Day 4 - Dynamic Frontend Components - E-Commerce

Overview

This document outlines the key functionalities implemented in the E-Commerce website. The platform focuses on providing users with an efficient and dynamic shopping experience, integrating features such as search functionality, dynamic routing for product detail pages, an add-to-cart system, and category-based filtering.

Key Functionalities

1. **Search Functionality**
   The search feature allows users to quickly find specific products by name or relevant keywords. This functionality ensures a seamless user experience with the following capabilities:
- **Real-time Search:** Users receive instant results as they type in the search bar.
- **Keyword Matching:** The search algorithm matches user input with product names and tags.
- **Responsive Design:** The search bar is designed to work across all devices, ensuring accessibility on mobile, tablet, and desktop.

Implementation Details:

- The search query is processed on the client side using JavaScript and dynamically filtered through the fetched product data.
- Suggestions or filtered results are displayed in a dropdown or a dedicated search results page.
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2. ***Dynamic Routing for Product Detail Pages***
   Each product on the website has a dedicated detail page accessible via dynamic routing. This functionality provides users with comprehensive information about individual products.
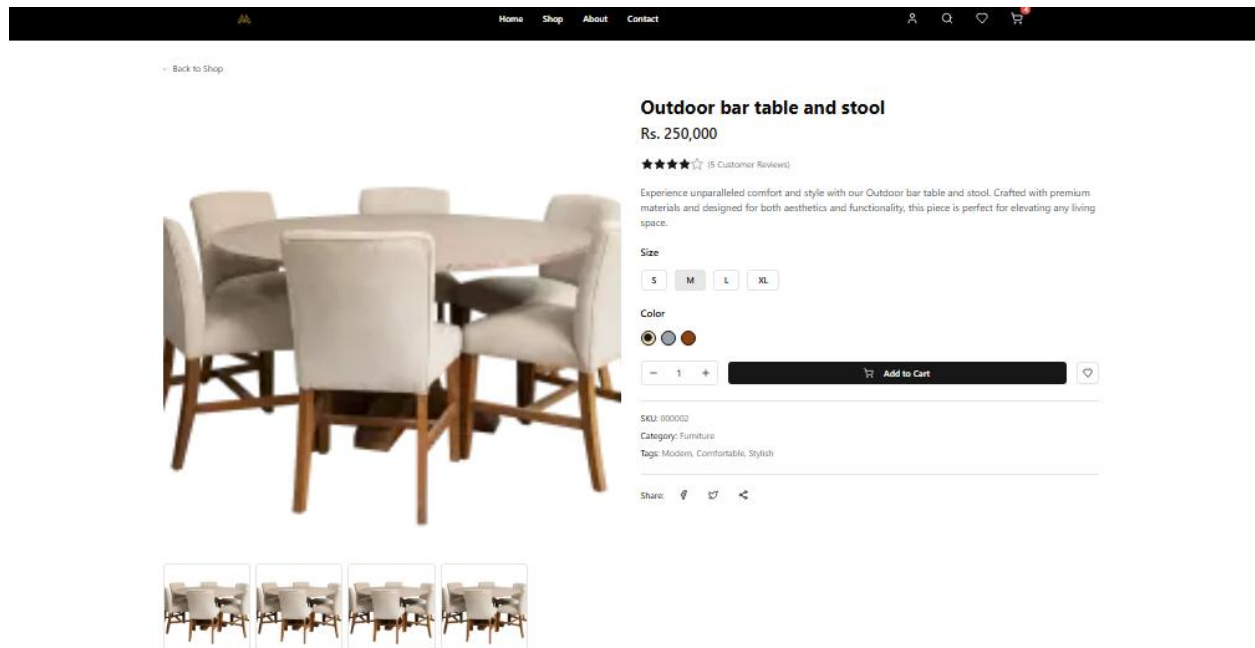
Key Features:

- **Dynamic URLs:** URLs are generated dynamically using product IDs or slugs for SEO-friendly routing.
- **Product Details:** Information displayed includes:
  - Product Name
  - Description
  - Price
  - Available Variants (size, color, etc.)
  - Images

      ○   Stock Status

Implementation Details:

- Built using Next.js dynamic routing to generate pages at runtime.
- Data for individual products is fetched from a headless CMS (e.g., Sanity) or an API.
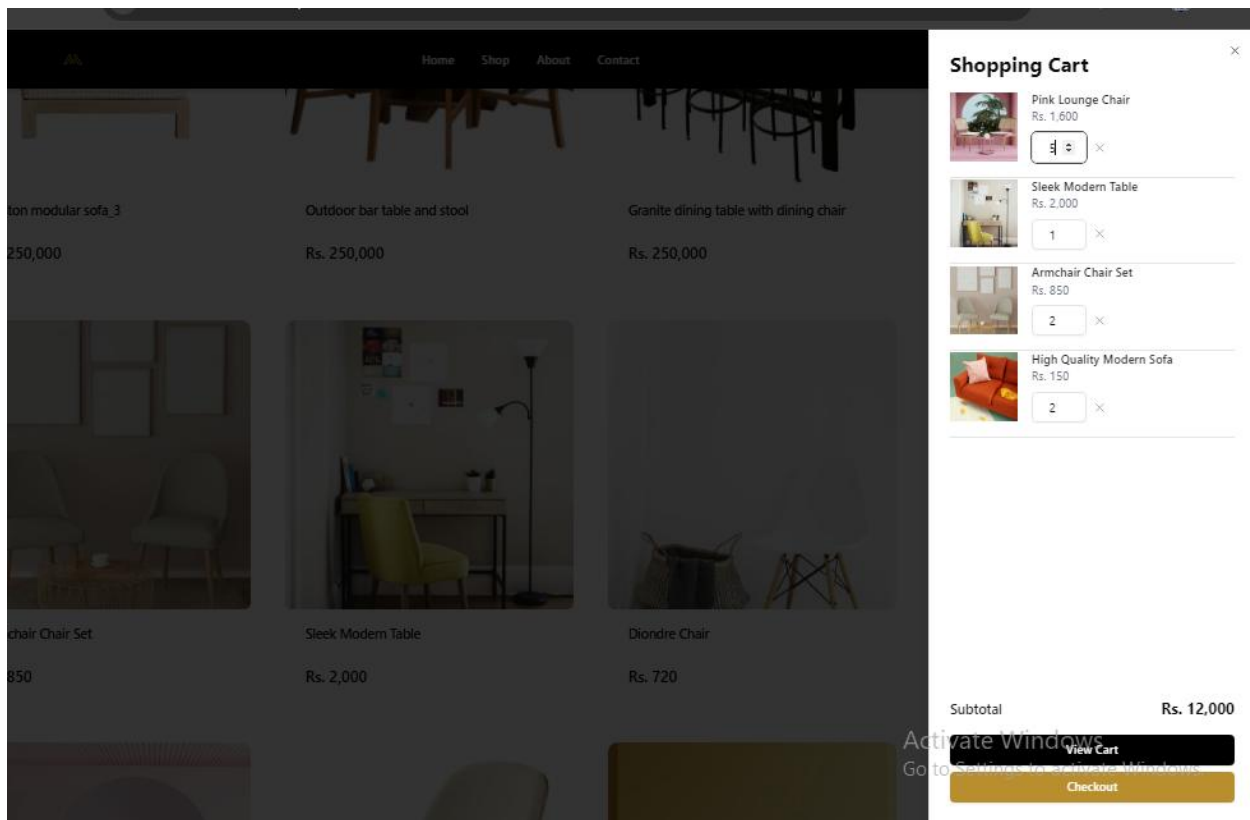

3. ***Add-to-Cart Functionality***
   The add-to-cart system allows users to select products for purchase, view them in the cart, and proceed to checkout seamlessly.

Key Features:

- **Add/Remove Products:** Users can add products to the cart with a single click and remove them when needed.
- **Cart Summary:** Displays selected items, quantities, and total price.
- **Persistent Cart:** Items remain in the cart even if the page is refreshed.

Implementation Details:

- Cart data is managed using React state and stored in local storage for persistence.
- Updates dynamically reflect changes without reloading the page.
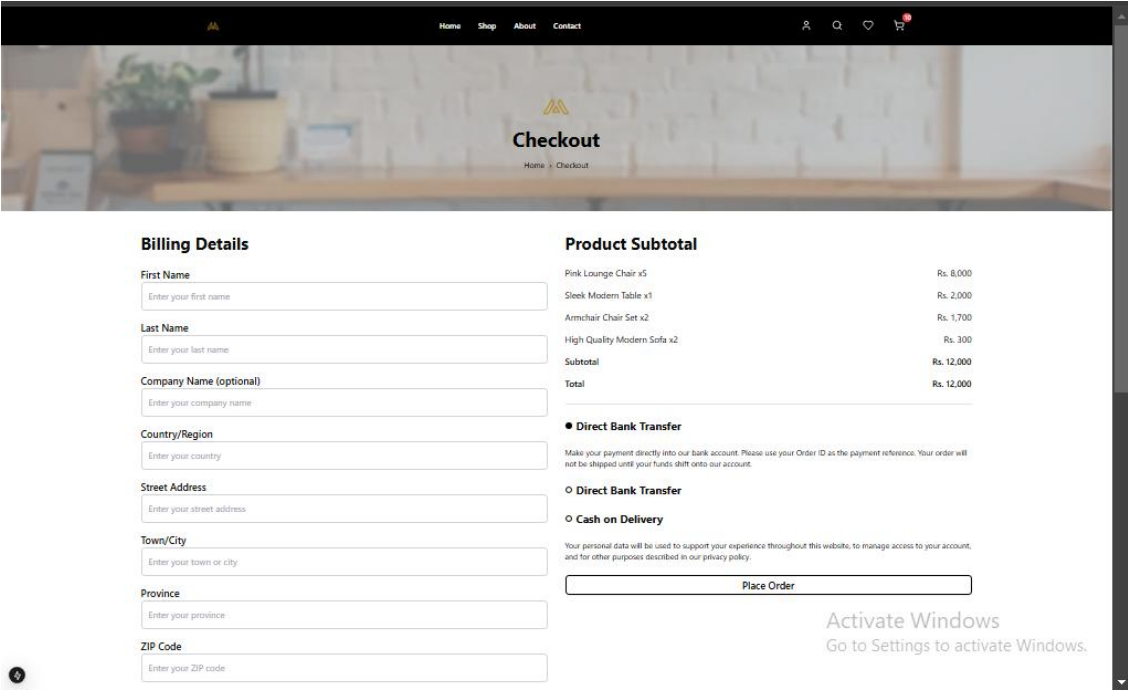
4. **Category Filter with Checkboxes**
   Category-based filtering allows users to refine their search and browse items by specific categories.

Key Features:

- **Dynamic Categories:** Categories are fetched dynamically from the CMS or API.
- **Multi-Select Checkboxes:** Users can select multiple categories simultaneously to view relevant items.
- **Real-Time Filtering:** The product grid updates immediately based on the selected categories.

Implementation Details:

- Filters are implemented using React state and checkbox inputs.
- Products are dynamically filtered by matching their category tags with user-selected optionS.

Conclusion

The E-Commerce website's functionalities are designed to provide a seamless, user-friendly experience. By integrating features such as a search bar, dynamic product pages, add-to-cart functionality, and category filters, the platform ensures efficiency and scalability. Future enhancements could include advanced filtering options, wish list functionality, and personalized recommendations to further enhance the shopping experience.

Frontend Component Development	Styling and Responsiveness	Code Quality	Documentation and Submission	Final Review
✓	✓	✓	✓	✓

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