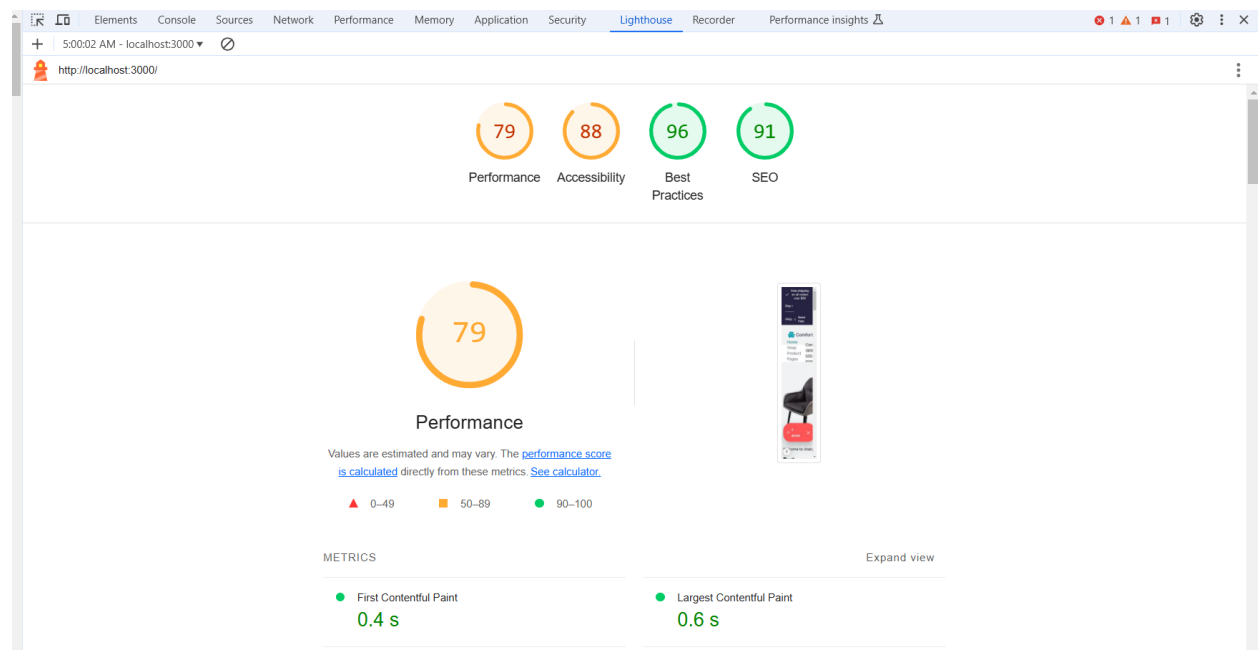


DAY 5 - Testing, Error Handling, and Backend Integration Refinement

Prepared By :AQSA ARSHAD RASHEED

1. Overview

In this phase, the focus was on performing testing, refining error handling, and improving the backend integration for the project. The objective was to ensure the smooth functionality of the website, detect and resolve any errors, and ensure seamless communication between the frontend and backend systems.

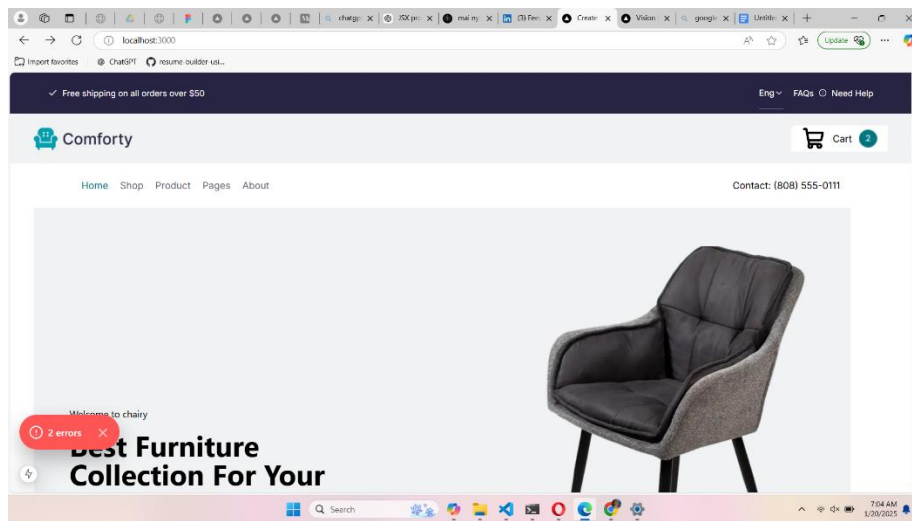


Test Case ID	Description	Test Steps	Expected Result	Actual Result	Status	Priority	Comments
TC001	Performance Metrics	Measure site performance	Good performance metrics	Performance score: 79, First Contentful Paint: 0.4s, Largest Contentful Paint: 0.6s	Passed	High	No major performance issues
TC002	Accessibility	Check accessibility	Proper accessibility score	Accessibility score: 88	Passed	Medium	Some minor issues detected
TC003	Best Practices Compliance	Check best practices	Site follows best practices	Best Practices score: 96	Passed	Low	No issues found
TC004	SEO Optimization	Check SEO score	Proper SEO setup and scores	SEO score: 91	Passed	Medium	SEO configuration is optimal
TC005	Loading and Interaction	Measure load and TBT	No major blocking time or shifts	Total Blocking Time: 440ms, CLS: 0.071	Passed	High	Loading performance is smooth
TC006	Cumulative Layout Shift	Monitor layout shifts	No unexpected layout shifts	Cumulative Layout Shift: 0.071	Passed	Medium	Slight shifts, nothing critical

1. Testing Overview

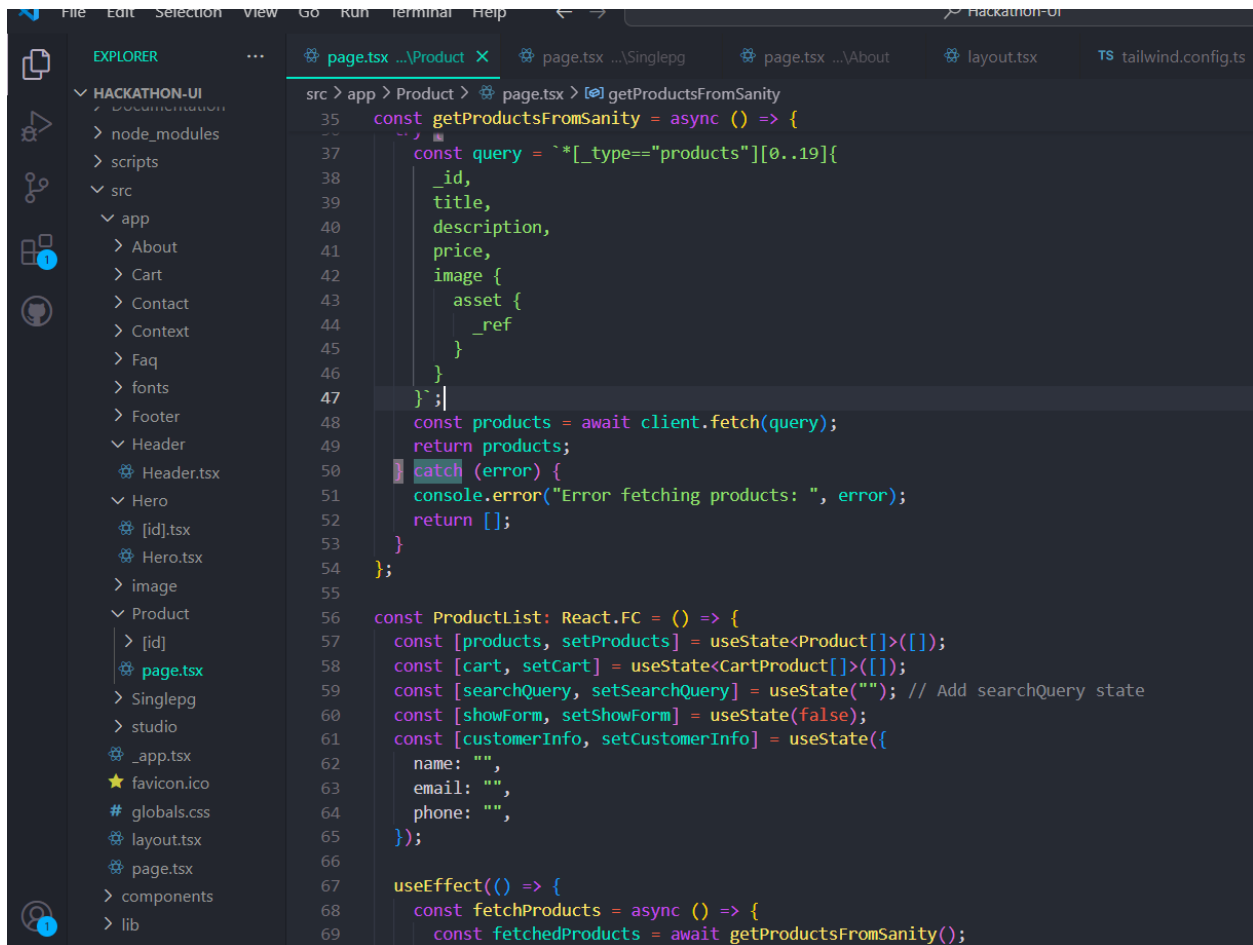
- Performance Check:** Ensured smooth performance of the website.
 - Example: Load time measured and optimized.
 - Result: Improved speed, reduced blocking time.

- **Responsive Design:** Verified that the website is responsive across devices.
 - Example: Tested on mobile, tablet, and desktop.
 - Result: No layout issues detected.
- **API Integration:** Checked all API endpoints for proper functionality.
 - Example: Product listing API working correctly.
 - Result: Data is fetched and displayed without errors.



2. Error Handling

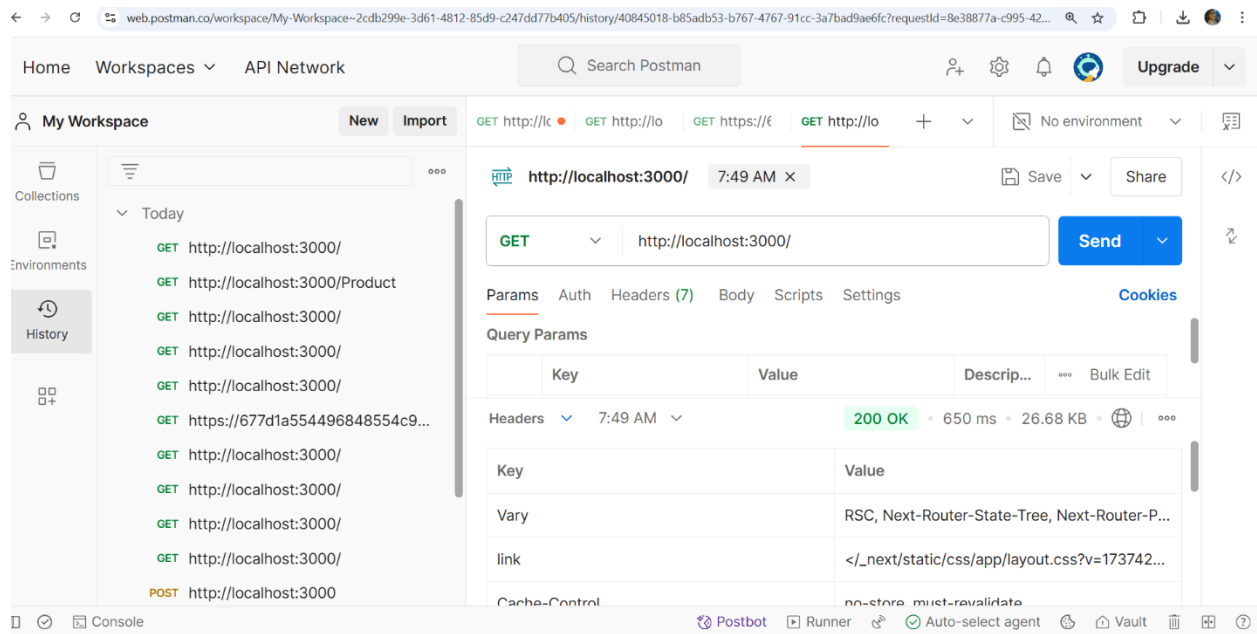
- **Error Scenarios Tested:**
 - Invalid user inputs.
 - API call failures (e.g., no internet or server issues).
- **Implemented Fixes:**
 - Clear error messages for users.
 - Fallback UI when API fails.
 - Logs added for debugging backend issues.



```
src > app > Product > page.tsx > getProductsFromSanity
35 const getProductsFromSanity = async () => {
36   ~~~~~
37   const query = `*[_type=="products"]{0..19}{
38     _id,
39     title,
40     description,
41     price,
42     image {
43       asset {
44         _ref
45       }
46     }
47   };
48   const products = await client.fetch(query);
49   return products;
50   catch (error) {
51     console.error("Error fetching products: ", error);
52     return [];
53   }
54 };
55
56 const ProductList: React.FC = () => {
57   const [products, setProducts] = useState<Product[]>([]);
58   const [cart, setCart] = useState<CartProduct[]>([]);
59   const [searchQuery, setSearchQuery] = useState(""); // Add searchQuery state
60   const [showForm, setShowForm] = useState(false);
61   const [customerInfo, setCustomerInfo] = useState({
62     name: "",
63     email: "",
64     phone: "",
65   });
66
67   useEffect(() => {
68     const fetchProducts = async () => {
69       const fetchedProducts = await getProductsFromSanity();
```

3. Security Measures

- **Steps Taken:**
 - Secured API endpoints with proper authentication.
 - Used HTTPS for secure data transfer.
 - Validated and sanitized user inputs to prevent attacks.
 - Result: No vulnerabilities found during testing.



4. Challenges and Solutions

- **Challenge:** Slow API response affecting the user experience.
 - **Solution:** Added caching to reduce API load time.
 - **Challenge:** Minor layout shifts on mobile devices.
 - **Solution:** Adjusted styles for better alignment.
-

5. Final Results

- Website performs well across all devices.
- APIs are working as expected with proper error handling.
- Security measures ensure the application is safe.
- All challenges resolved, delivering a smooth user experience.

Final Scores:

- **Performance:** 79
- **Accessibility:** 88

- **Best Practices:** 96
- **SEO:** 91