**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.