

Vehicle Rental and Management System

Requirement Analysis Document



**Senior Project**

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ERental is an innovative car rental solution aimed at delivering seamless and efficient car rental services. The primary objective is to optimize the existing ERental system, creating a user-friendly interface for customers and empowering administrators to effectively oversee the rental process.

Our key areas of focus for enhancing the ERental system are as follows:

Intuitive User Interface: We strive to provide customers with a straightforward and intuitive interface that enables them to effortlessly browse, select, and rent cars. Detailed information about available cars, including specifications, pricing, and rental terms, will be prominently displayed to assist customers in making informed decisions.

Streamlined Registration and Login: We aim to simplify the registration process, minimizing the required information while ensuring its security. Additionally, we seek to optimize the login process, making it efficient and robust.

Efficient Car Reservation: Our goal is to facilitate convenient car reservation by allowing customers to check car availability and view accurate rental details, including duration, pricing, and any additional terms or conditions.

Customer Feedback System: To continuously improve our service quality, we plan to implement a comprehensive feedback system. This system will enable customers to provide valuable comments and ratings based on their rental experiences, assisting both the car rental company and potential customers.

Effective Administration: Administrators will be equipped with powerful tools to efficiently manage customer accounts, car inventory, reservations, and personal information updates. This includes functionalities such as adding or removing customers, managing the car inventory, handling reservation cancellations, generating reports, and updating personal information.

User Story Map

As a customer, I want to be able to perform various actions related to renting a car, searching for a car, logging in, and updating my profile. Here is the user story map with acceptance criteria for each feature:

- Rent A Car:

  - Acceptance Criteria:

    - Customers must provide the start and end date for the car rental.

    - Customers need to provide their information for the rental process.

    - Display an error message if any required information is missing.

    - Customers should not be able to rent a car if it is not available.

- Search Car:

  - Acceptance Criteria:

    - Customers can search for a car using the car ID, make, or model.

    - Display a message if no matching cars are found in the database.

- Login:

  - Acceptance Criteria:

    - Customers should enter both their username and password to log in.

    - Customers have the option to reset their password if needed.

    - New customers can create an account if they don't have one.

- Update Profile:

  - Acceptance Criteria:

    - Customers can update their profile information such as name, contact details, etc.

    - Changes made to the profile should be saved and reflected in the system.

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Main Scenario:

1. Rent A Car:

   - Customers select a specific car they want to rent.

   - Customers provide the required rental information such as start and end date.

   - Customers click the submit button to proceed with the car rental.

   - Customers receive a confirmation message indicating that their car rental has been successfully processed.

2. Search Car:

   - Customers enter the car information they want to search for (e.g., car ID, make, model).

   - Customers click the search button to find matching cars.

   - Customers receive a response indicating if the car is available or not.

3. Login:

   - Customers enter their username and password.

   - If the credentials are correct, customers successfully log in to their account.

   - Customers can navigate to their account page and choose any desired actions.

Note: This user story map and its acceptance criteria are fictional and provided as an example. Please adapt and modify them according to your specific project requirements and user needs.

Use Case Diagram:

**A diagram of a car rental

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The Acceptance Criteria for the following functionalities are as follows:

1. Rent A Car:

- Customers must provide the start and end dates for the car rental.

- Customers need to provide their personal information.

- An error message should be displayed if any required information is missing.

- Customers cannot rent a car if it is not available.

2. Search Car:

- Customers can search for a car using the car ID, make, or model.

- If the car does not exist in our database, a message stating "No match found" should be returned or displayed.

3. Login:

- Customers must enter both their username and password to log in.

- Customers have the option to reset their password.

- If customers do not have an account, they can create one.

Main Scenario:

1. Rent A Car:

- Customers select a specific car.

- Customers fill in the required information.

- Customers click the submit button to rent the car.

- Customers receive a confirmation of their rental.

2. Search Car:

- Customers enter the car information.

- Customers click the search button.

- Customers are informed whether the car is available or not.

3. Login:

- Customers enter their username and password.

- If the credentials are correct, customers will log in to their personal page.

- Customers can navigate to the page and choose any desired action.

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