**E-commerce Web Application Test Case Document**

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**1. Introduction**

This document outlines test cases to ensure the e-commerce web application, including user and admin panels, operates reliably and efficiently. It encompasses functional, non-functional, performance, and security testing to validate the application's quality and user experience.

**2. Scope**

The test cases cover the following modules:

* **User Panel**:
  + User registration and authentication
  + Product browsing and catalog management
  + Shopping cart functionality
  + Checkout and payment processing
  + Order tracking and management
  + Search and filtering
  + User profile management
* **Admin Panel**:
  + Product management (add, update, delete)
  + Order management (view order details)

**3. Test Objectives**

* Verify all features align with requirements.
* Ensure intuitive and user-friendly interfaces.
* Confirm performance under normal and peak loads.
* Validate security against common threats.
* Identify and resolve defects for a seamless experience.

**4. Test Case Summary**

|  |  |  |
| --- | --- | --- |
| Module | Test Case Count | Priority |
| User Registration & Login | 6 | High |
| Product Catalog | 5 | High |
| Shopping Cart | 5 | High |
| Checkout Process | 6 | High |
| Order Management | 2 | Medium |
| Payment Gateway | 5 | High |
| Search Functionality | 5 | Medium |
| User Profile | 3 | Medium |
| Admin Panel | 6 | High |
| Performance Testing | 4 | High |
| Security Testing | 4 | High |

**5. Detailed Test Cases**

**User Registration and Login**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_UR\_001 | Verify successful user registration with valid details | Email: ahmed@gmail.com Password: ahmed@123 User Name: Ahmed Haque | 1. Navigate to registration page 2. Enter email, password, and name 3. Submit | User is registered, redirected to login page | Same as expected. | Not Run |
| TC\_UR\_002 | Verify registration with an existing email | Email: ahmed@gmail.com (already registered) Password: ahmed@123 | 1. Navigate to registration page 2. Enter already registered email 3. Submit | Error: "Email already exists" | Same as expected. | Pass |
| TC\_UR\_003 | Verify registration with invalid password format | Email: irtiza@gmail.com Password: weak | 1. Navigate to registration page 2. Enter email and weak password 3. Submit | Error: "Password must be at least 6 characters" | Same as expected. | Not Run |
| TC\_UR\_004 | Verify successful login with valid credentials | Username: ahmed@gmail.com Password: ahmed@123 | 1. Navigate to login page 2. Enter username and password 3. Submit | User logged in, redirected to homepage | Same as expected. | Not Run |
| TC\_UR\_005 | Verify login with invalid credentials | Username: ahmed@example.com Password: Wrong@123 | 1. Navigate to login page 2. Enter username and incorrect password 3. Submit | Error: "Invalid email or password" | Same as expected. | Not Run |
| TC\_UR\_006 | Verify registration with missing required fields | Email: (empty) Password: ahmed@123 | 1. Navigate to registration page 2. Leave email field empty 3. Submit | Error: "All required fields must be filled" | Same as expected. | Not Run |

**Product Catalog**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_PC\_001 | Verify product list is displayed on homepage | None | 1. Navigate to homepage 2. View product listings | Products displayed with name, price, image | Same as expected. | Not Run |
| TC\_PC\_002 | Verify product details page displays correct information | None | 1. Click on a product | Product details (description, price, reviews) displayed | Same as expected | Not Run |
| TC\_PC\_003 | Verify filtering products by category | Category: Men | 1. Select "Men" from filter | Only products in selected category displayed | Same as expected | Not Run |
| TC\_PC\_004 | Verify sorting products by price | Sort Option: Price Low to High | 1. Select "Sort by: Price Low to High" | Products sorted by price in ascending order | Same as expected | Not Run |
| TC\_PC\_005 | Verify out-of-stock product handling | None | 1. View out-of-stock product | "Out of Stock" label, add-to-cart disabled | TBD | Not Run |

**Shopping Cart**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_SC\_001 | Verify adding a product to the cart | Select any product from catalogue | 1. Navigate to product page 2. Click "Add to Cart" | Product added, cart count updated | Same as expected. | Not Run |
| TC\_SC\_002 | Verify updating cart quantity | Select any product from cart | 1. Go to cart 2. Change product quantity to 3 | Cart total and quantity updated | Same as expected. | Not Run |
| TC\_SC\_003 | Verify removing a product from the cart | Select any product from cart | 1. Go to cart 2. Click remove icon | Product removed; cart updated | Same as expected. | Not Run |
| TC\_SC\_004 | Verify adding an out-of-stock product | Select any product from catalogue | 1. Attempt to add out-of-stock product | Error: "Item out of stock" | Same as expected. | Not Run |
| TC\_SC\_005 | Verify cart behavior with maximum quantity | Select any product from catalogue | 1. Add product with quantity exceeding limit | Error: "Maximum quantity exceeded" | TBD | Not Run |

**Checkout Process**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_CO\_001 | Verify checkout for logged-in user | Logged in user testuser@example.com Products in cart | 1. Log in 2. Add product to cart 3. Proceed to checkout 4. Complete | Order placed, saved address used | Same as expected. | Not Run |
| TC\_CO\_002 | Verify checkout with invalid shipping address | Address: (incomplete address) | 1. Proceed to checkout 2. Enter invalid address 3. Submit | Error: "Invalid address" | Same as expected. | Not Run |
| TC\_CO\_003 | Verify checkout with empty cart | None | 1. Go to checkout with no items | Error: "Cart is empty" | Same as expected. | Not Run |
| TC\_CO\_004 | Verify saving address during checkout | Address: Apt 1/3A Sector A  Pincode:45234  Phone: 030070345 | 1. Proceed to checkout 2. Enter new address 3. Check "Save address" | Address saved to user profile | Same as expected. | Not Run |
| TC\_CO\_005 | Verify checkout with out-of-stock item | Select any out-of-stock product | 1. Add out-of-stock item to cart 2. Proceed to checkout | None | Same as expected. | Not Run |
| TC\_CO\_006 | Verify checkout session timeout | None | 1. Start checkout 2. Stay idle for 15 minutes | Session expires; user prompted to restart | Same as expected. | Not Run |

**Order Management**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_OM\_001 | Verify viewing order history | Logged in user testuser@example.com | 1. Log in 2. Navigate to "My Orders" | List of past orders displayed | Same as expected. | Not Run |
| TC\_OM\_002 | Verify viewing order details | Click on any previous order | 1. Go to "My Orders" 2. Click on an order | Order details (items, status, total) displayed | Same as expected. | Not Run |

**Payment Gateway**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_PG\_001 | Verify payment with PayPal | PayPal Credentials: test@paypal.com | 1. Proceed to checkout 2. Select PayPal 3. Complete authentication | Payment successful, order confirmed | Same as expected. | Not Run |
| TC\_PG\_002 | Verify payment with invalid card details | Card: 1234-5678-9012-3456 (invalid) | 1. Proceed to checkout 2. Enter invalid card details 3. Submit | Error: "Invalid card details" | Same as expected. | Not Run |
| TC\_PG\_003 | Verify saving card details | Card: 5555-6666-7777-8888 | 1. Proceed to checkout 2. Enter card details 3. Check "Save card" | Card saved for future purchases | TBD | Not Run |
| TC\_PG\_004 | Verify payment with insufficient funds | Card: 4444-3333-2222-1111 (low balance) | 1. Proceed to checkout 2. Enter card with insufficient funds | Error: "Insufficient funds" | TBD | Not Run |
| TC\_PG\_005 | Verify refund processing | Order ID: ORD789 | 1. Initiate refund for cancelled order | Refund processed, user notified | TBD | Not Run |

**Search Functionality**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_SF\_001 | Verify searching for a valid product | Search Term: "Laptop" | 1. Enter "Laptop" in search bar 2. Press Enter | Relevant products displayed | Same as expected. | Not Run |
| TC\_SF\_002 | Verify searching for a non-existent product | Search Term: "NonexistentItem" | 1. Enter "NonexistentItem" in search bar 2. Press Enter | "No results found" message | Same as expected. | Not Run |
| TC\_SF\_003 | Verify searching with partial product name | Search Term: "Lap" | 1. Enter "Lap" in search bar 2. Press Enter | Products matching partial name displayed | Same as expected. | Not Run |
| TC\_SF\_004 | Verify searching with special characters | Search Term: "" | 1. Enter special characters in search 2. Press Enter | No crash, valid results or "No results" | Same as expected. | Not Run |
| TC\_SF\_005 | Verify case-insensitive search | Search Term: "laptop" | 1. Enter "laptop" in search bar 2. Press Enter | Correct products displayed | Same as expected. | Not Run |

**User Profile**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_UP\_002 | Verify adding a new address | Address: 456 Test Ave, City, Country | 1. Go to "My Profile" 2. Add new address 3. Save | Address added to profile | Same as expected. | Not Run |
| TC\_UP\_003 | Verify deleting an address | Address: 456 Test Ave, City, Country | 1. Go to "My Profile" 2. Delete an address | Address removed from profile | Same as expected. | Not Run |

**Admin Panel**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_AP\_001 | Verify adding a new product | Title: Jacket  Description: xyz  Category: Men  Brand: Levis Price: $500 Sales Price: $699  Stock: 10  Image: media file | 1. Log in as admin 2. Navigate to "Products" 3. Enter product details 4. Save | Product added to catalog | Same as expected. | Not Run |
| TC\_AP\_002 | Verify updating an existing product | Title: Jacket  Description: xyz  Category: Men  Brand: Levis Price: $500 Sales Price: $699  Stock: 10  Image: media file | 1. Log in as admin 2. Navigate to "Products" 3. Select product 4. Update price 5. Save | Product details updated in catalog | Same as expected. | Not Run |
| TC\_AP\_003 | Verify deleting a product | Select any product | 1. Log in as admin 2. Navigate to "Products" 3. Select product 4. Delete | Product removed from catalog | Same as expected. | Not Run |
| TC\_AP\_004 | Verify adding a product with invalid data | Left any required field | 1. Log in as admin 2. Navigate to "Products" 3. Enter invalid price 4. Save | Error: "Invalid product details" | Same as expected. | Not Run |
| TC\_AP\_005 | Verify viewing order details in admin panel | Order ID: ORD789 | 1. Log in as admin 2. Navigate to "Orders" 3. Select an order | Order details (items, status, total) displayed | Same as expected. | Not Run |
| TC\_AP\_006 | Verify viewing a non-existent order | Order ID: INVALID123 | 1. Log in as admin 2. Navigate to "Orders" 3. Search for invalid order ID | Error: "Order not found" | Same as expected. | Not Run |

**Performance Testing**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_PT\_001 | Verify page load time | None | 1. Navigate to homepage 2. Measure load time | Page loads within 3 seconds | TBD | Not Run |
| TC\_PT\_002 | Verify handling concurrent users | Users: 1000 | 1. Simulate 1000 users accessing homepage | No crashes, response time <5 seconds | TBD | Not Run |
| TC\_PT\_003 | Verify checkout performance under load | Users: 500 | 1. Simulate 500 users checking out simultaneously | Checkout completes for all users | TBD | Not Run |
| TC\_PT\_004 | Verify search performance under load | Users: 1000 | 1. Simulate 1000 users searching simultaneously | Search results return within 5 seconds | TBD | Not Run |

**Security Testing**

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| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Test Description | Test Data | Test Steps | Expected Test Result | Actual Test Result | Status (Pass/Fail) |
| TC\_ST\_001 | Verify protection against SQL injection | Payload: ' OR '1'='1 | 1. Enter SQL injection payload in login form | No unauthorized access, input sanitized | TBD | Not Run |
| TC\_ST\_002 | Verify protection against XSS attack | Payload: | 1. Enter XSS script in search bar | Script neutralized, no execution | TBD | Not Run |
| TC\_ST\_003 | Verify CSRF protection | None | 1. Attempt checkout without CSRF token | Request blocked, error returned | TBD | Not Run |
| TC\_ST\_004 | Verify secure payment processing | None | 1. Monitor payment traffic | All data encrypted; no sensitive info exposed | TBD | Not Run |