E-COMMERCE CHECKOUT PROCESS

You are assigned to test the checkout process of an e-commerce website. The website allows users to add products to their cart, proceed to checkout, and complete the purchase. The checkout process involves multiple steps, including entering shipping information, selecting a payment method, and confirming the order.

Question A

Outline a high-level test strategy for testing the e-commerce checkout process. Consider key testing objectives, environments, and testing types (e.g., functional, usability, security).

RESPONSE

Testing the e-commerce checkout process is crucial to ensure a smooth and secure experience for users. Below is a test strategy that covers key testing objectives, environments, and testing types (e.g., functional, usability, security):

TEST STRATEGY FOR AN E-COMMERCE CHECKOUT PROCESS

PROJECT NAME: E-COMMERCE CHECKOUT PROCESS

PROJECT START DATE: 28/12/2023

PROJECT END DATE: 02/01/2024

1. **INTRODUCTION**

   In the dynamic landscape of online commerce, the checkout process serves as the crucial gateway between a customer's intention to purchase and the successful completion of a transaction. A seamless and efficient checkout experience not only enhances customer satisfaction but also significantly impacts the overall success of an e-commerce platform.

   This Test Strategy has been created to outline the testing methodology for an e-commerce checkout process. This document provides a comprehensive overview of the testing objectives, environments and testing types to ensure that a high-quality product that meets the requirement specification is delivered.

   1.1 TEST SCOPE

   The testing scope will cover all aspects of a typical e-commerce website. The testing will include functional testing, non-functional functional testing (performance, usability, security testing, etc.)

   1.2 TEST OBJECTIVE

To evaluate the robustness, functionality, and user experience of the checkout process on an e-commerce website to ensure seamless and secure transactions for end-users.

2. TEST APPROACH

Testing the checkout process of an e-commerce website will involve both manual and automation testing of the application. Functional and non-functional testing of the application will also be conducted.

2.1 TESTING LEVELS

Functionality Testing:

- To validate that users can successfully add products to the cart.
- To ensure the correctness of the checkout process through all steps.
- To verify the accuracy of order summary and pricing calculations.
- To confirm the proper application of discounts, promotions, and coupons.
- To test the removal of items from the cart.

Usability Testing:

- To evaluate the user interface for clarity and ease of use.
- To verify that error messages are clear and provide helpful guidance.
- To ensure the navigation through the checkout process is intuitive.
- To test responsiveness and usability on different devices and browsers.

Performance Testing:

- To measure the speed and responsiveness of the checkout process.
- To test the system under various load conditions to ensure scalability.
- To validate that the checkout process is efficient even with a high number of concurrent users.

Compatibility Testing:

- To verify the checkout process across different browsers (Chrome, Firefox, Safari, etc.).
- To test on various operating systems (Windows, macOS, Linux) and devices (desktop, tablet, mobile).

Security Testing:

- To validate the encryption of sensitive information during the checkout process.
- To test for vulnerabilities such as SQL injection and cross-site scripting.
- To verify that user authentication and authorization mechanisms are secure.

Integration Testing:

- To test the integration of the e-commerce platform with external systems (payment gateways, shipping providers).
- To ensure data consistency between the shopping cart, user profiles, and order processing.

Payment Gateway Testing:

- To validate the integration with different payment methods (credit card, PayPal, etc.).
- To test various scenarios for successful and failed transactions.
- To verify the accuracy of billing information and transaction records.

Regression Testing:

- To ensure that new updates or changes do not negatively impact the existing checkout process.
- To perform regression testing after bug fixes or feature additions.

2.2 TESTING LEVELS

Automated Testing:

- Use automated testing tools for repetitive and regression testing.
- Automate test scenarios for different browsers, devices, and payment methods.

Manual Testing:

- Conduct exploratory testing to identify usability issues and edge cases.
- Manually simulate various user interactions during the checkout process.

User Acceptance Testing:

- Involve actual users to perform UAT to ensure the checkout process meets their expectations.

Security Testing:

- Use security scanning tools to identify and address potential vulnerabilities.

Performance Testing:

- Utilize performance testing tools to simulate a variety of load conditions and identify performance bottlenecks.

3. TEST DELIVERABLES

The following documents will be produced to provide insights into the testing process, results, and overall quality of the checkout functionality. They are:

Test Plan:

- Outlines the overall strategy for testing the checkout process.

- Describes the scope, objectives, resources, schedule, and entry/exit criteria for testing.
- May include details on testing environments and configurations.

Test Cases:

- Comprehensive set of test cases covering positive and negative scenarios, edge cases, and regression tests for the checkout process.
- Test cases should be organized logically and include steps, expected results, and preconditions.

Test Data:

- Documentation on the test data used during checkout process testing.
- Includes details on various scenarios such as different products, quantities, shipping addresses, and payment methods.

Test Scripts:

- If automated testing is implemented, provide the scripts used for automation testing of the checkout process.
- Include details on test data, expected outcomes, and any specific configurations.

Defect Reports:

- Document any defects or issues discovered during testing.
- Include detailed information such as steps to reproduce, severity, and status.

Test Execution Report:

- Summarizes the results of test execution, including the status of test cases (pass/fail), percentage of test coverage, and any deviations from the expected behavior.

4. **TEST ENVIRONMENT**
   - A wireless network connection will be required.
   - A laptop (windows, mac and Linux) will also be required.
   - Browsers such as Google chrome, Mozilla firefox, Microsoft edge, Safari, Opera mini, etc. will also be used.

5. **ENTRANCE REQUIREMENT**

   These are the prerequisites that must be met before testing may begin.

6. **EXIT CRITERIA**

   These are the predefined conditions that must be met to conclude the testing process, such as a specific defect density threshold or completion of a predefined set of test cases, etc.

7. **APPROVAL**

   The test strategy document will be approved by the Head of the Testing team of the e-commerce website. This document will serve as a guide throughout the testing process.

Question B

Identify and list five critical test scenarios that you would prioritize for testing the checkout process. Include scenarios related to both positive and negative test cases.

RESPONSE

Test Scenario 1 (Positive):

Successful Checkout with Valid Information

Steps:

- Add a product to the cart.
- Proceed to checkout.
- Enter valid shipping information.
- Select a valid payment method.
- Confirm the order.

Expected Result: The order is successfully processed, and the user receives a confirmation with accurate details.

Test Scenario 2 (Positive):

Applying a Discount or Promotion

Steps:

- Add a product to the cart.
- Apply a valid discount code or promotion.
- Proceed to checkout.
- Enter valid shipping information.
- Select a valid payment method.
- Confirm the order.

Expected Result: The discount or promotion is applied correctly, and the final price reflects the discounted amount.

Test Scenario 3 (Negative):

Unsuccessful Checkout with Invalid Payment Information

Steps:

- Add a product to the cart.
- Proceed to checkout.
- Enter valid shipping information.
- Select a payment method.

- Enter invalid payment information (e.g., expired credit card, incorrect CVV).
- Confirm the order.

Expected Result: The system correctly identifies the invalid payment information and prevents the order from being processed.

Test Scenario 4 (Negative):

Error Handling for Insufficient Stock

Steps:

- Add a product to the cart.
- Set the product stock to a quantity lower than the quantity in the cart.
- Proceed to checkout.
- Enter valid shipping information.
- Select a valid payment method.
- Confirm the order.

Expected Result: The system should display an error message indicating insufficient stock and prevent the order from being completed.

Test Scenario 5 (Positive):

Mobile Checkout Process

Steps:

- Access the e-commerce website using a mobile device.
- Add a product to the cart.
- Proceed to checkout.
- Enter valid shipping information.
- Select a valid payment method.
- Confirm the order.

Expected Result: The mobile checkout process is smooth, and all elements are properly displayed and functional, ensuring a positive user experience.

Question C

Develop a test case for the scenario of completing the checkout process using the website's user interface. Include step-by-step instructions, expected results, and any necessary test data.

RESPONSE

Test Case: Completing the Checkout Process via the E-commerce Website UI

Preconditions:

- Access to the e-commerce website.
- A valid user account with products added to the cart.

Objective: To verify that users can successfully complete the checkout process on the e-commerce website, from adding a product to the cart to confirming the order.

Test Data:

- Product(s) in the cart.
- Valid shipping information.
- Valid payment method details.

Test Steps:

- Open the browser and navigate to the e-commerce website.
- Log in using valid credentials.
- Locate and click on the shopping cart icon.
- Verify that the correct product(s) are displayed in the cart.
- Confirm the quantity, price, and any applied discounts/promotions.
- Click on the "Proceed to Checkout" or a similar button.
- Fill in the shipping information form with valid details.
- Include name, address, city, state, ZIP code, and contact number.
- Choose a valid payment method (e.g., credit card, PayPal).
- Enter the necessary payment details (e.g., card number, expiration date, CVV).
- Review Order Summary by confirming that the order summary displays the correct products, quantities, and prices.
- Ensure any applied discounts or promotions are reflected in the total.
- Click on the "Place Order" or a similar button to confirm the purchase.
- Check for the order confirmation page or message.
- Confirm that the order details (order number, items, total) are accurate.
- Verify that the user receives an email confirmation.
- Check that the email includes accurate order details and a confirmation message.

Expected Results:

- Each step is completed without encountering errors.
- The order summary is accurate, reflecting the chosen products, quantities, and prices.
- The user receives an order confirmation on the website and via email.
- The email confirmation contains the correct order details and a confirmation message.

Post-conditions:

- The user account reflects the completed order in the order history.
- The products are removed from the cart.
- The system is ready for the next user interaction.