Planning the Technical Foundation for [E-Commerce]

1. System Architecture Overview:

The system architecture for eCommerce marketplace can be visualized as follows:

System Diagram:

```
           [Frontend (Next.js)]
               |       |
      [Sanity CMS] -----> [Product Data API]
               |
    [Third-Party API] -----> [Shipment Tracking API]
               |
       [Payment Gateway]
```

Data Flow & Workflow:

1. **Frontend (Next.js)**:
    - The user interacts with the marketplace frontend, which displays products, categories, and other details.
    - The frontend communicates with the **Sanity CMS** and **Third-Party APIs** to fetch dynamic data such as products, shipping details, and order processing.
2. **Sanity CMS**:
    - Acts as the content management system for storing and managing product data, customer details, and order records.
    - The **Sanity CMS API** is used to fetch product information and store orders.
3. **Third-Party APIs**:
    - Shipment tracking and payment processing are handled by third-party services.
    - The **Shipment Tracking API** provides updates on order delivery status.
    - The **Payment Gateway** securely handles transactions.
4. **User Actions:**
    - **Product Browsing**: User views products, and the frontend fetches data from the **Sanity API**.
    - **Order Placement**: User adds items to the cart, proceeds to checkout, and the order details are saved in **Sanity CMS**.
    - **Shipment Tracking**: Real-time updates from the **Shipment API** are shown to the user.
    - **Payment**: The **Payment Gateway** processes payments and sends confirmation to the frontend.

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2. Key Workflows:

User Registration:

- **Action**: User signs up.
- **Interaction**:
    - User data is stored in **Sanity CMS**.
    - A confirmation message is sent to the user.

Product Browsing:

- **Action**: User browses products.
- **Interaction**:

    - The frontend fetches product details from **Sanity CMS** through the **Product Data API**.
    - Product details like name, price, and description are displayed.

Order Placement:

- **Action**: User adds items to the cart and checks out.
- **Interaction**:
    - Order details (product, customer, payment) are stored in **Sanity CMS**.
    - A confirmation is displayed to the user.

Shipment Tracking:

- **Action**: User tracks their order.
- **Interaction**:
    - The **Shipment Tracking API** provides order status and ETA.
    - The frontend displays real-time updates to the user.

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3. API Endpoints & Methods:

Here’s an outline for the necessary API endpoints:

1. Product Data API:

- **Endpoint**: `/products`
- **Method**: `GET`
- **Description**: Fetch all product details from **Sanity CMS**.
- **Response Example**:

```
 [
  {
    "id": 1,
    "name": "Product A",
    "price": 100,
    "stock": 50,
    "image": "image-url"
  },
  ...
]
```

2. Order API:

- **Endpoint**: `/orders`
- **Method**: `POST`
- **Description**: Create a new order in **Sanity CMS**.
- **Payload**:

```
{
  "customerId": 123,
  "products": [
    { "productId": 1, "quantity": 2 },
    { "productId": 2, "quantity": 1 }
  ],
  "paymentStatus": "pending"
}
```

- **Response Example**:

```
{
  "orderId": 456,
  "status": "Success"
}
```

3. Shipment Tracking API:

- **Endpoint**: `/shipment`
- **Method**: `GET`
- **Description**: Track order status via **Third-Party Shipment API**.
- **Response Example**:

```
{
  "shipmentId": 789,
  "orderId": 456,
  "status": "In Transit",
  "ETA": "2 hours"
}
```

4. Payment API:

- **Endpoint**: `/payment`
- **Method**: `POST`
- **Description**: Process payment via **Payment Gateway**.
- **Payload**:

```
{
  "orderId": 456,
  "amount": 300,
  "paymentMethod": "credit-card"
}
```

- **Response Example**:

```
{
  "status": "Success",
  "transactionId": "abc123"
}
```

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4. Sanity CMS Schema Example:

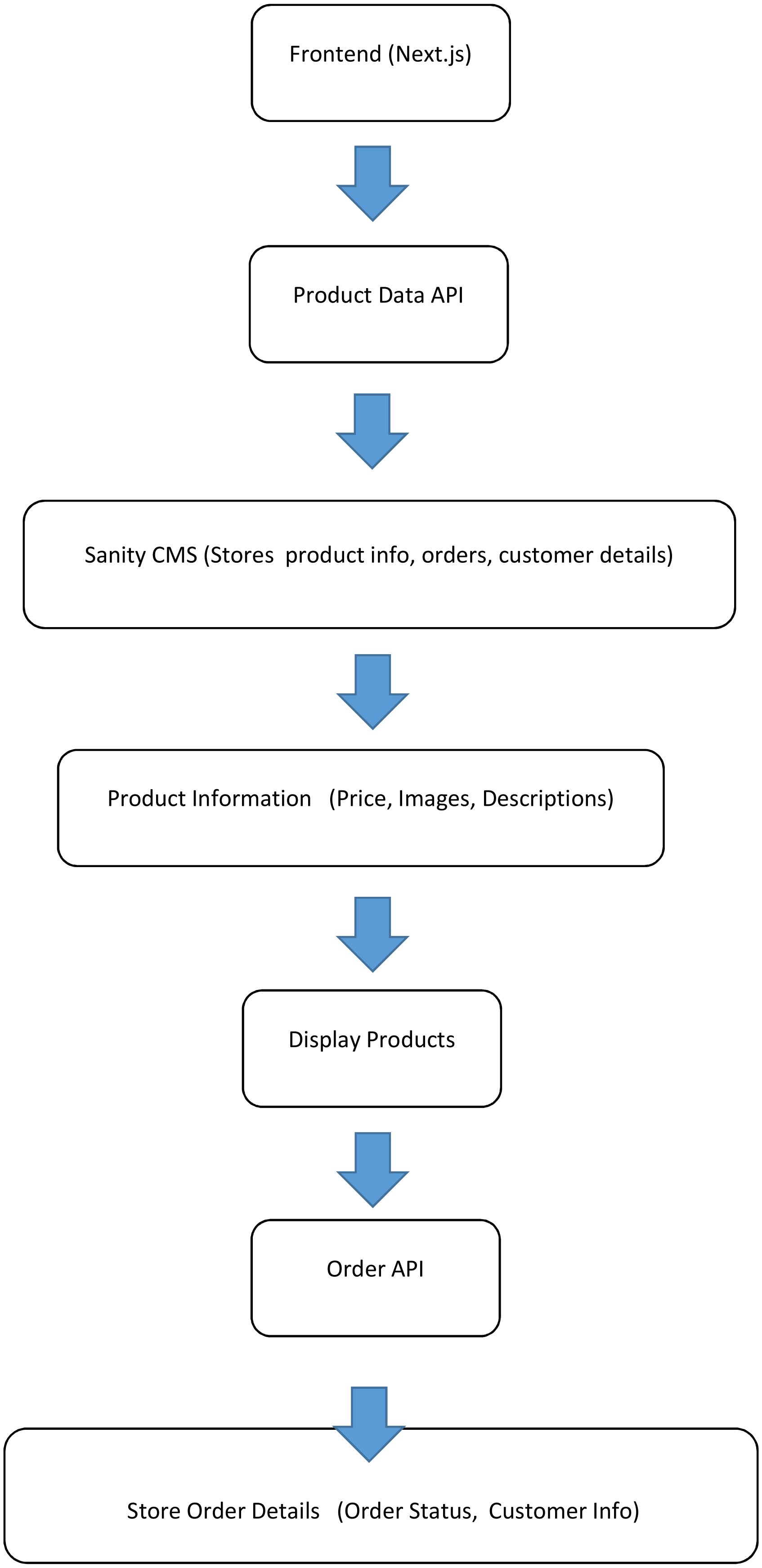
Here’s an example schema for **Product** and **Order** in Sanity CMS:

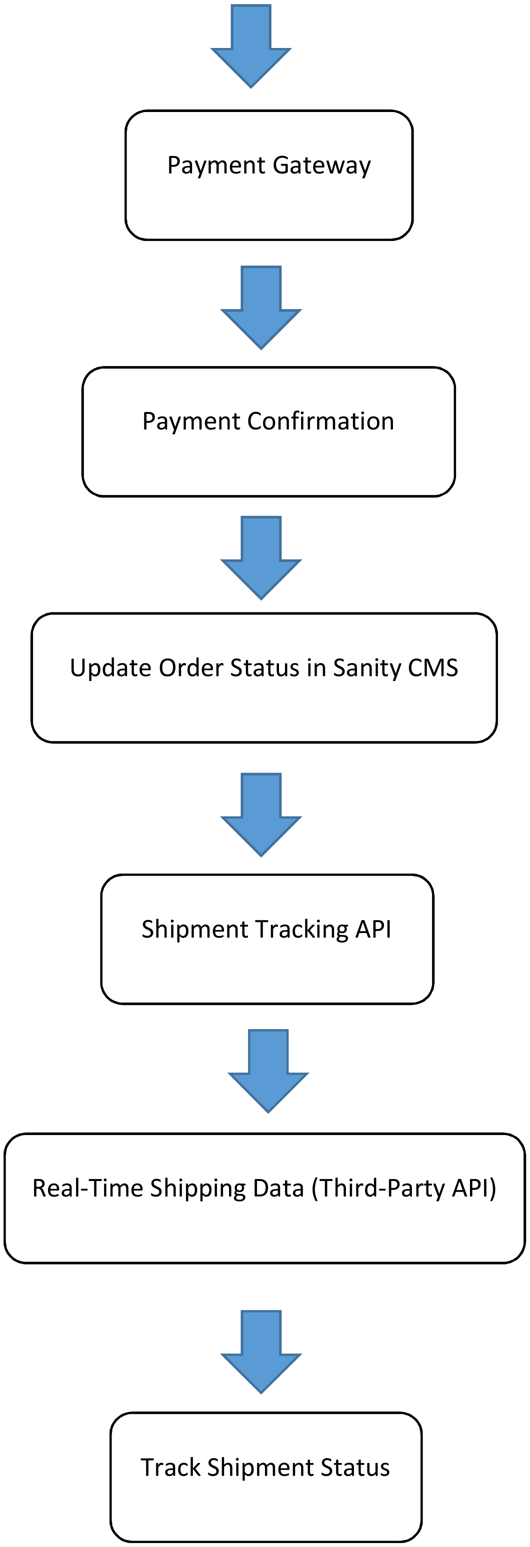
Product Schema:

```
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: 'customerId', type: 'reference', to: [{ type: 'customer' }] },
    { name: 'products', type: 'array', of: [{ type: 'reference', to: [{ type: 'product' }] }] },
    { name: 'paymentStatus', type: 'string', title: 'Payment Status' },
    { name: 'orderDate', type: 'datetime', title: 'Order Date' }
  ]
};
```


Frontend (Next.js)
Product Data API
Sanity CMS (Stores product info, orders, customer details)
Product Information   (Price, Images, Descriptions)
Display Products
Order API
Store Order Details   (Order Status, Customer Info)


Payment Gateway
Payment Confirmation
Update Order Status in Sanity CMS
Shipment Tracking API
Real-Time Shipping Data (Third-Party API)
Track Shipment Status