Test Strategy for OpenCart Application

1. Introduction

This Test Strategy document outlines the approach, resources, and schedule for testing the OpenCart application available at https://demo.opencart.com/. The primary goal is to ensure that the application meets its functional, performance, and usability requirements.

2. Objectives

- Validate the functionality of core modules like product catalog, cart, checkout, and user management.
- Ensure compatibility across browsers and devices.
- Identify and report defects early to minimize risks.
- Verify API integrations and database interactions.

3. Scope of Testing

The scope includes manual and automated testing of the following modules:
- User Authentication (Login/Registration)
- Product Search and Filtering
- Shopping Cart and Checkout Process
- Order Management
- Payment Gateway Integration
- Admin Panel Functionality
- API Testing for key endpoints
- Cross-browser and Cross-device Compatibility
- Performance Testing for high user loads

4. Test Approach

Testing will be conducted in the following phases:
1. Requirement Analysis: Review and understand application requirements.
2. Test Design: Develop test cases and scenarios based on requirements.
3. Test Execution: Execute manual and automated test cases.
4. Defect Reporting: Log and track defects using a defect management tool.
5. Retesting and Regression: Verify fixes and test impacted areas.

5. Test Types

- **Functional Testing**: Verify the application meets functional requirements.
- **Usability Testing**: Assess user interface and user experience.
- **Compatibility Testing**: Test across multiple browsers and devices.
- **API Testing**: Validate APIs using tools like Postman.
- **Performance Testing**: Use tools like JMeter to test application performance under load.
- **Regression Testing**: Ensure new changes do not affect existing functionality.

6. Tools and Resources

- Test Management: Jira, TestRail
- Functional Testing: Selenium, Manual Testing
- API Testing: Postman
- Performance Testing: JMeter
- Browser Compatibility: BrowserStack
- Database Validation: MySQL

7. Test Environment

The test environment will include:
- Browsers: Chrome, Firefox, Edge, Safari
- Devices: Desktop, Tablet, Mobile
- Operating Systems: Windows, macOS, Linux, Android, iOS

8. Risks and Mitigation

- **Risk**: Limited test coverage for edge cases.
  Mitigation: Prioritize critical test cases and perform exploratory testing.
- **Risk**: Insufficient time for regression testing.
  Mitigation: Use automation to cover regression scenarios.

9. Deliverables

- Test Plan Document
- Test Cases and Scenarios
- Test Execution Reports
- Defect Reports
- Final Test Summary Report

10. Approval

This Test Strategy document requires approval from the Project Manager and QA Lead before proceeding with testing.