# **OpenCart Test Plan**

**Version 2.0 | Modernized for Agile & CI/CD  
Prepared by:** Prasad V | **Date:** December 10, 2024

## **1. Overview**

This test plan outlines the strategy for validating the OpenCart e-commerce platform (https://demo.opencart.com/), ensuring alignment with modern QA practices, including **shift-left testing**, **risk-based prioritization**, and **CI/CD integration**. The focus is on delivering a scalable, maintainable, and user-centric validation process.

## **2. Scope**

### **2.1 Inclusions**

* **User Journeys:**
  + Account Management (Registration, Login, Password Reset)
  + Product Interaction (Search, Compare, Add to Cart/Wishlist)
  + Checkout Flow (Cart Management, Payment Simulation, Order History)
  + UI/UX Validation (Home Page, Category Pages, Responsive Design)
  + System Integration (Currency Conversion, Contact Forms, Download Management)
* **Non-Functional Coverage:**
  + Cross-Browser Compatibility
  + Mobile Responsiveness (iOS/Android)

### **2.2 Exclusions**

* Third-Party Payment Gateway Integration
* Performance/Load Testing
* Localization Testing (Language/Region-Specific Features)

## **3. Test Environments**

| **Type** | **OS/Browser** | **Version** |
| --- | --- | --- |
| Desktop | Windows 10 – Chrome/Firefox/Edge | Chrome 115+, Firefox 110+ |
| Desktop | macOS Ventura – Safari | Safari 16.4+ |
| Mobile | Android 13 – Chrome | Chrome 115+ |
| Mobile | iOS 16 – Safari | Safari 16+ |
| **Cloud** | BrowserStack | Real Device Cloud |

## **4. Test Strategy**

### **4.1 Methodology**

* **Shift-Left Testing:** Integrate QA into sprint planning; validate user stories during development.
* **Risk-Based Testing:** Prioritize test cases using risk matrices (Impact × Likelihood).
* **Exploratory Testing:** Allocate 20% of test cycles to unscripted user journey validation.
* **Automation:** Implement regression suites using Selenium (Python) for critical paths.

### **4.2 Test Levels**

| **Phase** | **Techniques** | **Tools** |
| --- | --- | --- |
| Smoke Testing | Build verification via core user flows | Postman, Selenium |
| Functional Testing | BVA, Decision Tables, State Transition | TestRail, Xray |
| Regression Testing | Automated checks for high-risk areas | Jenkins, GitLab CI/CD |
| Usability Testing | Heuristic evaluations, Accessibility audits | Axe, Lighthouse |

## **5. Roles & Responsibilities**

| **Role** | **Responsibilities** |
| --- | --- |
| **QA Manager** | Oversee test strategy, client communication, risk management. |
| **Test Lead** | Design test plan, coordinate automation, manage Jira workflows, defect triage. |
| **QA Engineer** | Develop/test scripts, execute test cycles, log defects, contribute to CI/CD. |
| **UX Specialist** | Validate UI/UX compliance against WCAG 2.1 and mobile responsiveness. |

## **6. Tools & Automation**

| **Category** | **Tools** | **Purpose** |
| --- | --- | --- |
| Test Management | TestRail, Xray | Test case design, traceability, reporting |
| Defect Tracking | Jira (with Xray plugin) | Bug lifecycle management |
| Automation | Selenium, Playwright | Cross-browser regression suites |
| API Testing | Postman, Swagger | Backend validation |
| CI/CD | Jenkins, GitLab Pipelines | Automated test execution |

## **7. Test Execution Workflow**

1. **Sprint 0:**
   * Requirements grooming with Product Owner.
   * Define acceptance criteria for user stories.
2. **Sprint 1-N:**
   * Daily automated smoke tests post-build deployment.
   * Execute prioritized manual/exploratory tests.
   * Regression suites triggered via CI/CD pipelines.
3. **Defect Triage:**
   * Daily standups to review P1/P2 bugs.
   * Retest fixes within 24 hours of resolution.

## **8. Defect Management**

* **Severity vs. Priority:**
  + P1 (Critical): Blocking issue (e.g., checkout failure).
  + P2 (High): Major functional deviation (e.g., cart miscalculation).
  + P3 (Medium): Cosmetic/UI flaws.
* **Workflow:**
  + Defects logged in Jira with attachments (screenshots, HAR files).
  + Root cause analysis (RCA) documented for recurring issues.

## **9. Entry/Exit Criteria**

| **Phase** | **Entry Criteria** | **Exit Criteria** |
| --- | --- | --- |
| **Test Planning** | Approved user stories, risk assessment | Signed-off test plan, traceability matrix |
| **Test Execution** | Stable build, automated smoke tests pass | 100% test coverage, P1/P2 defects resolved |
| **Test Closure** | All exit criteria met | Test summary report, client signoff |

## **10. Test Deliverables**

* **Pre-Execution:**
  + Test Plan (Confluence)
  + Traceability Matrix (Xray)
* **Post-Execution:**
  + Defect Dashboard (Jira)
  + Test Summary Report (PDF/HTML)
  + Automation Scripts (Git Repository)

## **11. Risks & Mitigations**

| **Risk** | **Mitigation** |
| --- | --- |
| Late requirement changes | Agile sprints with buffer for scope creep |
| Test environment instability | Dedicated Docker containers for consistency |
| Resource attrition | Cross-training, knowledge base in Confluence |

## **12. Approvals**

| **Document** | **Approved By** | **Date** | **Signature** |
| --- | --- | --- | --- |
| Test Plan | Client QA Director | 15/12/2024 | [Digital Sign-Off] |
| Test Cases | Product Owner | 15/12/2024 | [Digital Sign-Off] |

### **Revision History**

| **Version** | **Date** | **Changes** |
| --- | --- | --- |
| v1.0 | 10/09/2024 | Initial draft |
| v2.0 | 10/12/2024 | Modernized for agile/CI/CD, added automation scope |