DAY 2 PLANNING THE TECHNICAL FOUNDATION

Technical Roadmap for Furniture Marketplace

Week 1: Planning & Design

- **Deliverables:**
    - Finalize business requirements and technical specifications.
    - Design wireframes and UI/UX for:
        - Homepage
        - Product listing and details pages
        - Cart and checkout
        - Rental management
        - Admin dashboard
    - Create a detailed **System Architecture Diagram**:
        - Frontend (Next.js)
        - Backend (Node.js with APIs)
        - Sanity CMS integration
        - ShipEngine for shipment tracking.
    - Plan database schemas for:
        - Products, rentals, orders, users, and shipment tracking.

Week 2: Frontend Development - Core UI

- **Deliverables:**
    - Build responsive UI components using **Next.js** and **Tailwind CSS**:
        - Homepage: Showcase featured furniture and categories.
        - Product Pages:
            - General product details.
            - Rental-specific information (e.g., rental duration, deposit).
        - Cart and Checkout:
            - Enable add-to-cart, rental duration selection, and checkout flows.
        - Order Tracking Page:
            - Display real-time tracking status (integrated with ShipEngine).
    - Implement **React Context API** or **Zustand** for state management.
    - Integrate **React Hook Form + Zod** for input validation in forms.

Week 3: Backend Development - API & CMS

- **Deliverables:**
    - Develop backend API:
        - /products: Fetch product and rental information.

- /orders: Create and manage orders.

- /rental: Handle rental-specific data like duration, deposits, and condition tracking.

- /shipment: Integrate ShipEngine for order tracking.

  o Integrate **Sanity CMS**:

    - Set up schemas for products, orders, rentals, and tracking details.

    - Build APIs to fetch/update CMS data.

  o Implement authentication (e.g., Firebase or Clerk):

    - User login/signup for customers.

    - Admin authentication for product/order management.

Week 4: Integration - Frontend with Backend

- **Deliverables:**

  o Connect frontend UI components to backend APIs:

    - Product listing page fetches data from /products.

    - Cart and checkout send order data to /orders.

    - Order tracking page fetches data from /shipment.

  o Add error handling and loading states for APIs.

  o Test rental-specific flows:

    - Verify deposit and duration handling.

Week 5: Shipment & Order Tracking

- **Deliverables:**

  o Integrate **ShipEngine API**:

    - Configure API to create shipment labels and retrieve tracking information.

    - Add /shipment endpoint to backend for:

      - Tracking shipment status (e.g., "In Transit," "Delivered").

      - Estimating delivery time.

  o Display real-time tracking updates on the **Order Tracking Page**.

  o Implement email notifications:

    - Send order confirmation and shipment updates to users.

Week 6: Admin Panel Development

- **Deliverables:**

  o Build a responsive admin panel using Next.js:

    - Product Management: Add/edit/delete products.

    - Order Management: View and update order statuses.

- Rental Management: Monitor rental returns and condition tracking.
  - o Integrate analytics for admin dashboard:
    - View sales data, rental trends, and user activity.

Week 7: Testing & Optimization

- **Deliverables:**
  - o Conduct end-to-end testing:
    - Verify UI flows for both general purchases and rentals.
    - Ensure accurate shipment tracking and order updates.
  - o Optimize API performance:
    - Add caching for frequently accessed data (e.g., products).
  - o Test for scalability:
    - Simulate high traffic for product and order APIs.
  - o Fix UI/UX bugs identified during testing.

Week 8: Deployment & Launch

- **Deliverables:**
  - o Deploy frontend and backend:
    - Use **Vercel** for Next.js frontend.
    - Use **Sanity CMS** as backend.
  - o Set up CI/CD pipelines for seamless updates.?
  - o Launch the platform:
    - Announce the launch and onboard initial users.

Post-Launch Maintenance

- Monitor system performance and fix bugs.
- Roll out enhancements:
  - o Add advanced filters and sorting options.
  - o Introduce loyalty programs or subscription models for frequent renters.