

Software Test Plan

Project Name	xyz.exampleEcommerce.com
Test Plan ID	TPK-xyz1.0

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Introduction

This Test Plan outlines the approach and strategy for testing the eCommerce website “xyz.exampleEcommerce.com”. The website serves as an online platform for users to browse and purchase products across various categories. The objective of this test plan is to ensure that the website meets business requirements, functional specifications, performance benchmarks, and security standards.

The project will have three levels of testing: Unit, System/Integration, and Acceptance. The details for each level are addressed in the approach section and will be further defined in the level-specific plans.

The estimated timeline for this project is very aggressive, spanning six (6) months. As such, any delays in the development process or in the installation and verification of third-party software could have significant effects on the test plan. The acceptance testing is expected to take one (1) month from the date of application delivery from the system test and is to be done in parallel with the current application process.

Test Items

The following are the primary test items for the eCommerce website “xyz.exampleEcommerce.com”.

- 1. User Registration and Authentication**
- 2. Product Catalog**
- 3. Shopping Cart and Checkout**
- 4. Order Management**
- 5. Payment System**
- 6. Search Functionality**
- 7. Security and Privacy**
- 8. Mobile and Cross-Browser Compatibility**
- 9. Performance Testing**
- 10. Usability and User Interface (UI)**
- 11. Admin Dashboard**

Features to be Tested

- 1. User Registration and Authentication**
 - a. Sign-up functionality
 - b. Login and logout process
- 2. Product Catalog**
 - a. Product search

3. Shopping Cart and Checkout

- a. Add/remove products from cart
- b. Checkout process
- c. Order confirmation and receipt generation

4. Order Management

- a. Order cancellation and returns

5. Payment System

- a. Payment processing

6. Search Functionality

- a. Search bar and result.

7. Security and Privacy

- a. Session management and User privacy and data protection

8. Mobile and Cross-Browser Compatibility

- a. Mobile responsiveness across various devices

9. Performance Testing

- a. Load testing

10. Usability and User Interface (UI)

- a. User experience (UX) testing for ease of navigation.

11. Admin Dashboard

- a. Product management (add/edit/delete),

Features not to be Tested

1. User Registration and Authentication

- a. Password reset and recovery

2. Product Catalog

- a. Product filtering
- b. Product details page

3. Shopping Cart and Checkout

- a. Payment gateway integration

4. Order Management

- a. Order history and tracking

5. Payment System

- a. Refund and cancellation processing

6. Search Functionality

- a. Result filtering and sorting on various criteria

7. Security and Privacy

- a. Data encryption

8. Mobile and Cross-Browser Compatibility

- a. Website accessibility on different browsers

9. Performance Testing

- a. Stress testing

10. Usability and User Interface (UI)

- a. Accessibility features

11. Admin Dashboard

- a. Report generation

Approach

The approach for testing the eCommerce website “xyz.exampleEcommerce.com” follows a structured, multi-phase strategy to ensure all critical components meet business requirements, functional specifications, security standards, and performance benchmarks.

The testing will be conducted in three main levels:

1. **Unit Testing:** Focuses on testing individual components, such as user authentication and product catalog, through automated scripts to ensure proper functionality in isolation.
2. **System/Integration Testing:** Verifies that the integrated components (e.g., shopping cart, payment gateway) interact as expected. This also includes testing third-party integrations like the payment gateway, which will be validated as part of the system workflow, ensuring end-to-end functionality.
3. **Acceptance Testing:** Validates that the system meets business requirements by simulating real-world scenarios. It will focus on user acceptance, meeting the defined business goals, and ensuring that all critical workflows, such as user registration, checkout, and order management, function smoothly and as expected.

Additionally:

4. **Security Testing** will focus on verifying data protection mechanisms, including session management and user privacy regulations (e.g., GDPR compliance).
5. **Performance Testing** will assess the system's ability to handle expected traffic loads through load testing and ensure that the website performs under high traffic conditions.

6. **Cross-Browser and Device Compatibility Testing** will verify that the website is accessible across different browsers and devices, ensuring consistent performance.
7. **Usability and UI Testing** will focus on user experience (UX), verifying ease of navigation, intuitive design, and accessibility features for users with disabilities.

Items Pass/Fail criteria

The Pass/Fail Criteria will be used to determine whether each test item meets the desired requirements. The following criteria will apply to the listed test items:

1. User Registration and Authentication

a. Sign-up functionality

- i. **Pass:** The user can successfully register with valid inputs, and the registration confirmation email is received.
- ii. **Fail:** User registration fails or receives an error message with valid data.

b. Login and logout process

- i. **Pass:** The user can log in and log out without issues, and sessions are managed securely.
- ii. **Fail:** User cannot log in or log out, or session management errors occur.

c.

2. Product Catalog

a. Product search

- i. **Pass:** The search functionality returns relevant products based on keywords and filters.
- ii. **Fail:** Search results are irrelevant, or no results are returned for valid queries.

b.

3. Shopping Cart and Checkout

a. Add/remove products from cart

- i. **Pass:** Products can be added or removed from the cart, and the cart updates correctly.
- ii. **Fail:** Cart updates fail, or items cannot be added/removed.

b. Checkout process

- i. **Pass:** Users can complete the checkout process without errors and select shipping and payment options.

- ii. **Fail:** Errors during checkout (e.g., payment failure, shipping selection issue).

c. Order confirmation and receipt generation

- i. **Pass:** The system generates and sends an order confirmation and receipt upon successful checkout.
- ii. **Fail:** Order confirmation or receipt is not generated or sent to the user.

4. Order Management

a. Order cancellation and returns

- i. **Pass:** Users can successfully cancel or return orders following the defined process.
- ii. **Fail:** Order cancellation or return process does not work as expected.

5. Payment System

a. Payment processing

- i. **Pass:** Payment is processed correctly, and the user receives a confirmation.
- ii. **Fail:** Payment processing fails (e.g., payment gateway issues).

6. Search Functionality

a. Search bar and result

- i. **Pass:** Search bar returns relevant results based on user queries, including accurate filtering and sorting.
- ii. **Fail:** Search results are irrelevant, or the search bar is non-functional.

7. Security and Privacy

a. Session management and User privacy/data protection

- i. **Pass:** Sessions expire appropriately, and sensitive data is encrypted and protected in accordance with privacy regulations (e.g., GDPR).
- ii. **Fail:** Session management is compromised, or user data is exposed or unprotected.

8. Mobile and Cross-Browser Compatibility

a. Mobile responsiveness across various devices

- i. **Pass:** Website is responsive and works correctly on different screen sizes (smartphones, tablets).
- ii. **Fail:** Website does not display correctly or functions poorly on mobile devices.

9. Performance Testing

a. Load testing

- i. **Pass:** The website can handle the expected load (e.g., number of concurrent users) without significant performance degradation.
- ii. **Fail:** Website performance deteriorates or crashes under expected user load.

10. Usability and User Interface (UI)

a. User experience (UX) testing for ease of navigation

- i. **Pass:** Users can easily navigate the website, and the user interface is intuitive.
- ii. **Fail:** Navigation is confusing, and users have difficulty finding key features.

11. Admin Dashboard

a. Product management (add/edit/delete):

- i. **Pass:** Admins can add, edit, and delete products correctly within the dashboard.
- ii. **Fail:** Product management actions fail or cause errors

Suspension Criteria

1. Major System Failures

- a. **Criteria:** If the website encounters critical errors that prevent key functionalities from operating.
- b. **Action:** Testing will be suspended until the root cause is identified and fixed.

2. Test Environment Issues

- a. **Criteria:** If there are significant issues with the test environment, such as server downtime, database failures, or connectivity problems that prevent tests from running.
- b. **Action:** Testing will be suspended until the environment is restored and stable.

3. Blocking Defects

- a. **Criteria:** If a defect is identified that blocks the execution of further tests.
- b. **Action:** Testing will be suspended until the blocking defect is resolved by the development team.

4. Security Vulnerabilities

- a. **Criteria:** If a critical security vulnerability is discovered
- b. **Action:** Testing will be suspended until the vulnerability is addressed.

5. Incomplete Requirements or Changes in Scope

- a. **Criteria:** If changes to the project's scope or requirements occur after testing has started, or if the requirements are unclear or incomplete.

- b. **Action:** Testing will be suspended until requirements are finalized and clarified.

Test Deliverables

The following deliverables will be provided throughout the testing process for the eCommerce website “xyz.exampleEcommerce.com” These deliverables ensure that the testing phase is well-documented, progress is tracked, and any issues are communicated effectively to all stakeholders.

1. Test Plan Document

- a. **Description:** This document outlines the approach, scope, objectives, and testing levels for the project. It includes details on the pass/fail criteria, suspension criteria, and overall strategy for testing.
- b. **Timing:** Delivered at the start of the testing phase.
- c. **Purpose:** The Test Plan will serve as the roadmap for all testing activities, providing clarity on how the testing process will unfold and ensuring all stakeholders are aligned on goals and procedures.

2. Test Case Documentation

- a. **Description:** A detailed list of test cases for each feature and function of the website. Each test case will include the test scenario, expected results, and step-by-step instructions for execution.
- b. **Timing:** Delivered before testing begins.
- c. **Purpose:** Test cases will guide the testers through each functionality of the website, ensuring thorough and consistent testing across all features.

3. Test Execution Reports

- a. **Description:** These reports will track the progress of test execution, detailing which tests have been completed, and whether they passed or failed. Any blockers or issues encountered will also be highlighted.
- b. **Timing:** Provided regularly during the testing phase.
- c. **Purpose:** The Test Execution Reports will give stakeholders visibility into the progress of testing and help identify any issues or roadblocks that need attention.

4. Defect Logs

- a. **Description:** A log that captures all defects identified during testing. It will include details such as defect severity, steps to reproduce, and the current status (e.g., open, resolved, closed).
- b. **Timing:** Continuously updated throughout the testing process.
- c. **Purpose:** Defect logs will help track and manage issues, ensuring they are addressed and resolved before the project moves forward.

5. Test Summary Report

- a. **Description:** A final summary that provides an overview of the testing activities, results, and the status of each test. It will also highlight any outstanding issues or risks.
 - b. **Timing:** Delivered at the end of the testing phase.
 - c. **Purpose:** The Test Summary Report will give a clear picture of how well the website performed during testing and provide a basis for decision-making about the next steps.
6. **Security Testing Reports**
- a. **Description:** A report summarizing the results of security testing, including vulnerabilities, risks, and recommended actions to mitigate security threats.
 - b. **Timing:** Delivered after security testing is completed.
 - c. **Purpose:** These reports will ensure that the website meets the necessary security standards and protects user data appropriately.
7. **Performance Testing Reports**
- a. **Description:** A report detailing the results of performance tests, including load testing and stress testing, to ensure the website can handle the expected traffic.
 - b. **Timing:** Delivered after performance testing is completed.
 - c. **Purpose:** These reports will help ensure the website can handle peak loads and provide a smooth user experience, even under stress.
8. **Test Closure Report**
- a. **Description:** This final report will summarize the overall testing efforts, evaluate the quality of the website, and highlight any issues that remain unresolved. It will also provide a conclusion on whether the website is ready for release.
 - b. **Timing:** Delivered at the end of the testing phase.
 - c. **Purpose:** The Test Closure Report marks the completion of testing and provides a final assessment of the website's readiness for launch.

Testing Tasks

Here's a quick overview of the key tasks involved in testing the eCommerce website "xyz.exampleEcommerce.com"

1. **Test Planning and Preparation**
 - a. Create the test plan and define scope, objectives, and deliverables.
 - b. Set up testing schedules, resources, and required environments.
2. **Test Case Design**

- a. Write detailed test cases for each feature to be tested.
 - b. Review test cases to make sure they cover all business requirements.
- 3. **Test Environment Setup**
 - a. Set up the necessary hardware, software, and network for testing.
 - b. Ensure the environment mirrors the production setup.
- 4. **Unit Testing**
 - a. Test individual components (like user registration) to make sure they work correctly.
 - b. Log any defects and fix them.
- 5. **System/Integration Testing**
 - a. Test how different components work together (e.g., shopping cart with payment gateway).
 - b. Validate third-party integrations.
- 6. **Acceptance Testing**
 - a. Test the website using real-world scenarios to make sure it meets user expectations and business requirements.
- 7. **Security Testing**
 - a. Check for vulnerabilities like SQL injection or weak session management.
 - b. Ensure user data is encrypted and protected.
- 8. **Performance Testing**
 - a. Test the site's ability to handle expected traffic and stress scenarios.
 - b. Identify any performance bottlenecks.
- 9. **Cross-Browser and Device Compatibility Testing**
 - a. Ensure the website works well on different browsers and devices (e.g., phones, tablets, desktops).
- 10. **Usability and UI Testing**
 - a. Check that the website is easy to navigate and has a good user experience.
 - b. Test accessibility features like screen readers and color contrast.
- 11. **Test Reporting**
 - a. Document test results and provide regular progress reports.
 - b. Share any issues or risks with stakeholders.
- 12. **Test Closure**
 - a. Finalize testing, complete any remaining tasks, and prepare for release.
 - b. Summarize testing results and lessons learned for future reference.

Environment Needs

To effectively test the eCommerce website "xyz.exampleEcommerce.com," the following environments and tools are needed:

1. Test Environment

- a. **Web & Database Servers:** Set up web and database servers that closely match the production environment.
- b. **Test Data:** Prepare test data for users, products, orders, and payments.
- c. **Test Network:** A stable network to simulate real user conditions during testing.
- d. **Operating Systems:** Ensure compatibility with different OS.

2. Testing Tools

- a. **Test Management:** Jira to track test cases and defects.
- b. **Automation:** Selenium for automated testing.
- c. **Performance Tools:** JMeter for load and stress testing.
- d. **Security Tools:** Use OWASP ZAP to test security.
- e. **Cross-Browser Tools:** BrowserStack to test compatibility across browsers.

3. Devices and Browsers

- a. **Devices:** A mix of smartphones, tablets, and desktops for responsiveness testing.
- b. **Browsers:** Google Chrome, Firefox, Safari, Edge, and others to ensure cross-browser compatibility.

4. Security & Privacy Tools

- a. **Encryption Tools:** For SSL/TLS testing of data transactions.
- b. **Session Management:** Tools to test session handling and security.

5. Backup & Rollback

- a. **Backup Systems:** Ensure the environment can be restored if something goes wrong.
- b. **Rollback Tools:** Tools for reverting changes during testing.

Responsibilities

Here's how the responsibilities align with each key testing task for the eCommerce website "xyz.exampleEcommerce.com":

1. Test Planning and Preparation

- a. **Test Manager:** Responsible for creating the test plan, defining the scope, objectives, and deliverables. They ensure the testing schedule is set, resources are allocated, and the environment is prepared.
- b. **QA Lead:** Helps coordinate the planning and ensures all tasks are outlined for a smooth testing phase.

2. Test Case Design

- a. **Test Analyst:** Writes detailed test cases for each feature, ensuring they cover all business requirements. Reviews the test cases to make sure they are thorough and aligned with project goals.
- b. **QA Lead:** Oversees the test case design process, ensuring completeness and consistency with project specifications.

3. Test Environment Setup

- a. **DevOps/IT Team:** Responsible for setting up the necessary hardware, software, and network configurations for testing. They ensure the environment mirrors the production setup.
- b. **Test Manager:** Ensures the environment is ready for testing and monitors for any issues that might delay the testing phase.

4. Unit Testing

- a. **Developer:** Performs unit tests on individual components, ensuring they work correctly in isolation. They also log and fix any defects identified during testing.
- b. **Test Analyst:** Works alongside developers to validate unit tests, ensuring all features are adequately covered.

5. System/Integration Testing

- a. **Test Analyst:** Validates how different components work together (e.g., shopping cart with payment gateway) and ensures third-party integrations function as expected.
- b. **QA Lead:** Oversees the system and integration tests, ensuring that the website works as a whole and all dependencies are validated.

6. Acceptance Testing

- a. **End Users/Stakeholders:** Participate in acceptance testing, providing feedback based on real-world scenarios to ensure the website meets user expectations and business requirements.
- b. **Test Manager:** Coordinates the testing and ensures all business requirements are covered during the acceptance phase.

7. Security Testing

- a. **Security Test Engineer:** Responsible for testing the website's security, checking for vulnerabilities like SQL injection, weak session management, and ensuring sensitive user data is encrypted and protected.
- b. **QA Lead:** Works with the security engineer to integrate security testing into the overall testing plan and tracks progress.

8. Performance Testing

- a. **Performance Test Engineer:** Conducts performance tests to ensure the website can handle expected traffic and stress scenarios. They identify and document any performance bottlenecks.
- b. **Test Analyst:** Works with the performance test engineer to ensure the tests are representative of real-world conditions and user behavior.

9. Cross-Browser and Device Compatibility Testing

- a. **Test Analyst:** Ensures the website works across different browsers (Chrome, Firefox, Safari, etc.) and devices (smartphones, tablets, desktops) to guarantee compatibility.
- b. **UI/UX Specialist:** Ensures the website's design and layout adapt properly to different screen sizes and browsers.

10. Usability and UI Testing

- a. **UI/UX Designer:** Ensures the website has an intuitive and user-friendly interface, testing navigation, design consistency, and overall user experience.
- b. **Test Analyst:** Verifies the website's usability by testing its accessibility features (e.g., screen reader compatibility, color contrast) and overall ease of use.

11. Test Reporting

- a. **Test Manager:** Oversees the documentation of test results and ensures that regular progress reports are shared with stakeholders.
- b. **Test Analyst:** Documents the results of test executions, logs defects, and reports any issues or risks that arise during testing.

12. Test Closure

- a. **Test Manager:** Responsible for finalizing the testing process, ensuring all tasks are completed, and preparing for release. They provide a summary of test results and lessons learned for future projects.
- b. **QA Lead:** Helps to evaluate the overall testing efforts and provides a final sign-off on the testing phase.

Schedule

The testing schedule will follow the overall project timeline and be broken down into key phases, including test planning, test case design, execution, and final reporting. Testing will span approximately **six months**, with **one month** allocated for acceptance testing once system tests are completed. Regular progress updates will be provided to ensure the schedule is adhered to, and any delays will be communicated promptly.

Risks and Contingencies

Some potential risks include delays in development affecting testing timelines, issues with third-party integrations, or missing/incorrect test data. To mitigate these risks, contingency plans include having a flexible test environment setup, prioritizing critical tests first, and maintaining regular communication with the development team to resolve issues quickly. If delays occur, testing will be rescheduled or adjusted to focus on the most crucial areas.

Approvals

The Test Plan and final Test Summary Report will require approval from key stakeholders, including the **Test Manager**, **Project Manager**, and relevant business owners. The **QA Lead** will review the results before obtaining sign-off on the final report, ensuring that all testing activities meet business and technical requirements.