Technical Requirements for Furniture Ecommerce Website

1. Frontend Requirements:

The frontend of my furniture website must focus on delivering an optimal user experience, ensuring customers can easily browse and purchase products.

a. User-Friendly Interface:

- **Product Browsing**:
  - Customers should be able to effortlessly browse various furniture categories like sofas, chairs, tables, and storage units. The interface should allow for sorting by price, popularity, and newest arrivals.
  - Users should have the option to apply filters based on size, color, material, price range, etc.
- **High-Quality Visuals**:
  - Display high-resolution images for each product. The design should allow users to view different angles of the product, zoom in on images, and have access to product videos or 360-degree views.
- **Product Information**:
  - Provide detailed product descriptions, including dimensions, material, and pricing.
  - Clearly show stock levels and availability for each product to prevent customers from purchasing out-of-stock items.

b. Responsive Design:

- **Mobile and Desktop Compatibility**:
  - The website must be fully responsive, ensuring it adapts seamlessly to different screen sizes (desktops, tablets, and smartphones).
  - The mobile version of the site must offer optimized navigation and faster page loading times.

c. Essential Pages:

- **Home Page**:
  - A welcoming homepage showcasing featured products, top categories, promotions, and a search bar to navigate easily.
- **Product Listing Page**:
  - A page displaying a list of products with category filters and sorting options. Each product should be displayed with a thumbnail image, name, price, and "Add to Cart" button.
- **Product Details Page**:
  - A detailed page for each product with large images, specifications, customer reviews, and related products.
- **Cart Page**:
  - The cart should allow customers to view and edit the items they've selected, with clear buttons to either proceed to checkout or continue shopping.
- **Checkout Page**:
  - A simple, secure checkout process asking for necessary customer information (name, email, shipping address, payment method).
- **Order Confirmation Page**:
  - After a successful transaction, show a summary of the customer's order along with an order number, estimated delivery time, and tracking link.

2. Sanity CMS as Backend:

a. Product Data Management:

- **Sanity CMS** will serve as the content management system (CMS) to store and manage all product-related data. It will act as the central database for product details, customer information, and order records.

- **Products**: Sanity will store information such as product names, descriptions, pricing, stock levels, and images. The schema will allow easy updates and additions to the product catalog.
    - **Example Schema**:

```javascript
Copy code
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: 'description', type: 'text', title: 'Description' },
    { name: 'image', type: 'image', title: 'Product Image' }
  ]
};
```

- **Customer and Order Records**:
    - Sanity CMS will also store customer details such as names, addresses, and order history. Additionally, it will store the status of customer orders (pending, shipped, delivered, etc.).

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3. Third-Party APIs:

a. Payment Gateway:

- The website will integrate with trusted payment gateways such as **Stripe**, **PayPal**, or **Razorpay** to securely process customer payments.
- The payment gateway should support various payment methods, including credit/debit cards, digital wallets (Apple Pay, Google Pay), and bank transfers.

b. Shipment Tracking API:

- To provide customers with real-time tracking updates for their orders, the website will integrate with third-party shipment tracking APIs (e.g., **ShipEngine**, **AfterShip**, **UPS**).
- The API will provide the status of the order (e.g., "shipped", "in transit", "delivered") and estimated delivery time, which will be displayed on the user's **Order Confirmation** page and **Order History** section.

c. Other Required Backend Services:

- **Customer Authentication**:
  The site should integrate an authentication system (using services like **Auth0** or **Firebase**) to handle customer login, registration, and password management.
- **Analytics API**:
  Integration with third-party analytics tools (e.g., **Google Analytics**, **Mixpanel**) to track user behavior, product interactions, and conversion rates. This will help in making data-driven decisions and improving the overall user experience.

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4. Performance and Security:

a. Website Speed and Optimization:

- Ensure fast page loading times by optimizing images, using content delivery networks (CDNs), and implementing caching mechanisms. A slow website can lead to high bounce rates, especially on mobile devices.

- Ensure that all data transfers (including customer payment information) are encrypted by using SSL certificates, providing a secure shopping experience.

c. Compliance with Privacy Regulations:

- Implement privacy policies and cookie consent notices to comply with global privacy laws, such as the **General Data Protection Regulation (GDPR)** and **California Consumer Privacy Act (CCPA)**.

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5. Scalability and Maintenance:

- **Scalability**:
  The website should be built with scalability in mind, ensuring it can handle increased traffic during peak seasons like sales events or holidays. The use of cloud services like **AWS** or **Google Cloud** can help handle traffic spikes.
- **Regular Updates and Monitoring**:
  Regular monitoring of the website's performance, security patches, and updates to third-party APIs will be essential to maintaining a smooth and secure online shopping experience.

Conclusion:

By following these technical requirements,my furniture website will offer an engaging and seamless shopping experience for customers, ensuring smooth browsing, easy checkout, and efficient order fulfillment. Integrating Sanity CMS for managing product data and leveraging third-party APIs for payment and shipment tracking will streamline backend operations and provide a secure, efficient platform for both customers and administrators.