Report: Implementing a Dynamic Product Listing Component

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Objective:
The primary objective of Day 4 is to design and develop **dynamic frontend components** that can display marketplace data fetched from **Sanity CMS** or external APIs. This process focuses on modularity, reusability, and applying real-world development practices to build scalable and responsive web applications.

Task Overview

Objective:

Build a **Product Listing Component** for a marketplace.

Requirements:

1. Fetch product data dynamically using Sanity CMS or an external API.
2. Display the data in a **grid layout** of cards with the following details:
   - **Product**
   - **Name**
   - **Price**
   - **Image**
   - **Stock**
3. Ensure responsiveness across devices.
4. Implement modularity by breaking the component into smaller, reusable parts.

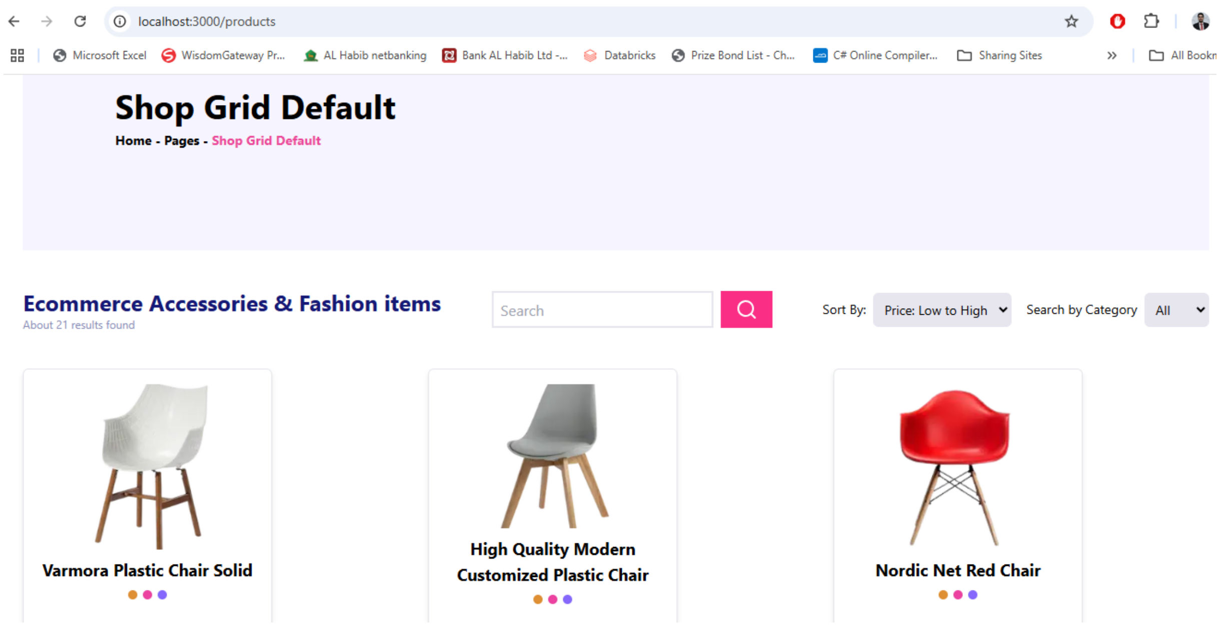
Tools & Technologies:

- **Framework:** React or Next.js
- **CMS:** Sanity CMS
- **Styling:** Tailwind CSS or plain CSS
- **State Management:** React Hooks

Implementation Plan

1. **Set Up Data Fetching:**
   - Integrate Sanity CMS or API endpoints to fetch the product data dynamically.
   - Use React hooks (`useEffect`) for data fetching and (`useState`) to store and manage the data.
2. **Design Reusable Components:**
   - Break down the Product Listing Component into smaller parts:
   - **Product Card Component:** Displays individual product details.
3. **Apply Responsive Design:**

   - Use Tailwind CSS or CSS Grid/Flexbox to ensure the grid layout adapts to all screen sizes.
4. **Enhance User Experience:**
   - Highlight important details like stock status with conditional formatting. ○ Add hover effects for better interactivity.


localhost:3000/products

Microsoft Excel | WisdomGateway Pr... | AL Habib netbanking | Bank AL Habib Ltd -... | Databricks | Prize Bond List - Ch... | C# Online Compiler... | Sharing Sites | All Bookn

Shop Grid Default

Home - Pages - Shop Grid Default

Ecommerce Accessories & Fashion items

About 21 results found

Search

Sort By: Price: Low to High

Search by Category All

Varmora Plastic Chair Solid

High Quality Modern Customized Plastic Chair

Nordic Net Red Chair

2. Product Detail Component

Objective:

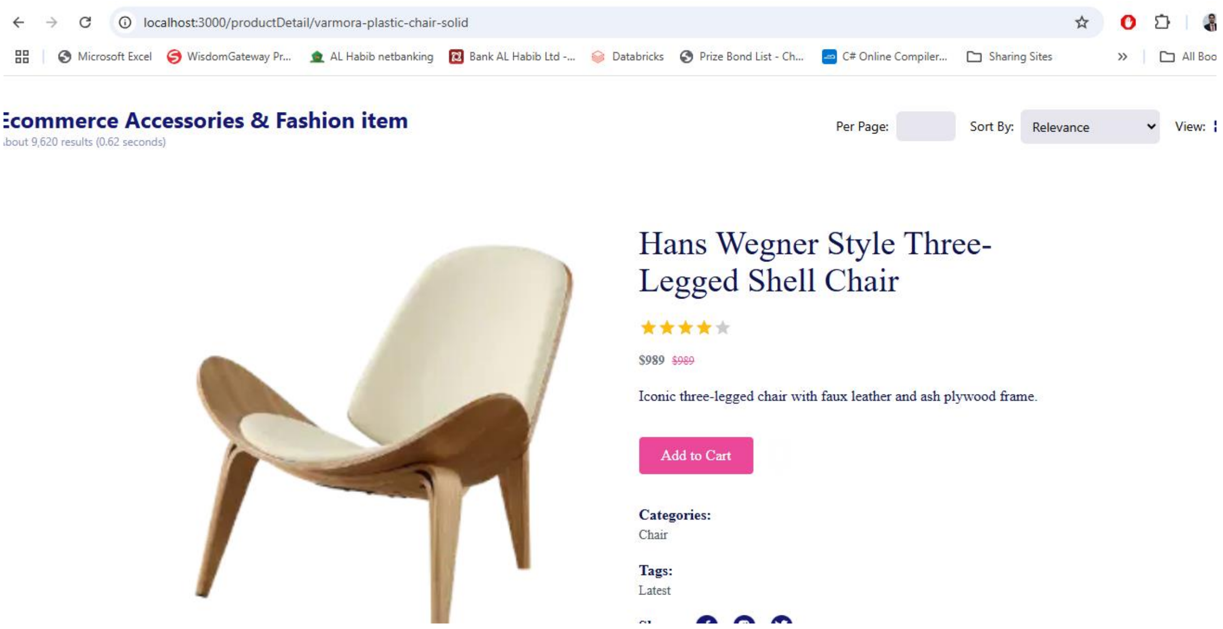
Develop individual product detail pages using **dynamic routing in Next.js**. These pages will display detailed information about each product, including:

- **Name**
- **Product Description**
- **Price**
- **Category**
- **Stock Availability Implementation Plan:**

1. **Dynamic Routing:**
   - Create dynamic routes using the `[id].tsx` file in the `pages/products` directory.
   - Fetch product data based on the product ID from a CMS like Sanity or an API.
2. **Data Fields:**
   Each product detail page should include the following fields:
   - **Product Description:** A detailed explanation of the product, fetched from the backend.
   - **Price:** Displayed prominently for clear visibility.
3. **Integration with Product Listing:**
   - Link each product card in the **Product Listing Component** to its corresponding detail page using the `Link` component in Next.js.
4. **Styling and Layout:**

- Use Tailwind CSS or plain CSS for a clean and responsive design. ○ Ensure the layout highlights the product description and price for user clarity.

UI Display OF Product Detail Page:



Hans Wegner Style Three-Legged Shell Chair

★★★★☆

$989 ~~$989~~

Iconic three-legged chair with faux leather and ash plywood frame.

Categories:
Chair

Tags:
Latest

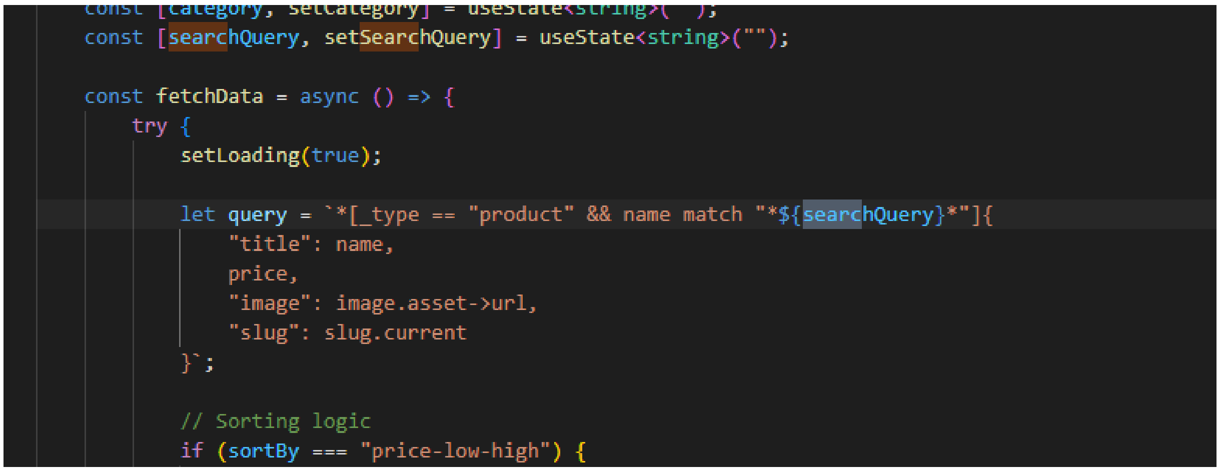
Step 3: Search Bar with Price Filter

Objective:

To implement a **search bar** and **price filters** to enhance the product browsing experience.

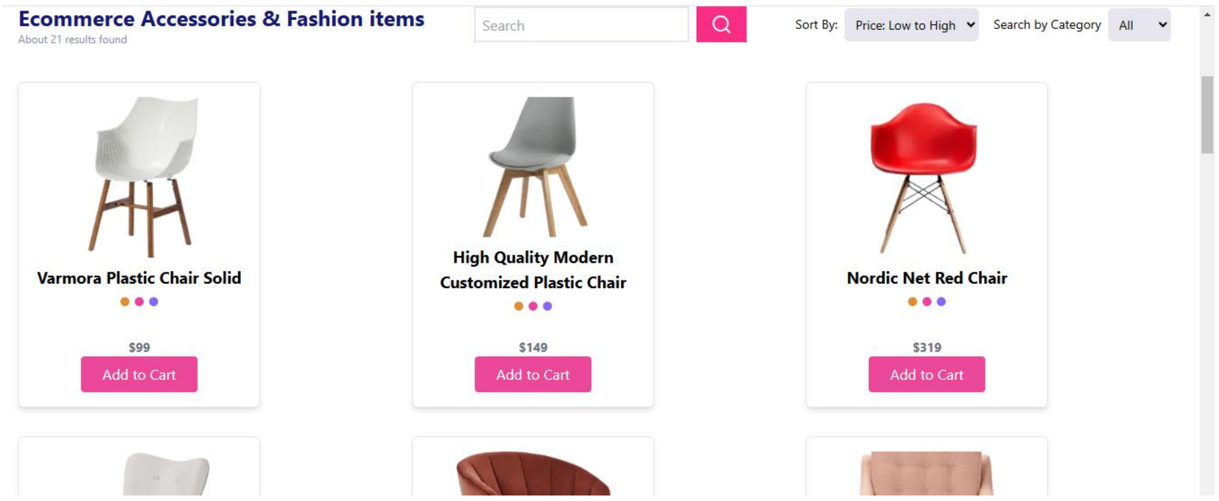
Implementation Plan:

1. **Search Bar Functionality:**
   - Filter products based on their name or associated tags. ○ Update the product list in real-time as the user types.



```
    const [category, setCategory] = useState<string>("");
    const [searchQuery, setSearchQuery] = useState<string>("");

    const fetchData = async () => {
        try {
            setLoading(true);

            let query = `*[_type == "product" && name match "*${searchQuery}*"]{
                "title": name,
                price,
                "image": image.asset->url,
                "slug": slug.current
            }`;

            // Sorting logic
            if (sortBy === "price-low-high") {
```

UI Display :



Ecommerce Accessories & Fashion items
About 21 results found

Search | Sort By: Price: Low to High | Search by Category: All

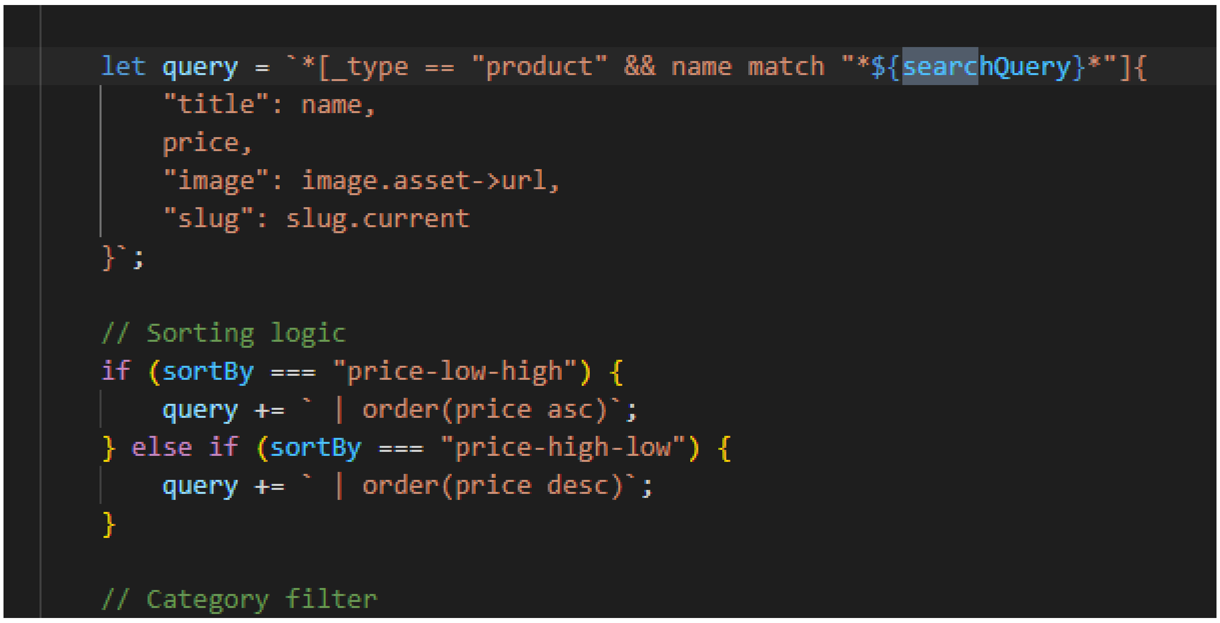
Varmora Plastic Chair Solid
$99
Add to Cart

High Quality Modern Customized Plastic Chair
$149
Add to Cart

Nordic Net Red Chair
$319
Add to Cart

2. **Price Filtering:**
    - Add options to sort products by price in **ascending** or **descending** order.

    - Combine the price filter with the search bar and category filter for seamless interaction

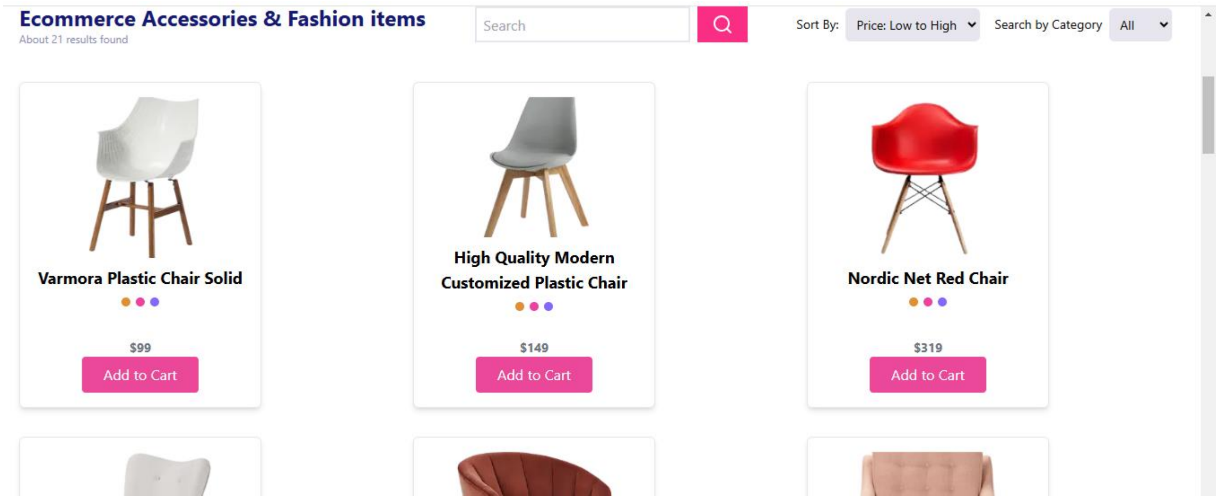


```
let query = `*[_type == "product" && name match "*${searchQuery}*"]{
    "title": name,
    price,
    "image": image.asset->url,
    "slug": slug.current
}`;

// Sorting logic
if (sortBy === "price-low-high") {
    query += ` | order(price asc)`;
} else if (sortBy === "price-high-low") {
    query += ` | order(price desc)`;
}

// Category filter
```

UI Display:

- ***High To Low:***

- ***Low To High:***



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Nordic Net Red Chair
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Features Implemented:

1. **Search Bar:** ○ Filters products by name or tags in real time.
2. **Price Filter:**
   ○ Allows sorting products by price (low to high or high to low).

Step 4: Cart Component

Objective:

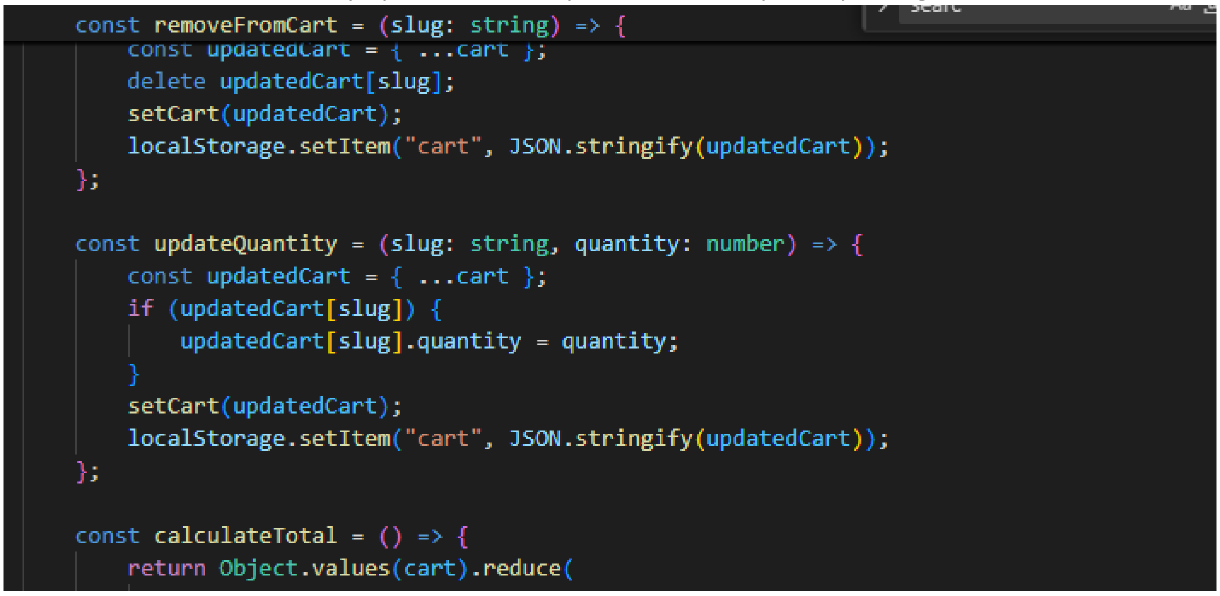
To create a **Cart Component** that displays the items added to the cart, their quantity, and the total price of the cart dynamically.

Implementation Plan:

1. **Local Storage:** ○ Use **local Storage** to store cart data.
2. **Cart Data:** ○ Include details for each product in the cart:
   - ✦ Product Name
   - ✦ Price
   - ✦ Quantity

   ○ Calculate and display the **total price** dynamically based on the items in the cart.

3. **Cart Interactions:**
   - ○ Allow users to **increase or decrease the quantity** of items.
   - ○ Automatically update the total price when the quantity changes.

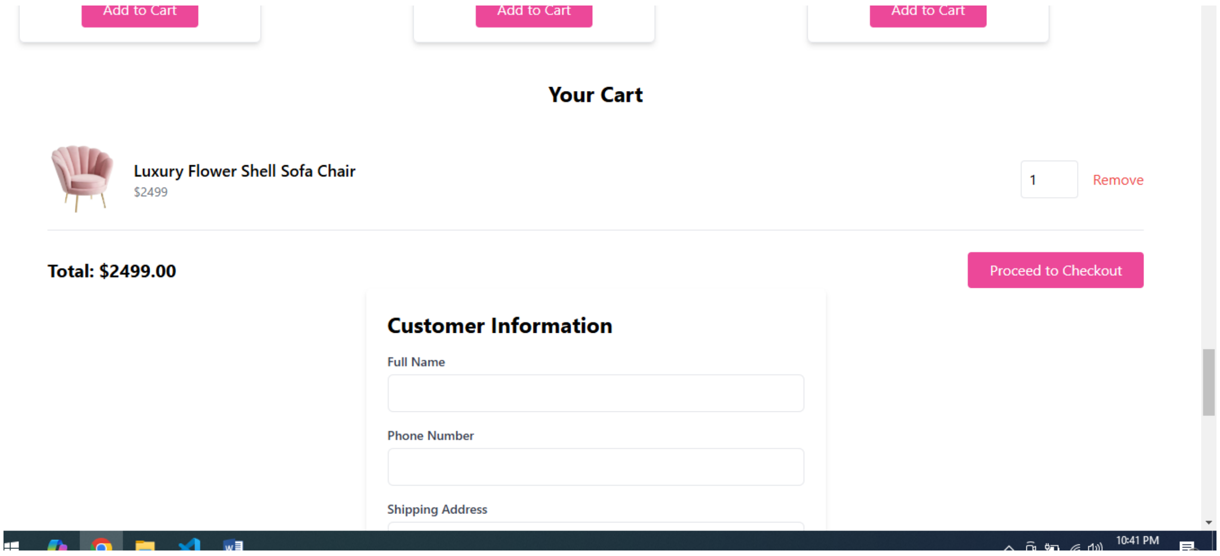


```
const removeFromCart = (slug: string) => {
    const updatedCart = { ...cart };
    delete updatedCart[slug];
    setCart(updatedCart);
    localStorage.setItem("cart", JSON.stringify(updatedCart));
};

const updateQuantity = (slug: string, quantity: number) => {
    const updatedCart = { ...cart };
    if (updatedCart[slug]) {
        updatedCart[slug].quantity = quantity;
    }
    setCart(updatedCart);
    localStorage.setItem("cart", JSON.stringify(updatedCart));
};

const calculateTotal = () => {
    return Object.values(cart).reduce(
```

UI Display Of Cart Page:


Add to Cart
Add to Cart
Add to Cart

Your Cart

Luxury Flower Shell Sofa Chair
$2499
1
Remove

Total: $2499.00
Proceed to Checkout

Customer Information
Full Name
Phone Number
Shipping Address

1. **Dynamic Item Display:** ○ Each item in the cart is displayed with its name, price, and quantity.
   - ○ Subtotal for each item is dynamically calculated.
2. **Quantity Update:** ○ Buttons to increase (+) or decrease (−) the quantity of an item.
   - ○ Quantity cannot go below `1`.
3. **Total Price Calculation:**
   - ○ The total price updates dynamically as items are added or quantities are changed.
4. **Remove Item:** ○ Users can remove individual items from the cart.

Conclusion

On **Day 4** of building dynamic frontend components for a marketplace, the focus was on creating modular, reusable, and responsive components. The following key components were successfully implemented:

1. **Product Listing Component:**
   - ○ Dynamically displayed products in a grid layout with details such as product name, price, image, and stock status.
2. **Product Detail Component:**
   - ○ Built individual product pages using dynamic routing in Next.js, including fields like product description, price, and image.
3. **Search Bar and Filters:**
   - ○ Implemented functionality to filter products by name or tags and added price filters (high to low and low to high).

4. **Cart Component:**
    - Displayed items added to the cart, quantity management, and total price calculation with dynamic updates.