Fpt University

TRƯỜNG ĐẠI HỌC FPT

CAPSTONE PROJECT REPORT

Smart online electronics sales system

Report 5 – Software Test Documentation

– CanTho, August 2024 –

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I. Testing Documentation

1. Scope of Testing

The scope of testing encompasses the verification and validation of various features, functions, and non-functional requirements of the target system. The key areas to be tested include:

- **User Management**: Functions related to user authentication and profile management.
- **Order Management**: Services involved in order processing, status updates, and notifications.
- **Product Management**: APIs and batch jobs related to product recommendations and statistics export.
- **Dashboard**: Services generating revenue reports.
- **Search Optimization**: Services ensuring the relevance and speed of search results.
- **Payment Integration**: APIs handling secure payment transactions.
- **Chatbot Integration**: Services providing customer support and product recommendations through chat.
- **Data Backup**: Jobs ensuring data integrity and disaster recovery.

2. Test Strategy

The test strategy outlines the types of testing, the levels at which they will be performed, and the tools that will be used. This ensures comprehensive coverage and quality assurance for the project.

2.1 Testing Types

1. **Functional Testing**:
    - **Objective**: Validate that each function of the software operates in conformance with the requirement specification.
    - **Technique**: Black-box testing, user interface testing
    - **Completion Criteria**: All functional requirements are met without issues
2. **Performance Testing**:
    - **Objective**: Ensure the software performs well under expected workload
    - **Technique**: Load testing, stress testing
    - **Completion Criteria**: System meets performance benchmarks
3. **Security Testing**:
    - **Objective**: Identify vulnerabilities and ensure data protection
    - **Technique**: Penetration testing, vulnerability scanning
    - **Completion Criteria**: No critical security issues remain
4. **Usability Testing**:
    - **Objective**: Ensure the software is user-friendly
    - **Technique**: User testing sessions, A/B testing

    - **Completion Criteria**: Users can accomplish tasks efficiently and effectively
5. **Regression Testing**:
    - **Objective**: Verify that new changes do not adversely affect existing functionalities
    - **Technique**: Automated regression test suites
    - **Completion Criteria**: No critical or major issues detected in previously working functions
6. **Compatibility Testing**:
    - **Objective**: Ensure software compatibility across different browsers, devices, and operating systems
    - **Technique**: Cross-browser testing, cross-device testing
    - **Completion Criteria**: Consistent behaviour across different environments

Testing Levels for Each Type:

- **Unit Testing**: Functional Testing, Security Testing (at the code level)
- **Integration Testing**: Functional Testing, Performance Testing, Security Testing
- **System Testing**: Functional Testing, Performance Testing, Usability Testing, Security Testing, Compatibility Testing
- **Regression Testing**: Performed at all levels as needed

2.2 Test Levels

Table 1 – Test Levels

Type of Tests	Test Level			
	Unit	Integration	System	Acceptance
Functional Testing	X	X	X	X
Performance Testing		X	X	
Security Testing	X	X	X	
Usability Testing			X	X
Compatibility Testing			X	

3. Test Plan

3.1 Human Resources

Table 2 - Human Resources

Worker/Doer	Role	Specific Responsibilities/Comments
Trần Chí Đô	Leader	Oversees the project, coordinates with stakeholders, leads design and planning, ensures team communication, reviews testers' work, resolves issues.
Quách Đăng Khoa	Tester	Conducts thorough testing, develops test cases and plans, reports bugs, verifies fixes, collaborates with developers to enhance functionality.
Trần Gia Cường	Tester	Focuses on functional and regression testing, documents test results, participates in User Acceptance Testing, shares insights with testers.
Trần Quốc Thái	Tester	Conducts performance and security testing, develops automated test scripts, maintains the test environment, improves testing process and software quality.

3.2 Test Environment

Table 3 - Test Environment

Purpose	Tool	Provider	Version
Code Repository	Github	GitHub,Inc.	N/A
IDE	Visual Studio Code	Microsoft	1.91.0
Spreadsheet	Google Sheet	Google	N/A
Test Case Management	Google Sheets	Google	N/A

Purpose	Tool	Provider	Version
Bug Tracking	Google Sheets	Google	N/A
Documentation	Google Docs	Google	N/A
Unit test	Manual	Team	N/A
Integration test	Manual	Team	N/A
System test	Manual	Team	N/A
Acceptance test	Manual	User	N/A

3.3 Test Milestones

Table 4 - Test Milestones

Milestone Task	Start Date	End Date
Testing Product Feedback module	01/07/2024	15/07/2024
Testing Payment module	01/07/2024	15/07/2024
Testing Product Management module	01/07/2024	15/07/2024
Testing Staff Management module	01/07/2024	15/07/2024
Testing Authentication module	01/07/2024	15/07/2024
Testing View module	01/07/2024	15/07/2024
Testing User Management module	01/07/2024	15/07/2024
Testing Order Management module	01/07/2024	15/07/2024
Testing Category Management module	01/07/2024	15/07/2024
Testing Blogs Management module	01/07/2024	15/07/2024

4. Test Cases

- *Test Cases (IT, ST, AT): Report5_Test Report.xls*
- *Unit Test Cases: Report5_Unit Test.xlsx*

5. Test Reports

Test coverage	100.00 %
Test successful coverage	100.00 %

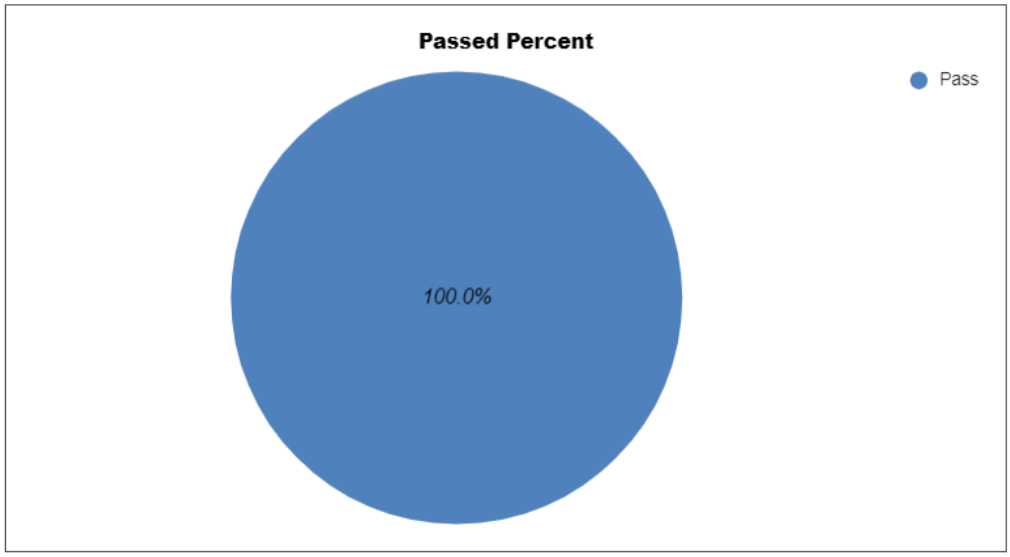

Figure 1 - Test Reports