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"Marketplace Technical Foundation

Car Rental Marketplace: Technical Foundation Plan

5:Technical Roadmap for Car Rental Marketplace Project

Objective:

To build a fully functional car rental marketplace with workflows for rental eCommerce, condition reporting, return management, and payment integration.

Phase 1: Project Initiation

- **Define Project Scope**:
  - Identify primary features (car listings, booking system, condition reports, payment).
  - Define user personas (renters, car owners, admin).
- **Create Initial Designs**:
  - Develop wireframes for key pages (home, car details, booking, etc.).
  - Design database schema (users, cars, bookings, payments).

Deliverables:

- Data schema documentation

Phase 2: Frontend Development

- **Tech Stack**: Next.js with Tailwind CSS
- **Key Steps**:
  - Build responsive UI components (Navbar, Car Cards, Filters).
  - Develop pages:
    - **Home Page**: Display featured cars and search options.
    - **Car Details Page**: Display car information, rental duration, and booking form.
    - **User Dashboard**: Manage bookings, condition reports, and payments.
- **Integrate AOS Animations** for a polished user experience.

Deliverables:

- Fully responsive frontend with user workflows

Phase 3: Backend Integration with Sanity CMS

Duration: 3-4 weeks

- **Tech Stack**: Sanity CMS for data management
- **Key Steps**:
  - **Schema Design**: Define schemas for key entities:
    - **Cars**: Car details, availability, rental pricing.
    - **Users**: Renter and owner profiles.
    - **Bookings**: Rental duration, car, user, and payment details.
    - **Condition Reports**: Images, notes, timestamps.
  - Integrate Sanity CMS with frontend using Sanity client.
  - Enable live previews for real-time content updates.
- **Security**:
  - Configure access permissions in Sanity CMS for admins and users.

Deliverables:

- Fully functional CMS integrated with frontend
- API endpoints using Sanity client

Phase 4: Payment Gateway Integration

- **Tech Stack**: Stripe
- **Key Steps**:
  - Add payment processing for bookings.
  - Implement refund logic based on condition report comparisons.
  - Generate invoices/receipts for transactions.

Deliverables:

- Payment gateway integrated and tested

Phase 5: Testing and Quality Assurance

- **Key Steps**:
  - Conduct unit and integration tests for all components (frontend and backend).
  - Perform end-to-end testing for:
    - Booking workflow
    - Condition report submission
    - Payment/refund management
  - Cross-browser testing for frontend compatibility.

Deliverables:

- Bug-free, stable application

Phase 6: Deployment

  - Deploy frontend and backend to production.
  - Set up environment variables for API keys, database connections, etc.

- ○ Monitor application for initial user feedback.

Deliverables:

- Live application with monitoring tools in place

Phase 7: Post-Launch Enhancements

- **Key Steps**:
  - ○ Add advanced features:
    - Dynamic pricing based on demand.
    - User reviews and ratings.
    - Push notifications for reminders.
  - ○ Analyze user feedback for continuous improvement.

Deliverables:

- Regular feature updates
- Improved user engagement