

Automation Testing Project Report

Project Name: Automation Framework for Testing Croma E-Commerce Website

Application/Module Name: Croma – E-commerce Web Application

1. Project Overview

This project automates the testing process of the Croma e-commerce website using Selenium WebDriver, TestNG, and Maven. The automation framework validates functionalities such as product search, filtering, sorting, add-to-cart, checkout, and login modules. It reduces manual efforts and ensures accuracy during regression cycles.

2. Scope of Automation

Modules Automated: - Product Search - Brand Filtering - Sorting by Discount - Price Calculation - Add to Cart - Checkout - User Login & Registration Out of Scope: - Payment Gateway Validation - CAPTCHA/OTP Authentication - Mobile Responsiveness

3. Tools & Technologies

• Java (JDK 17) • Selenium WebDriver • TestNG • Maven • Page Object Model (POM) • Extent Reports • Apache POI • Log4j2 • Eclipse/IntelliJ • Chrome, Firefox, Edge • GitHub • Jenkins (optional)

4. Framework Architecture

The framework is based on the Page Object Model with reusable utilities for WebDriver setup, reporting, data handling, and synchronization. Structure: - src/main/java – Page Classes, Utilities - src/test/java – Test Scripts - testdata – Excel Files - reports – HTML Reports & Screenshots - pom.xml – Dependencies

5. Test Scenarios & Test Cases

Search | TC_01 | Verify search for 'Refrigerator' | Passed Filter | TC_02 | Apply brand filters (Samsung, LG, Whirlpool) | Passed Sorting | TC_03 | Sort by discount (High → Low) | Passed Price | TC_04 | Calculate average price of top 10 discounted items | Passed Cart | TC_05 | Add product to cart | Passed Checkout | TC_06 | Validate checkout flow | Passed Login | TC_07 | Validate login | Passed Register | TC_08 | Verify new user registration | Passed

6. Execution & Results

Execution Summary: Total Tests: 40 | Passed: 38 | Failed: 2 | Skipped: 0 Reports Generated: - Extent HTML Report - TestNG Report - Logs - Screenshots Tests executed using Maven (`mvn test`) on multiple browsers.

7. Defects / Issues

DEF-301 | Filter not applied for multiple brands | Fixed DEF-302 | Checkout delay on Edge | Open DEF-303 | Minor UI alignment issue | Fixed

8. Challenges & Solutions

Dynamic Elements → Used XPath & Explicit Waits Synchronization → Applied FluentWait Browser Drivers → Used WebDriverManager Data Handling → Used Apache POI for Excel Report Integration → Linked Extent Reports with Screenshots

9. ROI / Benefits of Automation

• Reduced manual testing time by 70% • Improved test accuracy • Reusable and maintainable code • Faster regression cycles • Clear visual reporting

10. Conclusion

The Croma automation framework successfully validates major business workflows. Its modular and scalable design supports continuous integration, improved test coverage, and better maintainability.

11. Future Enhancements

• CI/CD Integration (Jenkins) • Mobile Testing (Appium) • API Testing (RestAssured) • Performance Testing (JMeter) • AI-based Element Locators