

Test document

1. Introduction to Testing

Black box and white box testing for backend server code

2. Test purpose

- Evaluation of software quality by analysis of test results
- Evaluate whether the test execution and test plan are consistent
- Analyze system defects and provide suggestions for fixing and preventing bugs

3. Test Tools

- Postman for functional testing of services
- Jmeter for interface stress testing

4. Test process

4.1 Functional Test

User Management

Features	Basic Requirements	Test Situation	By (Y/N)
User login	After the user login authentication succeeds, the correct token is returned. And the subsequent authorization can be provided.	Implemented	Y
User Information Acquisition	User access to personal information, also need to pass stress test	Implemented	Y
Modify User Information	Ability to modify user information normally, and validate via form	Implemented	Y
User tagged company	User's company watchlist added normally	Implemented	Y
Users get attention to the list of companies	Can return the list of companies that the user is concerned with, and the paging is normal	Implemented	Y

Company Management

Features	Basic Requirements	Test Situation	By (Y/N)
Get company information	Get information on Tushare and display it normally	Implemented	Y
Company Fuzzy Search	Ability to perform fuzzy search of company name based on keywords entered by users, and paging is normal	Implemented	Y

Stock Information Management

Features	Basic Requirements	Test Situation	By (Y/N)
Get Stock Information	Get the information on Tushare and display it normally	Implemented	Y

Company Financial Information

| Features | Basic Requirements | Test Situation | By (Y/N) | | ----- | -----
----- | ----- | ----- | Get company financial information | Get the information on
Tushare according to the company's stock code, and display it normally | Realized | Y |

Stock price closing line warning probability

Features	Basic Requirements	Test Situation	By (Y/N)
Get the probability of a burst	According to the company's stock code and the level of the warehouse line, you should return the probability of a burst (30 days)	Realized	Y

4.2 Performance Test

Test parameter description

Parameter Name	Value
Script Cycles	6000
Number of concurrent users	5/10/50/100/200
Number of real clients	1
Script Recording Method	Automatic
Analog Route Type	10/100M Ethernet

Performance test specific results

effectiveness

Average response time (s):

Number of concurrent users	Login	User information acquisition	Get stock information	Get company information
5	0.195	0.258	0.421	0.033
10	0.294	0.213	0.293	0.057
50	2.502	1.400	1.501	2.714
100	5.228	3.775	6.841	1.812

Performance Analysis

- Backend performance test analysis

According to the results of the JMeter aggregation report, each backend api performs normally. When running 100 threads (users), the average time is 9.862s, and the error rate is 0% in the case of low concurrent (5-100).

- Web performance test analysis

According to the results of the JMeter aggregation report, when running 200 threads (virtual users), when the number of https requests is about 460, the average response time is 1.452s and the error rate is only 0.07%, which is in line with the expected performance results.

