Day 4!

Detailed Documentation for Dynamic Components and Functionalities

This documentation provides an in-depth analysis of the key functionalities for a dynamic marketplace, emphasizing modularity, reusability, and integration with Sanity CMS. Each feature is described comprehensively, followed by a conclusion summarizing the approach.

Step 1: Functionalities Overview

The project implements the following core functionalities:

1. **Product Listing Page**
2. **Dynamic Route**
3. **Cart Functionality**
4. **Checkout**
5. **Price Calculation**
6. **Wishlist Dunctionality**
7. **Search engine**
8. **Products Category**
9. **User Authentication**

Each functionality contributes to building a responsive and scalable marketplace.

Step 2: Functionalities in Detail

1. Product Listing Page

The Product Listing Page is the primary interface where users can view all the available products in a structured and visually appealing format. Products are displayed dynamically, fetched from Sanity CMS, and rendered in a grid or list layout.

Detailed Description:

- The page offers sorting and filtering options to enhance usability, allowing users to organize products based on price, categories, or popularity.
- Pagination ensures the seamless handling of large datasets, improving performance and user experience.
- Responsive design ensures compatibility across devices, from desktops to mobile phones.
- Integration with Sanity CMS ensures real-time updates, so any product changes in the backend are instantly reflected.
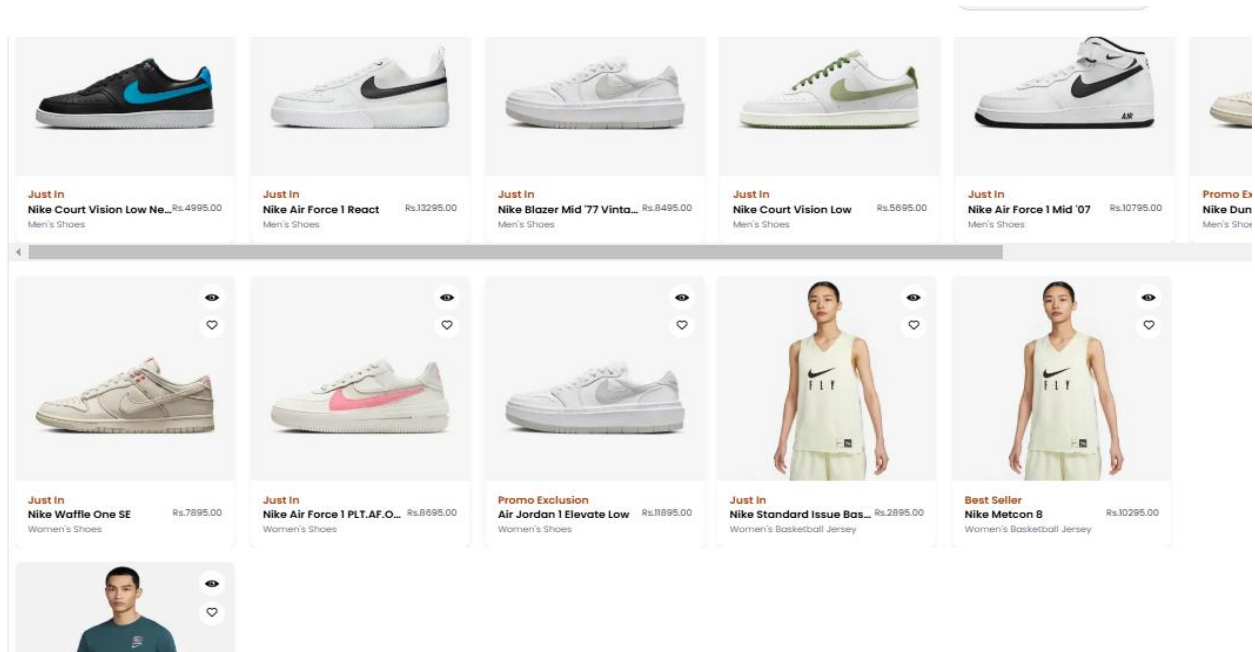
2. Dynamic Route

Dynamic routing allows for the creation of individual product detail pages, enabling users to view detailed information about each product.

Detailed Description:

- Every product has a unique identifier (ID or slug) used to dynamically generate its URL (e.g., /product/[id]).
- These pages are server-rendered to improve SEO and provide faster initial load times.
- Dynamic routes display details like product descriptions, images, price, stock status, and reviews.
- This approach ensures scalability, allowing new products to automatically generate corresponding pages without manual intervention.

Nike Court Vision Low Next Nature

Rs. 4,995

The Nike Court Vision Low Next Nature combines retro basketball style with modern sustainability. Made with at least 20% recycled content, it features a sleek design, durable materials, and ultimate comfort for everyday wear.

Category: Men's Shoes

Status: Just In

Inventory: 35 in stock
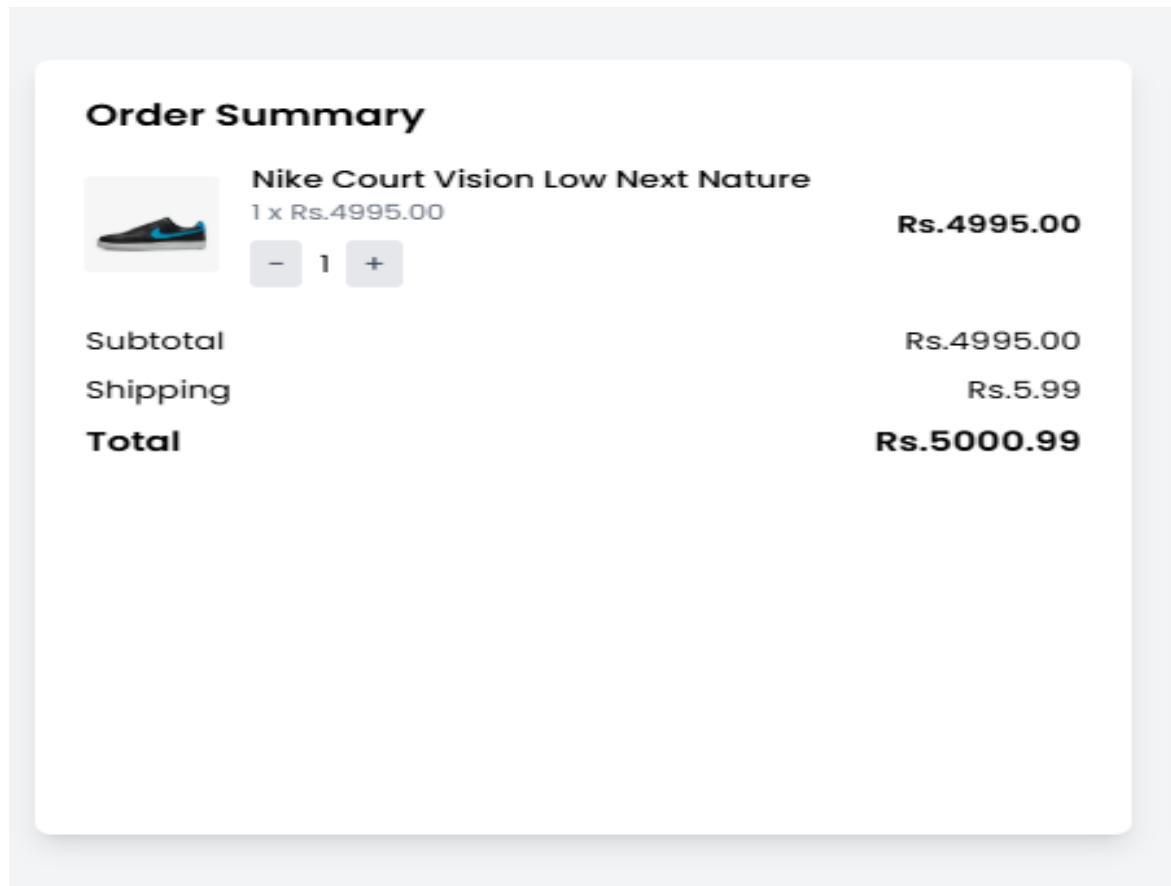
Available Colors:

[Add to Cart] ♡

3. Cart Functionality

The Cart Functionality manages the user's selected items, providing a seamless shopping experience by tracking their choices and summarizing costs.

Detailed Description:

- Users can add products to their cart directly from the product listing or detail page.
- The cart dynamically updates quantities and calculates the total cost, ensuring a real-time experience.
- A mini-cart displays a quick summary of selected items, while a detailed cart page offers options to edit or remove items.
- State management tools, such as React Context or Redux, are used to maintain the cart state across the application.
- Cart data persistence is achieved using local storage or session storage, ensuring the cart remains intact even if the page is refreshed.

Order Summary

Nike Court Vision Low Next Nature
1 x Rs.4995.00   **Rs.4995.00**

− 1 +

Subtotal   Rs.4995.00
Shipping   Rs.5.99
Total   **Rs.5000.99**

4. Checkout

The Checkout functionality streamlines the purchase process, collecting and validating user information to finalize the order.

Detailed Description:

- The checkout process is divided into multiple steps: billing details, shipping address, and payment information.
- A dynamic progress tracker indicates the current step, enhancing the user experience.
- Input validation ensures that all required fields are filled correctly, reducing errors during order submission.
- Although payment integration can be mocked initially, it is designed to be extendable with payment gateways like Stripe or PayPal.
- Order summaries are displayed at the end, allowing users to confirm their details before finalizing the purchase.

5. Price Calculation

Price Calculation dynamically computes the total cost of items in the cart, factoring in taxes, discounts, and other adjustments.

Detailed Description:

- The subtotal updates in real-time as items are added, removed, or quantities are adjusted.
- Taxes and discounts are calculated dynamically based on predefined rules, offering flexibility to apply promotional codes.
- The calculation logic is optimized to handle multiple scenarios, such as bulk discounts or tiered pricing.
- This functionality improves transparency by breaking down costs, giving users a clear understanding of the final price.

```
const subtotal = cartItems.reduce((sum, item) => sum + item.price * item.quantity, 0)
const shippingCost = 5.99 // You can adjust this or make it dynamic
const total = subtotal + shippingCost

const handleIncrement = (id: string) => {
  dispatch(increaseTheQuantity(id))
}

const handleDecrement = (id: string) => {
  dispatch(decreaseTheQuantity(id))
}
```
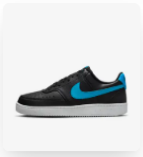
6. Add to wishlist

My user have permission to add the product in wishlist.
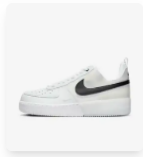
Detailed Description

- Users can add products to their Wishlist directly from the product listing or detail page.
- The Wishlist dynamically updates quantities and calculates the total cost, ensuring a real-time experience.
- State management tools, such as React or Redux, are used to maintain the wishlidt state across the application.

Your Wishlist

Nike Court Vision Low Next Nature
Rs. 4995
The Nike Court Vision Low Next Nature combines retro basketball style with modern sustainability. Made with at least 20% recycled content, it features a sleek design, durable materials, and ultimate comfort for everyday wear.

Remove from Wishlist

Nike Air Force 1 React
Rs. 13295
The Nike Air Force 1 React takes the classic AF1 to the next level with React technology. Experience unparalleled cushioning and modern design details for all-day comfort and a bold statement of style.

Remove from Wishlist

Nike Blazer Mid '77 Vintage
Rs. 8495
The Nike Blazer Mid '77 Vintage brings old-school basketball style to modern fashion. With a high-top design and premium leather, it delivers unmatched versatility and a timeless look.

Remove from Wishlist

Nike Court Vision Low
Rs. 5695
The Nike Court Vision Low blends basketball-inspired style with everyday comfort. Featuring a sleek design and durable materials, this versatile shoe is perfect for any casual wardrobe.
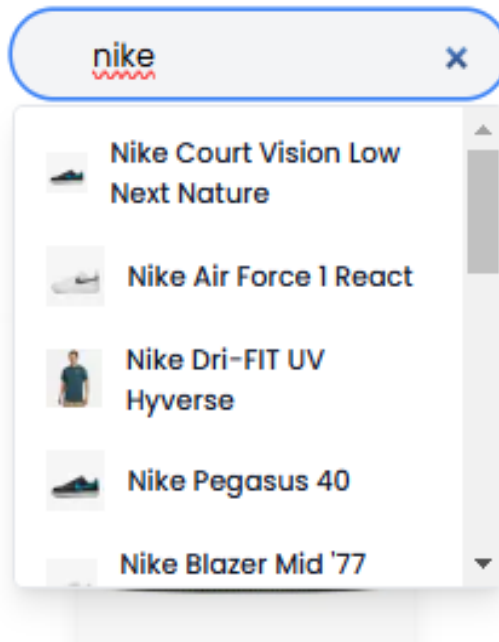
Remove from Wishlist

7. Search Engine.

I will make a search engine for my e-commerce products.

Detailed Description

- I have an input which is basicaaly my search engine.
- When user search any products in input that particular prosuct will show him
- When user click the product the product details will show him.

8. Product Categories

I will make every product category like when my product should conatins a men's hoes category my mens shoes will show in my mens component

Detailed Description

- Mens Category show the mens shoes and the womens category will show the womens shoes and so on
- When user click any category that category all products will show him
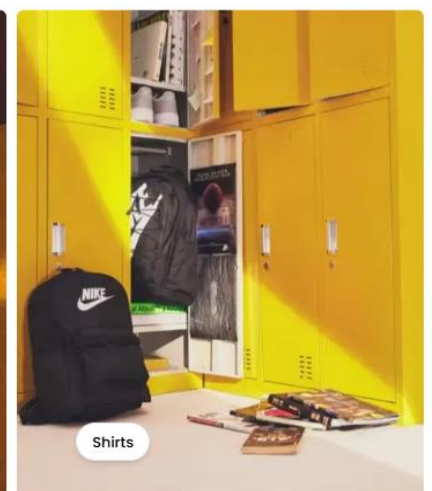
9. User Authentication
I will create a user manangement system with the help of clerk
Detailed Description:

- Clerk play the roll of authentication in my e-commerce store
- When user navigate in my website clerk show the sign in button
- If my user already login in my store the user my clerk will show the user profile
- Inside the profile user have permission to logout form the store
- User have permission to manage his account.
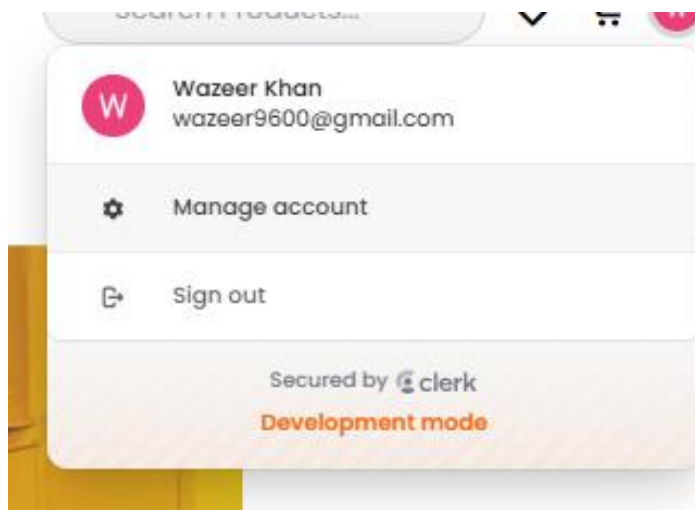
Step 3: Integration with Sanity CMS
Sanity CMS serves as the backend for managing and retrieving product data dynamically.
Detailed Description:

- Products, categories, and other metadata are stored in Sanity CMS, allowing admins to update content without touching the codebase.
- A robust client is used to query Sanity CMS, fetching data dynamically and efficiently.
- Changes made in the CMS are instantly reflected on the frontend, providing a seamless content management experience.
- The integration is designed to be extendable, allowing the addition of new data types or fields as the marketplace grows.

Conclusion
This documentation outlines a comprehensive approach to building dynamic and responsive marketplace components. By leveraging Sanity CMS for backend management

and modular frontend development techniques, the application achieves scalability, efficiency, and a superior user experience.

Each functionality—from product listing to clerk authentication—plays a vital role in delivering a professional marketplace that meets real-world needs. Future enhancements, such as integrating advanced analytics or AI-based recommendations, can further elevate the platform.