Date 1. (Project Overview)

Project Name:

HKM Mart

Objective:

To facilitate our customers by creating an online store to sell products with an easy checkouts process, tracking shipments, and handling payments securely.

Target Audience:

My eCommerce platform is for youngsters including casual ware, party ware and professional outfits to enhance customers' charming personality. We also deal in kitchen and dinning to boost customers standard and priorities.

Date 2. (Technologies Used)

Frontend:

Next.js: React-based framework for building the frontend. It helps with Server-Side Rendering (SSR), Static Site Generation (SSG), and API routes.

Features:

→ Component-based UI
→ Fast rendering
→ Dynamic routes for product pages and categories.

Backend

Sanity CMS: Headless Content Management System to handle content (product data, user data, and categories.

Features:

→ Real-time content updates
→ Customizable schema for product, user, order, etc.
→ API access to fetch product data.

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Third-party APIs:

→ Shipment & Tracking: Integrating third-party APIs like ShipEngine for shipment tracking and management.

Features:

→ Real-time shipment status.
→ Estimated delivery times.
→ Shipping label generation.

Payment Gateway:

Stripe: Payment solutions for processing payments securely.

Features:

→ Credit/debit card processing
→ One-click payments
→ Multi-currency support

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Other Technologies

→ CSS in js : styled-components or Tailwind CSS for styling.

→ Node.js : For handling API routes on the backend.

→ MongoDB : For storing user, order and product data.

→ Clerk : For authentication.

3. (Architecture & workflow)

High-Level Architecture:

Frontend (Next.js)

→ Pages for product listing, cart, checkout, order confirmation

→ Client-side interaction with APIs for products

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cart management, and payment processing.

→ Product, user, and order data fetched from Sanity CMS.

Backend: (Sanity CMS)

→ Provides product information (title, price, description, image etc)

→ Store order data (user info, order details, shipping address, etc)

→ custom schemas for product and order management.

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Third-party Integrations

→ Tracking : API calls to external services for tracking shipments.

→ Payment Gateway: API integration with Stripe for handling transactions securely.

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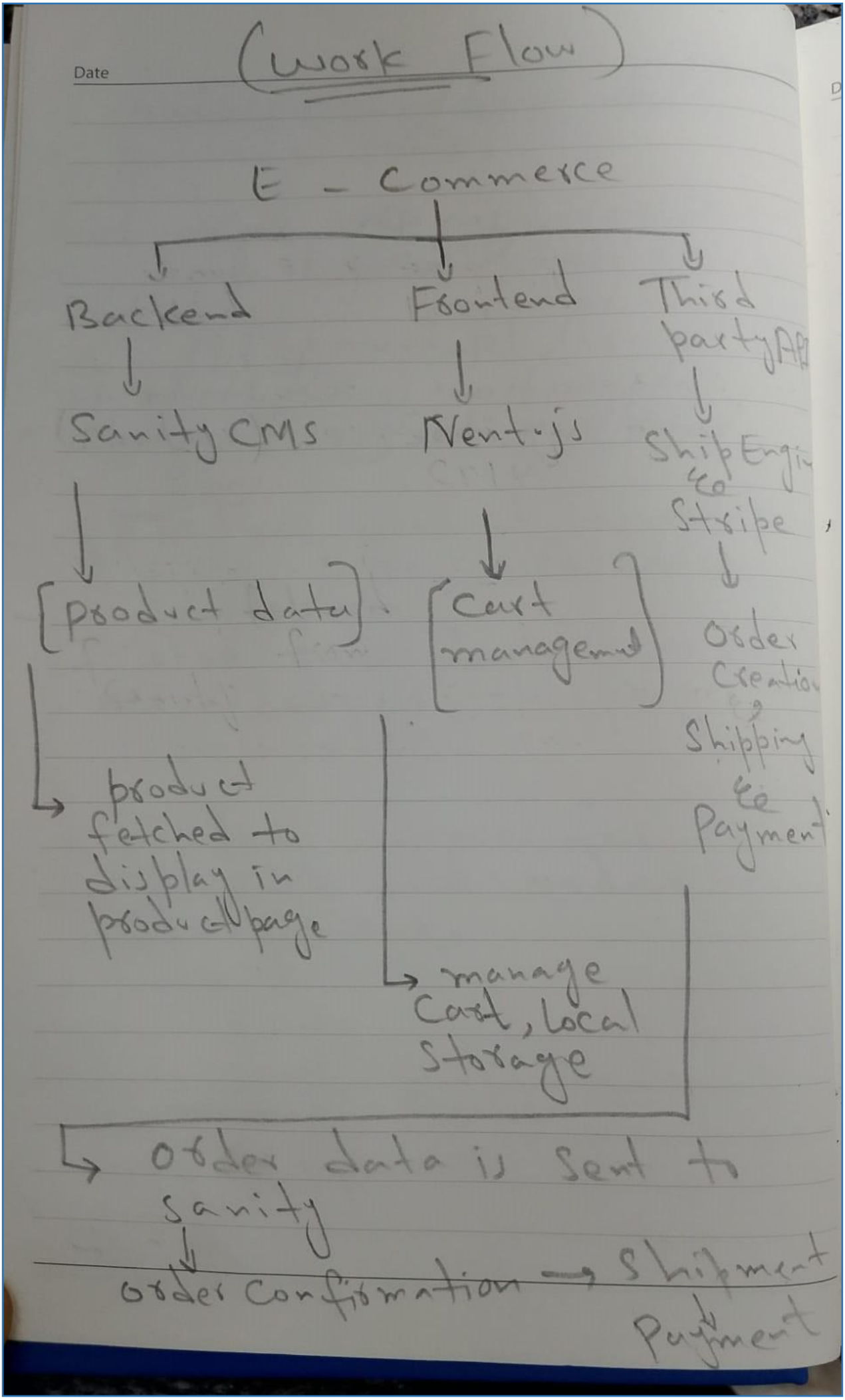
(Work Flow)



Date 4. (Features & Functionalities)

User Interface:

→ Product page to display products with price, image description and quantity.

→ Cart for user to add/remove view the product cart and proceed to checkout.

→ Checkout to collect customers details, Shipment and payment.

→ Order Confirmation: Confirmation page after successful payment.

Admin Interface (Optional)

→ Admin can add/edit/remove products via Sanity.

→ Admin can view customer orders and their status.

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→ Admin can track the shipment status.

Payment Integration

Stripe will integrate a secure payment gateway and support various payment methods.

Shipment Tracking

ShipEngine automatically update tracking information and display shipment status.

Date 5: (Database Schema)

User Schema:

id : String
name: string
email: string
shippingaddress: Object (address, city)
orders: Array[ ]

Product Schema:

product_id : string
name : string
description: Text
price: Number
category: string
image: string
stock quantity: Number

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Order Schema:

order_id: string
User_id: string (User reference)
products: [ ]
total_price: Number
payment_status: string (paid, pendin
shipping_status: string (shipped, deliver

6. (API Integration)

Sanity API

→ GET Products: Fetch products from Sanity.

→ POST Order: Create a new order in Sanity.

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Payment Gateway

Stripe

→ POST / create-checkout-session
→ Handle checkout.session.completed webhook to update the order status.

Third-Party shipment API

ShipEngine

→ GET / Track shipment Status
→ POST / create a new shipment after order confirmation.

Date 7. (Technical Skills Required)

Frontend:
→ Next.js
→ CSS Frameworks

Backend

→ Sanity
→ Node.js

APIs

→ Shipengine API integration

Payment Gateway

→ Stripe integration

Version Control

→ Git

Hosting / Deployment
→ Vercel
→ Sanity Studio

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8. (Challenges & Solutions)

Possible challenges.

→ Handling concurrent user sessions during high traffic periods.

→ Ensuring secure payment processing and protecting customer data.

→ Integration third-party APIs without issues.

Solutions:

→ Use Server-side-rendering (SSR) with Next.js to optimize performance.

→ User stripe's webhook to securely process payments and update the database.

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→ Integrate third-party APIs with proper error handling and retry logic.

9. (Conclusion)

HKM Mart will facilitate customers by providing an online store with easy check out and payment process. To ensure easness of customer we use Next.js for frontend to optimize performance. Sanity for backend to fetch products to display on product page for customers. ShipEngine for shipment to monitor the shipment status. These technologies provides user experience easy tracking of shipment and secured payment modes.

In future to enhance the performance of website we will work with innovative technologies to facilitate customers more efficiently.