Opencart Test Plan

Version-1.0

Prepared By

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Team Members

Role	Name
Project Manager	MNO
Development Team	ABC (Senior Software Engineer)
	EFG (Software Engineer)
	JKL (Software Engineer)
Testing Team	XYZ (Test manager)
	GHI (Test Lead)
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	PQR (Backup Test Engineer)

Document Log

Version	Created By	Reviewed By	Approval Date	Notes
1.0	Nolak Kapali	GHI (Test Lead)	08-09-2023	Approved by Test Lead
		XYZ (Test Manager)	09-09-2023	Approved by Test Manager

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1. Introduction

The test plan for the Opencart web application outlines the strategy, objectives, criteria, environment, deliverables, resources, schedule, and estimation of testing activities. It specifies testing scopes including features to be tested and not to be tested, types of testing, testing tools, test environments, personnel responsible for testing, and addresses the risks associated with test plan and describes the mitigation plans for all the included risks. The test plan serves as an overview for new team members and provides insights into testing details for non-testing team members.

1.1 Overview of Opencart Web Application

Opencart is a free, open-source e-commerce platform for a diverse user base, from web developers to shop owners offering foundational support for building online stores. The e-commerce application consists of Opencart store front and admin section. As the project is based on Opencart store front, the test plan specifically addresses Opencart Store front section, highlighting its core features which are discussed below:

- Provides foundational support for website development.
- Allows free user registration and user login.
- Features a homepage with a header, footer, and menu bar, product search option.
- Includes a product display page.
- Enables users to change and manage their information.
- Incorporates a shopping cart for adding and managing products.
- Offers a checkout page with international payment options for purchasing.
- Allows users to submit product reviews.
- Provides the option to purchase gift vouchers.

2. Test Strategy

Test strategy defines the overall testing approach for the Opencart web application. It consists of scope of testing, testing types, testing tools, risks and mitigation plans and test logistics

2.1 Scope of Testing

Scopes of testing is part of test strategy and it specify which components of the e-commerce web application to test and which not to test.

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2.1.1 In Scope

In scope discussed the components of Opencart application that are included in the testing procedure. The modules of the web application that are included in the test are discussed with details given below:

Modules and Sub-Modules	Description
Home	The homepage is the entry point for users which features a header with a top menu bar and a footer section for easy navigation. The header includes a search box for users to explore available products throughout the Opencart store.
Account	User can view register and login options before login. After login, users access their own personalized account page to view and manage their account information.
Account->Register	User can register their information on the register page.
Account->Login	After registration user can login to Opencart and without registration user can't login to Opencart.
Login->Forgot Password	If a user forgets their account password, they can retrieve it through this page, which provides a password reset link.
Account->Logout	User can logout from the application.
Account->Edit Account	User can edit their account information.
Account->Change Password	User can change their previous password to a new one.
Account->Address Book	Users can manage multiple addresses, but must have a mandatory default address
Account->Wishlist	Users can add products to wishlist for future purchases, with the option to move them to the shopping cart when users are ready to make a purchase.
Account->Payment	User can manage their payment method information.
Account->Order History	User can view their previous all order history information.
Account-> Downloads	If a user's purchase includes downloads, user can access them through the downloads page.
Account ->Reward Points	User can view their reward points after purchasing product and utilize their reward points for making additional purchases.
Account->Product Returns	User can return their products through the product return page
Account->Transactions	User can access and view their transaction history.
Account->Affiliate Account	Users can create an affiliate account and invite others to become affiliates. This enables user to promote the ecommerce platform, earning commissions on boosted sales and traffic.
Account->Newsletter	Users have the option to subscribe to the newsletter.

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Gift Certificate	User can send gift vouchers individually to another user.
Shopping Cart	Users can add products and view the total product count and order price of all added items.
Shopping Cart->Checkout	After adding product to shopping cart only then user can access checkout page and then products can proceed to checkout.
Contact US	User can submit their enquiries.
Specials	User can view special offers in the product list.
Site Map	User can view the site map and navigate all the other pages through it.
Brands	Users can see all the brands available in the store and view products list by their brand name.
Product Compare	User can compare multiple products based on specifications, features, and prices.
Product Display	User can view the selected products in detail format through product display page.

2.1.2 Out of Scope

The components of the Opencart application that are not included in the testing procedure are discussion in this out of scope section.

1. Test automation.
2. Website Security and performance.
3. Website Database/Server side.
4. Any third-party features.
5. All the features that doesn't mentioned in scope.
6. Software and Hardware interfaces.

2.2 Test Approach

Test approach is a component of the test strategy which outlines the testing process, various types of testing, and specifies the methods for conducting testing in the Opencart application.

2.2.1 Process of Testing

The testing process defines the way of carrying out all the testing activities for Opencart web application. A step-by-step testing process outlined for the Opencart web application is given below.

Step-1: Creation of Testing Artifacts

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Test Plan: A detailed test plan will be generated by the testing team for the Opencart application.

Test Scenarios and Test Cases: Testing team will develop test scenarios for all the modules of the Opencart application. Test cases will be generated based on these scenarios, employing various test design techniques which are given below:

- Equivalence Class Partition
- Boundary Value Analysis
- State Transition Testing

Step-2: Testing

- After creating the necessary testing artifacts testing team will execute the developed test cases and thoroughly test all the modules of Opencart application.

Step-3: Defect Reporting

- During testing if any bugs are identified, testing team will log bugs using Microsoft Excel and Jira for bug tracking. The bugs are categorized based on the priorities as follows:
    1) **High:** Serious errors preventing system tests or serious data type issues.
    2) **Medium:** Serious or missing data errors without preventing implementation.
    3) **Low:** Minor errors with no impact on functionality.
- Testing team will create a Requirement Traceability Matrix (RTM) based on test case execution and bug reports.
- Any identified bugs will be assigned to the developer by the tester.

Step-4: Resolving

- The developer will address and resolve the assigned bug.
- After addressing the assigned bug, the developer will mark it as 'Fixed' and assign it to the testing team for verification

Step-5: Verification

- The testing team will conduct a detailed verification of the fixes on the assigned bugs.

Step-6: Closure

- Upon successful verification of the bug fix, testing team will close the bug.

Step-7: Unresolved

- If the bug is not successfully fixed, tester will re-assign it to the developer for further resolution.

2.2.2 Testing Types

Testing types are standardized procedures designed for specific bug identification and ensuring early bug detection before product release. Here two types of testing are performed given below:

1. **Functional Testing:** To ensure the fulfillment of client-provided functional requirements, functional testing is conducted to verify that the functions within Opencart are operating correctly and meeting the specified criteria.

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2. **Exploratory Testing:** Exploratory Testing in software testing involves testers checking the system on the fly without pre-defined test cases and this testing will be conducted for the Opencart application.

2.3 Testing Tools

The tools used for testing the Opencart web application include:
- **Google Chrome:** For web application to be loaded in the web browser.
- **Microsoft Word:** For creating the test plan.
- **Microsoft Excel:** To design test cases, document bug reports and to generate requirement traceability matrix (RTM).
- **Jira:** For bug tracking and project management.
- **ClickUp:** For project management.
- **Lightshot:** For capturing screenshots.

2.4 Risk and Issues

In the process of testing this web application, specific risks have been identified. It's important to acknowledge that when these risks materialize, they can evolve into issues, signifying potential losses for the entire project. To resolve this risk mitigation strategies are outlined below along with the identified risks.

Risk	Mitigation
Team members lack essential skills for website testing.	Implement a targeted training course to enhance their proficiency in website testing.
With the project schedule being overly tight, project completion is very challenging.	Establish test priorities for each test activity to optimize testing efforts within the tight timeframe.
The Test Manager lacks effective management skills.	Implement leadership training for the manager.
Inadequate cooperation negatively impacts employee productivity.	Motivate each team member in their tasks and inspire them to put forth greater efforts.
Inaccurate budget estimate and cost overruns.	Define the scope before commencing work, prioritize thorough project planning, and consistently monitor and measure progress.

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2.5 Test Logistics

In the Opencart test plan, test logistics involve specifying the team responsible for test execution under 'Who will test,' and 'When will the testing occur' details the requirements that need to be ready for the testing to begin in the Opencart project.

2.5.1 Who will test?

For the Opencart project, internal team members will serve as the testing team. Testers/test engineers will execute the test cases based on the test scenarios for all the modules of Opencart web application.

2.5.2 When will the test occur?

The tester will initiate test execution when the below required inputs are prepared and available:
- Software is available for testing
- All developed code in the software must be unit tested.
- Test environment must be set up.
- Test Specification must be created ☐ Enough human resource for testing
- All credentials must be provided including test user accounts etc.

3. Test Objectives

For opencart project the test objectives are listed below:
- The opencart project must give high quality performance.
- The project must be developed according to the customer requirements.
- Every defect must be identified, tracked and solved before release.
- All the functionality of opencart must be without any defects in the final release.

4. Test Criteria

In this Opencart test plan, test criteria consist of suspension and exit criteria. Suspension criteria outline conditions that, if not fulfilled, will result in the temporary suspension of the testing process. Exit criteria specify the conditions that must be met to conclude the testing process.

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4.1 Suspension Criteria

For the Opencart project if the testing team member reports a 40% failure rate in test cases, testing will be suspended until the development team resolves all the failed cases.

4.2 Exit Criteria

The following conditions must be met for the successful completion of a test phase:
- All high priority errors from functional test must be fixed and tested.
- Run rate must be 100%, unless a clear reason is provided.
- Pass rate of 80% must be achieved for successful completion.
- Full project team must be comfortable with the quality of the project before going to the production stage.
- If any medium or low priority errors are outstanding the implementation risk must be acceptable by business representatives.
- Final sign off by stakeholders and business IT personnel.

5. Resource Planning

Resource planning is a detailed plan for all types of resources that are needed to complete the Opencart project. There are resources like human resources, equipment resources etc. are needed to complete the project.

System Resource: System resource includes all the equipment it needed to execute the testing for the Opencart project.

S. I	Resource Name	Description
1.	Web Browser	Google Chrome browser is needed for the Opencart web application to run and execute their test cases of all the modules of the Opencart project. The Chrome browser version number must be 120.0.6099.201 to run the web application.
2.	Test tool	No automation test tool is used but for manual testing, the following tools are utilized: Microsoft Word, Microsoft Excel, Jira, ClickUp, Lightshot.
3.	Network	Establish a LAN Gigabit network and install one internet line with a minimum speed of 5 Mb/s.
4.	Computer	At least 1 computer which has windows 10, RAM 8 GB, CPU 2.10 GHz

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Human Resource: The testing team members in the Opencart project includes:

S. I	Testing Team Member	Tasks
1.	Name: XYZ Designation: Test Manager	• Review Opencart test plan. • Hold a meeting with the development team. • Conduct a meeting with the testing team. • Conduct a meeting with the customer. • Handles risks and issues.
2.	Name: GHI Designation: Test Lead	• Participate in reviewing the Opencart test plan. Manage all the test engineers. • Review and approve test cases and test scenarios of Opencart. • Prepare RTM and reports. • Assign Modules to the test engineers. • Give appropriate training to skill up the testing team. • Handles the testing schedule of the Opencart application.
3.	Name: Nolak Kapali Designation: Test Engineer	• Analyze the Opencart application requirments. Design Opencart testcases with test scenarios • Execute test cases. • Defect tracking. • Prepare RTM for respective modules of Opencart.
	Backup Test Engineer: Name: PQR Designation: Test Engineer	In case of an emergency, if the assigned test engineer is absent, the backup test engineer will assume the responsibilities of the assigned test engineer in the Opencart Project.

6. Test Environment

A testing environment is a configured setup of software and hardware where the testing team executes test cases. This environment includes physical components such as servers and the frontend running the environment. The test environment is given in the figure below:
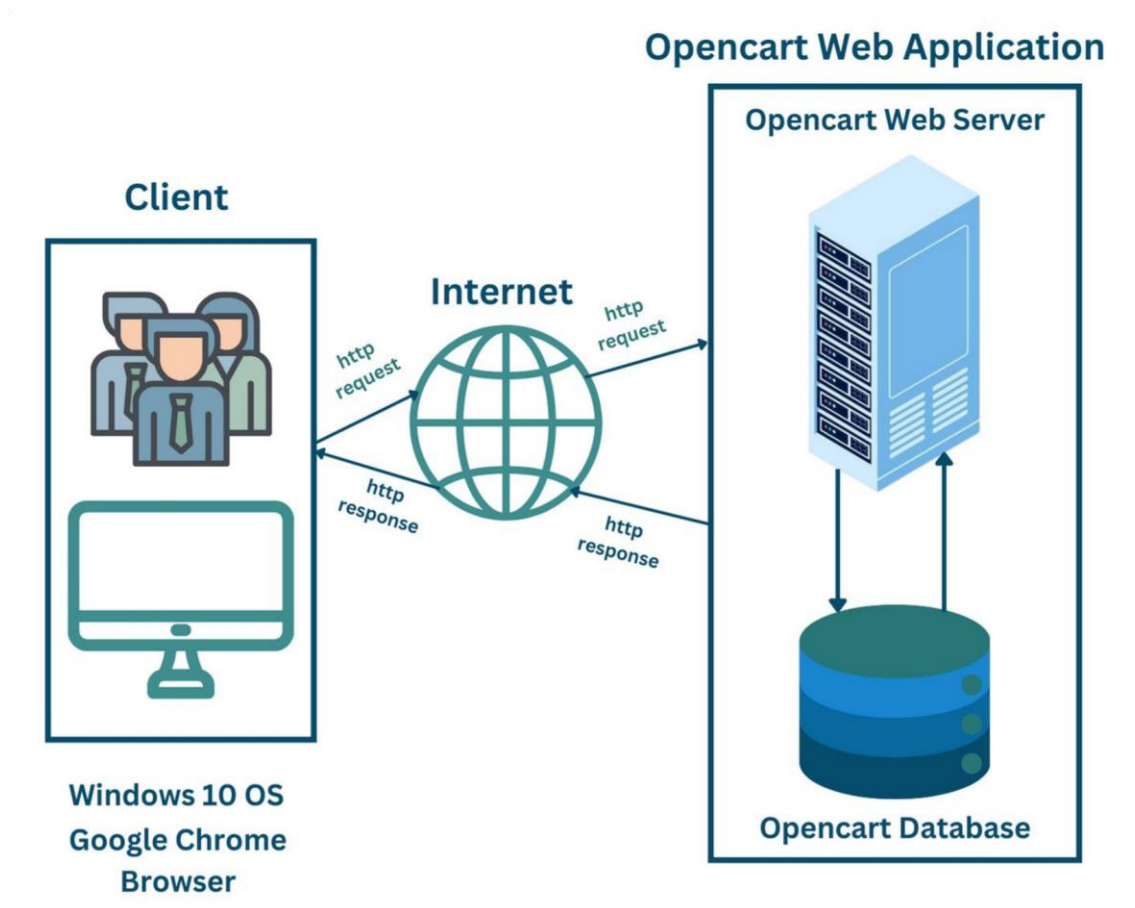
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Fig 1: Opencart Test Environment

Here in the test environment, testing is performed on a computer running the Windows 10 operating system, utilizing the Google Chrome browser. Test cases for the Opencart web application are executed on the Opencart demo website. Testers access the website through web browsing to conduct the testing.

7. Estimation & Schedule

The test schedule and the total test estimation are discussed in this section for Opencart project.

7.1 Test Estimation

In the test estimation phase, the entire project is divided into small tasks and the estimated time is allocated for each task as follows:

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Deliverables	Description	Targeted End date
Creating Test Plan	Test Manager, Test Lead, Test Engineer	180-man hour
Test Scenarios and Test Case Development	Test Lead, Test Engineer	160-man hour
Test Execution	Test Engineer	90-man hour
Documenting Bug Report	Test Engineer	50-man hour
Requirement Traceability Matrix (RTM)	Test Lead, Test Engineer	10-man hour
Test Delivery		20-man hour
Total		510-man hour

7.2 Test Schedule

In the test schedule phase, the schedule is designed based on the time allocations provided in the test estimation for the overall testing process, as outlined below:

Task	Start date	Finish Date
Test Plan Creation	03.11.2023	10.11.2023
Test Scenarios and Test Cases Creation	11.11.2023	17.11.2023
Test Execution	18.11.2023	21.11.2023
Bug Report Submission	22.11.2023	23.11.2023
RTM Submission	24.11.2023	24.11.2023
Test Delivery	25.11.2023	25.11.2023

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8. Deliverables

The test deliverables are the list of documents, tools and other components that are created to maintain and support the testing. The test deliverables of this Opencart project are given below:

- **Test plan document:** Detailed planned document that includes testing process, scope, deliverables, resources required for testing, test schedule and estimation, test environment etc. designed for the Opencart project.
- **Test cases documents:** Test cases with test scenarios developed on the features of in scope of the Opencart project.
- **Test Data:** It consists of the data that has been utilized during the execution of the testing process of Opencart web application.
- **Defect Report:** Bugs discovered during testing are reported with screenshots and videos, provided weekly at the discretion of the Project Manager of the Opencart project.
- **Requirement Traceability Matrix (RTM):** The Requirement Traceability Matrix (RTM) will be provided to the Project Manager upon completion of the bug report to offer a comprehensive overview of the overall testing process.