Test Plan

E-Commerce Web Application QA Testing

1. INTRODUCTION

1.1 Purpose

This test plan outlines the QA strategy, approach, resources, and schedule for testing the core features of the e-commerce web application hosted at http://automationpractice.multiformis.com.

1.2 Scope

The testing scope covers three critical features:

- Registration (Sign Up) - New user account creation
- Login - User authentication and session management
- Product Search - Product discovery and filtering functionality

1.3 Objectives

- Verify all features meet functional requirements
- Ensure features work correctly across different browsers and devices
- Identify and document defects before production release
- Validate security measures for user authentication
- Ensure excellent user experience across all features

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2. TEST ITEMS

2.1 Features Under Test

Registration Module:

- Account creation form
- Email validation
- Password strength validation
- Required field validation
- Optional field handling
- Email confirmation (if applicable)
- Auto-login after registration
- Duplicate email prevention

Login Module:

- Login form (email/password)
- Remember me functionality
- Session management
- Password masking

- Case-insensitive email handling
- Account lockout mechanism
- Logout functionality
- Redirect after login

Product Search Module:
- Search functionality (exact and partial matches)
- Search by product attributes (name, description, SKU)
- Filters (price, category, size, color, manufacturer)
- Sort functionality
- Pagination
- Search suggestions/autocomplete
- No results handling
- Search performance

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3. TEST APPROACH

3.1 Testing Types

Functional Testing:
- Validate all features work as specified
- Test positive and negative scenarios
- Verify business logic implementation

UI/UX Testing:
- Verify responsive design across devices
- Check accessibility compliance
- Validate user experience flow

Security Testing:
- SQL injection prevention
- HTTPS enforcement

Performance Testing:
- Search response time
- Page load time
- Concurrent user handling

Compatibility Testing:
- Browser compatibility (Chrome, Safari, Edge)
- Device compatibility (Desktop, Tablet, Mobile)
- Operating system compatibility

Integration Testing:
- Registration to Login flow
- Search to Product page navigation

3.2 Test Design Techniques

- Equivalence Partitioning
- Boundary Value Analysis
- Decision Table Testing
- State Transition Testing

- Error Guessing

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4. TEST ENVIRONMENT

4.1 Hardware Requirements

- Desktop: macOS (latest)
- Mobile devices: iOS (iPhone), Android devices
- Minimum screen resolutions: 1920x1080 (desktop), 375x667 (mobile)

4.2 Software Requirements

Browsers:

- Google Chrome (latest version)
- Mozilla Firefox (latest version)
- Safari (latest version)
- Microsoft Edge (latest version)

Testing Tools:

- Playwright for automated testing
- Browser Developer Tools
- JIRA for defect tracking

4.3 Test Data

- Valid user credentials
- Invalid email formats
- Various password strengths
- SQL injection payloads
- XSS payloads
- Search terms (valid/invalid)
- Special characters and Unicode

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5. DEFECT MANAGEMENT

5.1 Defect Severity Levels

Critical: Application crash, data loss, security vulnerabilities
High: Major functionality broken, no workaround available
Medium: Feature partially working, workaround available
Low: Minor UI issues, cosmetic defects

5.2 Defect Priority Levels

P1 (Immediate): Fix immediately, blocks testing
P2 (High): Fix in current sprint
P3 (Medium): Fix in next sprint
P4 (Low): Fix when time permits

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6. TEST METRICS

6.1 Key Metrics to Track

- Test case execution rate
- Pass/Fail percentage
- Defect density (defects per module)
- Defect resolution time
- Test coverage percentage
- Defect leakage rate
- Automation coverage

6.2 Success Criteria

- 95% or higher test pass rate
- Zero critical/high severity open defects
- 100% critical path coverage
- Average defect fix time < 24 hours for critical issues

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7. ASSUMPTIONS AND DEPENDENCIES

12.1 Assumptions

- Test environment mirrors production environment
- All required test data is available
- Team has necessary access and permissions
- Defect tracking system is operational
- Development team available for defect clarification

12.2 Dependencies

- Timely availability of test environment
- Developer availability for defect fixes
- Stakeholder availability for clarifications
- Network connectivity and system uptime

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