**Car Rental Management System**

**Introduction:**

A car rental system is a software application that allows users to rent vehicles from a car rental company. The system can be implemented using an object-oriented programming language such as Java. The system will typically have classes for representing the different types of vehicles, classes for representing customers and rental transactions, and classes for performing various tasks such as calculating rental fees, checking vehicle availability, and processing payments. Additionally, the system may include interfaces for interacting with users, such as a web-based interface or a command-line interface, and may also interact with other systems such as a reservation system or a fleet management system.

**Modules:**

**1. Admin:**

Admin is a person that can access all the information , add a new member, manipulate their information and search by different aspects.

**2. Costumer:**

Costumer will be one who will sign in and can rent a car from this system

3. Vehicle Management:

This module will allow the system to keep track of the different types of vehicles available for rent, as well as their current status (e.g. available, rented, under maintenance).

4. Customer Management:

This module will allow the system to store information about customers, such as their contact details and rental history.

5. Reservation and Booking:

This module will allow customers to search for and reserve vehicles, and will also keep track of the current reservations and booking.

6. Rental and Billing:

This module will handle the rental transactions, including calculating rental fees, processing payments and generating invoices.

7. **User Management:** This module will manage the user authentication, authorizations and user management tasks.

**Object Oriented Approach:**

It is necessary to understand some of the concepts used extensively in object-oriented programming. These include:

* Objects
* Classes
* Data abstraction and encapsulation
* Polymorphism
* Inheritance