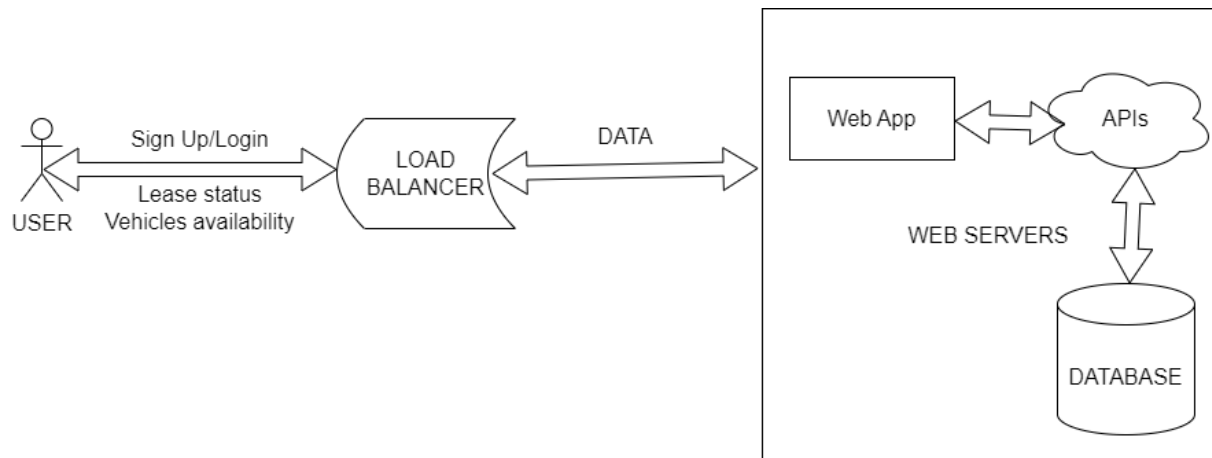


CarLease Part Two

1. Architecture



2. APIs

APIs and Methods

API Routes for Web Client:

- `/api/auth/signup`
 - **POST:** Creates a new user account.
 - **Inputs:** User's name, email, password, and other relevant information.
 - **Outputs:** User ID and authentication token.
-
- `/api/auth/signin`
 - **POST:** Authenticates a user and generates a session token.
 - **Inputs:** User's email and password.
 - **Outputs:** Authentication token.
-
- `/api/cars`
 - **GET:** Retrieves a list of available cars with their details (make, model, year, features, availability status, lease rates).
 - **Inputs:** (optional) Criteria for filtering cars (e.g., make, model, maximum lease rate).
 - **Outputs:** Array of car objects.
-

- `/api/cars/:carId`
 - GET: Retrieves detailed information about a specific car.
 - Inputs: Car ID.
 - Outputs: Car object with comprehensive details.
-
- `/api/user/leases`
 - GET: Retrieves a list of leases associated with the current user.
 - Inputs: Authentication token.
 - Outputs: Array of lease objects, including car details, lease start and end dates, payments, and other relevant information.
-
- `/api/user/leases/:leaseId`
 - GET: Retrieves detailed information about a specific lease.
 - Inputs: Authentication token, lease ID.
 - Outputs: Lease object with comprehensive details.
-

Methods for Other Clients:

- `initiateLease(userId, carId, leaseTerms)`
 - Creates a new lease record for the specified user and car.
 - Inputs: User ID, car ID, lease terms (duration, payment schedule, etc.).
 - Outputs: Lease ID.
-
- `updateCarStatus(carId, status)`
 - Updates the availability status of a car (e.g., available, leased, pending maintenance).
 - Inputs: Car ID, new status.
 - Outputs: Success message or error message.
-

Third-Party APIs:

- Payment Gateway API: To process lease payments securely.
- Email API (optional): To send lease confirmations, reminders, and other notifications.
- SMS API (optional): To send lease status updates or alerts via text messages.

Additional Relevant APIs and Methods:

- `/api/user/profile`
 - GET: Retrieves the current user's profile information.
 - PUT: Updates the current user's profile information.
-
- `/api/user/password`
 - PUT: Updates the current user's password.
-
- `/api/admin/cars`
 - POST: Adds a new car to the database.
 - PUT: Updates the information of an existing car.
 - DELETE: Removes a car from the database.
-

3. User-stories

User Stories for CarLease MVP:

1. As a potential customer, I want to browse the available cars and their details (make, model, year, features, lease rates, availability), so that I can easily find a car that meets my needs and budget.
 - Acceptance criteria: A list of available cars is displayed with relevant information. Cars can be filtered by various criteria. Clicking on a car shows detailed information.
2. As a registered user, I want to initiate a lease for a specific car with desired terms (duration, mileage limit, payment schedule), so that I can secure the car and start the lease process.
 - Acceptance criteria: User can select a car and choose different lease terms. Lease terms are validated and a quote is presented. User can confirm the lease agreement and provide payment information. A new lease record is created.

3. As a user with an active lease, I want to view my lease details (car information, start/end dates, payments, status), so that I can easily track my lease progress and manage any issues.
 - Acceptance criteria: User can access a dedicated "My Leases" section. Each lease shows car details, lease terms, payment history, and current status. User can download lease documents.
4. As a user nearing the end of my lease, I want to receive timely notifications and options to manage the lease renewal or return process, so that I can stay informed and take action before the lease expires.
 - Acceptance criteria: System sends email/SMS alerts before lease end. User can choose to renew the lease, return the car, or extend the lease period.
5. As a car administrator, I want to add new cars to the fleet, update existing car information, and manage their availability status, so that the car list is always accurate and reflects the actual inventory.
 - Acceptance criteria: Admin can add, edit, and delete cars. Car information like make, model, and availability can be updated. Admin can mark cars as under maintenance or unavailable for lease.

4. Data Model

