TRƯỜNG ĐẠI HỌC FPT

Capstone Project Document

Carrier Trading Center

Report #5 – Test Plan

Carrier Trading Center		
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SIGNATURE PAGE

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1. INTRODUCTION

1.1. Purpose

This is the comprehensive test plan of the CTC project. The purpose of the document describes scopes of test and activities which need to be taken during test process of project. It addresses the following items: Scopes of Testing, Requirements for Testing, Test Strategy, Test Resources, Test Environment, Test Milestones and Deliverables.

1.2. Definitions and Acronyms

This section describes the definitions, terms, and acronyms that are used in software requirements specification.

Acronym	Definition	Note
CTC	Carrier Trading Center	
GUI	Graphic User Interface	
KLOC	1000 line of code	
PM	Project Manager	
SRS	Software Requirement Specification	
TC	Test Case	

Table 2-2: Definition and Acronyms

1.3. References

Title/File name	Author	Version	Effective Date
CTC_Software Requirement Specification_v1.0_EN	QuyetTD	v1.0	23/02/2017

1.4. Background information

The target of testing is ensured all functions will be run correctly as SRS description. In addition, restrict maximum of defect during the user access in the application. To do this target, website will have to:

- Passed the stages of testing: Unit Testing, Integration Testing, System Testing, Acceptance Testing
- Passed the types of testing: Function Testing, User Interface Testing, Data and Data Integrity Testing

- Run normally in required devices/browsers.

1.5. Scope of testing

CTC will be tested by 3 phases:

Phase 1: Unit testing

- Unit testing will be done by developers
- Developers use Unit test and integration test technique to do
- When executing unit testing, if any bugs are found, developers have to log bug on "hostedredmine" website and fix it until it is correct.

Rule for filling test result:

Test result pass	Pass
Test result fail	Fail
Do not test	Untested
Cannot test	N/A (Not available)

Phase 2: Integration testing

- After finishing component testing, integration testing will be performed by testers.
- Material are integration test cases, high- level design and test tools.
- Integration test focuses on specific areas of use cases when all requirements are completed.
- Integration test should be performed to ensure all components incorporate well.
- When executing integration testing, if any bugs are found, testers have to log on "http://hostedredmine.com" website file and assign to developer fix it and redo this process until it is correct.

Rule for filling test result:

Test result pass	Pass
Test result fail	Fail
Do not test	Untested
Cannot test	N/A (Not available)

Phase 3: System testing

- After finishing integration testing and developers collect all functions and items, testers will be performed system testing, it means doing test whole system.

- Material area system test case, SRS
- If any bugs are found, developers have to fix and testers will verify them. System test is ended only when test cases are passed and no bug is found.

Rule for filling test result:

Test result pass	Pass
Test result fail	Fail
Do not test	Untested
Cannot test	N/A (Not available)

1.6. Constraints

- Deadline for testing only can be met if development progress is on time.
- At least one round of testing must be performed for requirements.
- Have more environments should be tested: Window 8, Window 10… and more browsers: Firefox and Google Chrome …

1.7. Risk list

- Not enough time to write enough test cases, execute test or re-test for fixed bug.
- Tester can be ill during the testing phase.

1.8. Guarantee the quality model

CTC follows V-Model process:

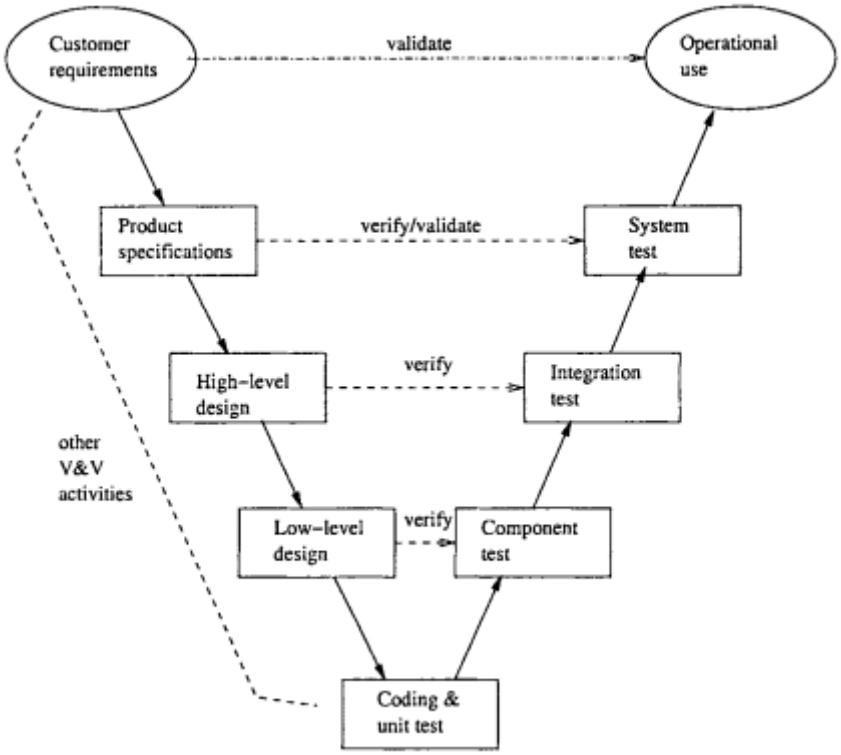

Figure 1: V-Model

Testing progress is divided to 4 phases include: Unit test, Integration test, System test and Acceptance test

- Unit test:
  - Unit testing is used to verify a single minimal unit of source code. The purpose of unit testing is to isolate the smallest testable parts of CTC and verify that they function properly in isolation.
  - Unit testing is the first level of testing and is perform prior to component testing
  - Unit testing will be done by developer.
- Integration test:
  - Integration testing is a level of the software testing process where individual units or component are combined and tested as a group.
  - The purpose is to expose faults in the interaction between integrated units.
  - Integration testing is performed after component testing
  - Integration testing will be done by tester
  - There are two methods of doing integration testing: Bottom-up Integration testing and Top Down Integration testing:

No	Integration Testing Method
1	Bottom-up integration This testing begins with unit testing, followed by tests of progressively higher-level combinations of units called modules.
2	Top- Down integration This testing, the highest-level modules are tested first and progressively lower-level modules are tested after that

Table 1-3: Integration test

- System test:
  - System Testing is a level of the software testing process where a complete, integrated system is tested
  - The purpose is to evaluate the system's compliance with the specified requirements
  - System testing is performed after integration testing
  - System testing will be done by tester
- Acceptance test: We make requirements, design product and launch to market, there is no end-user so we do not have acceptance test

2. REQUIREMENTS FOR TEST

2.1. Test item

UC No.	Group Of Functions	Function	Glossary
Guest			
UC001	**Register**	Register a new account	
UC002	**Bill of lading list**	Search bill of lading	
UC003		View bill of lading list	
UC004	**Price list**	View price	
UC005		Reference price	
Admin			
UC006	**Bill of lading list**	View bill of lading detail	
UC007		Search bill of lading	
UC008		View bill of lading list	
UC009		View carrier auction success	
UC010		Summary all bill of lading	
UC011		View carrier list who are auctioning	
UC012	**Manage user**	Search user	
UC013		View user profile	
UC014		Edit user profile	
UC015		Add company	
UC016		Account recharge for user	
UC017		Active user	
UC018		Deactivate user	
UC019		Edit company information	
UC020		View user list	
UC021	**Price list**	View price list	
UC022		Add a new price	
UC023		View price table history	
UC024		Edit price list	
UC025		Reference price	
UC026		Edit reference price	
UC027	**Transaction history**	Transaction History	
UC028	**Login**	Login	
UC029	**Logout**	Logout	
UC030	**Manage report**	Search report	
UC031		Response report	
UC032		View report list	
UC033	**Manage profile**	View profile	
UC034		Edit profile	
UC035		Forget password	
UC036		Change password	
Goods owner			
UC037	**Bill of lading list**	View bill of lading list	
UC038		View bill of lading detail	
UC039		Search bill of lading	

UC040		View carrier auction success	
UC041		Confirm complete transaction	
UC042		Post a new bill of lading	
UC043		Cancel bill of lading	
UC044	**Manage profile**	Edit profile	
UC045		View profile	
UC046		Change password	
UC047		Forget password	
UC048		Add company	
UC049	**Manage report**	Send report	
UC050		Search report	
UC051		Cancel report	
UC052		View report list	
UC053	**Price list**	Reference price	
UC054		View price list	
UC055	**Account recharge**	Account recharge	
UC056	**Transaction history**	Transaction history	
UC057	**Login**	Login	
UC058	**Logout**	Logout	
UC059	**Connect to carrier**	Connect to carrier	
Carrier			
UC060	**Bill of lading list**	View bill of lading list	
UC061		Confirm complete transaction	
UC062		View bill of lading detail	
UC063		Auction bill of lading	
UC064		Search bill of lading	
UC065		Cancel bill of lading	
UC066	**Manage profile**	Edit profile	
UC067		View profile	
UC068		Change password	
UC069		Forget password	
UC070		Add company	
UC071	**Manage report**	View report list	
UC072		Search report	
UC073		Cancel report	
UC074		Send report	
UC075	**Price list**	Reference price	
UC076		View pricing list	
UC077	**Transaction history**	Transaction history	
UC078	**Login**	Login	
UC079	**Logout**	Logout	
UC080	**Connect to goods owner**	Connect to goods owner	
UC081	**Account recharge**	Account recharge	

2.2. Acceptance Test Criteria

- Criteria for Unit test of Development team, for Test team accepts to start testing:

  - Number of TC/KLOC: 40TC/KLOC
  - Number defects/KLOC: 3-4 defects/KLOC
  - Path coverage: 100%
- Criteria for Integration test:
  - Number of TC/KLOC: 30 TC/KLOC
  - Number defects/KLOC: 2-3 defects/KLOC
- Criteria for System test:
  - Number of TC/KLOC: 20 TC/KLOC
  - Number defects/KLOC: 4-6 defects/KLOC

2.3. Feature not to be tested

- Over than 10.000 users connect to system at the same time.

3. TEST STRATEGY

3.1. Test type

3.1.1. Function Testing

Test Objective:	The type of this test is to ensure proper target-of-test functionality, including user interaction, all function defined in specification document implemented correctly.
Technique:	Executing each use case, function, using valid and invalid data, to verify the following: - The expected results occur when valid data is used. - The appropriate error or warning messages are displayed when invalid data is used. - Each business rule is properly applied.
Completion Criteria:	- All planned tests have been executed. - All identified defects have been addressed and closed.
Special Considerations:	Testing may be stopped when Time runs out A certain number of defects found Test coverage > 97% Stop when testing becomes unproductive

Table 3-1: Function Testing

3.1.2. User Interface Testing

GUI testing is the process of ensuring proper functionality of the GUI for a given web and making sure it conforms to its written specifications.

GUI testing evaluates design elements such as layout, colors, fonts, font sizes, labels, text boxes, text formatting, captions, buttons, lists, icons, links, content and more.

Test Objective:	Verify the following: - Navigation through the target-of-test properly reflects business functions and requirements, including window-to-window, field-to-field, and use of access methods (tab keys, mouse movements, accelerator keys) - Window objects and characteristics, such as menus, size, position, state, and focus conform to standards.

Technique:	Create or modify tests for each window to verify proper navigation and object states for each application window and objects.
Completion Criteria:	Each window successfully verified to remain consistent with benchmark version or within acceptable standard
Special Considerations:	Not all properties for custom and third party objects can be accessed.

Table 3-2: GUI Testing

3.2. Data and Database Integrity Testing

The databases and the database processes should be tested as a subsystem within the Project. These subsystems should be tested without the target-of-test's User Interface as the interface to the data. Additional research into the Database Management System (DBMS) needs to be performed to identify the tools and techniques that may exist to support the testing identified below.

Test Objective:	Ensure database access methods and processes function properly and without data corruption.
Technique:	- Invoke each database access method and process, seeding each with valid and invalid data or requests for data. - Inspect the database to ensure the data has been populated as intended, all database events occurred properly, or review the returned data to ensure that the correct data was retrieved for the correct reasons.
Completion Criteria:	All database access methods and processes function as designed and without any data corruption.
Special Considerations:	- Testing may require a DBMS development environment or drivers to enter or modify data directly in the databases. - Processes should be invoked manually.

Table 3-3: Data and Data Integrity Testing

3.3. Test stages

Clearly state the stage in which the test will be executed. Identified below are the stages in which common test are executed

Type of Tests	Stage of Test			
	Unit	Integration	System	Acceptance
Function Testing	X	X	X	

User Interface Testing	X		X	

4. RESOURCES

4.1. Human resource

Worker/Doer	Role	Specific Responsibilities/Comments
QuyetTD	Test Leader	Manage Test Resource and assign test tasks. Create and review Test Plan. Create and review Test Case. Execute test. Create and review Test Report
TuanDL	Tester	Create and review Test Case. Execute test. Create Test view points Create and review Test Report

Table 4-1: Human resource

5. TEST ENVIRONMENT

5.1. Hardware

Name	Purpose	Detail
Laptop DELL	Device for create and execute test	Window 8.1 Pro Core i5

Table 5-1: Hardware

5.2. Software

Name	Purpose	Detail
Test Plan	Managing test	Microsoft Word 2016
Test case	Executing test	Microsoft Excel 2016
Test report, Test checklist	Tracking test	Microsoft Excel 2016
Chrome	Executing test	Chrome
Firefox	Executing test	Firefox

Table 5-2: Software

5.3. Infrastructure

Name	Purpose	Detail
HostedRedmine.com	Tracking bug during testing time	

Table 5-3: Infrastructure

6. DELIVERABLES

No	Deliverables	Responsibilities	Delivered Date
1	Test Plan	Tester	
2	Unit Test case	Tester	
3	Integration Test case	Tester	
4	System Test case	Tester	
5	Defect Log Management	All members	
6	Test report	PM	

Table 6-1: Deliverables