Day 5 - Testing and Backend Refinement of E - Commmerce Website

As we progress toward launching our marketplace, Day 5 is dedicated to ensuring that all components are fully tested, optimized for performance, and ready to handle real-world customer interactions.

Key Areas of Focus:-

1. Functional Testing:

This document outlines the functional testing strategy for the Next.js ecommerce application. The testing covers core features such as product listing, filtering, cart operations, and dynamic routing using automated and manual testing approaches.

Tested Core Features:

1.1 Client-Side Navigation Between Components:

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1.1 Client-Side Navigation Between Components:

- Tested with React Testing Library:
- Verified smooth navigation across different sections of the website (e.g., home page to product listing, product details, cart, and wishlist pages)
- Ensured navigation links and buttons function correctly without a full page reload

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1.2 Cart operations:

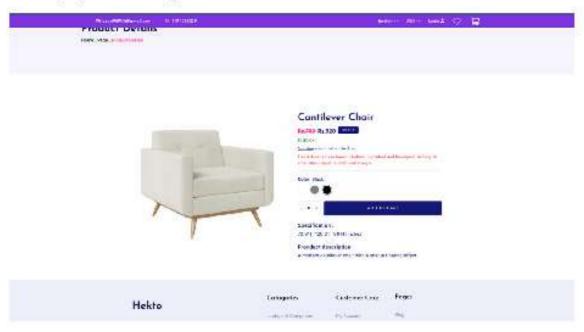
1.2.1 Add To Cart functionality:

- Tested with React Testing Library:
- Ensured that clicking the "Add to Cart" button correctly adds the selected product to the cart. Verified that the cart reflects the added item with accurate details (name, price, and quantity).

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1.5 Dynamic Routing:

- · Navigation to individual product detail pages
- Ensured product details (name, image, price, and description) are displayed correctly



1.6 Testing tools used:

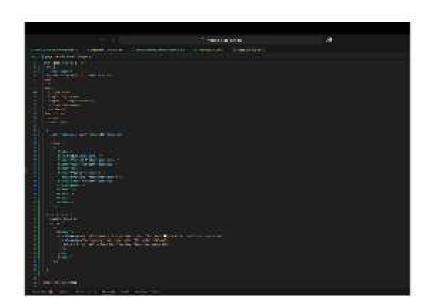
Feature	Tool Used		
API Testing	Postman		
Component Testing	React Testing Library		
Manual Testing	Browser Navigation		

Summary of Test Execution

Feature	Test Method
Product Listing Page	Manual Testing
Product Details Page	Manual Testing
Add to Cart Button	React Testing Library
Remove from Cart Button	React Testing Library
Add to Wishlist Button	React Testing Library
Remove from Wishlist Button	React Testing Library
Navigation (Dynamic Pages)	Manual Testing

2. Add Error Handling:

- implementing the error handling and fallback UI, the component will either render the fetched product data or show an error message if the fetch fails.
- The structure of the component includes:
- · Header: Displays the header section.
- Product Components: Renders components such as Hero,
 FeaturedProduct, LatestProduct, etc., passing the fetched response data as props.
- · Footer: Displays the footer of the page.

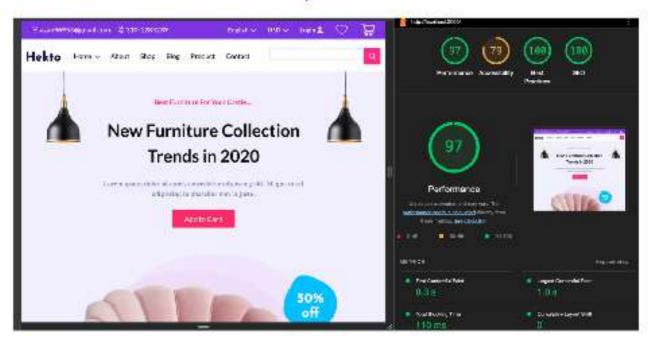


3.Performance Optimization:

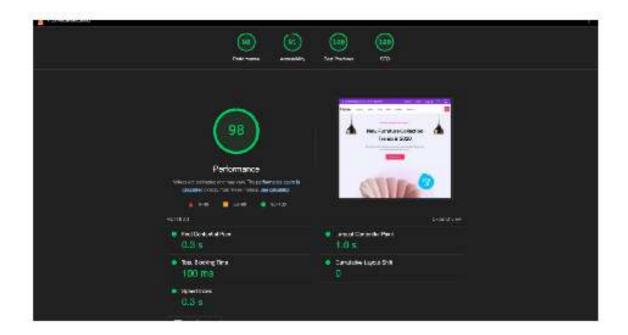
3.1. Optimize Assets

- Image Compression: Used tools like TinyPNG and ImageOptim to reduce image size
 without quality loss.
- Lazy Loading: Implemented lazy loading for large images and assets to improve load
 times and reduce initial page weight.

3.3. Performance Scores (Before Optimization):



3.4. Performance Scores (After Optimization):



Metric	Score	
Performance	98	
Accessibility	91	
Best Practices	100	
SEO	100	

4. Cross-Browser and Device Testing:

4.1. Browser Testing

Tested on Chrome, Firefox, Safari, and Edge to ensure consistent rendering and

5 User Acceptance Testing (UAT):

5.1 Document Version and Date:

Version: 1.0.

[30 - jan - 2025]

5.2 Introduction:

- Purpose: To verify the functionality, usability, and overal, user experience of the [E. Commerce] marketplace before deployment.
- Scope: This document covers all major functionality including browsing products, adding/removing items to/from the cart, checking out, wishlist management, and responsive layout.

5.3 UAT Objectives:

Outline the key objectives for UAT:

- Ensure core features work as expected.
- Validate that APIs are functioning and fallback mechanisms are in place.
- Check for usability issues on different devices.
- Ensure that all user interactions (cart, wishlist, product detail pages) are seamless and user-friendly.

Based on (UAT) test I have created a CSV report:

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