



# **EX-SELL**

## **Test Plan**

**Version 1.0 approved**

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## Document Changelog

S/N	Author	Version	Reason
01	Soong Jie Ming	V0.1	Creation of Test Plan for application V1.30.1
02	Chen Zhenni	V0.2	Creation of Test Plan for application V1.31.1
01	Soong Jie Ming	V0.3	Creation of Test Plan for application V1.32.1
03	Yiu Hong Sum	V1.0	Compilation of Test Plan

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# 1. Test Plan Identifier

This test plan will be known as TEST-V32-M-001.

The identifier can be broken down into different blocks, delimited by a 'hyphen. The naming convention will be as such: The first block will always contain "TEST" to represent a test plan. The second block will represent the stage of development of the product, in this case, it is "V32", also known as the 32th version of the prototype. This naming convention is linked to the actual version of the prototype while it is still in development. The next block will identify the type of plan, 'M' for Master, 'Lx' for Level x, and I for integration. The final block will represent its version number, in the event that there is a need to update or change the test plan.

## 2. Introduction

The purpose of this test plan is to formalise and outline the procedure to carry out the testing on the ex-sell application. The following sections will first detail the testing boundary for the Ex-sell version - Features and items to be tested. Next, The approach and methodology to conduct the tests, namely black-box and white-box testing, will be explained as well, this will be accompanied with the environment setup and technology required for this phase of testing. Lastly, the roles played by the individual members of the team will be listed in order for everyone in the team to know their roles and familiarise with their tasks.

### 3. Test Items

This list of items will be tested in accordance to this test plan. They will be categorised based on common functional areas between the items. The testing team will verify that the current version of the ex-sell application has the following components ready before full testing can be completed.

Load Testing	
S/N	Item
01	Concurrent user load
02	Database storage load
Functional Testing - General	
S/N	Item
01	Usage of website only after logging in
02	Communication with application administrator
Functional Testing - Administrative Tasks	
S/N	Item
01	Creation of Account
02	Login
03	Profile Editing
Functional Testing - Transactional Tasks	
S/N	Item
01	Create, View, Update listing
02	Management of interested products
03	Notification generation to transactional party

## 4. Features to Be Tested

This is a list of features that will be included in the testing phase in this version of the test plan and for this current version of the target application:

S/N	Feature	Level of severity
01	Creation of account	High
02	Mandatory Login to peruse website	High
03	View products	High
04	List/ Unlist/ Update new product listing	High
05	Edit profile	Medium
06	Live enquiries with administrator	Medium
07	Show/ Remove interest in products	High
08	View interest lists	High
09	Notification to user when a second party shows interest in his or her product	High

## 5. Features Not to Be Tested

This is a list of features that will not be included in the testing phase in this version of the test plan and for this current version of the target application:

S/N	Feature	Reason
01	Active conversation between users	This feature will not be included in this version of the prototype

## **6. Approach**

This section details the approach to the conduct of the testing phase. As the application is relatively small, some of the different testing components can be combined to facilitate a more holistic test on the ex-sell application. The main tests that will be conducted would be functional testing and performance testing using white box techniques, system and usability testing as part of the black box testing phase and followed by acceptance testing at the end to ensure that the application complies with contract requirements.

### **6.1. White-Box Testing**

1. Functional testing - This level of testing involves unit level and component testing as mentioned in the previous section "Test Items", under the functional testing tasks. Using white box techniques such as control flow graphs and path coverage. This will ensure that every item accepts the right type of inputs and provides a right output.
2. Performance testing - Done on the application after System Testing. There are four stages that will be conducted here, namely load testing to test the limit load of our web server, stress testing to observe the performance at its peak load and over, endurance testing to observe our application under various amounts of load for a certain duration of time, and spike testing to observe how resilient our application is at handling bursts of severe activity at once.

### **6.2. Black-Box Testing**

1. System testing - Done right after the functional testing of the application. This will be done by external users and members of Team Zenith not taking part in its application development. This is to provide an unbiased view on the integrity of the system. Concurrently, this form of testing will be used as an opportunity to gather user feedback on the application, which can be used as

feedback to the development team in order to make revisions or changes to the ex-sell application.

### 6.3. Conclusive Testing

1. Acceptance testing - Only done when all other tests have been completed and passed and the application is ready for deployment. The application will go into a beta testing phase and be deployed for a limited amount of time. Specific users with no knowledge of the internal workings of the application, such as certain stakeholders, will be allowed to access and utilise the website. If this test is cleared, the testing phase is officially finished, and application is fully ready for deployment.

## 7. Item Pass/Fail Criteria

Load Testing			
S/N	Item	Pass Criteria	Fail Criteria
01	Concurrent user load	Able to handle up to 30000 concurrent connections	Unable to meet passing criteria
02	Database storage load	Able to store up to 30000 accounts as well as 100000 listings	Unable to meet passing criteria
Functional Testing - General			
S/N	Item	Pass Criteria	Fail Criteria
01	Usage of application only after logging in	Able to visit all pages of the web application after logging in. User will be thrown back to the login page otherwise.	User can visit at least one page in the application even without the proper credentials or unable to view pages even after logging in.



02	Communication with application administrator	Messages sent by user to administrator and vice versa are received real time. Administrator availability status listed on the web page should be correctly reflected as well.	Messages sent are not received or administrator status incorrectly reflected.
<b>Functional Testing - Administrative Tasks</b>			
S/N	Item	Pass Criteria	Fail Criteria
01	Creation of Account	Able to sign up for account based on NTU school email. Account details should be reflected in the database.	Unable to sign up even with a NTU school email or account details not reflected correctly in database.
02	Login	Able to login based on account details.	Unable to login even after owning a legitimate account.
03	Profile Editing	Able to view current profile and update it, while observing the respective changes made to the accounts in the database.	Unable to view profile or no changes to database after submitting required information.
<b>Functional Testing - Transactional Tasks</b>			
S/N	Item	Pass Criteria	Fail Criteria
01	Create, View, Update listing	Able to correctly create, view, update listings without any errors or missing links.	Unable to create, view or update listings.
02	Management of interested products	Able to express/ remove interest for product after selecting interest. Product should also appear in the interested list.	Unable to observe a response after selecting/ remove interest in product. Product did not show up in interested list.
03	Notification	Notification should be	No notifications or

	generation to transactional party	sent to seller's email after buyer has expressed interest.	incorrect notification sent.
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## 8. Suspension Criteria and Resumption Requirement

Every defect found will be assigned an index representing its level of severity. This level of severity will range from 1 (least severe) to 3 (most severe). The exact definition of each category will be listed as follows:

1. Category 1 - Defect has relatively no impact to the navigation and functionalities of the ex-sell application. Testing may continue
2. Category 2 - Defect has some impact to the navigation and functionalities of the ex-sell application. Testing may continue in areas that are non-related to defect
3. Category 3 - Defect has definite impact to the navigation and functionalities of the ex-sell application. Testing should stop at this point as any other defects may be related to this defect.

## 9. Test Deliverables

Here is the list of deliverables to be submitted as per requirement of this test plan document:

- Test plan document.
- Test cases.
- Test design specifications.
- Tools and their outputs.
- Error logs and execution logs.
- Problem reports and corrective actions.

## 10. Environmental Needs

For the testing phase, the live server for the ex-sell application must be up continuously, along with the database server that the application is using. Also, the JUnit testing framework library should be included within eclipse to facilitate the writing of testing code.

## 11. Responsibilities

Here is the list of responsibilities withheld by the members of Team Zenith, in relation to the test plan:

S/N	Responsibility	Recommended By	Executed By	Task Description
01	Setting Risks	Chen Zhenni	Chen Zhenni	Documenting and selecting risks that are crucial to be tested.
02	Selection of tested and non Tested Features	Chen Zhenni	Soong Jie Ming	Separating features by its potential to impact the prototype and categorising them into features to be tested or not.
03	Setting overall strategy of test plan	Soong Jie Ming Chen Zhenni	Soong Jie Ming	Creating approach to handle test cases and testing procedures
04	Ensure all required inventories are available for testing	Chen Zhenni	Chen Zhenni	As per responsibility
05	Resolving schedule conflicts with testing phase	Soong Jie Ming	Soong Jie Ming	Ensures that scheduling conflicts differences between production team and testing team are

				resolved gracefully.
06	Training	Soong Jie Ming	Soong Jie Ming	Staff recommendation for training in test program
07	Critical go/ no go for uncovered items	Soong Jie Ming	Yiu Hong Sum	Final decision to include untested features into prototype

## 12. Staffing and Training Needs

The team responsible for testing will have to familiarise with the application as well as the test tools to be used for testing. One-man week will be provided for the team to learn to use and implement various testing frameworks and programs. Before every testing phase, the Lead Developer will host a meeting with the Testing team to level up everyone on the latest changelogs with respect to the target version of the application, following that, one-man day will be provided for the test team to familiarise themselves with the target application.

## 13. Schedule

The testing schedule will be aligned with the Gantt chart schedule created by the project manager in the project plan to ensure sufficient time to test the entire application. However, we recognise that there may be some possibilities of slippages e.g. due to delays in various parts of the prototype development or insufficient manpower etc. To mitigate these impacts, we will be taking some additional measures:

1. The quality assurance manager should always liaise and check with the lead developer to obtain the full changelog as well as ensuring the completion of the various components of the application for testing.

2. The amount of time provided for generation of test cases is two-man days. However, given the relatively small application size, we believe that this can be done in one-man day, giving us one full day in case of slippages or delays.
3. Any errors or missing information that impedes testing will have to be reported at once to the quality assurance manager and suitable actions will have to be taken immediately to resolve said issues.

## 14. Risks and Contingencies

This section will list the risks that might occur which will impact the testing of the ex-sell application. Every risk will also have its respective contingency plan to help mitigate its impact. The risks stated here will be aligned with but not the complete set of risks found in the risk register in the risk management plan. For a more complete coverage of the list of risks, please refer to the risk register in the risk management plan referenced in the last section.

S/N	Risk	Contingency Plan
01	Lack of manpower to test application	Some of the development team can substitute as testers while more manpower is being procured.
02	Lack of manpower to train testers	Ensure that there is always at least one mentor on standby to conduct learning or provide online resources for testers to self-learn in the event that the mentors are unavailable.
03	Lack of Hardware/ Software Components	Ensure that there are always at least 2 backup machines with the required software installed for testers to use in case of hardware failure.
04	Schedule delays	Some of the work done in the testing phase are anticipated to end earlier, creating a buffer for schedule delays.

## 15. Approvals

After the end of the testing phase, the testing team will draft a full report on the final status of the testing phase. This will be vetted by the Quality Assurance Manager before submitting to the project manager for approval. The project manager will be able to show the clients and stakeholders the testing phase report to obtain their approval before giving the approval for the live release of the application.

For the completion of this test plan, all three parties will have to co-sign here to state their approval of this test plan and testing results.

Stakeholder	Signature
Quality Assurance Manager	
Project Manager	
Client	

## 16. References

Document	Version
Software Quality Assurance Plan	Version 1.6
Risk Management Plan	Version 1.0
Software Configuration Management Plan	Version 1.0
Project plan	Version 1.2

