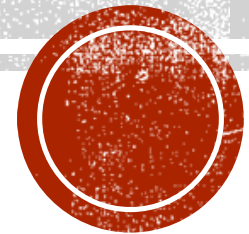


CAR RENTAL SYSTEM

System Requirement Specification



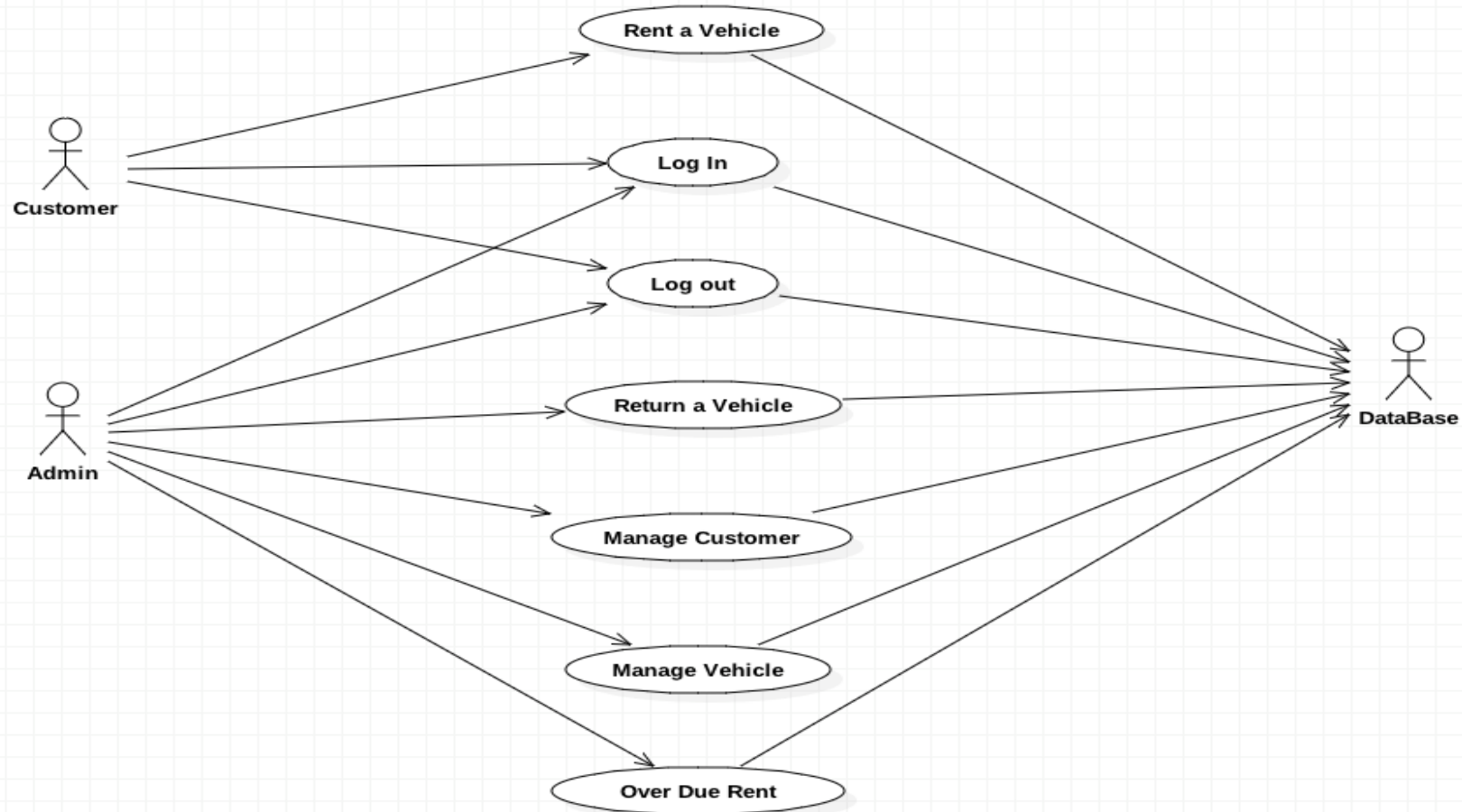
INTRODUCTION

- The system's aim is to provide better business management and customer satisfaction by providing the following services such as
- -Enhance Business Processes: to be able to use internet technology to project the rental company to the global world instead of limiting their services to their local domain alone and providing services 24/7, thus increase their return on investment (ROI).
- -Online Vehicle Reservation: A tool through which customers can browse the catalog of the business online and reserve available cars online prior to their expected pick-up date or time. The customer Can also choose home delivery of his choice of vehicle at an additional fee.
- - Customers Registration: A registration portal to hold customer's details, monitor their transaction and used same to offer better and improved services to them. The customer will have to provide payment details such as credit card to complete the reservation.
- -Management Module through which an admin of the System can add, edit, update and delete different categories of cars and their corresponding information , as well as customer information
- - A rating system through which customers can leave their feedback of the business as well the performance of the vehicles which they rented
- -Data Security by keeping company data in a secured database and controlling access levels to the data based on user rights.
- **GitHub Repository : <https://github.com/limeamer/Car-Rental-System/settings/collaboration>**



USE CASE DIAGRAM

UseCase Diagram



MANAGE VEHICLES

1. Manage Vehicles

This use-case allows admin to manage vehicles and do tasks such as edit, remove and add on the details.

2. Actor

Admin

3. Pre-condition

Admin must have a valid user name and password



4. BASIC FLOW

	Admin Action	System Response
1	Admin enters his/her user id and password to get in to the system.	The system checks user authorization and lets the admin in to the system.
2	Admin request the system to retrieve the collection of vehicles available.	System retrieves collection of vehicles
3	Admin requests the system to add, edit detail or remove vehicles (or make any other necessary changes to the list of vehicles available).	The system makes necessary changes to the list of vehicles as per the admin's request.



5. Post-Conditions

Updated list of vehicles information is available to customers.

6. Business Rules

Only an employee of the car rental company who is an authorized admin can make changes to the list of vehicles.

7. Alternate Paths

1) Admin not found

If the enters login information for admin is not authorized, the system displays a message that the admin cannot be found and is not authorized to get in to the system.

2) Vehicle not found

If the admin is trying to retrieve a vehicle based on old records which no longer exists in the company, the system displays a message that the vehicles is not available.



RENT A VEHICLE

1. Rent a vehicle

The use case allows customers to check-out/reserve vehicle/s.

2. Actor

Customer

3. Pre-Conditions

Customer must access our website



4. BASIC FLOW

No	User Action	System Response
1	The customer selects the category of the vehicle he wants to Rent	The system displays the vehicles that the customer selects
2	The customer is able to see and select vehicle he wants to Rent	The System checks availability and calculates the fee of the vehicle price per day and provide the customer to enter his details
3	The customer gives all his details and submit	The system validates all the info given by the customer.
4	The customer closes the system	The system reserves the car from being rent out by other customers
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5. Post-Conditions

New check-out record is added to the Rental DB whenever the checkout is successful.

6. Business Rules

Only customers with a valid Driving License can Rent a Vehicle

Only Vehicles that are available in are able to be checked-out

7. Alternate Paths

1) Invalid Driving License

If the Driving license is invalid the system displays that the given Driving license info is invalid.

2) Invalid Credit Card info

If the Credit Card is invalid the system displays that the Credit Card info is invalid.



MANAGE CUSTOMERS

1. Manage Customer

This use case allows Admin to add, remove ,update Customers logged into the System.

2. Actor:

Admin

3.Pre-Conditions

Admin is logged into the System.



4. BASIC FLOW

	Admin Action	System Response
1	Admin enters the customers valid ID, Driving license ID	The System checks for the validity of the Customer information.
2	requests the system to retrieve customer information.	The system retrieves customer information as per Admin's request
3	Admin requests the system to Add, remove, update any information related to Customer.	System makes any update on the list of existing customers based on Admin request.



5. Post-Conditions

Any Customer who made a car rent is added to the system Database whenever the verification process is successful.

6. Business Rules

Only Customers with valid Id can rent cars

Only Customers with Unexpired of driving license are allowed to rent a car

Only Customers with the age of 18 or above are allowed to rent a car.

7. Alternate Paths

1. Customer Id Invalid

If the Customer id is not known by the system (any id pattern mismatch) or if it is already expired



RETURN A VEHICLE

1. CHECK IN / RETURN A VEHICLE

THIS USE CASE ALLOWS THE ADMIN TO RETURN A RENTED CAR

2. ACTORS

ADMIN

3. PRE- CONDITIONS

The Admin must be logged on



4. BASIC FLOW

User Action	System Response
The Admin enters the Customers ID and request the System to Search for the Customer	The System Searches and Retrieves Customers ID and Name from the List of Customers
The Admin clicks on the Customer to view detailed customer information.	The System retrieves and displays the customers information such as the name, address, phone number of the customer along the Vehicles he / she has rented and the current amount owed as well as late fee if applicable
The Admin requests the System to check in/ return the vehicle	The System processes the payment, and the vehicle is added back to the list of available vehicles.



5. POST- CONDITIONS

The customer Db will be updated to reflect that he has no rented Cars when the Check In is successful

6. BUSINESS RULES

only valid customers can return a vehicle

The customer must have sufficient balance to return a vehicle

7. ALTERNATE FLOWS

1) Customer Not Found

If the member id does not exist, the system displays a message that the member id cannot be found.

2) Customer have insufficient balance

If the customer does not have enough balance to clear the amount owed the system will not clear the vehicle from the customers name.



SUPPLEMENTARY SPECIFICATION

- **Reliability** The main system must be running 97% of the time.
- **Performance** The system will support up to 200 simultaneous customers at any given time.
- **Accuracy Requirements:** All fields will be checked and Dates must be in the present
- **Backup and Recovery Requirements** All processes can be made available after unplanned system downtime within 1 working day. Data will be backed-up daily.
- **Capacity Requirements:** Process: Up to 50 users in total can issue same query example "Search Vehicle".
Data: Up to 1,000,000 customers can be stored.
- **Security Requirements** Process: Only users holding the Admin role can access Customers and Vehicles Data for editing and deletion



GLOSSARY:

- **Rent:** To let someone use something in return for payment.
- **Customer:** An individual who wants to rent a vehicle.
- **Vehicle:** A thing used for transporting people or goods.
- **Actor:** A person (admin or customer) interacting with the system.
- **Admin:** A person who is an employee of a rental company authorized to control the list of vehicles for rent.
- **Check-in:** To return a vehicle to the rental company.
- **Check-out:** To rent a vehicle from a rental company.
- **Authorize:** To allow or give official permission to someone to do something.
- **System:** A regularly interacting group of items forming a unified whole.
- **Manage:** Administer or run.
- **Overdue Fee:** Fee applied to customer when the date proceeds further than the original agreement duration to rent the vehicle.
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