Day 5 - Testing and Backend Refinement - Furniro

Introduction:

Day 5 of our hackathon focuses on testing, error handling, and backend integration refinement for the **Furniro** marketplace. In this phase, we aim to ensure that the marketplace functions seamlessly by validating core features, handling errors gracefully, and optimizing the platform for real-world deployment.

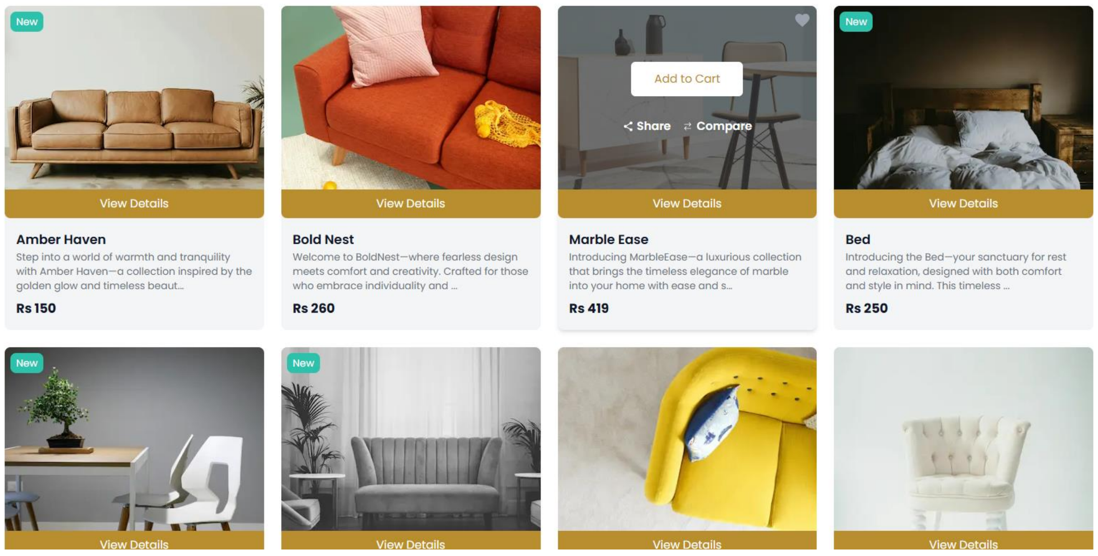
The tasks we completed during this phase include:

1. **Functional Testing**: Verifying that all core features like product listing, search, and cart operations work as expected.
2. **Error Handling**: Implementing try-catch blocks and fallback UI elements to handle errors and provide clear user feedback.
3. **Performance Testing**: Analyzing and optimizing the website's performance to ensure quick load times and smooth interactions.
4. **Cross-Browser and Device Testing**: Ensuring the marketplace works consistently across different browsers and devices.
5. **Security Testing**: Securing sensitive data and protecting the platform against common vulnerabilities.
6. **User Acceptance Testing (UAT)**: Simulating real-world user interactions to validate the marketplace's usability.

1. Functional Testing:

Product Listing:

- **Test Case**: Ensure that the product listing page displays products correctly from the API.
- **Steps**:
  1. Navigate to the product listing page.
  2. Verify that the product grid is populated with products fetched from the API.
  3. Ensure that each product displays the correct image, title, and price.
- **Expected Result**: Products should be displayed in a grid layout with their respective images, titles, and prices.
- **Actual Result**: Products were correctly displayed with the right information.
- **Screenshot**:



Amber Haven
Step into a world of warmth and tranquility with Amber Haven—a collection inspired by the golden glow and timeless beaut...
Rs 150

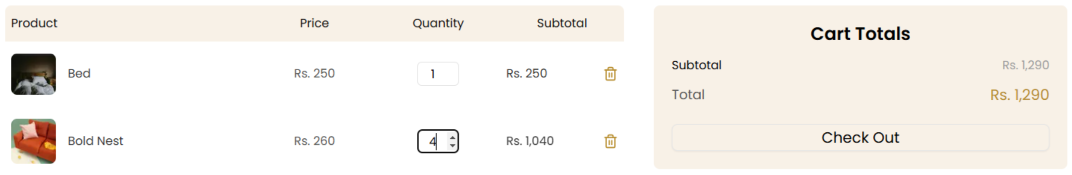
Bold Nest
Welcome to BoldNest—where fearless design meets comfort and creativity. Crafted for those who embrace individuality and ...
Rs 260

Marble Ease
Introducing MarbleEase—a luxurious collection that brings the timeless elegance of marble into your home with ease and s...
Rs 419

Bed
Introducing the Bed—your sanctuary for rest and relaxation, designed with both comfort and style in mind. This timeless ...
Rs 250

Cart Operations:

- **Test Case**: Validate the cart's ability to add, update, and remove items.
- **Steps**:
    1. Add products to the cart.
    2. Update the quantity of items in the cart.
    3. Remove items from the cart.
- **Expected Result**: Items are correctly added, updated, and removed from the cart.
- **Actual Result**: Cart functionality works correctly.
- **Screenshot:**

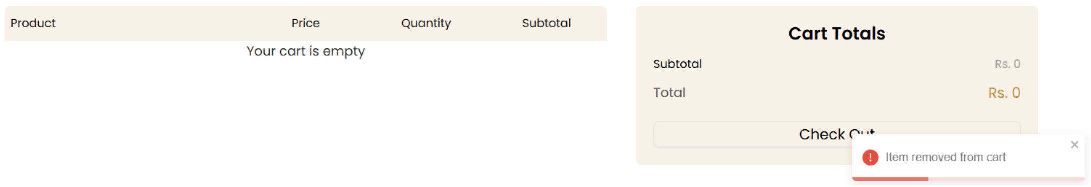


Product	Price	Quantity	Subtotal
Bed	Rs. 250	1	Rs. 250
Bold Nest	Rs. 260	4	Rs. 1,040

Cart Totals

Subtotal	Rs. 1,290
Total	Rs. 1,290

Check Out



Product	Price	Quantity	Subtotal

Your cart is empty

Cart Totals

Subtotal	Rs. 0
Total	Rs. 0

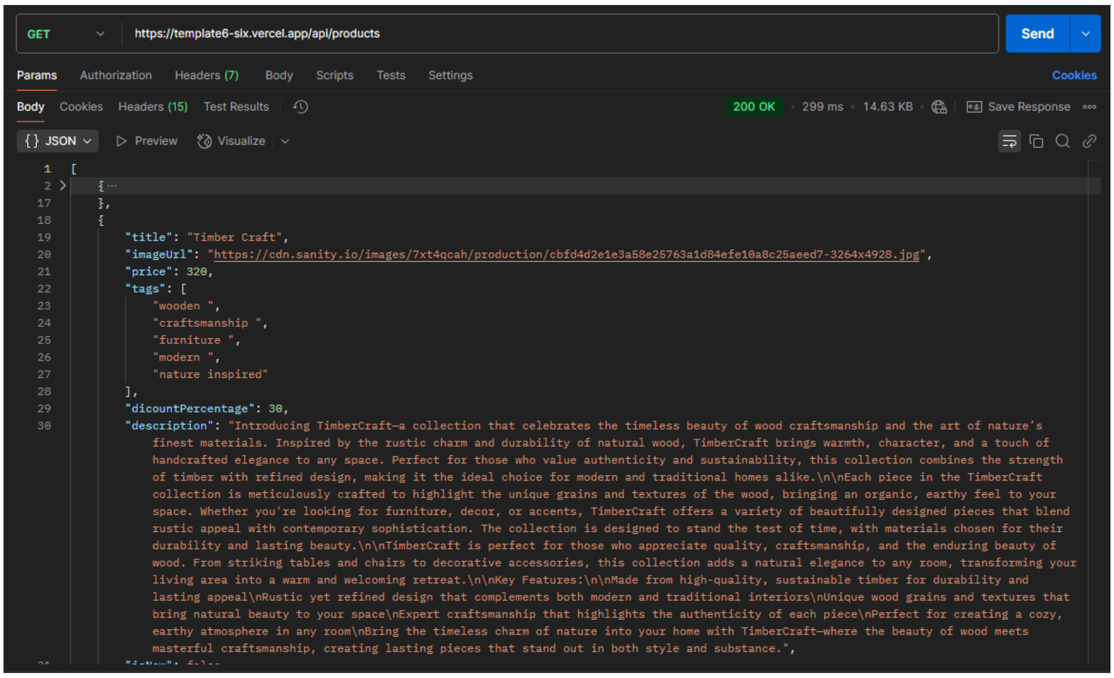
Check Out

Item removed from cart

API Testing with Postman:

- **Test Case**: Test API responses for fetching product data.
- **Steps**:
    1. Use **Postman** to send a GET request to the product API endpoint.
    2. Verify that the correct data is returned with status 200.
- **Expected Result**: API returns a successful response with the correct product data.

- **Actual Result**: API response as expected.
- **Screenshot**: [Insert screenshot here]



https://template6-six.vercel.app/api/products

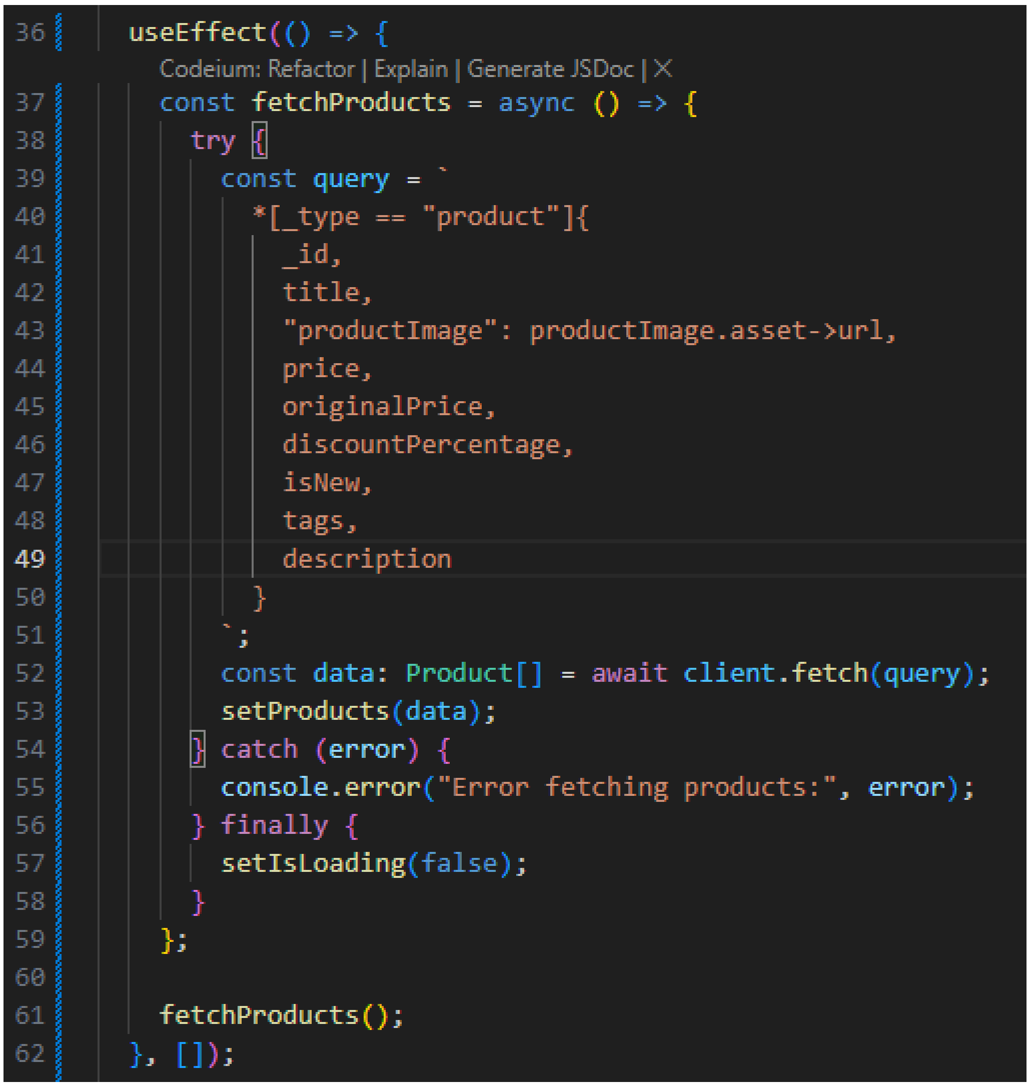
```
[
    {…
    },
    {
        "title": "Timber Craft",
        "imageUrl": "https://cdn.sanity.io/images/7xt4qcah/production/cbfd4d2e1e3a58e25763a1d84efe10a8c25aeed7-3264x4928.jpg",
        "price": 320,
        "tags": [
            "wooden ",
            "craftsmanship ",
            "furniture ",
            "modern ",
            "nature inspired"
        ],
        "dicountPercentage": 30,
        "description": "Introducing TimberCraft—a collection that celebrates the timeless beauty of wood craftsmanship and the art of nature's
            finest materials. Inspired by the rustic charm and durability of natural wood, TimberCraft brings warmth, character, and a touch of
            handcrafted elegance to any space. Perfect for those who value authenticity and sustainability, this collection combines the strength
            of timber with refined design, making it the ideal choice for modern and traditional homes alike.\n\nEach piece in the TimberCraft
            collection is meticulously crafted to highlight the unique grains and textures of the wood, bringing an organic, earthy feel to your
            space. Whether you're looking for furniture, decor, or accents, TimberCraft offers a variety of beautifully designed pieces that blend
            rustic appeal with contemporary sophistication. The collection is designed to stand the test of time, with materials chosen for their
            durability and lasting beauty.\n\nTimberCraft is perfect for those who appreciate quality, craftsmanship, and the enduring beauty of
            wood. From striking tables and chairs to decorative accessories, this collection adds a natural elegance to any room, transforming your
            living area into a warm and welcoming retreat.\n\nKey Features:\n\nMade from high-quality, sustainable timber for durability and
            lasting appeal\nRustic yet refined design that complements both modern and traditional interiors\nUnique wood grains and textures that
            bring natural beauty to your space\nExpert craftsmanship that highlights the authenticity of each piece\nPerfect for creating a cozy,
            earthy atmosphere in any room\nBring the timeless charm of nature into your home with TimberCraft—where the beauty of wood meets
            masterful craftsmanship, creating lasting pieces that stand out in both style and substance.",
```

2. Error Handling:

- **Try-Catch Example**:
  In the following code, we use a **try-catch** block inside a useEffect to fetch product data from the API. If an error occurs during the data fetch, it's caught and logged, ensuring the application doesn't crash.

Explanation:

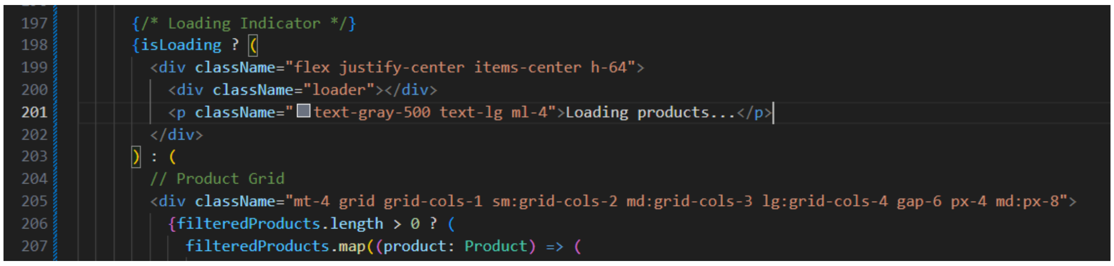
- The **try** block attempts to fetch the product data using a query to **Sanity CMS**.
- The **catch** block logs any error (e.g., network failure, API issue) and ensures the application continues running smoothly without crashing.
- The **finally** block ensures that the loading state (setIsLoading(false)) is always reset, whether the fetch is successful or not.



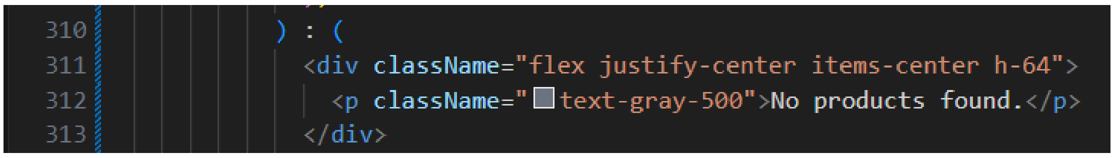
```
useEffect(() => {
  const fetchProducts = async () => {
    try {
      const query = `
        *[_type == "product"]{
          _id,
          title,
          "productImage": productImage.asset->url,
          price,
          originalPrice,
          discountPercentage,
          isNew,
          tags,
          description
        }
      `;
      const data: Product[] = await client.fetch(query);
      setProducts(data);
    } catch (error) {
      console.error("Error fetching products:", error);
    } finally {
      setIsLoading(false);
    }
  };

  fetchProducts();
}, []);
```

Fallback UI Example:

When products are unavailable or there’s an error fetching them, we show an alternative message such as "No items found" or a loading spinner.



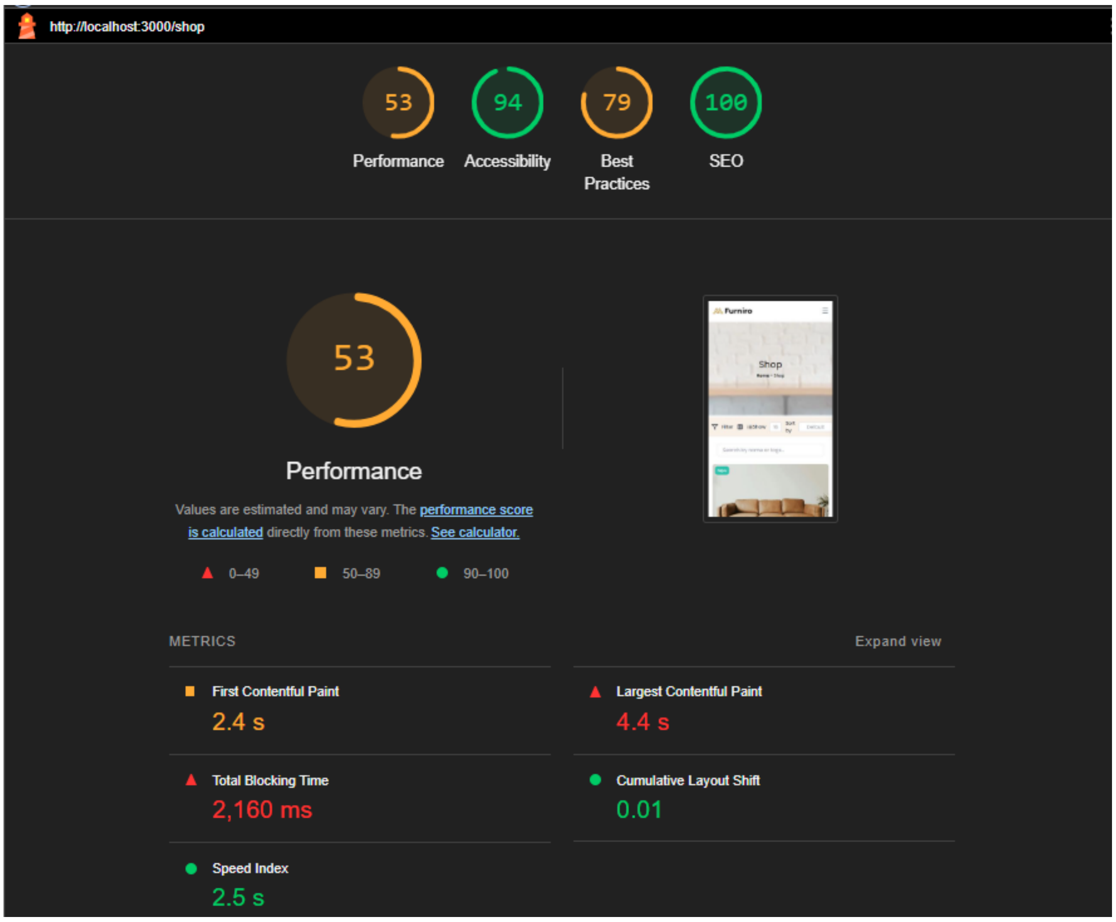
```
{/* Loading Indicator */}
{isLoading ? (
  <div className="flex justify-center items-center h-64">
    <div className="loader"></div>
    <p className="text-gray-500 text-lg ml-4">Loading products...</p>
  </div>
) : (
  // Product Grid
  <div className="mt-4 grid grid-cols-1 sm:grid-cols-2 md:grid-cols-3 lg:grid-cols-4 gap-6 px-4 md:px-8">
    {filteredProducts.length > 0 ? (
      filteredProducts.map((product: Product) => (
```



```
) : (
  <div className="flex justify-center items-center h-64">
    <p className="text-gray-500">No products found.</p>
  </div>
```

3.Performance Testing:

Description: The performance of the website was tested using tools like Lighthouse.


http://localhost:3000/shop

53 Performance | 94 Accessibility | 79 Best Practices | 100 SEO

53

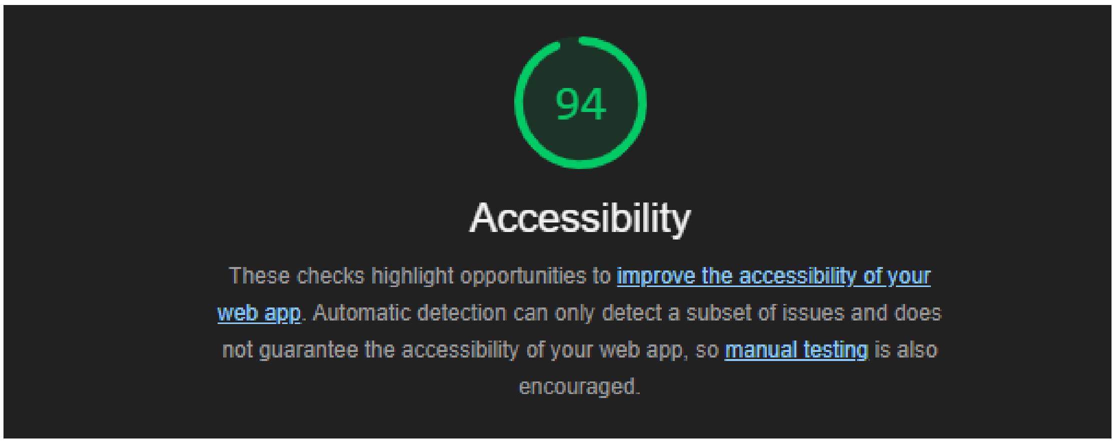
Performance

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

▲ 0–49 ■ 50–89 ● 90–100

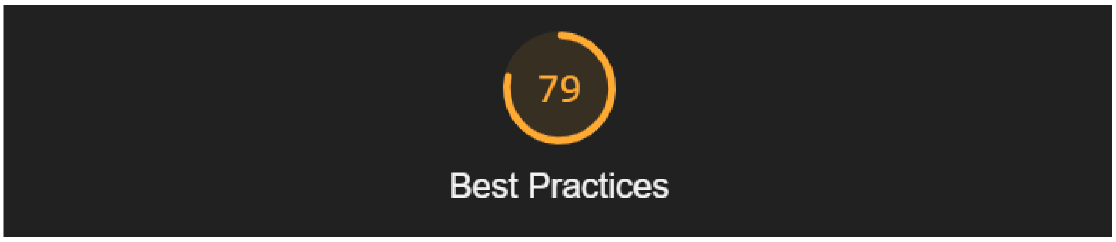
METRICS Expand view

■ First Contentful Paint 2.4 s	▲ Largest Contentful Paint 4.4 s
▲ Total Blocking Time 2,160 ms	● Cumulative Layout Shift 0.01
● Speed Index 2.5 s	

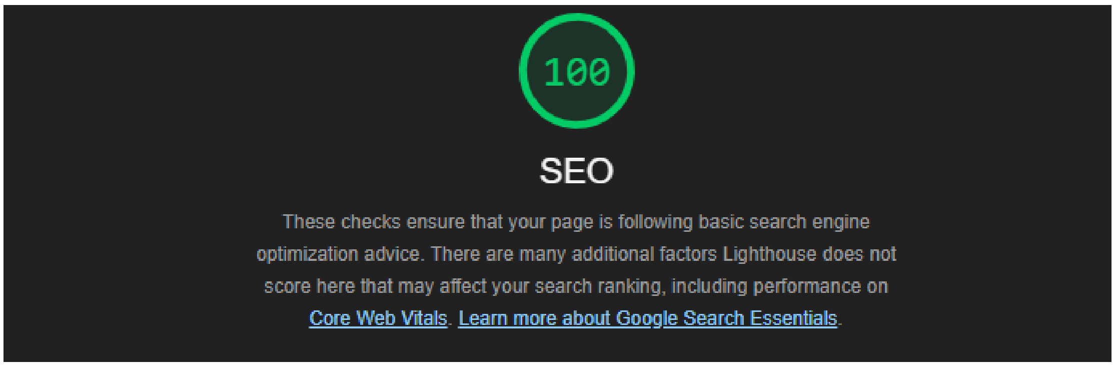

94

Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Automatic detection can only detect a subset of issues and does not guarantee the accessibility of your web app, so manual testing is also encouraged.


79

Best Practices


100

SEO

These checks ensure that your page is following basic search engine optimization advice. There are many additional factors Lighthouse does not score here that may affect your search ranking, including performance on Core Web Vitals. Learn more about Google Search Essentials.

4. Cross-Browser and Device Testing:

Description:
We tested the marketplace across various browsers and devices to ensure consistent performance and responsiveness.

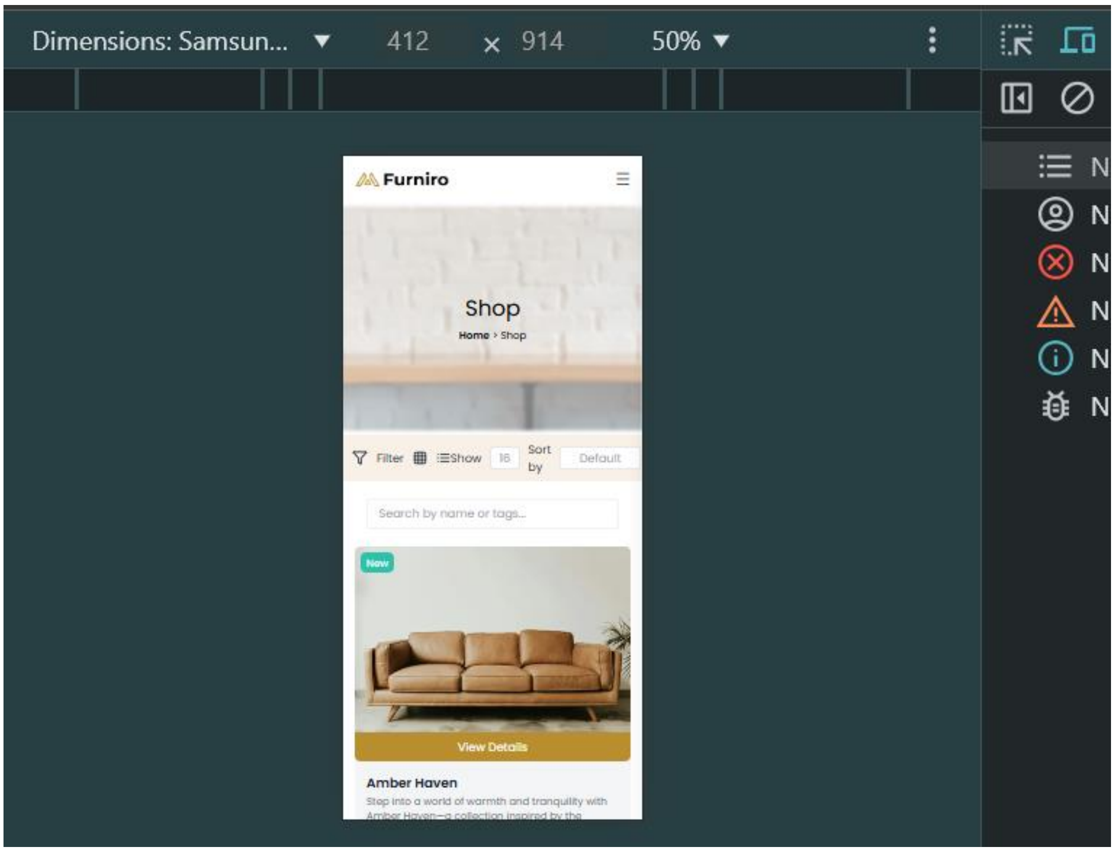
Key Points:

- Tested on popular browsers: Chrome, Firefox, Safari, and Edge.
- Verified responsiveness on desktop, tablet, and mobile devices.
- Ensured no layout issues or broken features across different screen sizes.

Expected Result:
The marketplace should function seamlessly across all browsers and devices.

Actual Result:
The marketplace displayed correctly with no layout or functionality issues on all tested browsers and devices.

Screenshot:

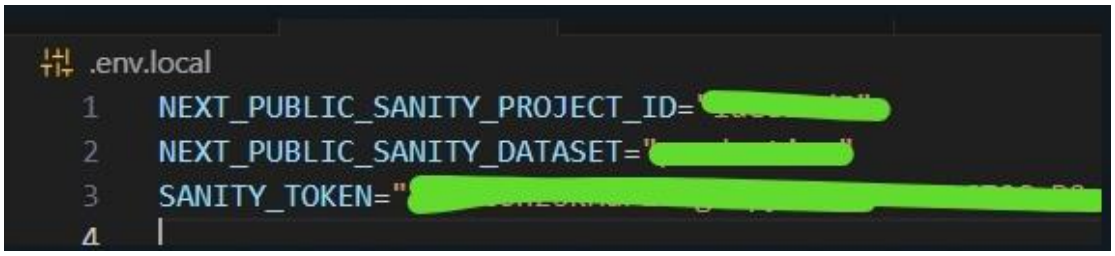

Dimensions: Samsun... 412 × 914 50%
Furniro
Shop
Home › Shop
Filter
Show 16
Sort by
Default
Search by name or tags...
New
View Details
Amber Haven
Step into a world of warmth and tranquility with Amber Haven—a collection inspired by the

5. Security Testing:

Description:
We focused on securing the marketplace by validating inputs, ensuring secure communication, and protecting sensitive data.

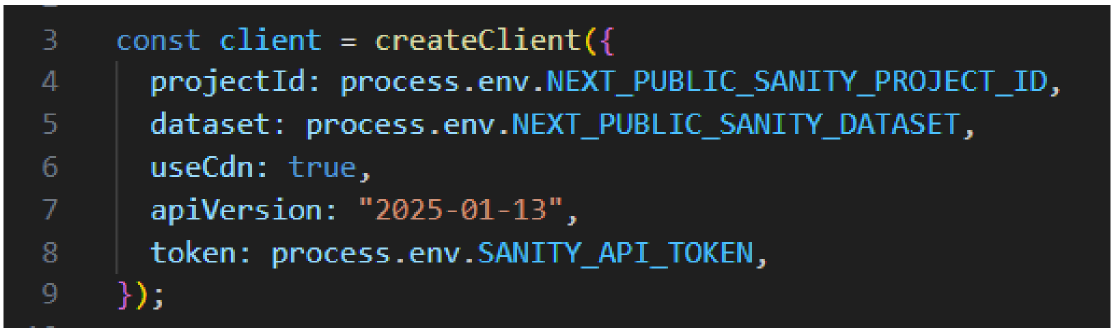
Secure API Communication:

- Ensure API calls are made over HTTPS to encrypt data during transmission.
- Store sensitive data like API keys in environment variables to prevent exposure.



.env.local

```
NEXT_PUBLIC_SANITY_PROJECT_ID=[redacted]
NEXT_PUBLIC_SANITY_DATASET=[redacted]
SANITY_TOKEN="[redacted]

```



```
const client = createClient({
  projectId: process.env.NEXT_PUBLIC_SANITY_PROJECT_ID,
  dataset: process.env.NEXT_PUBLIC_SANITY_DATASET,
  useCdn: true,
  apiVersion: "2025-01-13",
  token: process.env.SANITY_API_TOKEN,
});
```

6. User Acceptance Testing (UAT):

We tested the marketplace to ensure it meets real-world usage expectations.

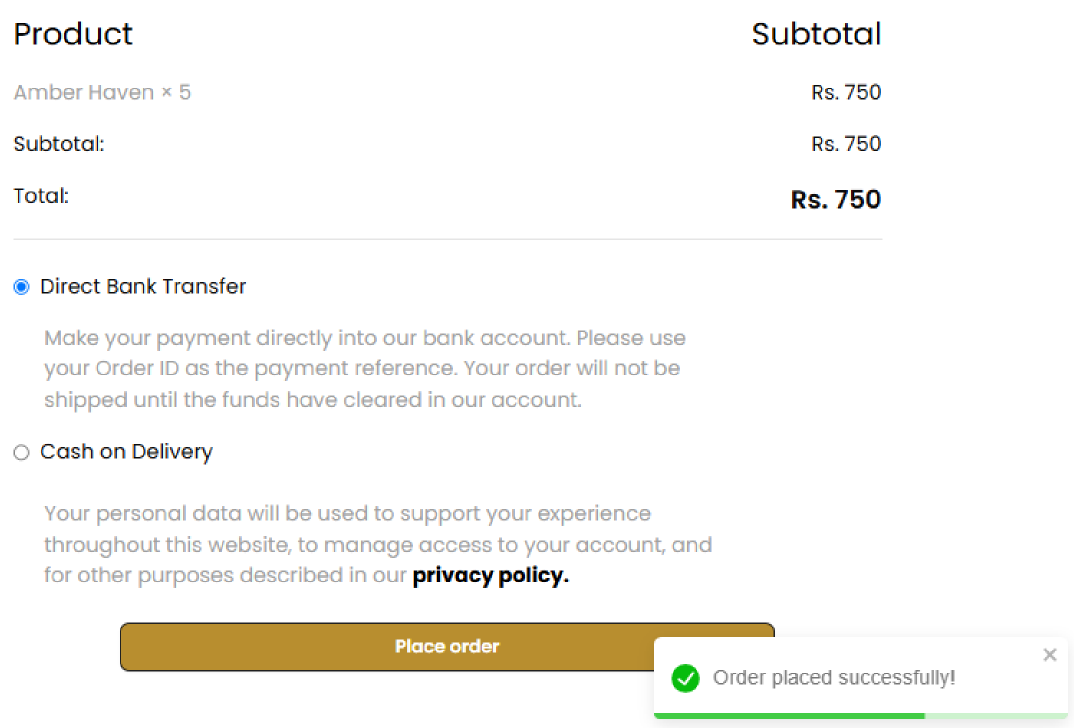
Key Points:

- Simulated tasks like browsing, adding to cart, and checking out.
- Collected feedback from peers and mentors to improve usability.

Expected Result:
A seamless and user-friendly experience.

Actual Result:
UAT completed successfully, with no major issues.

Screenshot:



Product	Subtotal
Amber Haven × 5	Rs. 750
Subtotal:	Rs. 750
Total:	**Rs. 750**

[✓ Direct Bank Transfer]

Make your payment directly into our bank account. Please use your Order ID as the payment reference. Your order will not be shipped until the funds have cleared in our account.

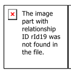
[Cash on Delivery]

Your personal data will be used to support your experience throughout this website, to manage access to your account, and for other purposes described in our **privacy policy.**

Order placed successfully!

Final Checklist:

Task	Status
Functional Testing	✓
Error Handling	✓
Performance Testing	✓
Device Testing	✓
Security Testing	✓
Documentation	✓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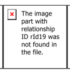
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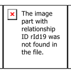
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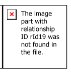
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-Made by Sabeh Shaikh