**Test Plan for Restful Booker API**

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**1. Objective**

This document outlines the test plan for the **Restful Booker API**, a web API that enables CRUD operations for hotel bookings. The objective is to ensure the quality, functionality, and reliability of the API while maintaining security through authentication mechanisms.

**2. Scope**

**Features to be Tested**

* Create Booking
* Update Booking
* Partial Update Booking
* Delete Booking
* Ping - Health Check
* Authentication - Create Token
* Get Booking IDs

**Types of Testing**

* Functional Testing
* Integration Testing
* API Testing (Manual and Automated)
* Performance Testing
* Security Testing

**Environments**

* **Operating Systems**: Windows 10, macOS, Linux
* **Browsers**: Google Chrome, Mozilla Firefox, Microsoft Edge (for API client tools like Postman)
* **Devices**: Desktop computers, laptops
* **Network Connectivity**: Wi-Fi, wired connections

**Evaluation Criteria**

* Number of defects found
* Time taken to complete testing
* API response times and reliability

**Team Roles and Responsibilities**

* **Test Lead**: Plan and oversee the testing process
* **Testers**: Execute test cases, report bugs
* **Developers**: Fix reported issues
* **Stakeholders**: Review and approve testing reports

**3. Inclusions**

* Testing API endpoints with valid and invalid data
* Validating response codes, messages, and payload structures
* Ensuring data integrity and consistency across API operations
* Verifying authentication and authorization mechanisms

**4. Exclusions**

* UI testing (not applicable as this is an API-only service)
* Non-functional testing unrelated to API operations

**5. Test Environments**

* **API Testing Tools**: Postman, Curl, Rest Assured
* **Logging and Debugging**: API logs, server logs
* **Security Protocols**: Token-based authentication
* **Access Permissions**: Only authorized users should be able to modify bookings

**6. Defect Reporting Procedure**

* **Criteria for identifying defects**: Incorrect responses, authentication failures, improper data handling
* **Steps for reporting defects**:
  + Use defect tracking tools (JIRA, Bugzilla)
  + Provide detailed reproduction steps
  + Attach API request/response logs
* **Triage and prioritization**: Assign severity levels based on business impact
* **Metrics**: Number of defects, resolution time, defect closure rate

**7. Test Strategy**

**Step 1: Test Scenarios and Test Cases Creation**

* **Techniques**: Equivalence Partitioning, Boundary Value Analysis, Use Case Testing
* **Additional methods**: Exploratory Testing, Negative Testing

**Step 2: Testing Procedure**

* **Smoke Testing**: Validate core functionalities
* **In-depth Testing**: Execute all test cases after smoke tests pass
* **Multiple Environments**: Test API across different OS and network conditions
* **Defect Reporting**: Log bugs in the defect tracking tool

**Step 3: Best Practices**

* **Shift-Left Testing**: Start testing early in the development cycle
* **End-to-End Testing**: Verify the entire API workflow

**8. Test Schedule**

|  |  |
| --- | --- |
| **Task** | **Duration** |
| Test Plan Creation | 2 days |
| Test Case Design | 4 days |
| Test Execution | 10 days |
| Defect Reporting & Fixing | Ongoing |
| Test Summary Report Submission | 2 days |

**9. Test Deliverables**

* **Test Plan Document**
* **Test Cases & Execution Reports**
* **Defect Reports**
* **Test Summary Report**

**10. Entry and Exit Criteria**

**Entry Criteria**

* Availability of API specifications
* Test environment setup completed

**Exit Criteria**

* All critical test cases executed
* No critical defects remaining
* Test summary report reviewed and approved

**11. Tools**

* **Defect Tracking**: JIRA, Bugzilla
* **API Testing**: Postman, Curl, Rest Assured
* **Reporting**: Excel, JIRA dashboards

**12. Risks and Mitigations**

|  |  |
| --- | --- |
| Risk | Mitigation Strategy |
| API downtime | Use mock servers for testing |
| Authentication failures | Verify token validity before testing |
| Performance issues | Load testing before production release |

**13. Approvals**

* **Client Approval Documents**: Test Plan, Test Cases, Test Summary Reports

**End of Test Plan**