TECHNICAL BLUEPRINT

Overview

This document outlines a detailed technical blueprint for building an e-commerce platform tailored to support small businesses and individual sellers. The platform is designed to allow vendors to list their products and customers to enjoy a seamless shopping experience.

Key Technologies

1. **Frontend Framework**: Next.js
2. **Content Management System**: Sanity CMS
3. **Order Tracking API**: ShipEngine
4. **Hosting Platforms**: Vercel (frontend)
5. **Payment Solutions**: JazzCash, EasyPaisa

System Design

Frontend (Next.js)

- Combines server-side and client-side rendering for enhanced performance and interactivity.
- Utilizes Sanity CMS for fetching dynamic, real-time content.

Content Management (Sanity CMS)

- Simplifies the management of marketing assets, product features, and homepage visuals.
- Seamlessly integrates with external services, including payment gateways and shipping APIs.
- Efficiently handles product data, order tracking, customer details, and payment records.

Order Tracking

- ShipEngine powers real-time shipment updates, ensuring precise delivery information for users.

Payments

- Provides secure payment processing through Stripe and local payment gateways, supporting multiple transaction methods.

Deployment Infrastructure

- Hosted on Vercel for scalability and efficient continuous integration/continuous deployment (CI/CD) workflows.

Workflows and Components

User Authentication

- APIs handle tasks like user registration, login, and verification.

Dynamic Content Management

- Administrators utilize Sanity CMS to curate products, banners, and marketing materials.
- GROQ queries dynamically fetch and display updated content on the frontend.

Product list and Checkout

- Server-side rendered product pages ensure a smooth user experience and improved search engine optimization (SEO).
- Features like browsing, filtering, and cart management are powered by Sanity CMS.

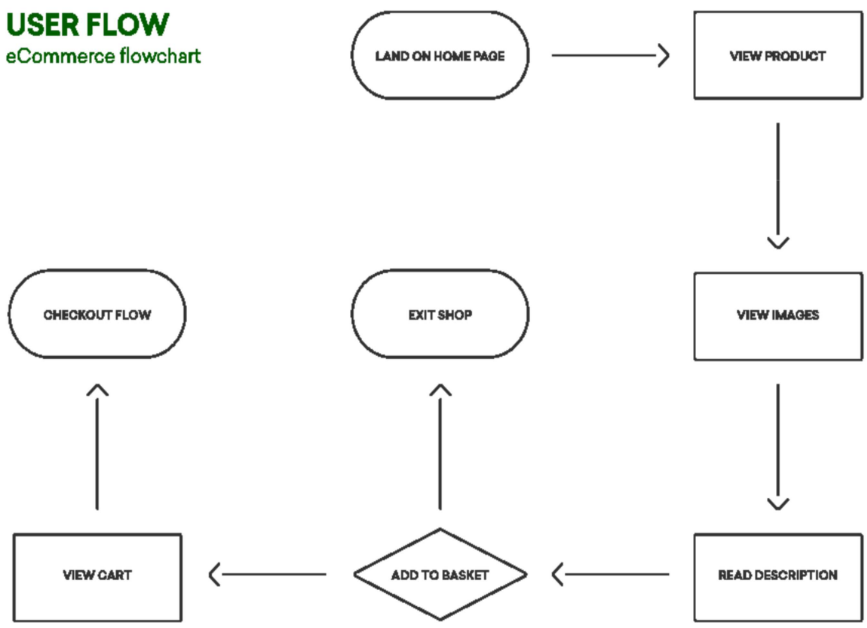
Order and Shipment Management

- Orders are processed through backend APIs with real-time status updates.
- Integration with ShipEngine facilitates precise shipment tracking.

Payment Handling

- Stripe and local gateways like JazzCash provide secure and flexible payment processing options, including cash-on-delivery (COD).

User interactions



API Endpoints

User Management

- (POST) `/api/auth/register`: Register a new user.
- (POST) `/api/auth/login`: Log in a user.
- (GET) `/api/users/profile`: Fetch user profile (authentication required).
- (PUT) `/api/users/update`: Update user details.

Products

- (GET) `/api/products`: Retrieve the full product list.
- (GET) `/api/products/:id`: Fetch details of a specific product.
- (POST) `/api/products`: Add a new product (admin/seller access required).

Orders

- (POST) `/api/orders`: Place a new order.

Payments

- (POST) `/api/payments`: Process a payment.
- (GET) `/api/payments/status`: Check payment status.

Shipments

- (POST) `/api/shipments`: Generate a shipment.
- (GET) `/api/shipments/track`: Track shipment delivery.

Integration Summary

Sanity CMS

- Manages homepage content, product highlights, and blogs.
- GROQ queries ensure the frontend reflects real-time updates.

ShipEngine

- Automates the creation of shipping labels and provides live tracking information.

Stripe

- Supports secure transactions, including payments, refunds, and subscriptions.

Deployment Plan

- The platform is deployed on Vercel with automated build pipelines triggered through GitHub integration

Conclusion

This technical plan provides a robust framework for developing a scalable and user-friendly e-commerce solution. By leveraging cutting-edge technologies, the platform aims to empower small businesses and individual sellers, fostering their growth through an exceptional digital marketplace experience.

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