Hackathon 3 : DAY 2

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Technical Planning for Furniture & Home Decor E-Commerce Website

1. Introduction

This document outlines the technical foundation for creating an eCommerce website dedicated to Furniture & Home Decor using Next.js, Tailwind CSS, and Sanity CMS. The platform aims to provide a seamless shopping experience for users to browse, purchase, and track a variety of furniture and home decor items, including sofas, chairs, vase sets, lamps, and future product additions.

2. Technical Requirements

Frontend Requirements

User-Friendly Interface:

The website will provide intuitive navigation to explore a wide range of items such as sofas, chairs, vase sets, and lamps, accessible through the Home Page and Product Listing Page.

Responsive Design:

Mobile-first responsive design using Tailwind CSS to ensure compatibility across all screen sizes.

Essential Pages:

Home Page: Displays featured products, promotions, and categories like sofas and lamps.

Product Listing Page: Lists all products with options to filter by category, price, and availability.

Product Details Page: Shows detailed information, including product description, price, images, and stock levels.

Cart Page: Displays selected items, allows quantity updates, and proceeds to checkout.

Checkout Page: Collects shipping details, payment preferences, and confirms orders.

Order Confirmation Page: Summarizes the user's purchase and provides tracking information.

Backend Requirements (Sanity CMS)

Product Data Management:

Store product details like name, category (e.g., Sofa, Lamp), price, description, images, and stock levels.

Future support for adding new product categories and items.

Order Management:

Maintain order records, including customer details, purchased products, payment status, and shipment updates.

Customer Data Management:

Manage user accounts, including order history and saved preferences.

Third-Party APIs

Shipment Tracking API:

Integrate with services like shipengine to provide real-time shipment updates.

Payment Gateway API:

Use Stripe or PayPal for secure online transactions.

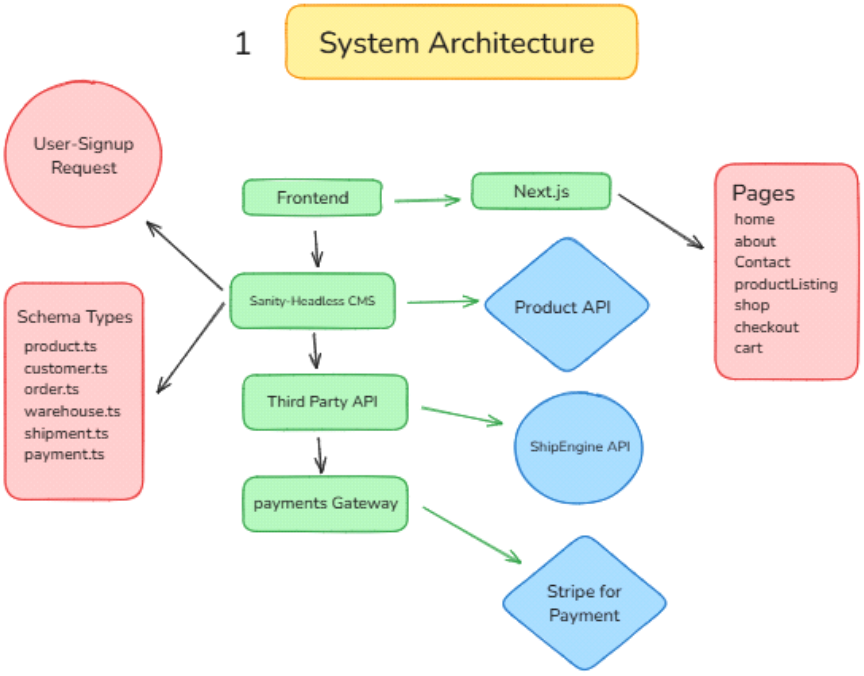
Tax Calculation API:

Automatically calculate taxes based on the user's location at checkout.

3. System Architecture

High-Level Overview

The system comprises a robust frontend, backend, and third-party integrations:



Key Workflows

User Registration:

Users sign up via the frontend, and their information is stored in Sanity CMS.

Confirmation emails are sent upon successful registration.

Product Browsing:

Frontend requests product data (e.g., sofas, lamps) from the Sanity CMS API.

Users can apply filters like price, category, and availability to narrow their search.

Order Placement:

Users add items to their cart and proceed to checkout.

Order details, including customer info and payment status, are sent to Sanity CMS for recording.

Payments are securely processed via Stripe API.

Shipment Tracking:

The Shipment API fetches real-time updates about the order status.

Users can track their shipment via the Order Confirmation Page.

4. API Requirements

Product Endpoints

Endpoint Name: /products

Method: GET

Description: Fetch product details (name, price, stock, category, image).
Response Example:


```
{
   "id": 1,
   "name": "Sofa Set",
   "category": "Sofa",
   "price": 1500,
   "stock": 5,
   "image": "https://example.com/images/sofa.jpg"
}
```


Order Endpoints

Endpoint Name: /orders

Method: POST

Description: Create a new order in Sanity CMS.

Payload Example:


```
{
   "customer": {
```

```
    "name": "Huriya Syed",
    "email": "huriyasyed1@gmail.com"
  },
  "products": [
    { "id": 1, "quantity": 2 }
  ],
  "paymentStatus": "Paid"
}
```


Response Example:


```
{
  "orderId": 1234,
  "status": "Order Confirmed"
}
```


Shipment Tracking Endpoint

Endpoint Name: /shipment

Method: GET

Description: Fetch shipment status for a given order.

Response Example:


```
{
  "shipmentId": 5678,
  "orderId": 1234,
  "status": "Out for Delivery",
  "expectedDelivery": "2024-09-20"
}
```


Payment Endpoint

Endpoint Name: /payment

Method: POST

Description: Process payments via Stripe API.

Payload Example:

```
{
   "amount": 1500,
   "currency": "USD",
   "paymentMethodId": "pm_card_visa"
}
```

Response Example:

```
{
   "paymentId": "pi_123456789",
   "status": "Succeeded"
}
```

Conclusion

This system architecture outlines a scalable, user-centric platform for Furniture & Home Decor eCommerce. By leveraging modern technologies like Next.js, Tailwind CSS, and Sanity CMS, alongside third-party integrations, the platform ensures a seamless user experience and supports future growth.