

# Project Overview

Comprehensive testing project evaluating two systems:

Swag Labs: React-based e-commerce demo application

DummyJSON: REST API service for testing practice

## Testing Objectives

Assess production readiness of both systems

Identify functional defects and performance bottlenecks

Validate API reliability and scalability

Establish automation framework for regression testing

## Project Structure

Final\_Project/

└─ Final\_Report.md # Complete 35-page test report

└─ Presentation/ # 11-slide presentation

└─ Testing\_Artifacts/

| └─ Manual\_Testing/

| | └─ test\_cases.xlsx # 20 manual test cases

| | └─ bug\_report.xlsx # 10 documented defects

| └─ API\_Testing/

| | └─ postman\_collection.json

| | └─ postman\_environment.json

- | | └─ newman\_results.xml
- | └─ Performance\_Testing/
- | | └─ k6\_scripts.js
- | | └─ performance\_results/
- | └─ UI\_Automation/
- | └─ MyTestCases.java
- | └─ testng\_results.xml
- └─ Visual\_Evidence/
- | └─ bug\_screenshots/ # 5 critical bug images
- | └─ test\_reports/ # TestNG, Newman reports
- └─ Documentation/
- └─ Test\_Plan.md
- └─ README.md # This file

## Tools & Technologies Used

### Testing Tools:

Manual Testing: Excel test cases, exploratory testing

API Testing: Postman, Newman for automation

Performance Testing: k6 for load and stress testing

UI Automation: Selenium WebDriver, TestNG, Java

Browser: Microsoft Edge

IDE: Eclipse

### Key Dependencies:

Java 11+

Selenium 4.0+

TestNG 7.8+

Postman/Newman

k6 0.50.0+

## Key Results Summary

### Success Metrics:

API Testing: 100% success rate (60/60 requests)

Performance: 0% errors under 25 concurrent users

UI Automation: 100% pass rate for enabled tests

Manual Testing: 70% pass rate, 6 critical defects found

## Critical Findings (Swag Labs):

Data Leakage: Cart persists across different users

Checkout Bypass: Empty cart purchases allowed

Form Dysfunction: Last Name field not editable

Price Inconsistency: Different prices across pages

UI Issues: Missing quantity controls, non-functional buttons

## DummyJSON API Assessment:

Production Ready: 100% reliability

Performance: <200ms average response time

Scalability: Linear performance under load

Recommendation: Ready for immediate deployment

## How to Execute Tests

### API Tests:

# Run Newman tests

```
newman run "DummyJSON_API.postman_collection.json" -e "environment.json"
```

# Generate reports

```
newman run collection.json --reporters cli,html,json
```

### Performance Tests:

# Smoke test

```
k6 run smoke_test.js
```

# Load test

```
k6 run load_test.js
```

### UI Automation:

# Run all tests

```
mvn test -Dtest=MyTestCases
```

# Generate report

mvn surefire-report:report

## Test Coverage

### Functional Coverage:

Authentication: 100%

Product Management: 85%

Cart Operations: 90%

Checkout Process: 95%

Navigation: 100%

### User Journeys Tested:

Login → Browse → Select → Cart → Checkout → Complete

Multiple user session management

Error handling and recovery

Cross-tab navigation

Form validation and submission

## Defect Statistics

Severity Count Status

Critical 2 Open

High 4 Open

Medium 3 Open

Low. 1 Open

Total 10 All Open

## Recommendations

### Immediate Actions (Week 1):

Fix session isolation and cart persistence bugs

Implement proper checkout validation

Restore Last Name field functionality

### Short-term (Week 2-3):

Fix price consistency across pages

Add quantity controls to cart UI

Resolve user-specific UI issues

### Long-term (Month 1):

Implement Page Object Model for automation

Enhance test reporting and metrics

Integrate with CI/CD pipeline

## Report Contents

The final report includes:

Executive Summary

System Under Test + Assumptions

Test Strategy and Scope

Manual Testing Results

Defects Analysis

API Testing Results

Performance Testing Results

UI Automation Framework

Risks, Limitations & Recommendations

Appendix with Visual Evidence

## Acknowledgments

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Student:

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