = []
        for i in range(nrows):
            # print(table.row_values(i)) #每一行的值
            rowvalues.append(table.row_values(i))
        return rowvalues
    except Exception as e:
        print(e)
```

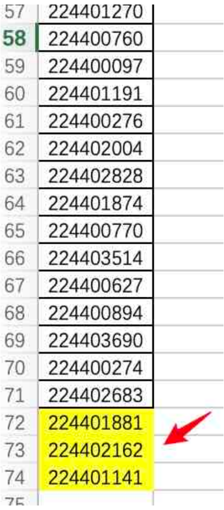


```python
'''
2023年07月12日23:00
批量获取设备在线情况
'''
def getDevInfo():

    devIdList = getExcelInfo();

    for i in devIdList:
        # print (i) #[224401212.0], 要转成str类型, 否则查不到结果

        # devId = str(i)
        # print (devId) #结果还是[224401212.0],只不过类型是str, 转换之前是list类型

        # print(type(i))
        # print(str(i[0])) #还是有小数点, 只是类型是str

        # print(int(i[0])) #直接转为int即可去掉小数点
        devId = str(int(i[0]))
        # print (devId) #为什么只能输出18个id? 有些id不存在导致
        # 注意引号内使用变量的方法, 双引号外加f, 然后内部使用{}
        url = f"http://182.151.50.32:17071/locman/facilitiesInfo/page?&page=1&limit=10&facil
        headers = {"Content-Type": "application/json",
                   "Cookie": "SECKEY_ABVK=9S5HgkMuWbknZXkbxiJCB68xManNfdmRvmUrr7mZ1oq%3D; BM
        # print(url)

        r = requests.get(url,headers=headers)
        # print(r.text) #{"code":0,"msg":"请求成功","page":1,"limit":10,"count":0,"data":[]}
        # devStat = r['data']['deviceState']  # 0表示在线, 1表示离线
        devInfo = r.text
        # devState = devInfo['data'] # string indices must be integers

        # print(type(devInfo)) #str类型
        # print(r.json()['data'])# 结果为[] 上面devId变量引用失败导致, 已修正
        deviceData = r.json()['data']
        # deviceState = deviceData.json()['deviceState']

        # print(type(r.json())) # dict字典类型
        # print(type(deviceData)) # list类型
```



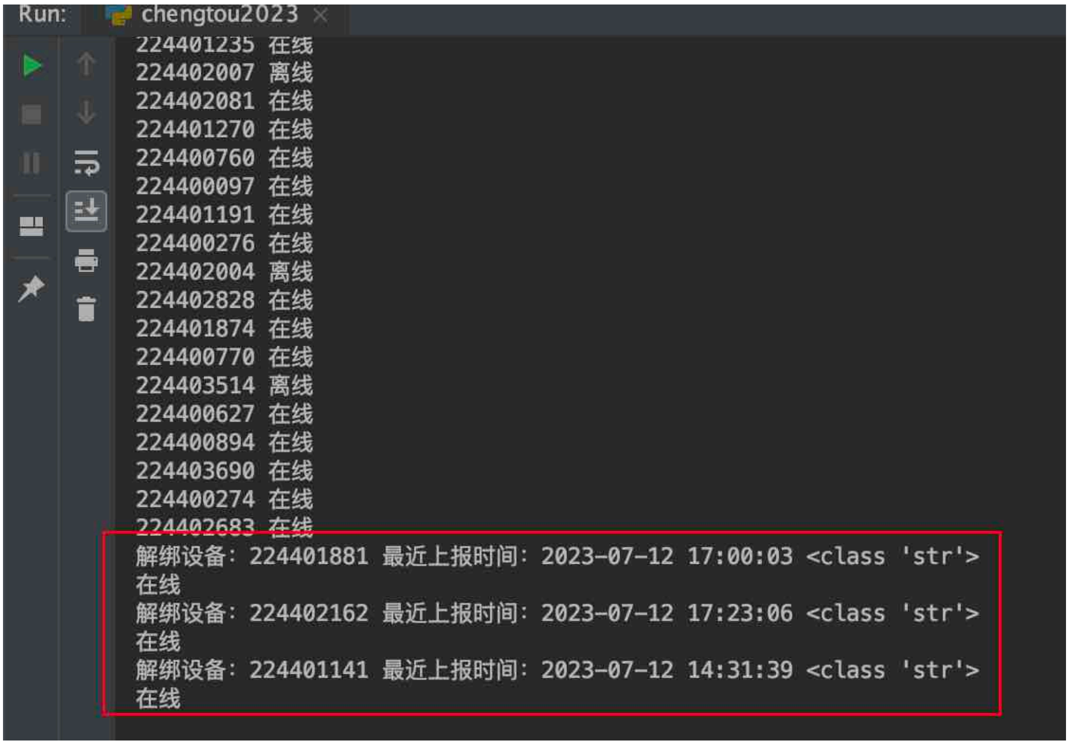
```python
        try:
            devData = deviceData[0] #取list中第一个即可
            # print (devData)
            devStat = devData['deviceState']
            # print(devStat) #str类型

            if devStat == "0":
                print(devId+" 在线")
                # print("在线")
            elif devStat == "1":
                print(devId+" 离线")
                # print("离线")
            else:
                print("error")
        except Exception as e:
            # print (devId+'---ERROR---',e) #出异常的都是搜不到的, 也就是被解绑了的设备, 需调用另外一个直接查询终端的接口
            url2 = f"http://182.151.50.32:17071/locman/deviceInfo/page?&page=1&limit=10&deviceName={devId}&subDeviceId=&deviceDefendState=&alarmDesc=&boundStatus=
            headers2 = {"Content-Type": "application/json",
                        "Cookie":"JSESSIONID=5A53C25317890434BDF0587F6F94B7AD; Authorization=eyJhbGciOiJIUzUxMiJ9.eyJ1c2VySWQiOjEyNjU0NzY4OTA2NzI2NzI4MDgsImFjY291b
            r2 = requests.get(url2, headers=headers2)
            devInfo2 = r2.text
            # print(devInfo2)
            deviceData2 = r2.json()['data']
            devData2 = deviceData2[0]
            lastReportTime = devData2['lastReportTime']

            print('解绑设备: ' + devId + ' 最近上报时间: ' + lastReportTime,type(lastReportTime)) #lastReportTime类型是str
            timenow = datetime.now() #不能写成datetime.datetime.now()了, 因为加了from datetime import datetime
            # print ('timenow:',timenow,type(timenow)) #不能用+连接, 只能用,  timenow类型是datetime.datetime

            lastReportTime2 = datetime.strptime(lastReportTime,'%Y-%m-%d %H:%M:%S') #把str类型转变为日期变量datetime.datetime, 必须加上from datetime import datetime,t
            # print('lastReportTime2:',lastReportTime2,type(lastReportTime2)) #类型转成和timenow一样了, datetime.datetime
            timeresult = (timenow - lastReportTime2)
            # print(timeresult,type(timeresult)) #时间相减的结果的类型是<class 'datetime.timedelta'>
            timeresult2 = timeresult.total_seconds() #转换为秒
            timeresult3 = timeresult2 / 3600 #转换为小时
            # print('时间相减结果转换为小时: ',timeresult3)

            # if timenow - lastReportTime < 24: #类型不同, 不能直接相减
            if timeresult3 < 24:
                print("在线")
            else:
                print("离线")
```

把3个解绑的加到excel：



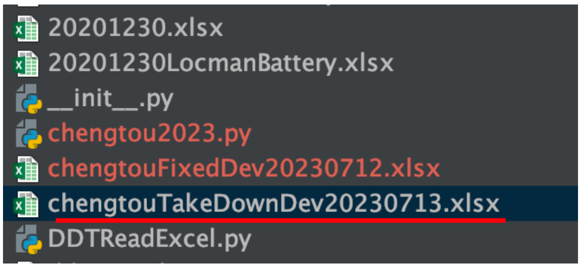
57	224401270
58	224400760
59	224400097
60	224401191
61	224400276
62	224402004
63	224402828
64	224401874
65	224400770
66	224403514
67	224400627
68	224400894
69	224403690
70	224400274
71	224402683
72	224401881
73	224402162
74	224401141
75	

运行结果：

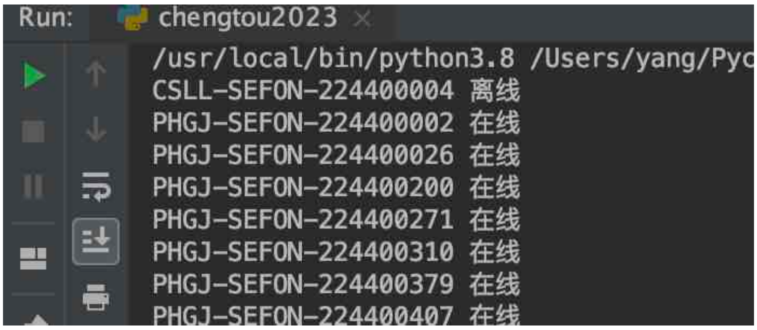


```
224401235 在线
224402007 离线
224402081 在线
224401270 在线
224400760 在线
224400097 在线
224401191 在线
224400276 在线
224402004 离线
224402828 在线
224401874 在线
224400770 在线
224403514 离线
224400627 在线
224400894 在线
224403690 在线
224400274 在线
224402683 在线
解绑设备：224401881 最近上报时间：2023-07-12 17:00:03 <class 'str'>
在线
解绑设备：224402162 最近上报时间：2023-07-12 17:23:06 <class 'str'>
在线
解绑设备：224401141 最近上报时间：2023-07-12 14:31:39 <class 'str'>
在线
```

这是拆回的36个设备运行结果：换一个execl，同理：



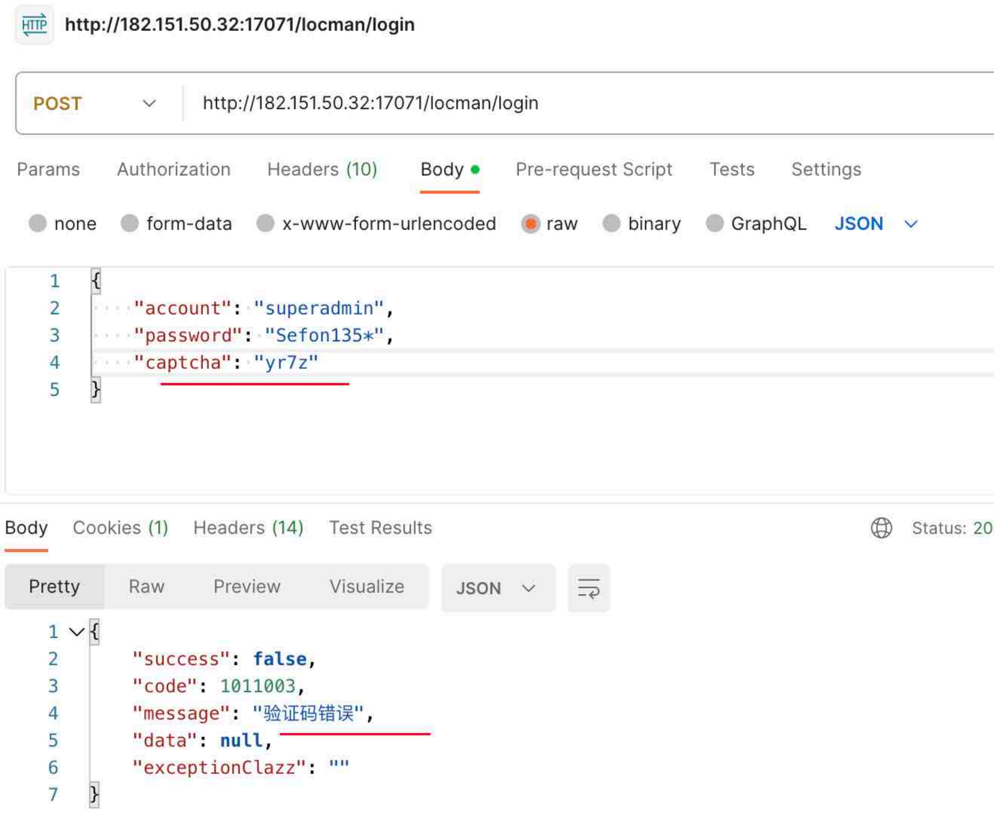
```
20201230.xlsx
20201230LocmanBattery.xlsx
__init__.py
chengtou2023.py
chengtouFixedDev20230712.xlsx
chengtouTakeDownDev20230713.xlsx
DDTReadExcel.py
```



```
/usr/local/bin/python3.8 /Users/yang/Pyc
CSLL-SEFON-224400004 离线
PHGJ-SEFON-224400002 在线
PHGJ-SEFON-224400026 在线
PHGJ-SEFON-224400200 在线
PHGJ-SEFON-224400271 在线
PHGJ-SEFON-224400310 在线
PHGJ-SEFON-224400379 在线
PHGJ-SEFON-224400407 在线
```

优化2思路

可以再次优化，首先加入登录接口，但是我们这里因为是正式环境，所以有验证码，接口里也有验证码：自动化执行就会有问题，所以cookies还是需要每天都手动去更新，没办法，除非是测试环境，没有验证码登录，就可以直接调用登录接口，获取token传给其他接口用。



http://182.151.50.32:17071/locman/login

POST http://182.151.50.32:17071/locman/login

```
{
    "account": "superadmin",
    "password": "Sefon135*",
    "captcha": "yr7z"
}
```

Status: 20

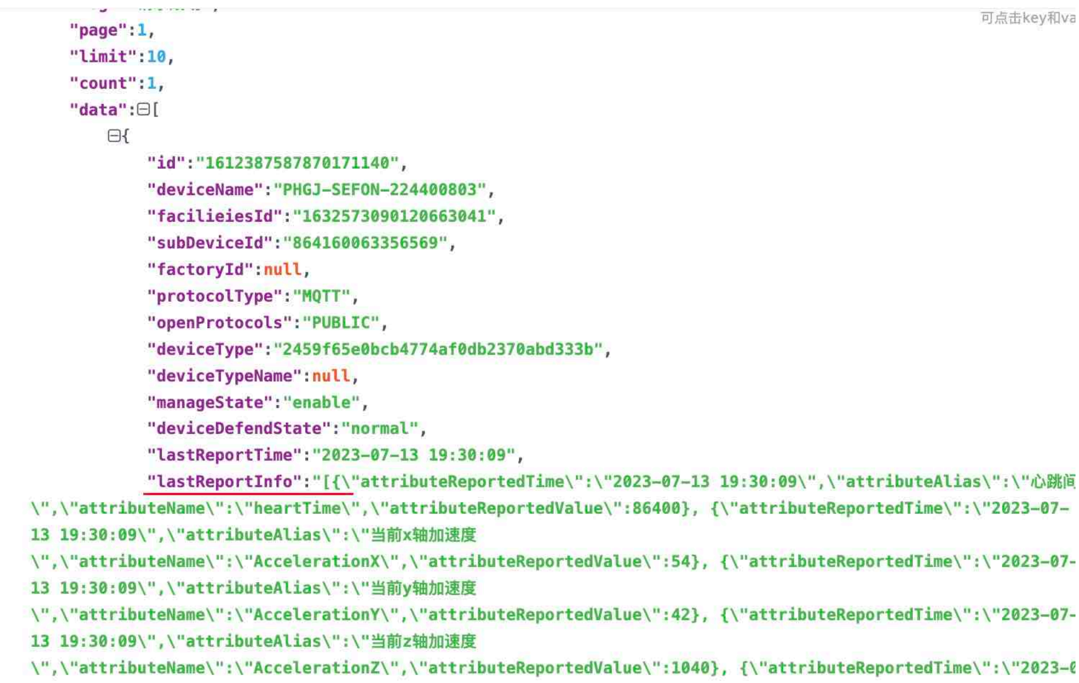
```
{
    "success": false,
    "code": 1011003,
    "message": "验证码错误",
    "data": null,
    "exceptionClazz": ""
}
```

另外，可以用传参的方式，将维修设备和拆回设备分成2个参数，调用方法时直接传参即可，不用去修改代码

需求2：获取已维修和拆回设备的固件版本

实现

进一步精确获取数据：比如版本号，在这个lastReportInfo里面

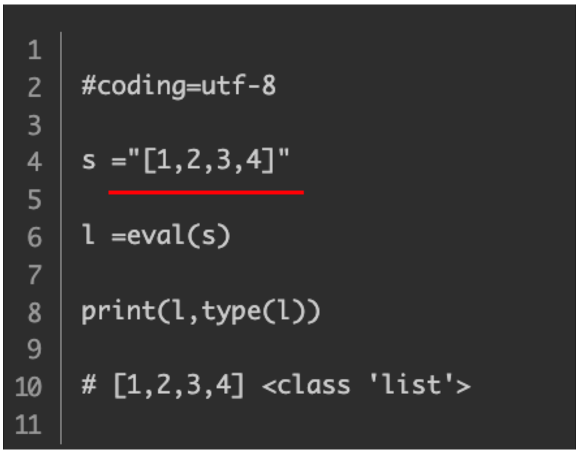


可点击key和va

```
        "page":1,
        "limit":10,
        "count":1,
        "data":⊟[
            ⊟{
                "id":"1612387587870171140",
                "deviceName":"PHGJ-SEFON-224400803",
                "facilieiesId":"1632573090120663041",
                "subDeviceId":"864160063356569",
                "factoryId":null,
                "protocolType":"MQTT",
                "openProtocols":"PUBLIC",
                "deviceType":"2459f65e0bcb4774af0db2370abd333b",
                "deviceTypeName":null,
                "manageState":"enable",
                "deviceDefendState":"normal",
                "lastReportTime":"2023-07-13 19:30:09",
                "lastReportInfo":"[{\"attributeReportedTime\":\"2023-07-13 19:30:09\",\"attributeAlias\":\"心跳间
   \",\"attributeName\":\"heartTime\",\"attributeReportedValue\":86400}, {\"attributeReportedTime\":\"2023-07-
   13 19:30:09\",\"attributeAlias\":\"当前x轴加速度
   \",\"attributeName\":\"AccelerationX\",\"attributeReportedValue\":54}, {\"attributeReportedTime\":\"2023-07-
   13 19:30:09\",\"attributeAlias\":\"当前y轴加速度
   \",\"attributeName\":\"AccelerationY\",\"attributeReportedValue\":42}, {\"attributeReportedTime\":\"2023-07-
   13 19:30:09\",\"attributeAlias\":\"当前z轴加速度
   \",\"attributeName\":\"AccelerationZ\",\"attributeReportedValue\":1040}, {\"attributeReportedTime\":\"2023-0
```

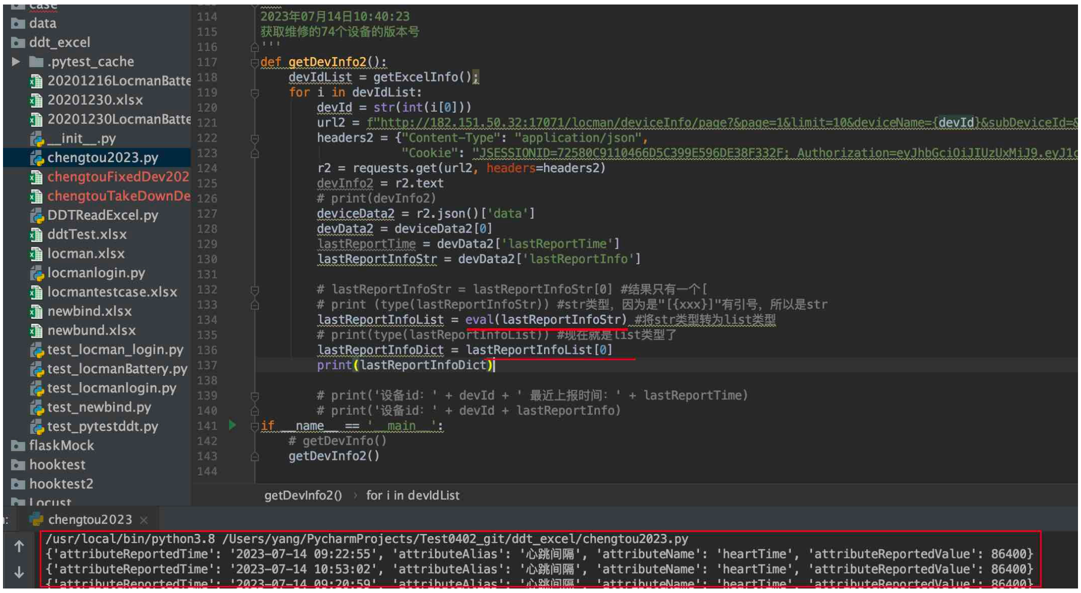
可是打印出的类型是str，因此不能用lastReportInfo[0]取值

网上看到一个，应该是一样的：



```

#coding=utf-8

s ="[1,2,3,4]"

l =eval(s)

print(l,type(l))

# [1,2,3,4] <class 'list'>

```

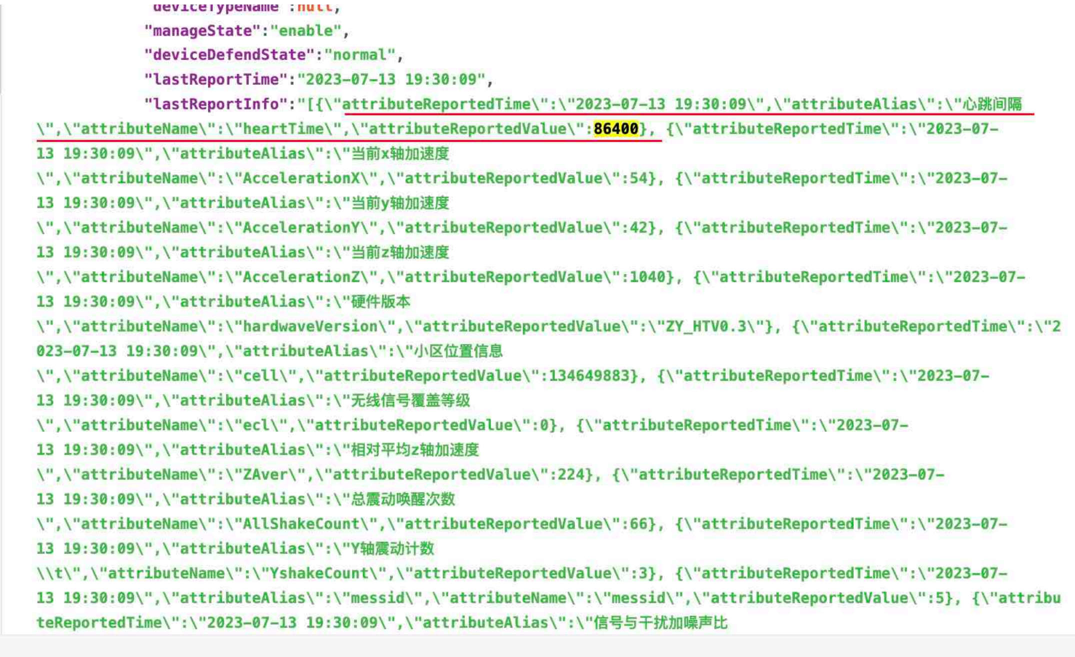
可以获取到lastReportInfo字典里的内容了：



```
2023年07月14日10:40:23
获取维修的74个设备的版本号
'''
def getDevInfo2():
    devIdList = getExcelInfo();
    for i in devIdList:
        devId = str(int(i[0]))
        url2 = f"http://182.151.50.32:17071/locman/deviceInfo/page?&page=1&limit=10&deviceName={devId}&subDeviceId=&
        headers2 = {"Content-Type": "application/json",
                    "Cookie": "JSESSIONID=72580C9110466D5C399E596DE38F332F; Authorization=eyJhbGciOiJIUzUxMiJ9.eyJ1c
        r2 = requests.get(url2, headers=headers2)
        devInfo2 = r2.text
        # print(devInfo2)
        deviceData2 = r2.json()['data']
        devData2 = deviceData2[0]
        lastReportTime = devData2['lastReportTime']
        lastReportInfoStr = devData2['lastReportInfo']

        # lastReportInfoStr = lastReportInfoStr[0] #结果只有一个[
        # print (type(lastReportInfoStr)) #str类型，因为是"[{xxx}]"有引号，所以是str
        lastReportInfoList = eval(lastReportInfoStr) #将str类型转为list类型
        # print(type(lastReportInfoList)) #现在就是list类型了
        lastReportInfoDict = lastReportInfoList[0]
        print(lastReportInfoDict)

        # print('设备id: ' + devId + ' 最近上报时间: ' + lastReportTime)
        # print('设备id: ' + devId + lastReportInfo)
if __name__ == '__main__':
    # getDevInfo()
    getDevInfo2()
```

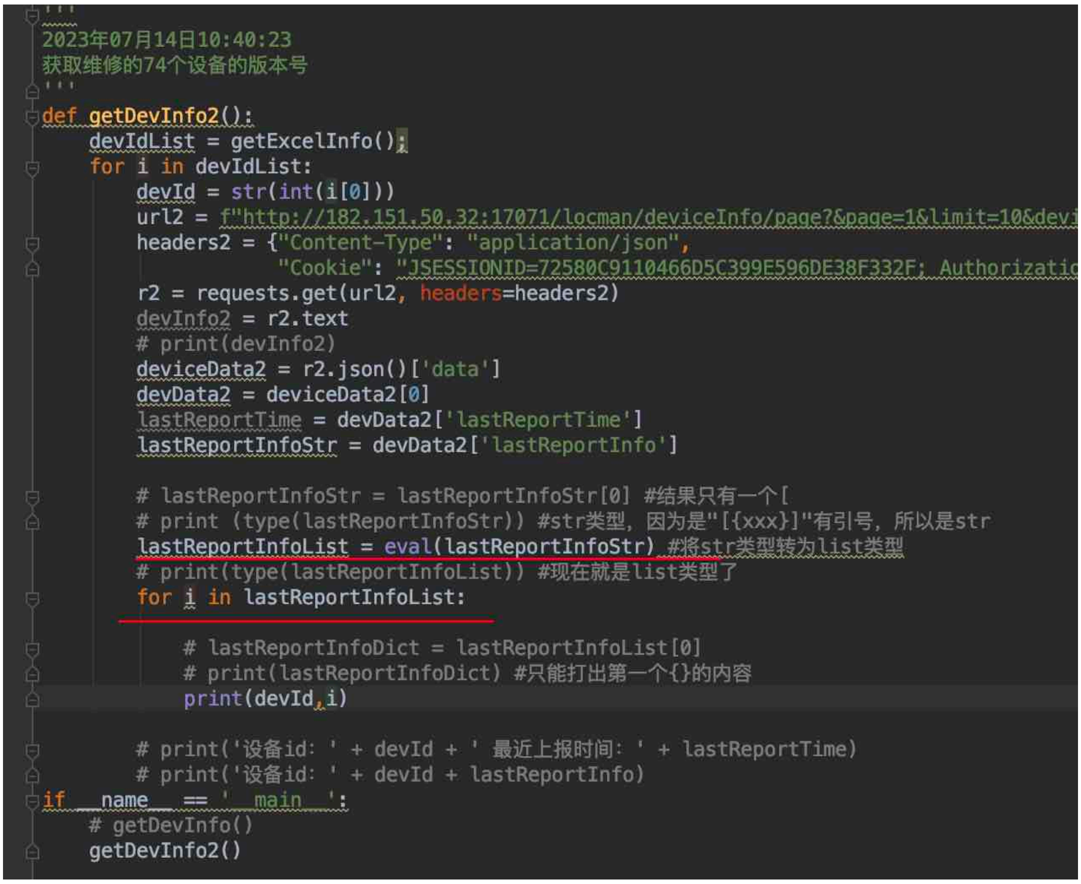
```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py
{'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '心跳间隔', 'attributeName': 'heartTime', 'attributeReportedValue': 86400}
{'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '心跳间隔', 'attributeName': 'heartTime', 'attributeReportedValue': 86400}
{'attributeReportedTime': '2023-07-14 09:20:59', 'attributeAlias': '心跳间隔', 'attributeName': 'heartTime', 'attributeReportedValue': 86400}
```

可以看到，只获取到了第一个{}里的内容：

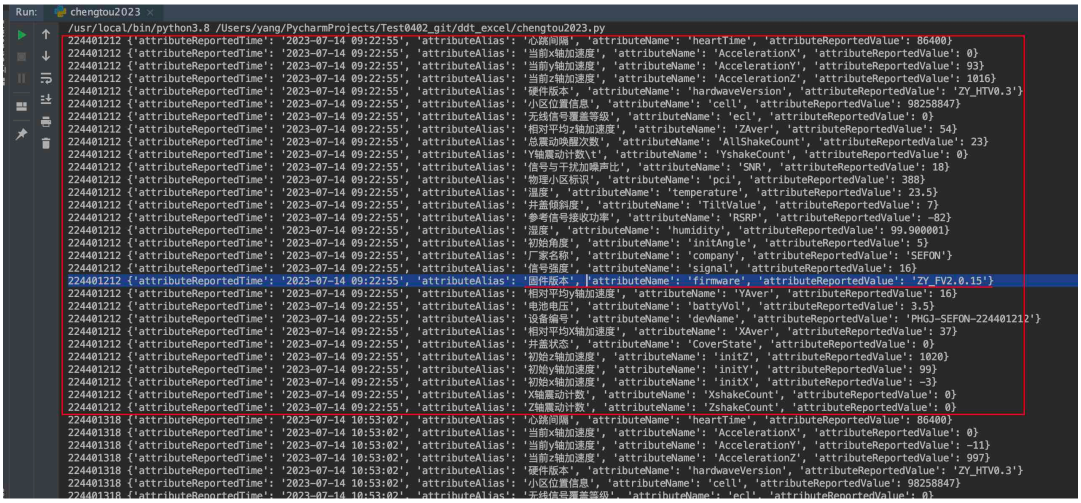


```
                "deviceTypeName":null,
                "manageState":"enable",
                "deviceDefendState":"normal",
                "lastReportTime":"2023-07-13 19:30:09",
                "lastReportInfo":"[{\"attributeReportedTime\":\"2023-07-13 19:30:09\",\"attributeAlias\":\"心跳间隔
\",\"attributeName\":\"heartTime\",\"attributeReportedValue\":86400}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"当前x轴加速度
\",\"attributeName\":\"AccelerationX\",\"attributeReportedValue\":54}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"当前y轴加速度
\",\"attributeName\":\"AccelerationY\",\"attributeReportedValue\":42}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"当前z轴加速度
\",\"attributeName\":\"AccelerationZ\",\"attributeReportedValue\":1040}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"硬件版本
\",\"attributeName\":\"hardwaveVersion\",\"attributeReportedValue\":\"ZY_HTV0.3\"}, {\"attributeReportedTime\":\"2
023-07-13 19:30:09\",\"attributeAlias\":\"小区位置信息
\",\"attributeName\":\"cell\",\"attributeReportedValue\":134649883}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"无线信号覆盖等级
\",\"attributeName\":\"ecl\",\"attributeReportedValue\":0}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"相对平均z轴加速度
\",\"attributeName\":\"ZAver\",\"attributeReportedValue\":224}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"总震动唤醒次数
\",\"attributeName\":\"AllShakeCount\",\"attributeReportedValue\":66}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"Y轴震动计数
\\t\",\"attributeName\":\"YshakeCount\",\"attributeReportedValue\":3}, {\"attributeReportedTime\":\"2023-07-
13 19:30:09\",\"attributeAlias\":\"messid\",\"attributeName\":\"messid\",\"attributeReportedValue\":5}, {\"attribu
teReportedTime\":\"2023-07-13 19:30:09\",\"attributeAlias\":\"信号与干扰加噪声比
```

看下每个设备的info有多少个字段：

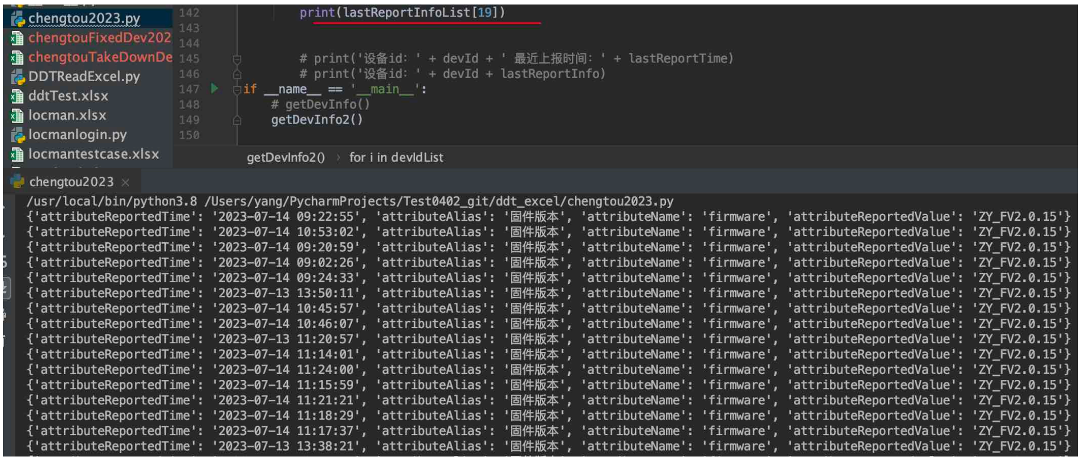


```python
'''
2023年07月14日10:40:23
获取维修的74个设备的版本号
'''
def getDevInfo2():
    devIdList = getExcelInfo();
    for i in devIdList:
        devId = str(int(i[0]))
        url2 = f"http://182.151.50.32:17071/locman/deviceInfo/page?&page=1&limit=10&devi
        headers2 = {"Content-Type": "application/json",
                    "Cookie": "JSESSIONID=72580C9110466D5C399E596DE38F332F; Authorizatio
        r2 = requests.get(url2, headers=headers2)
        devInfo2 = r2.text
        # print(devInfo2)
        deviceData2 = r2.json()['data']
        devData2 = deviceData2[0]
        lastReportTime = devData2['lastReportTime']
        lastReportInfoStr = devData2['lastReportInfo']

        # lastReportInfoStr = lastReportInfoStr[0] #结果只有一个[
        # print (type(lastReportInfoStr)) #str类型，因为是"[{xxx}]"有引号，所以是str
        lastReportInfoList = eval(lastReportInfoStr) #将str类型转为list类型
        # print(type(lastReportInfoList)) #现在就是list类型了
        for i in lastReportInfoList:

            # lastReportInfoDict = lastReportInfoList[0]
            # print(lastReportInfoDict) #只能打出第一个{}的内容
            print(devId,i)

        # print('设备id: ' + devId + ' 最近上报时间: ' + lastReportTime)
        # print('设备id: ' + devId + lastReportInfo)
if __name__ == '__main__':
    # getDevInfo()
    getDevInfo2()
```



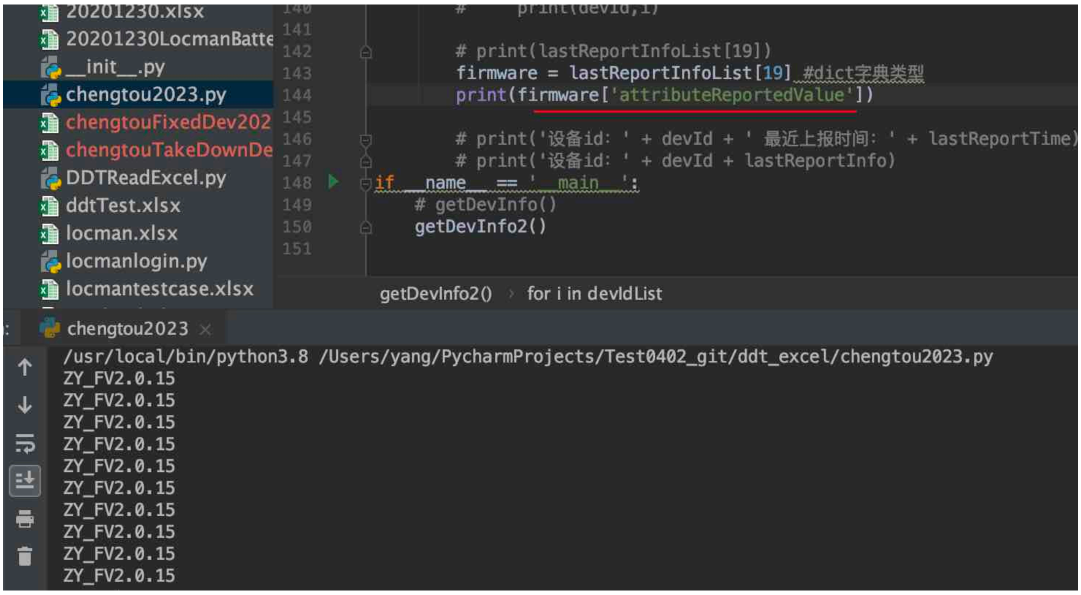
```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '心跳间隔', 'attributeName': 'heartTime', 'attributeReportedValue': 86400}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '当前x轴加速度', 'attributeName': 'AccelerationX', 'attributeReportedValue': 0}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '当前y轴加速度', 'attributeName': 'AccelerationY', 'attributeReportedValue': 93}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '当前z轴加速度', 'attributeName': 'AccelerationZ', 'attributeReportedValue': 1016}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '硬件版本', 'attributeName': 'hardwaveVersion', 'attributeReportedValue': 'ZY_HTV0.3'}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '小区位置信息', 'attributeName': 'cell', 'attributeReportedValue': 98258847}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '无线信号覆盖等级', 'attributeName': 'ecl', 'attributeReportedValue': 0}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '相对平均z轴加速度', 'attributeName': 'ZAver', 'attributeReportedValue': 54}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '总震动唤醒次数', 'attributeName': 'AllShakeCount', 'attributeReportedValue': 23}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': 'Y轴震动计数\t', 'attributeName': 'YshakeCount', 'attributeReportedValue': 0}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '信号与干扰加噪声比', 'attributeName': 'SNR', 'attributeReportedValue': 18}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '物理小区标识', 'attributeName': 'pci', 'attributeReportedValue': 388}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '温度', 'attributeName': 'temperature', 'attributeReportedValue': 23.5}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '井盖倾斜度', 'attributeName': 'TiltValue', 'attributeReportedValue': 7}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '参考信号接收功率', 'attributeName': 'RSRP', 'attributeReportedValue': -82}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '湿度', 'attributeName': 'humidity', 'attributeReportedValue': 99.900001}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '初始角度', 'attributeName': 'initAngle', 'attributeReportedValue': 5}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '厂家名称', 'attributeName': 'company', 'attributeReportedValue': 'SEFON'}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '信号强度', 'attributeName': 'signal', 'attributeReportedValue': 16}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '相对平均y轴加速度', 'attributeName': 'YAver', 'attributeReportedValue': 16}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '电池电压', 'attributeName': 'battyVol', 'attributeReportedValue': 3.5}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '设备编号', 'attributeName': 'devName', 'attributeReportedValue': 'PHGJ-SEFON-224401212'}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '相对平均X轴加速度', 'attributeName': 'XAver', 'attributeReportedValue': 37}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '井盖状态', 'attributeName': 'CoverState', 'attributeReportedValue': 0}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '初始z轴加速度', 'attributeName': 'initZ', 'attributeReportedValue': 1020}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '初始y轴加速度', 'attributeName': 'initY', 'attributeReportedValue': 99}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '初始x轴加速度', 'attributeName': 'initX', 'attributeReportedValue': -3}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': 'X轴震动计数', 'attributeName': 'XshakeCount', 'attributeReportedValue': 0}
224401212 {'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': 'Z轴震动计数', 'attributeName': 'ZshakeCount', 'attributeReportedValue': 0}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '心跳间隔', 'attributeName': 'heartTime', 'attributeReportedValue': 86400}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '当前x轴加速度', 'attributeName': 'AccelerationX', 'attributeReportedValue': 0}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '当前y轴加速度', 'attributeName': 'AccelerationY', 'attributeReportedValue': -11}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '当前z轴加速度', 'attributeName': 'AccelerationZ', 'attributeReportedValue': 997}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '硬件版本', 'attributeName': 'hardwaveVersion', 'attributeReportedValue': 'ZY_HTV0.3'}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '小区位置信息', 'attributeName': 'cell', 'attributeReportedValue': 98258847}
224401318 {'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '无线信号覆盖等级', 'attributeName': 'ecl', 'attributeReportedValue': 0}
```

我只需要用到固件版本，是第20个字段：



```
            print(lastReportInfoList[19])


        # print('设备id: ' + devId + ' 最近上报时间: ' + lastReportTime)
        # print('设备id: ' + devId + lastReportInfo)
if __name__ == '__main__':
    # getDevInfo()
    getDevInfo2()
```

```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py
{'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 09:20:59', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 09:02:26', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 09:24:33', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-13 13:50:11', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 10:45:57', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 10:46:07', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-13 11:20:57', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 11:14:01', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 11:24:00', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 11:15:59', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 11:21:21', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 11:18:29', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-14 11:17:37', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
{'attributeReportedTime': '2023-07-13 13:38:21', 'attributeAlias': '固件版本', 'attributeName': 'firmware', 'attributeReportedValue': 'ZY_FV2.0.15'}
```

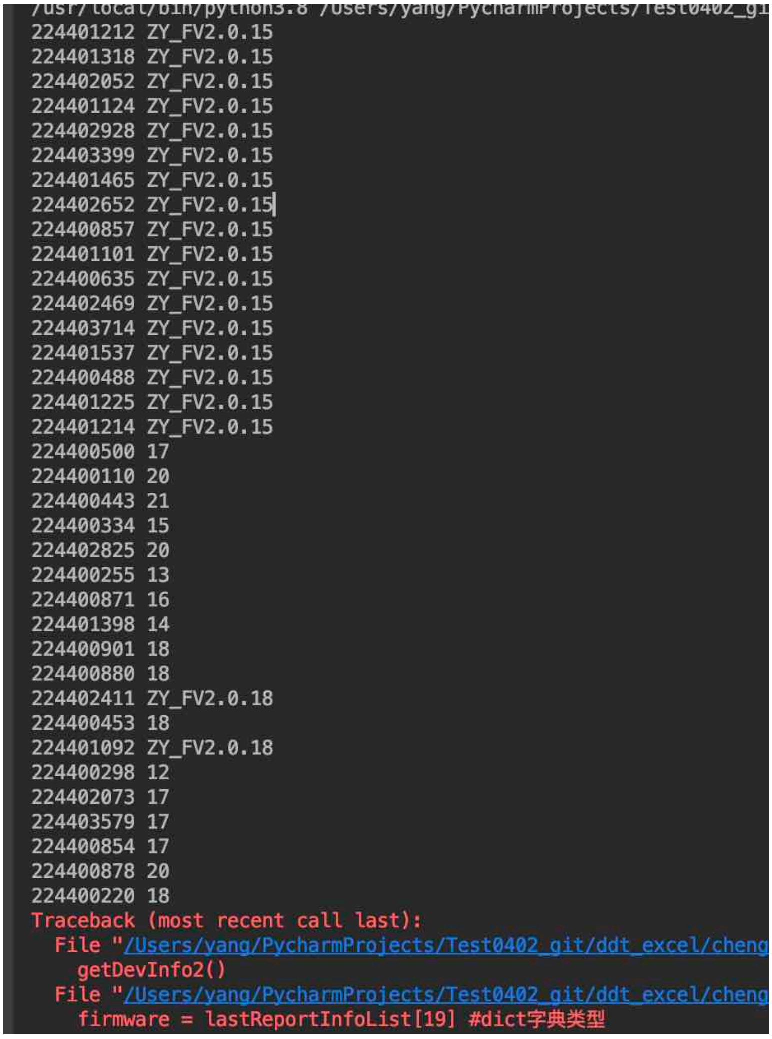


```
            #     print(devId,i)

            # print(lastReportInfoList[19])
            firmware = lastReportInfoList[19] #dict字典类型
            print(firmware['attributeReportedValue'])

        # print('设备id: ' + devId + ' 最近上报时间: ' + lastReportTime)
        # print('设备id: ' + devId + lastReportInfo)
if __name__ == '__main__':
    # getDevInfo()
    getDevInfo2()
```

```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
ZY_FV2.0.15
```

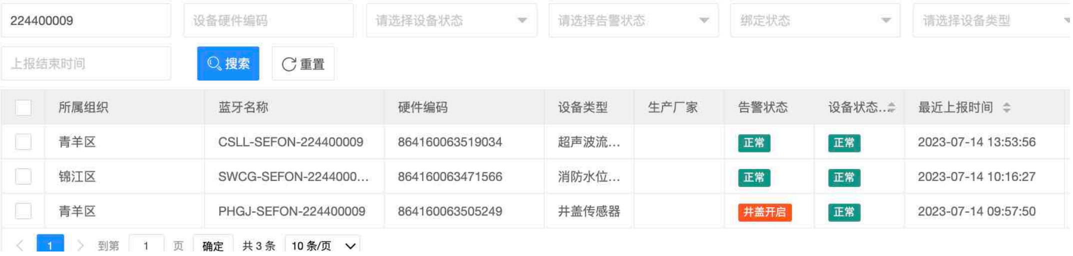
问题：（已解决）索引错误（已维修excel因为设备id没写全，有些id搜出来是多个值，补全id即可）

但还是有问题，有些设备上报字段不尽相同，所以下标19的并不一定是版本号：



```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_gi
224401212 ZY_FV2.0.15
224401318 ZY_FV2.0.15
224402052 ZY_FV2.0.15
224401124 ZY_FV2.0.15
224402928 ZY_FV2.0.15
224403399 ZY_FV2.0.15
224401465 ZY_FV2.0.15
224402652 ZY_FV2.0.15
224400857 ZY_FV2.0.15
224401101 ZY_FV2.0.15
224400635 ZY_FV2.0.15
224402469 ZY_FV2.0.15
224403714 ZY_FV2.0.15
224401537 ZY_FV2.0.15
224400488 ZY_FV2.0.15
224401225 ZY_FV2.0.15
224401214 ZY_FV2.0.15
224400500 17
224400110 20
224400443 21
224400334 15
224402825 20
224400255 13
224400871 16
224401398 14
224400901 18
224400880 18
224402411 ZY_FV2.0.18
224400453 18
224401092 ZY_FV2.0.18
224400298 12
224402073 17
224403579 17
224400854 17
224400878 20
224400220 18
Traceback (most recent call last):
  File "/Users/yang/PycharmProjects/Test0402_git/ddt_excel/cheng
    getDevInfo2()
  File "/Users/yang/PycharmProjects/Test0402_git/ddt_excel/cheng
    firmware = lastReportInfoList[19] #dict字典类型
```

我看了下，主要原因是这个，因为编号不全，搜出来的有多个：

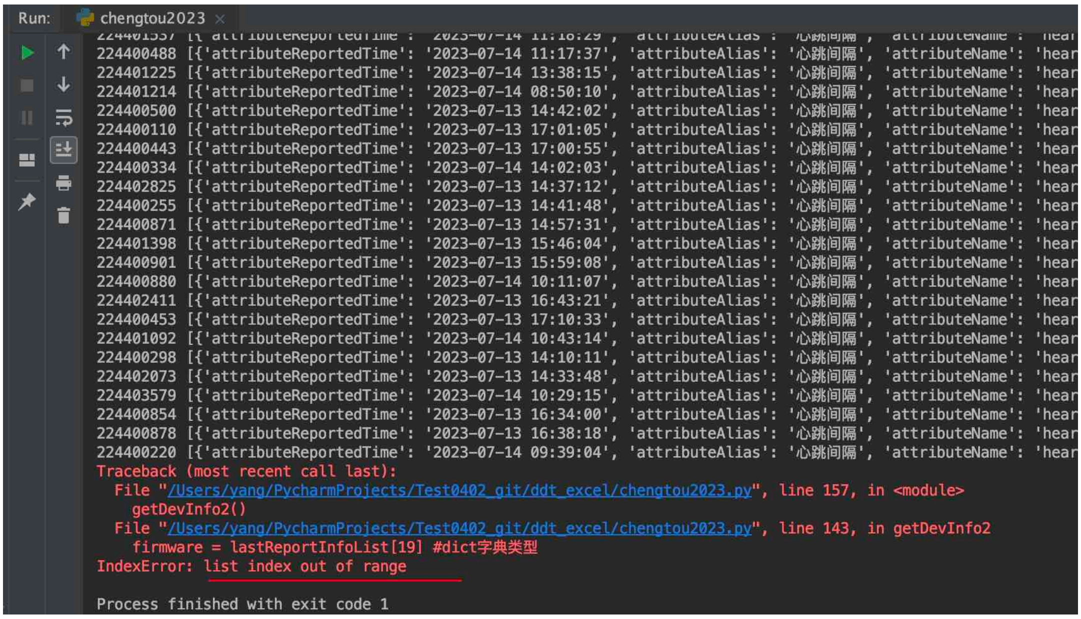


224400009

□	所属组织	蓝牙名称	硬件编码	设备类型	生产厂家	告警状态	设备状态...	最近上报时间
□	青羊区	CSLL-SEFON-224400009	864160063519034	超声波流...		正常	正常	2023-07-14 13:53:56
□	锦江区	SWCG-SEFON-2244000...	864160063471566	消防水位...		正常	正常	2023-07-14 10:16:27
□	青羊区	PHGJ-SEFON-224400009	864160063505249	井盖传感器		井盖开启	正常	2023-07-14 09:57:50

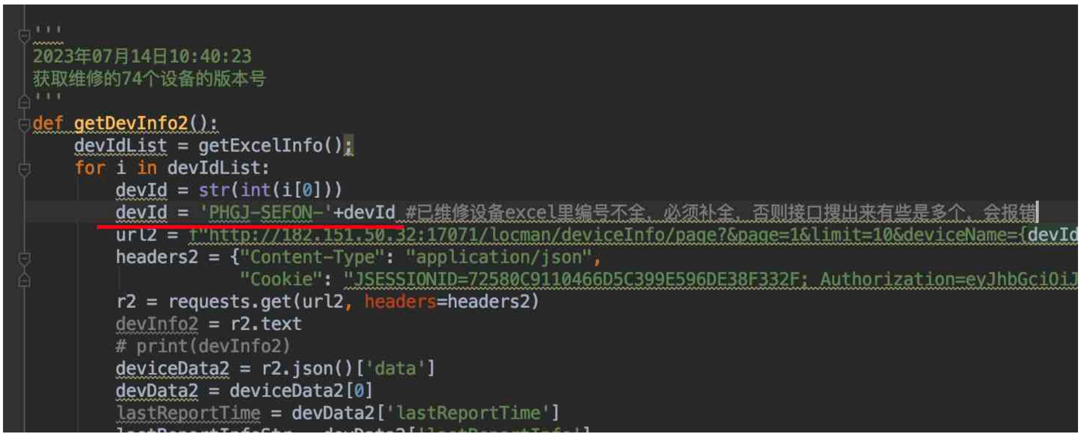
< 1 > 到第 1 页 确定 共 3 条 10 条/页

所以报索引错误：

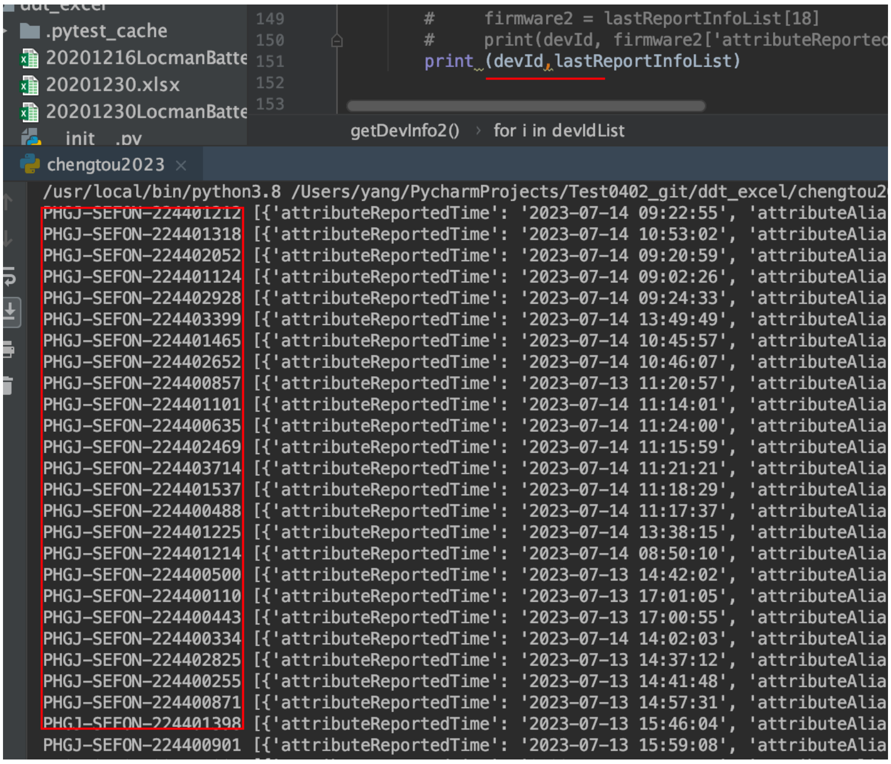


```
224401537 [{'attributeReportedTime': '2023-07-14 11:18:29', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400488 [{'attributeReportedTime': '2023-07-14 11:17:37', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224401225 [{'attributeReportedTime': '2023-07-14 13:38:15', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224401214 [{'attributeReportedTime': '2023-07-14 08:50:10', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400500 [{'attributeReportedTime': '2023-07-13 14:42:02', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400110 [{'attributeReportedTime': '2023-07-13 17:01:05', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400443 [{'attributeReportedTime': '2023-07-13 17:00:55', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400334 [{'attributeReportedTime': '2023-07-14 14:02:03', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224402825 [{'attributeReportedTime': '2023-07-13 14:37:12', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400255 [{'attributeReportedTime': '2023-07-13 14:41:48', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400871 [{'attributeReportedTime': '2023-07-13 14:57:31', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224401398 [{'attributeReportedTime': '2023-07-13 15:46:04', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400901 [{'attributeReportedTime': '2023-07-13 15:59:08', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400880 [{'attributeReportedTime': '2023-07-14 10:11:07', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224402411 [{'attributeReportedTime': '2023-07-13 16:43:21', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400453 [{'attributeReportedTime': '2023-07-13 17:10:33', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224401092 [{'attributeReportedTime': '2023-07-14 10:43:14', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400298 [{'attributeReportedTime': '2023-07-13 14:10:11', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224402073 [{'attributeReportedTime': '2023-07-13 14:33:48', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224403579 [{'attributeReportedTime': '2023-07-14 10:29:15', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400854 [{'attributeReportedTime': '2023-07-13 16:34:00', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400878 [{'attributeReportedTime': '2023-07-13 16:38:18', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
224400220 [{'attributeReportedTime': '2023-07-14 09:39:04', 'attributeAlias': '心跳间隔', 'attributeName': 'hear
Traceback (most recent call last):
  File "/Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py", line 157, in <module>
    getDevInfo2()
  File "/Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py", line 143, in getDevInfo2
    firmware = lastReportInfoList[19] #dict字典类型
IndexError: list index out of range

Process finished with exit code 1
```

解决方法很简答，补全即可，不用去修改原来的excel，要改74次太麻烦，直接：



```
'''
2023年07月14日10:40:23
获取维修的74个设备的版本号
'''
def getDevInfo2():
    devIdList = getExcelInfo();
    for i in devIdList:
        devId = str(int(i[0]))
        devId = 'PHGJ-SEFON-'+devId #已维修设备excel里编号不全，必须补全，否则接口搜出来有些是多个，会报错
        url2 = f"http://182.151.50.32:17071/locman/deviceInfo/page?&page=1&limit=10&deviceName={devId
        headers2 = {"Content-Type": "application/json",
                    "Cookie": "JSESSIONID=72580C9110466D5C399E596DE38F332F; Authorization=eyJhbGciOiJ
        r2 = requests.get(url2, headers=headers2)
        devInfo2 = r2.text
        # print(devInfo2)
        deviceData2 = r2.json()['data']
        devData2 = deviceData2[0]
        lastReportTime = devData2['lastReportTime']
        lastReportInfoStr = devData2['lastReportInfo']
```

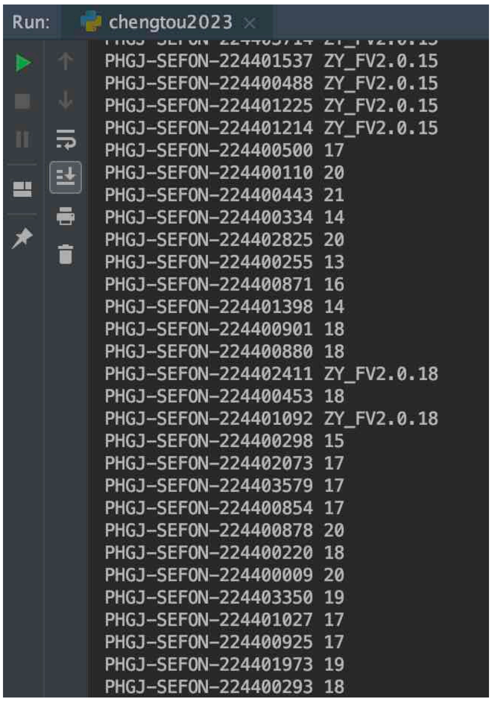


```
        #       firmware2 = lastReportInfoList[18]
        #       print(devId, firmware2['attributeReported
        print (devId, lastReportInfoList)
```

```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2
PHGJ-SEFON-224401212 [{'attributeReportedTime': '2023-07-14 09:22:55', 'attributeAlia
PHGJ-SEFON-224401318 [{'attributeReportedTime': '2023-07-14 10:53:02', 'attributeAlia
PHGJ-SEFON-224402052 [{'attributeReportedTime': '2023-07-14 09:20:59', 'attributeAlia
PHGJ-SEFON-224401124 [{'attributeReportedTime': '2023-07-14 09:02:26', 'attributeAlia
PHGJ-SEFON-224402928 [{'attributeReportedTime': '2023-07-14 09:24:33', 'attributeAlia
PHGJ-SEFON-224403399 [{'attributeReportedTime': '2023-07-14 13:49:49', 'attributeAlia
PHGJ-SEFON-224401465 [{'attributeReportedTime': '2023-07-14 10:45:57', 'attributeAlia
PHGJ-SEFON-224402652 [{'attributeReportedTime': '2023-07-14 10:46:07', 'attributeAlia
PHGJ-SEFON-224400857 [{'attributeReportedTime': '2023-07-13 11:20:57', 'attributeAlia
PHGJ-SEFON-224401101 [{'attributeReportedTime': '2023-07-14 11:14:01', 'attributeAlia
PHGJ-SEFON-224400635 [{'attributeReportedTime': '2023-07-14 11:24:00', 'attributeAlia
PHGJ-SEFON-224402469 [{'attributeReportedTime': '2023-07-14 11:15:59', 'attributeAlia
PHGJ-SEFON-224403714 [{'attributeReportedTime': '2023-07-14 11:21:21', 'attributeAlia
PHGJ-SEFON-224401537 [{'attributeReportedTime': '2023-07-14 11:18:29', 'attributeAlia
PHGJ-SEFON-224400488 [{'attributeReportedTime': '2023-07-14 11:17:37', 'attributeAlia
PHGJ-SEFON-224401225 [{'attributeReportedTime': '2023-07-14 13:38:15', 'attributeAlia
PHGJ-SEFON-224401214 [{'attributeReportedTime': '2023-07-14 08:50:10', 'attributeAlia
PHGJ-SEFON-224400500 [{'attributeReportedTime': '2023-07-13 14:42:02', 'attributeAlia
PHGJ-SEFON-224400110 [{'attributeReportedTime': '2023-07-13 17:01:05', 'attributeAlia
PHGJ-SEFON-224400443 [{'attributeReportedTime': '2023-07-13 17:00:55', 'attributeAlia
PHGJ-SEFON-224400334 [{'attributeReportedTime': '2023-07-14 14:02:03', 'attributeAlia
PHGJ-SEFON-224402825 [{'attributeReportedTime': '2023-07-13 14:37:12', 'attributeAlia
PHGJ-SEFON-224400255 [{'attributeReportedTime': '2023-07-13 14:41:48', 'attributeAlia
PHGJ-SEFON-224400871 [{'attributeReportedTime': '2023-07-13 14:57:31', 'attributeAlia
PHGJ-SEFON-224401398 [{'attributeReportedTime': '2023-07-13 15:46:04', 'attributeAlia
PHGJ-SEFON-224400901 [{'attributeReportedTime': '2023-07-13 15:59:08', 'attributeAlia
```

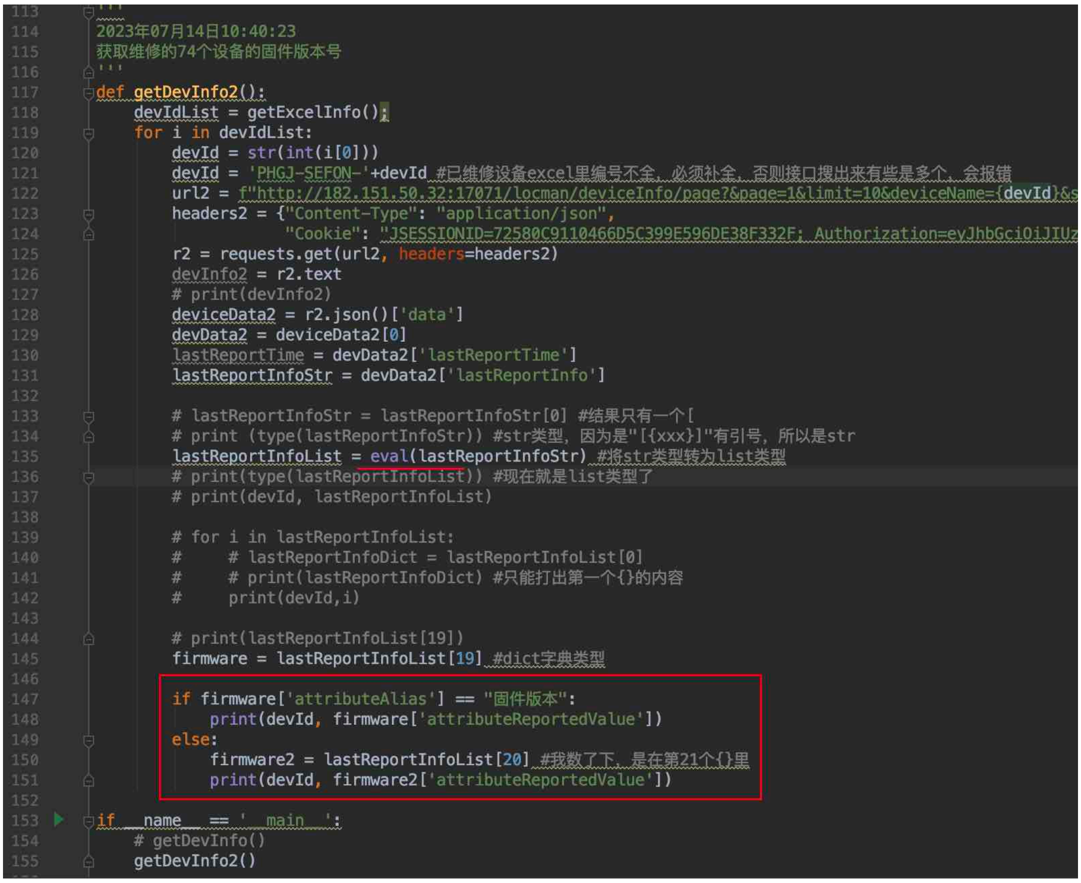
问题：（已解决）有些设备上报字段不相同，不能统一获取版本号（有些是升了级的，判断即可）

然后就是下一个问题：



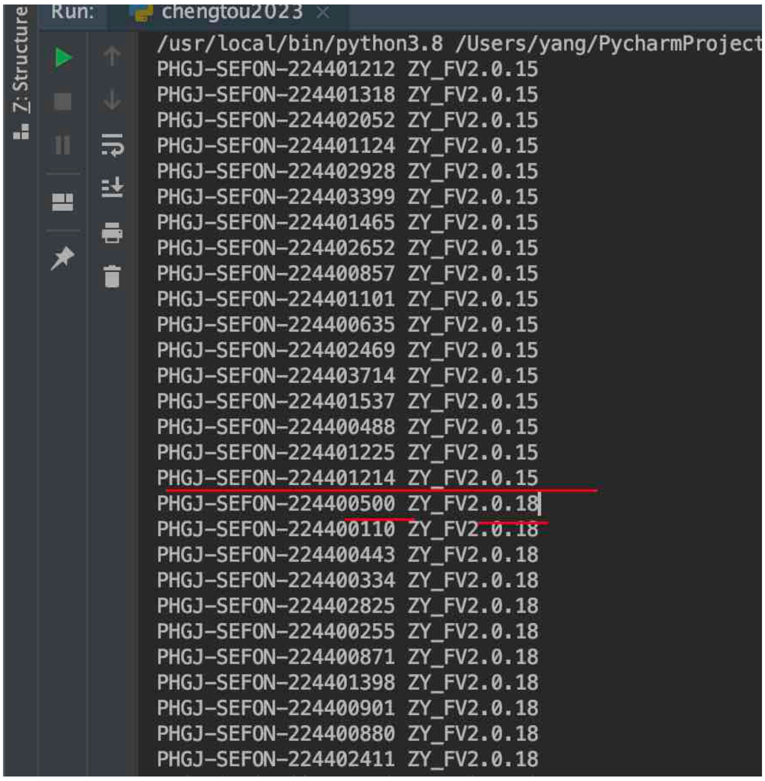
```
PHGJ-SEFON-224403714 ZY_FV2.0.15
PHGJ-SEFON-224401537 ZY_FV2.0.15
PHGJ-SEFON-224400488 ZY_FV2.0.15
PHGJ-SEFON-224401225 ZY_FV2.0.15
PHGJ-SEFON-224401214 ZY_FV2.0.15
PHGJ-SEFON-224400500 17
PHGJ-SEFON-224400110 20
PHGJ-SEFON-224400443 21
PHGJ-SEFON-224400334 14
PHGJ-SEFON-224402825 20
PHGJ-SEFON-224400255 13
PHGJ-SEFON-224400871 16
PHGJ-SEFON-224401398 14
PHGJ-SEFON-224400901 18
PHGJ-SEFON-224400880 18
PHGJ-SEFON-224402411 ZY_FV2.0.18
PHGJ-SEFON-224400453 18
PHGJ-SEFON-224401092 ZY_FV2.0.18
PHGJ-SEFON-224400298 15
PHGJ-SEFON-224402073 17
PHGJ-SEFON-224403579 17
PHGJ-SEFON-224400854 17
PHGJ-SEFON-224400878 20
PHGJ-SEFON-224400220 18
PHGJ-SEFON-224400009 20
PHGJ-SEFON-224403350 19
PHGJ-SEFON-224401027 17
PHGJ-SEFON-224400925 17
PHGJ-SEFON-224401973 19
PHGJ-SEFON-224400293 18
```

我数了下，固件版本在第21个{}里，修改：



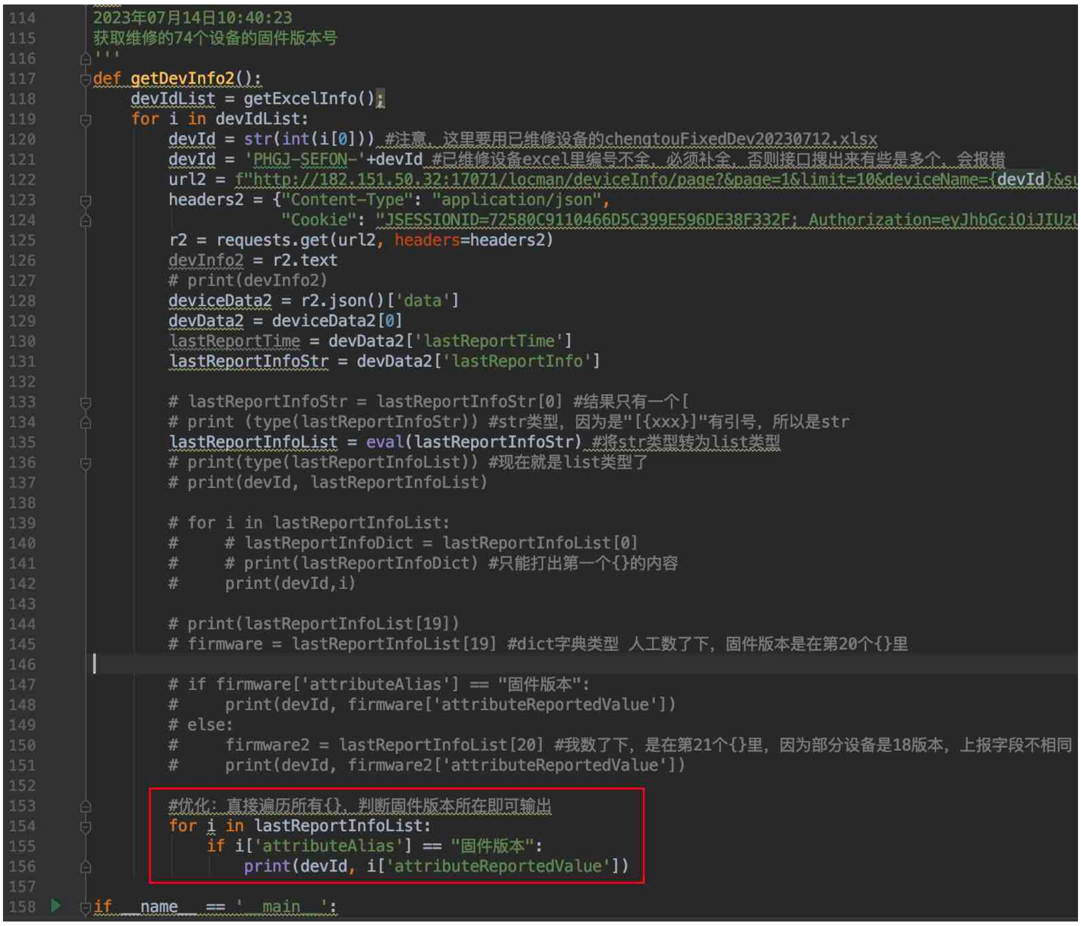
```
'''
2023年07月14日10:40:23
获取维修的74个设备的固件版本号
'''
def getDevInfo2():
    devIdList = getExcelInfo();
    for i in devIdList:
        devId = str(int(i[0]))
        devId = 'PHGJ-SEFON-'+devId #已维修设备excel里编号不全，必须补全，否则接口搜出来有些是多个，会报错
        url2 = f"http://182.151.50.32:17071/locman/deviceInfo/page?&page=1&limit=10&deviceName={devId}&s
        headers2 = {"Content-Type": "application/json",
                    "Cookie": "JSESSIONID=72580C9110466D5C399E596DE38F332F; Authorization=eyJhbGciOiJIUz
        r2 = requests.get(url2, headers=headers2)
        devInfo2 = r2.text
        # print(devInfo2)
        deviceData2 = r2.json()['data']
        devData2 = deviceData2[0]
        lastReportTime = devData2['lastReportTime']
        lastReportInfoStr = devData2['lastReportInfo']

        # lastReportInfoStr = lastReportInfoStr[0] #结果只有一个[
        # print (type(lastReportInfoStr)) #str类型，因为是"[{xxx}]"有引号，所以是str
        lastReportInfoList = eval(lastReportInfoStr) #将str类型转为list类型
        # print(type(lastReportInfoList)) #现在就是list类型了
        # print(devId, lastReportInfoList)

        # for i in lastReportInfoList:
        #     # lastReportInfoDict = lastReportInfoList[0]
        #     # print(lastReportInfoDict) #只能打出第一个{}的内容
        #     print(devId,i)

        # print(lastReportInfoList[19])
        firmware = lastReportInfoList[19] #dict字典类型

        if firmware['attributeAlias'] == "固件版本":
            print(devId, firmware['attributeReportedValue'])
        else:
            firmware2 = lastReportInfoList[20] #我数了下，是在第21个{}里
            print(devId, firmware2['attributeReportedValue'])

if __name__ == '__main__':
    # getDevInfo()
    getDevInfo2()
```

可以看到，全是18版本，版本变了，上报字段就变了，所以才会出问题：



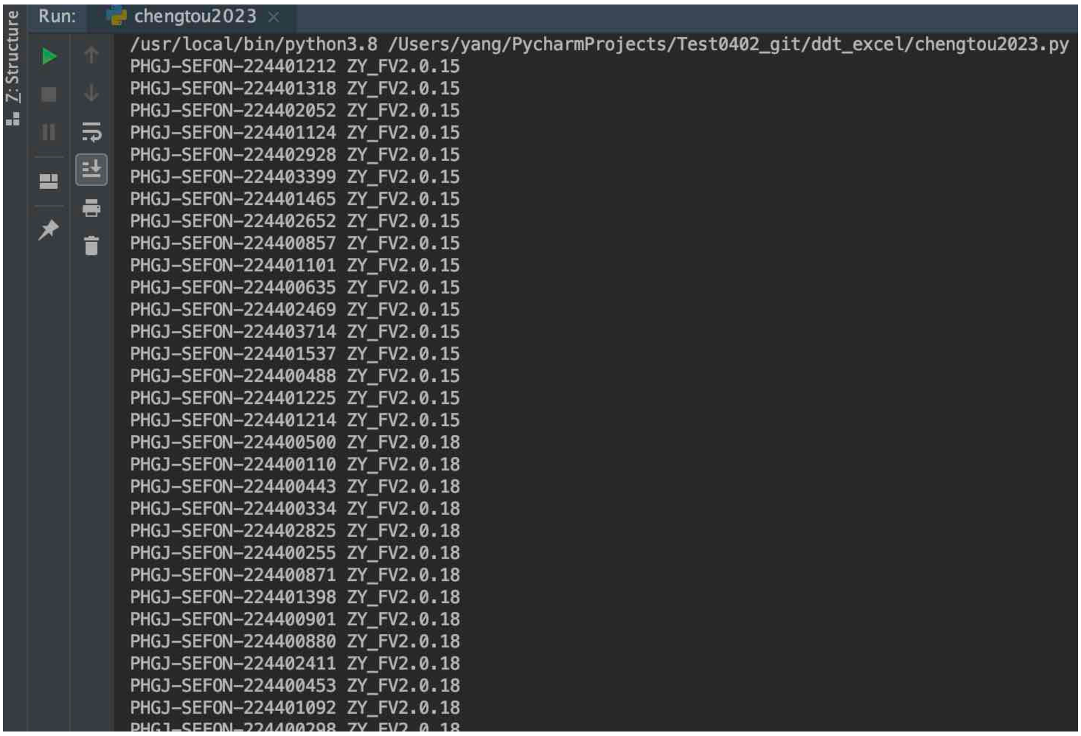
```
/usr/local/bin/python3.8 /Users/yang/PycharmProject
PHGJ-SEFON-224401212 ZY_FV2.0.15
PHGJ-SEFON-224401318 ZY_FV2.0.15
PHGJ-SEFON-224402052 ZY_FV2.0.15
PHGJ-SEFON-224401124 ZY_FV2.0.15
PHGJ-SEFON-224402928 ZY_FV2.0.15
PHGJ-SEFON-224403399 ZY_FV2.0.15
PHGJ-SEFON-224401465 ZY_FV2.0.15
PHGJ-SEFON-224402652 ZY_FV2.0.15
PHGJ-SEFON-224400857 ZY_FV2.0.15
PHGJ-SEFON-224401101 ZY_FV2.0.15
PHGJ-SEFON-224400635 ZY_FV2.0.15
PHGJ-SEFON-224402469 ZY_FV2.0.15
PHGJ-SEFON-224403714 ZY_FV2.0.15
PHGJ-SEFON-224401537 ZY_FV2.0.15
PHGJ-SEFON-224400488 ZY_FV2.0.15
PHGJ-SEFON-224401225 ZY_FV2.0.15
PHGJ-SEFON-224401214 ZY_FV2.0.15
PHGJ-SEFON-224400500 ZY_FV2.0.18
PHGJ-SEFON-224400110 ZY_FV2.0.18
PHGJ-SEFON-224400443 ZY_FV2.0.18
PHGJ-SEFON-224400334 ZY_FV2.0.18
PHGJ-SEFON-224402825 ZY_FV2.0.18
PHGJ-SEFON-224400255 ZY_FV2.0.18
PHGJ-SEFON-224400871 ZY_FV2.0.18
PHGJ-SEFON-224401398 ZY_FV2.0.18
PHGJ-SEFON-224400901 ZY_FV2.0.18
PHGJ-SEFON-224400880 ZY_FV2.0.18
PHGJ-SEFON-224402411 ZY_FV2.0.18
```

但是需要人工去查找显然不科学，优化：



```
2023年07月14日10:40:23
获取维修的74个设备的固件版本号
'''
def getDevInfo2():
    devIdList = getExcelInfo();
    for i in devIdList:
        devId = str(int(i[0])) #注意，这里要用已维修设备的chengtouFixedDev20230712.xlsx
        devId = 'PHGJ-SEFON-'+devId #已维修设备excel里编号不全，必须补全，否则接口搜出来有些是多个，会报错
        url2 = f"http://182.151.50.32:17071/locman/deviceInfo/page?&page=1&limit=10&deviceName={devId}&su
        headers2 = {"Content-Type": "application/json",
                    "Cookie": "JSESSIONID=72580C9110466D5C399E596DE38F332F; Authorization=eyJhbGciOiJIUzl
        r2 = requests.get(url2, headers=headers2)
        devInfo2 = r2.text
        # print(devInfo2)
        deviceData2 = r2.json()['data']
        devData2 = deviceData2[0]
        lastReportTime = devData2['lastReportTime']
        lastReportInfoStr = devData2['lastReportInfo']

        # lastReportInfoStr = lastReportInfoStr[0] #结果只有一个[
        # print (type(lastReportInfoStr)) #str类型，因为是"[{xxx}]"有引号，所以是str
        lastReportInfoList = eval(lastReportInfoStr) #将str类型转为list类型
        # print(type(lastReportInfoList)) #现在就是list类型了
        # print(devId, lastReportInfoList)

        # for i in lastReportInfoList:
        #     # lastReportInfoDict = lastReportInfoList[0]
        #     # print(lastReportInfoDict) #只能打出第一个{}的内容
        #     print(devId,i)

        # print(lastReportInfoList[19])
        # firmware = lastReportInfoList[19] #dict字典类型 人工数了下，固件版本是在第20个{}里

        # if firmware['attributeAlias'] == "固件版本":
        #     print(devId, firmware['attributeReportedValue'])
        # else:
        #     firmware2 = lastReportInfoList[20] #我数了下，是在第21个{}里，因为部分设备是18版本，上报字段不相同
        #     print(devId, firmware2['attributeReportedValue'])

        #优化：直接遍历所有{}，判断固件版本所在即可输出
        for i in lastReportInfoList:
            if i['attributeAlias'] == "固件版本":
                print(devId, i['attributeReportedValue'])

if __name__ == '__main__':
```

结果也是一样的：



```
/usr/local/bin/python3.8 /Users/yang/PycharmProjects/Test0402_git/ddt_excel/chengtou2023.py
PHGJ-SEFON-224401212 ZY_FV2.0.15
PHGJ-SEFON-224401318 ZY_FV2.0.15
PHGJ-SEFON-224402052 ZY_FV2.0.15
PHGJ-SEFON-224401124 ZY_FV2.0.15
PHGJ-SEFON-224402928 ZY_FV2.0.15
PHGJ-SEFON-224403399 ZY_FV2.0.15
PHGJ-SEFON-224401465 ZY_FV2.0.15
PHGJ-SEFON-224402652 ZY_FV2.0.15
PHGJ-SEFON-224400857 ZY_FV2.0.15
PHGJ-SEFON-224401101 ZY_FV2.0.15
PHGJ-SEFON-224400635 ZY_FV2.0.15
PHGJ-SEFON-224402469 ZY_FV2.0.15
PHGJ-SEFON-224403714 ZY_FV2.0.15
PHGJ-SEFON-224401537 ZY_FV2.0.15
PHGJ-SEFON-224400488 ZY_FV2.0.15
PHGJ-SEFON-224401225 ZY_FV2.0.15
PHGJ-SEFON-224401214 ZY_FV2.0.15
PHGJ-SEFON-224400500 ZY_FV2.0.18
PHGJ-SEFON-224400110 ZY_FV2.0.18
PHGJ-SEFON-224400443 ZY_FV2.0.18
PHGJ-SEFON-224400334 ZY_FV2.0.18
PHGJ-SEFON-224402825 ZY_FV2.0.18
PHGJ-SEFON-224400255 ZY_FV2.0.18
PHGJ-SEFON-224400871 ZY_FV2.0.18
PHGJ-SEFON-224401398 ZY_FV2.0.18
PHGJ-SEFON-224400901 ZY_FV2.0.18
PHGJ-SEFON-224400880 ZY_FV2.0.18
PHGJ-SEFON-224402411 ZY_FV2.0.18
PHGJ-SEFON-224400453 ZY_FV2.0.18
PHGJ-SEFON-224401092 ZY_FV2.0.18
PHGJ-SEFON-224400298 ZY_FV2.0.18
```