Day 2 of Hackathon - Bandage Online Shopping Platform

Bandage Online Shopping Platform

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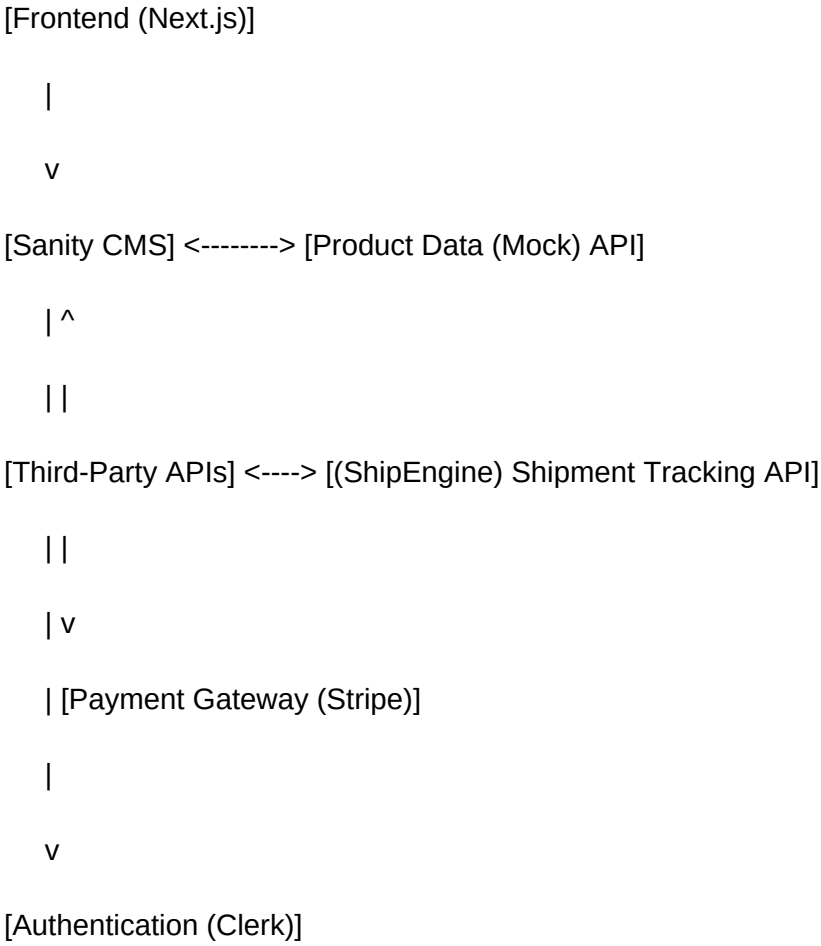
Overview

This document outlines the technical foundation and enhanced workflow for the Bandage Online Shopping Platform. It includes system architecture, key workflows, API endpoints, and a technical roadmap.

System Architecture



Component Descriptions

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- Frontend (Next.js):

Provides a responsive and interactive user interface for browsing products, managing orders, and handling user authentication.

Fetches and displays data dynamically using APIs in real-time.

- Sanity CMS:

Centralized backend for managing product information, user data, order records, and inventory.

Exposes APIs for dynamic data communication with the frontend.

- Third-Party APIs:

1. Shipment Tracking API (ShipEngine): Fetches real-time shipping updates and generates tracking details for orders.

2. Payment Gateway (Stripe): Processes secure payments and confirms payment status.

- Authentication (Clerk):

Handles user registration, login, and session management.

Integrates with Sanity CMS to securely store and retrieve user data.

Key Workflows

1. User Registration:

- User signs up via the frontend using Clerk.

- Registration details are stored in Sanity CMS for further use.

2. Product Browsing:

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- User navigates through product categories on the frontend.

- Sanity CMS API fetches product data (name, price, stock, description, images).

- Dynamic product listings are displayed on the frontend.

3. Order Placement:

- User adds products to the cart and proceeds to checkout.

- Order details are sent to Sanity CMS, payment is processed via Stripe.

- A confirmation message is sent to the user, and the order is recorded in Sanity CMS.

4. Shipment Tracking:

- After order placement, shipment details are updated using ShipEngine.

- Real-time tracking information is displayed to the user on the frontend.

5. Inventory Management:

- Product stock levels are managed in Sanity CMS.

- Real-time stock updates are fetched from Sanity CMS.

- Out-of-stock products are added to the wishlist, while in-stock products proceed to checkout.

API Endpoints

Endpoint	Method	Purpose	Response Example
/products	GET	Fetch all product details	{ "name": "Product Name", "price": 10
/order	POST	Submit new order details	{ "orderId": 123, "status": "success" }
/shipment-tracking	GET	Fetch tracking updates	{ "trackingId": "AB123", "status": "In T

Technical Roadmap

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Development Phase:

- Implement Clerk for user authentication and integrate it with Sanity CMS.
- Develop mock APIs for product, order, and cart management.
- Implement Stripe for payment processing.

Testing Phase:

- Conduct end-to-end testing for all workflows.
- Validate APIs using Postman or similar tools.

Launch Phase:

- Deploy the platform using Vercel or Netlify for scalability.
- Monitor performance using tools like Sentry or New Relic.
- Enable post-launch updates based on user feedback.

Conclusion

The Bandage Online Shopping Platform aims to deliver a seamless shopping experience with robust functionality like real-time shipment tracking, secure payment processing, and user-friendly interfaces. This document provides a strong technical foundation for successful development and deployment.