Day 5 - Testing and Backend Refinement - [Comforty Ecommerce]

Project Overview

This project showcases an e-commerce platform designed for optimal user experience and smooth backend integration. The tasks on Day 5 were focused on ensuring robustness in error handling, validating functionality through performance testing, and refining backend integrations for better data processing and user interaction.

Focus Areas:

- **Backend Integration:** Ensuring smooth data exchange with APIs.
- **Error Handling:** Managing edge cases like network failures and unexpected server errors.
- **Performance Testing:** Using Lighthouse to improve load times and responsiveness.

Tools Used

The following tools were used during the development and testing phases:

- **Postman**: For API testing and debugging.
- **React Testing Library**: To write and run component tests.
- **Lighthouse**: For performance, accessibility, SEO, and best practices analysis.
- **TinyPNG**: To optimize image sizes for faster load times.
- **Browsers**: Tested on Chrome, and Edge.

Testing Methodology

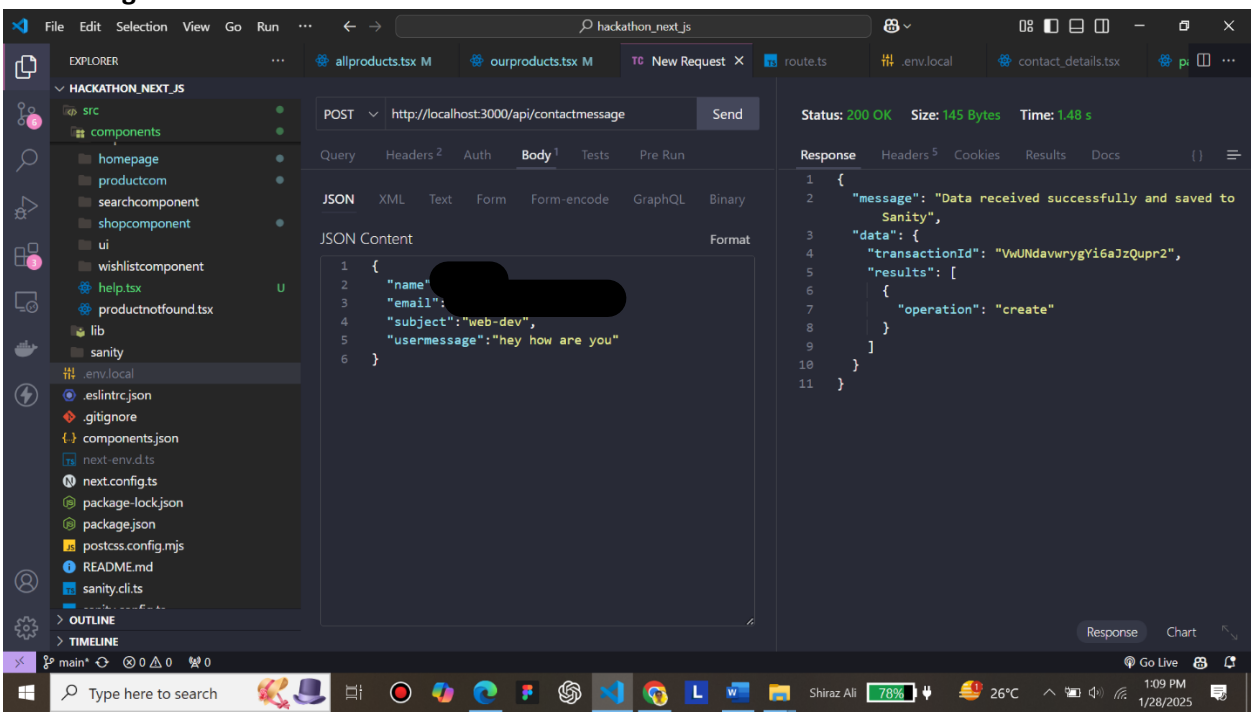
Our testing strategy for Day 5 involved a combination of different testing techniques to ensure robustness and reliability:

1. **API Testing**: Using Postman to validate all endpoints and ensure they return the expected data.
2. **Unit Testing**: Implementing tests for individual components using React Testing Library.
3. **Performance Testing**: Optimizing images with TinyPNG and testing website performance with Lighthouse.
4. **Cross-Browser Testing**: Ensuring compatibility across multiple browsers (Chrome, Firefox, Safari, and Edge).

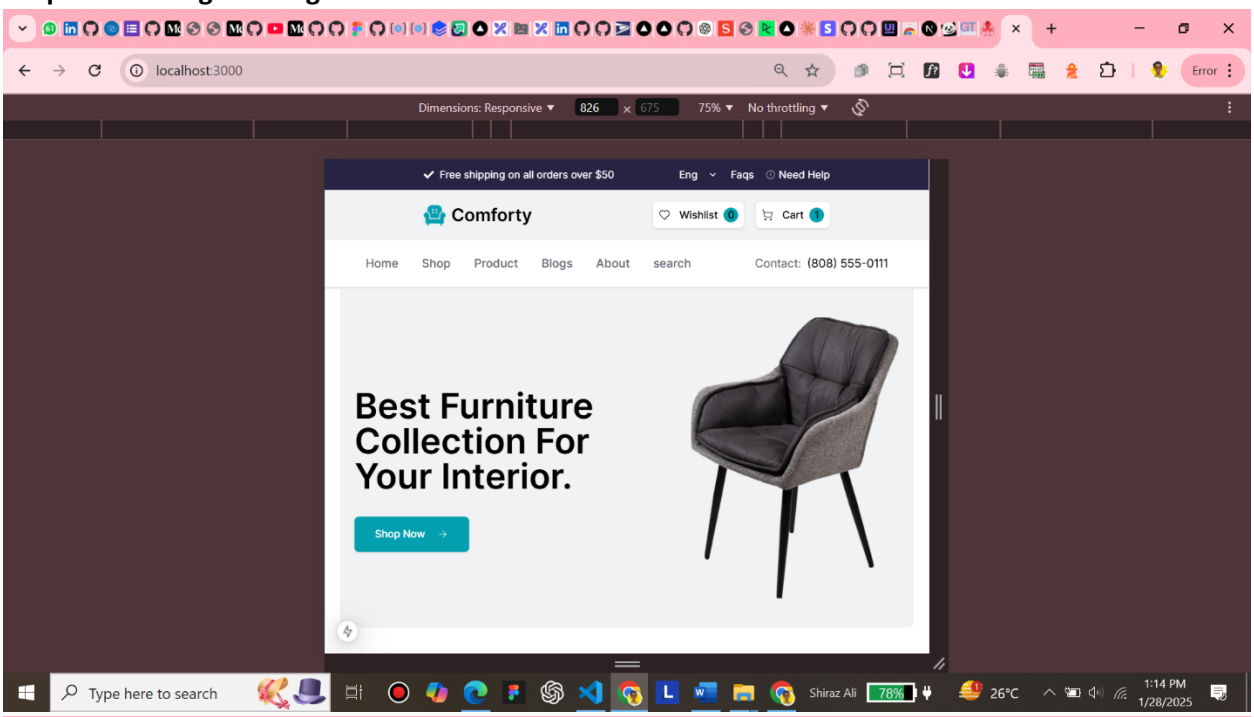
Screenshots

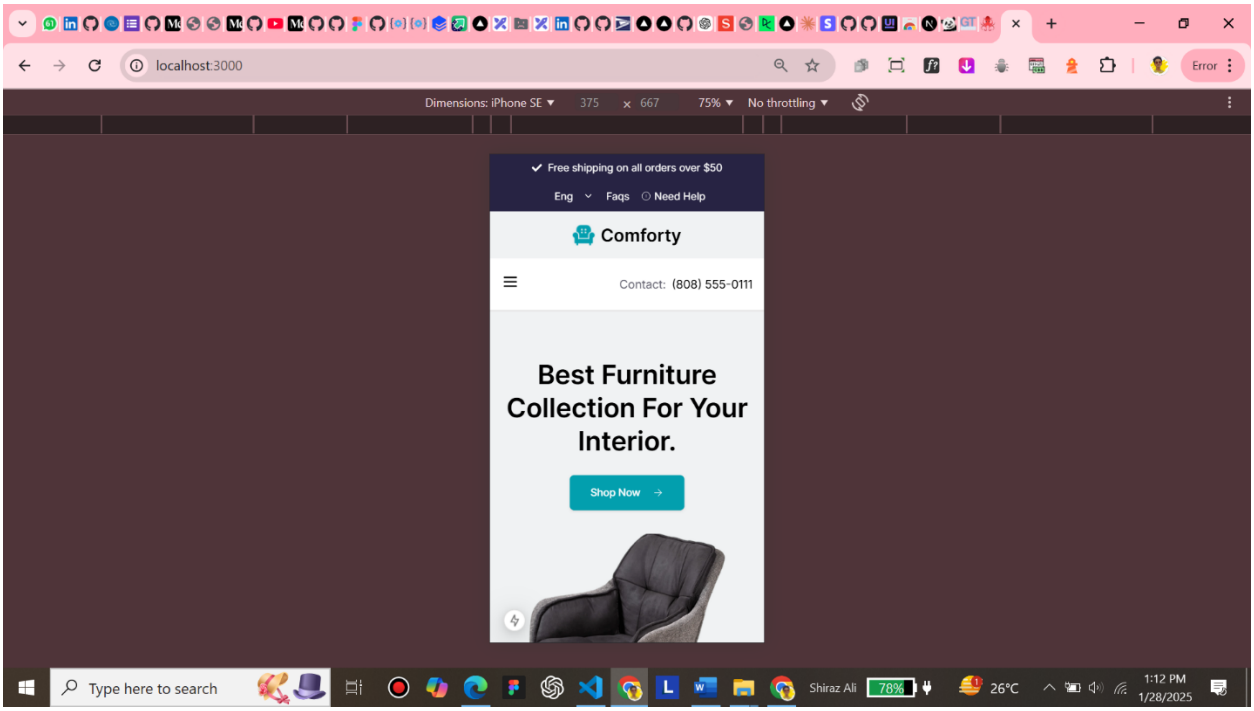
Application Development and Testing Process

- **API Testing with Postman:**

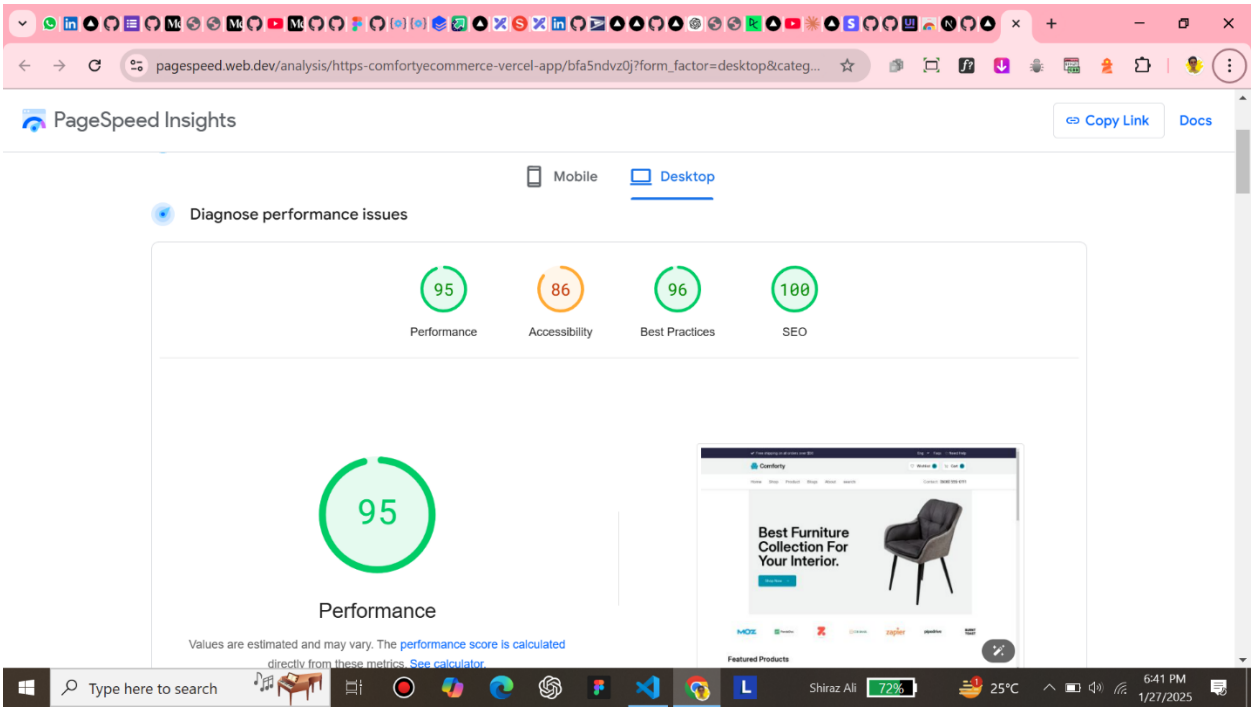


- **Responsive Design Testing:**

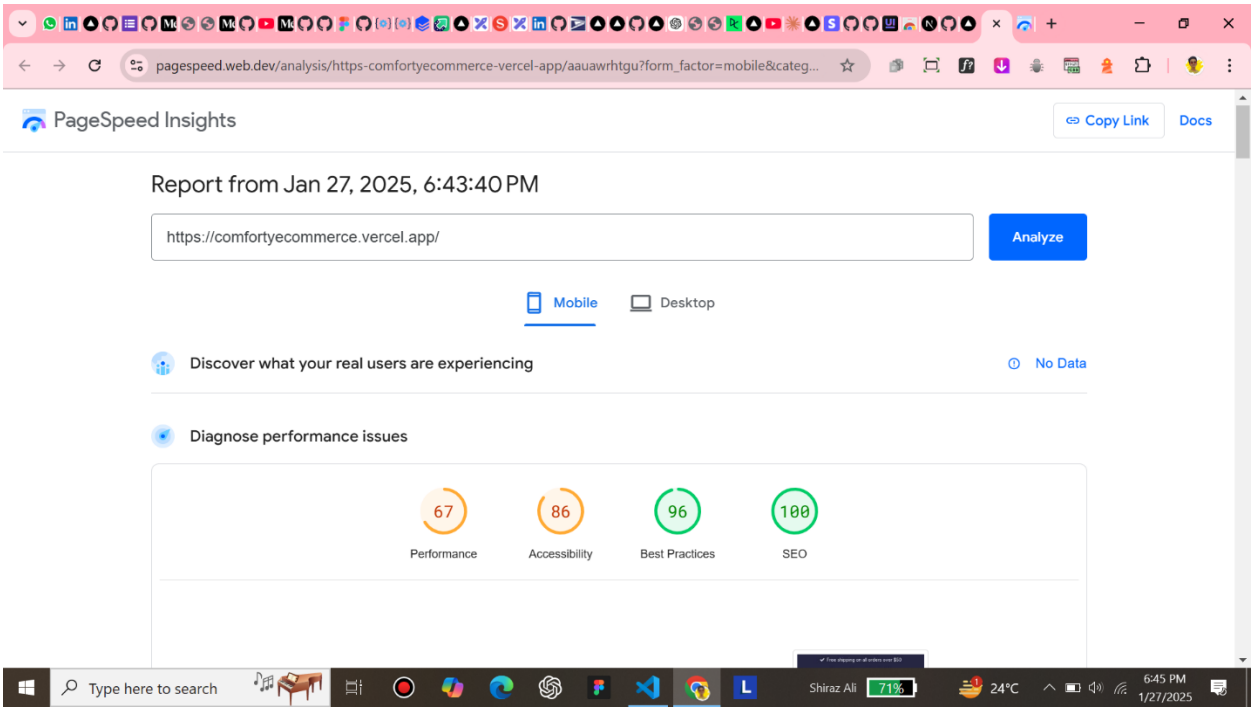




- **Desktop performance test**



- Mobile Performance test



Lighthouse Report

Summary

Desktop

- **Performance:** 95
- **Accessibility:** 86
- **Best Practices:** 96
- **SEO:** 100

Mobile

- **Performance:** 67
- **Accessibility:** 86
- **Best Practices:** 96
- **SEO:** 100

Key Areas for Improvement:

- **JavaScript Execution Time:** Reduce JavaScript execution time to improve load speed.
- **Main-Thread Work:** Minimize work on the main thread for better responsiveness.
- **Speed Index:** Optimize speed index performance to improve perceived load time.

Testing Report

You can download the full testing report in CSV format {link}

References

- **Hackathon Guidelines**
- **Tools Used**: Postman, React Testing Library, TinyPNG, Lighthouse, Chrome, Firefox, Safari, Edge,
- **Author**: [redacted]
- **Date**: January 28, 2025