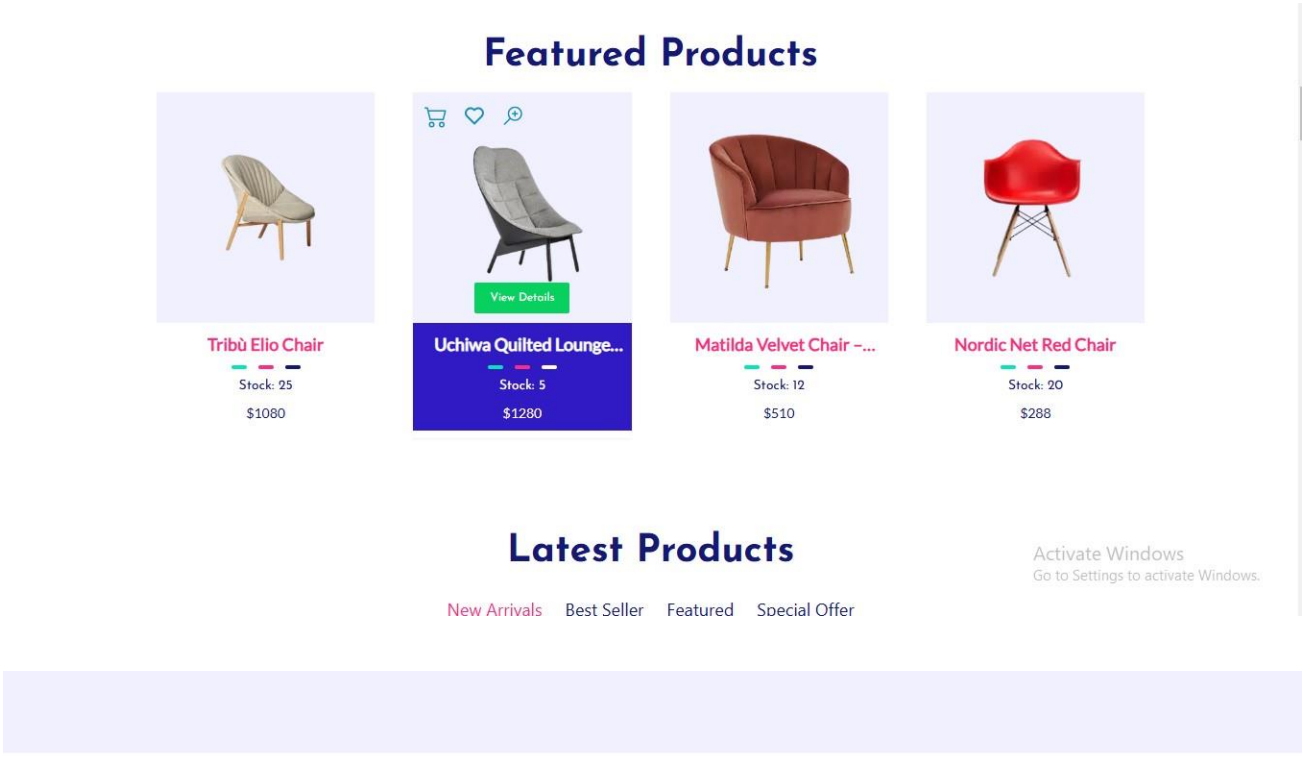
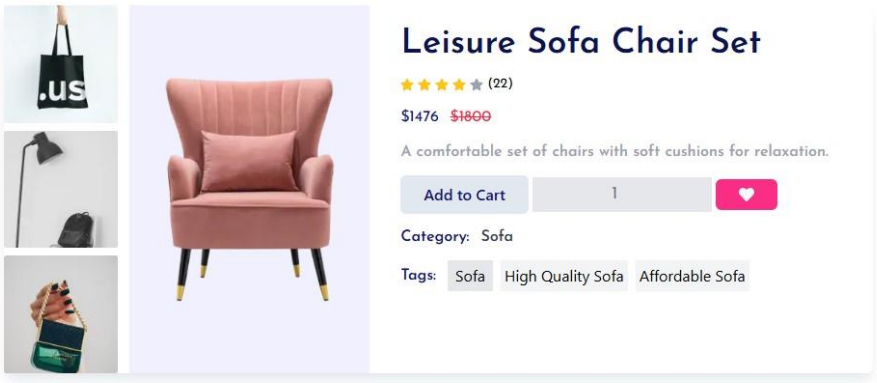
DAY 4 – Dynamic Frontend Components

On Day 4, our focus was on enhancing the UI by integrating API/Sanity data into various components, improving the website's efficiency, speed, and overall functionality.

Functional Deliverables:





Description Additional Info Reviews Video

A comfortable set of chairs with soft cushions for relaxation.

Related Products

Stylish Golden Metal Legs Mint Blue Fabric Velvet Sofa Leisure Armchair
$780

Leisure Sofa Chair Set
$1476

Luxury Flower Shell Sofa Chair
$2500

Ecommerce Acceories & Fashion item

About 15 results

Per Page: 15 View:

Categories

Chair

Discount Offer

10%

Stock Availability

In Stock

Price Filter

0

Filter with Price

Tribù Elio Chair

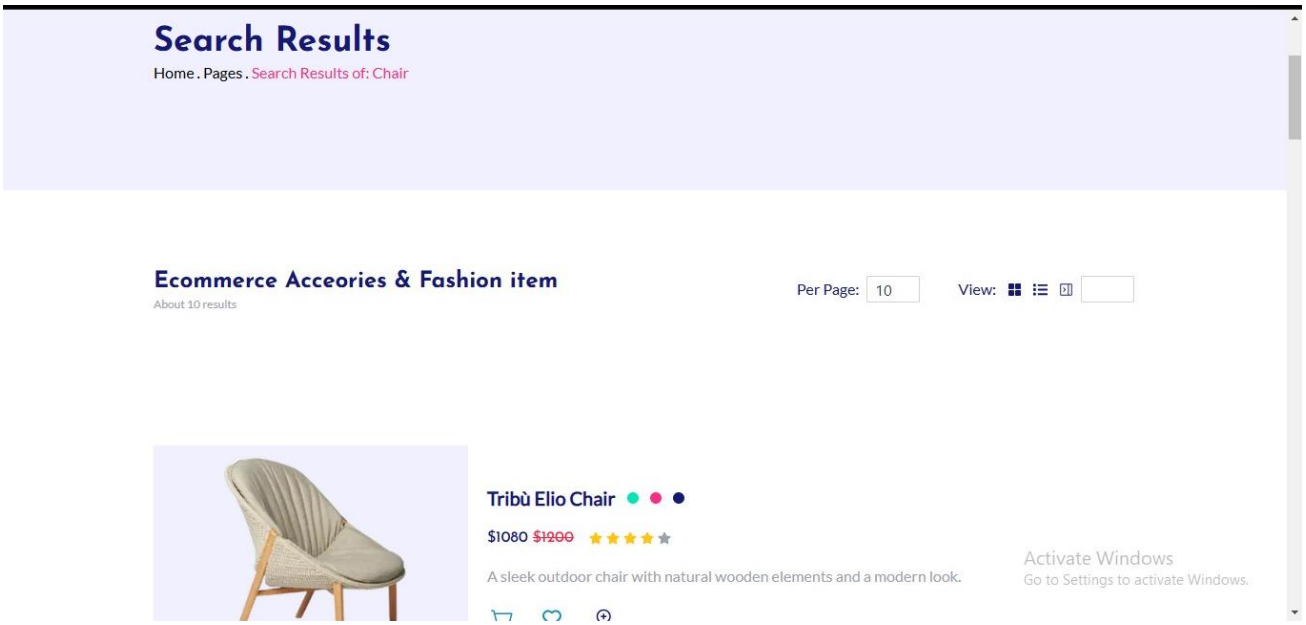
$1080 ~~$1200~~

A sleek outdoor chair with natural wooden elements and a modern look.

Hans Wegner Style Three-Legged Shell Chair

$891 ~~$990~~

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



Code Deliverables:

Main Product Component that provide multiple product cards based on requirement

```
import CategoryProduct from "./CategoryProduct"
import PRDesign1 from "./PRDesign1"
import PRDesign2 from "./PRDesign2"
import PRDesign3 from "./PRDesign3"
import ProductBarDesign from "./ProductBarDesign"

export interface ProductType{
    _id: string,
    name: string,
    description: string,
    image_url: string,
    stockLevel: string,
    price: number,
    discountPercentage:number,
    slug: string,
    category: string
}

export const finalPrice = (discountPercentage: number, price: number) => {
    if(!discountPercentage) return price;
    const amountToDeduct = (price / 100) * discountPercentage;
    const finalAmount = price - amountToDeduct;
```

```
    return finalAmount;
}

const ProductCard = ({ designType, showDots = false, data }: { designType: "SIMPLE 1/4" | "MEDIUM 1/3" |
"SIMPLEST" | "CATEGORY PRODUCT" | "BAR", showDots?:boolean, data:ProductType}) => {
    return (
        <>
          {designType == "SIMPLE 1/4" && <PRDesign1 data={data} />}
          {designType == "MEDIUM 1/3" && <PRDesign2 data={data} />}
          {designType == "SIMPLEST" && <PRDesign3 data={data} showDots={showDots} />}
          {designType == "CATEGORY PRODUCT" && <CategoryProduct data={data} />}
          {designType == "BAR" && <ProductBarDesign data={data} />}
        </>
    )
}

export default ProductCard
```

Search Page

```
"use client";
import Companies from '@/components/Companies'
import MainHeader from '@/components/MainHeader'
import Loader from '@/components/mini/Loader';
import ProductCard, { ProductType } from '@/components/mini/ProductCard'
import StoreDatahandler from '@/components/mini/StoreDatahandler'
import { client } from '@/sanity/lib/client';
import { useSearchParams } from 'next/navigation';
import React, { useEffect, useState } from 'react'


const ShopList = () => {
  const [products, setProducts] = useState<ProductType[]>();
  const [itemsPerPage, setItemsPerPage] = useState(10);
  const [loading, setLoading] = useState(false);
  const searchparams = useSearchParams();
  const getData = async () => {
    setLoading(true)
    try {
      const query = searchparams.get('search');
      let queryString = `*[_type == "product"][0..${itemsPerPage - 1}]{
        _id,
        name,
      description,
      stockLevel,
      discountPercentage,
      price,
      "image_url":image.asset->url,
      "slug": slug.current
        }`

      if(query){
        queryString = `*[(_type == "product")
```

```
    && (pt::text(name) match "${query}*" || description match "${query}*")] | score(pt::text(name) match "${query}*", boost(description match "${query}*", 3))[0..${itemsPerPage - 1}]
    {
      name,
    description,
    stockLevel,
    discountPercentage,
    price,
    "image_url":image.asset->url,
    "slug": slug.current,
      _score
      }`
    }

    const productsdata = await client.fetch(queryString);
    setProducts(productsdata);
    setLoading(false)
   } catch (error) {
    setLoading(false)
    console.error(error);
   }
  };

  useEffect(() => {
   getData();
  }, [itemsPerPage, searchparams]);
  return (
   <>
    <MainHeader title='Search Results' prev='Home . Pages . ' current={`Search Results of: ${searchparams.get('search')}`} />
    <StoreDatahandler itemsPerPage={itemsPerPage} setItemsPerPage={setItemsPerPage} />
    <div className="px-5 md:px-10 lg:px-40 w-full py-10">
     {loading && (
      <Loader />
     )}
     {(!products || products?.length == 0) && (
      <div className='w-full py-10 flex justify-center flex-col items-center'>
       <h3 className='text-3xl font-bold text-center text-gray-700 pt-10'>No Products Available!</h3>
      </div>
     )}
     {products && products.map((product, index) => (<ProductCard key={index} data={product} designType='BAR' showDots={true} />))}

    </div>
    <Companies />
   </>
  )
}

export default ShopList
```

Category Page

```
const Category = ({params}: {params: {slug: string}}) => {
```

```
  const [products, setProducts] = useState<ProductType[]>();
  const [itemsPerPage, setItemsPerPage] = useState(10);
  const [loading, setLoading] = useState(false);

  const getData = async () => {
    setLoading(true)
    try {

      const query = `*[_type == "product" && category == "${params.slug}"][0..${itemsPerPage}]{_id, name,
description, stockLevel, discountPercentage, price, "image_url": image.asset->url, "slug": slug.current}`;
      const product = await client.fetch(query);
      setProducts(product);
      setLoading(false)
    } catch (error) {
      setLoading(false)
      console.error(error);
    }
  };

  useEffect(() => {
    getData();
  }, [itemsPerPage]);
  return ()... //Same as above
```

Cart Store (Zustand)

```
import { ProductType } from '@/components/mini/ProductCard';
import { create } from 'zustand'

export interface CartProduct extends ProductType {
    quantity: number,
    subPrice: number,
    totalAmount: number,
}

interface CartStateI {
    cart: CartProduct[],
    addToCart: (item: CartProduct) => void,
    removeFromCart: (itemId: string) => void,
    clearCart: () => void,
    updateQuantity: (itemId: string, quantity: number) => void
}

const useCartStore = create<CartStateI>()((set) => ({
    cart: [],
    addToCart: (item) => set((state) => ({ cart: [...state.cart, item] })),
    removeFromCart: (itemId) => set((state) => ({ cart: state.cart.filter((item) => item._id !== itemId) })),
    clearCart: () => set({ cart: [] }),
    updateQuantity: (itemId, quantity) => set((state) => ({ cart: state.cart.map((item) => item._id === itemId ? { ...item,
quantity, totalAmount: item.subPrice * quantity } : item) }))
}));
```

```
export const calculateAmount = (cartItems: CartProduct[]) => {
    let amount;
    if (cartItems.length <= 0) { amount = 0; }
    else {
        amount = cartItems.reduce((acc, cartProduct) => acc + cartProduct.totalAmount, 0);
    }
    return amount;
}

export default useCartStore;
```

Wishlist store is created in that same way

Cart Page Script

```
"use client";
import MainHeader from '@/components/MainHeader'
import React, { useEffect, useState } from 'react'
import CartItem from './CartItem'
import { IoIosCheckmarkCircle } from 'react-icons/io'
import Link from 'next/link'
import useCartStore, { calculateAmount } from '@/store/cartStore'

const CartPage = () => {
    const {cart, clearCart} = useCartStore();
    const [subAmount, setSubAmount] = useState(0);
    useEffect(() => {
        const updatedAmount = calculateAmount(cart);
        setSubAmount(updatedAmount)
    }, [cart]);
    return (...) // Same Randering
}
```

Cart Btns Component:

```
"use client";
import React, { useState } from 'react'
import { BsCart2 } from 'react-icons/bs'
import useCartStore from '@/store/cartStore'
import { ProductType } from './ProductCard';
import { toast } from 'react-toastify';
import Link from 'next/link';
import { FiShoppingCart } from 'react-icons/fi';

const CartBtns = ({ varation, data, amount }: { varation: number, data?: ProductType, amount?: number }) => {
    const { addToCart, cart, updateQuantity } = useCartStore();
    const [qty, setQty] = useState(1);
    const handleCartAction = () => {
        const load = toast.loading('Adding to Cart...', { autoClose: 2000 });
        if(typeof data == "undefined" || typeof amount == "undefined") {
            toast.update(load, { render: "Data not defined!", type: "success", isLoading: false, autoClose: 1000 });
```

```
            return;
        }
        try {
            const cartData = { ...data, quantity: qty, subPrice: amount, totalAmount: (qty * amount) };
            const isAlreadyExist = cart.findIndex((pr) => pr._id == data._id);
            if (isAlreadyExist != -1) {
                const record = cart[isAlreadyExist]
                updateQuantity(data._id, record.quantity + qty);
            } else {
                addToCart(cartData)
            }
            toast.update(load, { render: "Item Added in to cart!", type: "success", isLoading: false, autoClose: 1000 });
        } catch (error) {

            toast.update(load, { render: "Failed: Try Again", type: "error", isLoading: false, autoClose: 1000 });
            console.log(error);
        }
    }
    return (
        <>
            {varation == 1 && (
                <div className='flex justify-center items-center bg-transparent text-[#1490b9] hover:bg-[#e6e6e7] hover:text-
offNavyBlue cursor-pointer rounded-full size-8 p-1' onClick={handleCartAction}>
                    <BsCart2 size={25} />
                </div>
            )}
            {varation == 2 && (
                <div className='flex justify-between items-center'>
                    <button className='px-6 py-2 text-navyBlue font-semibold bg-slate-200 rounded-md hover:bg-navyBlue
hover:text-white' onClick={handleCartAction}>Add to Cart</button>
                    <input type="number" value={qty} className='bg-gray-200 text-gray-500 border-none outline-none text-
center font-josefin-sans text-lg py-1 mx-1 font-normal' onChange={(e) => setQty(Number.parseInt(e.target.value))} />
                </div>
            )}
            {varation == 3 && (
                <Link href={"/cart"} className='bg-transparent text-white border-none outline-none pl-3 text-lg flex justify-
start items-center gap-2'><FiShoppingCart color={'white'} /> {cart.length > 0 && <span className='bg-white rounded-
full text-sm text-purple size-5 text-center font-semibold'>{cart.length}</span>}</Link>
            )}

        </>
    )
}

export default CartBtns
```

And some other components are also created and modified like checkout, wishlist

Technical Report Summary:

1. Steps Taken to Build and Integrate Components

- **API Integration:** Connected to Sanity CMS to fetch product data dynamically, like name, description, price, and images.
- **Product Cards:** Created reusable ProductCard components to display products in different layouts (e.g., simple, category).
- **Search & Categories:** Built a search page and category filters that show relevant products based on user input.
- **State Management (Zustand):** Used Zustand to manage the cart's state globally, allowing users to add/remove items and track the total.
- **Cart & Wishlist:** Set up pages for users to view and manage cart items and wishlist.
- **Checkout (Ongoing):** Started working on a checkout page to display order summary and user info.

2. Challenges and Solutions

- **Dynamic Data from Sanity:** Initially struggled with fetching data correctly, but I fixed it using flexible queries and pagination from Sanity.
- **State Management:** Managing cart updates across components was tricky, so I used Zustand for easier global state management.
- **UI Consistency:** Ensured a responsive design using TailwindCSS to make the website work well on all screen sizes.
- **Complex Cart Operations:** Handling quantity updates and price calculations was complex, but I solved it by creating functions in the cart store for real-time updates.
-

3. Best Practices Followed

- **Modular Components:** Created reusable components like ProductCard and CartBtns to keep the code clean and maintainable.
- **Centralized State Management:** Used Zustand for managing the cart globally, reducing repetitive code.
- **Error Handling:** Added error handling for API calls and loading states to improve the user experience.
- **Responsive Design:** Ensured the website adapts to different devices using TailwindCSS.
- **Performance:** Optimized the app by only fetching necessary data to avoid unnecessary API calls.

Final Update:

In this update, I reorganized and improved my code by creating modular components and centralizing repetitive code. I developed functions that can be used across the entire website instead of just in specific components. I also integrated the Sanity API into all relevant components. Although I faced some issues, I was able to resolve them by debugging queries in the studio and following the documentation. Additionally, I created schemas for customer and order data and connected them with Sanity. I also created an API route to handle orders, but this part will be completed later.