REST Assured API Automation Testing Project

Project Title

Enterprise REST API Automation Framework using REST Assured, TestNG & Maven

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1. Project Overview

This project demonstrates a professional REST API automation testing framework built using REST Assured, TestNG, and Maven. The framework validates RESTful web services by verifying HTTP responses, headers, performance, and JSON payloads against business requirements.

The API under test is a public Simple Books API which simulates real-world production REST services.

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2. Problem Statement

Manual API testing is time-consuming, error-prone, and inefficient for regression and CI/CD pipelines. Organizations require a reliable automated solution to validate API functionality, performance, and stability.

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3. Project Objective

- Automate REST API validation using Java.
- Ensure correctness of HTTP status, headers, response body, and performance.
- Build a scalable automation framework using Maven and TestNG.
- Produce recruiter-ready, enterprise-standard automation code.

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4. Technology Stack

Category	Tools Used
Programming Language	Java
Automation Library	REST Assured
Test Framework	TestNG
Build Tool	Maven
IDE	Eclipse IDE
Data Handling	Gson, org.json
Authentication Support	ScribeJava
Validation	Hamcrest Matchers
Version Control Ready	Git Compatible

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5. Framework Architecture

TestNG Test Class
↓
REST Assured Request Specification
↓
HTTP Request → API Server
↓
HTTP Response
↓
Assertions using Hamcrest
↓
TestNG Reporting

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6. Key Features

- Base URI configuration using RestAssured
- Query parameter handling
- Header validation
- Status code and status line verification
- Response time validation
- JSON payload assertion
- Logging of full request and response
- Maven dependency management
- TestNG execution support

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7. Test Scenario Implemented

Scenario: Fetch Fiction Books

- Endpoint: `/books`
- Method: GET
- Query Params: `type=fiction`, `limit=2`

Validations Performed

Validation Type	Description

Status Code	200 OK
Status Line	HTTP/1.1 200 OK
Content Type	application/json
Performance	< 2000 ms
Headers	Connection, Content-Length
Payload	Book ID, Name, Type, Availability

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8. Challenges & Solutions

Challenge	Solution
JSON parsing complexity	Used JSON Path and Hamcrest
Assertion readability	Used static imports
Dependency conflicts	Managed via Maven
Logging visibility	Used `.log().all()`
Test execution management	Integrated TestNG

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9. Maven Configuration (POM)

The project uses Maven for dependency management with REST Assured, TestNG, Gson, JSON, and ScribeJava libraries ensuring scalability and CI/CD compatibility.

Key benefits:

- Version control
- Easy upgrades
- Clean dependency management

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10. Execution Strategy

Steps to execute:

1. Right click Test Class
2. Run As → TestNG Test
3. View console results
4. Analyze assertions and logs

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11. Results & Reporting

- All tests passed successfully
- Zero failures
- Full HTTP request and response logs captured
- TestNG execution summary displayed

This confirms stability, correctness, and performance compliance.

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12. Business Impact

- Reduces manual testing effort
- Improves regression reliability
- Enhances API quality
- Enables CI/CD automation
- Improves defect detection speed

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13. Conclusion

This REST Assured automation framework demonstrates enterprise-level API testing capability using industry best practices. It validates API functionality, performance, and data integrity with high reliability and maintainability, making it suitable for real-world software development and DevOps pipelines.

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14. Author Details

Author: Routh Kiran Babu
Role: SDET / API Automation Engineer Aspirant

IDE Used: Eclipse IDE
Build Tool: Maven
Framework: REST Assured + TestNG
Domain: API Automation Testing

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15. Connect, Follow & Project Links

Recruiters, mentors, and collaborators can connect with me through the platforms below:

🔗 Professional Profiles

- **LinkedIn:** https://www.linkedin.com/in/routhkiranbabu/
- **GitHub:** https://github.com/RouthKiranBabu
- **LeetCode:** https://leetcode.com/u/routhkiranbabu/
- **Strava:** https://routhkiranbabu.github.io/Strava_stats/

📁 Project Access

- **GitHub Repository:**
  https://github.com/RouthKiranBabu/Mini_Major--Projects./tree/main/Projects/Year_Equals_2026/01_Jan/03_%5BRestAssured%20%26%20TestNG%5D%20-%20API%20Test%20Automation%20Framework%20Using%20Rest-Assured
- **Project Documentation:**
  https://github.com/RouthKiranBabu/Mini_Major--Projects./tree/main/Projects/Year_Equals_2026/01_Jan/03_%5BRestAssured%20%26%20TestNG%5D%20-%20API%20Test%20Automation%20Framework%20Using%20Rest-Assured

📢 LinkedIn Project Post

- **LinkedIn Showcase Post:**
  https://www.linkedin.com/posts/routhkiranbabu_im-happy-to-share-this-rest-assured-activity-7415032358388555776-u_AK?utm_source=share&utm_medium=member_desktop&rcm=ACoAAC0fSW0BCXvPinW6E3cbBZFekfnprC0b-FU

🤝 Open for

- API Automation Engineer Roles
- SDET Opportunities
- QA Automation Projects
- Open Source Collaboration

I actively share automation projects, learning progress, and technical insights on LinkedIn and GitHub. Feel free to connect, follow, or collaborate.