

PM4

Project and Team

Project Name: **CarGenie**

Team Name: **HuskyAutoCoders** (Team 4)

Team Members:

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- Luwei Fang
- Qiuying Zhuo
- Wen Xie
- Zhe Zhang
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Dataset used: [Kaggle Used Cars Dataset](#)

Screenshots and CRUD functions

1. Home Page

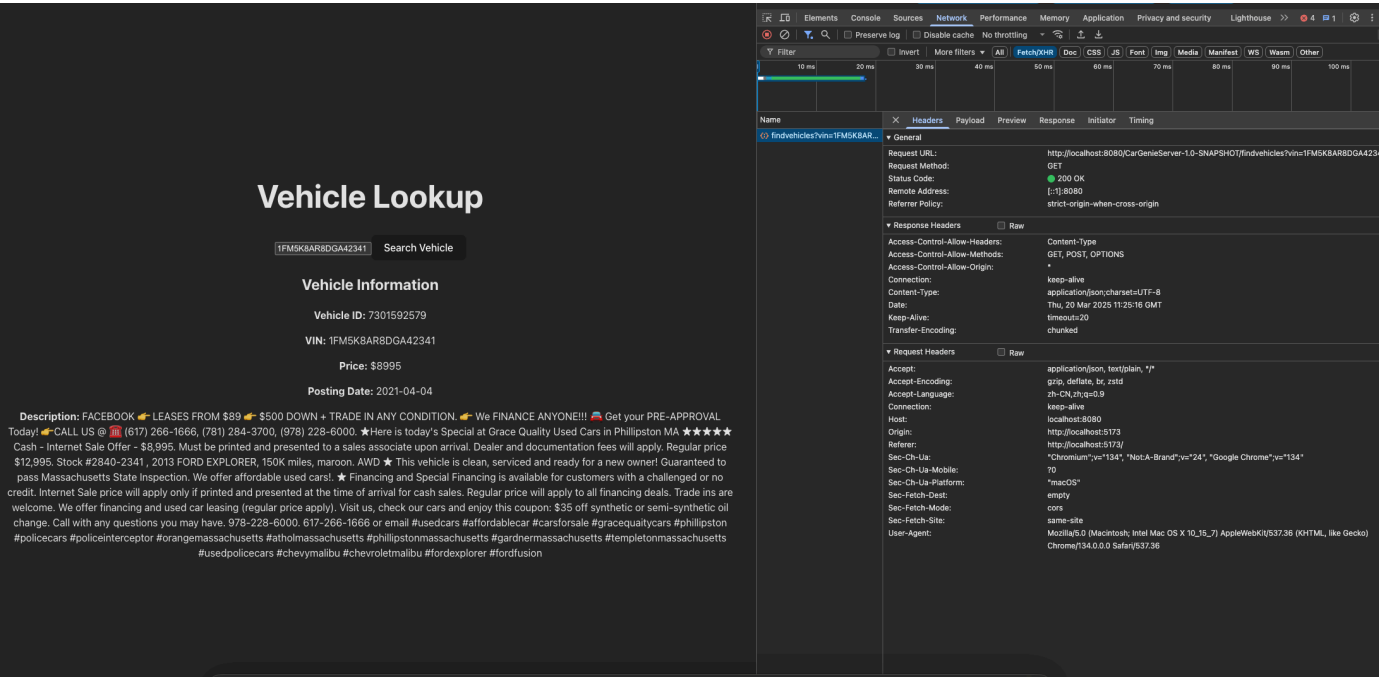
- **Description**: The home page of CarGenie. There are three

options for users to choose from: **Find Vehicle**, **Filter Vehicle**, and **Manage Vehicle**.

! [homePage.png] (resources/homePage.png)

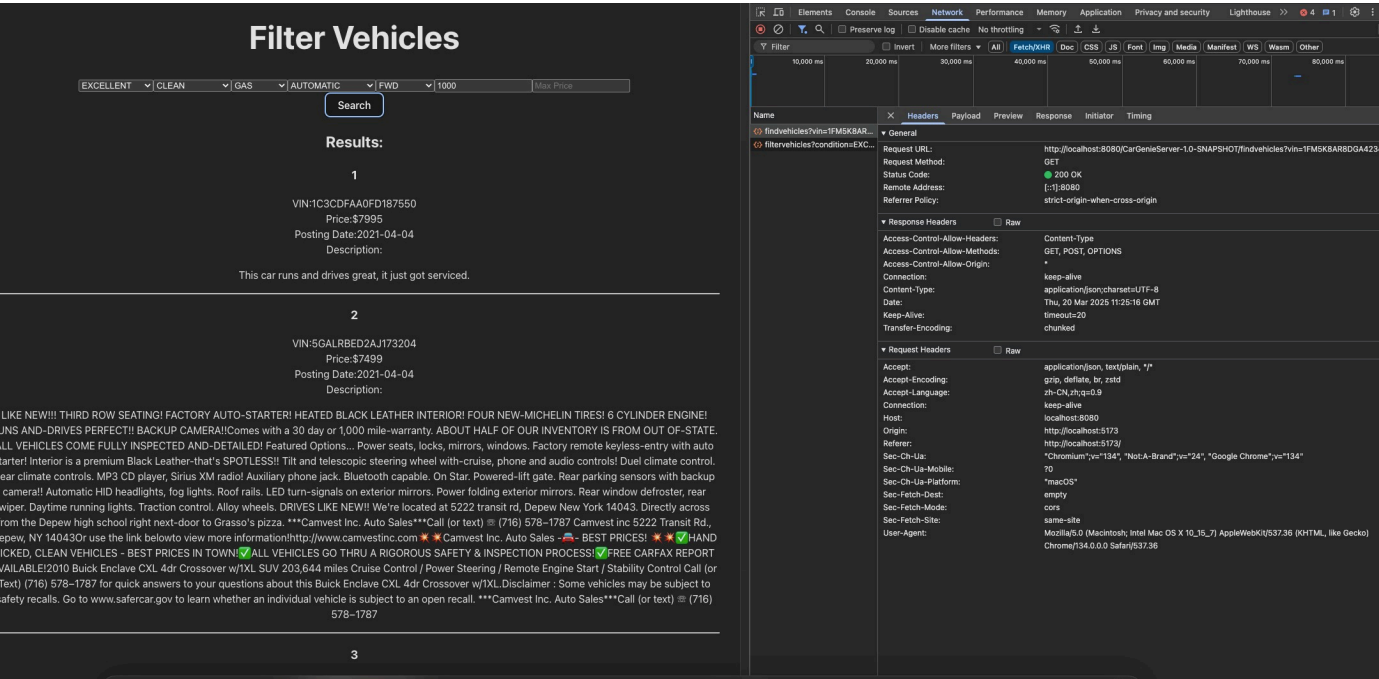
2. Find Vehicle

- **Description**: Users can search for vehicles by entering the vehicle Vin.
- **CRUD Functions**: Read the vehicle information by Vin.



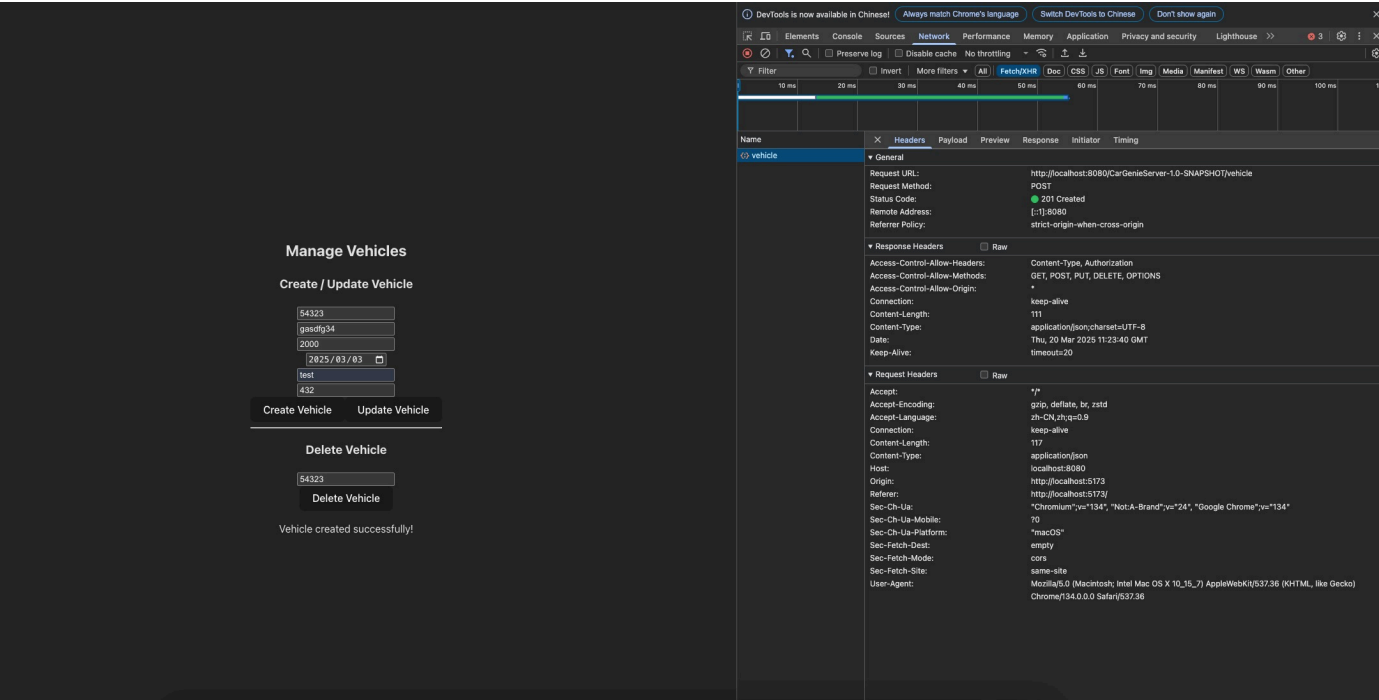
3. Filter Vehicle

- **Description**: Users can filter vehicles by selecting the vehicle condition, title status, fuel, and more.
- **Multi-criteria Filtering**: Users can apply multiple filters simultaneously to narrow down search results.
- **Dynamic Query Optimization**: The system efficiently processes filter conditions to return results quickly.
- **Range-based Filtering**: Users can specify price ranges and other numerical attributes for more precise filtering.
- **Stateful Filtering**: Filters persist across user sessions, ensuring a seamless browsing experience.
- **Sorting Integration**: Users can combine filters with sorting options (e.g., by price, mileage, year).
- **Smart Vehicle Recommendation (Advanced Feature)**: If no vehicles match the selected filters, the system suggests alternative vehicles with slight variations in the selected attributes (e.g., slightly higher price or different features) or recommends Popular vehicles within the same category.
- **CRUD Functions**:
 - **Read**: Retrieve vehicle listings based on the specified filter conditions using optimized database queries.
 - **Recommend**: When no exact matches are found, suggest alternative vehicles based on a predefined recommendation algorithm.

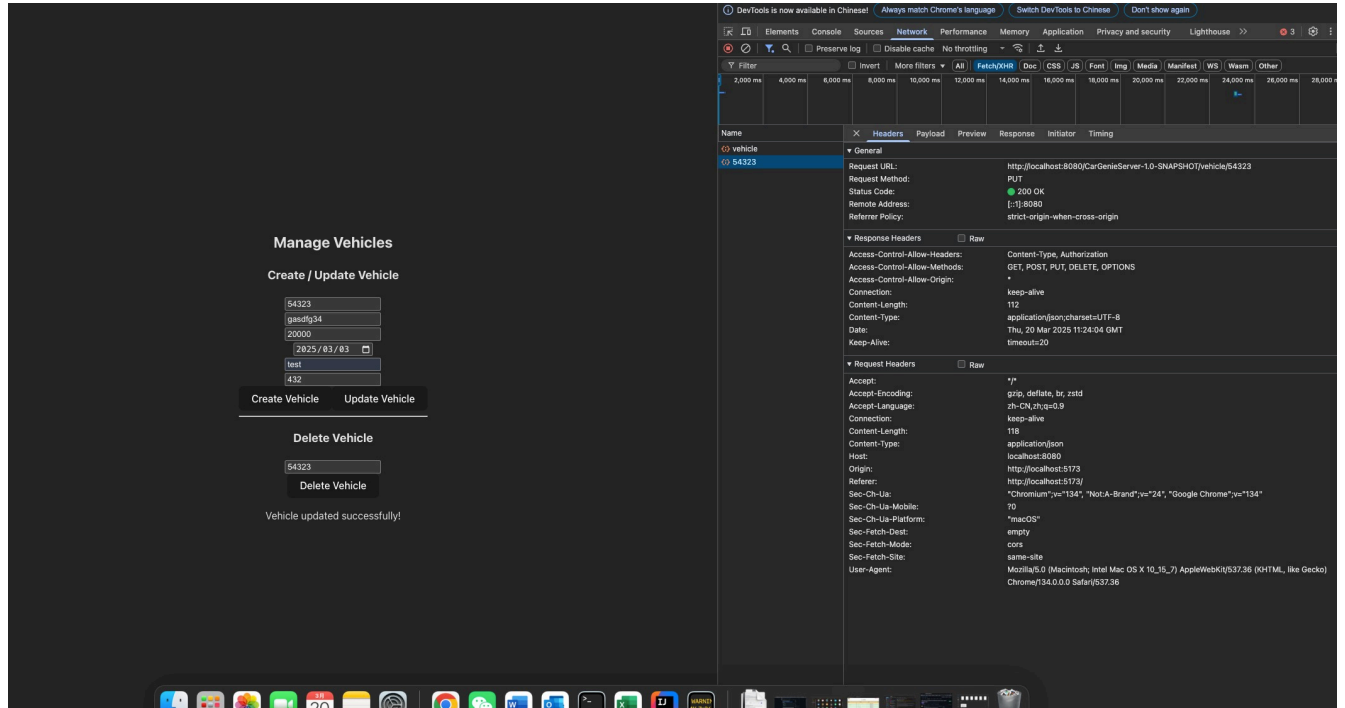


4. Manage Vehicle

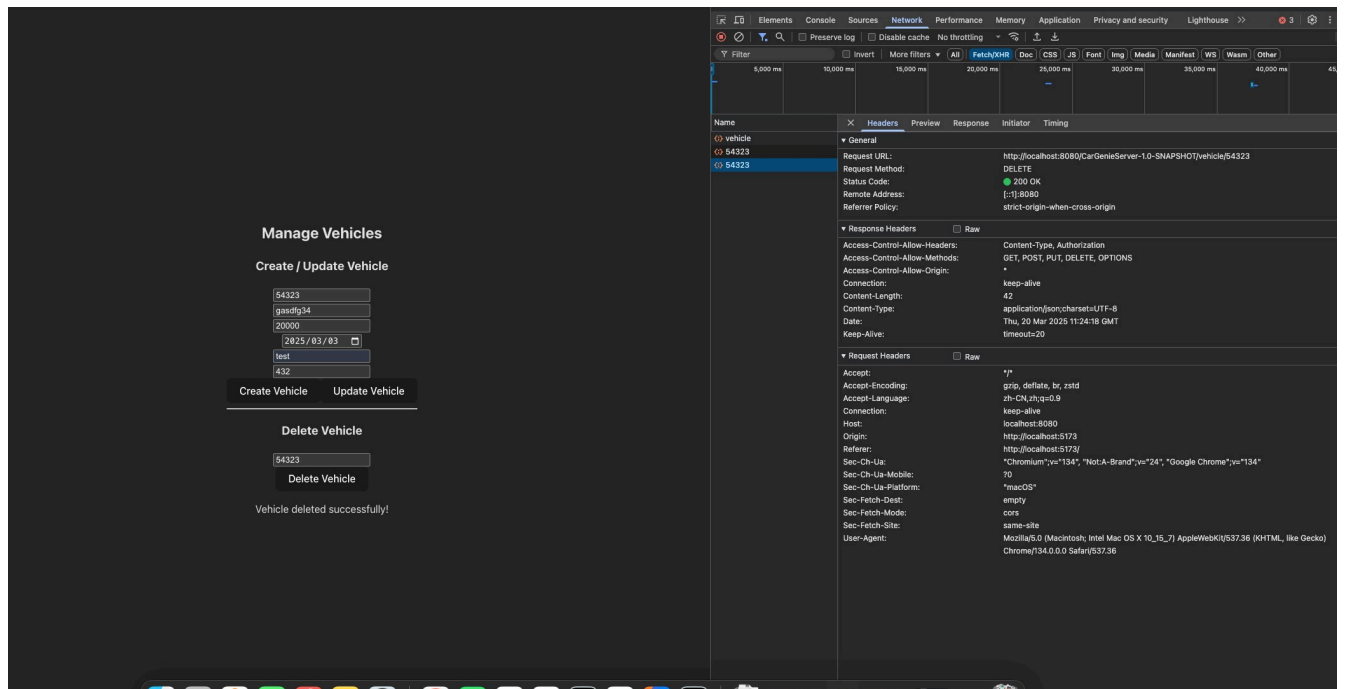
- ****Description****: Users can manage vehicles by adding, updating, and deleting vehicle information.
- ****CRUD Functions****: Post, Read, Update, and Delete vehicle information.



- post vehicle: Users are able to post a vehicle by entering the vehicle information.



- update vehicle: Users are able to update the vehicle information by entering the vehicleId.



- delete vehicle: Users are able to delete the vehicle by entering the vehicleId.