Omar Al-mukhtar University

Advanced OOP

Car Rental System

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Car Rental System – Summary

The Car Rental System is designed to simplify and automate the process of renting cars. It allows customers to view available cars, make reservations, and manage their bookings easily. Administrators can manage car information, track reservations, and maintain an up-to-date list of available vehicles.

The system helps improve efficiency, reduce manual errors, and provide a smooth experience for both customers and administrators. It applies Object-Oriented Programming (OOP) principles, ensuring modularity, reusability, and easy system maintenance.

- Main Features

    • Customer registration and profile management.
    • Viewing available cars with details (brand, model, price per day).
    • Making and canceling reservations.
    • Automatic calculation of rental cost based on days.
    • Admin management of cars and reservations.

- Actors

    • Customer: Makes reservations and views available cars.
    • Admin: Manages cars, reservations, and customer data.

2. List of Main Use Cases

#	Use Case Name	Actor	Brief Description
1	**Register Customer**	Customer	The customer registers in the system by providing personal details such as name and phone number.
2	**View Available Cars**	Customer	The customer views a list of cars that are currently available for rent with their details and prices.
3	**Make a Reservation**	Customer	The customer selects a car, chooses rental dates, and confirms the booking. The system calculates the total cost and reserves the car.
4	**Cancel Reservation**	Customer	The customer can cancel an existing reservation if needed. The system updates the car's availability.
5	**Add New Car**	Admin	The admin can add new cars to the system with details such as brand, model, and daily rate.
6	**Update Car Information**	Admin	The admin can modify car details or change availability status.
7	**View All Reservations**	Admin	The admin can view all existing reservations, including customer and car details.

3. Use Case Diagrams

Car Rental System

Customer

Admin

- Login
- Logout
- Register Customer
- View Available Cars
- Make Reservation
- Cancel Reservation
- Process Payment
- Add New Car
- Update Car Info
- View Reservations
- Generate Report