

浙江大学

本科实验报告

课程名称: B/S 体系软件设计

姓 名: 肖瑞轩

学 院: 计算机科学与技术学院

系: 计算机科学与技术

专 业: 计算机科学与技术

学 号: 3180103127

指导教师: 胡晓军

2021 年 6 月 29 日

浙江大学实验报告

课程名称： B/S 体系软件设计 实验类型： 个人上机实验

实验项目名称： 物联网应用网站测试报告

学生姓名： 肖瑞轩 专业： 计算机科学与技术 学号： 318010327

同组学生姓名： 无 指导老师： 胡晓军

实验地点： 曹西 503 实验日期： 2021 年 6 月 29 日

物联网应用网站测试报告

3180103127 肖瑞轩

物联网应用网站测试报告

一、用户登录与注册模块测试

1.1 用户注册模块

1.2 用户登录版块

二、信息接受模块测试

三、设备管理模块测试

3.1 新增设备测试

3.2 编辑设备测试

3.3 消息查询测试

四、主页统计测试

4.1 新增设备与当前设备数

4.2 消息流统计

4.3 最近消息列表

五、密码修改与找回密码测试

六、路径搜索模块测试

一、用户登录与注册模块测试

1.1 用户注册模块

提供了完整的正则检测，若邮箱、用户名不满足要求或有内容未填写，则不能进行注册，报错显示也符合需求。



创建您的IOT平台账号

用户名

请填写用户名

账户性别

男



账户生日

2000/06/24



邮箱账号

请输入有效的邮箱地址

密码

密码应有至少8个字符

☐ 显示密码

确认密码

[登录现有账号](#)

下一步

[帮助](#) [使用条款](#) [隐私协议](#)

Copyright © KnoxXiao 2021.

两次输入密码也要求一致，否则不能进行注册。

注册成功 X
成功注册账号，请返回登录



创建成功，请返回登录

用户名

tester_bs

账户性别

男

账户生日

2000/06/24

邮箱账号

tester_bs@zju.edu.cn

密码

test00000

确认密码

test00000

☒ 显示密码

[登录现有账号](#)

下一步

完成注册后，出现弹窗提示，在后端数据库进行检测，如图所示，证明成功注册进数据库中（后来添加了密码md5加密存储）。

2	tester_bs	test00000	tester_bs@zju.edu.cn	男	2000-06-24
---	-----------	-----------	----------------------	---	------------

1.2 用户登录版块

登录刚刚注册的账号，



登录

使用您的 lot Platform 账号

输入您的电子邮件地址

tester_bs@zju.edu.cn

创建新账号

下一步

帮助

使用条款 隐私协议

Copyright © KnoxXiao 2021.

输入错误的密码，



欢迎

tester_bs@zju.edu.cn

输入您的登录密码

testerror

☒ 显示密码

忘记密码?

下一步

帮助

使用条款 隐私协议

Copyright © KnoxXiao 2021.

跳出密码错误提示弹窗：

localhost:3001 显示

密码错误，请重新登录

确定

自动返回登录页面，重新登录，输入正确的账号密码，可以成功登录，进入主页



个人中心也看得到对应的个人信息

The screenshot shows the IoT Platform user profile page. The left sidebar contains navigation links: 数据统计 (Data Statistics), 设备管理 (Device Management), 设备轨迹查询 (Device Location Query), 个人信息修改 (Personal Information Modification), and 使用帮助与隐私说明 (Usage Help and Privacy Policy). The main content area displays a form for editing user information:

- 修改您的IOT平台账号信息** (Edit Your IoT Platform Account Information): A form with fields for 用户名 (Username), 用户性别 (User Gender), 用户生日 (User Birthday), 邮箱账号 (Email Account), 新密码 (New Password), and 确认密码 (Confirm Password). A '显示密码' (Show Password) checkbox is also present.
- 确认修改** (Confirm Modification): A button to save the changes.
- 帮助 使用条款 隐私协议** (Help Terms of Use Privacy Policy): Links to help, terms of use, and privacy policy.
- Copyright © KnoxXiao 2021.**

证明登录模块也满足需求，通过测试。

二、信息接受模块测试

启动Iotclient，publish的信息如下所示

```
Message published
Publishing message: {"alert":1,"clientId":"device0005","info":"Device Data 2021/06/30 14:45:05","lat":30.3531848430633
57,"lng":120.20484474897385,"timestamp":1625035505376,"value":96}
Message published
Publishing message: {"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:45:07","lat":30.4452215671539
33,"lng":120.22659446001053,"timestamp":1625035507203,"value":35}
Message published
Publishing message: {"alert":0,"clientId":"device0001","info":"Device Data 2021/06/30 14:45:07","lat":30.2203159093856
83,"lng":120.08383767604829,"timestamp":1625035507244,"value":41}
Message published
Publishing message: {"alert":1,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:09","lat":30.3784042358398
45,"lng":119.92432295084001,"timestamp":1625035509179,"value":88}
Message published
Publishing message: {"alert":0,"clientId":"device0005","info":"Device Data 2021/06/30 14:45:09","lat":30.1411248207092
3,"lng":120.04499360322953,"timestamp":1625035509378,"value":25}
Message published
Publishing message: {"alert":0,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:10","lat":30.3041241407394
43,"lng":120.34822924137116,"timestamp":1625035510182,"value":80}
Message published
Publishing message: {"alert":1,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:12","lat":30.2889909505844
13,"lng":119.97801315784454,"timestamp":1625035512184,"value":95}
Message published
Publishing message: {"alert":1,"clientId":"device0004","info":"Device Data 2021/06/30 14:45:13","lat":30.2204829692840
6,"lng":119.93771911859513,"timestamp":1625035513195,"value":96}
Message published
Publishing message: {"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:45:14","lat":30.1942740917205
83,"lng":120.14896156787873,"timestamp":1625035514204,"value":69}
Message published
```

启动mymqttserver，对publish的信息进行订阅，接受结果如下：

```
b'{"alert":0,"clientId":"device0004","info":"Device Data 2021/06/30 14:45:03","lat":30.121176314353946,"lng":120.11061406135559,"timest
mp":1625035503190,"value":49}'
b'{"alert":0,"clientId":"device0004","info":"Device Data 2021/06/30 14:45:04","lat":30.17724874019623,"lng":120.26075983047485,"timesta
p":1625035504193,"value":37}'
b'{"alert":1,"clientId":"device0005","info":"Device Data 2021/06/30 14:45:05","lat":30.353184843063357,"lng":120.20484474897385,"timest
mp":1625035505376,"value":96}'
b'{"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:45:07","lat":30.445221567153933,"lng":120.22659446001053,"timest
mp":1625035507203,"value":35}'
b'{"alert":0,"clientId":"device0001","info":"Device Data 2021/06/30 14:45:07","lat":30.220315909385683,"lng":120.08383767604829,"timest
mp":1625035507244,"value":41}'
b'{"alert":1,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:09","lat":30.378404235839845,"lng":119.92432295084001,"timest
mp":1625035509179,"value":88}'
b'{"alert":0,"clientId":"device0005","info":"Device Data 2021/06/30 14:45:09","lat":30.14112482070923,"lng":120.04499360322953,"timesta
p":1625035509378,"value":25}'
b'{"alert":0,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:10","lat":30.304124140739443,"lng":120.34822924137116,"timest
mp":1625035510182,"value":80}'
b'{"alert":1,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:12","lat":30.288990950584413,"lng":119.97801315784454,"timest
mp":1625035512184,"value":95}'
b'{"alert":1,"clientId":"device0004","info":"Device Data 2021/06/30 14:45:13","lat":30.22048296928406,"lng":119.93771911859513,"timesta
p":1625035513195,"value":96}'
b'{"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:45:14","lat":30.194274091720583,"lng":120.14896156787873,"timest
mp":1625035514204,"value":69}'
b'{"alert":0,"clientId":"device0001","info":"Device Data 2021/06/30 14:45:14","lat":30.19409878253937,"lng":120.10167515277863,"timesta
p":1625035514246,"value":31}'
b'{"alert":0,"clientId":"device0005","info":"Device Data 2021/06/30 14:45:14","lat":30.403989171981813,"lng":119.91109812259674,"timest
mp":1625035514380,"value":67}'
b'{"alert":1,"clientId":"device0003","info":"Device Data 2021/06/30 14:45:19","lat":30.388335156440736,"lng":120.48747065067292,"timest
mp":1625035519187,"value":89}'
```

后端数据库中也成功存储了消息数据。

	id	alert	cid	info	lat	lng	timestamp	value
	433	0	device0005	Device Data 2021/06/30 13:48:35	30.2198	120.434	2021-06-30 13:48:35	70
	434	0	device0001	Device Data 2021/06/30 13:48:36	30.4581	120.494	2021-06-30 13:48:36	61
	435	0	device0002	Device Data 2021/06/30 13:48:37	30.1795	120.489	2021-06-30 13:48:37	49
	436	435	device0004	Device Data 2021/06/30 13:48:38	30.3729	120.154	2021-06-30 13:48:38	77
	437	0	device0002	Device Data 2021/06/30 13:48:38	30.1483	120.099	2021-06-30 13:48:38	37
	438	0	device0003	Device Data 2021/06/30 13:48:40	30.3041	120.453	2021-06-30 13:48:40	32
	439	0	device0004	Device Data 2021/06/30 13:48:42	30.3834	120.424	2021-06-30 13:48:42	69
	440	0	device0005	Device Data 2021/06/30 13:48:42	30.3676	120.372	2021-06-30 13:48:42	10
	441	0	device0005	Device Data 2021/06/30 13:48:43	30.4924	120.024	2021-06-30 13:48:43	31
	442	0	device0001	Device Data 2021/06/30 13:48:43	30.1822	120.27	2021-06-30 13:48:43	41

三、设备管理模块测试

3.1 新增设备测试

点击右上角的新增设备按钮，输入唯一正确的id和name之后会成功添加。



新建设备信息

设备id(如'device0001')

device0006

设备昵称(如'我的远程遥控器')

我的新增设备

设备描述

描述新设备

设备类别

私有

确认新建

[帮助](#) [使用条款](#) [隐私协议](#)

Copyright © KnoxXiao 2021.

出现成功添加的弹窗。

localhost:3001 显示
新建设备成功,请返回主页

确定

重复添加，则会有报错的弹窗

localhost:3001 显示

出现了重名!

确定

在统计页面可以看得这个新增的设备，但看不到其他用户拥有的设备，也不能对其他用户的设备进行编辑。

绑定设备

设备ID	设备名	设备描述	创建时间	拥有者
device0006	我的新增设备	描述新设备	Wed, 30 Jun 2021 14:50:49 GMT	tester_bs

看不到另一个用户拥有的device0004

	id	cid	name	cdes	create_time	user
▶	1	第一个设备	device0004	这里是描述	2021-06-30 13:40:02	tester
	2	我的新增设备	device0006	描述新设备	2021-06-30 14:50:49	tester_bs

3.2 编辑设备测试

输入设备id，输入更改之后的基本信息，点击确认更改之后即可对设备进行配置与修改

修改设备信息

设备id(如'device0001')

device0006

查询设备消息

设备昵称(如'我的远程遥控器')

修改后

设备描述

修改描述

设备类别

私有

⋮

确认修改

修改成功，显示栏中也发生改变。

绑定设备

设备ID	设备名	设备描述	创建时间	拥有者
device0006	修改后	修改描述	Wed, 30 Jun 2021 14:50:49 GMT	tester_bs

但只能编辑自己的设备与共享的设备，不能编辑别人私有的设备或不存在的设备，否则会报错。

修改设备信息

设备id(如'device0001')

device0004

查询设备消息

设备昵称(如'我的远程遥控器')

XXXZ

设备描述

addsa

设备类别

私有

⋮

确认修改

localhost:3001 显示

编辑设备失败，请检查是否是否存在或是否拥有权限

确定

修改设备失败

编辑设备失败，请重新编辑

x

3.3 消息查询测试

对设备消息进行查询，可以对所有设备消息进行查询，输入设备id,点击查询设备消息按钮即可显示消息列表。

修改设备信息

设备id(如 device0001)

device0001

查询设备消息

设备昵称(如我的远程遥控器)

设备描述

设备类别

私有

确认修改

查询设备消息

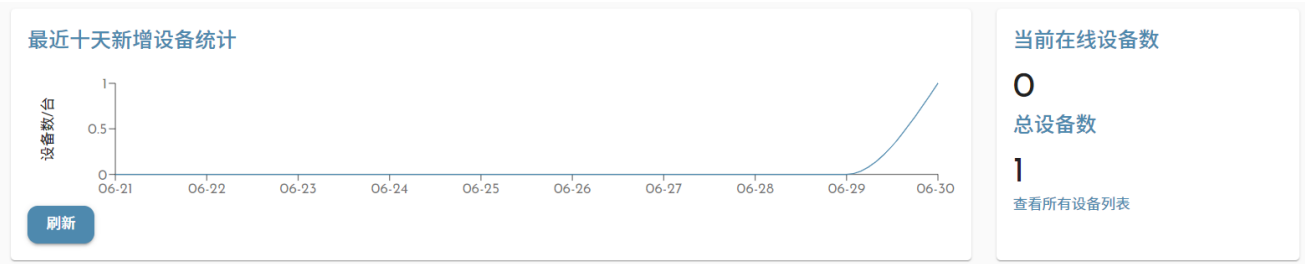
时间	设备ID	警报	消息内容	传送值	设备坐标
name					
Wed, 30 Jun 2021 14:54:25 GMT	device0001	0	Device Data 2021/06/30 14:54:25	16	(30.2721, 120.001)
Wed, 30 Jun 2021 14:54:26 GMT	device0001	0	Device Data 2021/06/30 14:54:26	67	(30.4471, 120.193)
Wed, 30 Jun 2021 14:54:30 GMT	device0001	0	Device Data 2021/06/30 14:54:30	64	(30.4631, 119.963)
Wed, 30 Jun 2021 14:54:38 GMT	device0001	0	Device Data 2021/06/30 14:54:38	37	(30.2023, 120.082)
Wed, 30 Jun 2021 14:54:41 GMT	device0001	0	Device Data 2021/06/30 14:54:41	28	(30.4518, 119.942)
Wed, 30 Jun 2021 14:54:41 GMT	device0001	0	Device Data 2021/06/30 14:54:41	40	(30.3141, 120.261)
Wed, 30 Jun 2021 14:54:49 GMT	device0001	0	Device Data 2021/06/30 14:54:49	2	(30.2827, 120.421)
Wed, 30 Jun 2021 14:54:56 GMT	device0001	1	Device Data 2021/06/30 14:54:56	87	(30.4273, 120.299)
Wed, 30 Jun 2021 14:54:58 GMT	device0001	0	Device Data 2021/06/30 14:54:58	48	(30.3338, 120.387)
Wed, 30 Jun 2021 14:55:05 GMT	device0001	0	Device Data 2021/06/30 14:55:05	59	(30.319, 120.236)
Wed, 30 Jun 2021 14:55:10 GMT	device0001	0	Device Data 2021/06/30 14:55:10	38	(30.1301, 120.024)
Wed, 30 Jun 2021 14:55:17 GMT	device0001	0	Device Data 2021/06/30 14:55:17	45	(30.2296, 120.141)
Wed, 30 Jun 2021 14:55:20 GMT	device0001	0	Device Data 2021/06/30 14:55:20	0	(30.1583, 120.034)
Wed, 30 Jun 2021 14:55:26 GMT	device0001	1	Device Data 2021/06/30 14:55:26	91	(30.3059, 120.036)

查询到的消息都是属于这一个设备的，且与后端数据库中一致。

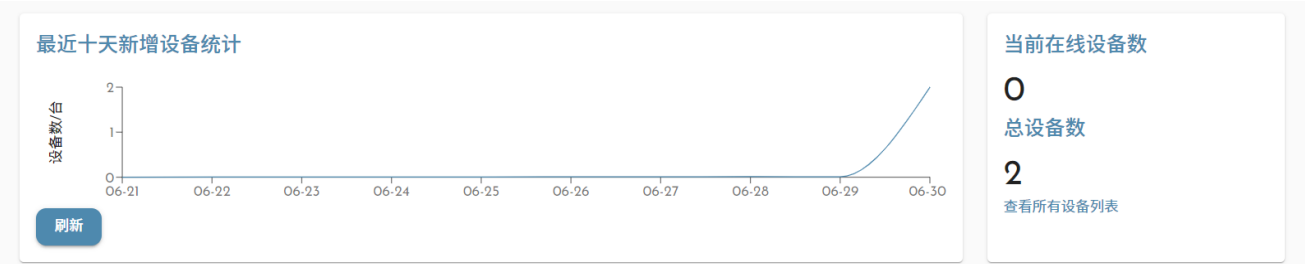
四、主页统计测试

4.1 新增设备与当前设备数

在第三步新增设备前：



在第三步新增设备之后：



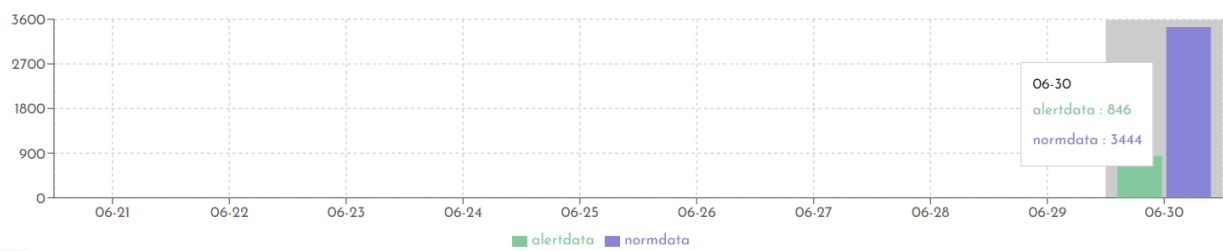
	id	cid	name	cdes	create_time	user
▶	1	第一个设备	device0004	这里是描述	2021-06-30 13:40:02	tester
	2	我的新增设备	device0006	描述新设备	2021-06-30 14:50:49	tester_bs
✱	NULL	NULL	NULL	NULL	NULL	NULL

可见新增设备与总设备数的图像满足需求。

4.2 消息流统计

消息流数据结果也与在后端数据库中查找的结果一致

最近十天消息流数据统计



刷新

```

1 • use myapp;
2 • select count(*) from my_message where alert=0;

```

<

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [IA](#)

	count(*)
▶	3444

```
1 • use myapp;
2 • select count(*) from my_message where alert=1;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
count(*)			
846			

4.3 最近消息列表

全部最近消息列表也与最新接收到的消息列表一致

```
b'{"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:59:39","lat":30.33221311569214,"lng":120.46585701704026,"timestamp":1625036379558,"value":11}'
b'{"alert":0,"clientId":"device0004","info":"Device Data 2021/06/30 14:59:42","lat":30.295441007614137,"lng":120.35606261491776,"timestamp":1625036382545,"value":73}'
b'{"alert":1,"clientId":"device0001","info":"Device Data 2021/06/30 14:59:42","lat":30.171803975105288,"lng":120.43099559545517,"timestamp":1625036382642,"value":99}'
b'{"alert":1,"clientId":"device0001","info":"Device Data 2021/06/30 14:59:42","lat":30.3293655872345,"lng":120.16454384326936,"timestamp":1625036382642,"value":85}'
b'{"alert":0,"clientId":"device0004","info":"Device Data 2021/06/30 14:59:45","lat":30.393172788619996,"lng":120.26587970256806,"timestamp":1625036385546,"value":23}'
b'{"alert":0,"clientId":"device0003","info":"Device Data 2021/06/30 14:59:45","lat":30.34654214382172,"lng":120.1855326294899,"timestamp":1625036385549,"value":20}'
b'{"alert":0,"clientId":"device0005","info":"Device Data 2021/06/30 14:59:45","lat":30.381206679344178,"lng":120.44978046417236,"timestamp":1625036385739,"value":16}'
b'{"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:59:46","lat":30.487643003463745,"lng":120.08105475902558,"timestamp":1625036386560,"value":38}'
b'{"alert":0,"clientId":"device0004","info":"Device Data 2021/06/30 14:59:47","lat":30.237527823448183,"lng":120.4530784726143,"timestamp":1625036387548,"value":75}'
b'{"alert":0,"clientId":"device0001","info":"Device Data 2021/06/30 14:59:48","lat":30.301760244369508,"lng":120.45651491880417,"timestamp":1625036388644,"value":58}'
b'{"alert":0,"clientId":"device0002","info":"Device Data 2021/06/30 14:59:49","lat":30.105748867988588,"lng":120.10388550758363,"timestamp":1625036389561,"value":0}'
```

Wed, 30 Jun 2021 14:59:46 GMT	device0002	0	Device Data 2021/06/30 14:59:46	38	(30.4876 , 120.081)
Wed, 30 Jun 2021 14:59:47 GMT	device0004	0	Device Data 2021/06/30 14:59:47	75	(30.2375 , 120.453)
Wed, 30 Jun 2021 14:59:48 GMT	device0001	0	Device Data 2021/06/30 14:59:48	58	(30.3018 , 120.457)
Wed, 30 Jun 2021 14:59:49 GMT	device0002	0	Device Data 2021/06/30 14:59:49	0	(30.1057 , 120.104)
Wed, 30 Jun 2021 14:59:53 GMT	device0001	1	Device Data 2021/06/30 14:59:53	91	(30.1679 , 120.2)
Wed, 30 Jun 2021 14:59:53 GMT	device0005	1	Device Data 2021/06/30 14:59:53	94	(30.2807 , 120.135)
Wed, 30 Jun 2021 14:59:54 GMT	device0003	0	Device Data 2021/06/30 14:59:54	20	(30.4278 , 120.267)
Wed, 30 Jun 2021 14:59:54 GMT	device0002	0	Device Data 2021/06/30 14:59:54	65	(30.3955 , 119.947)
Wed, 30 Jun 2021 14:59:56 GMT	device0004	0	Device Data 2021/06/30 14:59:56	24	(30.3282 , 120.099)
Wed, 30 Jun 2021 14:59:57 GMT	device0005	0	Device Data 2021/06/30 14:59:57	74	(30.212 , 120.483)
Wed, 30 Jun 2021 15:00:00 GMT	device0003	0	Device Data 2021/06/30 15:00:00	71	(30.4732 , 120.085)
Wed, 30 Jun 2021 15:00:00 GMT	device0002	0	Device Data 2021/06/30 15:00:00	42	(30.2377 , 119.97)
Wed, 30 Jun 2021 15:00:00 GMT	device0001	0	Device Data 2021/06/30 15:00:00	75	(30.2284 , 120.311)

五、密码修改与找回密码测试

对个人信息中的用户名与密码进行修改

修改您的IOT平台账号信息

用户名

tester_bs_new

账户性别

男

账户生日

2000/06/24

邮箱账号

tester_bs@zju.edu.cn

新密码

testnew111

确认密码

testnew111

☒ 显示密码

确认修改

帮助 使用条款 隐私协议

Copyright © KnoxXiao 2021.

查找后端数据库，发现用户名与密码都成功得到修改。

2	tester_bs_new	testnew111	tester_bs@zju.edu.cn	男	2000-06-24
---	---------------	------------	----------------------	---	------------

点击登录页面的找回密码之后，也可以成功收到验证码消息。

收件人: But Always&~ <2271493535@qq.com>

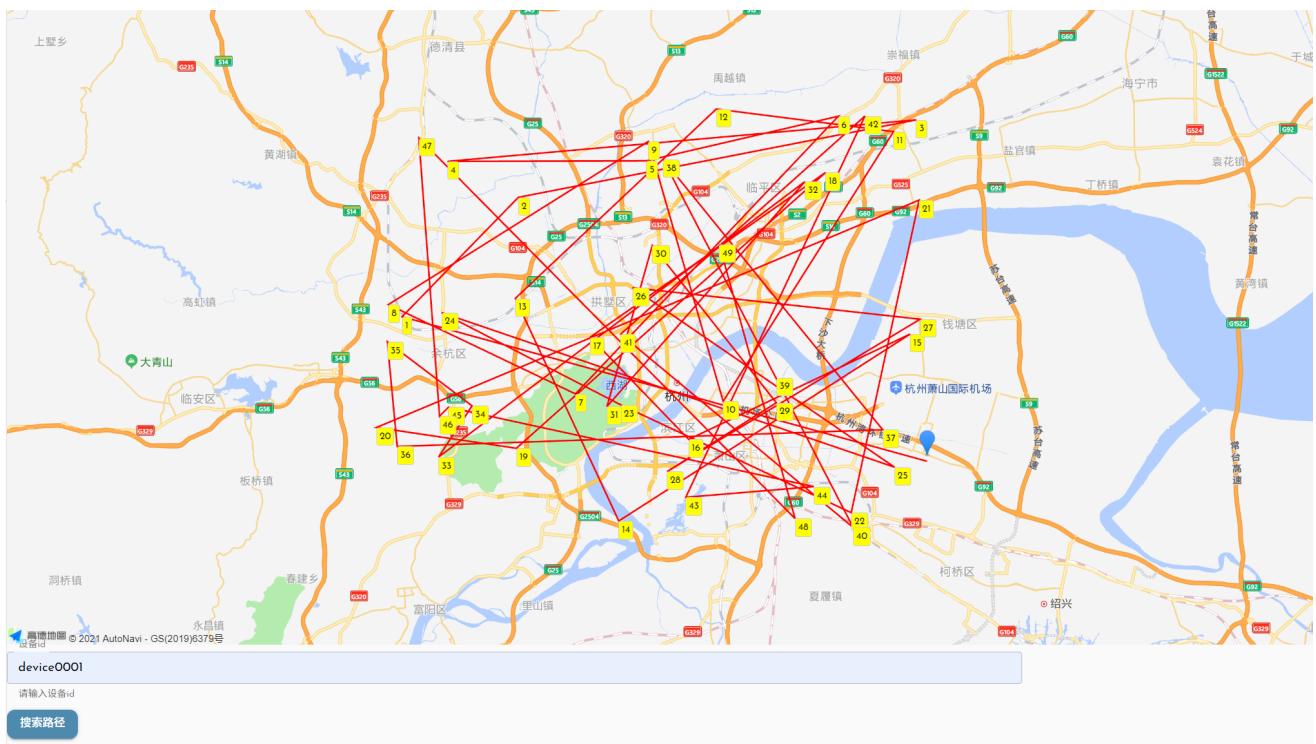
邮件可翻译为中文

立即翻译

Your verification code is 364353 (Only valid in 10 minutes)

六、路径搜索模块测试

输入设备id，点击搜索路径，可以成功对最近的路径进行显示（最多显示最近50个轨迹点的数据）



打印的路径数据与后端数据库中数据一致。

```
▶ 22: (2) [120.387, 30.1318]
▶ 23: (2) [120.153, 30.2266]
▶ 24: (2) [119.971, 30.3076]
▶ 25: (2) [120.431, 30.1718]
▶ 26: (2) [120.165, 30.3294]
▶ 27: (2) [120.457, 30.3018]
▶ 28: (2) [120.2, 30.1679]
▶ 29: (2) [120.311, 30.2284]
▶ 30: (2) [120.185, 30.3665]
▶ 31: (2) [120.139, 30.2251]
▶ 32: (2) [120.34, 30.4225]
▶ 33: (2) [119.968, 30.1807]
▶ 34: (2) [120.002, 30.2257]
▶ 35: (2) [119.916, 30.282]
▶ 36: (2) [119.926, 30.19]
▶ 37: (2) [120.419, 30.2047]
▶ 38: (2) [120.196, 30.442]
▶ 39: (2) [120.311, 30.2504]
▶ 40: (2) [120.389, 30.1188]
▶ 41: (2) [120.153, 30.2887]
▶ 42: (2) [120.401, 30.48]
▶ 43: (2) [120.219, 30.1453]
▶ 44: (2) [120.349, 30.1547]
▶ 45: (2) [119.978, 30.2245]
▶ 46: (2) [119.969, 30.2166]
▶ 47: (2) [119.948, 30.4608]
▶ 48: (2) [120.33, 30.1266]
▶ 49: (2) [120.253, 30.3674]
length: 50
```