Marketplace Builder Hackathon

Day 2: Planning the Technical Foundation

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Timing: Saturday (2 PM - 5 PM)
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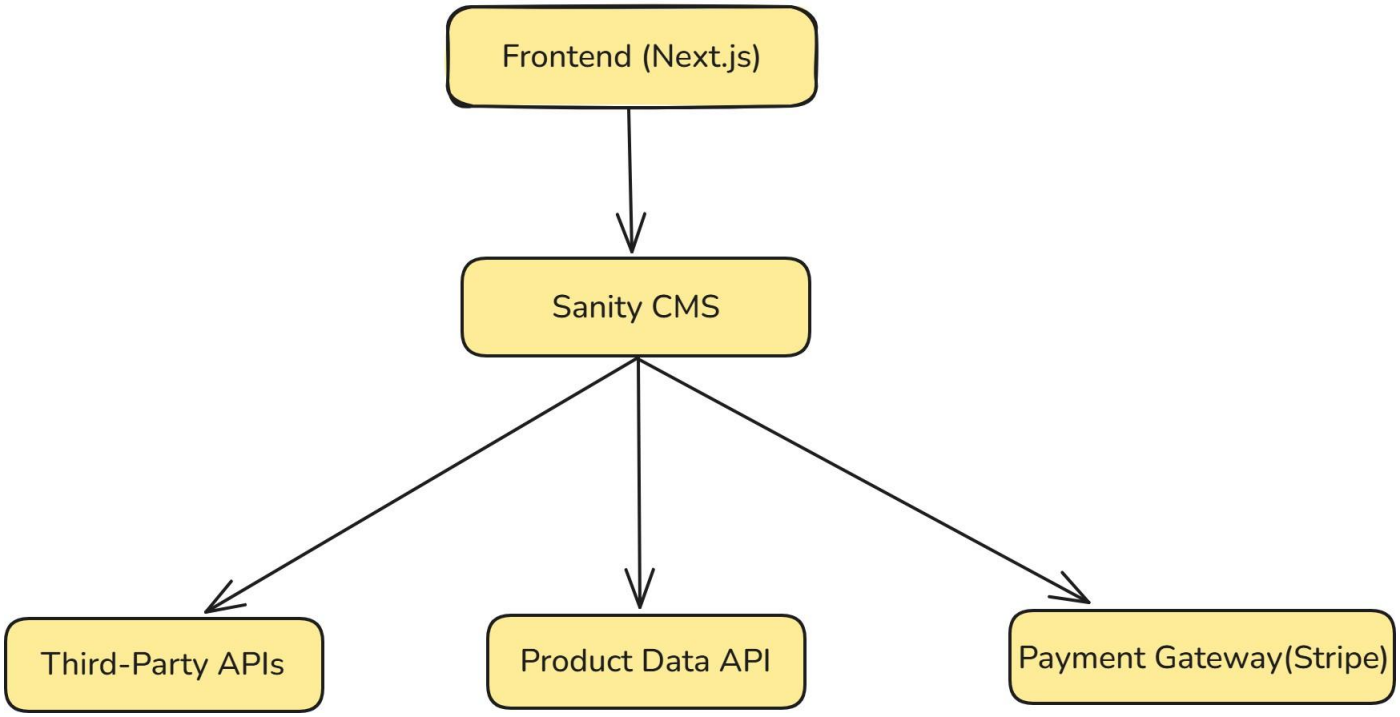
Comforty E-Commerce System Architecture

1. **System Architecture Overview:**

   The architecture for the Comforty E-Commerce platform integrates multiple technologies to ensure scalability, user-friendliness, and reliability. Below is a high-level system architecture:

Diagram


Frontend (Next.js)
Sanity CMS
Third-Party APIs
Product Data API
Payment Gateway(Stripe)

- **Components**
  - Frontend (Next.js)
    - Dynamic and responsive UI for users.
    - Interacts with backend services to fetch and display data.
- **Sanity CMS:**
  - Acts as the primary backend for managing product data, customer details, and order records.
  - Provides APIs for CRUD operations on data.
- **Third-Party APIs:**
  - Shipment tracking to update order delivery status.
- **Payment Gateway (Stripe):**
  - Processes secure transactions.

Key Workflows

1. Product Browsing:
   - User visits the frontend to browse products.
   - Frontend fetches product data via Sanity CMS API.
2. Order Placement:
   - User adds items to the cart and checks out.
   - Order details are stored in Sanity CMS.
3. Shipment Tracking:
   - Order tracking updates are fetched via a third-party API.
4. Payment Processing:
   - Stripe handles secure transactions, and payment confirmation is sent to Sanity CMS.

2. API Endpoints:

Endpoint	Method	Purpose	Payload	Response Example
/products	GET	Fetch all product details	N/A	{ "id": 1, "name": "Sofa", "price": 1000 }
/products/:id	GET	Fetch a specific product	N/A	{ "id": 1, "name": "Sofa", "price": 1000 }
/cart	POST	Add item to cart	{ "productId": 1, "quantity": 2 }	{ "cartId": 123, "status": "Added" }
/checkout	POST	Process checkout	{ "cartId": 123, "paymentInfo": {...}}	{ "orderId": 456, "status": "Confirmed" }
/shipment	GET	Get shipment tracking info	{ "orderId": 456 }	{ "rt``trackingId": "789", "status": "In Transit"}
/login	POST	User login	{ "email": "user@example.com", "password": "..." }	{ "token": "jwt_token" }
/signup	POST	User registration	{ "email": "user@example.com", "password": "..." }	{ "status": "Registered" }

3. Sanity CMS Schema

Product Schema

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

Order Schema

```
export default {
  name: 'order',
  type: 'document',
  fields: [
    { name: 'customer', type: 'reference', to: [{ type: 'customer' }] },
    { name: 'products', type: 'array', of: [{ type: 'product' }] },
    { name: 'status', type: 'string', title: 'Order Status' }
  ]
};
```

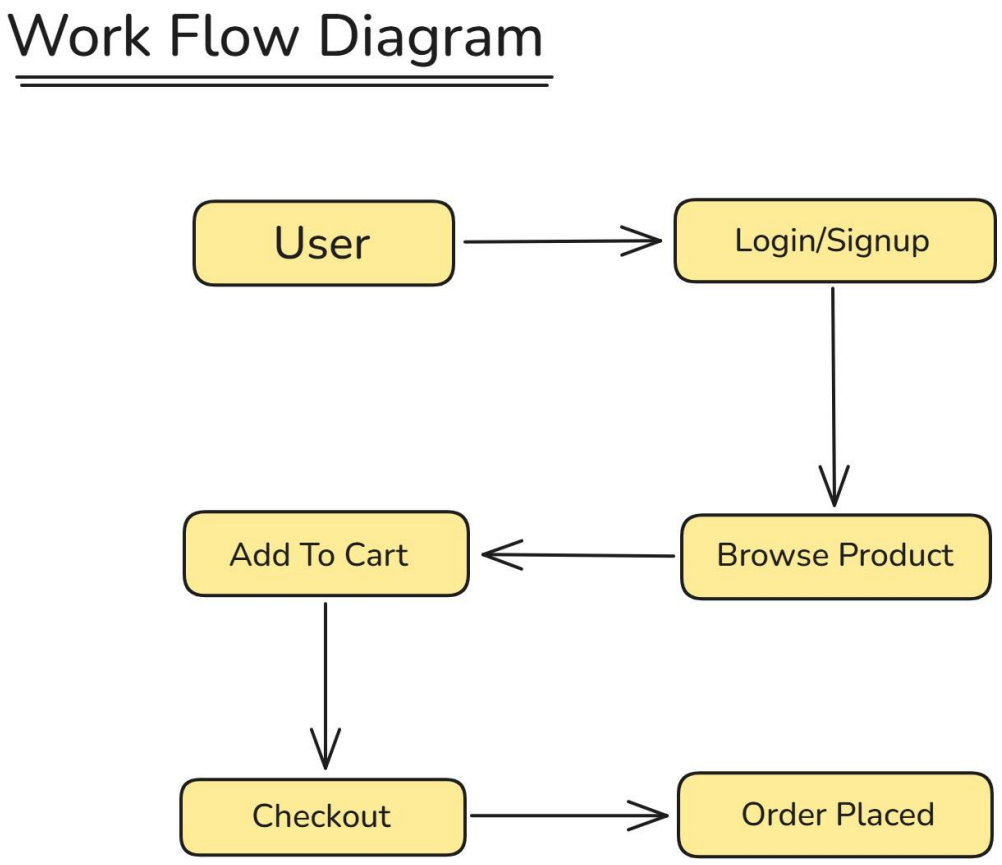
4. Technical Documentation

Workflows

- **Login and Signup:**
  - User registers or logs in via the frontend.
  - Details are authenticated and stored in the Sanity CMS.

- **Cart Management:**
  - Items added to the cart are tracked using the /cart endpoint.

- **Order Confirmation:**
  - User checks out, and the order is stored in Sanity CMS with payment status.



5. Submission

The document is structured to reflect the architecture, API specifications, and workflows. The PDF will include:

1. System Architecture Diagram.
2. Detailed API Endpoints.
3. Workflows and Key Features.
4. Sanity CMS Schemas.

Next Steps

This document ensures the technical foundation is ready for implementation. Following these guidelines will enable smooth development and scalability.