

# GIAIC Hackathon 3 Day 4

## BUILDING DYNAMIC

## FRONTEND COMPONENTS

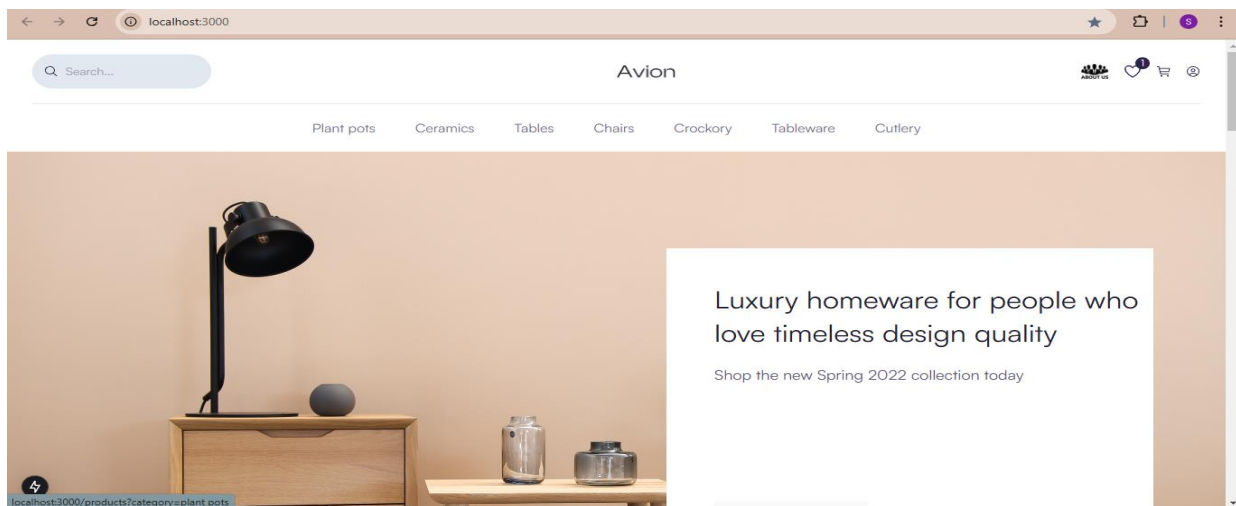
## FOR YOUR

## MARKETPLACE

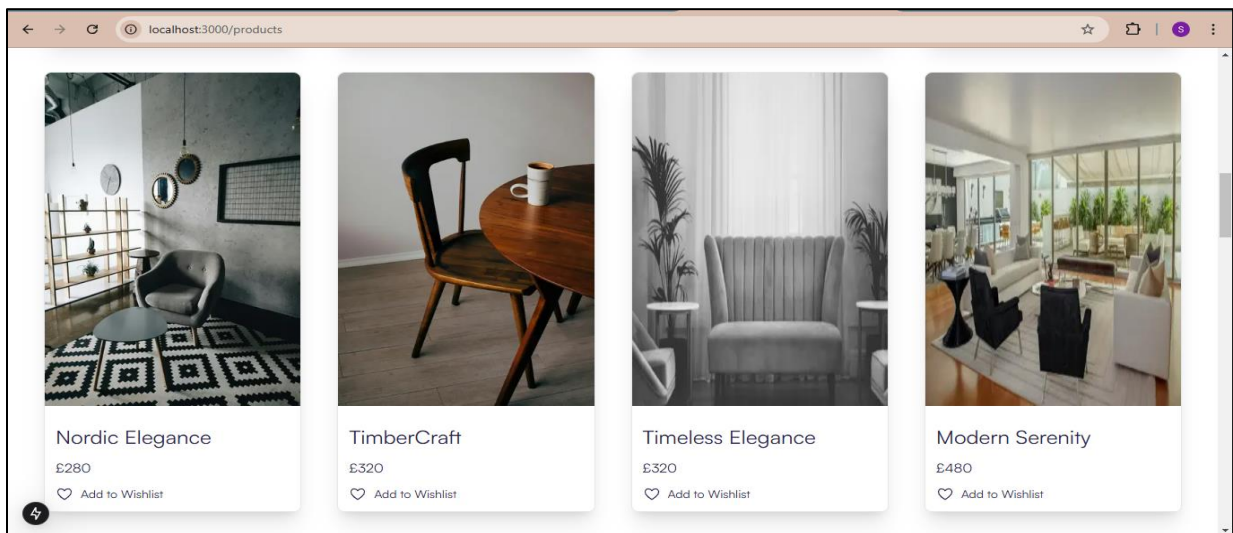
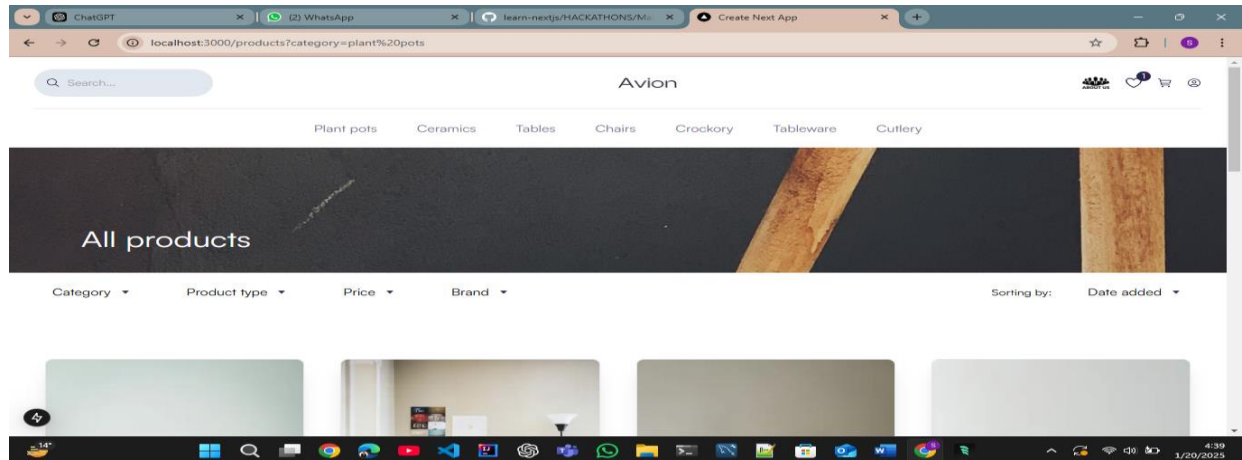
**Document Title:** "Day 4- Dynamic Frontend Components - [General E-commerce]"

### ScreenShots :

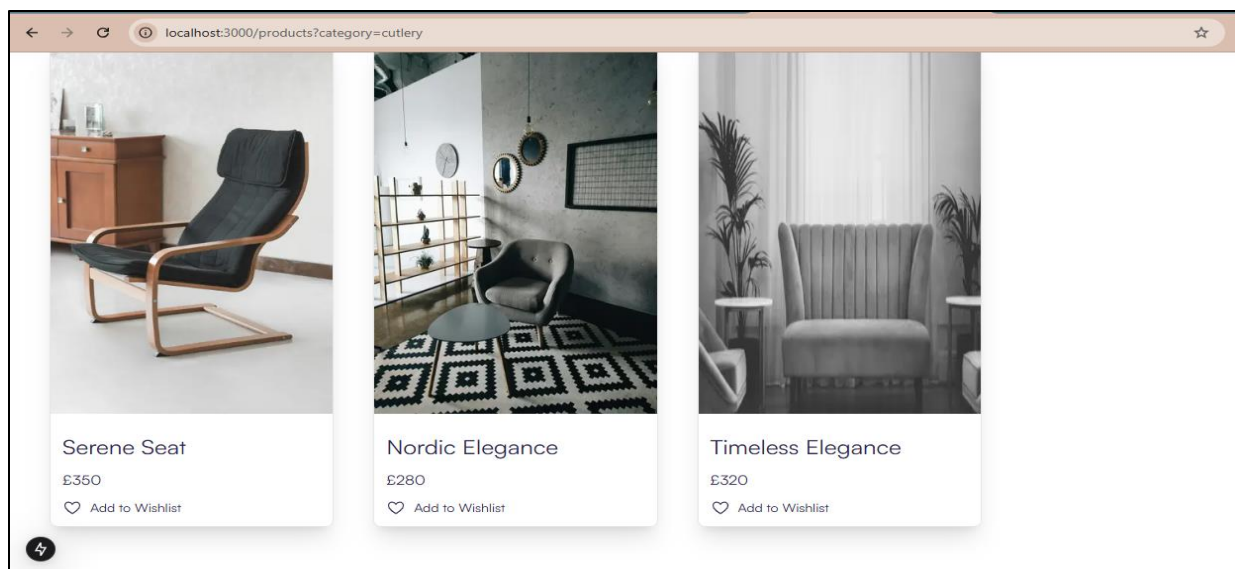
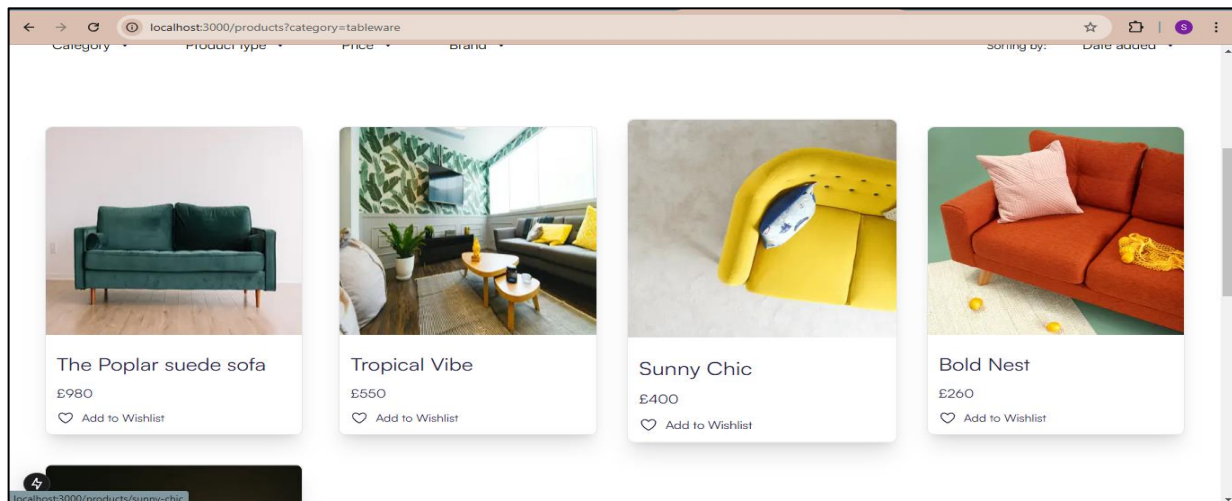
- Homepage



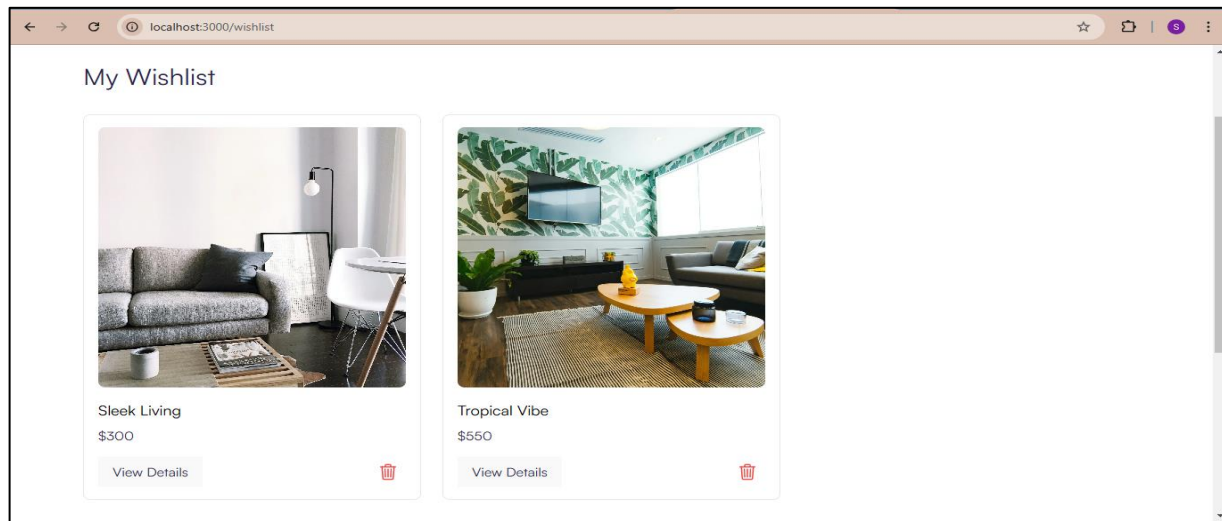
- Product Page Screenshot



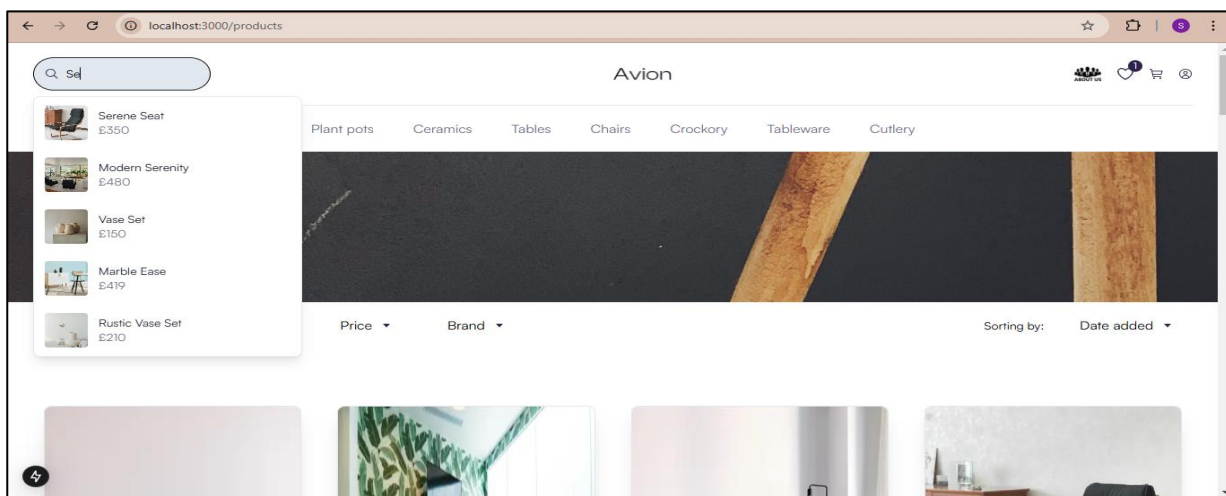
- Product rendering by specific category page screenshot



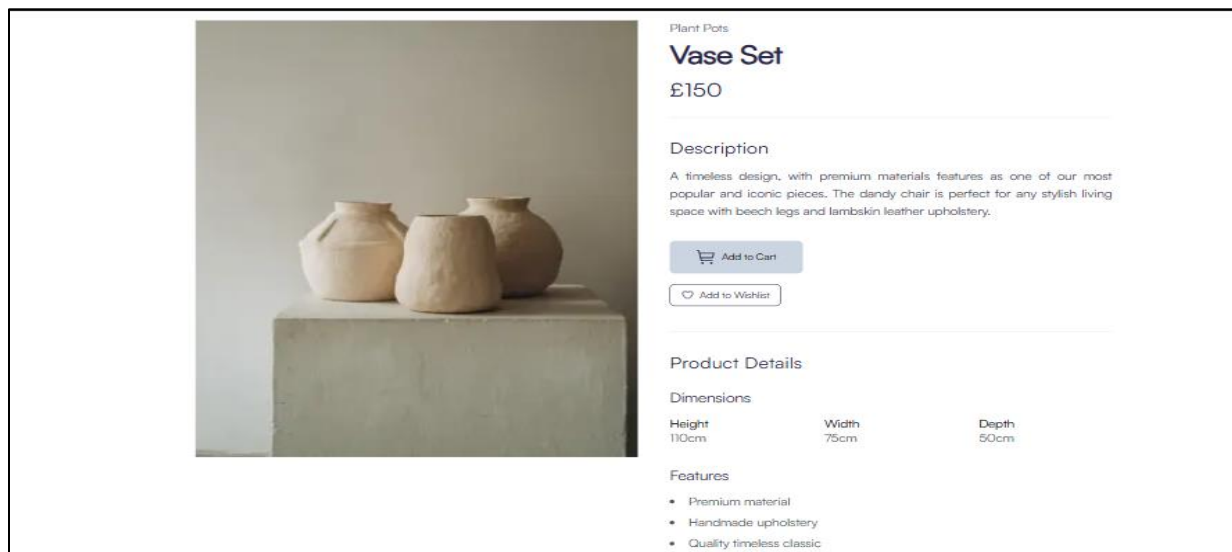
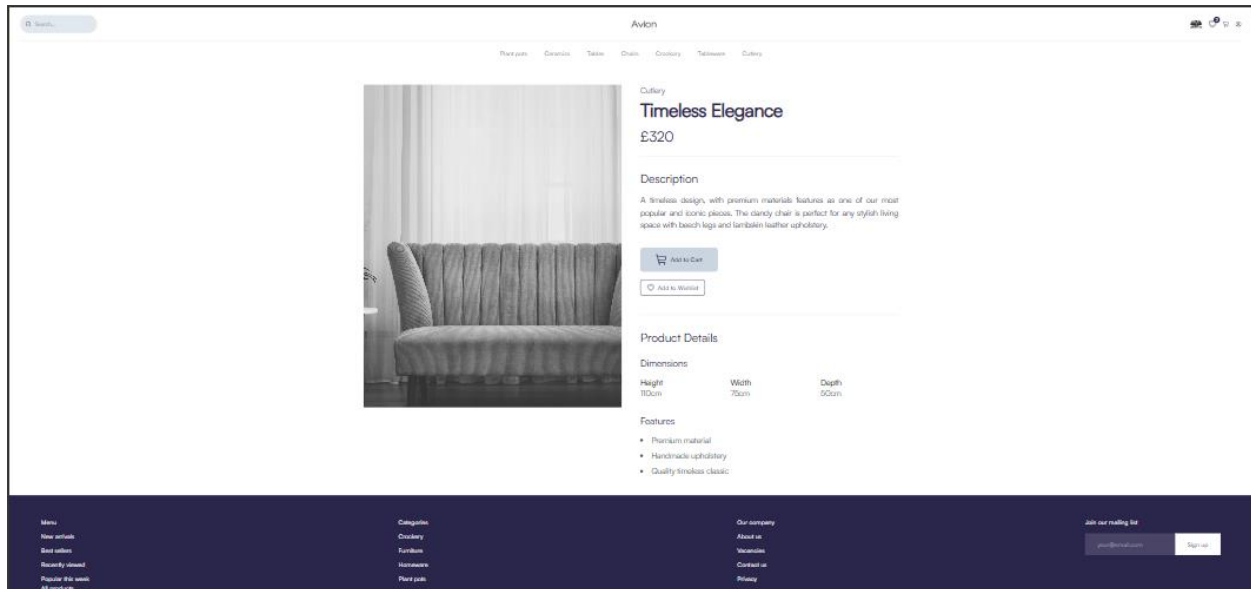
- Wishlist Page screenshot




- Search Bar functionality screenshot



- Product details page screenshots



[Plant pots](#) [Ceramics](#) [Tables](#) [Chairs](#) [Crockery](#) [Tableware](#) [Cutlery](#)



Cutlery

Timeless Elegance

£320

Description

A timeless design, with premium materials features as one of our most popular and iconic pieces. The dandy chair is perfect for any stylish living space with beech legs and lambskin leather upholstery.

Add to Cart

Add to Wishlist

Product Details

Dimensions

Height

110cm

Width

75cm

Depth


50cm

Features

- Premium material

Avion

[Plant pots](#) [Ceramics](#) [Tables](#) [Chairs](#) [Crockery](#) [Tableware](#) [Cutlery](#)



Tables

Zen Table

£250

Description

A timeless design, with premium materials features as one of our most popular and iconic pieces. The dandy chair is perfect for any stylish living space with beech legs and lambskin leather upholstery.

Add to Cart

Add to Wishlist

Product Details

Dimensions

Height

110cm

Width

75cm

Depth

50cm

Features

- Premium material
- Handmade upholstery
- Quality timeless classic



## £980

A timeless design, with premium materials features as one of our most popular and iconic pieces. The dandy chair is perfect for any stylish living space with beach legs and lambskin leather upholstery.



### Dimensions

Depth  
50cm

- Premium material
- Handmade upholstery
- Quality timeless classic

## popular products

## **Key Components:**

### **1) Product Card Component:**

- A reusable card that displays individual product information
- Shows product image, name, and price
- Includes a wishlist toggle button
- Links to the detailed product page when clicked
- Handles wishlist functionality using local storage

### **2) Product List Component:**

- Split into two parts for better performance:
  - A server part that fetches product data from Sanity CMS
  - A client part that handles the display and filtering of products
- Displays products in a responsive grid layout
- Handles category filtering based on URL parameters

### **3)Category Filter Component:**

- Provides a navigation bar with different product categories



- Uses URL-based filtering (query parameters)
- Categories include: Plant pots, Ceramics, Tables, Chairs, Crockery, Tableware, and Cutlery
- Responsive design that adapts to different screen sizes

## **API Integration and Routing:**

### **1) Sanity CMS Integration**

- Connected to Sanity CMS for content management
- Fetches product data including images, prices, and categories
- Uses GROQ queries to efficiently retrieve specific data
- Handles image optimization through Sanity's CDN

### **2) Dynamic Routing System**

- Creates unique URLs for each product using their slugs
- Handles category filtering through URL parameters

- Provides SEO-friendly URLs for products and categories
- Implements error handling for non-existent products

### 3)Data Flow

- Server components fetch initial data
- Client components handle user interactions
- URL parameters maintain filter state
- Local storage manages wishlist functionality

This implementation creates a smooth, user-friendly e-commerce experience with efficient data management and responsive design. The separation of server and client components ensures good performance, while the integration with Sanity CMS provides reliable content management capabilities.

## **Technical Report - E-Commerce Project**

### **Project Overview**

This project is a modern e-commerce platform built using Next.js 14, integrated with Sanity CMS for content management, and styled with Tailwind CSS.

## **Components and Implementation**

### **1. Core Components**

**ProductCard:** Reusable component for displaying product information

**ProductList:** Grid layout component for product listing

**SearchBar:** Dynamic search functionality with real-time filtering

**CategoryFilter:** Component for filtering products by categories

### **2. Technical Implementation**

#### **API Integration**

- Sanity CMS integration for content management
- Dynamic data fetching using Next.js server components

- Real-time content updates using GROQ queries

## **Routing Implementation**

- Dynamic routing for product pages using Next.js App Router
- SEO-friendly URL structure
- Optimized page loading with loading states

## **3. Best Practices Followed**

### **Code Organization**

- Component-based architecture
- Separation of concerns
- TypeScript for type safety
- Modular CSS with Tailwind

### **Performance Optimization:**

- Image optimization using Next.js Image component
- Server-side rendering for better SEO
- Lazy loading for improved performance

## **Security:**

- Environment variables for sensitive data
- Input sanitization
- API route protection

## **Challenges and Solutions:**

### **Challenge 1: Dynamic Routing with Sanity**

**Solution:** Implemented dynamic route generation using Next.js `generateStaticParams`

### **Challenge 2: Real-time Search**

**Solution:** Implemented client-side filtering with debounced search

### **Challenge 3: Responsive Design**

**Solution:** Utilized Tailwind CSS breakpoints and flexbox/grid layouts

## **Additional Features**

1. Related Products Section

2. User Profile Components
3. Dynamic Category Filtering
4. Real-time Search
5. Responsive Design