**Test Plan for nopCommerce Product Search Module**

**Application URL**: https://demo.nopcommerce.com/

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**1. Test Plan Identifier**

TP-nopCommerce-Search-2025-v1

**2. Introduction**

This test plan outlines the testing strategy for the Product Search functionality. Effective search is crucial for user experience, enabling customers to find desired products quickly. This plan covers basic search, advanced search (categories, manufacturers), and search by popular tags.

**3. Test Items**

Basic Search Functionality

Advanced Search by Category

Advanced Search by Manufacturer

Search using Popular Tags

Search Result Page Layout and Sorting

Search Auto-suggestion Feature

Handling of no search results.

**4. Features to be Tested**

Basic Search:

Search with full product name.

Search with partial product name/keyword.

Search with irrelevant keyword (no results found).

Case-insensitive search

Search with special characters.

Advanced Search:

Filtering search results by a specific category.

Filtering search results by a specific manufacturer.

Combining category and manufacturer filters.

Verifying the "Advanced search" checkbox functionality.

Search by Tags:

Clicking on a popular tag and verifying the displayed products are relevant.

Search Results:

Verifying product name, price, and image are displayed correctly in results.

Sorting results by Name (A-Z, Z-A), Price (Low to High, High to Low).

Pagination functionality on search results page.

**5. Features Not to be Tested**

The performance or speed of the search algorithm.

Search indexing mechanisms on the backend.

**6. Approach**

Manual Testing: Initial exploratory testing and validation of all scenarios.

Automation Testing (Primary): All test scenarios will be automated using the defined tech stack.

Framework: Selenium WebDriver with Java.

Pattern: Page Object Model (POM) for maintainability.

BDD: Scenarios will be written in Gherkin in .feature files.

Execution: Tests will be grouped (e.g., @login, @regression) and executed using TestNG, capable of parallel runs.

Data-Driven Testing: Test data will be externalized using @CucumberOptions or Excel/JSON files.

Cross-Browser Testing: Automated tests will be run on Chrome, Firefox, and Edge browsers.

Reporting: Extent Reports will be generated after each execution cycle for analysis.

**7. Item Pass/Fail Criteria**

Pass: The actual result of the test case matches the expected result defined in the Gherkin scenario.

Fail: The actual result deviates from the expected result, the test script throws an unhandled exception, or a defect is found.

**8. Suspension Criteria and Resumption Requirements**

Suspension: Testing will be suspended if the nopCommerce demo environment is unavailable for more than 2 hours or if a critical bug in the build blocks the execution of over 70% of the test cases.

Resumption: Testing will resume once the environment is stable again or a new build with the critical fix is deployed.

**9. Test Deliverables**

This Test Plan document.

Manual Test Cases.

Automated Test Assets:

Feature Files: search.feature

Page Objects: HomePage.java, SearchPage.java, ProductListingPage.java

TestNG XML files.

Extent Reports.

Defect Reports in JIRA.

**10. Environmental Needs**

Application: nopCommerce Demo Website (https://demo.nopcommerce.com/).

Test OS: Windows 10/11.

Browsers: Chrome, Firefox, Edge

Automation Environment:

JDK 17.

Maven 3.8.11

IDE: Eclipse.

Selenium WebDriver & Browser Drivers.

Version Control: GitHub repository.

Project Management: JIRA for task and defect tracking.

**11. Responsibilities (Aligned with Capstone Roles)**

Product Owner (PO): Prioritize which authentication features to test first. Sign off on requirements.

Scrum Master (SM): Facilitate daily stand-ups, remove blockers in environment setup or test data creation.

Developers: Implement the automation scripts, page objects, and framework utilities. Integrate with Extent Reports.

Testers: Design manual test cases, verify automation results, and log detailed defects in JIRA.

**12. Schedule**

**Activity Timeline**

Test Planning & Case Design Day 1

Automation Script Development Day 4-5

Test Execution & Bug Logging Day 8

Retest & Cross-Browser Execution Day 11

**13. Risks and Contingencies**

No Risk

**14. Approvals**

Test Lead: John Doe

Product Owner: John Doe