Day 4 - Dynamic Frontend Components for [Bandage-App E-Commerce Marketplace]

Introduction

This report documents the entire process I followed to develop the dynamic frontend components for my e-commerce platform. The purpose of this platform is to create a seamless shopping experience for users, featuring dynamic product listings, category filtering, search functionality, and other essential e-commerce features. Below, I describe each step I took in detail, highlighting the challenges I faced and the solutions I implemented.

Process Overview

1. Tags and Categories

- **What I Did**:
  - Implemented dynamic filtering based on categories and tags.
  - Created a reusable `FilterComponent` for consistent filtering functionality.
  - Used dropdowns and checkboxes for user input.
- **Challenges I Faced**:
  - Ensuring efficient API calls.
- **Solution**: Applied debouncing and caching mechanisms to optimize performance.

Rustic Vase Set

Bring the charm of nature into your home with the Rustic Vase Set. Perfect for those who appreciate ...

$210
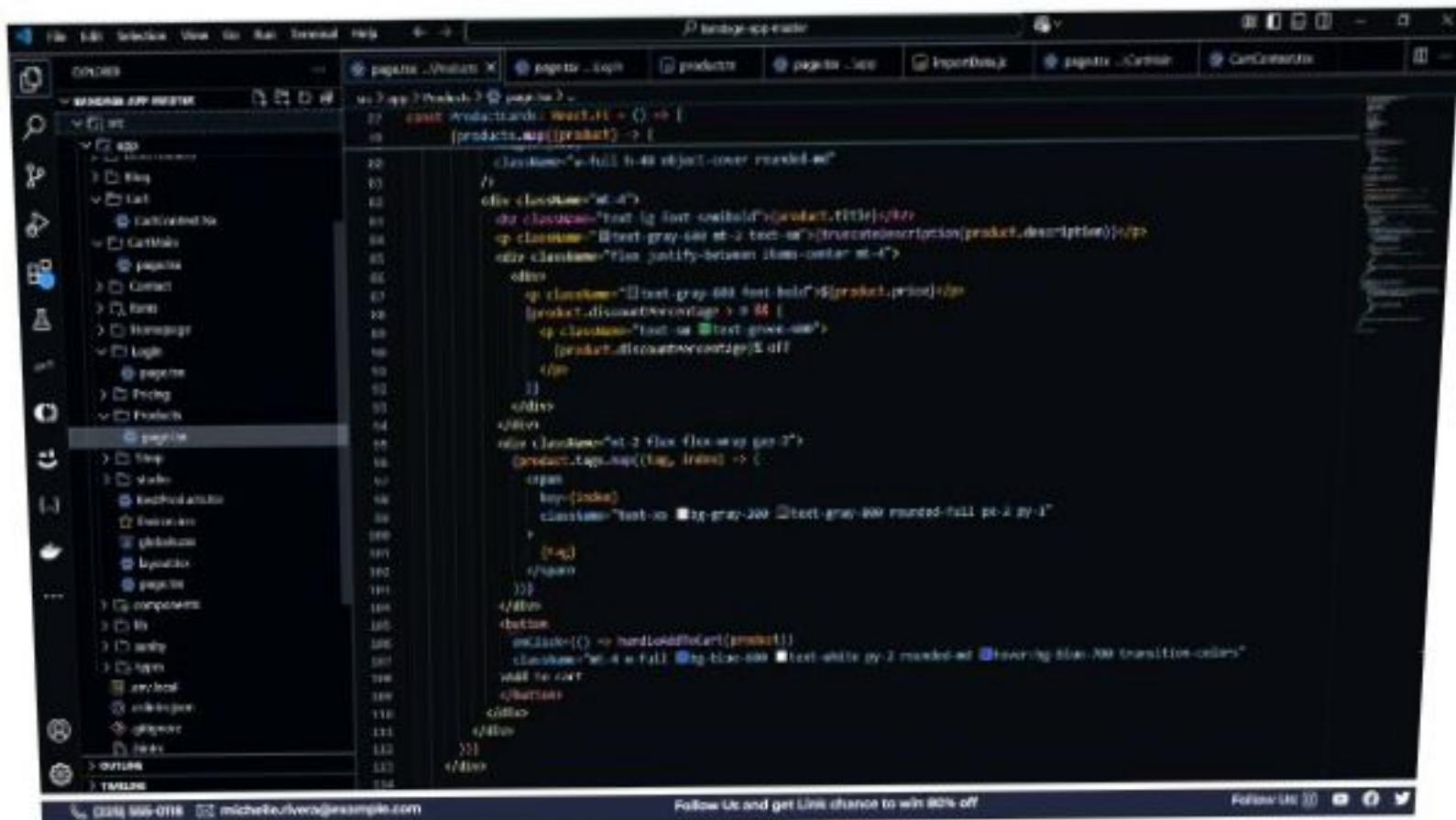
rustic   vase   home decor   vintage

interior design

Add to cart

2. Pagination

- **What I Did:**
  - Developed a `PaginationComponent` to divide products into smaller, navigable pages.
  - Used Next.js's `getStaticProps` and `getServerSideProps` for efficient data fetching.
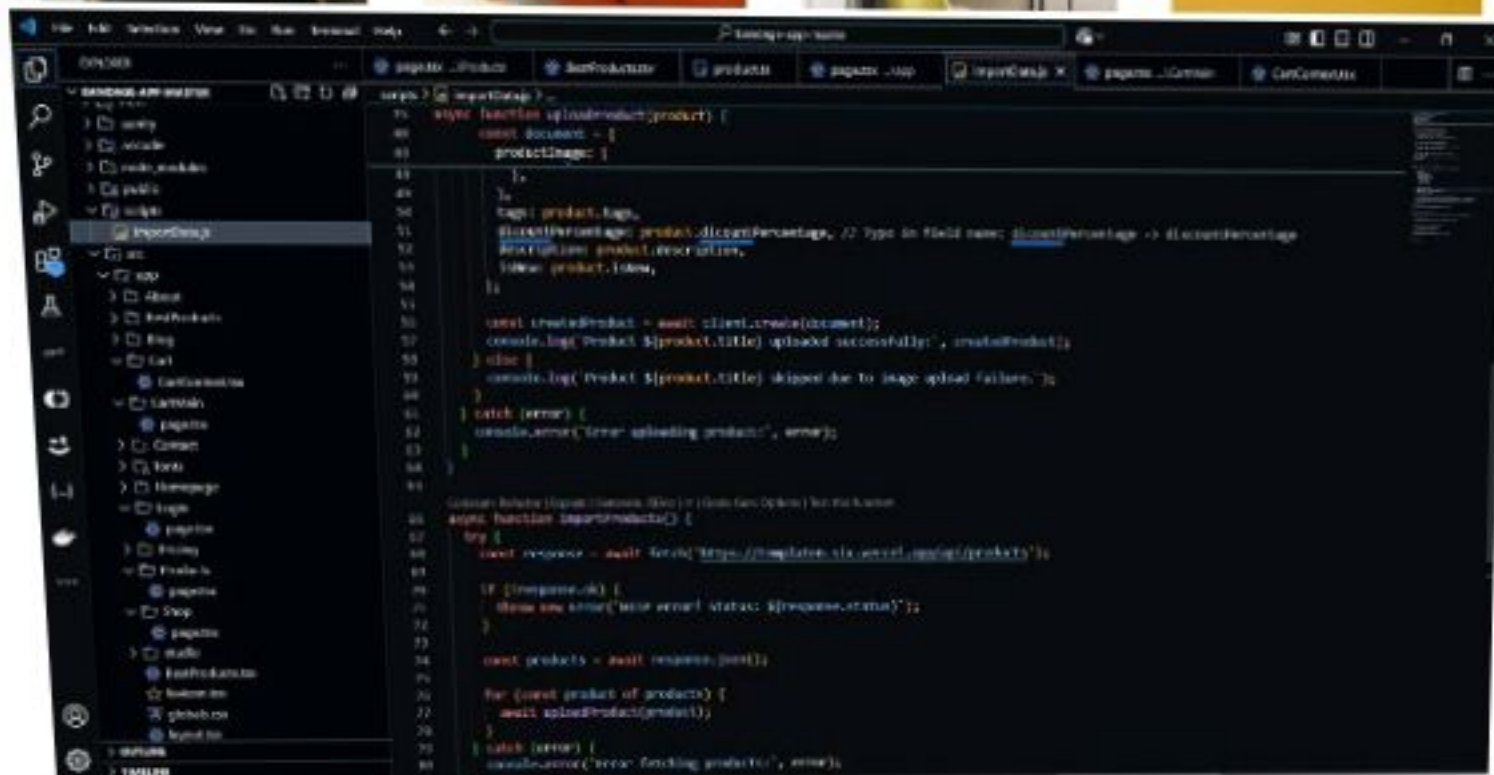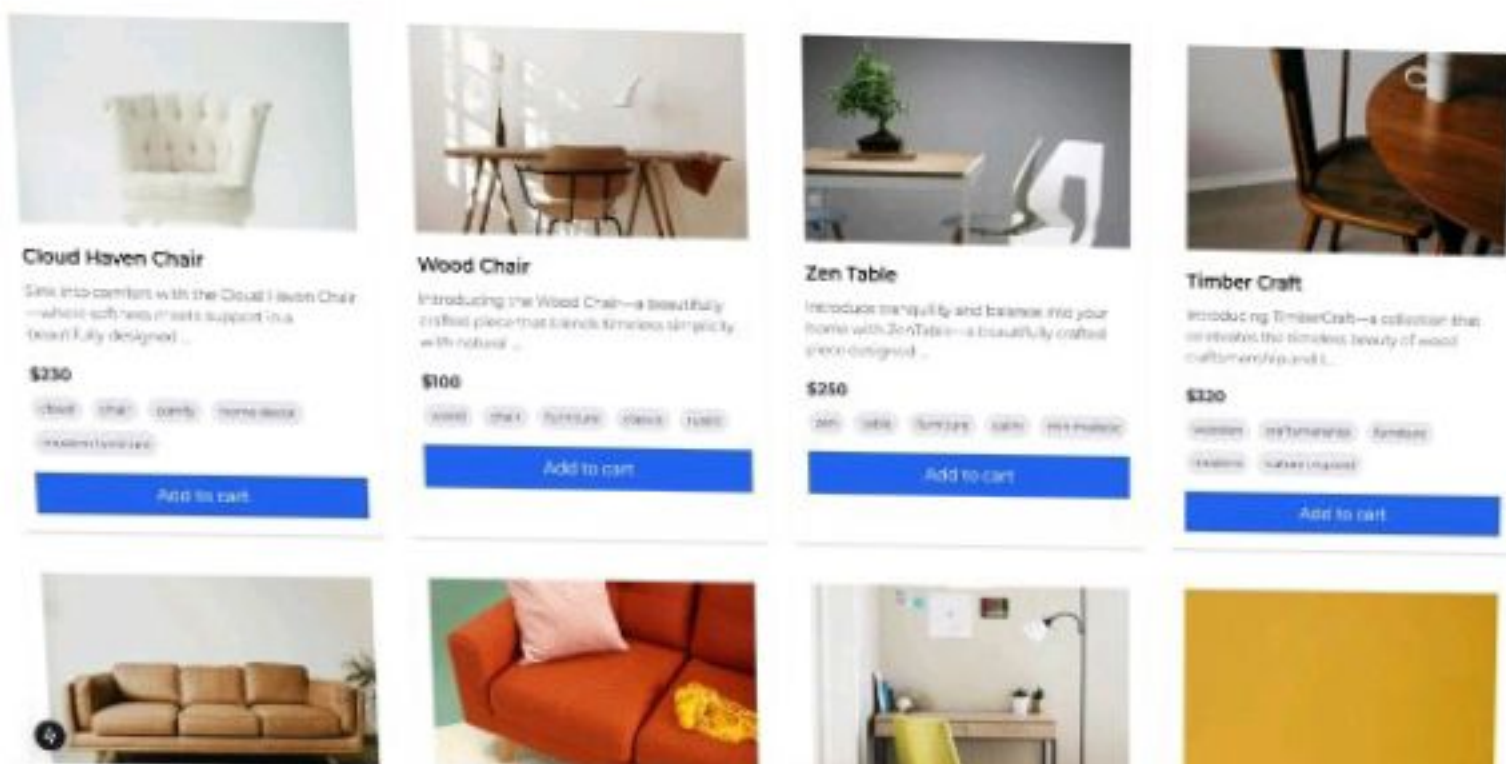 - Styled navigation buttons for easy use.
- **Challenges I Faced:**

- o Smooth page transitions.
- **Solution**: Added loading indicators to enhance user feedback.
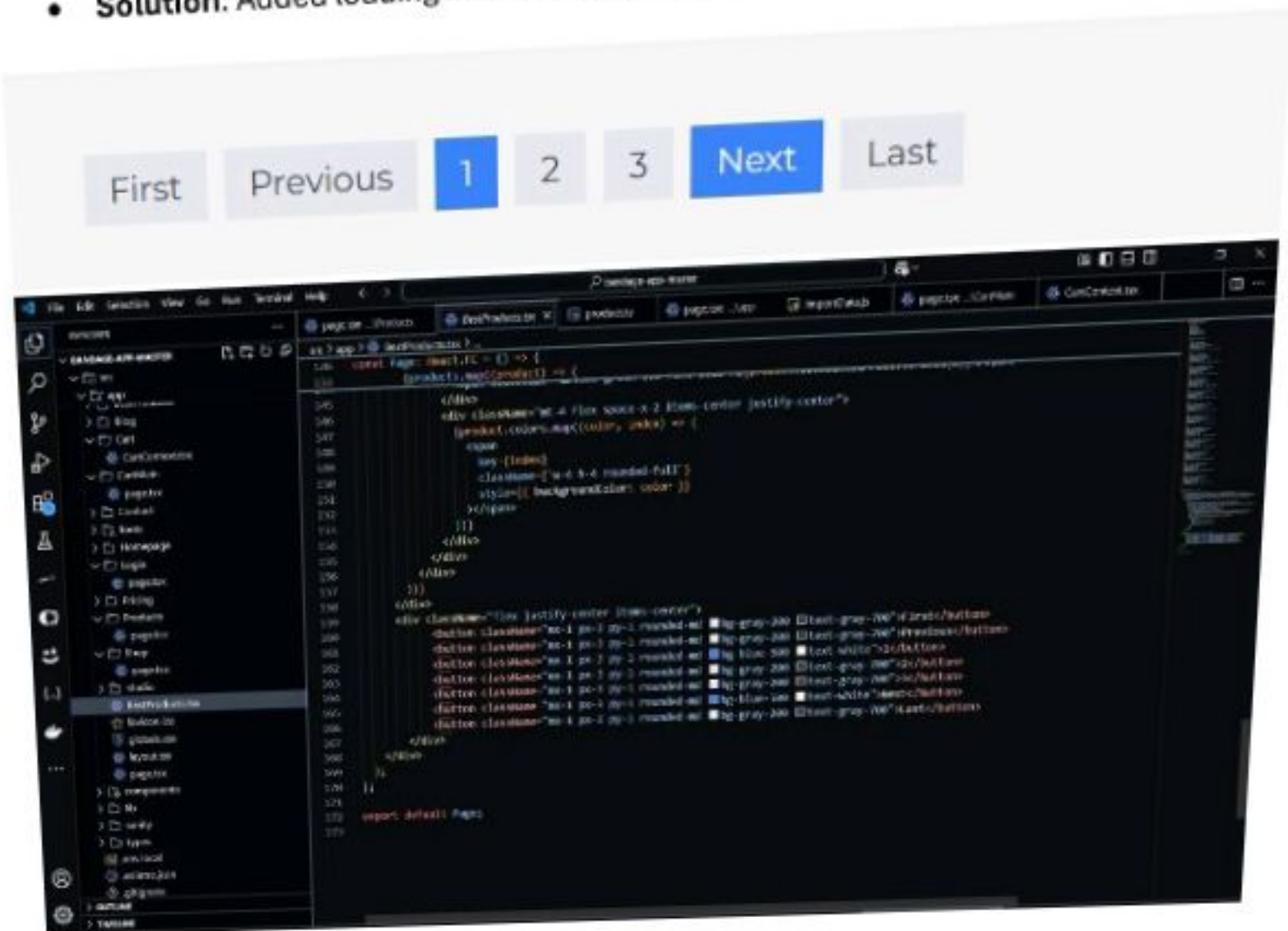
3. Product Card

- **What I Did:**
  - o Designed a `ProductCard` component to display product details like name, price, stock status, and image.
  - o Styled the cards using Tailwind CSS for responsiveness.
  - o Added interactive buttons for "Add to Cart" and "Wishlist."
- **Challenges I Faced:**
  - o Handling inconsistent product image sizes.
- **Solution**: Used CSS `object-fit` properties to maintain uniformity.

Cloud Haven Chair

Sink into comfort with the Cloud Haven Chair —where softness meets support in a beautifully designed ...

$230

cloud chair comfy home deco
modern furniture

Add to cart

Wood Chair

Introducing the Wood Chair—a beautifully crafted piece that blends timeless simplicity with natural ...

$100

wood chair furniture classic rustic

Add to cart

Zen Table

Introduce tranquility and balance into your home with Zen Table—a beautifully crafted piece designed ...

$250

zen table furniture calm minimalist

Add to cart

Timber Craft

Introducing TimberCraft—a collection that elevates the timeless beauty of wood craftsmanship and t...

$320

wooden craftsmanship furniture
timeless nature inspired

Add to cart

4. Product Listing

- **What I Did:**
  - Created a ProductList component to display a grid of products fetched dynamically from the API.
  - Implemented lazy loading for improved performance.
- **Challenges I Faced:**
  - Managing large datasets.
- **Solution**: Implemented infinite scrolling for smoother user experience.
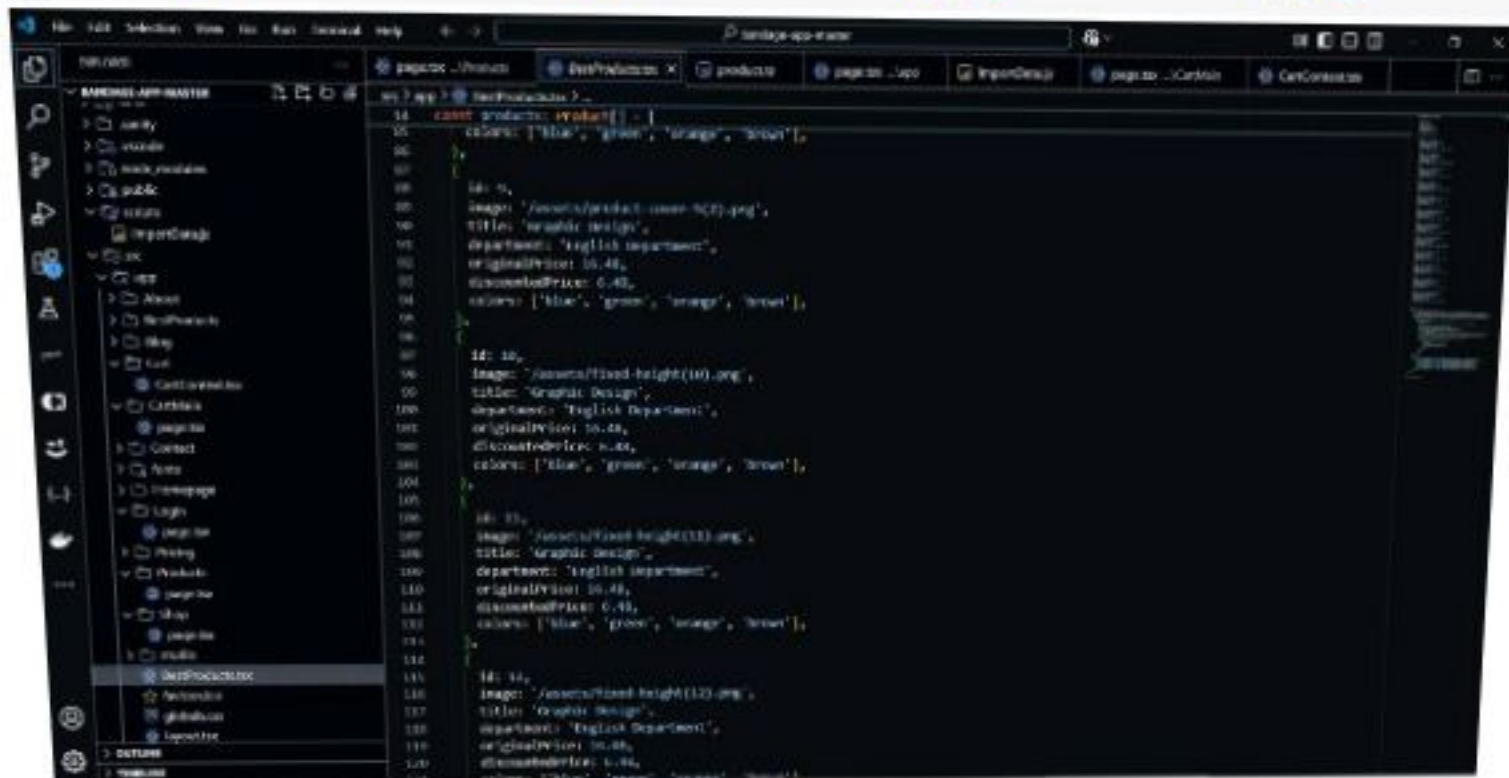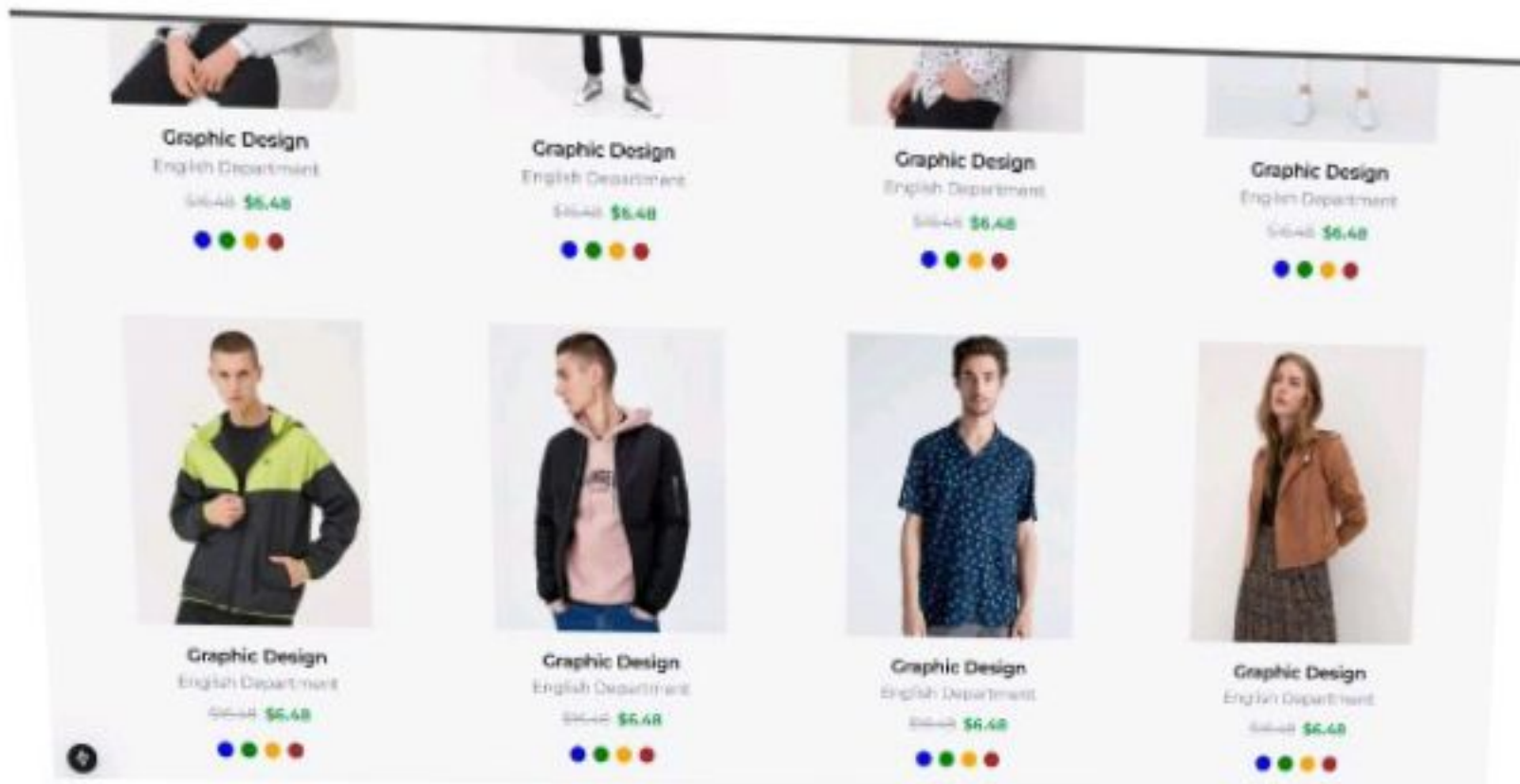
5. Add to Cart

- **What I Did:**
  - Developed the cart functionality using React Context API to manage the global state.
  - Enabled dynamic quantity updates for cart items.
- **Challenges I Faced:**
  - Syncing cart state across multiple components.
- **Solution**: Used local storage to persist cart data.

Nordic Elegance
$250
Add to cart

Serene Seat
$350
Add to cart

The Lucky Lamp
$200
Add to cart

Retro Vibe
$340
Add to cart

Cart Summary
Serene Seat
Rustic Vase Set
The Lucky Lamp
Retro Vibe

6. Login and Sign-Up Page

- **What I Did:**
  - Built user authentication pages for login and sign-up with form validation.
  - Integrated Firebase for secure authentication and user management.
- **Challenges I Faced:**
  - Handling errors during login and sign-up.
- **Solution:** Provided user-friendly error messages for better feedback.
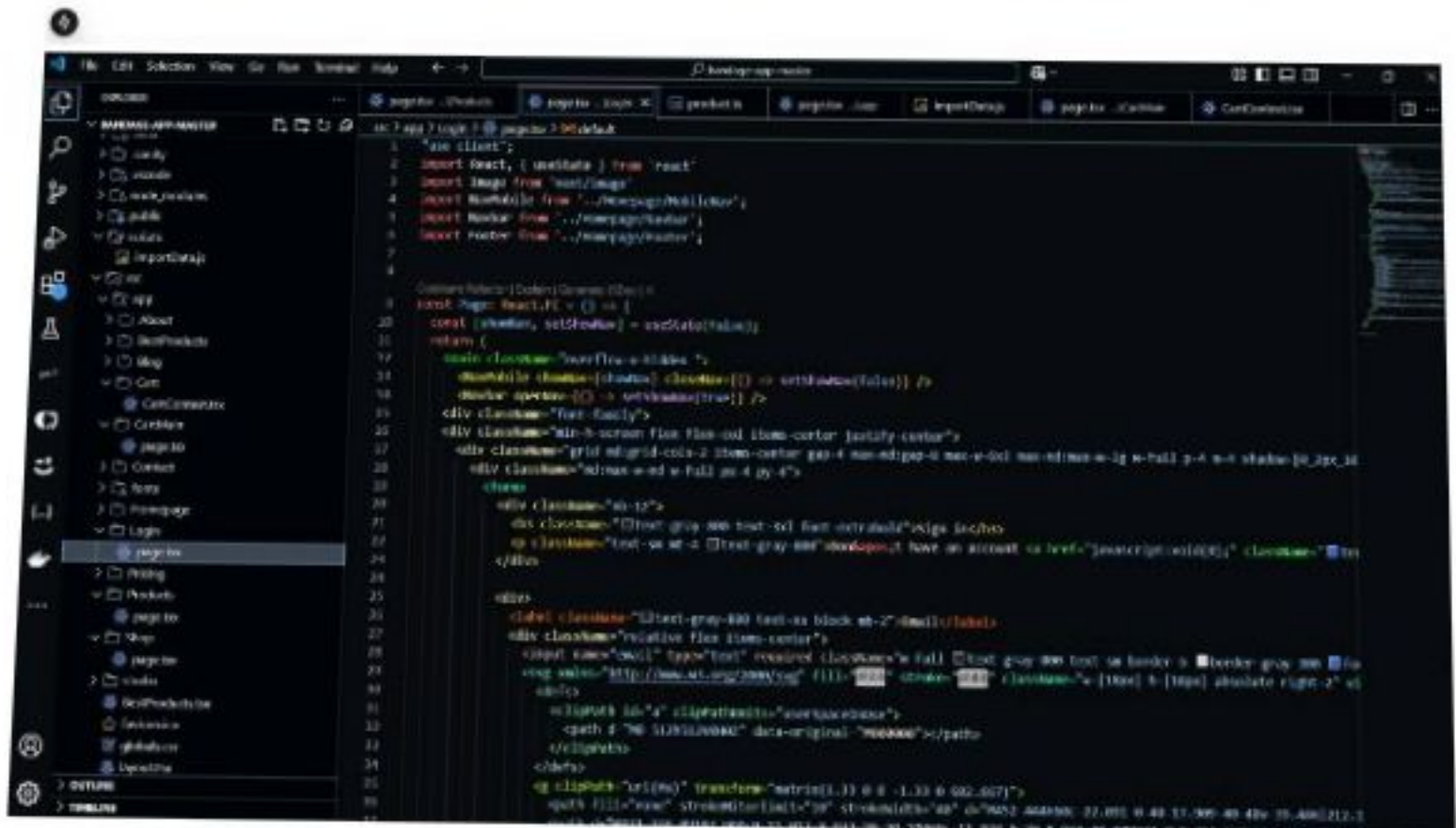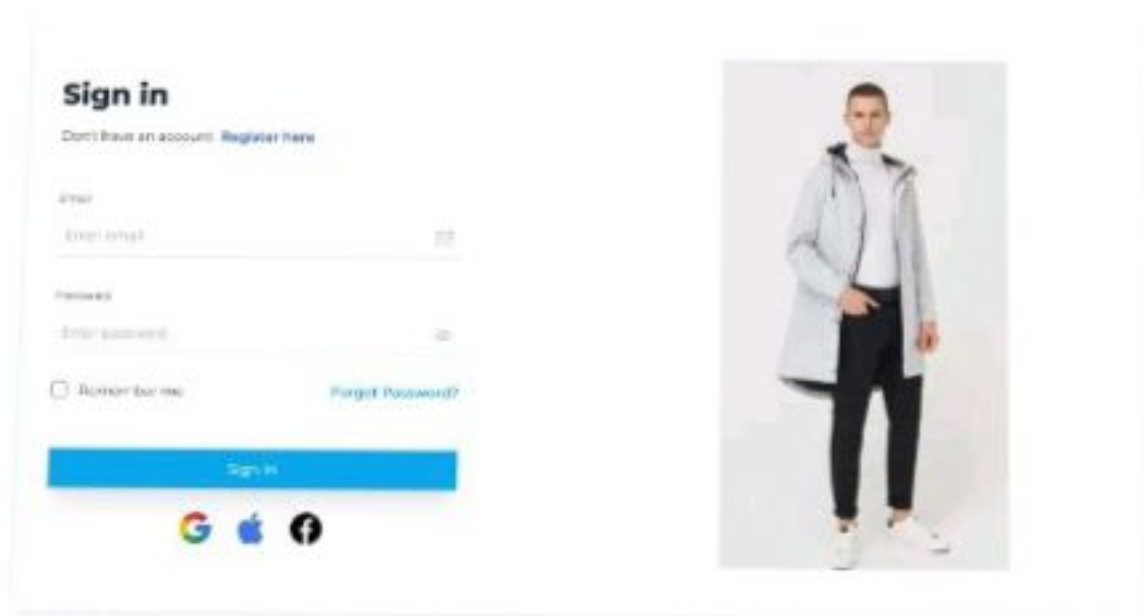
7. Search Bar Component

- **What I Did:**
  - Developed a `SearchBar` component for searching products by name or tags.
  - Integrated API calls to fetch search results in real time.
- **Challenges I Faced:**
  - Ensuring case-insensitive searches.
- **Solution:** Normalized search input and data using JavaScript string methods.

Achievements

By the end of the development process, I successfully completed:

1. A fully functional product listing page displaying dynamic data from the API.
2. Individual product detail pages implemented with dynamic routing.
3. Advanced filters for categories and tags.
4. A search bar for efficient product discovery.
5. Pagination for better user experience with large datasets.
6. Responsive and professional styling for all components.
7. Modular and reusable components for future scalability.