

## **EComFlow**

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**Abstract:** *E-commerce platforms require comprehensive testing of core functionalities including user authentication, product search, and shopping cart operations. Manual testing approaches are time-consuming, error-prone, and unscalable for modern web applications. This paper presents a Selenium-Based E-Commerce Automation Testing Framework developed for the Tricentis DemoWebShop platform (<https://demowebshop.tricentis.com>). The framework implements Page Object Model (POM) architecture, unittest/PyTest integration, robust WebDriverWait mechanisms, and continuous test execution with visual verification pauses. The system validates login/register workflows, product search accuracy, add-to-cart functionality, and edge-case error handling across 25+ test scenarios. Modular design ensures 95%+ test coverage, maintainability, and scalability for enterprise testing needs. Experimental results demonstrate zero false failures post-locator optimization and 100% automation of regression test suites.*

**Keywords:** Selenium WebDriver, Page Object Model, E-Commerce Testing, Automation Framework, Python unittest, Tricentis DemoWebShop

