

Project 4 Task 2 – Web Service Logging and Analysis Dashboard

By Xiawei He

Description:

The web application I developed in Task 1 is modified to connect to Mongo DB and upload each use case information to the database. Then this information is analyzed to present as a dashboard along with all the logging data on a web page.

1. Log useful information

The project directory for web application of Task 2 is:

Project4Task2

The URL of my web service deployed to Heroku is:

<https://safe-stream-72232.herokuapp.com/>

On the welcome page, there are two links:

- Activity Generator
 - Leads to the web service of activity generator
- Dashboard
 - Leads to dashboard with logs and Operations analytics

1.1. Has at least 6 pieces of information logged for each request/reply with the mobile phone

1.1.1. Include information about the request from the mobile phone

1.1.2. Include information about the request and reply to the 3rd party API

1.1.3. Include information about the reply to the mobile phone

In the ApiActivity.java, for each request/reply, following information are logged:

- Timestamp
Following are code related to recording Timestamp:

```
// timestamp for calculating latency
Timestamp timestamp;
Timestamp responseTime;
long latency;

// record the timestamp of the request received
timestamp = new Timestamp(System.currentTimeMillis());
```

- Phone Model
Phone model information is retrieved in the search method in getActivity.java in the Android Application using the getDeviceName method. The phone model is then transferred as a “device” parameter in the request sent to the web server.
- Search Type
Extracted from the request as the “type” parameter.
- Mobile Request
- Web Application Request
- Latency (ms)
`latency = responseTime.getTime() - timestamp.getTime();`
- API Reply
- Web Application Reply

2. Store the log information in a database

In the ApiActivity.java, the web service can connect, store information from the MongoDB database in the cloud.

In the dashboard.jsp, the web page can retrieve the stored information from the MongoDB database.

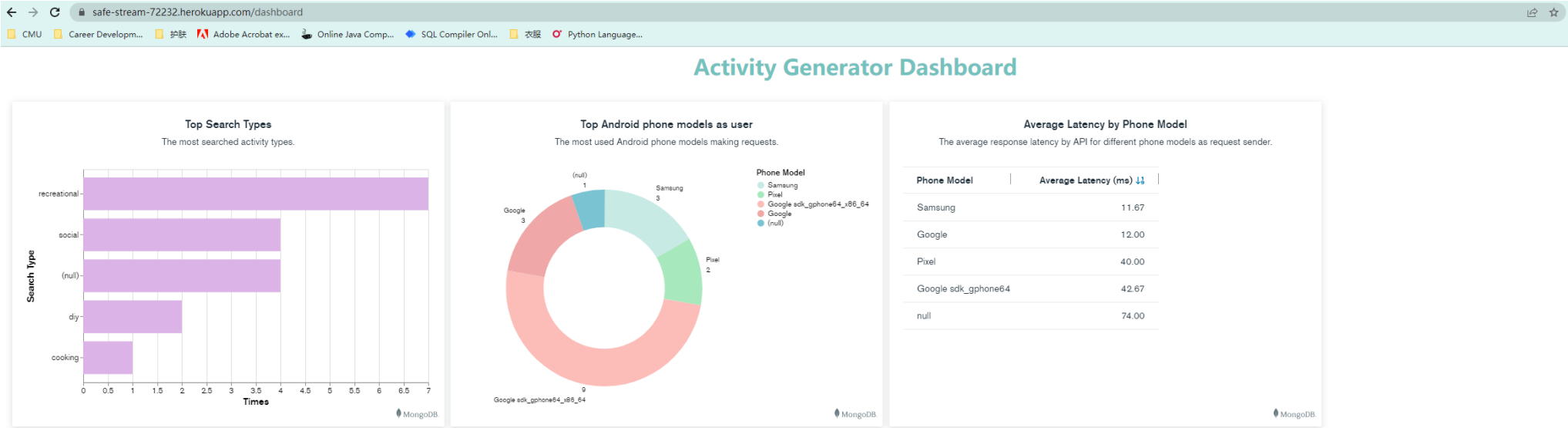
3. Display operations analytics and full logs on a web-based dashboard

3.1. A unique URL addresses a web interface dashboard for the web service

The URL to the dashboard is:

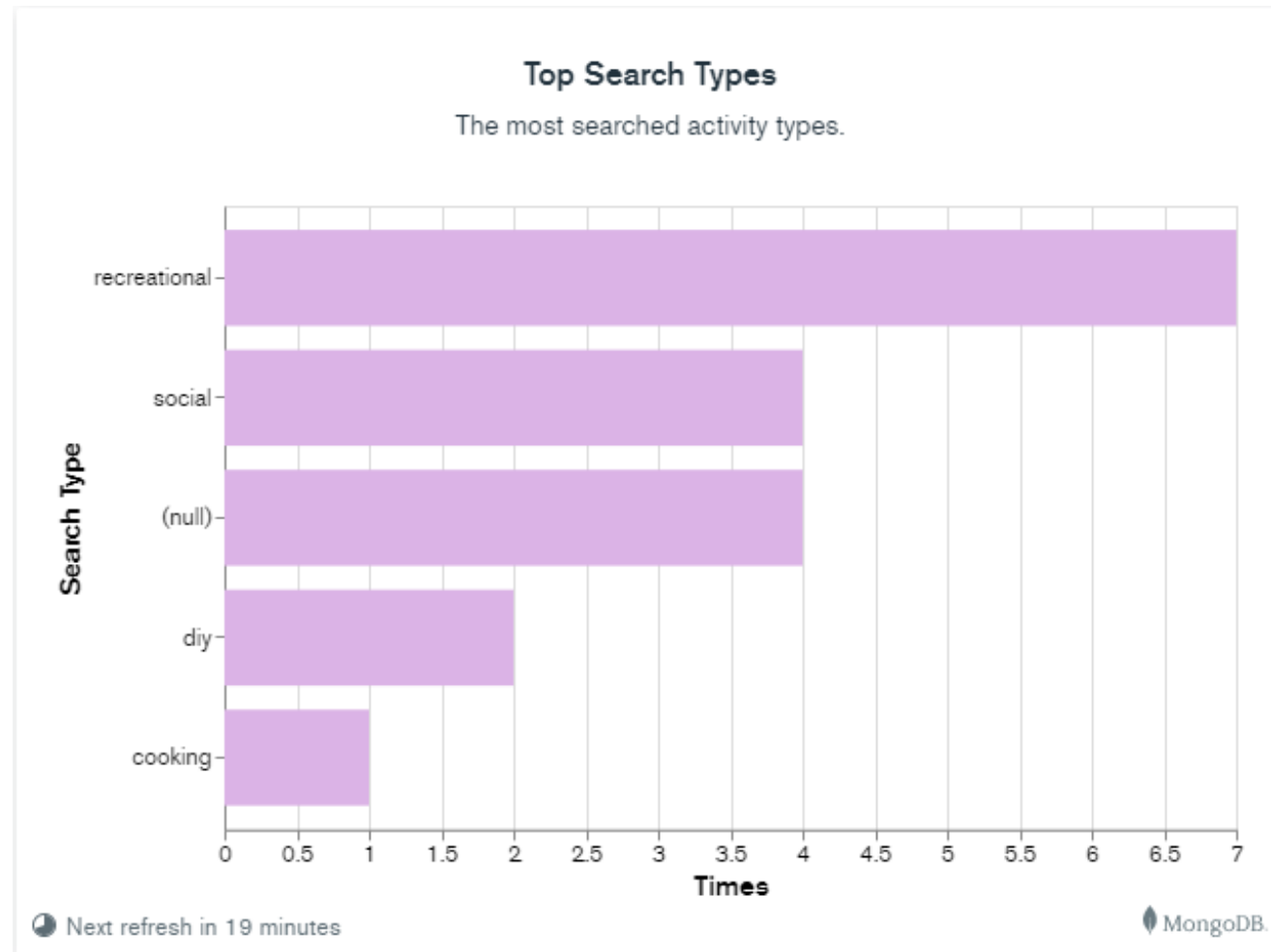
<https://safe-stream-72232.herokuapp.com/dashboard>

3.2. The dashboard displays at least 3 interesting operations analytics



There are three charts:

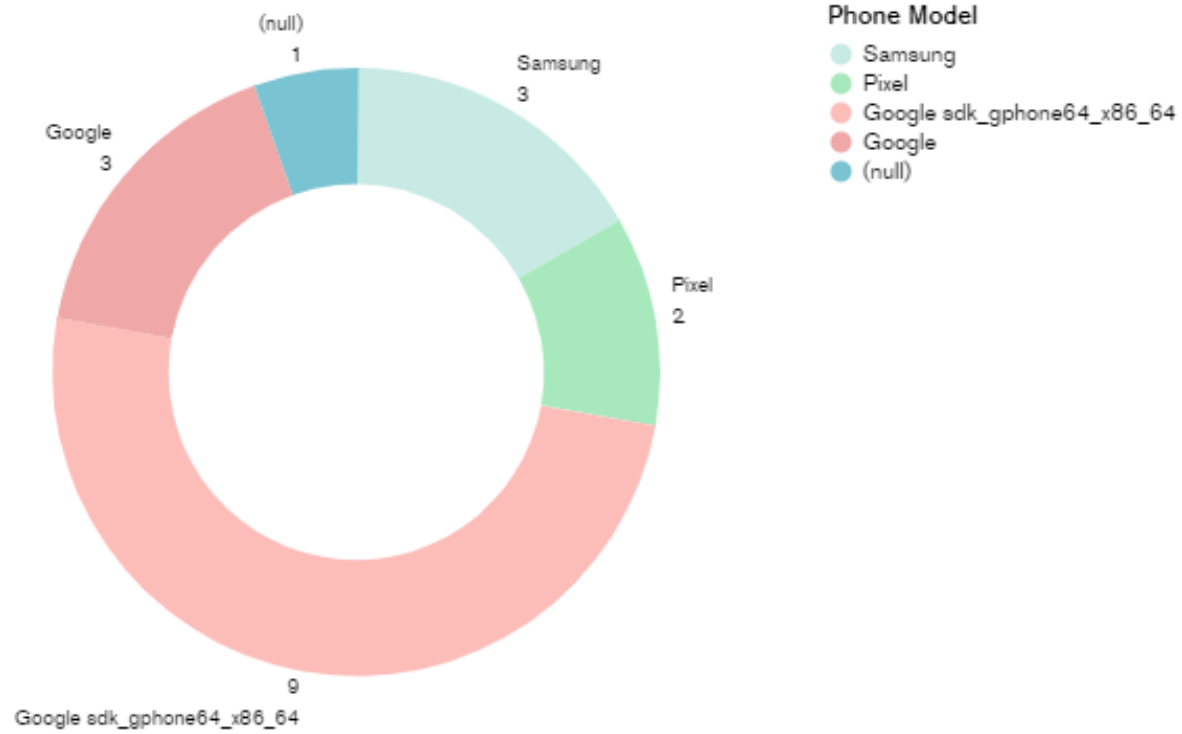
- Top Search Types



- Top Android phone models as user

Top Android phone models as user

The most used Android phone models making requests.



Next refresh in 19 minutes

MongoDB

- Average Latency by Phone Model

Average Latency by Phone Model

The average response latency by API for different phone models as request sender.

Phone Model	Average Latency (ms) ⬇️
Samsung	11.67
Google	12.00
Pixel	40.00
Google sdk_gphone64	42.67
null	74.00

🕒 Next refresh in 18 minutes

🌿 MongoDB.

3.3. The dashboard displays formatted full logs

id	Timestamp	Phone Model	Search Type	Mobile Request	Web Application Request	Latency (ms)	API Reply	Web Application Reply
1	Sun Apr 10 09:11:12 UTC 2022	null	null	/getActivity	http://www.boredapi.com/api/activity/	74	Response Code: 200, Content: {"activity":"Compliment someone","type":"social","participants":2,"price":0,"link":"","key":"9149470","accessibility":0}	{"activity":"Compliment someone","type":"social","participants":2,"price":0,"link":""}
2	Sun Apr 10 09:12:25 UTC 2022	Google	recreational	/getActivity	http://www.boredapi.com/api/activity?type=recreational	13	Response Code: 200, Content: {"activity":"Think of a new business idea","type":"recreational","participants":1,"price":0,"link":"","key":"6808057","accessibility":0.05}	{"activity":"Think of a new business idea","type":"recreational","participants":1,"price":0,"link":""}
3	Sun Apr 10 09:12:33 UTC 2022	Google	social	/getActivity	http://www.boredapi.com/api/activity?type=social	14	Response Code: 200, Content: {"activity":"Go see a movie in theaters with a few friends","type":"social","participants":4,"price":0.2,"link":"","key":"5262759","accessibility":0.3}	{"activity":"Go see a movie in theaters with a few friends","type":"social","participants":4,"price":0.2,"link":""}
4	Sun Apr 10 09:12:38 UTC 2022	Google	diy	/getActivity	http://www.boredapi.com/api/activity?type=diy	9	Response Code: 200, Content: {"activity":"Fix something that's broken in your house","type":"diy","participants":1,"price":0.1,"link":"","key":"6925988","accessibility":0.3}	{"activity":"Fix something that's broken in your house","type":"diy","participants":1,"price":0.1,"link":""}

(Overall look of the log section)

id	Timestamp	Phone Model	Search Type	Mobile Request	Web Application Request	Latency (ms)
1	Sun Apr 10 09:11:12 UTC 2022	null	null	/getActivity	http://www.boredapi.com/api/activity/	74
2	Sun Apr 10 09:12:25 UTC 2022	Google	recreational	/getActivity	http://www.boredapi.com/api/activity?type=recreational	13
3	Sun Apr 10 09:12:33 UTC 2022	Google	social	/getActivity	http://www.boredapi.com/api/activity?type=social	14

API Reply	Web Application Reply
Response Code: 200, Content: {"activity":"Compliment someone","type":"social","participants":2,"price":0,"link":"","key":"9149470","accessibility":0}	{"activity":"Compliment someone","type":"social","participants":2,"price":0,"link":""}
Response Code: 200, Content: {"activity":"Think of a new business idea","type":"recreational","participants":1,"price":0,"link":"","key":"6808057","accessibility":0.05}	{"activity":"Think of a new business idea","type":"recreational","participants":1,"price":0,"link":""}
Response Code: 200, Content: {"activity":"Go see a movie in theaters with a few friends","type":"social","participants":4,"price":0.2,"link":"","key":"5262759","accessibility":0.3}	{"activity":"Go see a movie in theaters with a few friends","type":"social","participants":4,"price":0.2,"link":""}

(Closer look of the logs)

4. Deploy the web service to Heroku

This web service is deployed to Heroku with the link shown above.