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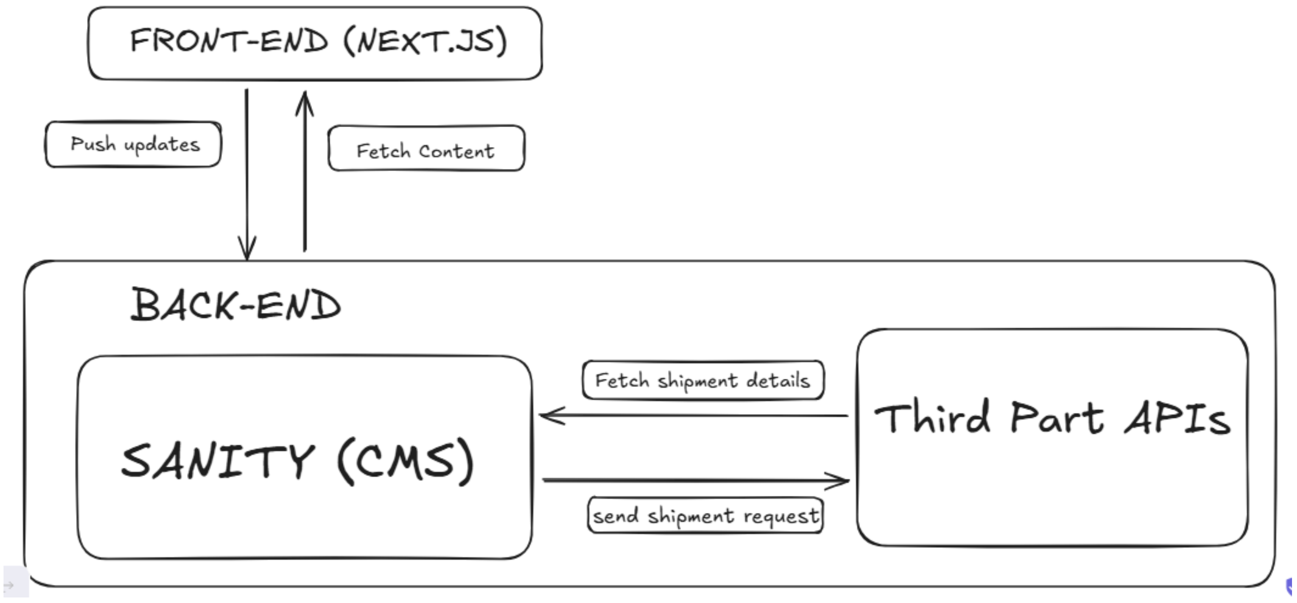
DAY 2: Planning the Technical Foundation

System Architecture Overview

Front-end interaction with Sanity CMS and Third Party APIs

The image below shows visual representation of how each component in my system interact with each other.



Role of Each Component

1. Front-End

- It displays data like products, or order info by fetching data from the backend.
- Handles actions like users clicking on "Place Order".

2. Back-End

- It cordinates all the logics.
- It sends and receives requests from:
    i. Sanity CMS for content (product listings, user profiles, etc.).
    ii. Logistics API for delivery updates (e.g., delivery partner gets order details).
    iii. Payment API for payment validation and processing.
- It returns processed data to the frontend.

3. Sanity

- It structured as schemas.

- It allows your backend to fetch or update content easily via APIs.

4. Logistics API (Third-Party)

- When a user places an order, backend sends delivery details (address, product info) to the logistics API.
- Returns delivery updates to the backend (e.g., order dispatched, out for delivery, etc.), which then sends them to the frontend for users.

5. Payment API (Third-Party)

- When a user places an order, the payment API validates the credit card/payment info.
- Sends back confirmation to the backend and logs the payment in the system.

Key Workflows

1. Content Fetching (User Browses the Marketplace)

User view products > Frontend requests product > Backend retrieves content from Sanity CMS > Frontend displays the fetched content to the user.

2. Order Placement

User clicks 'Order Now' in the frontend > Frontend sends order details to the backend > Backend actions sends order data to Sanity CMS for storage, creates a shipment via Logistics API (returns tracking ID) and processes payment via Payment API > Frontend confirms the order and displays the tracking ID.

3. Order Tracking

User clicks Track My Order in the frontend > Frontend sends tracking request to backend >Backend fetches status from Logistics API (e.g., "Out for delivery") > Frontend displays shipment status to the user.

Plan API Requirements

Following are the API Endpoints I have planned:

1. Products

- Endpoint Name: /products
- Method: GET
- Description: Fetch all available products from the Sanity CMS.
- Response: Returns product details (ID, name, price, category, quantity, reviews).

2. Single Product Details

- Endpoint Name: /products/:id
- Method: GET
- Description: Fetch details of a single product by its ID.
- Parameters: Product ID.
- Response: Returns specific product details (ID, name, price, category, quantity, reviews).

3. Create an Order

- Endpoint Name: /orders
- Method: POST
- Description: Create a new order in the system.
- Payload: { "customerId": "12345", "products": [{ "id": "prod001", "quantity": 2 }, { "id": "prod002", "quantity": 1 }], "totalAmount": 1000, "paymentMethod": "CreditCard", "deliveryZoneId": "zone001" }
- Response: Returns order details (ID, status, createdAt, tracking ID).

4. Fetch All Orders

- Endpoint Name: /orders
- Method: GET
- Description: Fetch all orders.
- Response: Returns a list of all orders with details (ID, total amount, status, createdAt).

5. Fetch a Single Order

- Endpoint Name: /orders/:id
- Method: GET
- Description: Fetch details of a specific order by its ID.
- Parameters: Order ID.
- Response: Returns specific order details (ID, products, customer info, total amount, status, shipment ID).

6. Order Status

- Endpoint Name: /orders/:id/status
- Method: GET
- Description: Fetch the status of an order by its ID.
- Parameters: Order ID.

- Response: { "orderId": "order001", "status": "Out for delivery", "shipmentId": "shipment001" }

7. Create a Payment

- Endpoint Name: /payments
- Method: POST
- Description: Process a new payment.
- Payload: { "orderId": "order001", "paymentMethod": "CreditCard", "amountPaid": 1000 } Response: Payment confirmation (ID, order ID, status).

8. Shipment Details

- Endpoint Name: /shipments/:id
- Method: GET
- Description: Fetch details of a specific shipment by its tracking ID.
- Parameters: Shipment ID.
- Response: { "shipmentId": "shipment001", "deliveryTime": "2025-01-20T12:00:00Z", "status": "Out for delivery" }

9. Fetch Delivery Zones

- Endpoint Name: /delivery-zones
- Method: GET
- Description: Fetch all delivery zones.
- Response: Returns details of all zones (ID, zone name, delivery charges).

10. Customer Information

- Endpoint Name: /customers/:id
- Method: GET
- Description: Fetch details of a customer by their ID.
- Parameters: Customer ID.
- Response: Customer details (ID, name, phone number, delivery zone ID).

11. Order Tracking

- Endpoint Name: /orders/:id/tracking
- Method: GET
- Description: Fetch the current tracking status of an order.
- Parameters: Order ID.
- Response: { "orderId": "order001", "shipmentStatus": "Out for delivery", "estimatedDeliveryTime": "2025-01-20T15:30:00Z" }

12. Update Order Status

- Endpoint Name: /orders/:id/status
- Method: PATCH
- Description: Update the status of an order (e.g., "Delivered", "Cancelled").
- Payload: { "status": "Delivered" } Response: Confirmation of status update.

13. Update Product Inventory

- Endpoint Name: /products/:id/inventory
- Method: PATCH
- Description: Update the inventory of a specific product.
- Payload: { "quantity": 10 }
- Response: Confirmation of inventory update.