File 1: SystemArchitecture_Day2.pdf

Purpose: This document outlines the overall system architecture for the e-commerce platform, including the components, their roles, and data flow.

System Architecture Overview

The e-commerce marketplace comprises three main components:

1. **Frontend (Next.js)**:
   - Acts as the user interface.
   - Enables users to browse products, manage carts, place orders, and track shipments.
2. **Backend (Sanity CMS)**:
   - Stores and manages product, customer, and order data.
   - Provides dynamic data to the frontend through APIs.
3. **Third-Party APIs**:
   - Manages payment gateways for secure transactions.
   - Fetches real-time shipment tracking information.

Architecture Diagram

Diagram Workflow:

1. **User Interaction**: Users interact with the frontend to browse and purchase products.
2. **Data Fetching**: Product details are fetched from Sanity CMS via APIs.
3. **Order Processing**: Order data is stored in Sanity CMS and processed via the payment gateway.
4. **Shipment Tracking**: Shipment updates are retrieved via third-party APIs.

Example Data Flow

- **Browsing Products**:
  User → Frontend → Sanity CMS → Products API → Product Listing Page.
- **Placing Orders**:
  User → Frontend → Sanity CMS → Orders API → Payment Gateway → Sanity CMS.
- **Shipment Tracking**:
  User → Frontend → Shipment API → Real-Time Delivery Updates.

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          │  Start  │
          └─────────┘
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               ▼
      ┌──────────────────┐
      │ User Visits      │
      │ Website          │
      └──────────────────┘
               │
               ▼
      ┌──────────────────┐
      │ Browse Products  │
      └──────────────────┘
               │
               ▼
      ┌──────────────────┐
      │ Fetch Product    │
      │ Data (Sanity     │
      │ CMS)             │
      └──────────────────┘
               │
               ▼
         ◇ Product Selected? ◇ ──────▶ ┌──────────────────┐
               │                       │ View Product     │
               │                       │ Details          │
               ▼                       └──────────────────┘
      ┌──────────────────┐                      │
      │ Continue         │                      ▼
      │ Browsing         │             ┌──────────────────┐
      └──────────────────┘             │ Add Product to   │
                                       │ Cart             │
                                       └──────────────────┘
                                                │
                                                ▼
                                       ┌──────────────────┐
                                       │ Proceed to       │
                                       │ Checkout         │
                                       └──────────────────┘
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                                                ▼
                                       ┌──────────────────┐
                                       │ Place Order      │
                                       └──────────────────┘
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                                       ┌──────────────────┐
                                       │ Payment          │
                                       │ Processing       │
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                                       │ Prepare Shipment │
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                                       │ Deliver Order    │
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```