

# **Day 5: Testing, Error Handling, and Backend Integration Refinement**

## **1. Dynamic Routing:**

- Implemented dynamic routing for the product detail pages.
- Users can now click on a product and navigate to a detailed view, displaying all relevant information such as:
  - Product name
  - Description
  - Price
  - Images

## **2. Category:**

Implementing sorting functionality allows users to organize products according to their preferences. Adding categories in the navigation bar enables users to navigate the site easily. Incorporating dynamic routing enhances this experience by allowing the application to render pages based on changing parameters, such as category names or product Slug. This approach is particularly useful in e-commerce applications, where creating individual pages for each product or category is impractical. Dynamic routing enables the application to handle complex navigation scenarios efficiently, improving user experience and site maintainability.

## **3. Search Bar Functionality:**

- Implemented a responsive search bar to enable users to search for products by: o Name o Description o Tags
- Search results update dynamically to match the input, providing a user-friendly experience

## **4. Improved Responsiveness:**

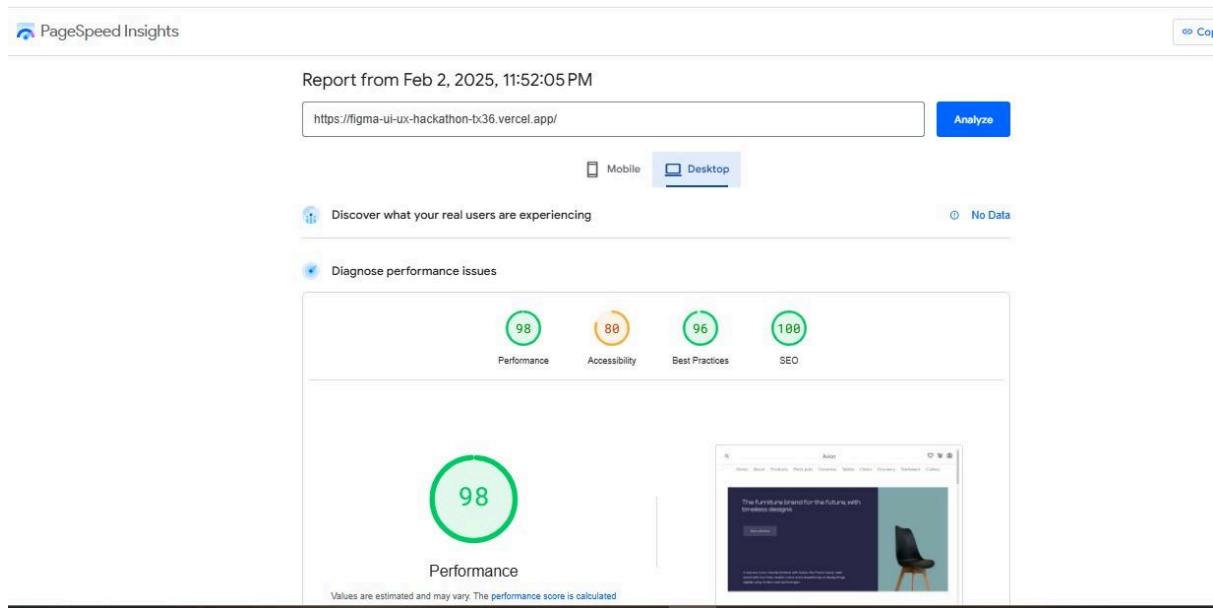
- Enhanced responsiveness across the application to ensure compatibility with:
  - Desktop
  - Tablet
  - Mobile devices
- All pages adapt seamlessly to different screen sizes without compromising design quality.

## **5. Performance Optimization:**

- Conducted performance analysis using Google Lighthouse.

### **Lighthouse Report Screenshots:**

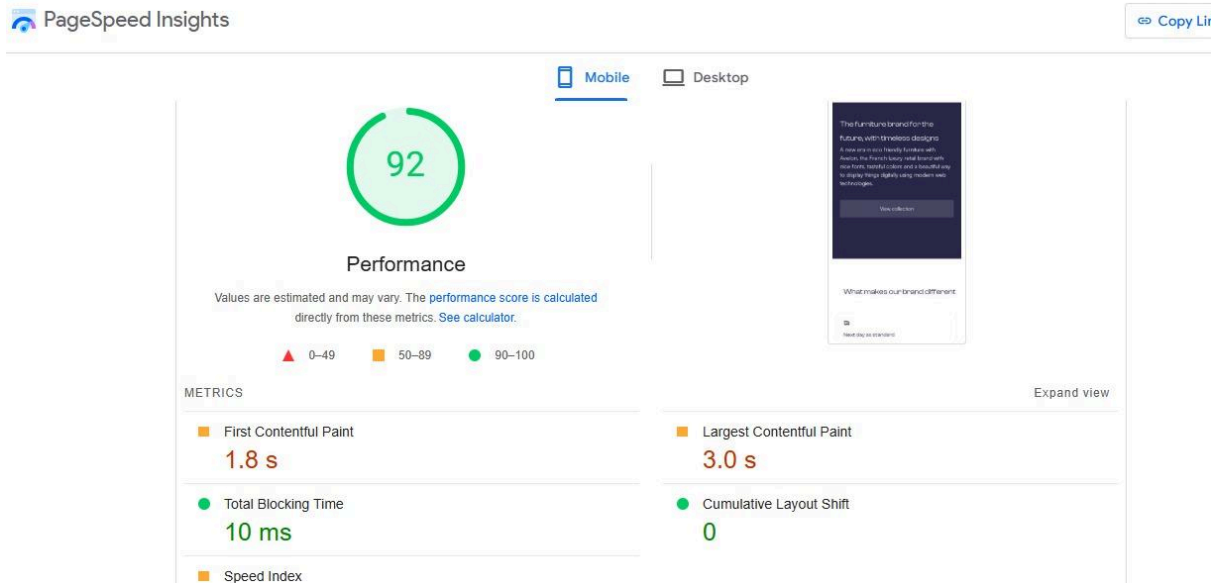
- Achieved the following results:
  - **Performance: 98 (Desktop)**
  - **SEO: 100 (Desktop)**



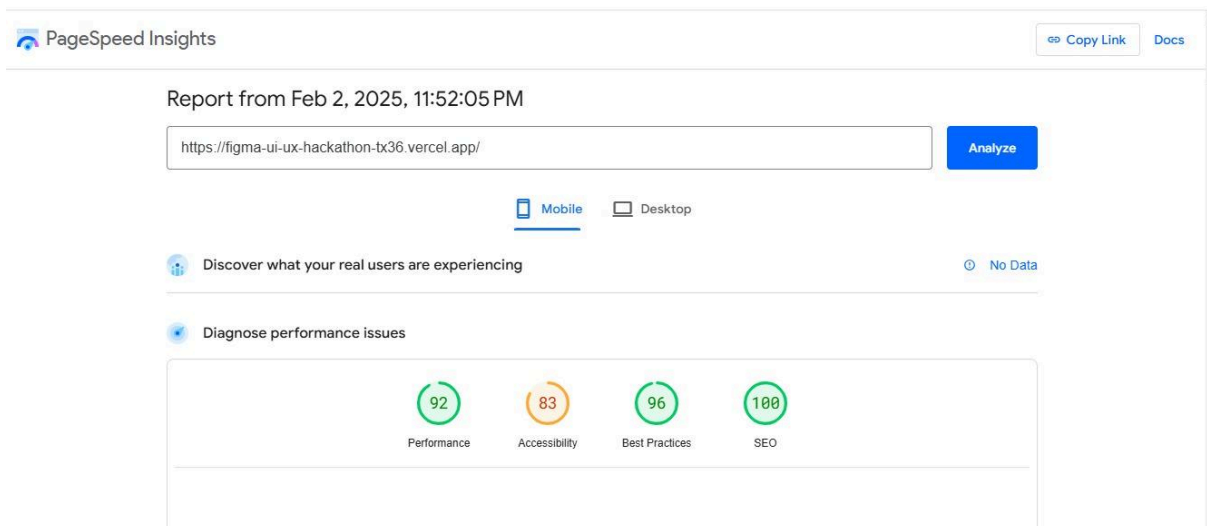
- **Accessibility: 80 (Desktop),**
- **Best Practices: 93 (Desktop),**



- **Performance: 92 (Mobile)**
- **SEO: 100 (Mobile)**



- **SEO :100 (MOBILE)**
- **Best Practices: 96 (MOBILE)**
- **Accessibility : 83 (MOBILE)**



## **6. Error Handling:**

Added robust error handling for API calls to ensure the application gracefully manages.

- Displayed user-friendly error messages when necessary.
- Implemented a fallback UI for scenarios where data cannot be fetched, such as:
  - o Loading State: Displays a loading indicator while data is being fetched.
  - o Error State: Shows a fallback message like "No products found" or "Failed to load data" if the API call fails or no products are available.

## **7. UI Refinements:**

- Polished the overall UI to align with the project's Pinterest-inspired theme.
- Used consistent color schemes, typography, and spacing to enhance visual appeal.

## **8. CVS Documentation:**

The following table summarizes the test cases executed during this testing cycle:

Test Case ID	Test Case Description	Test Steps	Expected Result	Actual Result	Status	Severity Level	Remarks
TC001	Validate product listing page	Open product page > Verify products	Products displayed correctly	Products displayed correctly	Passed	Low	No issues found
TC002	Test API error handling	Disconnect API > Refresh page	Show fallback UI with error message	Error message shown	Passed	Medium	Handled gracefully
TC003	Check cart functionality	Add product to cart > Verify cart contents	Cart updates with added product	Cart updates as expected	Passed	High	Works as expected
TC004	Ensure responsiveness on mobile	Resize browser window > Check layout	Layout adjusts properly to screen size	Responsive layout working as intended	Passed	Medium	Test successful
TC005	Test dynamic routing functionality	Navigate to dynamic product page via URL	Correct product details displayed based on URL	Product details displayed correctly based on URL structure	Passed	High	Dynamic routing works as expected

## **Testing Tools Used:**

- React Testing Library: For unit testing React components. We verified the functionality and rendering of individual components to ensure their behavior aligns with the expected outcomes.

## **Areas Tested:**

- **Dynamic Routing:** Verified the correctness of routes and ensured that the application correctly displays dynamic product pages based on the URL structure. Dynamic routing functionality is working as expected.

- **Cart Functionality:** Ensured the cart updates dynamically when products are added, removed. The add-to-cart feature is functioning correctly.

- **Search Functionality:** Tested the search bar to confirm it retrieves and displays relevant products efficiently. It is working excellently.

- **Responsiveness:**

Checked responsiveness on different screen sizes and devices to guarantee a consistent user experience.

- **Product Details Page:** Confirmed all product details are displayed correctly, including images, descriptions, and pricing. Product details are shown accurately and align with the expected design.

## **Summary:**

Day 5 involved significant improvements in both functionality and user experience. The integration of dynamic routing, and search features ensures the application meets user needs effectively. Additionally, rigorous testing and responsiveness optimizations guarantee the app performs well across all devices.

**Prepared By :**

**ERUM BABY WARIS**

**ROLL NO : 422422**

**BADGE:RISING STAR**