# **RESTful Booker API – Test Plan**

## **📌 Objective**

The objective of this test plan is to thoroughly test the **RESTful Booker API**, validating functionality like booking creation, updates, and deletions—secured with authentication tokens. It aims to detect bugs in various API behaviors. All test cases will be executed using **Postman**, and eventually automated using **REST Assured**.

## **🌐 API URL**

**Base Documentation URL:**<https://restful-booker.herokuapp.com/apidoc/index.html>

## **📘 Scope**

### **1. Functional Testing**

* Test all API endpoints: Create, Read, Update, Delete.
* Validate correct use of authentication for protected endpoints.

### **2. Data Validation Testing**

* Input validation and boundary value checks.
* Correct structure and format of returned responses.

### **3. Error Handling Testing**

* Proper HTTP status codes and messages.
* Graceful handling of malformed or incorrect requests.

### **4. Performance Testing**

* Evaluate response times under load.
* Measure concurrency and throughput.

### **5. Security Testing**

* Injection, XSS, and token misuse validation.
* HTTPS compliance and role-based access validation.

### **6. Integration Testing**

* End-to-end flow across multiple endpoints.

### **7. Compatibility Testing**

* Run across different OS/browsers/devices.

### **8. Documentation Review**

* Ensure API documentation reflects actual behavior.

### **9. Load & Concurrency Testing**

* Heavy-load simulation and concurrent usage scenarios.

### **10. Regression Testing**

* Re-run tests after bug fixes and updates.

### **11. Additional Testing Types**

* Edge Case Testing
* Ad Hoc Testing
* Usability Testing
* CI/CD Testing
* Backup/Recovery Testing
* Internationalization
* Rate Limiting
* Third-Party Integrations

## **✅ In-Scope Test Areas**

* ✅ POST /auth
* ✅ GET /booking, GET /booking/:id
* ✅ POST /booking
* ✅ PUT /booking/:id
* ✅ PATCH /booking/:id
* ✅ DELETE /booking/:id
* ✅ GET /ping

## **🧪 Test Environments**

| **Environment** | **URL** |
| --- | --- |
| QA | <https://restful-booker.herokuapp.com/apidoc/index.html> |
| Pre-Prod | <https://restful-booker.herokuapp.com/apidoc/index.html> |

### **OS/Browsers:**

* **Windows 10:** Chrome, Firefox, Edge
* **macOS:** Safari
* **Android:** Chrome
* **iOS:** Safari

### **Network:**

* Wi-Fi, Wired, Cellular

## **🐞 Defect Reporting Procedure**

* Tool: **JIRA**
* Criteria: Any deviation from expected behavior
* Report: Repro steps, screenshots/logs
* Assignment:  
  + Frontend: Devesh
  + Backend: Sonal
  + DevOps: Prajeeth
* Metrics: Defect count, resolution time, defect closure %
* Communication: Daily status reports, triage calls as needed

## **🧪 Test Strategy**

### **📋 Test Design Techniques:**

* Equivalence Class Partitioning
* Boundary Value Analysis
* Decision Table Testing
* State Transition Testing
* Use Case Testing

### **✅ Manual Testing Flow:**

1. **Smoke Testing** on initial build.
2. Reject unstable builds.
3. Once stable, perform full test cycle.
4. Test across environments in parallel.
5. Daily bug reporting and EOD summary.

### **✅ Best Practices:**

* **Context-Driven Testing**
* **Shift-Left Testing**
* **Exploratory Testing**
* **End-to-End Flow Testing**

## **📆 Test Schedule**

| **Task** | **Timeline** |
| --- | --- |
| Test Plan Creation | Sprint 1 |
| Test Case Creation | Sprint 1 |
| Test Case Execution | Sprint 2 |
| Summary Report Submission | Sprint 2 |

## **📦 Test Deliverables**

* Test Plan
* Test Scenarios
* Test Cases
* Execution Reports
* Defect Reports
* Test Summary Reports

## **📥 Entry & Exit Criteria**

### **✅ Requirement Analysis**

* **Entry:** Receipt of requirements
* **Exit:** Requirements reviewed, questions clarified

### **✅ Test Execution**

* **Entry:** Test cases approved, application ready
* **Exit:** Test reports generated

### **✅ Test Closure**

* **Entry:** Execution complete, defects logged
* **Exit:** Summary reports submitted and accepted