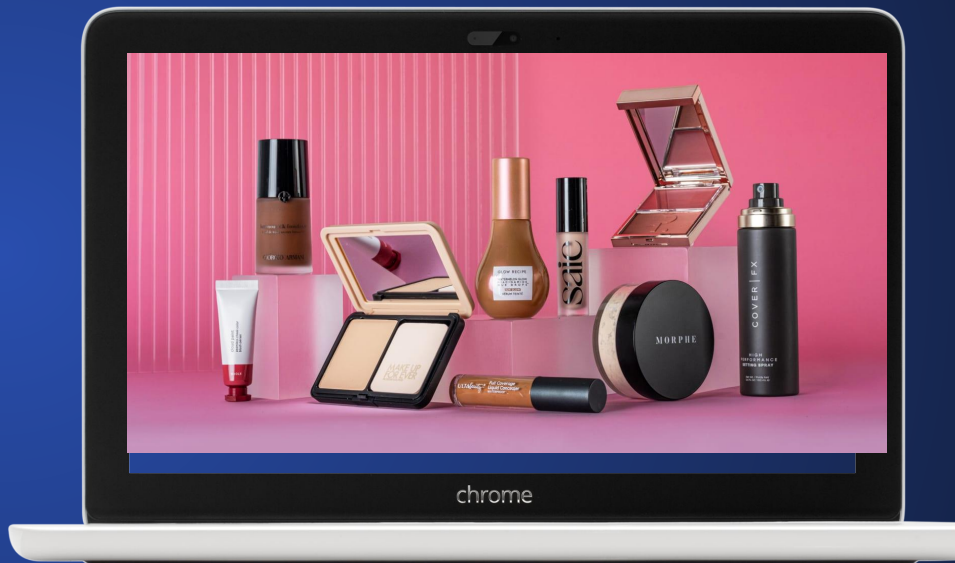Prepared by
Alishba Majeed

Hackathon Day 2

Day 2 Planning the Technical Foundation

OutLines

My Marketplace Clothing Website

- Overview
- System Architecture
- Frontend Development Plan
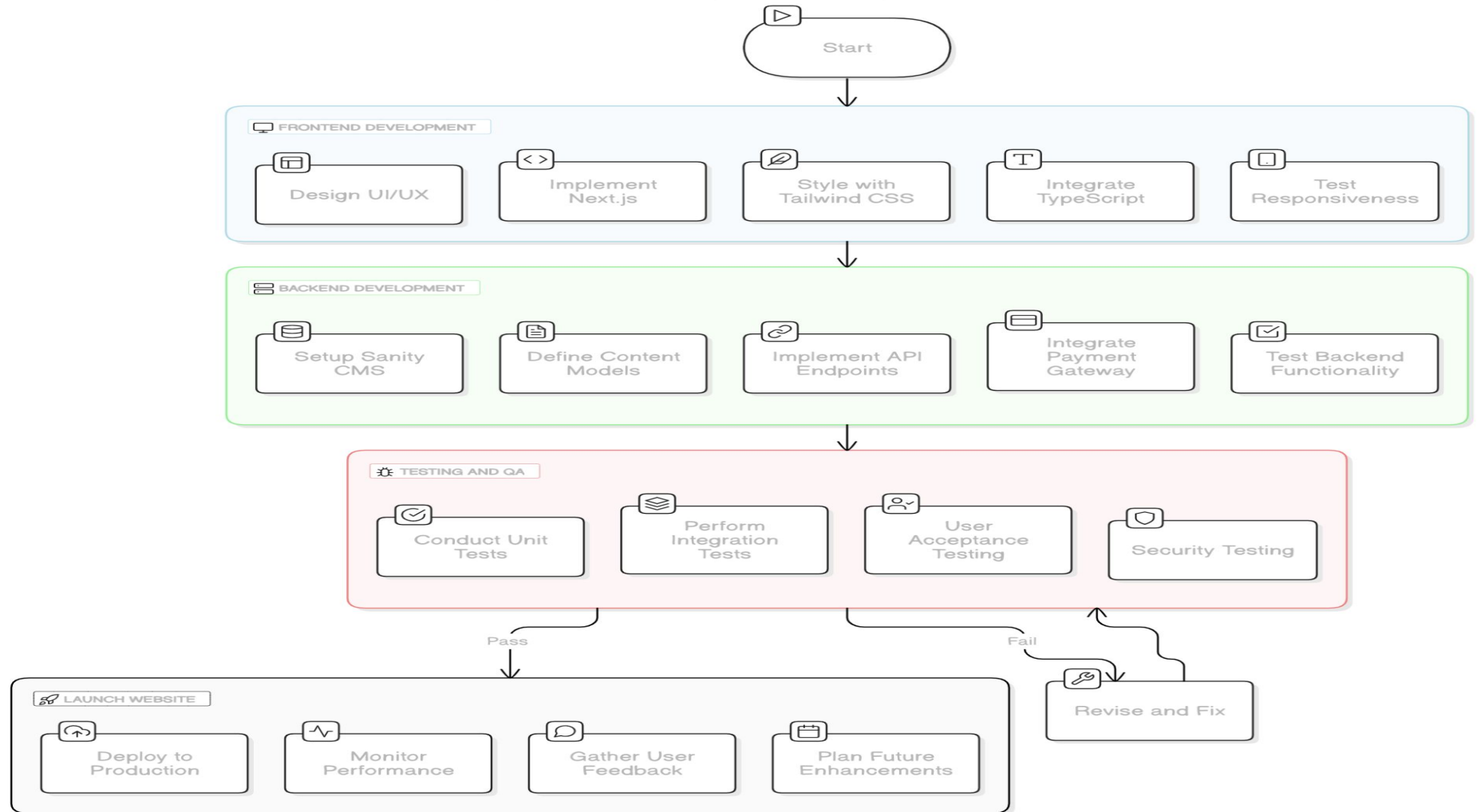- Backend Development Plan
- Integration and Workflow
- Conclusion

Technical Plan for Glow Up Beauty Marketplace Website

Overview :

Our vision is to design the Glow Up Beauty Marketplace Website as an efficient, scalable, and user-friendly platform. This project, developed collaboratively by my sister and me, aims to convert business requirements into robust technical solutions while ensuring the website's structure aligns perfectly with our business goals.

Glow Up Beauty Marketplace Development Process

Start

FRONTEND DEVELOPMENT

- Design UI/UX
- Implement Next.js
- Style with Tailwind CSS
- Integrate TypeScript
- Test Responsiveness

BACKEND DEVELOPMENT

- Setup Sanity CMS
- Define Content Models
- Implement API Endpoints
- Integrate Payment Gateway
- Test Backend Functionality

TESTING AND QA

- Conduct Unit Tests
- Perform Integration Tests
- User Acceptance Testing
- Security Testing

Pass → **Fail** → Revise and Fix

LAUNCH WEBSITE

- Deploy to Production
- Monitor Performance
- Gather User Feedback
- Plan Future Enhancements

Technical Plan for Glow Up Beauty Marketplace Website

Goals and Objectives

1. Efficiency: Ensure smooth and fast performance for all users.
2. Scalability: Create a system capable of handling growth in traffic, vendors, and products.
3. User-Friendly Experience: Offer an intuitive interface for customers, vendors, and administrators.
4. Alignment with Business Goals:
   - Facilitate easy product discovery and purchasing for customers.
   - Enable seamless onboarding and management for vendors.
   - Enhance brand visibility for Glow Up Beauty products.

Project Collaboration

- **Roles**: My sister and I will share responsibilities, focusing on:
  - Frontend Development: Designing and implementing a visually appealing and responsive UI.
  - Backend Development: Building a secure, scalable, and robust server architecture.
  - Testing and Deployment: Ensuring the website is error-free and ready for production.
- **Tools for Collaboration:**
  - Code Management: GitHub for version control and collaboration.
  - Task Management: Trello or Notion for tracking progress.

1. Architecture Overview

The system will adopt a 3-Tier Architecture to separate concerns and ensure maintainability:

1. **Presentation Layer**
   - Handles user interactions via a responsive and visually appealing interface.
   - Technologies: Next.js, Tailwind CSS, TypeScript.
2. **Application Layer (Business Logic)**
   - Processes requests from the frontend and communicates with the database.
   - Technologies: Node.js with Express.js.
3. **Data Layer**
   - Manages persistent data storage for users, products, orders, and vendors.
   - Technologies: PostgreSQL (Relational) and MongoDB (NoSQL).
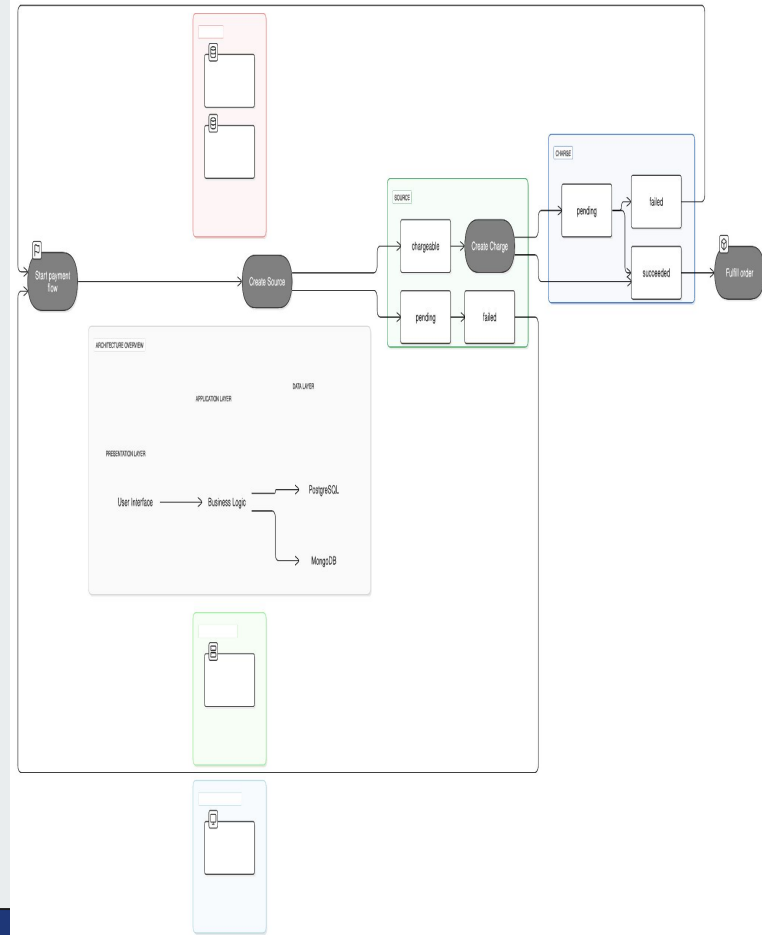
Technical Plan for Glow Up Beauty Marketplace Website

Frontend Development Plan

1. **Framework**: Use Next.js for server-side rendering and improved performance.
2. **Styling**: Apply Tailwind CSS for a responsive and modern design.
3. Key Pages:
   - Home Page: Showcase trending products and categories.
   - Product Page: Display product details with options to add to cart.
   - Cart/Checkout: Allow users to review items and proceed to payment.
   - User Dashboard: Manage orders, profile, and reviews.
4. **Features**:
   - Interactive UI with animations.
   - Real-time updates (e.g., cart updates).
   - Mobile-first design.
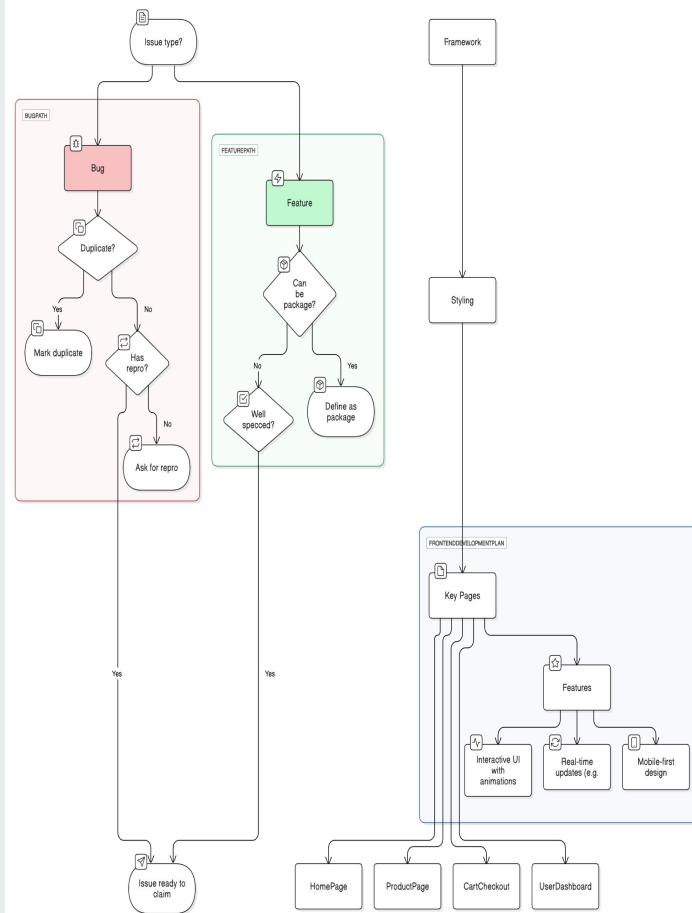
Technical Plan for Glow Up Beauty Marketplace Website

Backend: ● Sanity CMS: ○ Centralized content management for product details, categories, banners, and user reviews. ○ Easy updates to product information and other content through an admin-friendly interface.

● API Layer: ○ REST or GraphQL APIs connect the frontend and backend, ensuring seamless data exchange

. ● Order Management: ○ Backend services process orders and store shipping information, ensuring a smooth purchase experience.

Backend System Flowchart
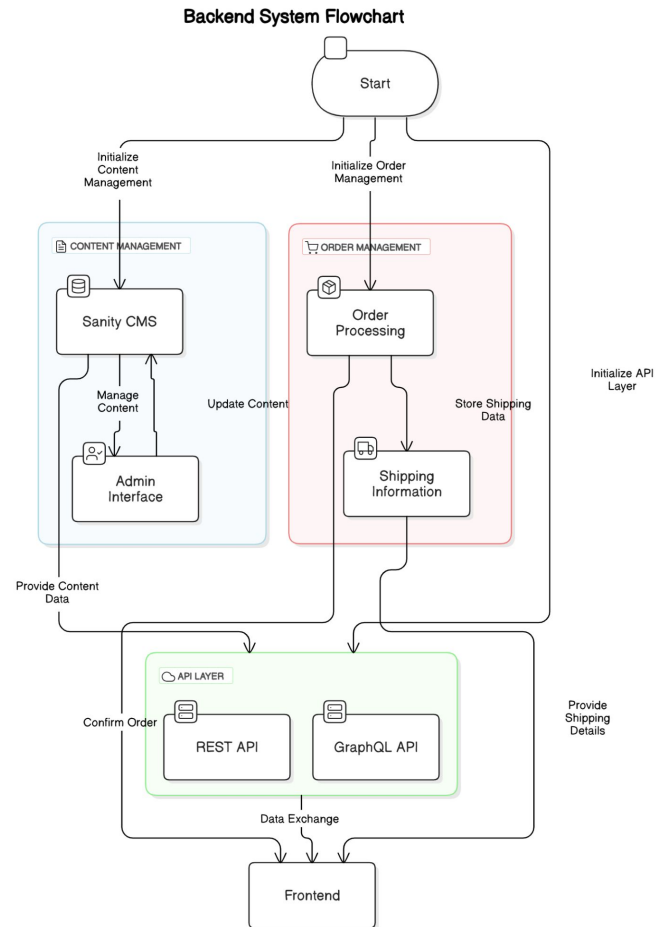
Technical Plan for Glow Up Beauty Marketplace Website

API Integration and Endpoints:

Authentication APIs

1. **User Registration**: `POST /api/auth/register`
   - Registers a new user.
2. **User Login**: `POST /api/auth/login`
   - Authenticates user and returns JWT.
3. **Profile**: `GET /api/auth/profile`
   - Returns user profile (JWT required).

Product APIs

1. **Get Products**: `GET /api/products`
   - Retrieves all products.
2. **Get Product**: `GET /api/products/:id`
   - Retrieves product by ID.
3. **Add Product**: `POST /api/products` (Admin Only).
4. **Update Product**: `PUT /api/products/:id` (Admin Only).
5. **Delete Product**: `DELETE /api/products/:id` (Admin Only).

Sanity Content APIs

1. **Get Blogs**: `GET /api/sanity/blogs`
2. **Get Banners**: `GET /api/sanity/banners`

Stripe Payment APIs

1. **Create Payment Intent**: `POST /api/payments/create-intent`
2. **Confirm Payment**: `POST /api/payments/confirm`

Technical Plan for Glow Up Beauty Marketplace Website

Workflow

1. **User Interaction**
   - Users visit the website, browse products, and interact with features like search and filters.
   - Secure authentication allows users to register, log in, and manage profiles.
2. **Product Management**
   - Admins manage product data (CRUD operations) via a dashboard using backend APIs.
   - Sanity CMS is used to update dynamic content (blogs, banners).
3. **Order Processing**
   - Users add products to the cart and place orders via the checkout system.
   - Backend APIs handle order creation, payment validation, and order status updates.
4. **Payment Workflow**
   - Stripe integration processes payments securely.
   - Payment intents are created, and users confirm transactions via Stripe's API.
5. **Content Delivery**
   - Sanity CMS serves dynamic content like banners and blogs, integrated via APIs for a seamless experience.
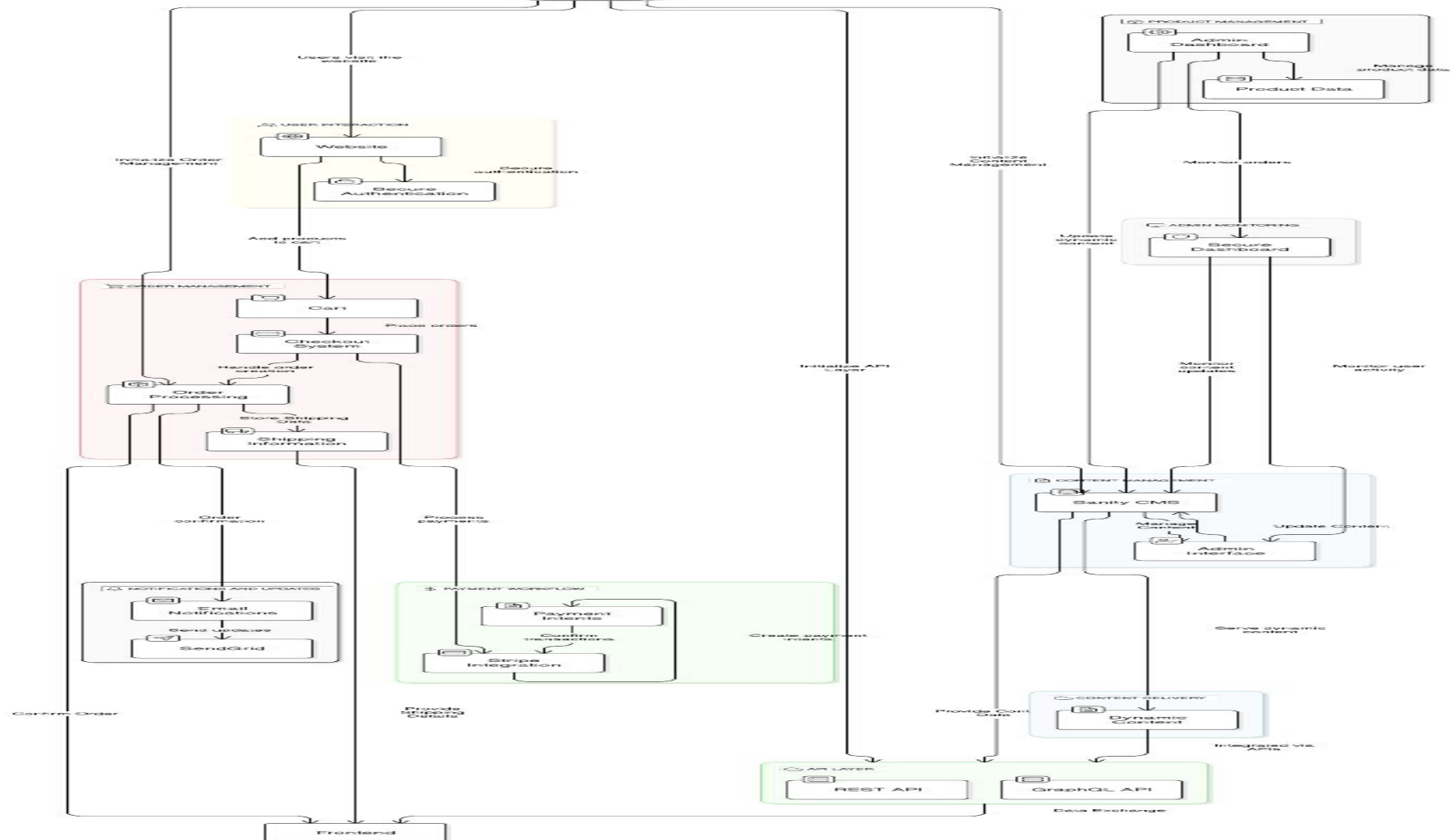6. **Notifications and Updates**
   - Email notifications for order confirmation and updates via SendGrid.
7. **Admin Monitoring**
   - Admins monitor orders, user activity, and content updates through a secure dashboard.

Backend System Flowchart

Start

Users visit the website

USER INTERACTION

Website

Secure Authentication

Handle authentication

Add products to cart

Initialize Order Management

ORDER MANAGEMENT

Cart

Checkout System

Place orders

Handle order creation

Order Processing

Store Shipping Data

Shipping Information

Order confirmation

Process payments

NOTIFICATIONS AND UPDATES

Email Notifications

Send updates

SendGrid

Confirm Order

PAYMENT WORKFLOW

Payment Intents

Confirm transactions

Stripe Integration

Create payment intents

Provide Shipping Details

PRODUCT MANAGEMENT

Admin Dashboard

Product Data

Manage product data

Monitor orders

Initialize Content Management

Update dynamic content

ADMIN MONITORING

Secure Dashboard

Monitor content updates

Monitor user activity

Initialize API Layer

CONTENT MANAGEMENT

Sanity CMS

Manage Content

Admin Interface

Update Content

Serve dynamic content

Provide Content Data

CONTENT DELIVERY

Dynamic Content

Integrated via APIs

API LAYER

REST API

GraphQL API

Data Exchange

Frontend

Schema

Entity	Attributes	Description
User	id (PK), name	Stores user information in
Product	id (PK), name	Contains product details I
Order	id (PK), user_	Manages order records w
Cart	id (PK), user_	Tracks items added to the
Review	id (PK), user_	Stores user reviews and r
Payment	id (PK), order	Handles payment-related
Category	id (PK), name	Defines product categorie
Admin	id (PK), name	Manages admin details ar

Conclusion

This technical plan outlines the approach for the **Glow Up Beauty Marketplace Website**, ensuring it is scalable, efficient, and user-friendly.

- **Frontend**: React, Next.js, TypeScript, and Tailwind CSS for a responsive and interactive UI.
- **Backend**: Sanity CMS, management and scalability.
- **API Integration**: Secure endpoints for authentication, product management, and order processing.
- **Data Migration**: A strategy for seamless data transfer with integrity.
- **User Experience**: Clean, intuitive design with personalized features like reviews and order tracking.

This plan aligns with business goals, ensuring long-term growth and a smooth user experience.

Thank You

Prepared by
Alishba Majeed