Test Plan for Airline Reservation Application

# 1. Test Plan ID

TP-AR-2025-001

# 2. Introduction

This document outlines the test plan for the Airline Reservation System (ARS). The ARS allows users to search flights, book tickets, manage reservations, and process payments. The objective is to ensure the system works as expected across all supported platforms and meets business and performance requirements.

# 3. Scope of Testing

* In-Scope:
* Flight search (one-way, round-trip, multi-city)
* Booking flights (economy, business, first class)
* Payment gateway integration
* Seat selection and ancillary services
* User login/registration and profile management
* Booking management (cancellation, modification, refund)
* Mobile and desktop compatibility
* Out-of-Scope:
* Backend airline scheduling and crew management systems
* Third-party airline systems not directly integrated

# 4. Test Objectives

Validate functional correctness of booking, search, and payment modules.

Ensure security of payment and personal data.

Confirm application works as expected under varying load conditions.

Verify UI/UX consistency across browsers and devices.

# 5. Test Strategy

* Testing Types:
* Functional Testing
* Regression Testing
* Integration Testing
* Usability Testing
* Performance Testing
* Security Testing
* Cross-browser and cross-device Testing

# 6. Test Environment

Frontend: React-based web interface and Android/iOS mobile apps

Backend: REST APIs with Java & MySQL

Browsers: Chrome, Firefox, Edge, Safari

Devices: Android 10+, iOS 14+, Windows, macOS

# 7. Roles and Responsibilities

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| --- | --- |
| Role | Responsibility |
| Test Manager | Overall QA strategy and resource allocation |
| QA Lead | Test planning, scheduling, and reporting |
| Automation Tester | Selenium-based UI automation, API automation |
| Manual Tester | Functional and regression testing |
| Performance Tester | JMeter-based load testing |
| Security Analyst | Penetration testing, vulnerability scanning |

# 8. Test Deliverables

* Test Plan Document
* Test Scenarios and Test Cases
* Test Data
* Bug Reports
* Test Execution Reports
* Final Test Summary Report
* Sign-off Document

# 9. Entry and Exit Criteria

* Entry Criteria:
* Functional requirements finalized and signed off
* Test environment ready
* Test data available
* All necessary access provided
* Exit Criteria:
* 100% test case execution
* All critical and high severity defects closed
* Test summary report reviewed and approved

# 10. Tools to be Used

* Test Management: JIRA, TestRail
* Automation: Selenium WebDriver, Appium
* API Testing: Postman, RestAssured
* Performance Testing: JMeter
* Security Testing: OWASP ZAP, Burp Suite
* CI/CD: Jenkins

# 11. Risk and Mitigation

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| --- | --- |
| Risk | Mitigation |
| Delays in development delivery | Daily stand-ups and buffer time in schedule |
| Third-party API unavailability | Use of stubs/mocks for testing |
| Cross-browser UI issues | Early compatibility testing |
| Payment gateway test downtime | Coordinate with provider for sandbox access |

# 12. Schedule

|  |  |  |
| --- | --- | --- |
| Activity | Start Date | End Date |
| Test Planning | 2025-05-10 | 2025-05-12 |
| Test Case Design | 2025-05-13 | 2025-05-18 |
| Test Environment Setup | 2025-05-13 | 2025-05-14 |
| Test Execution | 2025-05-19 | 2025-06-05 |
| Defect Retesting & Closure | 2025-06-06 | 2025-06-10 |
| Final Sign-off | 2025-06-11 | 2025-06-12 |

# 13. Approval

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| --- | --- | --- | --- |
| Name | Role | Signature | Date |
|  |  |  |  |
| [Test Manager] | QA Lead | \_\_\_\_\_\_\_\_\_\_\_ | [TBD] |
| [Client] | Product Owner | \_\_\_\_\_\_\_\_\_\_\_ | [TBD] |