Hackathon Day 5:

Functional Testing, Error Handling PerformanceOptimization, and Cross-Browser & Device Testing

Summary:

On the Fifth day of my hackathon journey, I conducted functional testing to ensure the core features of the application worked seamlessly. The key areas tested included:

Product Listing Page: Verified that all products are displayed correctly with accurate details such as name, price, rating and availability.

Product Details Page: Ensured individual product pages load as expected with complete information, including images, descriptions, and specifications.

Cart Page: Tested the addition and removal of items, quantity updates, and price calculations for accuracy payment.

In addition to functional testing, I implemented error handling mechanisms for various scenarios:

Invalid or Missing Data: Displayed appropriate error messages like "Requireddata is missing. Please refresh the page."

404 Errors: Configured a custom page with the message "404: This page could not be found" for non-existent routes.

API Failures: Implemented error messages when product data fails to load,

such as "Product data could not be fetched. Please try again later."

Cart Issues: Displayed error notifications for cart operations, e.g ., "Some Product not added to cart. fetch issue."

To further enhance the application, I performed performance optimization using Lighthouse. The optimization process involved analyzing key performance metrics such as:

Performance: Achieved a score of 95 by optimizing page load times and reducing resource usage.

Accessibility: Scored 91 by ensuring the application met accessibility standards, such as proper labeling and navigation support.

Best Practices: Achieved a score of 93 by adhering to modern development guidelines and ensuring secure implementation.

SEO: Secured a perfect score of 91 by following SEO best practices, including metadata optimization and mobile responsiveness.

This step helped identify bottlenecks and implement necessary improvements to deliver a faster, more accessible, and efficient user experience.

The final step involved cross-browser and device testing to ensure the application works consistently across various environments. This included:

.**Browser Testing**: Verified the application's functionality and design across major browsers like Chrome, Firefox, Edge, and Safari.

Device Testing: Conducted tests on mobile devices to evaluate responsiveness and performance on different screen sizes.

Manual Mobile Testing: Manually tested the application on phones to ensure

it works perfectly and maintains responsiveness.

Mobile Lighthouse Testing: Performed Lighthouse testing for mobile devices, analyzing and optimizing metrics for performance, accessibility, best practices, and SEO. Ensured the application's mobile experience is robust and efficient.

These tests confirmed that the application is responsive, user-friendly, and performs well across different browsers and devices, providing a seamless experience for all users.

Chart: Test Completion Status Of Desktop

Performance Optimization: ###(99%)

Accessibility: ###(90%)

Best Practices :###(96%)

SEO: ####(91%)

Browser Testing: ##(100%)

Device Testing: ##(100%)

Chart:Test Completion Status Of Mobile

Performance Optimization: ###(90%)

Accessibility: ###(90%)

Best Practices :###(96%)

SEO: ####(91%)

Browser Testing: ##(100%)

Device Testing: ##(100%)

https://pagespeed.web.dev/analysis/https-7days-hakhothan-vercel-app/f2phyxad9p?form_factor=desktop

d Insights

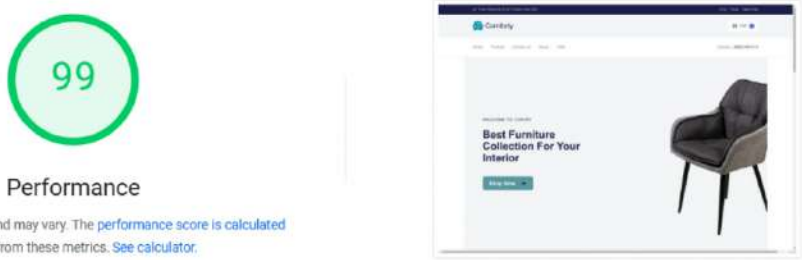
https://7days-hakhothan.vercel.app/ Analyze

Mobile Desktop

Discover what your real users are experiencing No Data

Diagnose performance issues

Performance	Accessibility	Best Practices	SEO
99	90	96	91



99

Performance

Values are estimated and may vary. The performance score is calculated directly from these metrics. See calculator.

▲ 0–49 ■ 50–89 ● 90–100

METRICS Expand view

https://pagespeed.web.dev/analysis/https-7days-hakhothan-vercel-app/f2phyxad9p?form_factor=mobile

PageSpeed Insights

https://7days-hakhothan.vercel.app/ Analyze

Mobile Desktop

Discover what your real users are experiencing No Data

Diagnose performance issues

Performance	Accessibility	Best Practices	SEO
90	90	96	91

90

Performance

Values are estimated and may vary. The performance score is calculated directly from these metrics. See calculator.

▲ 0–49 ■ 50–89 ● 90–100

METRICS Expand view