

Day 4 - Dynamic Frontend Components Documentation

Overview

On Day 4, I focused on designing and developing dynamic frontend components for a marketplace application. These components retrieve data dynamically from **Sanity CMS** or APIs, ensuring a modular and scalable architecture.

Completed Components









1. Product Listing Component

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.

- Dynamically renders products in a grid layout.
- Includes key fields:
 - **Product Name**
 - **Price**
 - **Image**
 - **Stock Status**
- Implemented using **Next.js dynamic routing**.
- Styled with **Tailwind CSS** for responsiveness.
- Integration with **Sanity CMS** ensures real-time updates, so any product changes in the backend are instantly reflected.

```
const ProductGrid = ({products}: {products:Product[]}) => {
  <p className="font-montserrat text-[14px] font-normal text-text leading-[20px] t
    Problems trying to resolve the conflict between
  </p>
</div>
<div className="grid grid-cols-1 sm:grid-cols-3 lg:grid-cols-4 mt-4 gap-4">
  {products?.map((product) => {
    return(
      <AnimatePresence key={product._id}>
        <motion.div
          layout
          initial={{opacity: 0.2}}
          animate={{opacity: 1}}
          exit={{opacity: 0}}
          className="flex justify-center w-full"
        >
          <ProductThumb key={product._id} product={product} />
        </motion.div>
      </AnimatePresence>
    )
  })}
</div>
</section>
)
}

export default ProductGrid;
```

 <p>Acer SB220Q bi 21.5 inches Full HD (19... 21.5 inches Full HD (1920 x 1080) widescreen IPS display An...</p> <p>\$599.00 Stock: 45</p> <p>Buy Now</p>	 <p>BIYLACLESEN Women's 3-in-1 Snowbo... Note:The Jackets is US standard size. Please choose size as ...</p> <p>\$56.99 Stock: 44</p> <p>Buy Now</p>	 <p>DANVOUY Womens T Shirt Casual Cot... 95%Cotton,5%Spandex; Features: Casual, Short Sleeve, Letter ...</p> <p>\$12.99 Stock: 56</p> <p>Buy Now</p>	 <p>Featured Products 1 This is a tested description of my e-commerce website</p> <p>\$27.00 Stock: 45</p> <p>Buy Now</p>
 <p>Fjallraven - Foldsack No. 1 Backpack, F... Your perfect pack for everyday use and walks in the forest. ...</p> <p>\$109.95 Stock: 45</p> <p>Buy Now</p>	 <p>John Hardy Women's Legends Naga G... From our Legends Collection, the Naga was inspired by the my...</p> <p>\$695.00 Stock: 16</p> <p>Buy Now</p>	 <p>Lock and Love Women's Removable H... 100% POLYURETHANE(shell) 100% POLYESTER(lining) 75% POLYESTE...</p> <p>\$29.95 Stock: 44</p> <p>Buy Now</p>	 <p>MBJ Women's Solid Short Sleeve Boat ... 95% RAYON 5% SPANDEX, Made in USA or Imported, Do Not Bleach...</p> <p>\$9.85 Stock: 44</p> <p>Buy Now</p>

2. Product Detail Component

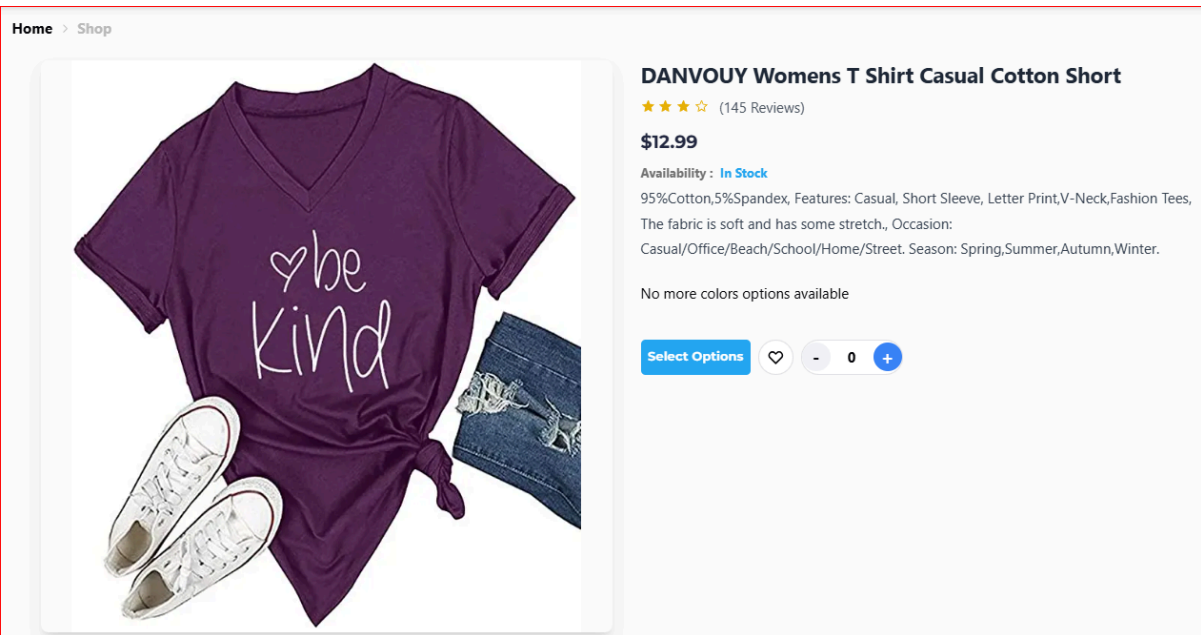
Dynamic routing allows for the creation of individual product detail pages, enabling users to view detailed information about each product.

- Displays individual product details using **dynamic routing** (`/product/[slug]`).
- Includes:
 - **Product Description**
 - **Rating**
 - **Price**
 - **Available Sizes/Colors**
 - **Add to Cart** and **Wishlist** buttons.
- Uses API integration to fetch product data dynamically.
- Responsive design ensures compatibility across devices, from desktops to mobile phones.

```

async function ProductPage({ params }: { params: Promise<{ slug: string }> }) {
  <h1 className="text-2xl font-bold" text-gray-800">
    {product.name}
  </h1>
  <div className="flex items-center gap-1 text-yellow-500 my-2">
    {Array.from({ length: Math.floor(product.rating) }).map(
      (_, i) => (
        <AiFillStar key={i} />
      )
    )}
    {product.rating % 1 !== 0 && <AiOutlineStar />}
    <span className="text-gray-600 ml-2">
      ({product.ratingCount} Reviews)
    </span>
  </div>
  <h3 className="font-montserrat text-xl font-bold leading-[32px] tracking-[0.1px] text-text2 py-1">
    ${product.price.toFixed(2)}
  </h3>
  <div className="flex text-sm font-bold text-text py-1 gap-2">
    <span>Availability </span>{ " " }
    <span className="text-prim_blue">
      {product.stock > 0 ? "In Stock" : "Out of Stock"}{ " " }
    </span>
  </div>
  <div className="prose max-w-none mb-6">
    {Array.isArray(product.description) ? (
      <PortableText value={product.description} />
    ) : (
      <p>{product.description || "No description available."}</p>
    )}
  </div>
  <div className="flex gap-3 my-4">
    <div className="flex flex-direction-reverse gap-2">
      {product.colors.map((color: string, index: number) => (
        <span
          key={index}

```



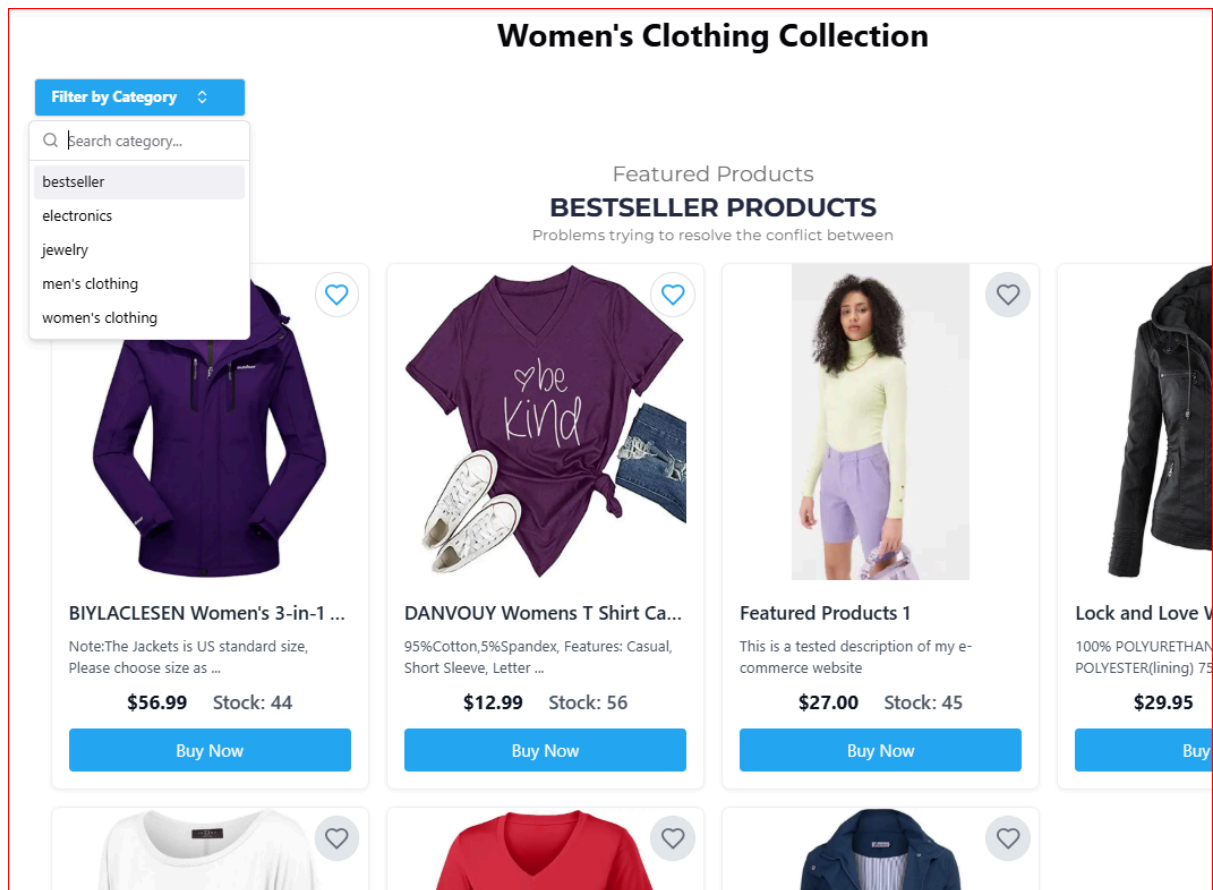
3. Category Component

- Displays product categories dynamically.
- Allows filtering products by category.
- Uses API calls to fetch category data.

```
const CategoryPage: React.FC<CategoryPageProps> = async ({ params }) => {
  try {
    const [products, categories] = await Promise.all([
      getProductsCategory(slug),
      getAllCategories(),
    ]);

    return (
      <div className="flex flex-col items-center w-full justify-top max-w-screen-2xl min-h-screen mx-auto bg-gray-100 p-4">
        <div className="bg-white p-8 rounded-lg shadow-md w-full">
          <h1 className="text-3xl font-bold mb-6 text-center">
            {formatTitle(slug)} Collection
          </h1>
          <ProductsView products={products} categories={categories} />
        </div>
      </div>
    );
  } catch (error) {
    console.error('Error fetching data:', error);
    return (
      <div className="flex flex-col items-center justify-center min-h-screen bg-gray-100 p-4">
        <div className="bg-white p-8 rounded-lg shadow-md w-full max-w-4xl">
          <h1 className="text-3xl font-bold mb-6 text-center text-red-500">
            Error
          </h1>
          <p className="text-center">Failed to load the category page.</p>
        </div>
      </div>
    );
  }
};

export default CategoryPage;
```



4. Search Bar

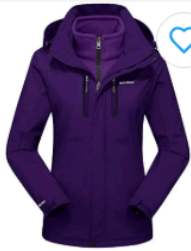
- Enables users to search products by **name or tags**.
- Implements **debouncing** for optimized performance.
- Uses **useState** and **useEffect** for search query handling.

Search Results for: Jacket

Featured Products

BESTSELLER PRODUCTS

Problems trying to resolve the conflict between



BIYLACLESEN W...

Note:The Jackets is US standard size, Please choose size as ...

\$56.99 Stock: 44

Buy Now



Lock and Love W...

100% POLYURETHANE(shell)
100% POLYESTER(lining)
75% POLYESTE...

\$29.95 Stock: 44

Buy Now



Mens Cotton Jac...

great outerwear jackets for
Spring/Autumn/Winter, suitable f...

\$55.99 Stock: 45

Buy Now



Rain Jacket Wom...

Lightweight perfect for trip or casual wear---
Long sleeve wit...


\$39.99 Stock: 44

Buy Now

5. Cart Component

Users can add products to their cart directly from the product listing or detail page.

- Displays added items, their quantity, and total price.
- Uses **local state** for cart management.
- Provides functions to **increase/decrease quantity** and **remove items**.
- Persistent data using **local storage** for session retention.
- Alerts and indicators, such as "Only 3 left in stock," create a sense of urgency, encouraging purchases.



White Gold Plated Princess




★★★★ (400 Reviews)

\$9.99

Availability : [In Stock](#)

Classic Created Wedding Engagement Solitaire Diamond Promise Ring for Her. Gifts to spoil your love more for Engagement, Wedding, Anniversary, Valentine's Day...










No more colors options available

[Select Options](#)   14 

✓ Added White Gold Plated Princess to your basket.

📌 Only 3 left in stock.

Your Basket

	White Gold Plated Princess Price: \$9.99	 2 
	Rain Jacket Women Windbreaker Striped Climbing Raincoats Price: \$39.99	 2 
	DANVOUY Womens T Shirt Casual Cotton Short Price: \$12.99	 1 

Order Summary

Items: 5

Total: \$112.95

[Clear Basket](#)

[Checkout](#)

6. Wishlist Component

- Allows users to **save favorite products** for later.
- Implemented using **local state** and **local storage**.
- Provides an "Add to Wishlist" button in the **Product Detail Component**.
- Wishlist items persist across page reloads.
- Add **real-time notifications** (Toasts) for adding/removing cart and wishlist items.

Your Wishlist



DANVOUY Womens T Shirt Casual Cotton Short
\$12.99



BIYLACLESEN Women's 3-in-1 Snowboard Jacket Winter Coats
\$56.99



John Hardy Women's Legends Naga Gold & Silver Dragon Station Chain
Bracelet
\$695.00



Clear Wishlist

7. Checkout Flow Component

- Implements a **multi-step checkout process**:
 - **Payment Method (Stripe)**
 - **Order Confirmation**
- Ensures **form validation** for required fields.
- Uses **Next.js pages** for **step-by-step navigation**.

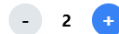
Your Basket



White Gold Plated Princess
Price: \$9.99



Rain Jacket Women Windbreaker Striped Climbing Raincoats
Price: \$39.99



DANVOUY Womens T Shirt Casual Cotton Short
Price: \$12.99



Order Summary

Items: 5

Total: \$112.95


Clear Basket

Checkout

← Marketplace-Website-Bandage TEST MODE


Pay Marketplace-Website-Bandage

£112.95




White Gold Plated Princess
Product ID: bGqRxvd3u3k0l6TawbXDyg
Qty 2

£19.98
£9.99 each



Rain Jacket Women Windbreaker Striped Climbing Raincoats
Product ID: 4FpUDTZy0SLs4hXTHFF3u3
Qty 2

£79.98
£39.99 each



DANVOUY Womens T Shirt Casual Cotton Short
Product ID: 4FpUDTZy0SLs4hXTHFF4Fp
Qty 1

£12.99


Subtotal

£112.95

[Add promotion code](#)

Total due

£112.95

Pay with  link

Or pay with card

Email

shehreenarshad96@gmail.com

Card information

4242 4242 4242 4242

12 / 34

123

VISA

Cardholder name

12345

Country or region

Pakistan

☐ Securely save my information for 1-click checkout

Pay faster on Marketplace-Website-Bandage and everywhere Link is accepted.

Pay

✓

Thank You for your Order!

Your order has been confirmed and will be shipped shortly.

Order Number: e491c3d8-166d-4277-8e49-49012be25494

A confirmation email has been sent to your registered email address.

View Order Details

Continue Shopping

Technologies Used

- **Next.js** for dynamic routing and component-based architecture.
- **Tailwind CSS** for styling and responsive design.

- **Sanity** for storing all data.
- **React Hooks** (`useState`, `useEffect`) for state management.
- **Local Storage** for persisting cart and wishlist data.

Challenges & Solutions

Challenge	Solution
API data not loading immediately	Used <code>useEffect</code> to fetch data on component mount
Search bar lagging with fast input	Implemented debouncing to optimize performance
Wishlist not persisting after page reload	Stored wishlist data in local storage

Next Steps

- Implement **pagination** for the Product Listing page.
- Integrate **Sanity backend** for authentication-based wishlist persistence.

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 inventory management—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.

For any additional details, enhancements, or implementation support, feel free to reach out!