SauceDemo Automated Testing

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**Project Overview:**

The **SauceDemo Test Automation** project is a robust Selenium-based testing framework designed to ensure the seamless functionality of key e-commerce operations on the **SauceDemo** website. It automates and validates critical workflows, including **user authentication, product selection, cart management, checkout, and logout**, ensuring a smooth and error-free user experience.

Leveraging **Java, Selenium WebDriver, TestNG, and Maven**, the project enables efficient test execution, structured dependency management, and comprehensive validation through automated assertions. This ensures reliability, accuracy, and scalability in testing, making it a powerful solution for end-to-end web application automation

**Technologies Used**

* **Java** – Programming language for writing test scripts.
* **Selenium WebDriver** – For automating web interactions.
* **TestNG** – For assertions, validation, and test case execution.
* **Maven** – For managing dependencies and project build automation.
* **ChromeDriver** – WebDriver implementation for Google Chrome.

**Project Features**

1. **Login Functionality Testing**
   * Opens the SauceDemo login page.
   * Enters valid user credentials (standard\_user / secret\_sauce).
   * Asserts successful login by verifying the presence of the **Products** page.
2. **Product Selection and Cart Validation**
   * Adds the **Sauce Labs Backpack** to the cart.
   * Navigates to the cart and verifies that the selected product is present.
3. **Checkout Process Automation**
   * Proceeds to the checkout page.
   * Fills in customer details (First Name, Last Name, Postal Code).
   * Completes the purchase by clicking **Finish**.
4. **Order Confirmation Validation**
   * Verifies the success message **"Thank you for your order!"** on the checkout complete page.
5. **Logout Functionality**
   * Navigates to the menu and clicks on **Logout**.
   * Asserts that the login page is displayed again after logout.
6. **Browser Automation**
   * Uses **ChromeDriver** to launch and interact with the website.
   * Implements basic delay handling (Thread.sleep, replaceable with WebDriverWait).

**Expected Outcome**

* Ensures that the SauceDemo login, product selection, cart management, checkout flow, and logout functionality work correctly.
* Automates end-to-end testing of an e-commerce workflow.
* Validates successful transactions using **TestNG assertions**.
* Uses **Maven** for managing dependencies and running test cases efficiently.

**Future Enhancements**

* Implement **WebDriverWait** instead of Thread.sleep for better synchronization.
* Integrate with **JUnit/TestNG** for test execution and reporting.
* Parameterize test cases for **multiple user roles and credentials**.