Marketplace Builder Hackathon Day-2

General E-Commerce Marketplace Plan

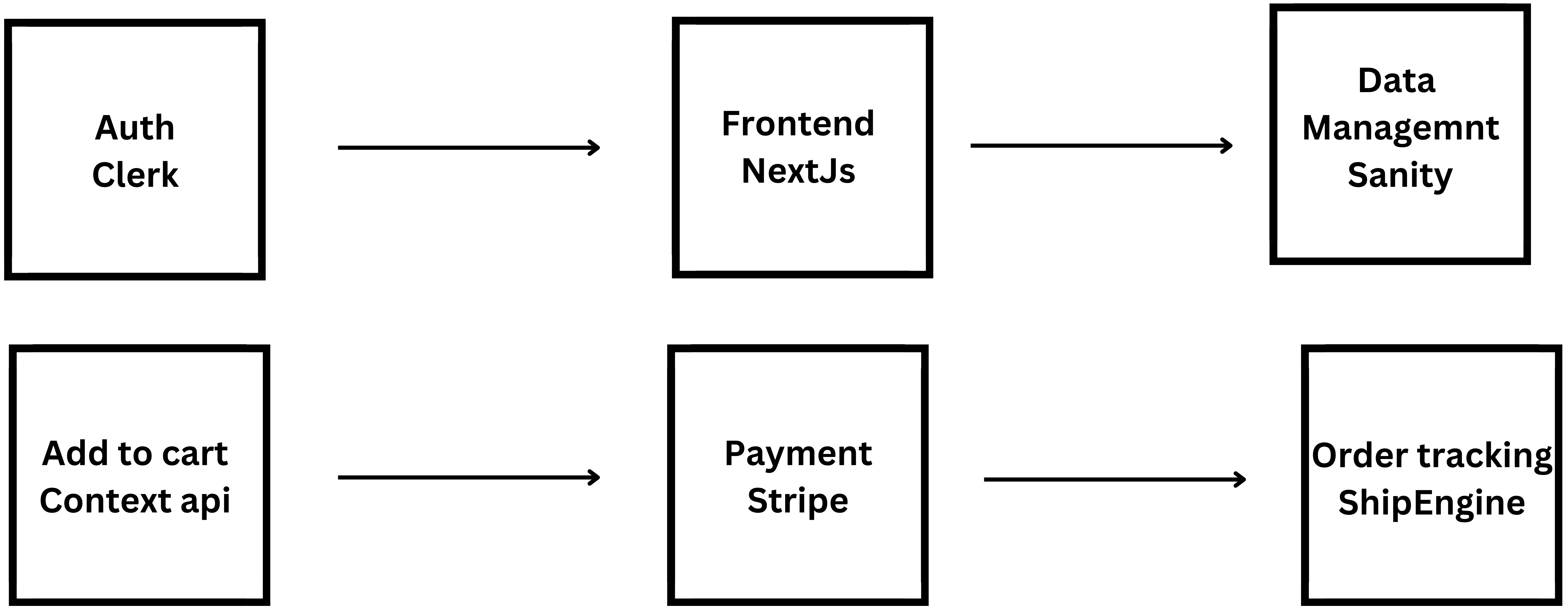
Objective:

The aim here is to devise an effective e-commerce strategy that allows for hassle-free scaling with singular built-in utilities like:

- Product browsing and management via Sanity CMS.
- Authentication using Clerk.
- Order tracking with ShipEngine API.
- Secure payments via Stripe.
- Modern tools like useContext for cart functionality.

System Architecture Diagram

graph TD



Features & Workflow

Frontend

User Authentication (Clerk):

- Use Clerk's pre-built authentication components.
- Manage user sessions without storing data in Sanity CMS.

Product Browsing:

- Fetch and display products from Sanity CMS using GROQ queries.

Cart Management:

- Use useContext to manage cart state globally.
- Add/remove items and calculate totals dynamically.

Checkout Process:

- Collect user details and payment via Stripe-hosted checkout.
- Display order confirmation after successful payment.

Order Tracking:

- Generate a shipping label ID using ShipEngine.
- Provide label ID to users for tracking.

Backend

Sanity CMS:

Manage products and orders using Sanity Studio.

Custom APIs:

- /api/products: Fetch product data.
- /api/shipping-label: Generate shipping labels using ShipEngine.
- /api/track-order: Retrieve tracking details using ShipEngine.
- /api/checkout: Integrate with Stripe for payments.

Admin Panel:

- Use Sanity Studio for inserting and managing data.

Sanity Schemas

Product Schema

```
export default {
  name: 'product',
  title: 'Product',
  type: 'document',
  fields: [
    { name: 'name', title: 'Name', type: 'string' },
    { name: 'description', title: 'Description', type:
'text' },
    { name: 'price', title: 'Price', type: 'number' },
    { name: 'image', title: 'Image', type: 'image' },
    { name: 'stock', title: 'Stock', type: 'number' },
  ],
};
```

Order Schema

```
export default {
  name: 'order',
  title: 'Order',
  type: 'document',
  fields: [
    { name: 'userEmail', title: 'User Email', type: 'string'
},
    { name: 'items', title: 'Items', type: 'array', of: [{ type:
'reference', to: [{ type: 'product' }] }] },
    { name: 'totalAmount', title: 'Total Amount', type:
'number' },
    { name: 'status', title: 'Status', type: 'string', options:
{ list: ['pending', 'confirmed', 'failed'] } },
    { name: 'shippingLabelId', title: 'Shipping Label ID',
type: 'string' },
  ],
};
```

API Requirements

Endpoint	Method	Description
/api/orders	GET	Get Order details from Stripe dasboard
/api/shipengine	GET	Generate a shipping label using ShipEngine.
/api/Checkout_sessions	POST	Integrate Stripe for payment processing.

Tools & Libraries

Clerk: Authentication.

Sanity CMS: Content management.

ShipEngine API: Shipping and tracking.

Stripe: Payment gateway.

React Context API: Cart functionality.

Development Steps

Set Up Next.js Project:

- Create a new project: npx create-next-app@latest my-app --typescript.

Install Dependencies:

- npm install @clerk/nextjs @sanity/client shipengine stripe**.**

Configure Clerk:

- Set up Clerk in _app.tsx and integrate authentication components.

Set Up Sanity CMS:

- Create schemas for products and orders.
- Use Sanity Studio to manage data.

Integrate APIs:

- Create custom API routes for ShipEngine and Stripe.

Develop Frontend Pages:

- Home: Product listing.
- Cart: Display selected items.
- Checkout: Integrate with Stripe.
- Test Functionality:

Test cart management, order placement, and shipping label generation.

Deliverables

System Architecture Diagram: Shows component interaction.
Sanity Schemas: For products and orders.
API Endpoints: For shipping, tracking, and payments.
Frontend Pages: Authentication, product browsing, cart management, and order confirmation.

Portfolio-Ready Submission: Polished project showcasing full-stack e-commerce skills.