

Car Rental Management System

The Car Rental Management System is a web-based application designed to streamline and manage the daily operations of a car rental store. Built using JavaScript, HTML, and CSS, this system provides a comprehensive platform for store managers to efficiently manage cars, categorize the fleet, and oversee member activities. The primary goal of this project is to enhance the functionality of traditional rental stores by leveraging modern web technologies to deliver a user-friendly and effective management tool.

Key Features

1. Car Management by Manager

- **Add or Remove Cars** : Managers have the authority to add new cars to the store's inventory or remove existing ones. This feature ensures that the store's fleet is always up-to-date and relevant.
- **Categorize Cars** : Cars can be categorized based on various criteria such as type, brand, model year, and more. This categorization aids in easy navigation and retrieval of cars by both managers and customers.

2. Inventory Management

- **Unique Identification** : Each car is identified by its unique vehicle registration number. This ensures precise tracking and management of the fleet.
- **Multiple Units** : The system supports the addition of multiple units of the same car model. This feature is crucial for stores that need to manage large volumes of cars and ensure that multiple customers can rent the same model simultaneously.

3. Customer Registration and Management

- **NIC Number Registration** : Customers are required to register with their National Identity Card (NIC) number. This ensures a unique identifier for each customer, simplifying the process of tracking rental history and managing customer information.
- **User Profile Management** : Customers can view and update their personal information, check their rental history, and see the status of cars they have rented.

4. Car Renting and Return

- **Renting Cars** : Customers can rent cars for a specified period, such as a few hours or days. The system keeps track of the rental date and time and automatically calculates the due time.
- **Overdue Alerts** : If a customer fails to return a car within the specified period, the system generates an alert for the manager. This feature ensures that cars are returned on time and helps maintain the store's inventory.
- **Return Processing** : When a customer returns a car, the system updates the rental section to reflect the return. This includes marking the car as available for renting again and removing it from the customer's active rented cars list.

5. Reports

- **Inventory Report** : Provides a detailed overview of all cars in the store, including their categories and availability.
- **Rental Report** : Tracks the rental history, overdue cars, and frequently rented cars.
- **Customer Report** : Lists all registered customers and their rental activities.

User Roles

1. Manager

- Manage cars (add, remove, categorize).
- View and manage customer information.
- Oversee renting and return processes.
- Generate and view reports.

2. Customer

- Register and manage their profile.
- Rent and return cars.
- View rental history and status of rented cars.

Technical Overview

The Car Rental Management System is developed using a combination of JavaScript, HTML, and CSS. To ensure simplicity and ease of use, the system is designed to work entirely on the client side, utilizing local storage for data persistence. This approach eliminates the need for a server-side backend, making it ideal for small to medium-sized rental stores.

- **JavaScript** : Manages the core functionality, including event handling, DOM manipulation, and interaction with local storage. JavaScript is used to perform all operations such as adding/removing cars, updating categories, and managing customer data.
- **HTML** : Structures the content and elements of the web pages.
- **CSS** : Enhances the appearance and layout, providing a consistent and user-friendly design across different devices and screen sizes.
- **Local Storage** : Utilized for data persistence, local storage ensures that all data (cars, customers, rental records) is saved directly in the user's browser. This enables the application to retain data between sessions without requiring a server-side database.

Conclusion

The Car Rental Management System offers a robust solution for managing the diverse needs of a car rental store. By integrating essential features such as car management, customer registration, and rental processes, it simplifies the day-to-day operations for managers while providing a seamless experience for customers. The addition of comprehensive reporting capabilities enhances the system's utility by providing valuable insights into inventory, rental trends, and customer activities. This project represents a significant step towards digitizing rental management and improving the overall efficiency and accessibility of rental services.