Urban Loom:
Testing And Backend Reflnement

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Objectives:

1. Functional Testing
2. Error Handling
3. Performance Optimization
4. Cross-Browser and Device Testing
5. Security Testing
6. User Acceptance Testing (UAT)

1: Funtional Testing:

Functional testing validated Urbna Loom's core workflows, including product browsing, cart management, and checkout processes, to ensure seamless user interaction. Critical features were tested using React Testing Library for UI behavior. Discrepancies were logged and resolved to align with business requirements and user expectations

1.0: Product Listing :

Functional testing validated Urban Loom's core workflows, including product browsing, cart management, and category filtering, to ensure seamless user interaction. Critical features were tested using React Testing Library for UI behavior validation. Any discrepancies were logged and resolved to align with business requirements and user expectations.
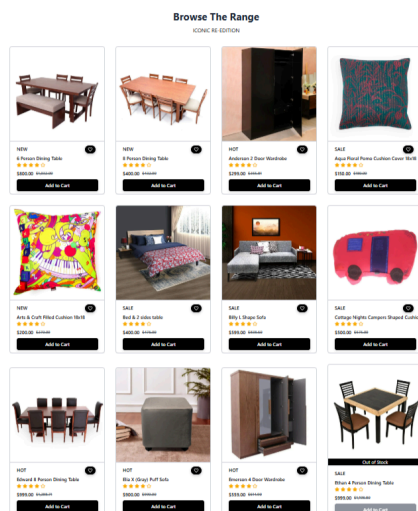
1.2:Filters, Categories, and Search:

Users can search for products using the search bar and filter them through the category dropdown.

- Category Filtering: Users can refine their search by selecting relevant categories
- Search Functionality: A search query fetches the corresponding products efficiently.

Searching Result:

Filter By Category :

You can Filter categories :

Searching Categories:

Category Result:

1.5: Cart operations :

- Adding Items: Products can be added to the cart.
- Increasing Quantity: Users can increase the quantity of items in the cart.
- Decreasing Quantity: Users can reduce the quantity or remove items from the cart.

Item adding:
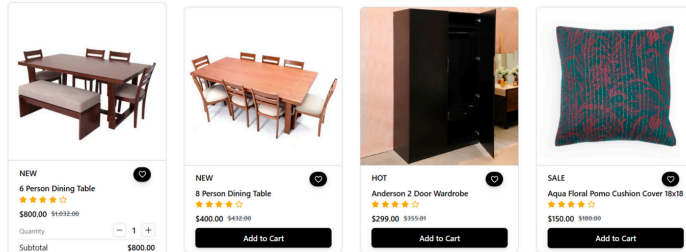
Item Increasing:
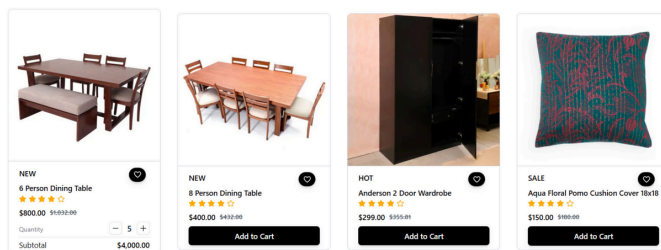
Tool Used:

Item Decreasing:
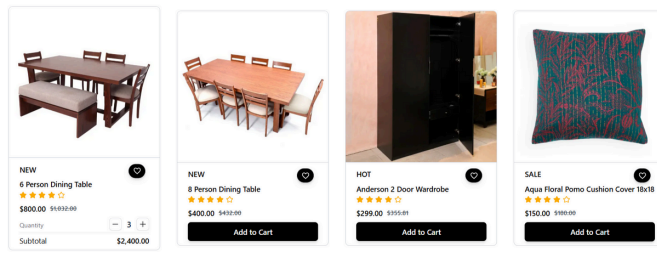
2: Error Handling:

- Error handling mechanisms have been implemented using try-catch blocks and fallback UI strategies to ensure smooth performance even when unexpected issues arise. Example:

```
(export const searchProductsByName = async(searchParam: string) =>{

 try {
   const products =await sanityFetch({
     query:PRODUCT_SEARCH_QUERY,
     params: {
       searchParam:searchParam,
     },
   });
   return products?.data || [];
 } catch (error) {
   console.log("Fetching product by name Error: ", error);
   return [];
 }
};

)
```

3: Performance Testing Result:

Performance testing was conducted on both mobile and desktop platforms:

Performance on Mobile:

- Mobile Performance: Optimized for smooth navigation and quick load times.
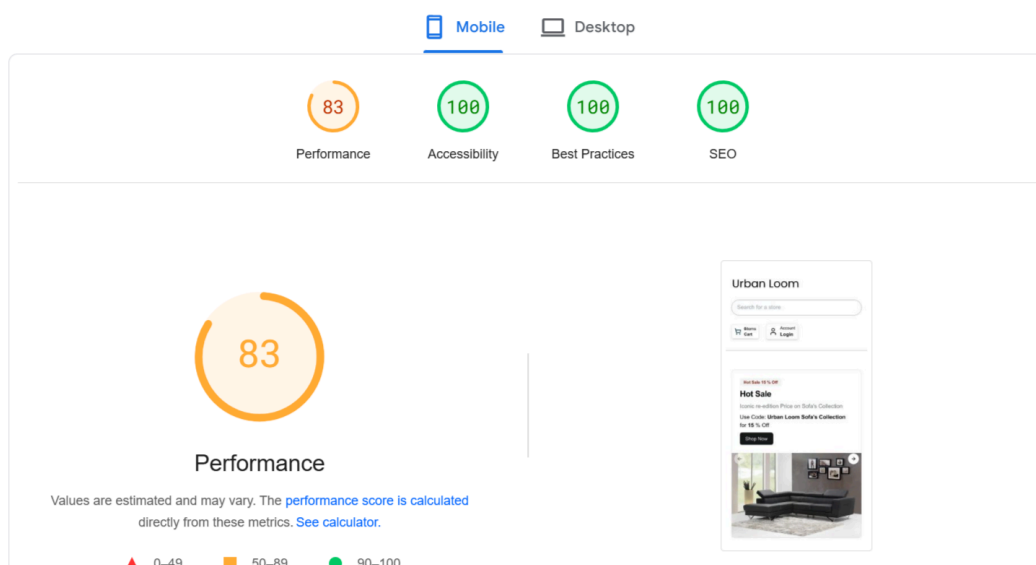
Performance on Dekstop:

Desktop Performance: Verified for seamless browsing and interaction.
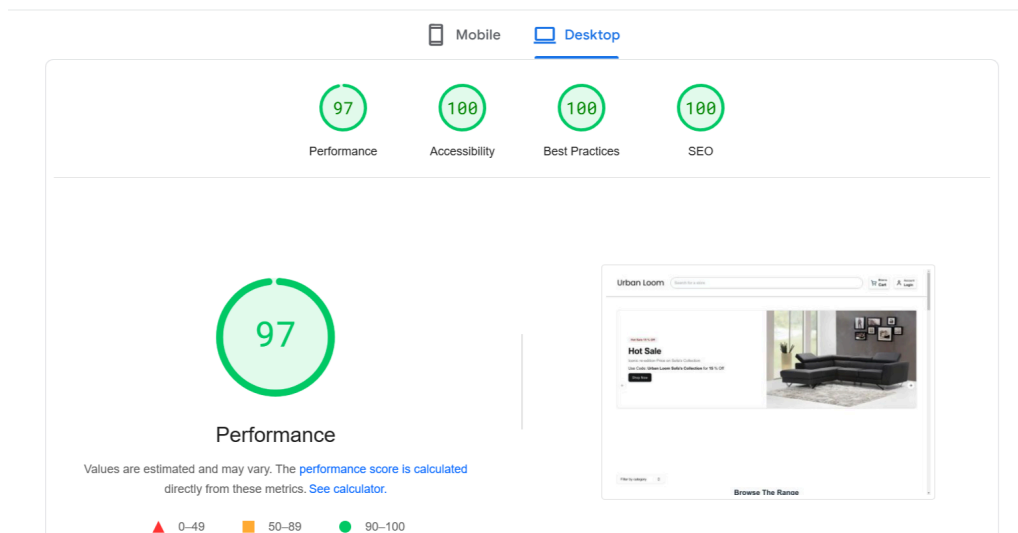
4: Cross-Browser and Device Testing

Testing was conducted using BrowserStack and LambdaTest across multiple browsers and devices, including:

- Browsers: Chrome, Firefox, Safari, Edge.
- Devices: Desktop, mobile, and tablets.

5. Security Testing

To ensure data security and prevent vulnerabilities:

- Input fields are validated to prevent injection attacks.
- HTTPS is used for secure communication.
- Sensitive data, such as API tokens, is stored in environment variables (e.g., in Vercel).
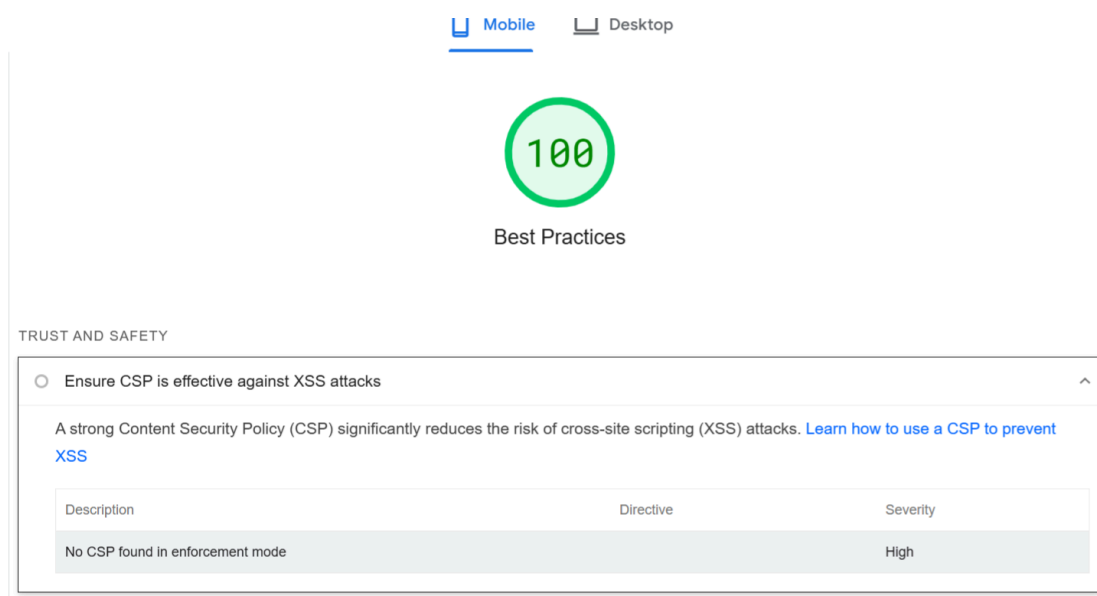
6: User Acceptance Testing (UAT)

User Acceptance Testing (UAT) was performed to simulate real-world scenarios, including:

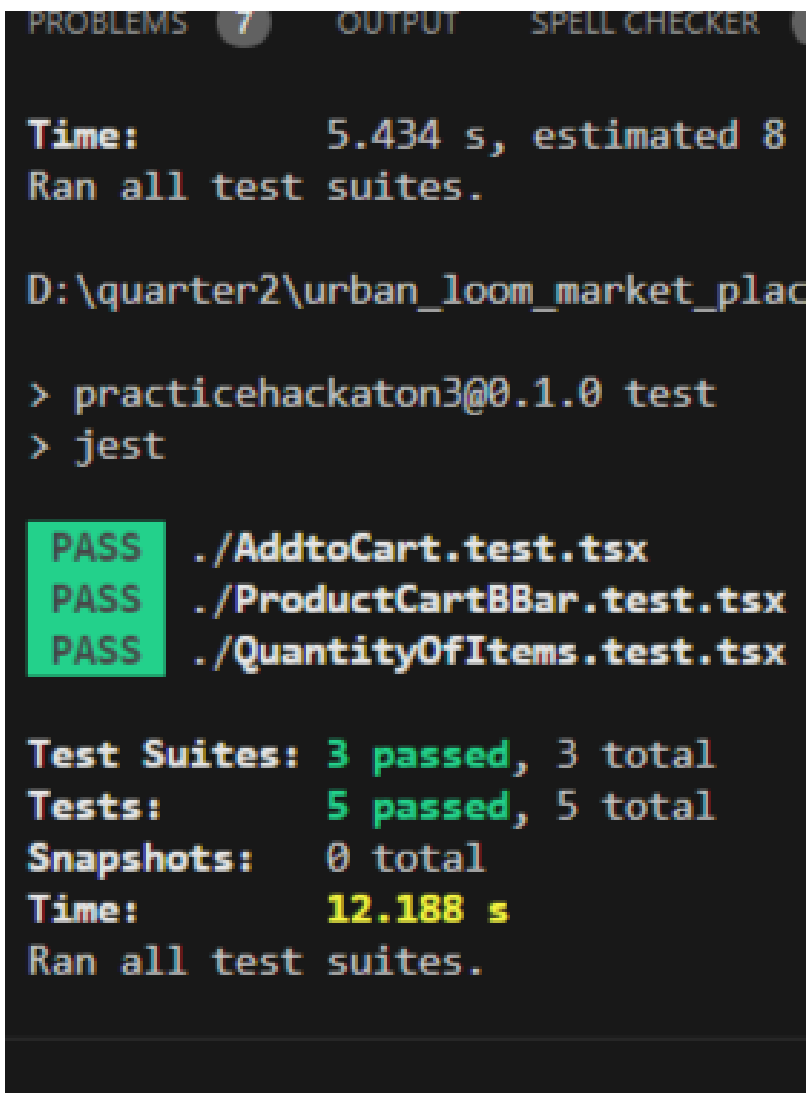- Browsing products.
- Adding/removing items from the cart.
- Verifying overall system usability.

React Testing Result:

React Testing Library was used to verify component functionality, ensuring correct rendering and behavior in various scenarios

CSV Testing Report:

A CSV report was generated to log test results, highlighting successful and failed test cases.

Test Case ID	Test Case Description	Expected Result	Actual Result	Status	Severity Level	Remarks
TC001	Validate product listing page	Products displayed correctly	Products displayed correctly	Passed	Medium	No issues found
TC002	Performance	Performance Score <90	Score 85	Passed	Medium	Improve needed
TC003	Accessibility	Accesibility Score <90	Score 100	Passed	High	Test Successful
TC004	Seo	Seo score<90	Score 100	Passed	High	Test successful
TC005	Add to Cart Funtionality	Item Increase /Decrese/Add and Remove	Result as expected	Passed	High	Successfull funtionality
TC006	Best Practices	Practices Score <90	Score 100	Passed	High	Good

Document Summary:

- This document outlines the testing, error handling, and backend integration refinements for Urban Loom. Functional testing was conducted to validate product listing, search, category filters, and cart operations, ensuring smooth user interactions. React Testing Library was used for UI behavior validation.
- Error handling strategies, including try-catch blocks and fallback UI implementations, were incorporated to improve system stability. Performance tests were performed across mobile and desktop platforms to ensure optimized loading times.
- Cross-browser and device compatibility testing confirmed smooth functionality across Chrome, Firefox, Safari, and Edge. Security measures, such as input validation and HTTPS implementation, were applied to protect user data.
- User Acceptance Testing (UAT) simulated real-world scenarios to verify the overall user experience. The document also includes testing reports and debugging strategies to enhance the reliability of Urban Loom.

Thanks for Viewing

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