

Software Quality Engineering Coursework

Final Test Report - Tricentis Demo Web Shop

Module: Software Quality Engineering (SQE)
Application Under Test: <https://demowebshop.tricentis.com/>
Submission Date: December 18, 2025

Team Members

Name	Role	Responsibilities
Lakindu De Silva	Team Lead	Documentation, Automation, Coordination
Chamath Madurasinghe	Test Executor	Manual Testing (TC001-TC020)
Senithi Mathangaweera	Test Executor	Manual Testing (TC021-TC040), Defect Logging

1. Executive Summary

This report presents the testing conducted on the Tricentis Demo Web Shop e-commerce platform. Testing included functional, usability, UI/UX, and boundary testing through both manual and automated approaches.

Key Results

Metric	Value
Total Test Cases	70 (40 Manual + 30 Automated)
Overall Pass Rate	98.6%
Manual Tests	39/40 Pass (97.5%)
Automated Tests	30/30 Pass (100%)
Defects Found	4 (1 High, 3 Medium)
Requirements Coverage	100% (8/8)
Release Decision	GO (Conditional)

2. Testing Requirements

Eight testing requirements were identified for the Demo Web Shop:

ID	Requirement	Priority	Status
TR-001	User Registration Must Work Correctly	Critical	<input checked="" type="checkbox"/> Verified
TR-002	User Authentication Must Be Secure	Critical	<input checked="" type="checkbox"/> Verified

ID	Requirement	Priority	Status
TR-003	Navigation Must Work Correctly	High	☑ Verified
TR-004	Shopping Cart Must Function Properly	Critical	⚠ 1 Defect
TR-005	Product Search Must Return Accurate Results	High	⚠ 1 Defect
TR-006	Checkout Process Must Complete Successfully	Critical	☑ Verified
TR-007	Product Display Must Be Accurate	Medium	⚠ 2 Defects
TR-008	Form Validations Must Prevent Invalid Data	High	☑ Verified

3. Test Strategy & Plan

3.1 Testing Approach

- **Manual Testing:** 40 test cases covering all functional areas
- **Automated Testing:** 30 tests using Playwright with Page Object Model
- **Exploratory Testing:** Session-based testing for edge cases

3.2 Testing Types

Type	Test Cases	Purpose
Functional	TC001-TC020	Core feature verification
Usability	TC021-TC026	User experience validation
UI/UX	TC027-TC032	Visual consistency checks
Boundary/Negative	TC033-TC040	Edge case & error handling

3.3 Tools & Environment

Component	Technology
Automation Framework	Playwright v1.57.0
Language	JavaScript
Design Pattern	Page Object Model (POM)
Browser	Chromium
CI/CD	GitHub Actions

4. Test Cases Summary

4.1 Test Case Distribution

Category	IDs	Count	Pass	Fail	Pass Rate
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Category	IDs	Count	Pass	Fail	Pass Rate
Functional	TC001-TC020	20	20	0	100%
Usability	TC021-TC026	6	6	0	100%
UI/UX	TC027-TC032	6	6	0	100%
Boundary/Negative	TC033-TC040	8	7	1	87.5%
Total		40	39	1	97.5%

4.2 Test Cases List

TC ID	Title	Type	Status
TC001	Valid User Registration	Functional	<input checked="" type="checkbox"/> Pass
TC002	Registration with Existing Email	Functional	<input checked="" type="checkbox"/> Pass
TC003	Valid User Login	Functional	<input checked="" type="checkbox"/> Pass
TC004	User Logout	Functional	<input checked="" type="checkbox"/> Pass
TC005	Main Navigation Menu	Functional	<input checked="" type="checkbox"/> Pass
TC006	Footer Links	Functional	<input checked="" type="checkbox"/> Pass
TC007	Add Product to Cart	Functional	<input checked="" type="checkbox"/> Pass
TC008	View Shopping Cart	Functional	<input checked="" type="checkbox"/> Pass
TC009	Update Cart Quantity	Functional	<input checked="" type="checkbox"/> Pass
TC010	Remove Product from Cart	Functional	<input checked="" type="checkbox"/> Pass
TC011	Initiate Checkout	Functional	<input checked="" type="checkbox"/> Pass
TC012	Complete Checkout Flow	Functional	<input checked="" type="checkbox"/> Pass
TC013	Product Search	Functional	<input checked="" type="checkbox"/> Pass
TC014	Search No Results	Functional	<input checked="" type="checkbox"/> Pass
TC015	Category Filtering	Functional	<input checked="" type="checkbox"/> Pass
TC016	Product Sorting	Functional	<input checked="" type="checkbox"/> Pass
TC017	Breadcrumb Navigation	Functional	<input checked="" type="checkbox"/> Pass
TC018	Product Details Page	Functional	<input checked="" type="checkbox"/> Pass
TC019	Product Comparison	Functional	<input checked="" type="checkbox"/> Pass
TC020	Recently Viewed Products	Functional	<input checked="" type="checkbox"/> Pass
TC021	Consistent Header	Usability	<input checked="" type="checkbox"/> Pass
TC022	Footer Presence	Usability	<input checked="" type="checkbox"/> Pass

TC ID	Title	Type	Status
TC023	Checkout Progress Indicators	Usability	<input checked="" type="checkbox"/> Pass
TC024	Error Message Clarity	Usability	<input checked="" type="checkbox"/> Pass
TC025	Navigation Styling	Usability	<input checked="" type="checkbox"/> Pass
TC026	Active Menu State	Usability	<input checked="" type="checkbox"/> Pass
TC027	Responsive Layout	UI/UX	<input checked="" type="checkbox"/> Pass
TC028	Font Consistency	UI/UX	<input checked="" type="checkbox"/> Pass
TC029	Color Scheme	UI/UX	<input checked="" type="checkbox"/> Pass
TC030	Button Styling	UI/UX	<input checked="" type="checkbox"/> Pass
TC031	Form Field Alignment	UI/UX	<input checked="" type="checkbox"/> Pass
TC032	Image Quality	UI/UX	<input checked="" type="checkbox"/> Pass
TC033	Empty Cart Checkout	Boundary	<input checked="" type="checkbox"/> Pass
TC034	Negative Quantity in Cart	Boundary	<input checked="" type="checkbox"/> Fail
TC035	Session Timeout	Boundary	<input checked="" type="checkbox"/> Pass
TC036	Maximum Quantity	Boundary	<input checked="" type="checkbox"/> Pass
TC037	Checkout Without Terms	Boundary	<input checked="" type="checkbox"/> Pass
TC038	Empty Required Fields	Boundary	<input checked="" type="checkbox"/> Pass
TC039	Non-existent Product URL	Boundary	<input checked="" type="checkbox"/> Pass
TC040	Max Items Comparison	Boundary	<input checked="" type="checkbox"/> Pass

5. Test Automation

5.1 Automation Architecture

```
automation/
├── pages/           # Page Object Model Classes
│   ├── BasePage.js
│   ├── RegisterPage.js
│   ├── LoginPage.js
│   ├── ProductPage.js
│   ├── CartPage.js
│   └── CheckoutPage.js
└── tests/          # Test Specifications
    ├── registration.spec.js
    ├── login.spec.js
    ├── cart.spec.js
    └── checkout.spec.js
```

5.2 Automated Test Results

Suite ID	Description	Tests	Passed	Failed	Duration
AT-001	User Registration	7	7	0	36.3s
AT-002	User Login/Logout	9	9	0	48.6s
AT-003	Shopping Cart	9	9	0	61.3s
AT-004	Checkout Process	5	5	0	98.7s
Total		30	30	0	4m 5s

Automation Pass Rate: 100%

6. Defect Report

6.1 Defect Summary

Severity	Count	Open	Closed
Critical	0	0	0
High	1	1	0
Medium	3	3	0
Low	0	0	0
Total	4	4	0

6.2 Defect Details

ID	Summary	Severity	Module	Related TC
DEF-001	No error message when entering negative quantity - product disappears from cart	Medium	Shopping Cart	TC034
DEF-002	Search by category name "Books" returns no products	Medium	Product Search	Exploratory
DEF-003	Electronics products missing "Add to Cart" button on listing page	Medium	Product Browsing	Exploratory
DEF-004	Product detail page missing "Add to Cart" button for certain items	High	Product Browsing	Exploratory

6.3 DEF-001 Details (Failed Test Case)

Steps to Reproduce:

- 1. Add any product to cart
- 2. Go to Shopping Cart page

3. Change quantity to -1
4. Click "Update shopping cart"

Expected: Error message displayed, quantity rejected

Actual: Product silently removed from cart, no error shown

7. Requirements Traceability Matrix

Requirement	Test Cases	Automated	Manual	Coverage
TR-001: Registration	TC001, TC002, TC027-TC029	AT-001 (7)	5	<input checked="" type="checkbox"/> 100%
TR-002: Authentication	TC003, TC004, TC030-TC031, TC035	AT-002 (9)	5	<input checked="" type="checkbox"/> 100%
TR-003: Navigation	TC005, TC006, TC015-TC016, TC021-TC022, TC025-TC026	-	8	<input checked="" type="checkbox"/> 100%
TR-004: Shopping Cart	TC007-TC010, TC032-TC033, TC036	AT-003 (9)	7	<input checked="" type="checkbox"/> 100%
TR-005: Product Search	TC013-TC014, TC017, TC034	-	4	<input checked="" type="checkbox"/> 100%
TR-006: Checkout	TC011-TC012, TC023, TC037-TC038	AT-004 (5)	5	<input checked="" type="checkbox"/> 100%
TR-007: Product Display	TC018-TC020, TC039-TC040	-	5	<input checked="" type="checkbox"/> 100%
TR-008: Form Validation	TC024, TC027-TC031	AT-001, AT-002	6	<input checked="" type="checkbox"/> 100%

Requirements Coverage: 8/8 (100%)

8. Test Coverage & Metrics

8.1 Coverage Summary

Metric	Value
Requirements Covered	8/8 (100%)
Test Cases Executed	40/40 (100%)
Automation Coverage	30 tests (75% of manual TCs)
Defect Detection Rate	0.10 defects/test case

8.2 Results by Testing Type

Type	Tests	Pass	Fail	Rate
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Type	Tests	Pass	Fail	Rate
Functional	20	20	0	100%
Usability	6	6	0	100%
UI/UX	6	6	0	100%
Boundary/Negative	8	7	1	87.5%

8.3 Defect Density by Module

Module	Test Cases	Defects	Density
User Management	8	0	0.00
Product Search	2	1	0.50
Product Browsing	4	2	0.50
Shopping Cart	7	1	0.14
Checkout	2	0	0.00

9. Risk Assessment

Risk	Likelihood	Impact	Mitigation
Negative quantity removes cart items	Low	Medium	Document as known issue; fix in next sprint
Search by category name fails	Medium	Low	Users can navigate via menu
Some products cannot be purchased	Low	High	Affects limited Electronics products only

Overall Risk Level: LOW-MEDIUM

10. Conclusion & Recommendations

10.1 Release Decision: ☒ GO (Conditional)

Rationale:

- 98.6% combined pass rate exceeds 95% threshold
- No Critical severity defects
- All 8 requirements have been verified
- Core business flows (registration, login, cart, checkout) working correctly

Conditions:

1. All 4 defects logged in backlog
2. DEF-004 (High) prioritized for next sprint

3. Known issues documented for support team

10.2 Recommendations

Immediate:

- Add input validation for cart quantity field
- Fix "Add to Cart" button for affected products

Short-term:

- Expand automated test coverage to 50+ tests
- Add API-level testing
- Implement performance testing

10.3 Key Achievements

- ☒ 100% requirements coverage
- ☒ 100% automated test pass rate
- ☒ 97.5% manual test pass rate
- ☒ 4 defects identified and documented
- ☒ Comprehensive test documentation delivered

Appendix

Note: Full test case details, screenshots, and automation code are available in the GitHub repository.

Repository Structure

- [/docs/test-cases/](#) - Full test case documentation
- [/docs/defects/evidence/](#) - Defect screenshots and videos
- [/docs/screenshots/](#) - Manual test execution evidence
- [/automation/](#) - Playwright test automation code

Sign-Off

Role	Name	Date
Team Lead	Lakindu De Silva	Dec 18, 2025
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