Day 3- API Integration and Data Migration

Product Catalog Project Documentation

Overview

The Product Catalog project is designed to show a dynamic list of products. It displays product details, and the design supports responsive and aesthetic layouts. It uses modern web development technologies like Next.js, TypeScript, and Tailwind CSS for implementation.

Features

1. Product Display:

a. Product display with basic details such as name, price, description, and image in dynamic rendering

b. Each product will be represented by an individual card.

2. Search Functionality:

a. Real-time filtering of products as the user types.

3. Responsive Design:

a. Fully responsive layout using Tailwind CSS.

b. Optimized for desktops, tablets, and mobile devices.

4. Product Details Page:

a. Clicking a product opens a dedicated page displaying detailed information.

b. Includes product name, price, description, and high-resolution image.

5. Dark Mode Support:

a. Provides light and dark themes to enhance user experience.

6. Reusable Components:

a. Modular components such as ProductCard, SearchBar, and ProductDetails for scalability and maintenance.

Technologies Used:

1. Next.js:

a. Framework for server-side rendering and static site generation.

b. Provides routing and enhanced performance for the project.

2. TypeScript:

a. Ensures type safety and reduces runtime errors.

b. Improves code readability and scalability.

3. Tailwind CSS:

a. Simplifies styling with utility-first classes.

b. Enables fast and responsive design development**.**

Project Structure:

```
src/
|-- components/
|   |-- Navbar.tsx
|
|-- product/
|   |-- [id]/
|   | --page.tsx
|   --page.tsx
|
|
|-- styles/
|   |-- globals.css
|
|-- sanity/
|-- schemaTypes/
|      |--categories.ts
|      |--products.ts
```

Explanation of Folders:

1. **components/**

a. Contains reusable React components such as ProductCard, SearchBar, and ProductDetails.

2. **pages/**

   a. product/page.tsx : Renders the homepage with a list of products.

   b. [id]/page.tsx: Dynamic route for displaying individual product details.

3. **styles/**

   a. Stores global CSS styles.

4. **schemaTypes/products.ts**

   a. Defines the structure and mock data for individual product details used in the application.

5. **schemaTypes/categories.ts**

   b. Organizes and manages mock data for product categories, enabling filtering and categorization.

Key Functionalities:

1. **Product Page (page.tsx):**
   a. Displays all products in a grid layout.
2. **Product Details Page ([id]/page.tsx):**
   a. Dynamically renders details for the selected product.

Implementation Highlights:

- **Routing:** Next.js dynamic routes ([id]/page.tsx) enable navigation to individual product pages.
- **State Management:** Used React useState and useEffect for managing state.
- **Styling:** Tailwind CSS used for quick and customizable designs.

- **TypeScript:** Added type definitions for products to ensure consistency.

Challenges and Solutions:

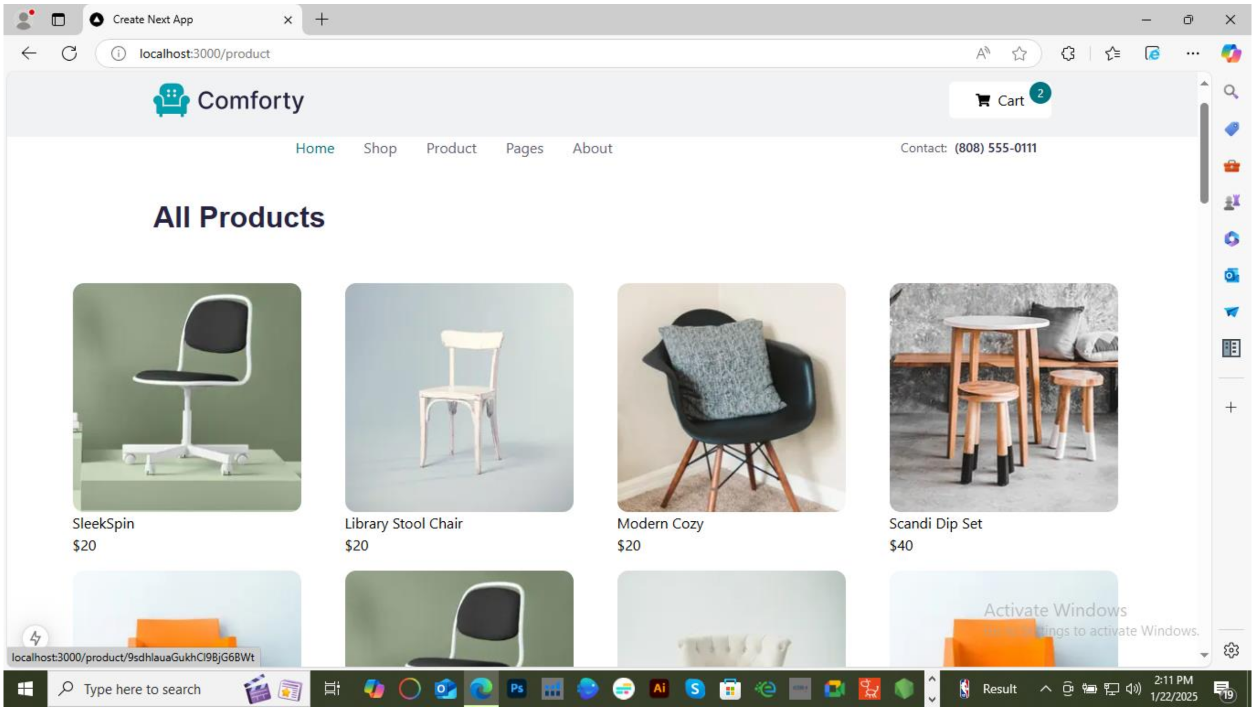
1. **Challenge:** Making the layout responsive.
   - **Solution:** Used Tailwind CSS grid and flex utilities to create responsive designs.
2. **Challenge:** Implementing dynamic routing for product pages.
   - **Solution:** Utilized Next.js dynamic routes ([id]/page.tsx) to render product details based on the product ID.

Future Enhancements:

- Add user authentication to allow users to save favorite products.
- Integrate a backend API for real-time product updates.
- Enable sorting and advanced filtering (e.g., by price, category).

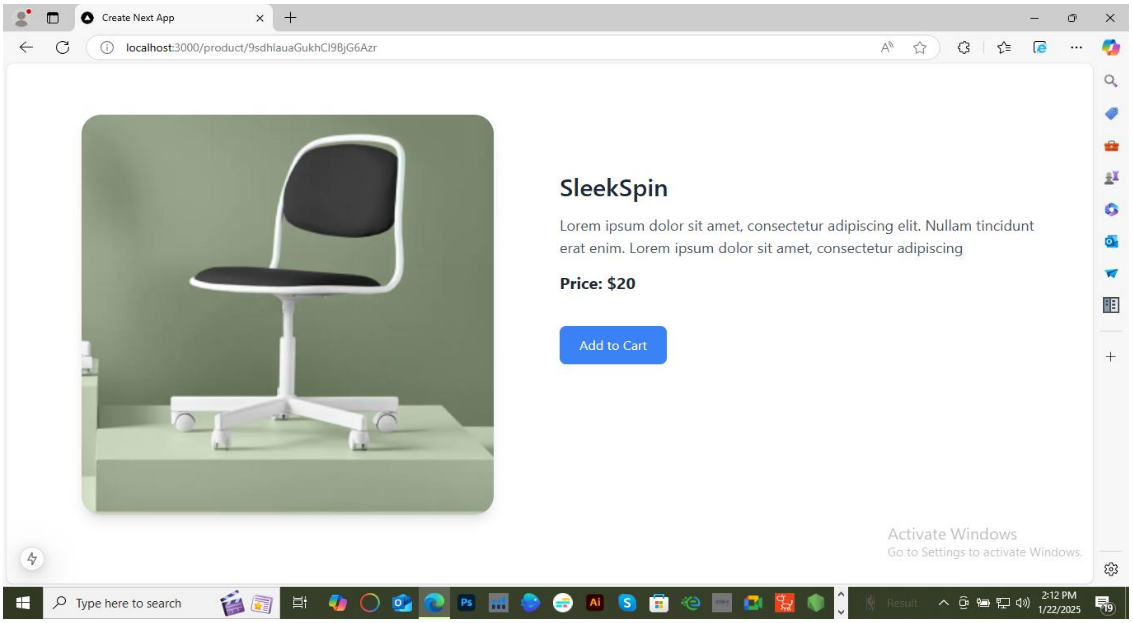
Conclusion:

- The Product Catalog project is a scalable and user-friendly application that demonstrates the effective use of modern web technologies. It provides a solid foundation for further development and enhancement.



All Products

SleekSpin $20	Library Stool Chair $20	Modern Cozy $20	Scandi Dip Set $40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SleekSpin

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Price: $20

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