TEST PLAN

1. Introduction

This Test Plan defines the strategy, scope, approach, and deliverables to validate the nopCommerce public storefront at https://demo.nopcommerce.com/. The goal is to ensure core e-commerce flows (browse, search, cart, checkout, account management), integrations (payments, shipping), and non-functional aspects (usability, accessibility, basic performance) function correctly and meet acceptance criteria for releases delivered in Agile sprints.

2. Scope

2.1 In Scope

- Home page, category pages, product details pages (PDP)

- Search & filters (auto-suggest, results, sorting)

- Shopping cart (add/update/remove, mini cart)

- Checkout flows (guest checkout, registered user checkout)

- Payment method flows exposed in demo (e.g., credit card, payment gateway simulators)

- Shipping calculation during checkout

- Account registration, login/logout, profile management

- Order history and order details in My Account

- Newsletter/subscribe flow

- Product reviews and ratings (add/view)

- Promotions/coupons application during checkout

- Multi-language / currency UI elements present on the site

- Basic responsive behavior across desktop/tablet/mobile widths

- Basic accessibility checks for critical pages (WCAG checklist smoke)

2.2 Out of Scope

- Admin portal (admin-demo.nopcommerce.com)

- Full performance/load/stress testing beyond lightweight page-load checks

- Deep security/penetration testing

- Third-party systems not reachable from demo (enterprise integrations)

- Cross-browser matrix beyond Chrome, Firefox, Edge (latest stable versions only)

3. Objectives

- Validate critical e-commerce user journeys are functional and reliable.

- Find and document defects against acceptance criteria.

- Provide regression coverage for release readiness.

- Automate high-value repetitive tests (smoke + checkout happy path).

4. Roles & Responsibilities

- **Product Owner:** Provide acceptance criteria, priority features.

- **Scrum Master:** Remove impediments, coordinate releases.

- **QA Lead:** Test strategy, test plan ownership, reporting.

- **QA Engineers:** Write/exe test cases, automation, report defects.

- **Developers:** Fix defects, unit tests, support QA.

5. Test Methodology & Levels

- Agile testing embedded in sprints.

- Test levels: Unit (dev), Integration, System (end-to-end), Regression, UAT.

- Defects logged in Jira with priority/severity and linked to test cases.

6. Test Environment & Tools

- **Environments:** Public demo site (https://demo.nopcommerce.com/) — test on staging/QA if available.

- **Browsers:** Chrome (latest), Firefox (latest), Edge (latest)

- **Devices:** Desktop, Tablet (responsiveness), Mobile width

- **Tools:** Jira (defects), Selenium + TestNG (automation), Postman (API spot checks), Browser dev tools, Lighthouse (basic perf/a11y), GitHub/GitLab, Jenkins (CI).

7. Test Strategy

7.1 Manual Testing

- Exploratory testing for new features and demo quirks.

- Regression testing of critical flows each sprint.

7.2 Automation

- Automate smoke suite: login, search, add to cart, checkout (happy path), order history lookup.

- Automation framework: Selenium (Page Object Model), TestNG, CI integration.

- Goal: ≥60% automation coverage for regression candidates by Sprint 4.

7.3 Performance / Non-functional

- Basic page load measurements (home, category, PDP, checkout page) using Lighthouse.

- Accessibility smoke checks on critical pages (login/checkout/PDP) — keyboard navigation, form labels.

8. Risks & Mitigations

- **Risk:** Demo site may be reset or unstable — *Mitigation:* schedule tests during low-traffic windows; keep notes of known demo resets.

- **Risk:** Payment gateways not fully functional on demo — *Mitigation:* use provided test/sandbox flows or mock validation.

- **Risk:** Data inconsistency (product/catalog) — *Mitigation:* design tests to be idempotent and cleanup after themselves where possible.

9. Entry & Exit Criteria

Entry Criteria

- Stable demo site reachable.

- Test environment and tools configured.

- Test data and test accounts available.

Exit Criteria

- All planned tests executed for the sprint scope.

- No open Critical defects; High defects either fixed or accepted by Product Owner.

- Regression smoke suite passes.

10. Test Deliverables

- Test Plan (this document)

- Test Cases & Test Scenarios (manual + automated)

- Test Data sets (accounts, coupon codes, addresses)

- Test Execution Report (daily/sprint)

- Defect Reports (Jira)

- Automation scripts & CI job definitions

- Test Closure Report & Sign-off

11. Sprint Breakdown (Suggested)

- **Sprint 0 (Preparation):** Environment setup, account creation, smoke checklist, seed test data.

- **Sprint 1 (Browse & Search):** Home, categories, PDP, search, filters, sorting, automation for search & PDP smoke.

- **Sprint 2 (Cart & Checkout):** Add/edit/remove cart items, mini cart, checkout flows (guest & registered), payment simulator, automation for checkout happy path.

- **Sprint 3 (Account & Orders):** Registration, login, profile, order history, order details, automation for account smoke.

- **Sprint 4 (Promotions & Final Regression):** Coupons, discounts, reviews, responsive checks, accessibility smoke, full regression and release readiness.

12. High-Level Test Scenarios

(Representative list to drive test case creation)

- TS_01: Verify home page loads and main banners/carousels are displayed.

- TS_02: Verify category page lists products, pagination and filters work.

- TS_03: Verify product details page displays images, price, description, stock status.

- TS_04: Verify search returns relevant products and auto-suggest works.

- TS_05: Verify product can be added to cart from PDP and from category listing.

- TS_06: Verify mini cart updates quantity and total correctly.

- TS_07: Verify cart page allows update quantity, remove item, and shows subtotal/taxes.

- TS_08: Verify guest checkout completes using available payment simulator.

- TS_09: Verify registered user can checkout and order appears in Order History.

- TS_10: Verify coupon code applies discount and updates totals correctly.

- TS_11: Verify product review submission works (if enabled) and appears after moderation (or immediately in demo).

- TS_12: Verify account registration with valid and invalid data.

- TS_13: Verify login/logout and session timeout behavior.

- TS_14: Verify shipping selection updates shipping charges in totals.

- TS_15: Verify checkout validation messages for mandatory fields.

- TS_16: Verify currency/language toggles (if present) reflect on prices/UI.

- TS_17: Verify responsive layout on mobile widths for key pages (Home, PDP, Cart, Checkout).

- TS_18: Verify breadcrumbs and navigation links route correctly.

- TS_19: Verify newsletter subscription flow and confirmation message.

- TS_20: Verify search engine friendly URLs and SEO meta tags present on PDP/category pages (smoke).

13. Example Test Case Template (single example)

- **TC_ID:** TC_CART_01

- **Title:** Add product to cart from Product Details Page

- **Preconditions:** Product is visible and in-stock on PDP.

- **Steps:**

    1. Navigate to product details page.

    2. Select required options (if any) and click **Add to cart**.

    3. Observe mini cart and cart page.

- **Expected Result:** Product quantity increments in mini cart; cart page shows correct product, price, subtotal.

- **Postconditions:** Remove product from cart or clear via UI.

14. Automation Candidates (Priority)

- Login/Logout (account smoke)

- Search auto-suggest and search results

- Add to cart + update cart

- Checkout (guest happy path and registered happy path)

- Apply coupon and validate totals

- Order history lookup for a placed order

15. Test Data Requirements

- Test accounts (registered user with known email/password)

- Guest checkout addresses (valid/invalid) per country rules

- Valid coupon code(s) for discount testing

- Products with variants (size/color) and simple products

- Shipping addresses and shipping methods for calculation tests

16. Non-Functional Checks (smoke)

- Page load times for Home, Category, PDP, Checkout (Lighthouse score / times recorded)

- Accessibility smoke (alt tags on product images, form labels, keyboard navigation on checkout forms)

- Basic security checks: HTTPS, cookie secure flags (surface checks only)

17. Reporting & Metrics

- Daily test execution status (Executed / Passed / Failed / Blocked)

- Defect counts by severity and status

- Automation pass rate in CI

- Test coverage by features/user stories

18. Sign-off Criteria

- All high-severity defects closed or accepted by Product Owner.

- Regression smoke suite green.

- Test execution report shared and approved by QA Lead and PO.