

GENERAL E-COMMERCE



*Day2: PLANNING THE
TECHNICAL
FOUNDATION*

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Slot:Wednesday7to10 Rollno:00218262

Business Overview

Our business focuses on creating a specialized marketplace for furniture and home décor. By offering a wide range of curated products, from modern sofas to elegant dining sets and versatile lighting solutions, we aim to be a one-stop solution for customers looking to enhance their living spaces.

Problems We Solve

1. **Scattered Options:** Customers face difficulty finding a single platform with varied and quality furniture.
2. **Trust Issues:** Online buyers worry about product quality and reliable delivery.
3. **No Personalization:** Limited options for tailored product recommendations.
4. **Delivery Delays:** Inefficient delivery tracking frustrates customers.
5. **Eco Concerns:** Lack of access to sustainable furniture solutions.

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Technical Requirements

Website Structure and Details

1. Logo

- **Position:** Top-left corner of the website.
- **Functionality:** Clicking the logo redirects the user to the home page.

2. Header

- **Includes navigation bar** with the following links:
 - Categories
 - About
 - Services
 - Testimonials
 - Contact
 - Signup
 - Login
- **Additional Elements:**
 - Search bar: Users can search for products.
 - Cart icon: Users can view items added to their cart or their purchase history.
 - User icon: Users can log in and view their profile.

3. Main Sections

- **Hero Section**
 - Contains a functional image slider (or banner) with navigation icons to scroll through images.
- **Featured Products Section**
 - Displays featured products, such as chairs, sofas, comfort beds, tables, lamps, and frames.
- **Categories Section**
 - Displays product categories such as:
 - Living Room Decor
 - Dining and Kitchen
 - Bedroom Inspirations
 - Clicking on a category redirects the user to a page displaying relevant products.
- **Call-to-Actions**
 - Each product card includes:
 - "Explore Details" button: Redirects to the product detail page.
 - "Shop Now" button: Redirects to a shopping page with sale tags.

- **Testimonial Section**
 - Displays customer reviews and ratings.
 - Cards for testimonials include:
 - User profile picture (circular)
 - Verified icon
 - User name and profession
 - Customer review text
 - Includes transitions and animations for better interactivity.

4. Footer

- **Includes:**
 - Logo and website name.
 - Links to:
 - Privacy Policies
 - Terms and Conditions
 - FAQ
 - Categories
 - Complaint form for user feedback.
 - Social media platform links (e.g., GitHub, Instagram, Email).

Page-Specific Details

- **Categories Page**

- Displays products grouped by categories (e.g., sofas, tables, chairs).
- **Additional Filters:**
 - Price range (low to high, high to low).
 - Ratings.

2. **About Page**

- Provides details about the business:
 - When it started.
 - Goals and mission.
 - Problems the business aims to solve.

3. **Product Detail Page**

- **Includes:**
 - Product image
 - Product title
 - Description
 - Price
 - Category
 - "Add to Cart" button: Adds the product to the cart.
 - "Save for Later" option: Allows users to save the product for future consideration.

4. **Cart Page**

- **Displays:**
 - Selected items added to the cart.
 - Individual item prices.
 - Total price.
 - Shipping costs.
 - Estimated delivery time.
 - Option to remove items.

5. **Checkout Page**

- Contains a form to collect user details:
 - Name
 - Email
 - Address
 - Phone number
 - House number
- **Payment Options:**
 - Cash on Delivery
 - Debit/Credit card
- "Confirm Order" button to finalize the purchase.

Database Structure

User Schema

Stores user information:

- ID
- Name
- Email
- Password
- Phone number
- Address
- Gender
- Profile picture

Product Schema

Stores product details:

- Product ID
- Name
- Description
- Price
- Category
- Stock
- Quantity

Order Schema

Tracks and stores order details:

- Order ID
- Product name
- User ID
- Product ID
- Order status (e.g., delivered, pending)

Cart Schema

Stores cart data:

- User ID
- Product ID
- Quantity

API Endpoints

Product APIs

- GET /products: Fetches all products.
- GET /products/:id: Fetches product details by ID.
- GET /categories: Fetches all categories.
- GET /categories/:id/products: Fetches products for a sp

Cart APIs

- POST /cart/add: Adds an item to the cart.
- GET /cart: Fetches all items in the cart.
- DELETE /cart/remove/:id: Removes an item from the cart using its ID.

Order APIs

- POST /checkout: Places an order.
- GET /orders/:id: Fetches details of a specific order.

Shipment APIs

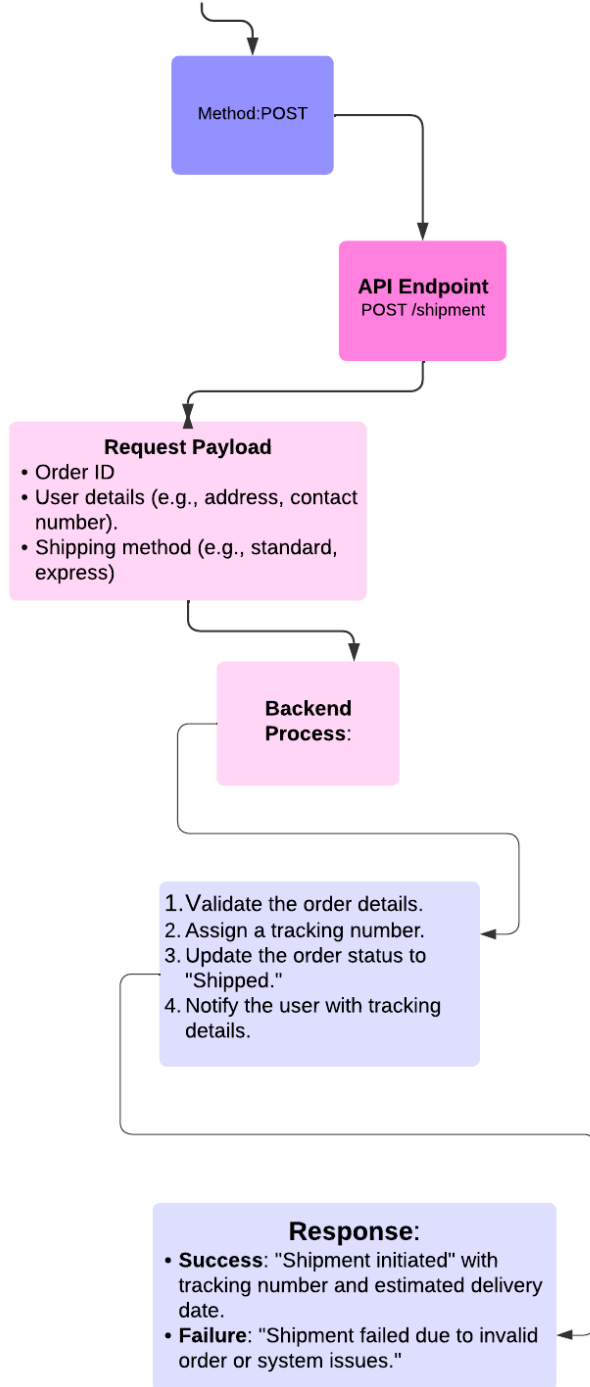
- POST /shipment/create: Creates a shipment for an order.
 - **Payload:** Order ID, user address, shipping method.
- GET /shipment/track/:trackingId: Fetches shipment status by tracking ID.
- PUT /shipment/update/:trackingId: Updates shipment details.

API DATA WORKFLOW

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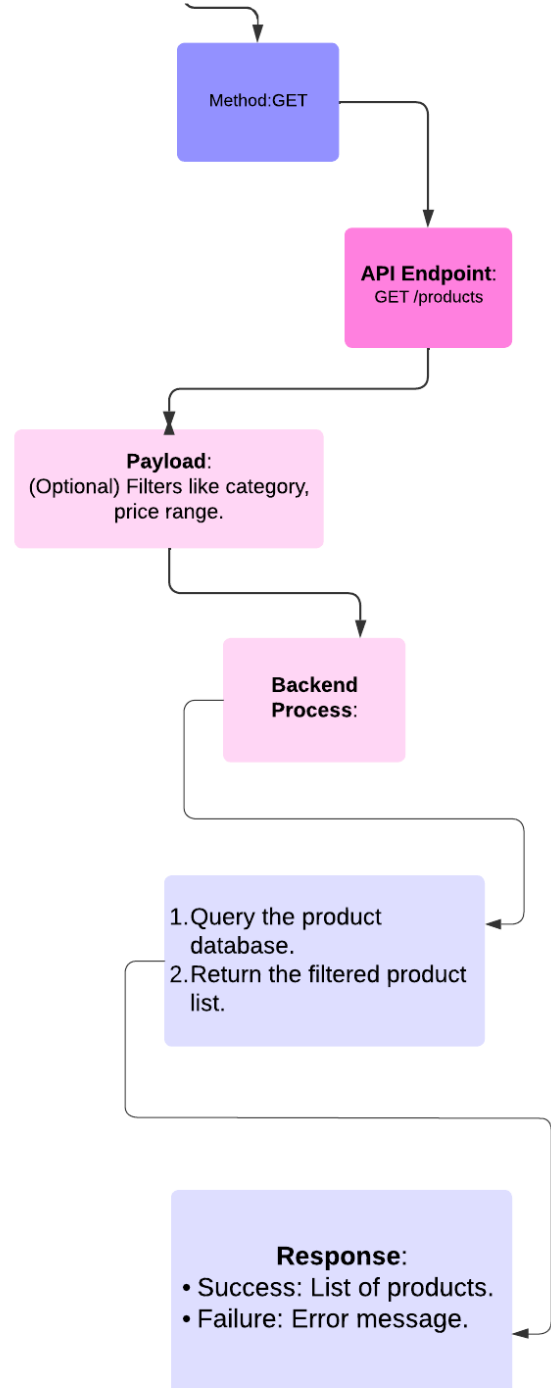
Shipment Workflow

Consist of

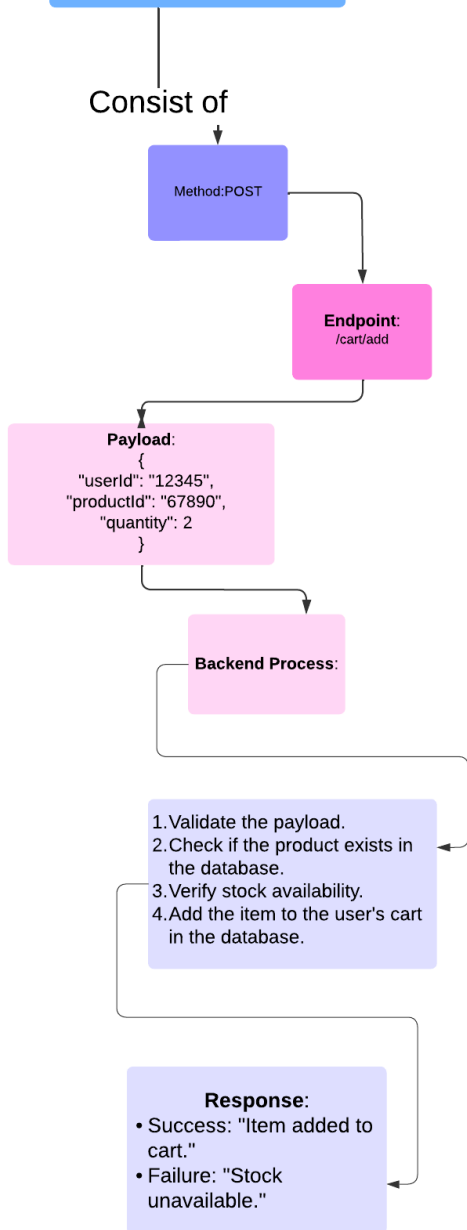


Fetch Products Workflow

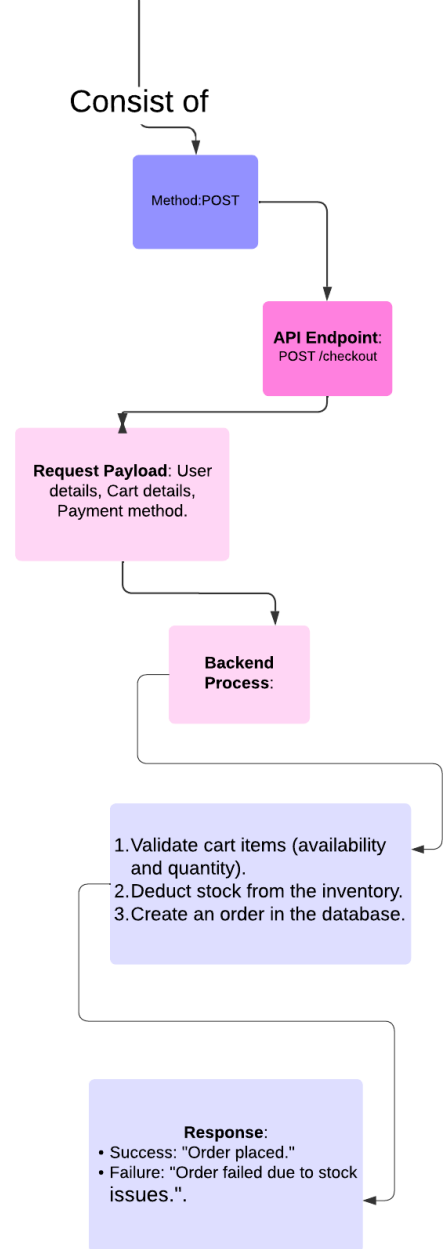
Consist of



Add to Cart API Workflow



Place Order Workflow



SYSTEM ARCHITECTURE

The user interacts with the **Frontend (Next.js)** via a browser or device.

Sends requests (e.g., get products, place orders) to the **Backend API Layer**.

- The APIs process the requests and act as the middle layer.
- They connect to the **Database** or **Third-Party APIs** for required data or actions.

- Stores and retrieves the core data (e.g., products, users, orders, cart items).
- APIs query the database for relevant information.

- Used for specialized functionalities like:
- **Payment Gateways:** For payment processing.
 - **Shipping APIs:** For order shipment and tracking.

- After fetching or processing the data, the **APIs** send responses back to the **Frontend**.
- The **Frontend** updates the user interface for the **User**.

