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

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 | |

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| --- | --- |
| **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 |
| 1. Customer inputs their ID and password | Customer, RentalDB |
| 1. The DB confirms that information matches | RentalDB, Customer |
| 1. 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 | |

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| --- | --- |
| **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 |
| 1. The DB confirms that the Customer is within the date rented | Reservation |
| 1. 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 | |
| **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 |
| 1. DB Updates Vehicle status and checks if brought on time | Vehicle, Reservation |
| 1. Return the Customers Deposit | Invoice, Customer |
| 1. 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 | |

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| --- | --- |
| **Use case name:** WriteReview | **UniqueID:** A008 |
| **Area:** RentalWebsite | |
| **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 |
| 1. Customer inputs their review value | Customer |
| 1. DB updates their review | RentalDB, Customer |
| 1. 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 | |

Use Case

A diagram of a network

Description automatically generated

Class Diagram

A diagram of a vehicle

Description automatically generated

Register Sequence

A diagram of a diagram

Description automatically generated

Login Sequence

A diagram of a rental system

Description automatically generated

Reserve Sequence

A diagram of a diagram

Description automatically generated

PickUp Sequence

A diagram of a vehicle

Description automatically generated

Return Sequence

A diagram of a project

Description automatically generated

Review Sequence

A screenshot of a diagram

Description automatically generated

Test Cases

|  |  |
| --- | --- |
| 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)   1. Verify account using email or phone number 2. Login |
| Post condition | Allows user to log in using the account they just made |
| Expected results | User made an account |

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| --- | --- |
| Name | Reservation |
| Requirement | User can reserve a car and get confirmation email |
| Preconditions | User must be logged in |
| Steps | 1. Choose “Reserve now” option 2. Browse through available cars 3. Choose a car 4. Select time period of rental 5. Fill in card details an billing address 6. 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 | Login |
| Requirement | User can Login to their account |
| Preconditions | User has to have an account |
| Steps | 1. Choose “Login” option 2. Enter username or email 3. Enter password 4. Click “Login” |
| Post condition | User has the ability to rent and write reviews |
| Expected results | User is logged into their account |

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| --- | --- |
| 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 |

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| --- | --- |
| Name | Return car |
| Requirement | User is able to return the car |
| Preconditions | User must have at least ¼ fuel left |
| Steps | 1. Must locate a branch 2. Must drive to our return point 3. Take out all their belongings 4. 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 | 1. Click the “Review us” button 2. Choose previous reservation 3. Choose the star rating 4. Optionally write about the experience 5. 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