CS-201 Data Structures and Algorithm

Rental Car System

Project Report

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Rent a Car System

Rent a car systems are designed to manage rented rides for customer and calculate reasonable prices according to the mileage of the car and the number of days the car is rented. The software solution is designed based on the system requirements, the people involved, the content of the operation and the activity to be performed.

The main limitation of the previous system of Car Rental System:

The existing system only provides text-based interface, which is not as user-friendly as Graphical user Interface.
Since the system is implemented in Manual, so the response is very slow.The transactions are executed in offline mode, hence online data capture and modification is not possible.
Offline reports cannot be generated due to batch mode execution.
Hence, there is a need of reformation of the system with more advantages and flexibility. The Car Rental System eliminates most of the limitations of the existing software.

Objective of Library Management System

The main objective of this project is to provide rental car services to the customer. Different car models are available for the customer to select from and also select the number of days to rent for. It takes user information while renting. An admin mode is also available to manage the rides.

Enhancement:

The main objective of Car Rental System is to enhance and upgrade the existing system by increasing its efficiency and effectiveness. The software improves the working methods by replacing the existing manual system with the computer-based system.

Automation:

The Car Rental System automates each and every activity of the manual system and increases its throughput. Thus the response time of the system is very less and it works very fast.

Accuracy:

The Car Rental System provides the uses a quick response with very accurate information regarding the users etc. Any details or system in an accurate manner, as and when required.

User-Friendly:

The software Car Rental System has a very user-friendly interface. Thus the users will feel very easy to work on it. The software provides accuracy along with a pleasant interface. Make the present manual system more interactive, speedy and user friendly.

Availability:

The transaction reports of the system can be retried as and when required. Thus, there is no delay in the availability of any information, whatever needed, can be captured very quickly and easily.

Maintance Cost:

Reduce the cost of maintenance

Scope of Rent a Car System

The scope of Rent a Car system is:

♦ Provide reasonable prices according to the Type, Mileage of car and the number of the days rented.

♦ Recursive Program that is always active.

♦ An error reduction in handling process.

♦ To have more timely information.

It may help collecting perfect management in details. In a very short time, the collection will be obvious, simple and sensible. It will help a person to know the management of passed year perfectly and vividly. It will also reduced the cost of collecting the management & collection procedure will go on smoothly. The present project has been developed to meet the aspirations indicated in the modern age. An attempt has been made through this project to do all work ease & fast. It provide current add, Update, Display & Delete all facilities to accomplish the desired objectives.
The facility Include in this project and the suggested activities have been organized to impart knowledge & develop skill.

Tool Used in the Project:

- Visual Studio
- Dev C++

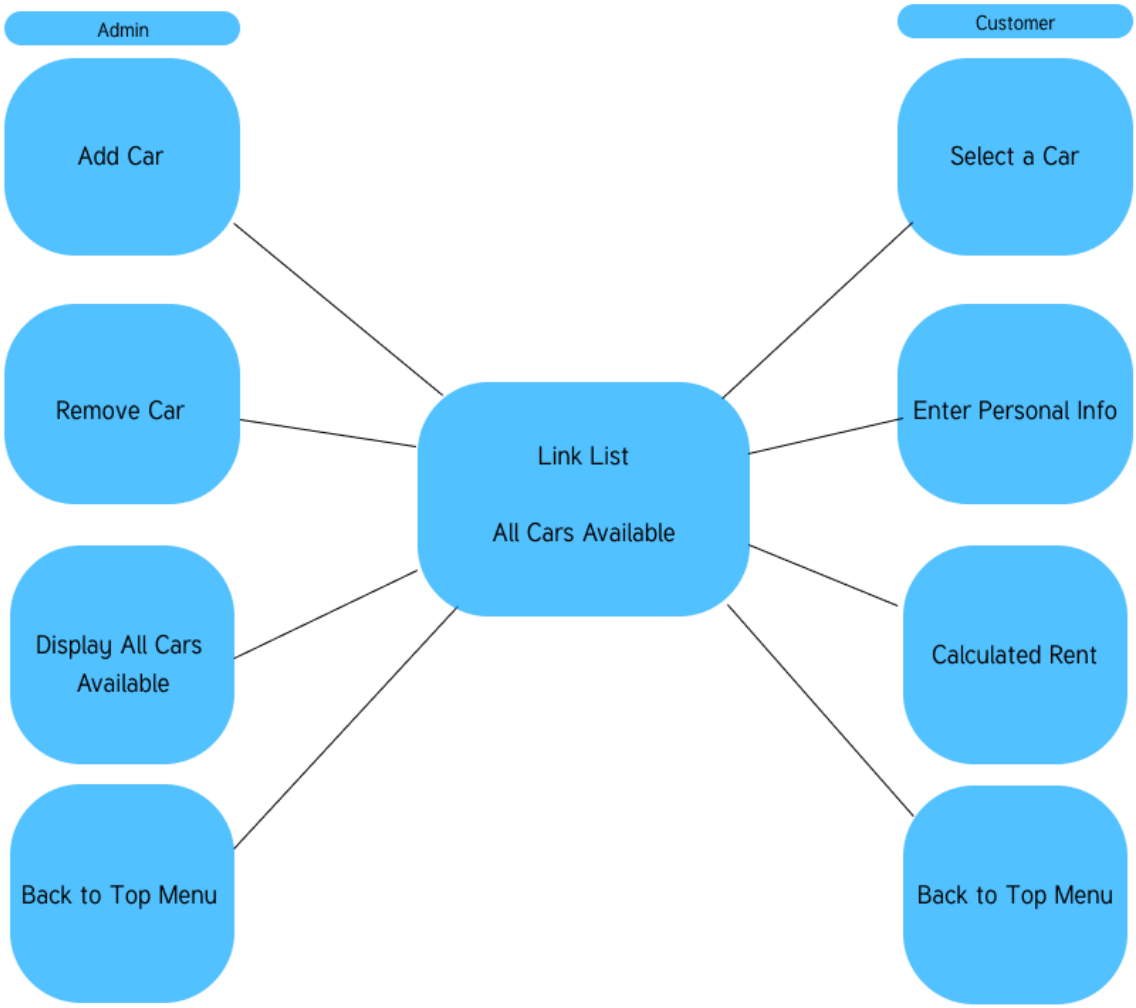
Language Used in the Project:

- C++

Description of Project:

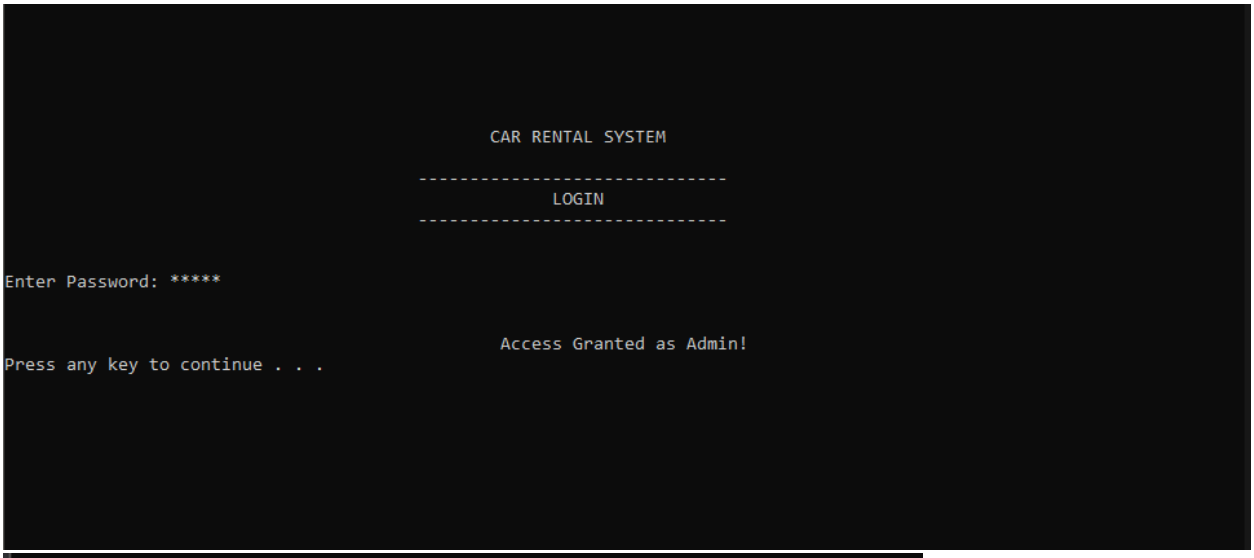
- This project uses the concepts of Data Structures and Algorithms to properly and efficiently function. You can select cars according to their mileage and add the number of days to rent for and a reasonable price is calculated.
- Two different modes are available; Admin Mode (pass: admin) and User Mode (pass: 1234). Admin is responsible to manage the cars available and update their mileages. While the customer can select rides and rent a car.
- Doubly linked lists, classes and file handling has been used in this project.
- Each node in the linked list is considered to be a Car. It has its specific model and mileage. Two pointers; next and previous are made to link with other nodes.
- Multiple functions related to linked lists are present i.e adding a node, removing a node, displaying a node (nodes are cars)
- Customer class and child class rent are made to handle the rental process. Login, calculate rent, and show rent function are made for the proper working.

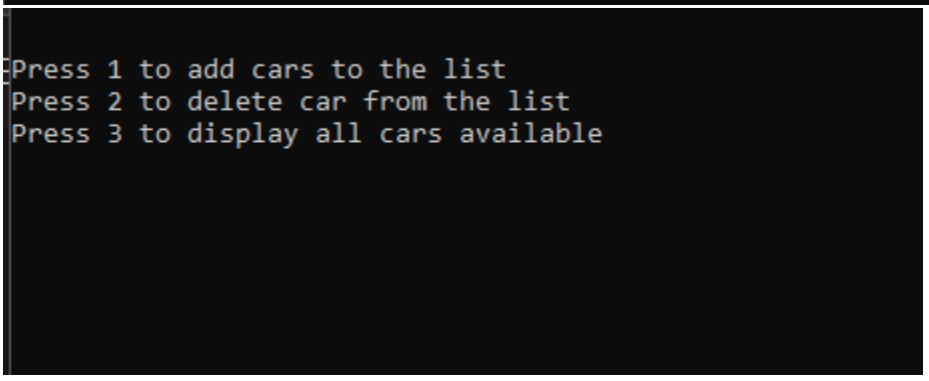
Data Flow Diagram



Admin Mode:


CAR RENTAL SYSTEM
LOGIN
Enter Password:


CAR RENTAL SYSTEM
LOGIN
Enter Password: *****
Access Granted as Admin!
Press any key to continue . . .

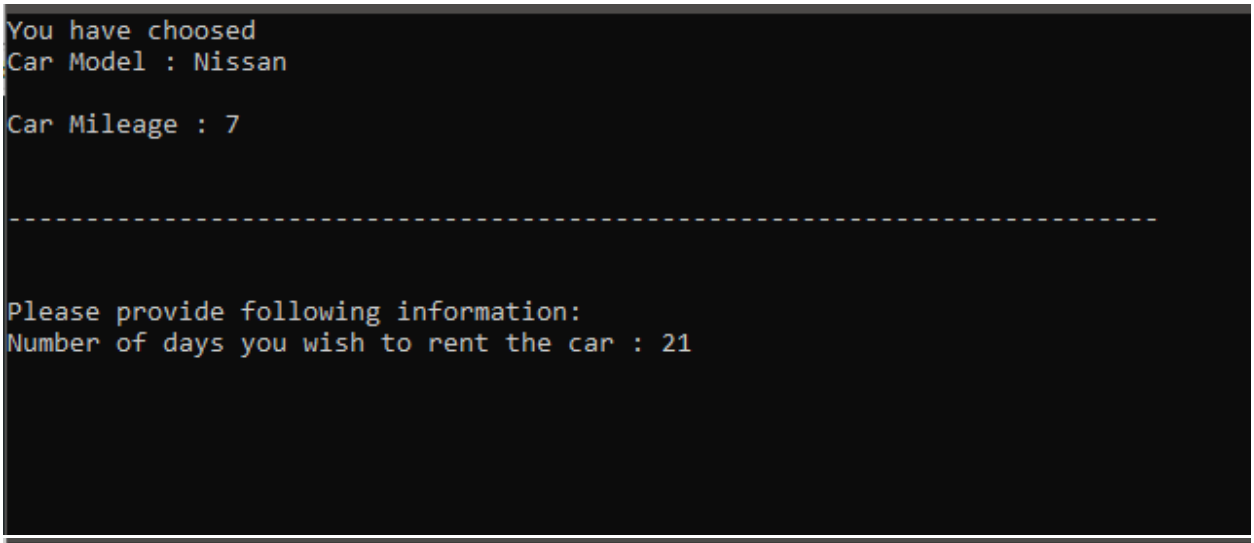

Press 1 to add cars to the list
Press 2 to delete car from the list
Press 3 to display all cars available

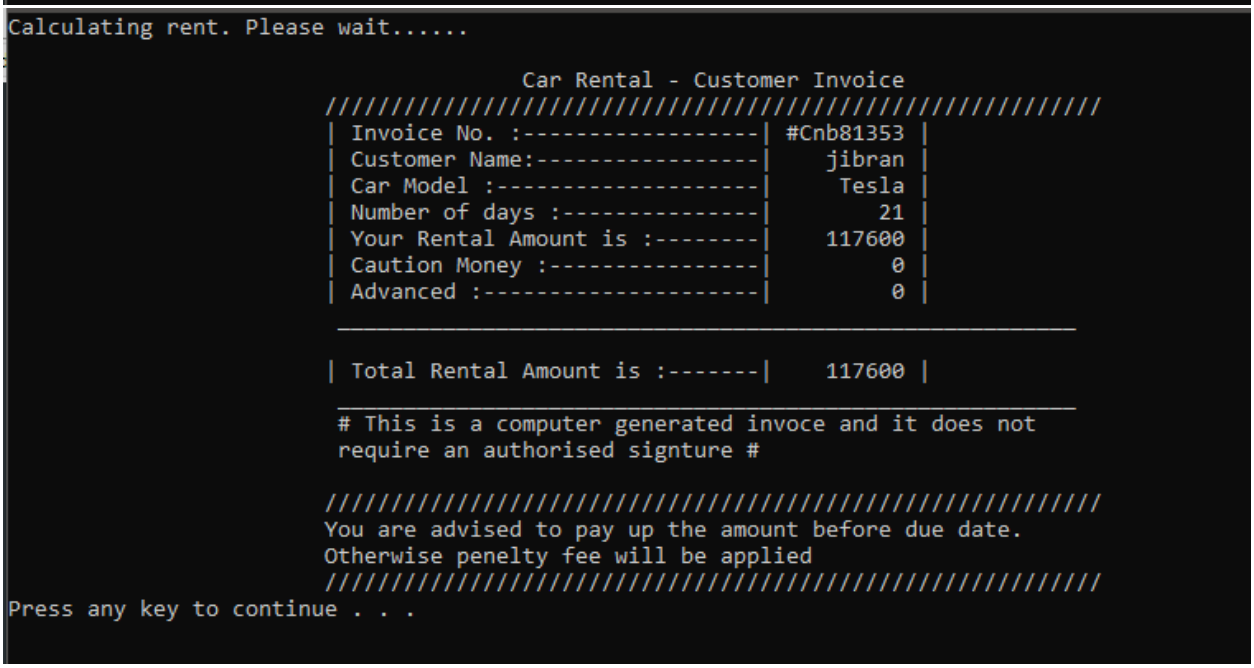
```
Press 1 to add cars to the list
Press 2 to delete car from the list
Press 3 to display all cars available
1


Enter the Car Model :
Enter Car Model : Hyundai

Enter Car Mileage : 12.2


Press 1 to goto the Admin Menu
Press any Key to continue
Your Choice :
```

USER MODE

```
                                        CAR RENTAL SYSTEM

                                    ------------------------------
                                                LOGIN
                                    ------------------------------


Enter Password: ****


                                                  Access Granted as User!
Press any key to continue . . .
```

```
                            Please Enter your Name: jibran

                            Please Select a Car


Car Model : Tesla
Car Mileage : 70

Car Model : Nissan
Car Mileage : 7

Car Model : Toyota
Car Mileage : 3

Car Model : Honda
Car Mileage : 5
                            Choose a Car from the above options:
```





Conclusion:

The project was successful as the all the applied concepts of Data structures and Algorithms were working efficiently. The user can select a car for a rent for a specific number of days the rent would be calculated and the admin can easily manage the cars available and update their mileages.