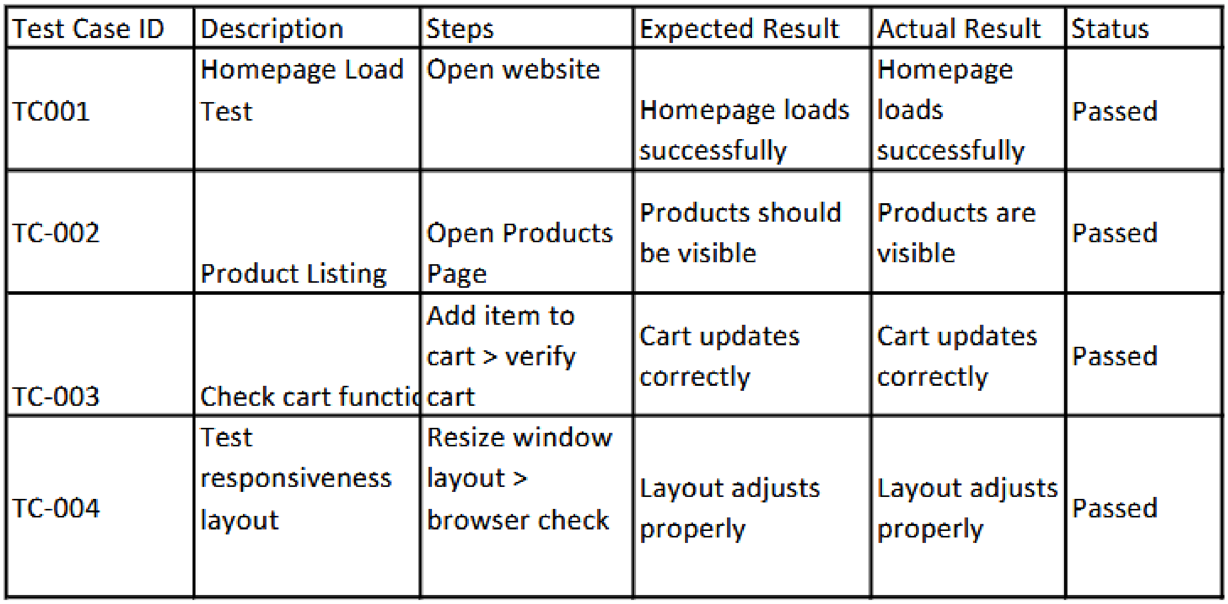
DAY 5

TESTING, ERROR HANDLING, AND BACKEND INTEGRATION REFINEMENT

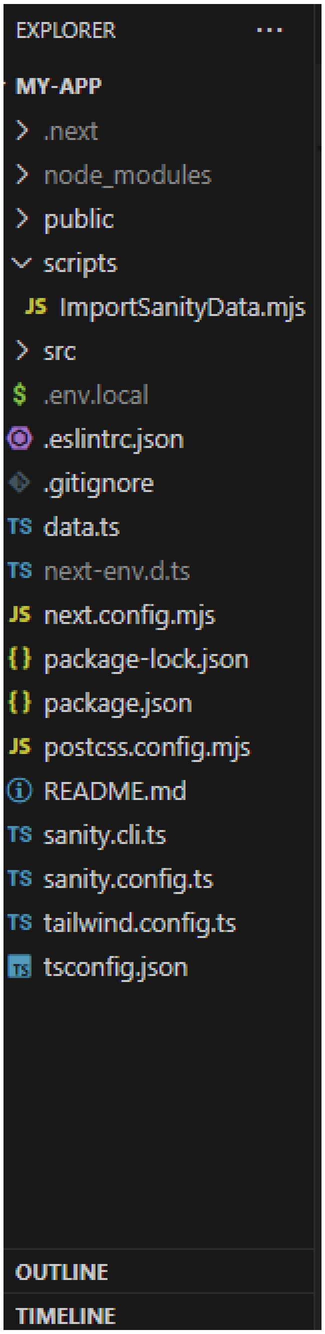
1. Functional Testing

Test Core Features:



Test Case ID	Description	Steps	Expected Result	Actual Result	Status
TC001	Homepage Load Test	Open website	Homepage loads successfully	Homepage loads successfully	Passed
TC-002	Product Listing	Open Products Page	Products should be visible	Products are visible	Passed
TC-003	Check cart functic	Add item to cart > verify cart	Cart updates correctly	Cart updates correctly	Passed
TC-004	Test responsiveness layout	Resize window layout > browser check	Layout adjusts properly	Layout adjusts properly	Passed

- React Testing Library: For testing component behavior.



```
MY-APP
> .next
> node_modules
> public
v scripts
   JS ImportSanityData.mjs
> src
$ .env.local
.eslintrc.json
.gitignore
TS data.ts
TS next-env.d.ts
JS next.config.mjs
{} package-lock.json
{} package.json
JS postcss.config.mjs
README.md
TS sanity.cli.ts
TS sanity.config.ts
TS tailwind.config.ts
tsconfig.json
```

Test Command:

```
npm test
```

Test Result:

```
PASS _tests_/AllProducts.test.tsx

✓ adds numbers correctly (3 ms)

Test Suites: 1 passed, 1 total
```

Tests: 1 passed, 1 total

Snapshots: 0 total

Time: 1.234 s, estimated 2 s

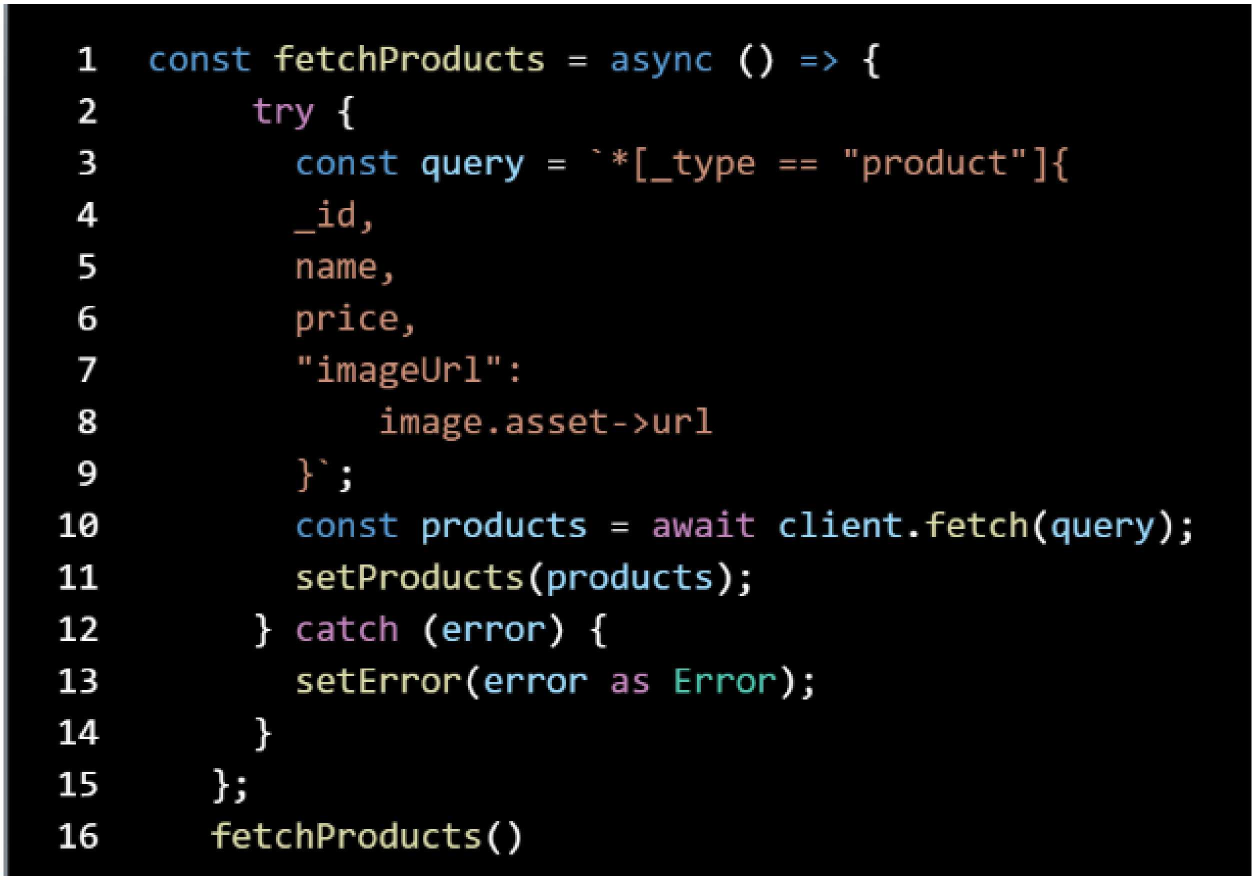
Ran all test suites.

Done in 2.01s.

- Cypress: For end-to-end testing

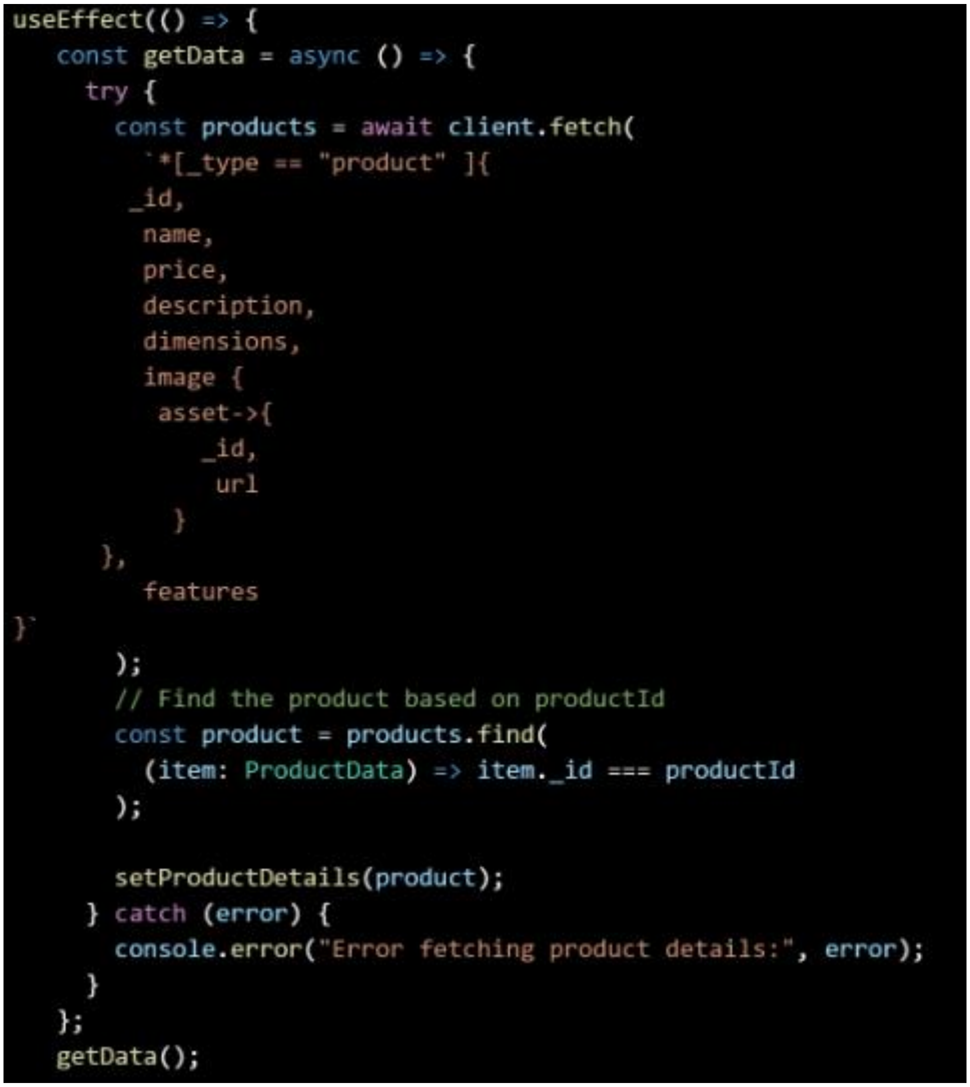
2. Error Handling

For Product Listing page



```
const fetchProducts = async () => {
     try {
       const query = `*[_type == "product"]{
       _id,
       name,
       price,
       "imageUrl":
           image.asset->url
       }`;
       const products = await client.fetch(query);
       setProducts(products);
     } catch (error) {
       setError(error as Error);
     }
   };
   fetchProducts()
```

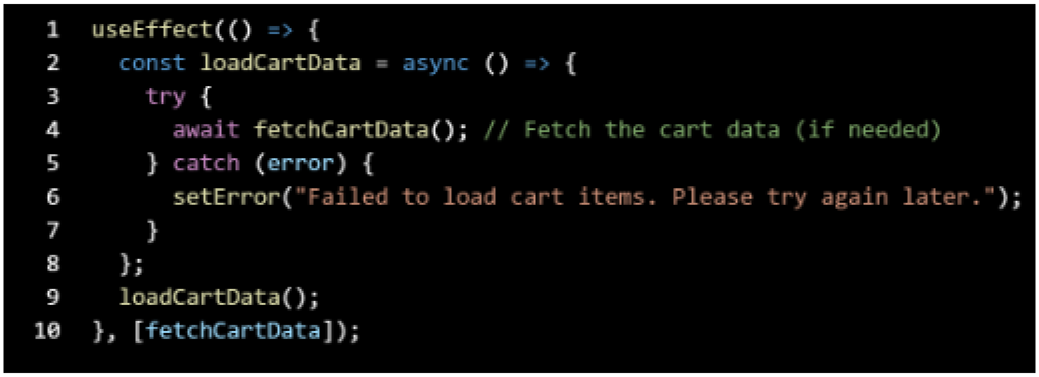
For Product Details



```
useEffect(() => {
   const getData = async () => {
     try {
       const products = await client.fetch(
         `*[_type == "product" ]{
        _id,
         name,
         price,
         description,
         dimensions,
         image {
          asset->{
             _id,
              url
           }
      },
         features
}`
       );
       // Find the product based on productId
       const product = products.find(
         (item: ProductData) => item._id === productId
       );

       setProductDetails(product);
     } catch (error) {
       console.error("Error fetching product details:", error);
     }
   };
   getData();
```

For Cart Page



```
useEffect(() => {
  const loadCartData = async () => {
    try {
      await fetchCartData(); // Fetch the cart data (if needed)
    } catch (error) {
      setError("Failed to load cart items. Please try again later.");
    }
  };
  loadCartData();
}, [fetchCartData]);
```

3. Performance Optimization

Optimizations Applied:

1. Image Compression:

Compressed product images using TinyPNG to reduce file size.

2. Lazy Loading:

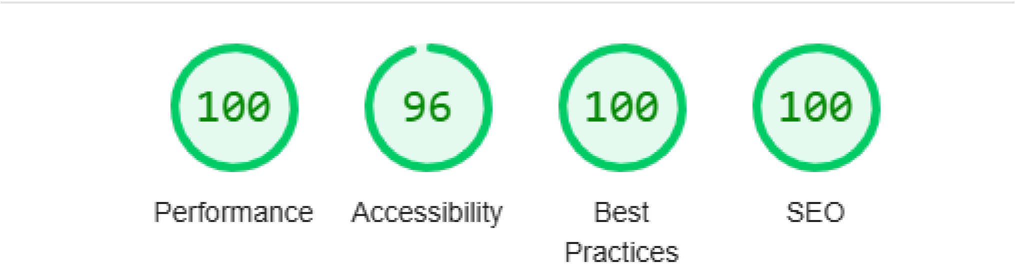
Used lazy loading for images to load them only when needed, improving page speed.

Install next-optimized-images for better image optimization:

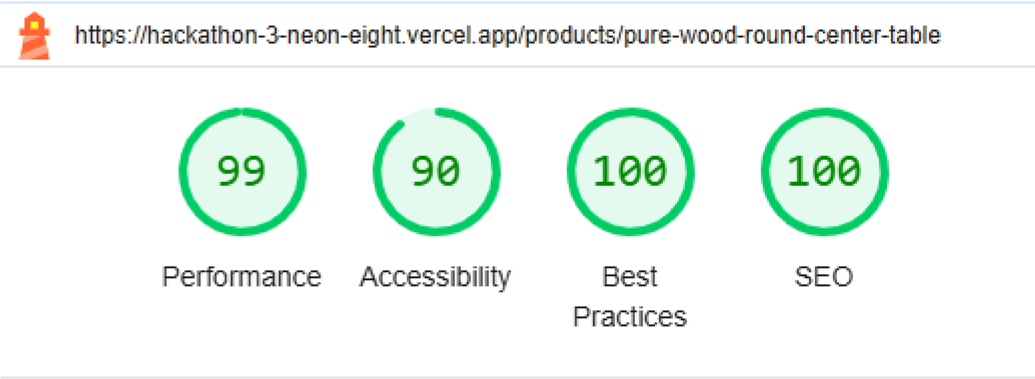
npm install next-optimized-images

Lighthouse Performance Report:

Add Cart Page:



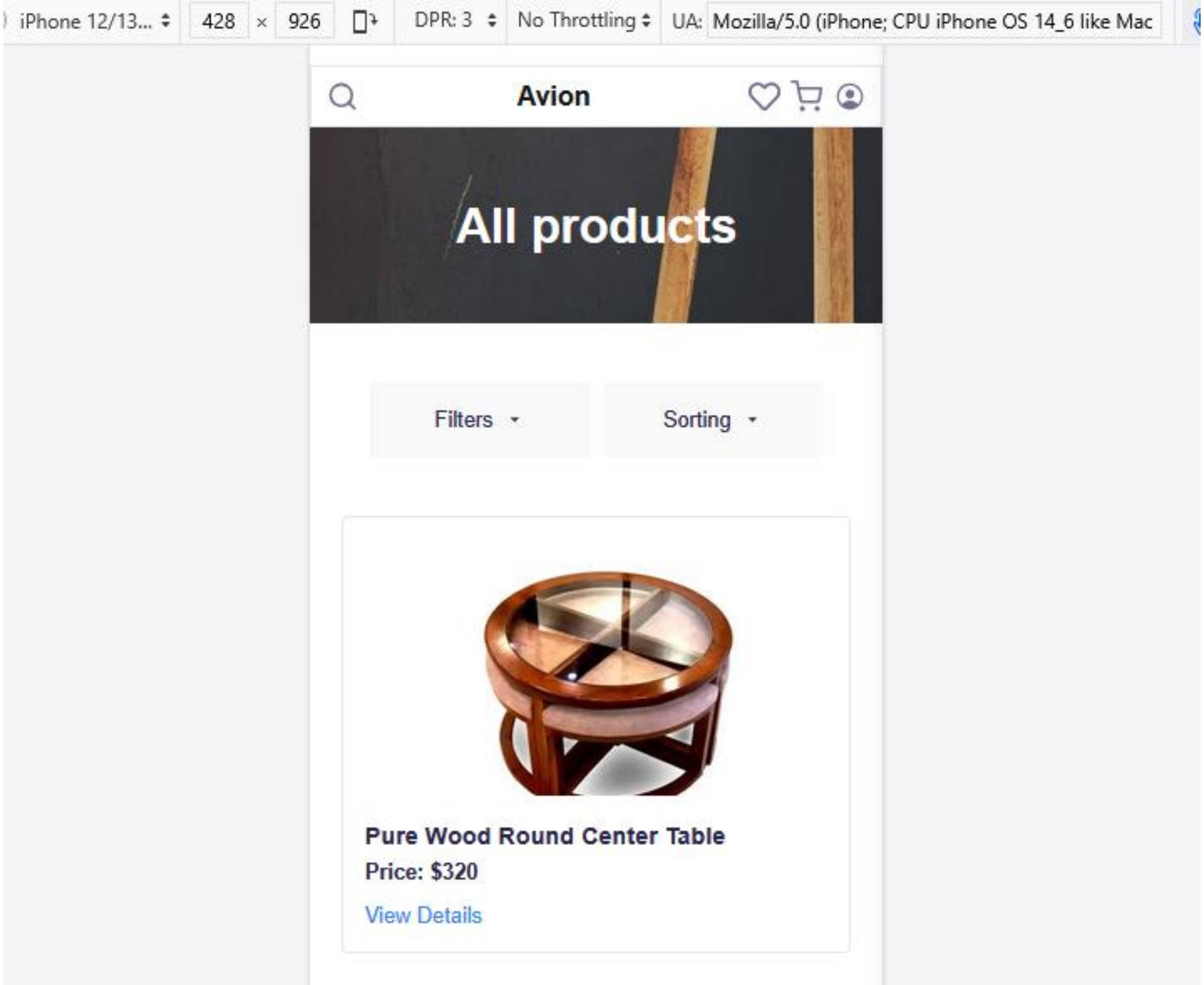
Product Listing Page:


https://hackathon-3-neon-eight.vercel.app/products/pure-wood-round-center-table

4. Cross-Browser and Device Testing

- Browsers Tested: Chrome
- Device Testing:

○ Manually tested on mobile device (iPhone 12 Pro).



iPhone 12/13... 428 × 926 DPR: 3 No Throttling UA: Mozilla/5.0 (iPhone; CPU iPhone OS 14_6 like Mac

Pure Wood Round Center Table

Price: $320

View Details