Hackathon 3 Day 5

Testing, Error Handling, and Backend Integration Refinement

Nike Overview

My Nike Marketplace is a mobile first e-commerce website offering a variety of Nike products like shoes, activewear, and accessories. Built with Next.js and Sanity CMS, it features easy product filtering, secure checkout, and order tracking. The site ensures fast load times and a seamless user experience.

1.Functional Testing:

- **Feature Validation:** Ensure all marketplace features function correctly.
- **Core Functionalities:** Test essential operations such as product listing, detailed product pages, cart actions, and user filter.

2.Error Handling

o **Log Errors for Debugging**

Errors are logged to help identify and resolve issues quickly.

o **API Error Handling**

Api errors are caught using try-catch blocks. During network failures or unexpected errors, user-friendly messages like "Network error. Please check your connection" are displayed.

o **Item Not Found**

A fallback message like "Item not found is shown if a user accesses a non-existing product or page

o **Checkout Validation (Zod)**

Zod validates form inputs during checkout. If any required fields are missing or the data is invalid, messages like "Please fill out all required fields" or "invalid payment details are displayed

- o **Stock Validation**

  If a user tries to purchase more than the available stock, a message like "Nat enough stock available" is shown

- o **No Products Available**

  If no products are found in a category, a message like "No products available" informs the user

2. Cross-Browser and Device Testing

- **Browsers Tested:** Chrome, Firefox, Safari, and Edge. The website looks and works the same on all browsers. No issues with layout, images, or functions.

- **Device Testing:** Used BrowserStack to test on different devices. The site works perfectly on all devices. Also tested on a physical mobile device (iPhone/Android), and it's fully responsive,

3.Performance Optimization
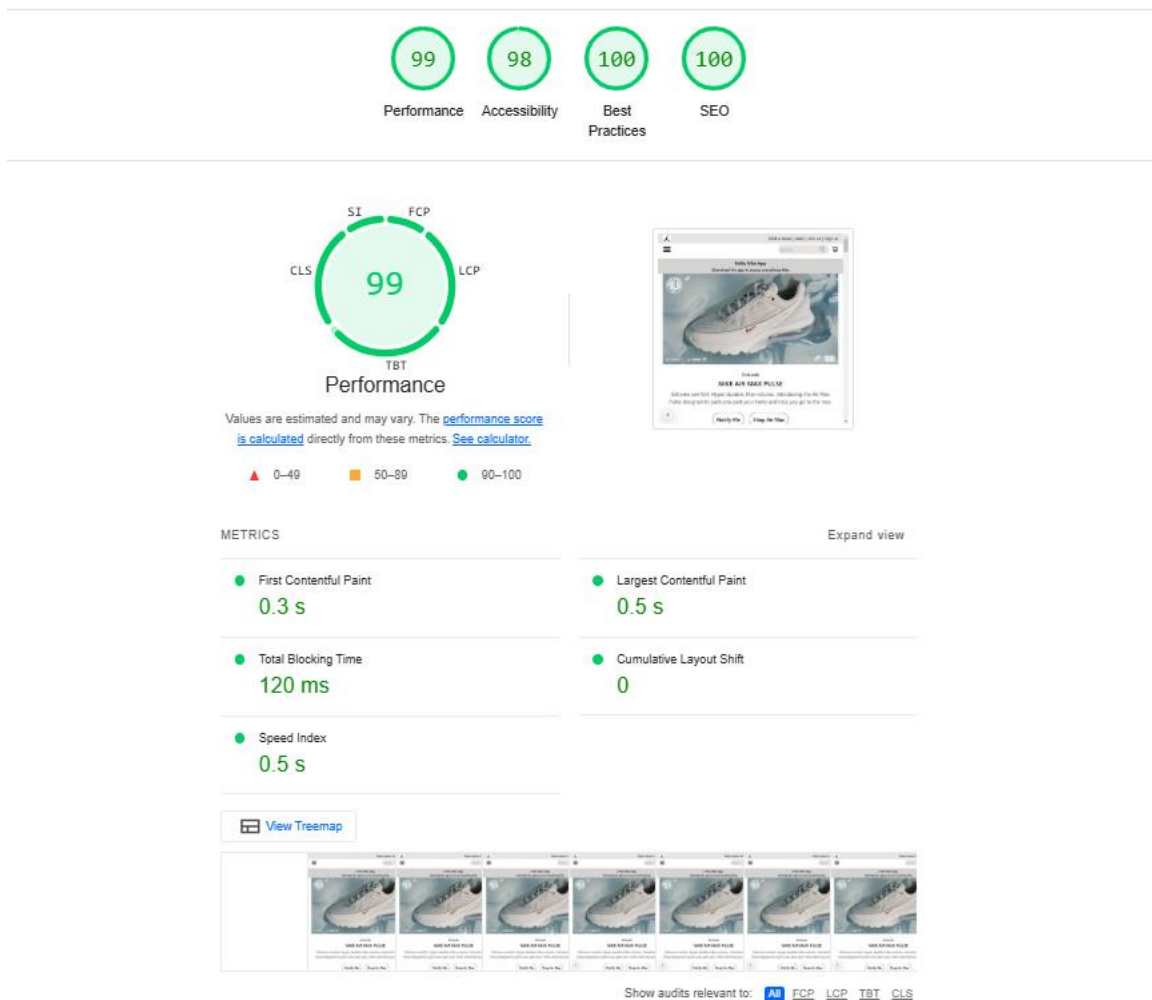
Assets: Implemented lazy loading for images

Analysis: Achieved Lighthouse scores

- Performance: 99
- Accessibility: 98
- SEO: 100
- Best Practices: 100
  Optimized unused CSS, caching, and JavaScript.
  Load Times
- First Content full Paint (FCP): 0.35
- Largest Content full Paint (LCP): 0.55
- Speed Index: 0.5s
- Initial Load Time (LT): 0.5s

4. Performance Optimization

Simulate Real World Use:

- **Browse Products:** Ensure smooth navigation across product categories and easy access to detailed product pages
- **Add to Cart:** Test adding items with different properties (like color) to the cart.
- **Update Quantities:** Check if users can modify item quantities and adjust them easily
- **Remove Items:** Confirm that users can easily remove products from the cart.
- **Checkout Process:** Test completing purchases, filling in billing/shipping info, and selecting payment methods.
- **Product Details**: Ensure product images, descriptions, prices, and stock are displayed correctly.
- **User Registration/Login**: Verify that users can sign up, log in, and manage accounts.

- **Filters:** Check that product filters (category, price, size) work effectively for easy product discovery.

Feedback I Received:

- Clear Labels: All buttons, links, and input fields are properly labeled (e.g., "Add to Cart", "Proceed to Checkout").
- Accurate Pricing & Fees: Pricing, discounts, and shipping fees are calculated correctly.
- Out of Stock: "Add to Cart" button is disabled for out-of-stock items.
- Cart Controls: Increment button is disabled when stock limits are reached.

5. testing Report

Test case id	Description	Expected Result	Actual Result	Status	Severity	Remarks
TC001	Test Navigation Links	Links should navigate to correct pages	Links navigate correctly	Passed	Low	No issues
TC002	Product Listing	Products displayed with correct detail	displayed correctly	Passed	Medium	All data fetched
TC003	Cart Functionality	Cart should update with items added or removed	updated correctly	Pass	Medium	Tested with different products

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TC004	Performance	Speed metrics:	FCP < 1s,LCP < 2.5s , FCP 0.3s,LCP 0.5s,Speed index 0.5s,initial speed 0.5s	P a ss e d	Low	Optimize d performa nce
TC005	Test Checkout	Checkout process should work correctly	worked correctly	P a ss e d	high	No error during checkout
TC006	SEO	SEO score 100	SEO score:100	P a ss e d	Low	SEO opti mized