

*Software Requirements
Specification*

ONLINE CAR RENTAL SYSTEM

Author(s): Jothika S

Version: 0.1

Date: November 29, 2024

CONTENTS

1. Abstract	4
2. Objective and Scope	4
3. Project End Users	4
4. Module Description	4
4.1 User Modules	4
4.1.1 home module	4
4.1.2 Login module	5
4.1.3 Register module	5
4.1.4 Search module	5
4.1.5 Details module	5
4.1.6 Booking module.....	5
4.1.7 Payment module.....	5
4.2 Admin Modules	5
4.2.1 Manage users module	5
4.2.2 Manage cars module	5
4.2.3 Manage bookings module	5
5. Requirements	6
5.1 Functional Requirements	6
5.2 Non-Functional Requirements.....	6
6. Design	7
6.1 High Level Design.....	7
6.2 Low Level Design	7
7. Diagrams	8
7.1 Use Case Diagram	8
7.2 Class Diagram	9
7.3 Sequence Diagram	10

7.4 Flow chart	11
7.5 Entity Relationship Diagram	13
8. Conclusion.....	14

1. Abstract

A car rental is a vehicle that can be used temporarily for a fee for a certain period of time. The customer/user who needs a car should contact the rental company and rent a car, the staff of that car rental company also need to check their data to see whether the car is available or not for rental on that time. This online car rental system project is to book/reserve a car for a rent from anywhere where they are, so that customers do not need to call and spent unnecessary time to reserve a car. They can go online and reserve the car they want that are available. Company will able to track the car where it is. The project's goal is to automate car rental and reservation so that clients don't have to waste time calling and waiting for a vehicle. To convert the manual car rental procedure into a digital method.

2. Objective and Scope

The objective and the scope of the project is to convert the manual car rental procedure into a digital method, so that clients don't have to waste time calling and waiting for a vehicle and for the company to manage their rental business efficiently.

The scope of the project includes the following basic features:

- ✓ General customers as well as the company's staff will also able to use the online car rental system efficiently.
- ✓ This system access will be available for 24/7.

3. Project End Users

Those who require the car for a rent for a certain period of time can use this website.

4. Module Description

User can login/signup and view details of the available cars and rent for a certain period of time easily.

4.1 User Modules

4.1.1 Home Module

The user can view the overview and details of the site.

4.1.2 Login Module

The user can login into the site by using username/email and password.

4.1.3 Register Module

If the user doesn't have an account, they will register by using email, name & password.

4.1.4 Search module

The user can search a car to their interest and taste that are available in the website.

4.1.5 Details module

This module will provide the details of the available cars to the user like name of the car, model, mileage, fuel type etc.

4.1.6 Booking Module

User can book the car by providing necessary details like location, pickup date and location and drop off date and location and number of days they rent the car.

4.1.7 Payment Module

In this module the customer can make payment through online for car renting for a certain period of time.

4.2 Admin Modules

The admin can login into the site by using username/email and password.

4.2.1 Manage users Module

The admin can manage the details of users who login into the site.

4.2.2 Manage cars Module

The admin can manage car details like add, delete and edit the car and car details.

4.2.3 Manage bookings Module

The admin can view the details of the bookings and confirm or cancel the bookings.

5. Requirements

5.1 Functional Requirements

Functional requirements are those that are used to demonstrate the system's internal functioning nature, as well as the system's description and explanation of each subsystem. It comprises the task that the system should accomplish, the processes involved, the data that the system should contain, and the user interfaces.

The functional requirements discovered are as follows:

- **Customer registration** – New users should be able to register online
- **Car reservation online** – Customers should be able to utilise the system to book and reserve car online.
- **Automatic database update once a reservation is made or a new customer is registered** – The system should be able to update the database without any further effort from the administrator whenever a new reservation or registration is made.

5.2 Non-Functional Requirements

It describes system elements that are concerned with how the system fulfills functional requirements. They are as follows:

1) Security – Only authorized staff may get access to the firm's secured page on the systems, and only users with proper passwords and usernames can log in to see the users' page.

2) Performance and Response Time – The system should have a high-performance rate while executing user input and should be able to offer feedback or a response in a short time.

3) Availability – This system must be accessible at all times, 24 hours a day, seven days a week.

4) Ease of Use – Given the consumers' level of understanding, a basic yet high-quality user interface should be created to make it simple to comprehend and need minimal training.

6. Design

System design is the solution for the creation of a new system. This phase focuses on the detailed implementation of the feasible system. Its emphasizes on translating design. System design has two phases of development:

- High Level Design
- Low Level Design

6.1 High Level Design

- The homepage provides the brief view of the website and available brands are also shown there.
- Login page asks the users a username and a password.
- System must contain login/register page that page must easier to understand and user friendly.
- Car details page contains the available cars and that details in that time.
- Payment module asks user to fill the card details and book the car.
- Orders page shows the details of the car bookings and cancel option.
- Admin has to manage the car details, booking details and user details.

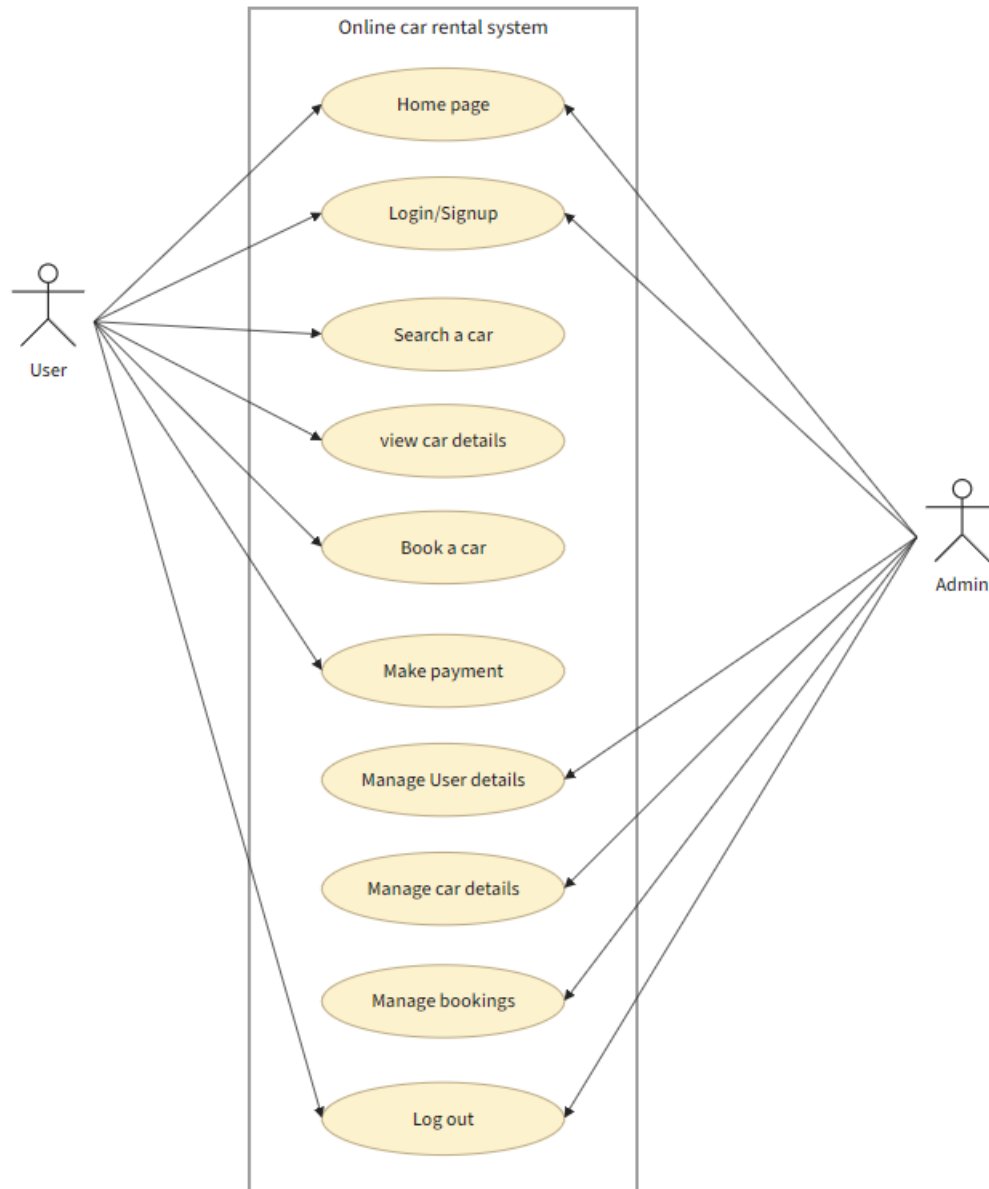
6.2 Low Level Design

- A user not to allowed to proceed without correct the error.
- Define roles like customer, admin.
- Maintain a database of available cars with details like model, fuel type, mileage, price etc.
- Car Search: Enable users to search for available cars based on brands of the car available in the site.
- Car Details: Provide detailed information about each car, including images.
- Allow users to select a car, choose rental dates and location, calculate the cost and mode of payment.
- Allow admins to add, edit, or delete cars.
- Provide administrators to manage users, cars, reservations.

7. Diagrams

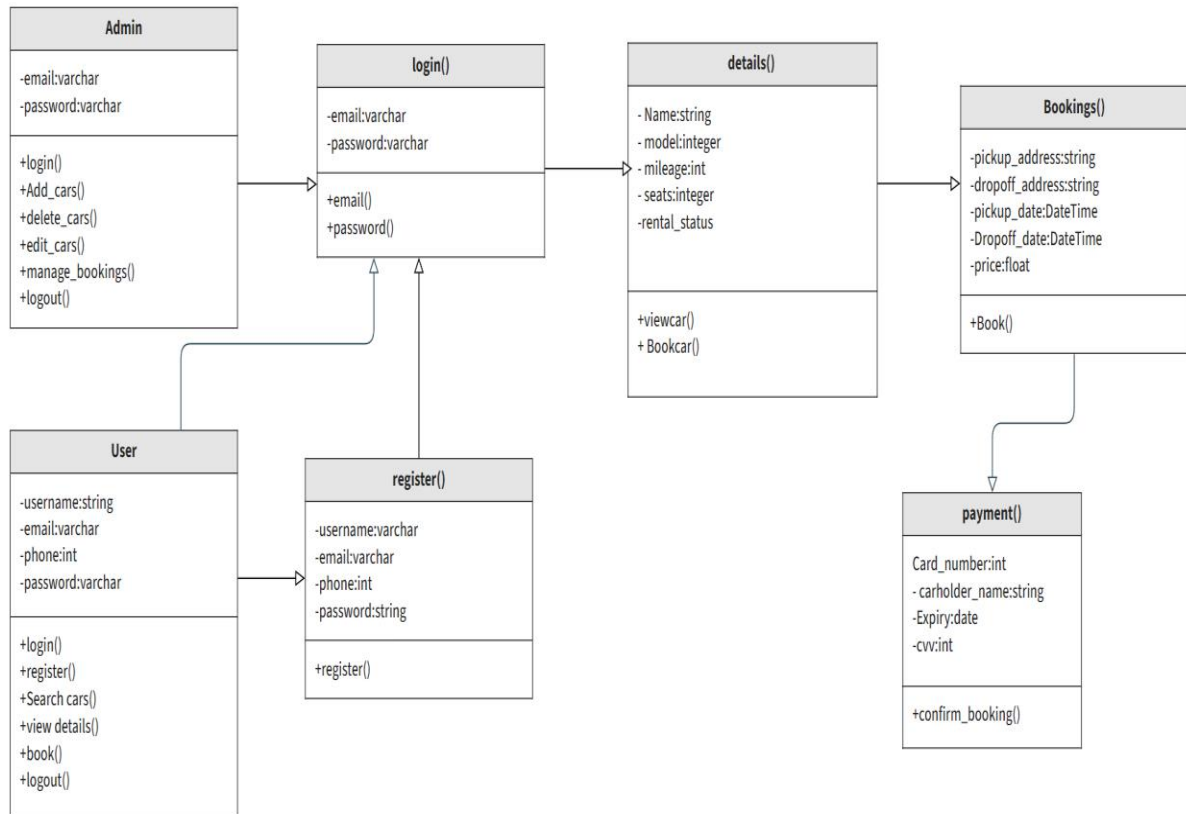
7.1 Use case diagram

In the Unified Modelling Language (UML), a use case diagram can summarize the details of your system's users (also known as actors) and their interactions with the system. To build one, you'll use a set of specialized symbols and connectors.



7.2 Class diagram

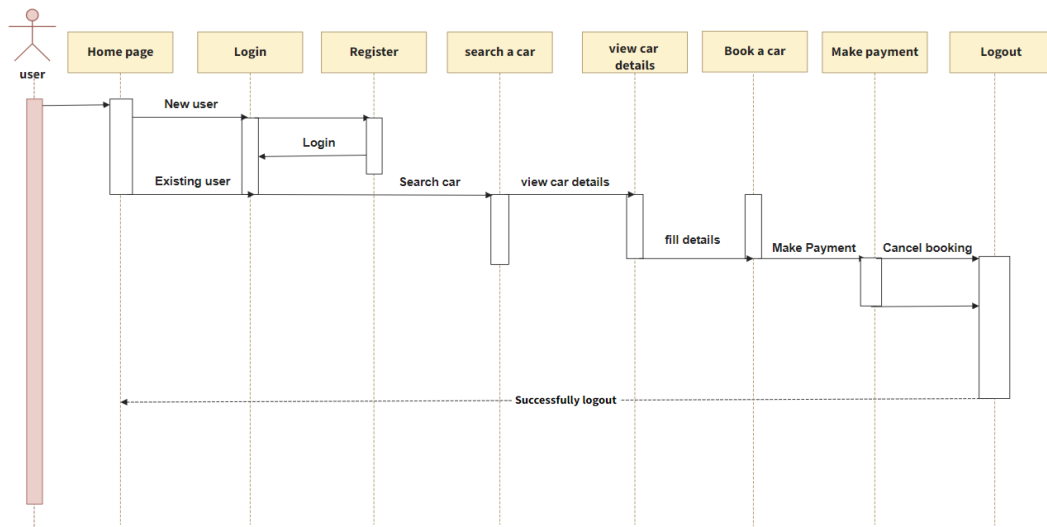
Class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application. Class diagram describes the attributes and operations of a class and also the constraints imposed on the system.



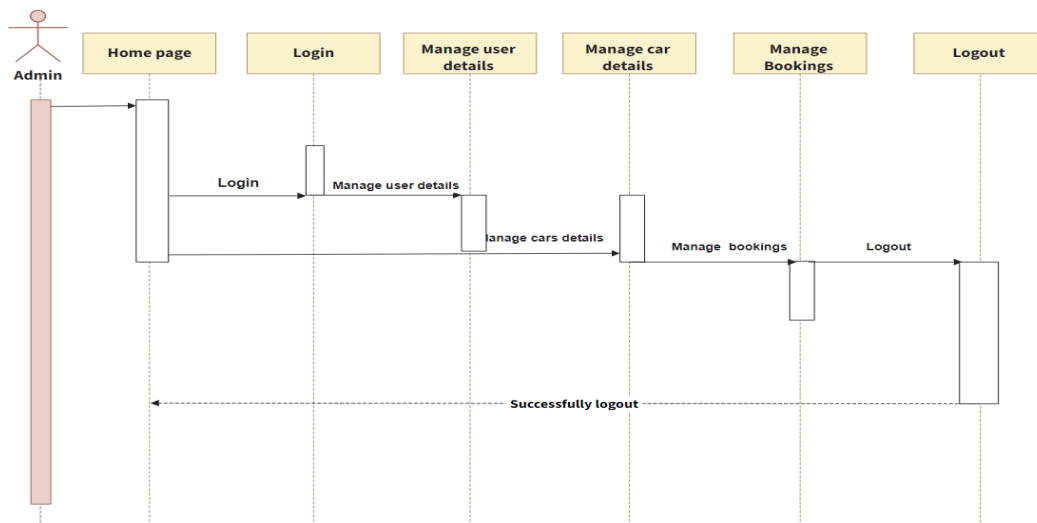
7.3 Sequence diagram

A sequence diagram is a Unified Modeling Language (UML) diagram that illustrates the sequence of messages between objects in an interaction. A sequence diagram consists of a group of objects that are represented by lifelines, and the messages that they exchange over time during the interaction.

User sequence diagram:



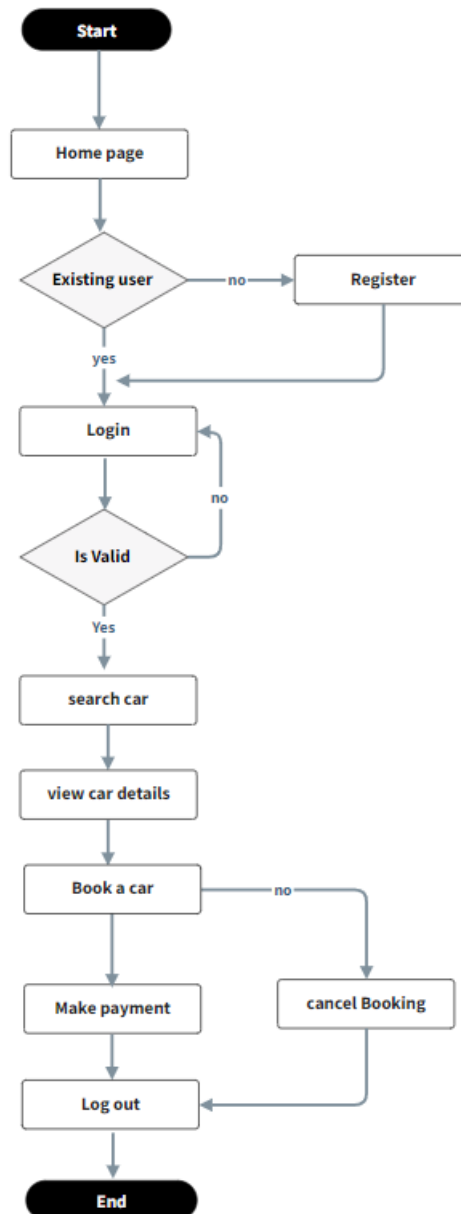
Admin Sequence Diagram:

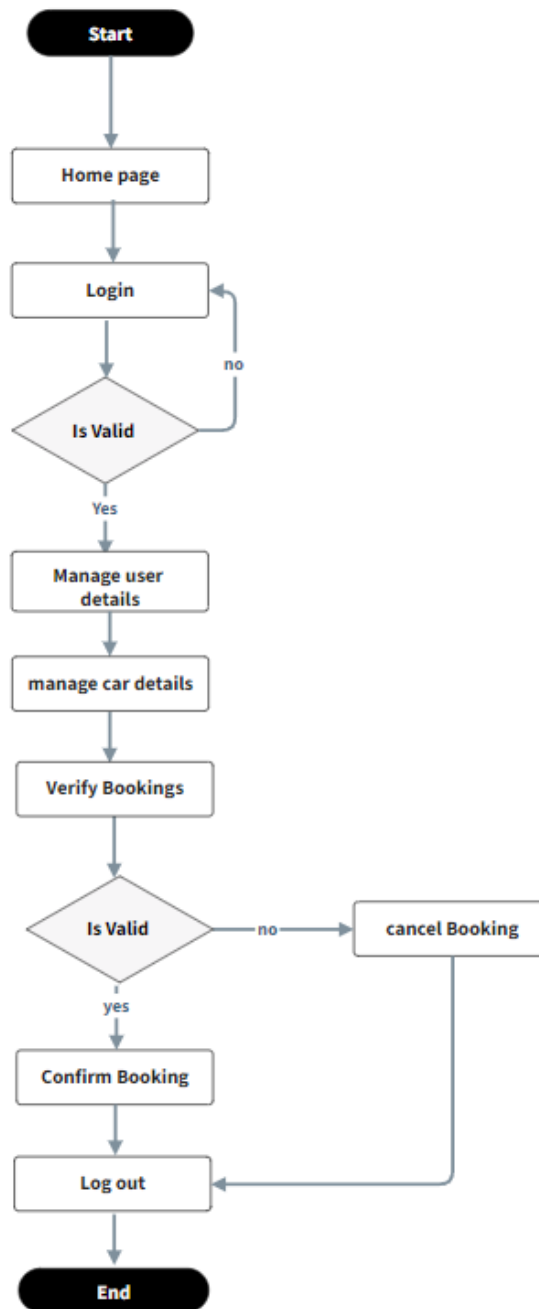


7.4 Flow chart

A website flowchart (also known as a sitemap) maps out the structure and complexity of your current or future website. A well-structured sitemap or flowchart makes your website easily searchable. Each piece of content should ideally give users accurate search results, based on keywords connected to your web content.

Flow chart for user:

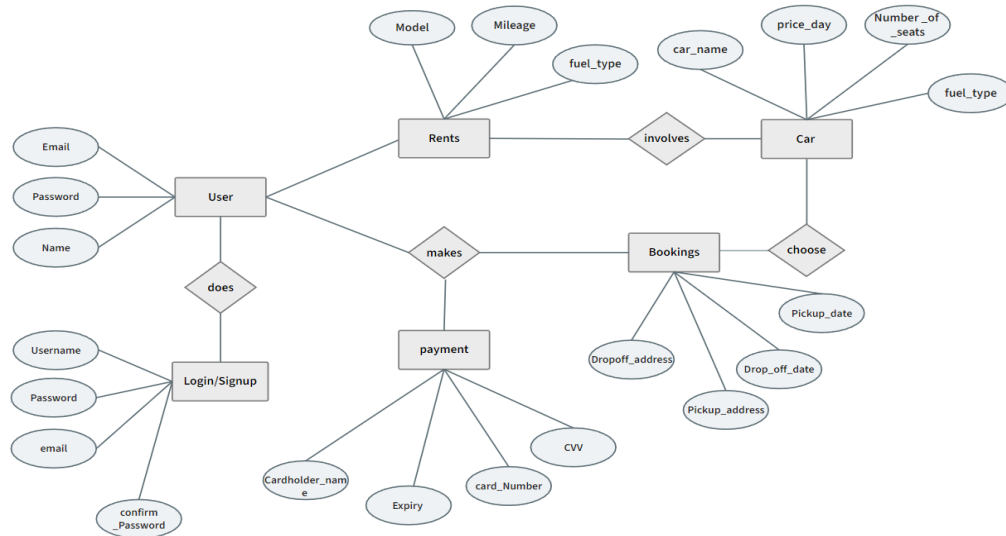


Flow chart for admin:

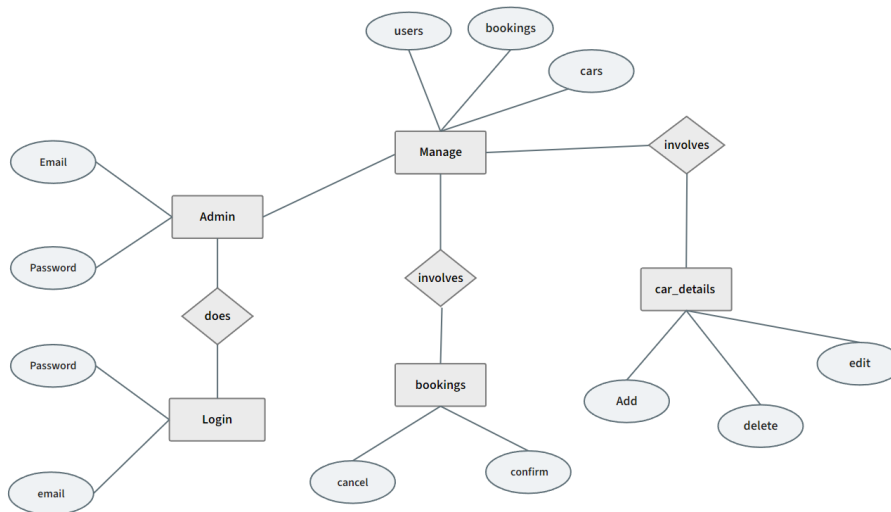
7.5 Entity Relationship Diagram

An Entity Relationship Diagram (ERD), also known as an entity relationship model, is a graphical representation that depicts relationships among people, objects, places, concepts or events within an information technology (IT) system.

User ER Diagram:



Admin ER Diagram:



8. Conclusion

This online car rental system offers the user/customer to reserve cars online, rent a car online and the cars will bring to their doorstep once the customer is registered. This project converts the manual procedure to digital car booking. This system provides advantage to the customer as well as car rental company efficiently and effectively.