



TECHNICAL FOUNDATION FOR MARKETPLACE BUILDER

Presented by: Shop.co
Hackathon 2025 - Marketplace Builder Challenge





BUSINESS GOAL

Our aim is to create a seamless and user-friendly e-commerce platform named Shop.co, specializing in selling diverse clothing options, including:

- Casual Wear
- Formal Wear
- Gym Wear
- Party Wear
- Accessories

Key Objectives:

1. Enable users to explore a wide range of clothing with ease.
2. Provide smooth user registration and personalized experiences.
3. Facilitate secure and efficient order placement and tracking.
4. Implement scalable and robust backend architecture.

DATA SCHEMA DESIGN

Core Tables:

- User Table: user_id, name, email, password, address, phone_number, registration_date.
- Product Table: product_id, product_name, category, description, price, stock, image_url, created_at.
- Order Table: order_id, user_id, order_date, total_amount, order_status.
- Shipment Table: shipment_id, order_id, tracking_number, carrier, status, expected_delivery_date.
- Delivery Zone Table: zone_id, region_name, delivery_fee, estimated_delivery_time.

Relationships:

1. A user can place multiple orders.
2. Each order contains multiple products.
3. An order is linked to a single shipment.

FRONTEND REQUIREMENTS

Key Features:

1. User-Friendly Interface: Dynamic and responsive design, accessible navigation menu for product categories.
2. Product Browsing: Filters by category, price, and rating; detailed product pages with high-quality images and descriptions.
3. Order Management: Interactive shopping cart, order summary with pricing breakdown.
4. Shipment Tracking: Real-time tracking updates, integrated map for delivery status.

Technologies:

- Framework: React with Next.js.
- Styling: Tailwind CSS for a modern and clean aesthetic.



BACKEND: SANITY CMS

Features:

1. Headless CMS: Manage product data, categories, and inventory; real-time updates for seamless frontend integration.
2. Scalability: Supports large datasets and high traffic.
3. Security: Role-based access control for administrators and content managers.



THIRD-PARTY APIS

1. Payment Gateway Integration:
 - Providers: Stripe, PayPal.
 - Functions: Secure transactions, multi-currency support.
2. Shipment Tracking APIs:
 - Providers: FedEx, UPS, DHL.
 - Functions: Real-time tracking updates.
3. Authentication APIs:
 - Provider: Auth0 or Firebase.
 - Functions: Secure user login and registration.

DESIGN SYSTEM ARCHITECTURE

Key Components:

- Atomic Design Principles:
 - Atoms: Buttons, inputs, icons.
 - Molecules: Product cards, search bars.
 - Organisms: Navbar, footer, product grids.
- UI/UX Guidelines:
 - Dark mode and light mode support.
 - Consistent typography and spacing.
 - Accessibility compliance (WCAG 2.1).

KEY WORKFLOW DESCRIPTIONS

1. User Registration:

- User inputs email, password, and profile details.
- Backend validates and stores user data in the database.
- Sends verification email via a third-party API.

2. Product Browsing:

- Frontend fetches product data from Sanity CMS.
- Users filter and search through categories.
- Dynamic product pages are rendered.

3. Order Placement:

- User selects items and confirms the order.
- Backend processes payment through APIs.
- Stores order details in the database.

4. Shipment Tracking:

- Backend generates tracking details upon order confirmation.
- Users access shipment status through API integrations.
- Updates are reflected on the frontend in real-time.

API REQUIREMENT PLANNING

Endpoints:

- User Management:
 - POST /register: Create a new user.
 - POST /login: Authenticate user credentials.
- Product Management:
 - GET /products: Fetch all products.
 - GET /products/:id: Fetch product by ID.
- Order Management:
 - POST /orders: Create a new order.
 - GET /orders/:id: Fetch order details.
- Shipment Management:
 - GET /shipment/:id: Fetch shipment status.
 - POST /shipment: Create a new shipment.

Methods and Headers:

- All API requests secured with JWT tokens.
- Standard HTTP methods (GET, POST, PUT, DELETE).



CONCLUSION

By implementing this robust technical foundation, Shop.co will:

1. Deliver an intuitive and reliable shopping experience.
2. Solve common e-commerce challenges such as real-time inventory management and shipment tracking.
3. Provide a scalable and secure platform ready for future growth.

Let's build a platform that redefines online shopping!