

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

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