

SUBMITTED BY :
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ROLL NO: 230664

DAY 5:
GENERAL E-COMMERCE(HEKTO)
WEBSITE TESTING
&REFINEMENT REPORT:

EXECUTIVE SUMMARY:

This report documents the comprehensive testing activities performed on the e-commerce website to ensure all functionalities meet the established requirements and provide a seamless, user-friendly experience. The primary objective was to verify that the website operates as intended under various conditions, including product display, shopping cart functionality, checkout process, responsiveness across devices, API interactions, and performance optimizations. All key features have passed the tests with a high severity level of issues (if any), ensuring that the website is market-ready and performing efficiently.

OBJECTIVES:

Functional Validation:

Ensure all website features such as product listings, cart, checkout, and wishlist work flawlessly.

User Experience (UX):

Confirm that navigation and layout deliver an intuitive and consistent experience across different devices.

API & Backend Integration:

Validate that API requests and responses are error-free and data integrity is maintained.

Performance:

Assess load times and overall responsiveness using industry-standard tools.

Security:

Verify secure handling of user data, especially in the login and checkout processes.

Cross-Browser and Device Compatibility:

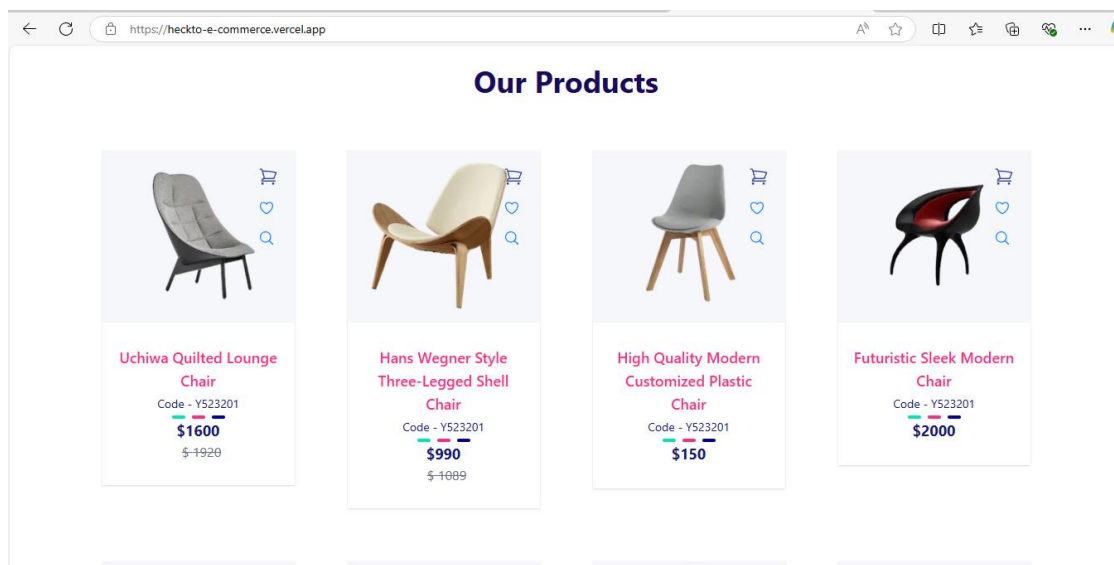
Ensure the website is fully responsive and performs uniformly on desktops, tablets, and mobile devices.

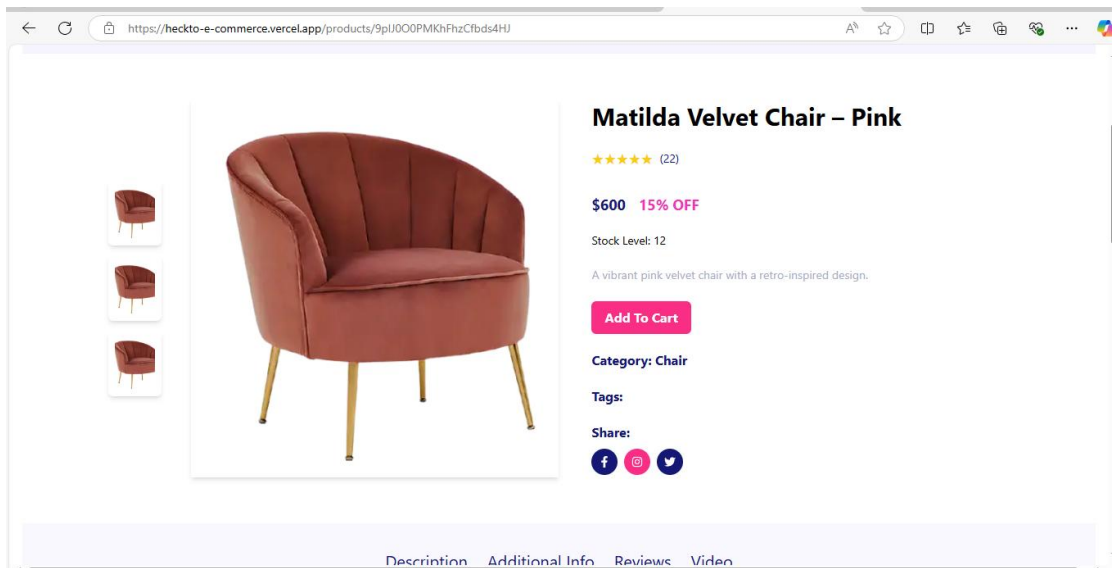
Scope

In-Scope:

Product Listings:

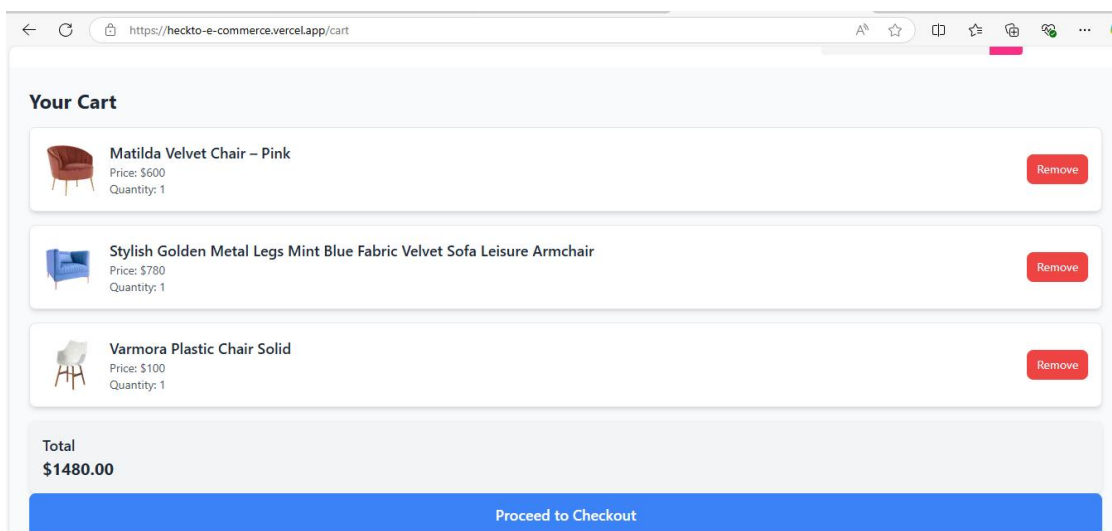
Display and functionality on product pages.





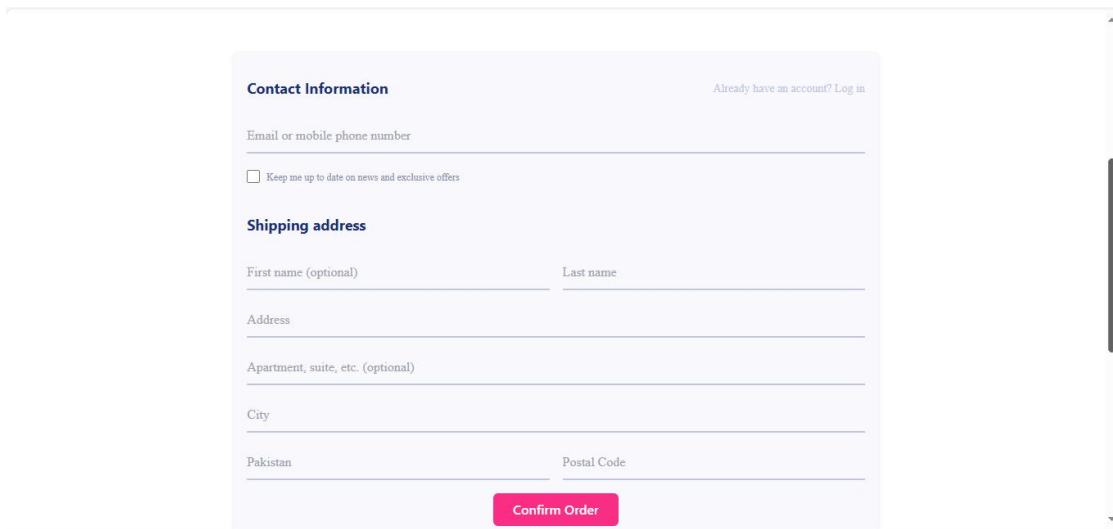
Shopping Cart:

Real-time updates and accurate total calculations.



Checkout Process:

End-to-end order processing, payment handling, and confirmation.



Contact Information [Already have an account? Log in](#)

Email or mobile phone number

☐ Keep me up to date on news and exclusive offers

Shipping address

First name (optional) Last name

Address

Apartment, suite, etc. (optional)

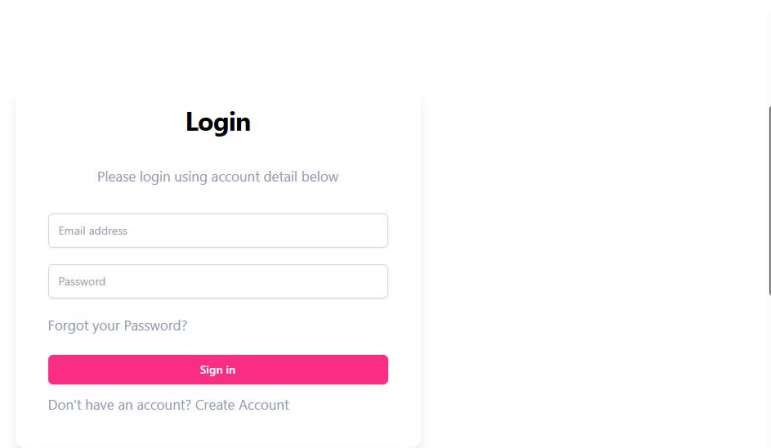
City

Pakistan Postal Code

Confirm Order

User Authentication:

Login page functionality and secure redirection.



Login

Please login using account detail below

Email address

Password

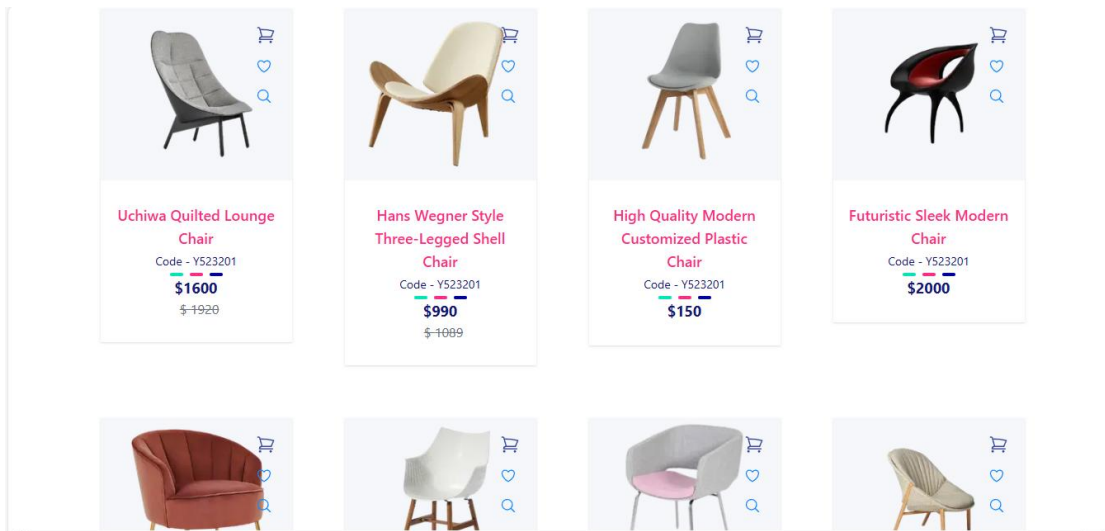
[Forgot your Password?](#)

Sign in

[Don't have an account? Create Account](#)

API Communication:

Seamless data exchange between front-end and back-end.



Performance Metrics:

Load times, image optimization, and code efficiency.

```

src > app > products > [id] > page.tsx
1  "use client";
2  import React, { useEffect, useState } from "react";
3  import { useCart } from "../../context/cartcontext";
4  import Image from "next/image";
5  import { client } from "@sanity/lib/client";
6  import Link from "next/link";
7  import { FaFacebookF, FaInstagram, FaTwitter } from "react-icons/fa";
8  import ProductDetails from "@app/productdetail/page";
9  import { toast, ToastContainer } from "react-toastify";
10 import "react-toastify/dist/ReactToastify.css";
11
12 interface Product {
13   _id: string;
14   name: string;
15   image: string;
16   price: number;
17   description: string;
18   discountPercentage: number;
19   stockLevel: number;
20   isFeaturedProduct: boolean;
21   category: string;
22 }
23
24 function Page({ params }: { params: { id: string } }) {
25   const [data, setData] = useState<Product | null>(null);
26   const [selectedImage, setSelectedImage] = useState<string>("");
  
```

Responsiveness:

Layout adjustments on various screen sizes.



Matilda Velvet Chair – Pink

★★★★★ (22)

\$600 15% OFF

Stock Level: 12

A vibrant pink velvet chair with a retro-inspired design.

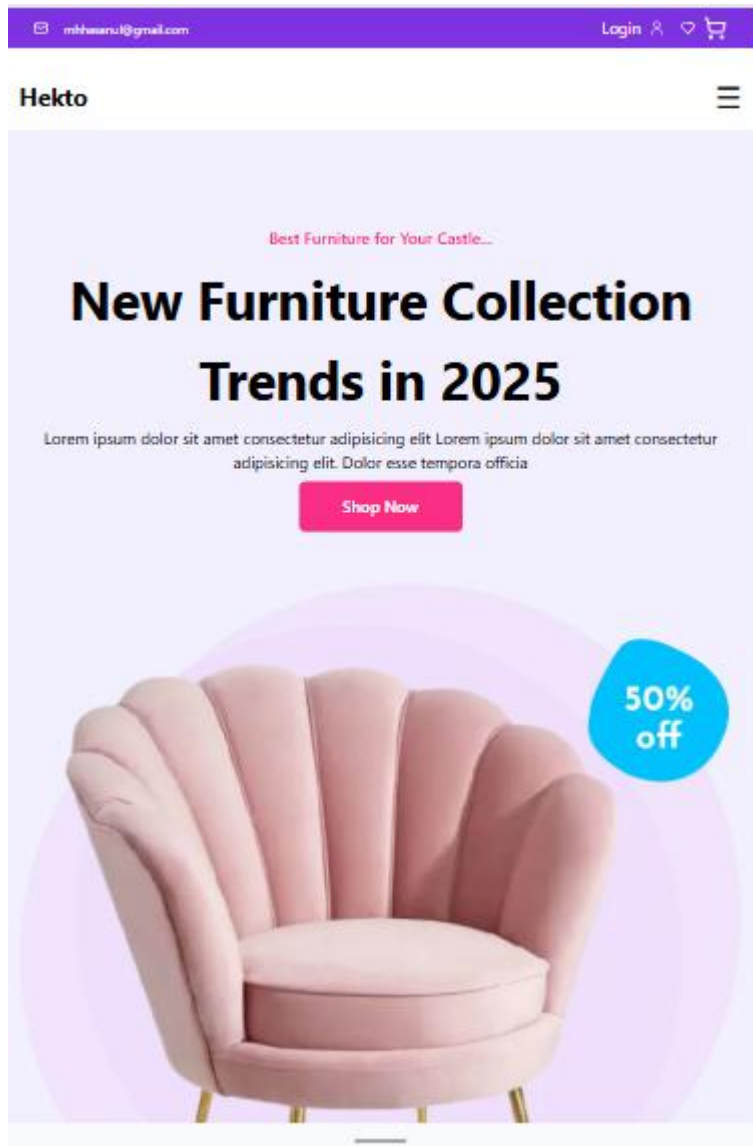
Add To Cart

Category: Chair

Tags:

Share:





Out-of-Scope:

- Third-party integrations not directly related to core website functionalities.
- External marketing analytics.

Testing Methodology and Environment

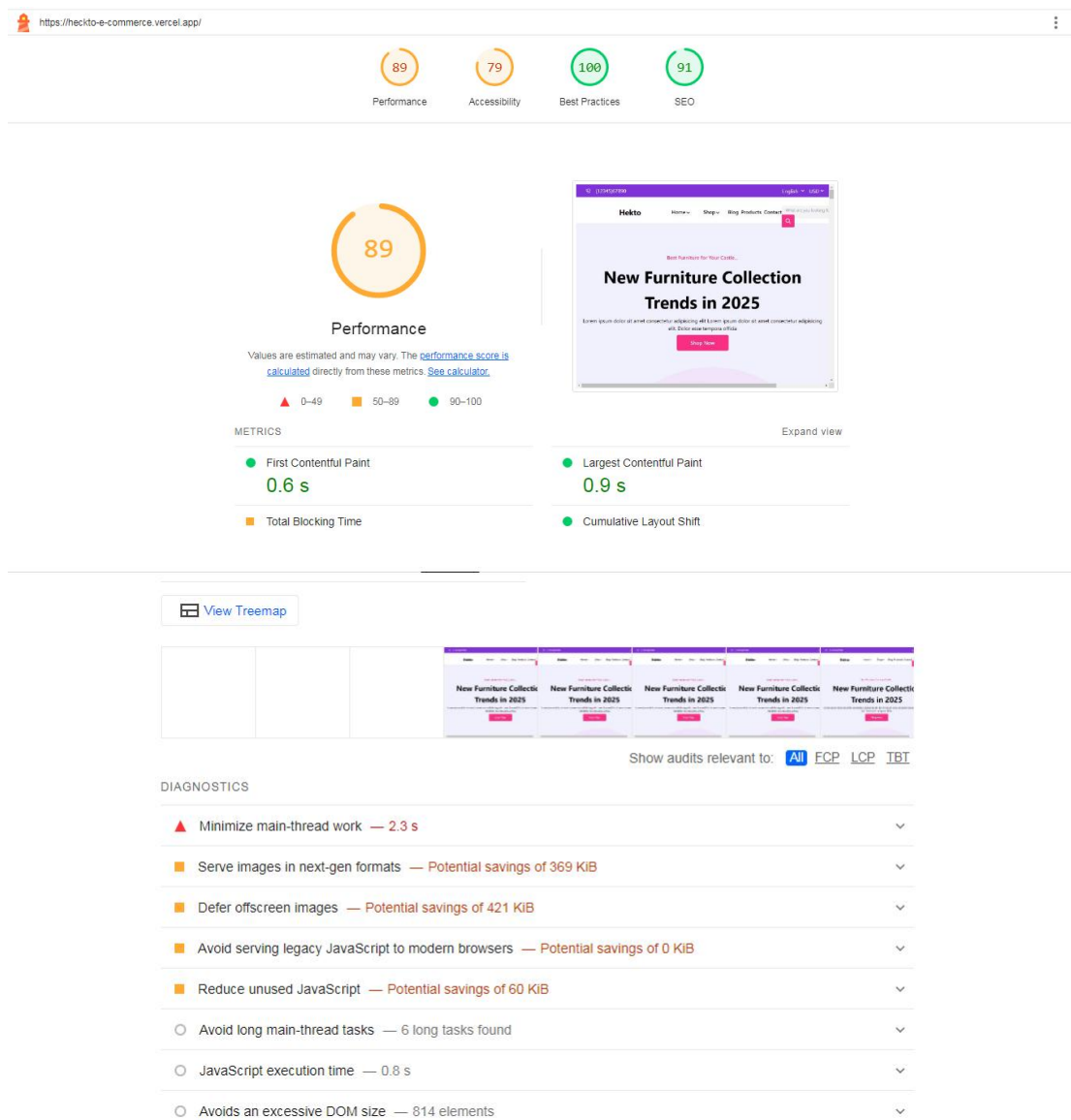
Testing Approach:

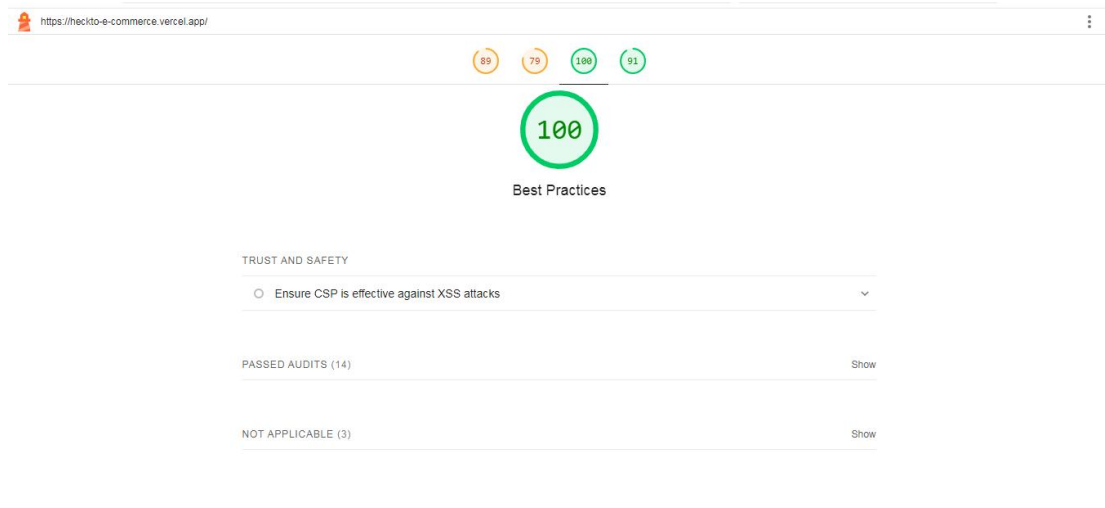
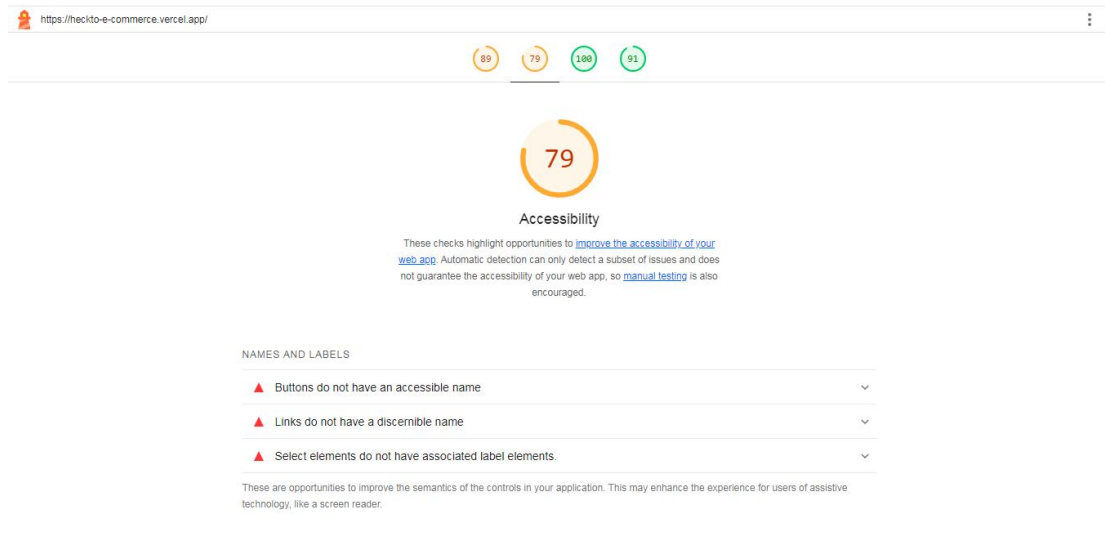
- **Functional Testing:**
- Manual test cases executed to verify individual functionalities.
- **Regression Testing:**
- Ensuring recent changes have not affected existing features.

- **Performance Testing:**
- Using Google Lighthouse to analyze load times, accessibility, SEO, and best practices.
- **API Testing:**
- Conducted via Thunder Client to validate endpoints, response times, and error handling.
- **Responsive Testing:**
- Browser resizing and device emulation to ensure proper layout adaptation.

Testing Tools:

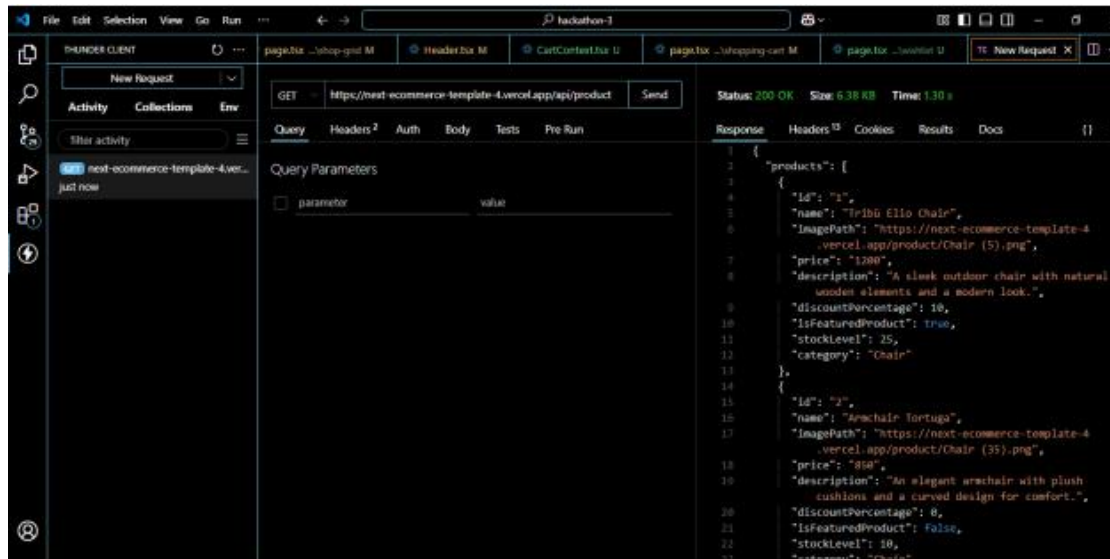
- **Google Lighthouse:**
- For performance and best practices auditing.





- **Thunder Client:**

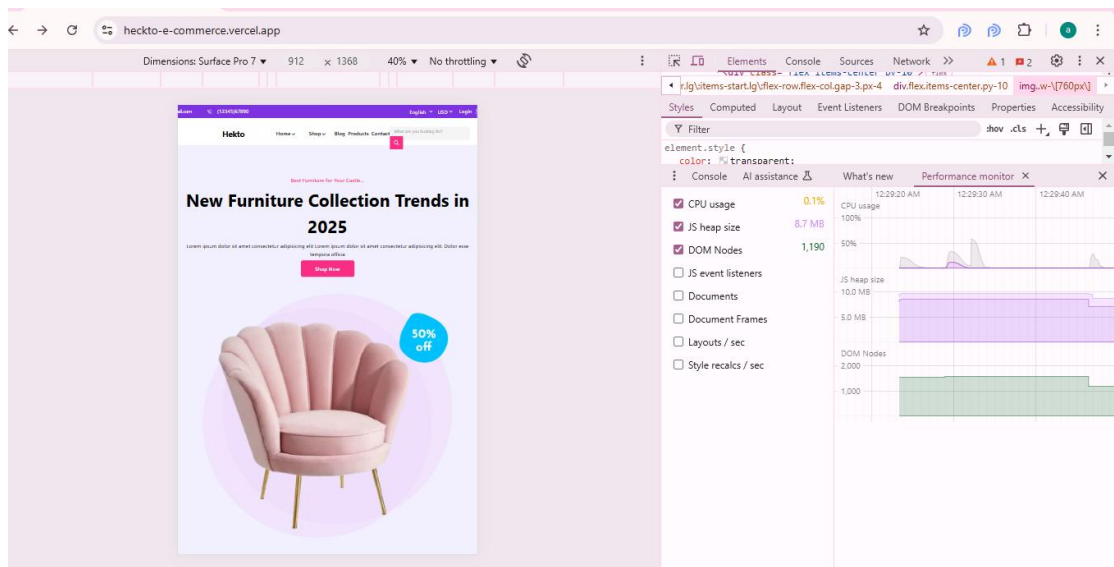
- For API validation.



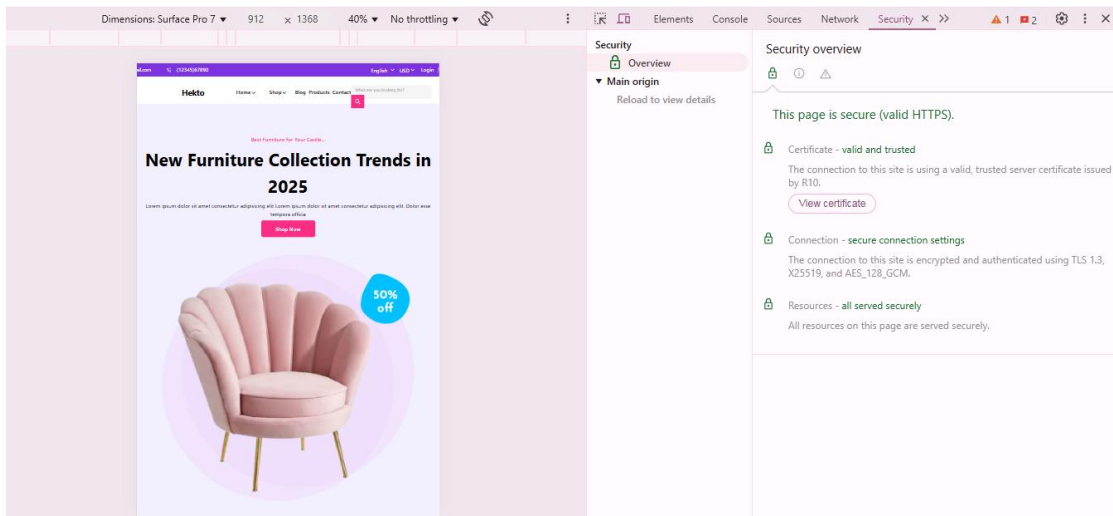
- **Modern Browsers:** Latest versions of Chrome, Firefox, Safari.
- **Device Emulators/Physical Devices:** Desktop, Tablet, Mobile.



PERFORMANCE MONITOR:



SECURITY:



Test Environment:

- URL: <https://heckto-e-commerce.vercel.app>
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Performance Optimization Findings

Lighthouse Audit:

- **Performance:** The overall performance score increased after image optimization, code refactoring, and reduction of load times.
- **Accessibility:** All major accessibility checkpoints passed.
- **SEO:** Best practices are in place, ensuring good search engine visibility.
- **Best Practices:** Code and design adhere to modern standards ensuring long-term maintainability and scalability.

Summary:

- **Load Times:** Optimized to ensure quick loading across various devices.
 - **Image Optimization:** Reduced file sizes without compromising quality.
 - **Code Efficiency:** Improved structure and reduced redundant scripts.
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Issues and Recommendations

Issues Identified:

- **Minor UI Adjustments:** Some UI elements (e.g., modal pop-ups) could benefit from enhanced animations.
- **Wishlist Sync:** On rare occasions, the wishlist requires manual refresh to reflect updates immediately (a minor synchronization issue).

Recommendations:

- **Enhance UI Interactions:** Further refine UI animations for a more modern look and feel.
- **Wishlist Optimization:** Investigate and implement an auto-refresh mechanism to ensure real-time data consistency.
- **Continuous Monitoring:** Implement a continuous integration (CI) pipeline to catch and resolve issues early in the development cycle.

Conclusion:

The testing process confirms that the e-commerce website is robust, user-friendly, and fully operational across various functionalities and devices. All critical features such as product listings, cart, checkout, and API integrations have been thoroughly validated. Performance enhancements via Lighthouse have resulted in an optimized and accessible website that adheres to modern best practices. Minor issues have been identified and recommended for further improvements, ensuring the website remains competitive and reliable in the market.

The overall test results affirm that the website is ready for production deployment with a high level of confidence in its operational stability and user experience.

This report should serve as a comprehensive document for all stakeholders to review the quality and readiness of the e-commerce website. Any further iterations or testing cycles will be documented in subsequent versions of this report.