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| --- | --- | --- | --- | --- |
| Project Name | Tourism Experience Connection Management System | Prepared By | D01-RT03 | |
| Validated By | LÊ TRUNG KIÊN | Dated | | 27/06/2025 |
| Plan Version | 1.0 |  | |  |

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# 1. Introduction

### 1.1 Purpose

This Test Plan is created to:

* Define comprehensive testing strategy for the tourism connection management system
* Ensure product quality meets the requirements of both tourists and local residents
* Establish systematic testing procedures for functions ranging from basic to complex
* Minimize risks and ensure system operates stably across multiple platforms

### 1.2 Background

The web system is developed to:

* Connect tourists with local experiences (homestay, cooking classes, festivals, agriculture)
* Create income opportunities for local residents
* Support multiple devices (mobile phones, tablets, computers)
* Build a community for sharing tourism experiences

## 

### 1.3 Scope

Within testing scope:

* All functions of 3 user types: Tourists, Local residents, Admin
* User interface on web browsers
* Online payment integration
* Messaging and review system
* Responsive design for multiple devices
* User information security

Out of testing scope:

* Native mobile applications (only responsive web testing)
* Third-party payment gateway internals
* Email server configuration

### 1.4 Project Identification

The table below identifies the documentation and availability used for developing the test plan:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Document (and version / date) | Created or Available (Yes/No) | Received or Reviewed (Yes/No) | Author or Resource | Notes |
| Requirements Specification | Yes | Yes | Nhóm D01-RT03 | Requirement Outline v1.0 |
| Functional Specification | Yes | Yes | Nhóm D01-RT03 | Derived from requirements |
| Use-Case Reports | Yes | Yes | Nhóm D01-RT03 | User stories documented |
| Project Plan | Yes | Yes | Nhóm D01-RT03 | SWP391 project timeline |
| Design Specifications | In Progress | No | Nhóm D01-RT03 | UI/UX mockups |
| Prototype | In Progress | No | Nhóm D01-RT03 | Early demo version |
| User's Manuals | No | No | Nhóm D01-RT03 | To be created |
| Business Model or Flow | Yes | Yes | Nhóm D01-RT03 | Tourism ecosystem flow |
| Data Model or Flow | Yes | Yes | Nhóm D01-RT03 | Database ERD |
| Business Functions and Rules | Yes | Yes | Nhóm D01-RT03 | Business logic rules |
| Project or Business Risk Assessment | Yes | Yes | Nhóm D01-RT03 | Risk matrix created |

# 2. Test Approach

## 2.1 Testing Stages

### 2.1.1 Unit Testing

* Test individual components/modules (Servlets, JSP pages, DAO classes)
* Validate business logic methods
* Test database connection and CRUD operations
* Coverage target: 80% code coverage

### 2.1.2 Integration Testing

* Test interaction between frontend and backend
* Validate API endpoints and data flow
* Test database integration with application layer
* Verify email notification system integration

### 2.1.3 System Testing

* End-to-end testing of complete user workflows
* Cross-browser compatibility testing
* Performance testing under normal and peak loads
* Security testing for authentication and authorization

### 2.1.4 Acceptance Testing

* User Acceptance Testing (UAT) with stakeholders
* Business process validation
* Usability testing with real users
* Final verification before deployment

## 2.2 Testing Types

### 2.2.1 GUI Testing:

|  |  |
| --- | --- |
| Test Objective | - Verify user interface elements display correctly across different browsers and devices  - Ensure responsive design works on mobile, tablet, and desktop  - Validate navigation flow and user experience |
| Technique | - Manual testing across Chrome, Firefox, Safari, Edge  - Responsive design testing using browser dev tools  - Accessibility testing with screen readers  - Visual regression testing using screenshots |
| Completion Criteria | - All UI elements render correctly on target browsers  - Responsive breakpoints work as designed  - Navigation is intuitive and error-free  - Accessibility standards met (WCAG 2.1 AA) |
| Special Considerations | - Test on actual mobile devices, not just emulators  - Verify touch interactions on mobile interfaces  - Check loading states and error messages |

### 2.2.2 Functional Testing:

|  |  |
| --- | --- |
| Test Objective | - Verify all functional requirements are implemented correctly  - Test user registration, login, and profile management  - Validate booking and payment processes  - Test admin management features |
| Technique | - Black-box testing based on requirements  - Positive and negative test scenarios  - Boundary value analysis for input fields  - State transition testing for booking workflows |
| Completion Criteria | - All user stories pass acceptance criteria  - Error handling works as expected  - Data validation prevents invalid inputs  - Business rules are properly enforced |
| Special Considerations | - Test multi-language support if applicable  - Verify email notifications are sent correctly  - Test concurrent user scenarios |

### 2.2.3 Performance Testing:

#### 2.2.3.1) Performance Profiling:

|  |  |
| --- | --- |
| Test Objective | - Identify performance bottlenecks in the application  - Measure response times for critical user actions  - Analyze database query performance |
| Technique | - Application profiling using Java profilers  - Database query analysis with SQL Server Profiler  - Frontend performance monitoring with browser tools |
| Completion Criteria | - Page load times under 3 seconds for 95% of request  - Database queries execute within acceptable timeframes  - Memory usage remains stable during extended use |
| Special Considerations | - Profile both development and production-like environments  - Monitor resource consumption during peak usage |

#### 2.2.3.2) Load Testing:

|  |  |
| --- | --- |
| Test Objective | - Verify system performance under expected user load  - Test scalability and resource utilization  - Identify breaking points and capacity limits |
| Technique | - Gradual load increase testing  - Concurrent user simulation  - Stress testing beyond normal capacity |
| Completion Criteria | - System handles 100 concurrent users without degradation  - Response times remain acceptable under normal load  - System recovers gracefully from overload conditions |
| Special Considerations | - Test realistic user behavior patterns  - Include database and file system stress testing |

### 2.2.4 Configuration Testing:

|  |  |
| --- | --- |
| Test Objective | - Verify system works correctly in different server configurations- Test deployment on different environments  - Validate configuration parameters and settings |
| Technique | - Deploy on multiple server configurations  - Test with different database connection settings  - Verify environment-specific configurations |
| Completion Criteria | - Application deploys successfully on target servers  - Configuration files are properly managed  - Environment-specific features work correctly |
| Special Considerations | - Test both development and production configurations  - Verify backup and recovery procedures |

### 2.2.5 Installation Testing:

|  |  |
| --- | --- |
| Test Objective | - Verify installation procedures work correctly  - Test system deployment and configuration  - Validate database setup and initial data loading |
| Technique | - Fresh installation testing  - Upgrade testing from previous versions  - Installation on clean environments |
| Completion Criteria | - Installation completes without errors  - All required components are properly installed  - System starts and functions correctly after installation |
| Special Considerations | - Document installation prerequisites  - Test rollback procedures if installation fails |

### 2.2.6 Browser Testing:

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|  |  |
| --- | --- |
| Test Objective | - Ensure cross-browser compatibility  - Verify consistent user experience across browsers  - Test JavaScript functionality on different engines |
| Technique | - Automated cross-browser testing tools  - JavaScript compatibility testing  - Manual testing on major browsers |
| Completion Criteria | - Application works correctly on Chrome, Firefox, Safari, Edge  - No browser-specific bugs or rendering issues  - JavaScript features function consistently |
| Special Considerations | - Test on both desktop and mobile browsers  - Include testing on older browser versions if required |

# 3. Test Deliverables

The following are the test deliverables:

1. Test Plan - This document
2. Test Cases - Detailed test case specifications
3. Test Scripts - Automated test scripts where applicable
4. Test Data - Sample data for testing scenarios
5. Test Reports - Execution results and defect reports
6. Summary Report - Final test summary and recommendations
7. Deployment Guide - Instructions for production deployment
8. User Acceptance Test Report - UAT results and sign-off

# 4. Environmental Needs

### 4.1 Hardware

|  |  |
| --- | --- |
| Machine | Configuration |
| Server | CPU: 4 cores, RAM: 8GB, Storage: 500GB SSD, Network: 1Gbps |
| Client | CPU: 2 cores, RAM: 4GB, Display: 1920x1080, Mobile devices for testing |

### 4.2 Software

|  |  |  |  |
| --- | --- | --- | --- |
| Machine | OS | Browser | Software Required for Testing |
| Server | Windows Server 2019/Linux Ubuntu 20.04 | N/A | Java 11, Tomcat 9, SQL Server 2019 |
| Client | Windows 10/MacOS/Android/iOS | Chrome, Firefox, Safari, Edge | Browser dev tools, Postman |

### 4.3 Tools

Test Management: Jira

Automation: Selenium WebDriver

Performance: JMeter

Database: SQL Server Management Studio

API Testing: Postman

Bug Tracking: Jira

Version Control: Github

# 5. Staffing

### 5.1 Responsibilities

|  |  |  |
| --- | --- | --- |
| Role | Responsibility | Person |
| Test Plan | Create and maintain test strategy | Test Lead |
| Test Cases | Design and document test cases | Test Analysts |
| Manual Testing | Execute manual test cases | Testers |
| Automated Testing | Develop and maintain automation scripts | Automation Engineer |
| Performance Testing | Design and execute performance tests | Performance Tester |
| UAT Coordination | Coordinate user acceptance testing | Business Analyst |

### 5.2 Training

Testing Tools Training: Selenium, JMeter, SQL Server

Domain Knowledge: Tourism industry processes and workflows

Security Testing: OWASP guidelines and security testing practices

Agile Testing: Continuous integration and testing practices

# 6. Dependencies/Risks

### 6.1 Dependencies

* Development Environment: Complete development environment setup
* Test Data: Availability of realistic test data
* Third-party Services: Payment gateway test accounts
* Infrastructure: Test servers and database instances

### 

### 6.2 Risk

|  |  |  |  |
| --- | --- | --- | --- |
| Risk | Impact | Probability | Mitigation Strategy |
| Incomplete requirements | High | Medium | Regular requirement reviews and clarifications |
| Performance issues | High | Medium | Early performance testing and optimization |
| Security vulnerabilities | High | Low | Security code reviews and penetration testing |
| Browser compatibility issues | Medium | Medium | Continuous cross-browser testing |
| Database performance | Medium | Medium | Database optimization and indexing |
| Timeline delays | Medium | High | Parallel testing activities and resource allocation |

# 7. Schedule and Milestones

### 7.1 Schedule

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Testing Type** | **Unit Testing** | | | **Module Testing** | | | **System Testing** | | |
|  | GUI | Functional | Performance | GUI | Functional | Performance | GUI | Functional | Performance |
| Schedule Date | 01/07/2025 | 02/07/2025 | 03/07/2025 | 08/07/2025 | 09/07/2025 | 10/07/2025 | 15/07/2025 | 16/07/2025 | 17/07/2025 |

### 7.2 Milestones

|  |  |
| --- | --- |
| Module Name | Release Date |
| User Management Module | 05/07/2025 |
| Tourism Experience Module | 12/07/2025 |
| Booking and Payment Module | 19/07/2025 |
| Admin Management Module | 26/07/2025 |
| Full System Integration | 31/07/2025 |

# 8. Approvals

|  |  |  |  |
| --- | --- | --- | --- |
|  | Project Manager | Quality Manager |  |
| Name | Lê Trung Kiên |  |  |
| Signature |  |  |  |