# Test Plan for Restful Booker API

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## 1. Objective

This document outlines the test plan for the Restful Booker API. The objective is to ensure that all API functionalities, including booking creation, updating, deletion, and retrieval, work as expected for the end users.

## 2. Scope

The scope of this test plan includes:

- Features to be tested:  
 - Creating a booking  
 - Updating a booking  
 - Deleting a booking  
 - Fetching a booking by ID  
 - Fetching all bookings  
 - Authentication via Basic Auth & Token Auth

- Types of testing: Manual testing, automated testing, performance testing, security testing.

- Environments: Different operating systems, API clients, network conditions.

- Evaluation criteria: Number of defects found, time taken to complete testing, response times, API reliability.

- Team roles and responsibilities: Test lead, testers, developers, automation engineers.

## 3. Inclusions

Introduction: Overview of the test plan, including purpose, scope, and goals.

Test Objectives: Ensuring API functionality, response validation, security compliance, and performance evaluation.

## 4. Exclusions

- UI Testing (as this is a backend API testing scope).

- Non-supported authentication mechanisms.

## 5. Test Environments

- Operating Systems: Windows 10, macOS, Linux.

- API Clients: Postman, Curl, Swagger.

- Network Connectivity: Wi-Fi, cellular, wired connections.

- Security Protocols: Basic Auth, Token Auth.

- Access Permissions: Testers, developers, stakeholders.

## 6. Defect Reporting Procedure

- Criteria for identifying defects: API response validation, performance degradation, security vulnerabilities.

- Steps for reporting defects: Logging bugs in JIRA with clear reproduction steps, request/response logs, and severity classification.

- Tracking tools: JIRA.

- Communication channels: Email, Slack, Stand-up meetings.

- Metrics: Number of defects found, time taken to resolve issues, defect severity classification.

## 7. Test Strategy

Step 1: Test Scenarios and Test Case Creation

- Techniques: Equivalence Class Partitioning, Boundary Value Analysis, State Transition Testing, Use Case Testing.

- Methods: Exploratory Testing, Automation.

Step 2: Testing Procedure

- Smoke Testing: Validate API availability.

- Functional Testing: Validate API responses.

- Security Testing: Check authentication mechanisms.

- Performance Testing: Response time under different load conditions.

- Regression Testing: After bug fixes.

Step 3: Best Practices

- Early Testing Approach.

- Exploratory API Testing.

- Test automation for API endpoints.

- End-to-end booking flow validation.

## 8. Test Schedule

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| --- | --- |
| Task | Duration |
| Test Plan Creation | 2 Days |
| Test Case Creation | 4 Days |
| Test Execution | 10 Days |
| Report Submission | 2 Days |

## 9. Test Deliverables

- Entry and Exit Criteria  
 - Entry: API is developed and stable.  
 - Exit: All test cases executed, defects reported and resolved.

- Reports: Test Case Reports, Defect Reports, Test Summary Reports.

## 10. Tools

- Bug Tracking: JIRA

- Automation: Postman

- Performance Testing: JMeter

- Documentation: Excel, Word, Confluence

## 11. Risks and Mitigations

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| --- | --- |
| Risk | Mitigation |
| API downtime | Ensure backup servers, retry mechanisms |
| Incorrect API responses | Implement detailed validation checks |
| Security vulnerabilities | Conduct penetration testing |

## 12. Approvals

- Test Plan Approval by Test Lead

- Test Execution Approval by QA Manager

- Final Approval by Product Owner