## 1. Introduction

This software test plan is aimed at verifying the functionality and correct working of every aspect and part of the Atul Airways website. Testing will ensure the software is foolproof and error-free before go-live. It will evaluate the software features to detect any discrepancies between actual and expected behavior.

## 2. Objectives

- Ensure seamless user experience across all website features.  
- Validate all critical functionalities: booking, cancellation, scheduling, check-in, and search.  
- Verify reliability and security of the application.  
- Eliminate bugs and ensure robust performance through thorough testing.

## 3. Testing Strategy

Testing will follow an Agile model and include both manual and automation techniques. Testing will occur iteratively across sprints, with close collaboration among QA, development, and business stakeholders.

Test plan components include:

- Purpose for the test  
- Pass/Fail criteria  
- Hardware/Software requirements

## 4. Scope of Testing

- Booking Flow (One-way, Round-trip, Multi-city)  
- Scheduling and Rescheduling of flights  
- Flight Status Check  
- Booking Cancellation  
- Web Check-in and Boarding Pass Generation  
- Flight Search  
- Flight Details Page  
- Payment Gateway Integration  
- Notifications (SMS/Email alerts)  
- User Account Management  
  
**Out of Scope:**  
- Third-party partner system deep testing (only integration points will be verified).

## 5. Types of Tests

- **Unit Testing**: Each component is tested individually to verify internal logic and functionality.

- **Integration Testing:** Modules are combined and tested for data flow and consistency.

- **Interface Testing**: Checked across various systems (Windows/Linux) for UI consistency.

- **Security Testing:** Ensures data encryption, password protection, and secure backup.

- **Recovery Testing**: Simulates crash scenarios to validate data restoration from backups.

- **Use Case Testing:** Validates input validations, errors for missing/wrong data formats.

- **Alpha Testing:** Internal team testing by non-developers for early feedback.

- **Stress Testing:** Simulates high-load (e.g. multiple simultaneous logins) and tracks performance.

## 6. Testing Approach

**Manual Testing:**

- Exploratory Testing  
- Functional Testing  
- Regression Testing  
- UI/UX Testing  
- Cross-browser Testing  
- Mobile Responsive Testing

**Automation Testing:**

- Regression suites for critical flows (booking, check-in, cancellations).  
- Selenium WebDriver + TestNG framework will be used.  
- Automated smoke tests for major deployments.

## 7. Pass / Fail Criteria

Failing Criteria:

- The software crashes  
- It results in wrong output

Passing Criteria:

- The correct results are obtained  
- Expected functionality is achieved across modules

## 8. Environmental Requirements

**Hardware:**

- Working internet connection

**Client Software:**

- Operating System: Windows/Linux  
- HTML/CSS/JavaScript

**Server Software:**

- Apache  
- PHP  
- MySQL

## 9. Timeline

Project Duration: 60 Working Days  
Sprint Duration: 2 weeks per sprint  
Final UAT and Go-Live Preparation: Last 2 sprints

**Phase | Duration**  
------|---------  
Requirement Analysis | 3 days  
Test Planning & Environment Setup | 5 days  
Sprint 1 to N - Test Design, Execution & Automation | 8 weeks  
UAT & Final Regression | 1.5 weeks  
Go-Live | 60th working day

## 10. Roles & Responsibilities

- QA Lead: Test Planning, Sprint Test Management, Client Reporting  
- Manual Testers: Test case execution, Bug reporting  
- Automation Testers: Automation Scripting, Regression Suite Maintenance  
- Developers: Bug fixing, Unit Testing

## 11. Risks & Mitigation

Risk | Mitigation Strategy  
---- | ---------------------  
Delay in requirement clarity | Regular sprint planning and backlog grooming  
Defect leakage due to Agile fast pace | Strong regression suite and smoke testing in place  
Third-party dependency delays | Early integration testing planning

## 12. Exit Criteria

- All critical and major bugs closed  
- Test cases executed with at least 95% pass rate  
- Final UAT sign-off from stakeholders