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Car rental

This concept of a Car rental will let a user pick out a car for a certain period of time. There will be a selection of cars to choose from. The user can pick from 3 categories of cars. Small, big and utility.

The user will have an option to buy insurance for the vehicle of choice. Utility vehicles will be mandatory to insure. The user can pick from different insurances.

A deposit of 100 euro will be taken from the user when they rent a car. The deposit will be given back if the vehicle is returned with at least ¼ of the tank.

Requirements

As a customer I would like to be able to register for a system so that my details can be saved which makes using the system easier and faster.

As a customer I would like to be able to login into the system with my details so that I am able to use the system to reserve a vehicle.

As a customer I would like to be able to leave a review and see the systems average score so that I can see if the system that I will use has a good reputation.

As a customer I would like to reserve a vehicle so that I know that the vehicle will be available for me at the time I have reserved it.

As a customer I would like to be able to choose between insurances so that the car I rent can be insured.

As a customer I would want to be able to be able to pick up the vehicle at any time during my rented period so that I have freedom of when I can pick up the vehicle

As a customer I would like an easy way to return the vehicle so that I can receive my deposit back if I bring back the vehicle in good condition.

As a customer I would like to be able to sort and filter through available vehicle so that I can easily find a vehicle within my location and budget range.

Operation:

- Ability for user to choose car
- Ability for user to choose time period
- Ability for user to choose insurance
- Ability for user to return the car
- Ability for user to report a claim
- Ability for user to claim deposit

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Scenarios

Use case name: Register	**UniqueID:** A001
Area: Rental Website	
Actor(s): Customer	
Description: The customer registers their details	
Triggering Event: customer chooses to register	
Trigger type: ☒**External** ☐**Temporal**	
Steps Performed (Main Path)	**Information for Steps**
1.customer chooses to register	
2.user inputs their details	Customer
3.the details are saved	Customer
4.CustomerID is created for the DB and customer	Customer
Preconditions: Customer isn't registered	
Postconditions: customer details are saved for login	
Assumptions: customer has valid driver ID	
Requirements met: Customer cam register to the system	
Outstanding issues: no confirmation system	
Priority: high	
Risk: high	

Use case name: Login	**UniqueID:** A002
Area: Rental Website	
Actor(s): Customer	
Description: Customer can login with their ID and password	
Triggering Event: Customer chooses to login	
Trigger type: ☒**External** ☐**Temporal**	
Steps Performed (Main Path)	**Information for Steps**
1. Customer Chooses to login	Customer, RentalDB
2. Customer inputs their ID and password	Customer, RentalDB
3. The DB confirms that information matches	RentalDB, Customer
4. Customer is logged into the website	Customer
Preconditions: Customer has registered	
Postconditions: Customer is logged in	
Assumptions: Customer inputs correct information	
Requirements met: allow the customer to login	
Outstanding issues:	
Priority: high	
Risk: high	

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Use case name: Reserve Vehicle	**UniqueID:** A003
Area: Rental Website	
Actor(s): Customer	
Description: Customer reserves a vehicle	
Triggering Event: customer houses a vehicle	
Trigger type: ☒**External** ☐**Temporal**	
Steps Performed (Main Path)	**Information for Steps**
1.customer chooses a vehicle	Vehicle
2.customer chooses the length of time to rent	Vehicle, Reservation
3.customer must choose insurance if it's a heavy vehicle	Vehicle, Reservation
4.the vehicle DB is updated	Vehicle, Rental DB
5. Reservation is confirmed	Reservation
6. An invoice is created	Reservation, Invoice
Preconditions: Customer is logged in	
Postconditions: a reservation and invoice is created and vehicle is set to not available	
Assumptions: vehicle is available	
Requirements met: allow customer to reserve a vehicle	
Outstanding issues:	
Priority: high	
Risk: high	

Use case name: Pick Up Vehicle	**UniqueID:** A005
Area: Rental Website	
Actor(s): Customer	
Description: Customer chooses to pics up their vehicle	
Triggering Event: Customer has chosen their reservation to pickup	
Trigger type: ☒**External** ☐**Temporal**	
Steps Performed (Main Path)	**Information for Steps**
1. Customer chooses to pick up their vehicle	Customer, Reservation
2. The DB confirms that the Customer is within the date rented	Reservation
3. Reservation Vehicle state is updated to picked up	Reservation
Preconditions: Customer is logged in and has a reservation	
Postconditions: customer has their reservation vehicle picked up	
Assumptions: customer has paid the invoice	
Requirements met: Customers have their vehicles available from their reservation	
Outstanding issues:	
Priority: high	
Risk: high	

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Use case name: Return Vehicle	**UniqueID:** A007
Area: Rental Website	
Actor(s): Customer	
Description: Customer returns their rented vehicle	
Triggering Event: Customer Chooses to return their rented vehicle	
Trigger type: ☒**External** ☐**Temporal**	
Steps Performed (Main Path)	**Information for Steps**
1. Customer Chooses to Return vehicle	Reservation, Customer
2. DB Updates Vehicle status and checks if brought on time	Vehicle, Reservation
3. Return the Customers Deposit	Invoice, Customer
4. Update the DB to remove the reservation	Reservation
Preconditions: Customer is logged in and has a reservation	
Postconditions: vehicle is available on website and customer reservation is complete	
Assumptions: customer returned the vehicle with quarter tank and not late	
Requirements met: Customer can return the car and get their deposit back if quarter full	
Outstanding issues:	
Priority: high	
Risk: high	

Use case name: Write Review	**UniqueID:** A008
Area: Rental Website	
Actor(s): Customer	
Description: Customer Can review the Rental Website	
Triggering Event: Customer Chooses to write a review	
Trigger type: ☒**External** ☐**Temporal**	
Steps Performed (Main Path)	**Information for Steps**
1. Customer Chooses to leave a review	Customer
2. Customer inputs their review value	Customer
3. DB updates their review	RentalDB, Customer
4. The websites average is recalculated and displayed	RentalDB
Preconditions: Customer is logged in	
Postconditions: The Customers review is updated	
Assumptions: Customer inputs	
Requirements met: Customer can leave a review on the website	
Outstanding issues:	
Priority: low	
Risk: low	

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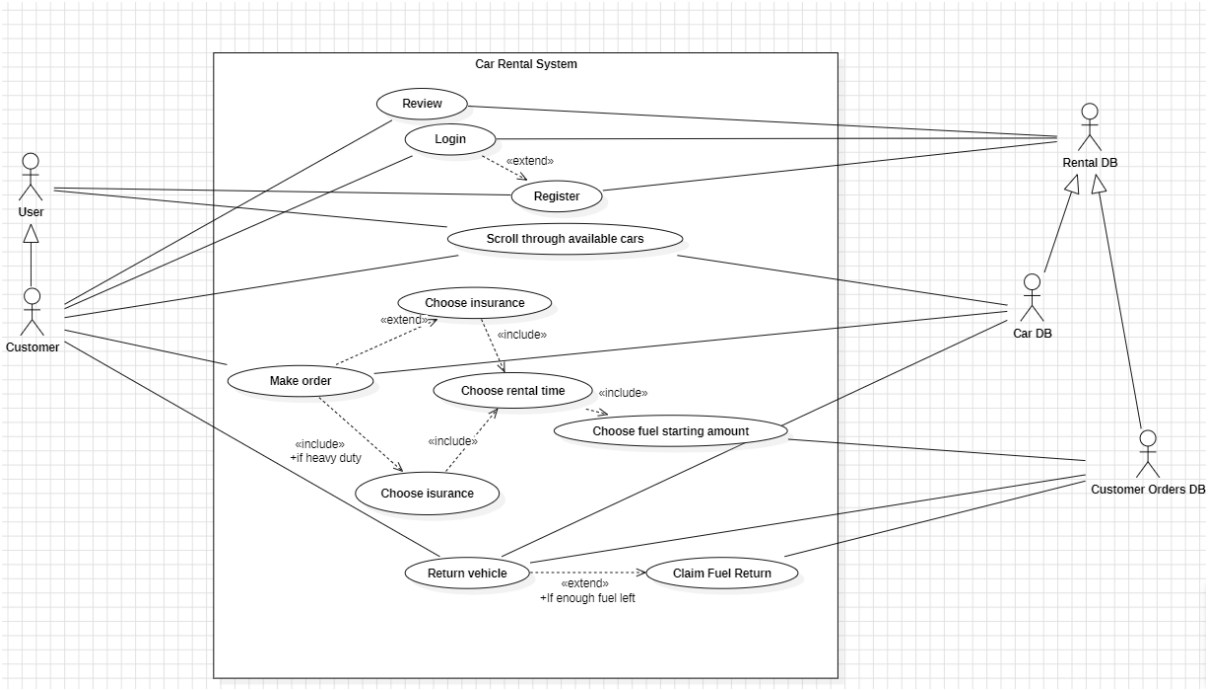
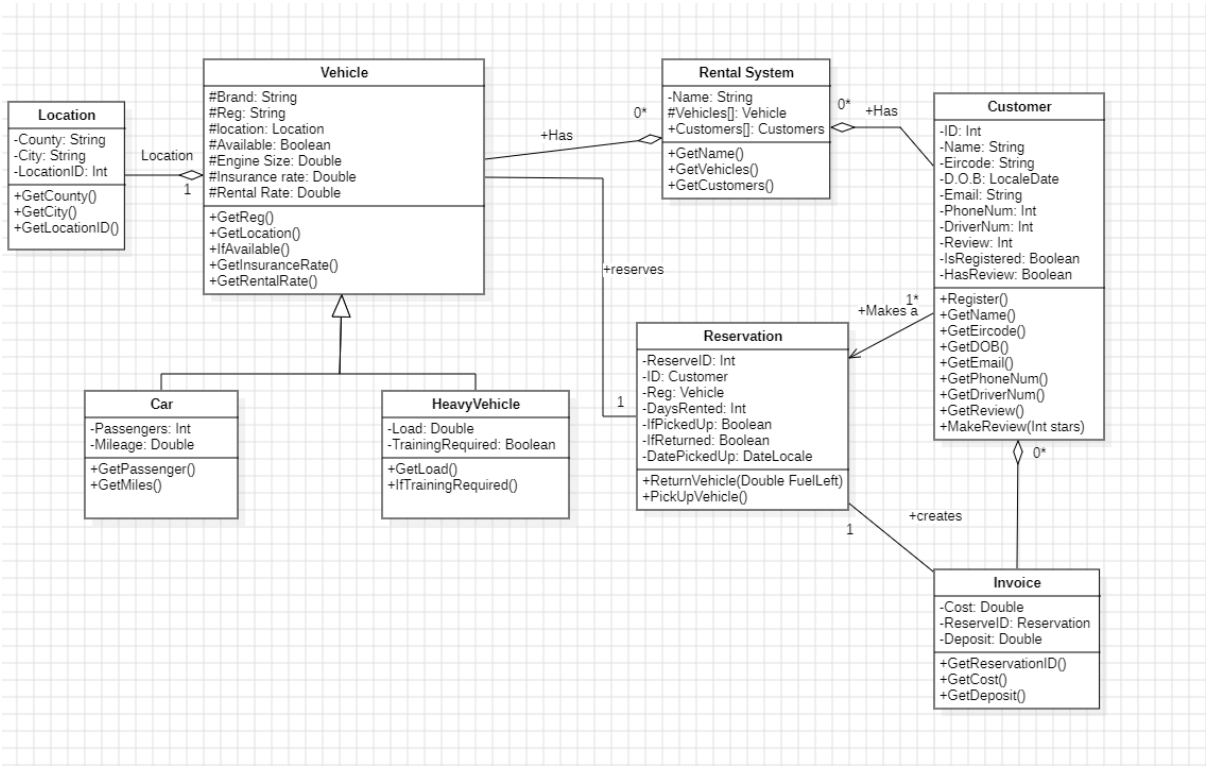
Use Case



Class Diagram



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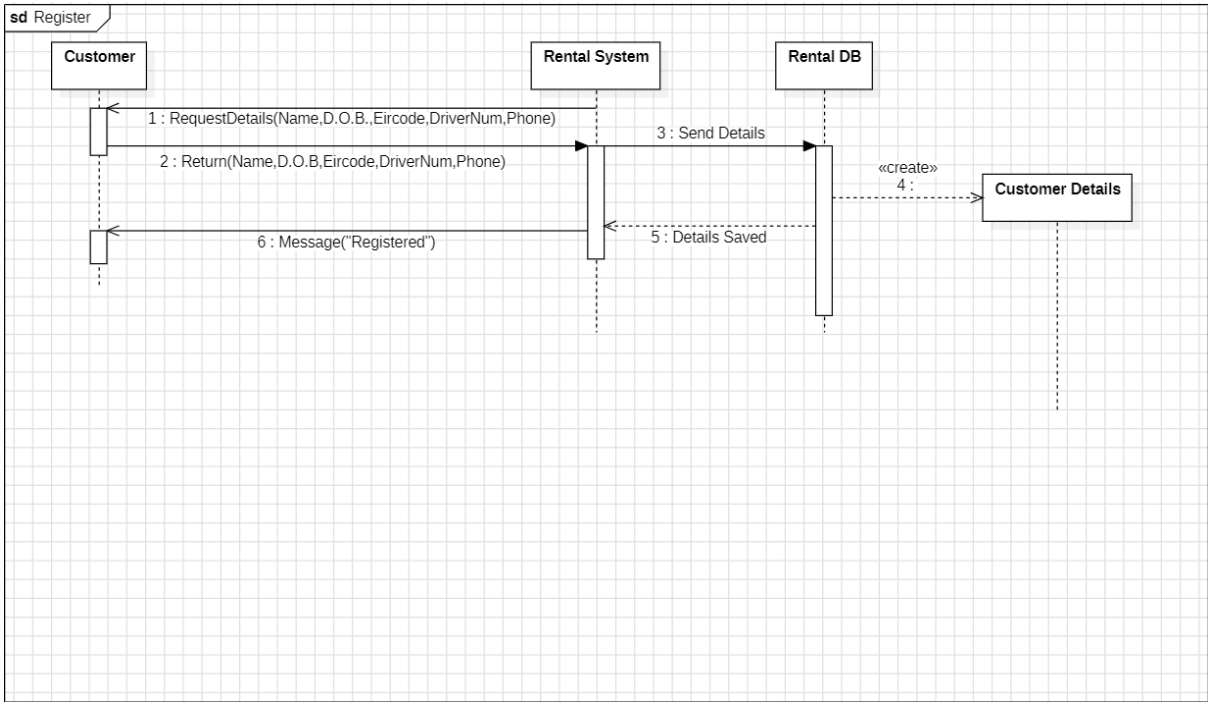
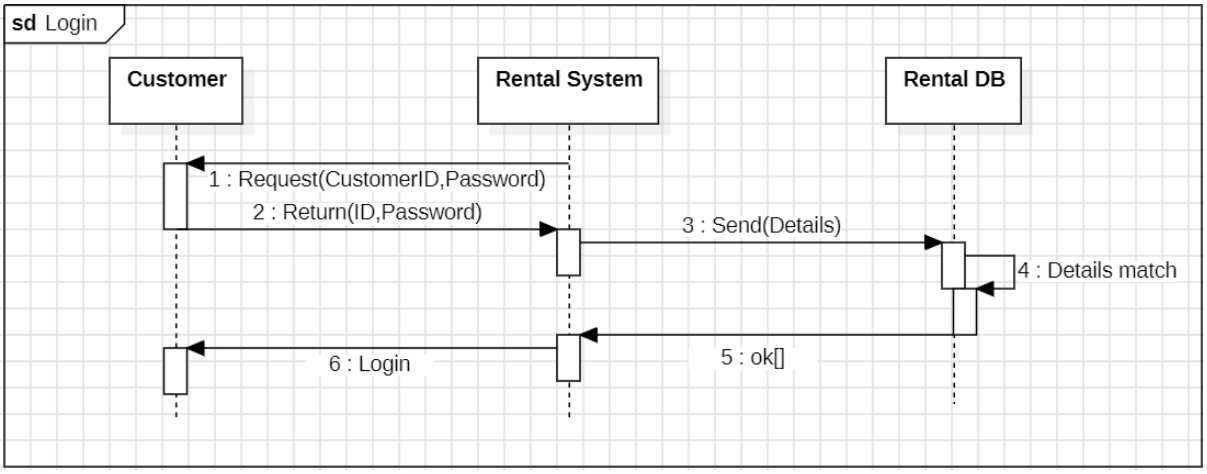
Register Sequence



Login Sequence



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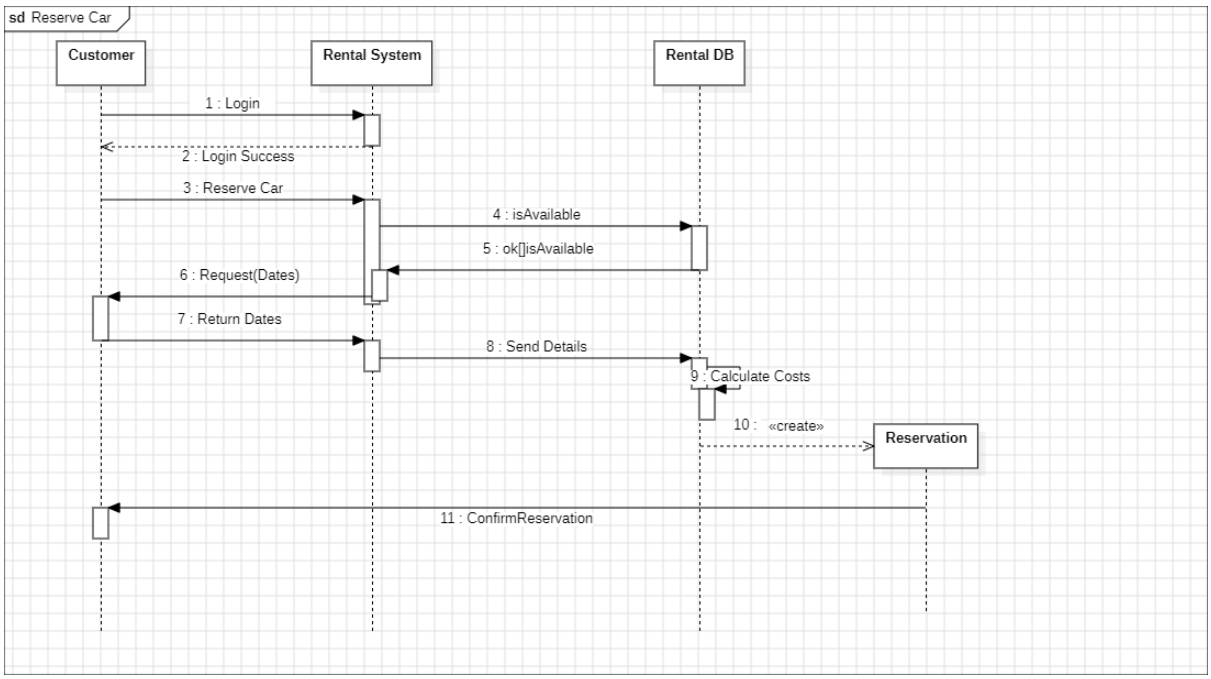
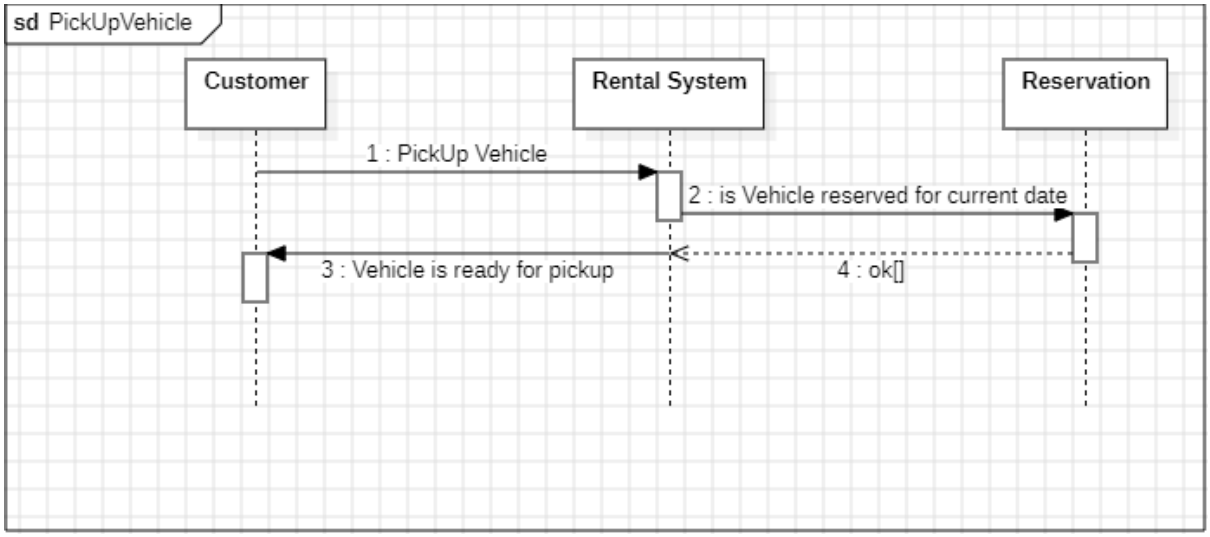
Reserve Sequence



PickUp Sequence



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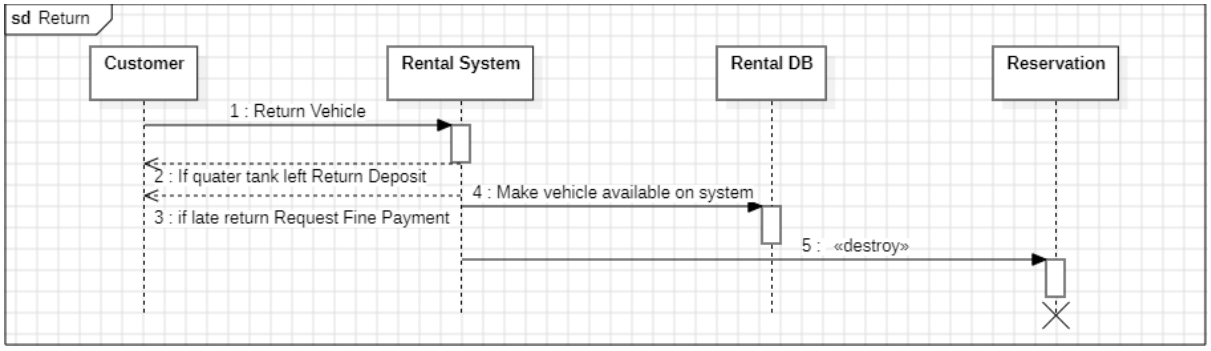
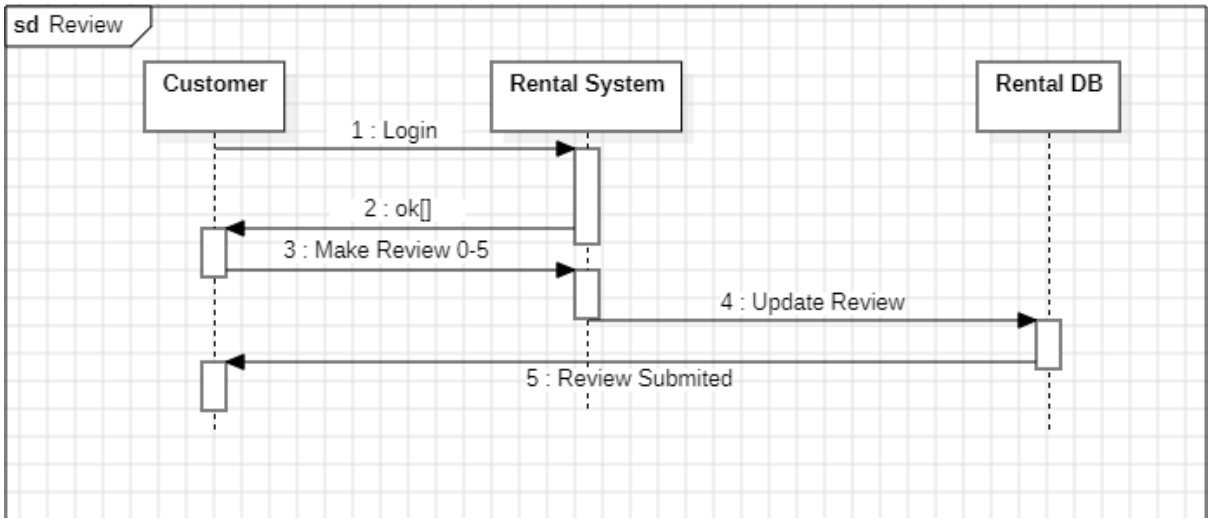
Return Sequence



Review Sequence



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Name	Register
Requirement	User can make an account
Preconditions	User must have an email address
Steps	1. Choose “Register” option 2. Enter Details: (Name, Email, Password, Phone number, D.O.B, Driver number, Eircode) 3. Verify account using email or phone number 4. Login
Post condition	Allows user to log in using the account they just made
Expected results	User made an account

Test Cases

Name	Login
Requirement	User can Login to their account
Preconditions	User has to have an account
Steps	11. Choose “Login” option 12. Enter username or email 13. Enter password 14. Click “Login”
Post condition	User has the ability to rent and write reviews
Expected results	User is logged into their account

Name	Reservation
Requirement	User can reserve a car and get confirmation email
Preconditions	User must be logged in
Steps	5. Choose “Reserve now” option 6. Browse through available cars 7. Choose a car 8. Select time period of rental 9. Fill in card details an billing address 10. Click “finalize order”
Post condition	Site updates to prevent double booking
Expected results	User receives a confirmation Email and has successfully reserved a car

Name	Car pickup
Requirement	User is able to collect their car
Preconditions	User must have a vehicle reserved
Steps	1. User must locate a branch 2. Show their reservation code to a staff member 3. Show their driving licence to a staff member 4. User receives keys
Post condition	Allows user to drive once they receive the keys
Expected results	User picked up their car

Name	Return car
Requirement	User is able to return the car
Preconditions	User must have at least ¼ fuel left
Steps	5. Must locate a branch 6. Must drive to our return point 7. Take out all their belongings 8. Give the keys
Post condition	Allows user to get their deposit back
Expected results	Car is returned in the correct spot

Name	Review
Requirement	User is able to review the service
Preconditions	User must have reserved a car
Steps	9. Click the “Review us” button 10. Choose previous reservation 11. Choose the star rating 12. Optionally write about the experience 13. Click “Submit” review
Post condition	User can edit reviews
Expected results	Users review is submitted

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Use Case, Test Cases, Summary, Scenarios

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Class Diagram, Sequence Diagrams, Scenarios