Day 4 - Dynamic Frontend Components - [Bandage]

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1. Introduction

This assignment focuses on building dynamic frontend components for a modern e-commerce marketplace. The goal was to implement various components that enhance user interaction, provide a seamless shopping experience, and optimize the marketplace's usability. We used React.js and Next.js for implementing dynamic features such as product listing, product details, search functionality, cart system, and more.

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2. Functional Deliverables

A. Product Listing Component

- Rendered product data dynamically in a grid layout using `ProductCard` components.
- Each product card includes key details such as:
    - Product Name
    - Price
    - Image
    - Stock Status
    -

B. Product Detail Component

- Created dynamic routing using **Next.js** to generate individual product pages.
- Each page includes:
    - Product Description
    - Price
    - Available Sizes or Colors
    - "Add to Cart" button

Top Picks For You

Find a bright ideal to suit your taste with our great selection of suspension, floor, and table lights.

Bed Room	**Living Room**	**Dining Room**	**Study Room**
Rs. 250,000.00	Rs. 550,000.00	Rs. 350,000.00	Rs. 250,000.00

Side Sofa	**Skylar sofa**	**Trinqal sofa**	**Wenda sofa**
Rs. 550,000.00	120000	240000	Rs. 550,000.00

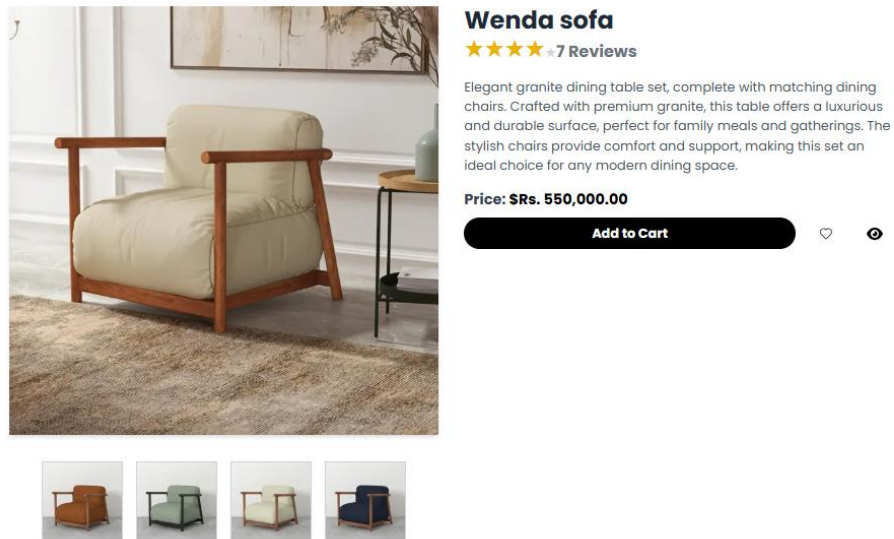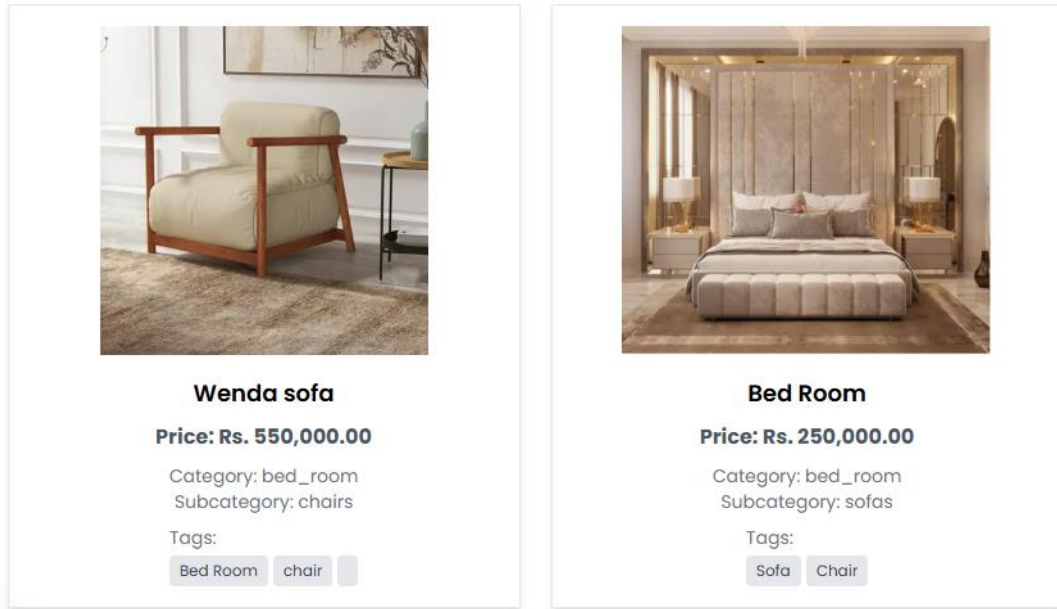|			
Front sofa	**latest sofa**	**Bed Room**	**sofa sets**
Rs. 550,000.00	Rs. 550,000.00	Rs. 250,000.00	Rs. 550,000.00

C. Category Component

- Dynamically fetches and displays categories.
- Allows users to filter products by selected categories.

E. Cart Component

- Displays items added to the cart along with quantities and total price.
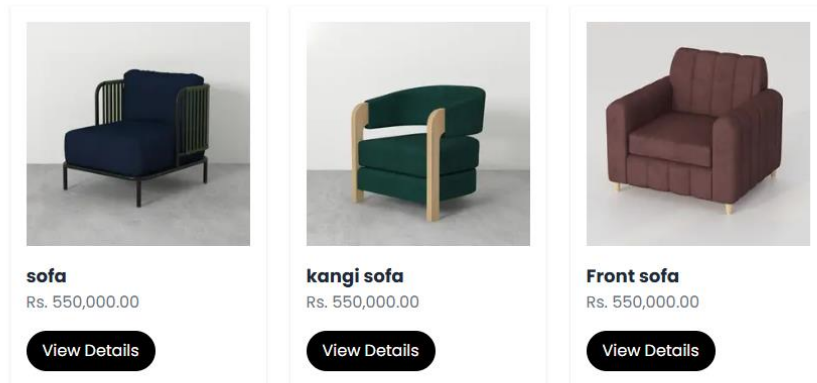- Integrated state management to track cart items and their updates.

F. Wishlist Component

- Users can add products to their wishlist for future reference.
- Data persists using `localStorage` for the wishlist.
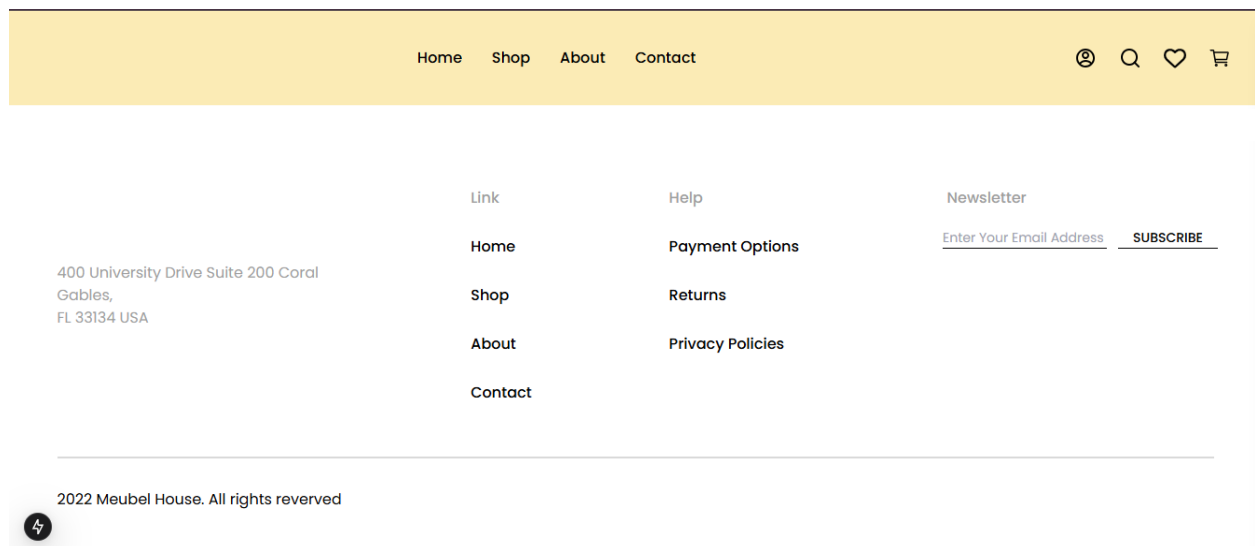
H. Related Products Component

- Displays related products on product detail pages.
- The recommendations are based on tags, categories, or user behaviors
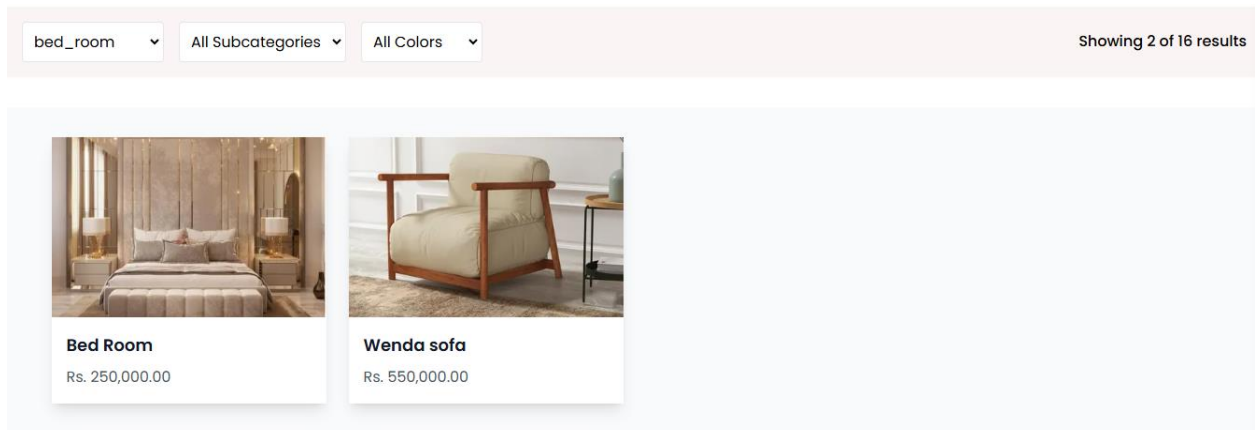-

Related Products

sofa	kangi sofa	Front sofa
Rs. 550,000.00	Rs. 550,000.00	Rs. 550,000.00
View Details	View Details	View Details

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I. Footer and Header Components

- Responsive header and footer components with links to Home, About, Contact, etc.

Home   Shop   About   Contact

Link	Help	Newsletter
Home	Payment Options	Enter Your Email Address SUBSCRIBE
Shop	Returns	
About	Privacy Policies	
Contact		

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J. Filter Panel Component

- Added advanced filters for products based on price, brand, and availability.
- Filters are displayed in a dedicated panel on the side.

Bed Room
Rs. 250,000.00

Wenda sofa
Rs. 550,000.00

R. Blog

- Users can view blog posts and leave comments on them.
- Comments are displayed dynamically, and users can interact with the posts.

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3. Key Features Implemented

A. Login and Signup Pages:

- Created **Login** and **Signup** forms:
  - **Login Page:** Users can log in using their credentials (currently static data).
  - **Signup Page:** Users can create an account (form submission with validation in place, dynamic implementation will follow in future stages).

B. Dynamic Data Rendering:

- Integrated **API calls** for fetching product data, categories, reviews, and customer feedback.
- All product and user-related data is rendered dynamically, ensuring the marketplace stays up-to-date.

C. User Interaction:

- Implemented interactive elements such as adding to the cart, wishlist, and submitting reviews.
- Feedback and ratings are stored dynamically and shown on the product pages.

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4. Challenges Faced and Solutions

1. **Dynamic Routing for Product Detail Pages:**

   o **Challenge:** Ensuring that product data was dynamically fetched for individual product pages.
   o **Solution:** Used **Next.js** dynamic routing methods (`getStaticPaths` and `getStaticProps`) to pre-render product pages.
2. **Multi-Language Support:**

   o **Challenge:** Translating dynamic content effectively.
   o **Solution:** Built a language switcher UI with future integration plans for dynamic translations using an external API.
3. **Checkout Process:**

   o **Challenge:** Managing a smooth multi-step checkout flow.
   o **Solution:** Created separate components for each step (billing, shipping, and payment), managed state efficiently across these steps.

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5. Best Practices Followed

1. **Modular and Reusable Components:**
   o Ensured the code was clean, modular, and reusable (e.g., `ProductCard`, `SearchBar`, `Cart`).
2. **State Management:**
   o Managed global state using React's `useState` and context APIs for cart data, user authentication, and other features.
3. **Responsive Design:**
   o Ensured that all components are fully responsive using **CSS Grid/Flexbox** and media queries.
4. **User Experience Focused:**
   o Focused on creating intuitive features like the search bar, advanced filters, and seamless checkout process.

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6. Pending Work

1. **Login and Signup Dynamic Functionality:**
   o Although the login and signup pages are created, their dynamic functionality (e.g., form validation, API integration for authentication) still needs to be implemented.
2. **Social Media Sharing:**

  o Social media sharing buttons are designed but need dynamic API integration for platforms like **Facebook**, **Twitter**, and **WhatsApp**.

3. **AI Recommendations:**
  o Product recommendations are static, but integrating AI-based recommendations based on user behavior or preferences is a future task.

4. **Admin Dashboard:**
  o The admin panel needs to be built for managing products, orders, and user data.

5. **Gift Cards & Subscription Management:**
  o UI for managing gift cards and subscriptions needs to be designed and integrated.

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7. Code Deliverables

- **Key Components:**

  o ProductCard, ProductList, ProductDetail, Cart, Wishlist, Review, FilterPanel, SearchBar, Blog, etc.
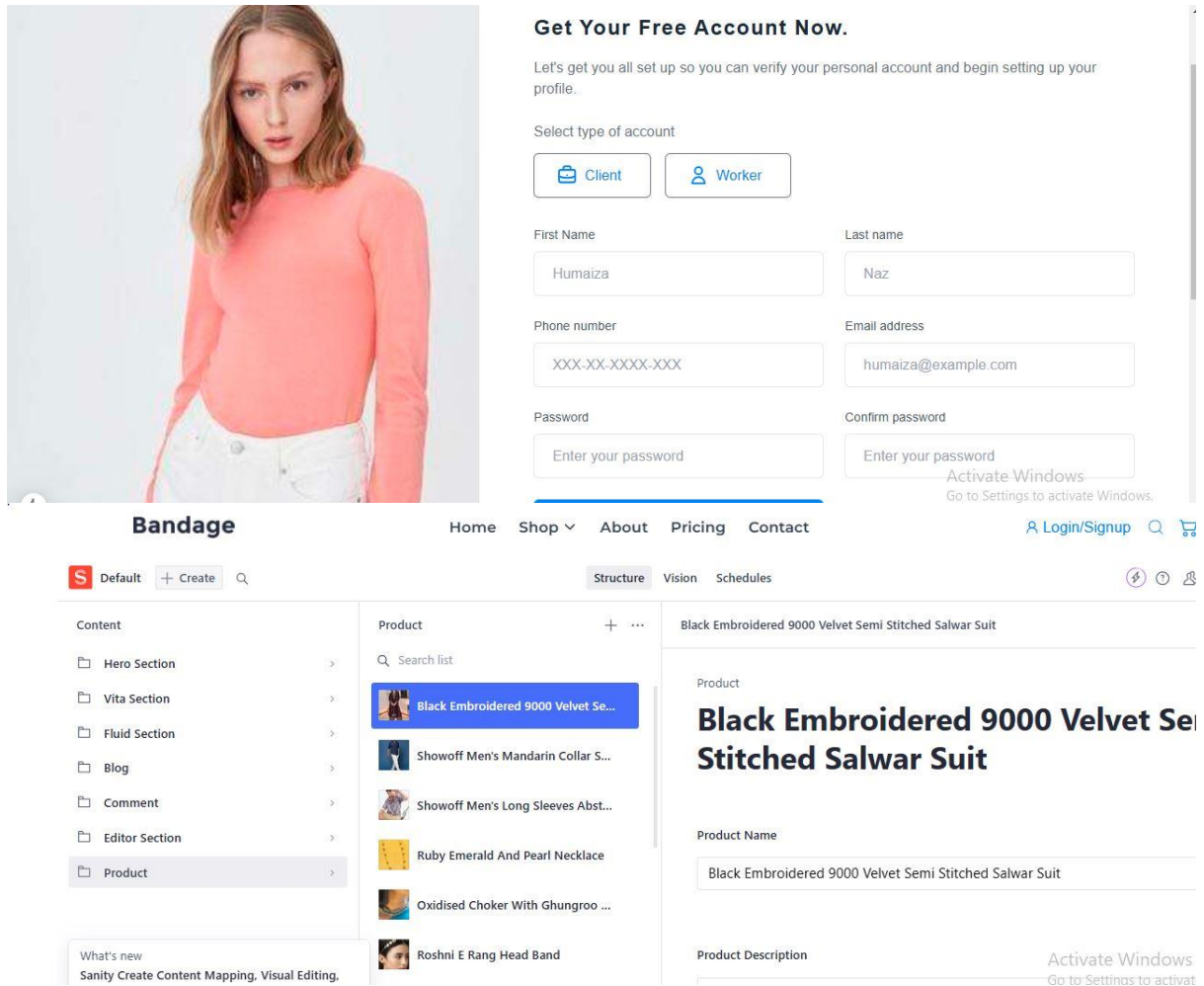
- **State Management:**

  o Implemented global and local state using React's `useState` and `useContext`.

- **API Integration:**

  o Used **Next.js API routes** for fetching dynamic data (product details, categories, reviews, etc.).

- **Form Validation:**

  o Applied basic validation for forms (Login, Signup, Checkout).

Conclusion

This assignment covers the development of dynamic frontend components for an e-commerce marketplace, focusing on user interactivity, data management, and enhancing the user experience. While several key features have been implemented successfully, there are still some dynamic features (like login, signup, AI recommendations) that need to be finalized in future phases.