

**DEPARTMENT OF COMPUTER & INFORMATION SYSTEMS ENGINEERING  
BACHELORS IN COMPUTER SYSTEMS ENGINEERING**

**Course Code: CS-116**

**Course Title: Object Oriented Programming**

**Complex Engineering Problem**

**FE Batch 2024, Spring Semester 2025**

**TERM PROJECT**

**Term Project Title:**

**ONLINE CAR RENTAL SYSTEM**

**Description:**

This is an online car rental system where users can create their account to rent different types of cars according to the car's availability.

**Minimum Required Features:**

Your application should contain the following:

- A. Store and display a list of different cars with rental price per day and other features (seating capacity, brand, model etc.).
- B. User should be shown only those cars which are available for rental.
- C. Allow user to create an account with some basic information like username, password, first and last names, address, balance etc.
- D. Allow user to login to the respective account and rent a car based on available cars. User cannot reserve more than one car at a time.
- E. When the user has reserved a car for rental, online payment is made from his account balance.
1. Maintain rental history for each user with start date of reservation, end date of reservation, car reserved, rent amount and any other relevant information.
- F. The rental system provides the customer with an interface to perform all operations described above, review rental history and update account balance.
- G. An administrator can print a report about all customers and their current rentals.
- H. An administrator can also add new cars or remove cars from the system.
- I. An administrator can also print a report about all cars that are currently reserved.

**Design Hints:**

1. Finalize the user interface for your application.
2. Choose data structures and classes to keep and organize the information when your application is running.
3. Decide on information that needs to be stored in files, for e.g. user accounts info, rental history etc.
4. Implement the application class by class.
5. Mention constraints or any other design scenario clearly.

**Some Extension Ideas:**

- Use GUI to improve interface for customer and administrator
- Make web interface for the application.
- Extra Classes to increase functionality of the system can be done as well.
- Show pre-made packages including driver with extra fee, or daily pick-up/drop off.
- Allow user to display rental history for a specific date or car.
- Allow multiple rental durations (for e.g. hourly)
- Include a proper payment system asking for credit card information, address confirmation, feedback on products and service, receipt generation etc.
- Include a function where if a user returns a car before the end date no compensation is made and if a user doesn't return the car on the specified date extra fee is charged.