Use Case UC1: Create User Profile

Scope: User Database

Level: User Goal

Primary Actor: Customers

Stakeholders and Interests:

- Customer: Wants a profile to be able to rent/return/buy vehicles with.

- Company: Wants a user profile that accommodates all uses of system.

Preconditions: The user is ready to create an account.

Main Success Scenario (Basic Flow)

1. User selects the create profile button.

2. System displays new user page.

3. User inputs necessary, requested information.

4. System displays all entered information to clarify correctness.

5. User selects to submit their information and create account.

6. System adds new user to the database.

Extensions:

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

1a. Profile link does not work.

1. System displays error to screen with redirection link to home page.

2. User can use get help link.

3a. User's provided username is already taken.

1. System requests a new username until a non-used one is entered.

3b. User's provided email is already associated with an account.

1. System alerts user.

5a. User finds incorrect data in final display of information.

1. System provides user with edit link to edit the info that is incorrect.

6a. User selects submit button, but it fails.

1. System reports error to user and asks them to wait and try again.

7a. System fails to connect the user with the database.

1. System reports error to user and system admin.

2. System requests user to wait and try again.

Use Case UC2: Login

Scope: User Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- User: Wants fast and intuitive login process to allow for easy access to the system.

- Company: Wants efficient login process that is secure and robust.

Preconditions: User has an account already that exists within the database and is not flagged.

Success Guarantee (or Postconditions): User is granted access to the system.

Main Success Scenario (or Basic Flow):

1. User reaches the hosted site and lands on the landing page.

2. User enters a login name and its associated password.

3. User uses 'Login' button.

4. System initiates authentication process (database verification).

5. User is permitted to access the system.

6. User's login is recorded within the system.

Extensions:

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

2a. Unauthorized user attempts to login.

1. System denies access to user.

2. User is prompted to login again.

2b. User doesn't have an account.

1. System prompts user for create account.

2. User enters valid credentials.

3a. User is a flagged user.

    1. System responds with error message.

4a. User enters incorrect information.

    1. System denies access.

    2. User must reattempt to login.

6a. Incorrect login is used.

    1. System will not log the login information.

Use Case UC3: View Catalog

Scope: Vehicle Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- User: Wants to have easy access to view the list of rental vehicles.

- Company: Wants to provide customers with ability to view list of rental vehicles.

Preconditions: User has logged in.

Success Guarantee (Postconditions): The user gains access to the list of vehicles.

Main Success Scenario:

1. System displays the available rental vehicles, based on popularity.

2. User selects desired vehicle.

3. System shows specific vehicle details and information.

4. User logs out.

Extensions (Alternative Flows):

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

Use Case UC4: Search Vehicle

Scope: Vehicle Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- Users: Wants quick and intuitive search process to find vehicles within provided criteria.

- Company: Wants effective search methods that are unique and simple.

Preconditions: User has an associated account, has been identified, and authenticated.

Success Guarantee (or Postconditions): User can search the system for registered vehicles with matching criteria.

Main Success Scenario (or Basic Flow):

1. System allows the user to access the vehicle database.

2. User then enters search criteria they wish their rental vehicle to have.

3. System updates the user's search results.

4. User selects a vehicle to view.

5. System provides user with updated information about that vehicle.

Extensions:

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

2a. User changes search criteria.

1. User deselects the given the option.

2. System updates the provided search results.

Use Case UC5: Sort Vehicle

Scope: Vehicle Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- User(s): Wants a easy-to-use website with straightforward navigation and quick search results to find desired vehicles.

- Company: Wants a unique, simplistic website, making the users' experience as best as possible.

- Vehicle Company: Wants their vehicle to be accurately displayed and advertised.

Preconditions: The user has an account and the vehicle catalog exists.

Success Guarantee (or Postconditions): Results of sorted vehicles are viewable by the user.

Main Success Scenario (or Basic Flow):

1. Actor reaches the main search page.

2. Actor is presented with the catalog of vehicles.

3. Actor enter valid information into the search bar.

4. System returns all the matching vehicles that fit the criteria provided by the user.

5. Actor can continue to view the provided results or change the search criteria.

Extensions:

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

Use Case UC6: Select Vehicle

Scope: Vehicle Database

Level: User Goal

Primary Actor: All Users

Stakeholders & Interests:

- Users: Selects a given vehicle, providing all the details associated with that vehicle.

- Company: Ensure all essential information associated with a vehicle is in the hands of the user.

Preconditions: The vehicle is registered within the system and meets the user's specified search criteria.

Postconditions: The vehicle view count is updated.

Main Success Flow:

1. User selects a vehicle they wish to rent.

2. System displays all information pertaining to that vehicle for the user.

3. System updates view count associated with the vehicle.

4. User chooses the "rent" option provided with selected vehicle.

5. System prompts the user for the amount of time they will rent the vehicle for and where to pick it up from.

6. User selects the amount of time they would like to rent for and pickup location.

7. System displays a success dialogue box and puts the selected vehicle in the rented section of the user.

Extensions:

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

4a. User wants to buy the vehicle, rather than rent it.

1. System confirms the user's choice of buying, rather than renting

    1. User proceeds with the buying process.

        i.   System initiates the buying process of a vehicle.

    2. User signifies that they do not want to buy the vehicle, rather rent it instead.

        i.   System returns the user back to the vehicle being viewed.

7a. User wants to cancel a rental request.

1. User proceeds to view rented vehicle on their profile.

2. System returns the vehicles currently on request OR actively rented.

    a. User selects return vehicle.

    b. System initiates the user's return request.

Scope: Vehicle Database

Level: User Goal

Primary Actor: All Users

Stakeholders & Interests:

- Users: Selects to rent a particular vehicle or cancel a previously set reservation.

- Company: Provide the user with a simplistic rental process, including confirmation and cancellation screens.

Preconditions: The vehicle is selected by the user. The user wishes to rent the selected vehicle.

Postconditions: The user has set a rental period and pickup location. The vehicle is updated as "in use."

Main Success Flow:

1. User selects a vehicle they wish to rent.

2. User chooses the "rent" option provided with selected vehicle.

3. System prompts the user for the amount of time they will rent the vehicle for and where to pick it up from.

4. User selects the amount of time they would like to rent for and pickup location.

5. System displays a success dialogue box and puts the selected vehicle in the rented section of the user.

Extensions:

*System Fails.

4. System restarts.

5. User logs in.

6. System reconstructs prior state.

1a. User wants to cancel a rental request.

1. User proceeds to view rented vehicle on their profile.

2. System returns the vehicles currently on request OR actively rented.

    a. User selects return vehicle.

    b. System initiates the user's return request.

Use Case UC8: Payment/Billing System

Scope: Vehicle Rental Payment System

Level: User Goal

Primary Actor: Employee

Stakeholders and Interests:

- Employee: Wants accurate and quick when processing payment.

- Customer: Wants a pleasant purchase experience, fast service with minimal effort, and a well-organized display of purchases and costs.

- Company: Wants to accurately record transactions and satisfy customer interests.

Preconditions: Employee is identified and authenticated. User has paid for a service.

Success Guarantee (or Postconditions): Sale is saved, tax is correctly calculated, inventory is adjusted, and receipt is generated.

Main Success Scenario:

1. Customer arrives at checkout.

2. Employee uses POS and records the rental purchase.

3. System displays the total cost of the purchase along with the items purchased.

4. System requests user for a type of payment (cash, debit, credit).

5. User pays using their preferred method of payment.

6. System validates the transaction, makes a record, and updates the inventory.

7. User receives a receipt from the System.

Extensions (Alternative flows):

*System Fails.

7. System restarts.

8. User logs in.

9. System reconstructs prior state.

*b. Invalid item ID

1. System signals error and rejects entry

2. Employee responds to error, manually enters in ID

3. Employee continues with sale

Use Case UC9: Bill for Damages

Scope: Payment System

Level: System Goal

Primary Actor: System

Stakeholders and Interests:

- Company: Wants to receive compensation for any damages to its vehicles as efficiently as possible.

- Customer: Wants to be billed in a fair and timely manner.

- Insurance Company: Wants to pay the minimum in repairs.

Preconditions: Damages are logged during inspection of vehicle.

Success Guarantee (or Postconditions): The vehicle is inspected, washed and rentable again. The system is updated to reflect this.

Main Success Scenario (or Basic Flow):

1. System logs damages from vehicle inspection.

2. System logs costs of damages, upon vehicle being fixed.

3. System bills the customer's insurance or the customer for the cost to fix any damages.

4. Insurance company or the customer pays for the damage in full.

Extensions (or Alternative Flows):

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.

4a. The Insurance Company denies claim:

1. Bill is sent to customer instead.

2. Customer appeals to insurance company.

   a)   Insurance company accepts claim and pays for repairs.

        b)   Insurance again denies claim and customer is liable.

   3. Customer pays for damages independent from insurance company.

4b. Customer neglects to pay for damages:

4c. No payment is logged within given time frame.

4d. Customer is sent more billing statements.

   1. Customer pays for damages.

   2. Customer refuses to provide compensation.

4e. Company files charges against customer for breaking contract.

   1. Customer is convicted on criminal charges.

   2. Customer is found innocent of breaking contract.

4f. Company files civil suit for damages and legal fees.

   1. Customer is held liable for damages and fees and ordered to pay.

   2. Customer is found not to be liable for damages or fees and company must pay.

Special Requirements:

- Robust recovery of sensitive data such as billing or insurance information

- Alert System for overdue bills

Frequency of Occurrence: As often as vehicles are returned having accrued damages.

Open Issues:

• What were the circumstances of the damage occurring?

Use Case UC10: Purchase Insurance Policy

Scope: User Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- Users: Wants to have the option of purchasing a temporary insurance plan through the rental company.

- Company: Wants to provide the customer with an insurance purchasing option in case the customer does not have insurance or does not want to use their own policy.

Preconditions: User has an account within the database.

Success Guarantee (or Postconditions): User is granted a company insurance policy.

Main Success Scenario (or Basic Flow):

1. User reaches the 'Purchase Policy Through C.A.R.' part of the application.

2. User selects 'Yes'.

3. System adds insurance fee to the Actor's total purchase.

4. User is granted an insurance policy.

Extensions:

*System Fails.

    10. System restarts.

    11. User logs in.

    12. System reconstructs prior state.

1a. User can purchase a policy later even if they declined it initially.

2a. User selects 'No'

    2a1. User will not be permitted to rent/buy a vehicle

Use Case UC11: Use Personal Insurance Policy

Scope: User Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- Users: Wants to have the option of using their own auto insurance policy.

- Company: Wants to allow customers to provide their own auto insurance policy.

Preconditions: User has an account within the database.

Success Guarantee (or Postconditions): User is listed in the database as using their personal

policy.

Main Success Scenario (or Basic Flow):

1. User reaches the 'Purchase Policy Through C.A.R.' part of the application.

2. User selects that they would like to use their personal auto insurance policy.

3. System prompts user for their auto insurance info.

4. User's auto info is entered into the database and the application continues.

Extensions:

*System Fails.

13. System restarts.

14. User logs in.

15. System reconstructs prior state.

1a. User can opt to use their personal auto insurance policy later if they decide to do so

Use Case UC12: Vehicle Pickup

Scope: Vehicle Database

Level: User Goal

Primary Actor: Customer

Stakeholders and Interests:

- Customer: Wants to have easy access to rental vehicle pickup without any issues.

- Company: Wants to provide customers with easy process for rental vehicle pickup.

Preconditions: Customer has a valid driver's license and is capable of operating a motor

vehicle.

Success Guarantee (Postconditions): The customer leaves with their rental vehicle.

Main Success Scenario:

1. Customer arrives at location of vehicle pickup.

2. Customer finds a parking spot and parks.

3. Customer meets with the employee and views the vehicle.

4. Customer accepts the vehicle and receives the keys.

5. System updates the inventory.

6. Customer leaves the place with their rental vehicle.

Extensions (Alternative Flows):

*System Fails.

16. System restarts.

17. User logs in.

18. System reconstructs prior state.

1a. If the chosen vehicle is unavailable

1. Another vehicle may be chosen instead.

2a. The user declines their rental vehicle

1. The employee moves the rental vehicle back in inventory.

Use Case UC13: Return Vehicle

Scope: System Database

Level: System Goal

Primary Actor: On Sight Attendant

Stakeholders and Interests:

- On Sight Attendant: Wants to input information to return vehicle successfully so database knows where and when it is available.

- User: Wants to return vehicle and be charged for rental.

Preconditions: User must have a vehicle to return

Main Success Scenarios (Basic Flow):

1. User arrives at physical location of rental service and parks in an empty spot.

2. On sight attendant approaches and begins return process.

3. Attendant logs in to system and navigates to return vehicle section

4. Attendant asks user for username or email to look up rental information

5. Attendant selects rental from user profile that they are returning

6. System prompts for location of return, information on vehicle appearance (scratches, etc.), and for mileage. Also provides information about previous damages to ensure user is not charged for damages they did not cause.

7. Attendant submits required information.

8. System calculates cost of rental based on days rented, damages, and mileage

9. Attendant shows user total cost of rental and gets their confirmation

10. System charges the card on file for the cost of the rental.

11. Ensure the card goes through, if not, alert attendant who will request a different one from the user at that moment.

12. Display a thank you for using our business message for attendant to say to the user

Extensions (Alternate Flow):

*System Fails.

    19. System restarts.

    20. User logs in.

    21. System reconstructs prior state.

3.a Username and email are not recognized in system

    2.a.1 Attendant asks for user's actual name and looks it up via their name

4.a Rental vehicle being returned does not show on system

    3.a.1 Contact location where the user says the vehicle was rented from for information

    needed to return vehicle

8.a User argues over price or requests more information about why they are being charged

    more than expected

    8.a.1 Attendant shows the user the cost calculation, pointing out any damages they

    marked and the total mileage and time

10.a New card fails as well

    10.a.1 Attendant asks for new card until one is accepted or receives cash payment as

    last resort

Use Case UC14: Buy Vehicle

Scope: Vehicle Database

Level: User Goal

Primary Actor: User

Stakeholders and Interests:

- Company: Wants to sell the vehicle at the highest possible price and accurately record sale and wants payment in full of customer or third party loan.

- Customer: Wants to purchase vehicle in good condition for lowest offered price as fast as possible.

- Bank: Wants to ensure customer will repay loan through credit history or collateral, and profit from interest on loan.

- Government Tax Agencies: Wants to collect tax from the sale.

- Salesman: Wants to quickly get customer approved for loan and sell the vehicle.

Preconditions: Customer desires to purchase vehicle.

Success Guarantee (or Postconditions): Customer owns vehicle. Sale is saved. Tax is correctly calculated. System is updated to reflect sale.

Main Success Scenario (or Basic Flow):

1. Customer decides to purchase used vehicle from rental agency.

2. Salesman starts a new sale.

3. Salesman/Company and customer negotiate a final price.

4. Customer provides proof of existing insurance and valid driver's license.

5. Customer applies for loan from personal bank or bank associated with company.

6. Customer is approved for loan and payment plan is negotiated and approved.

7. Customer pays down payment (check, debit, or cash).

8. Vehicle registration is transferred to customer.

9. System is updated to reflect sale.

10. Customer leaves with vehicle.

11. Customer continues to make loan payments until vehicle is paid in full or resells vehicle.

Extensions (or Alternative Flows):

*System Fails.

22. System restarts.

23. User logs in.

24. System reconstructs prior state.

2a. Customer and company cannot agree on price:

1. Customer decides to pay company offered price.

2. Company discounts vehicle to meet customer desires.

3. Customer decides not to purchase vehicle.

   a. Sale is voided.

2b. The loan application is denied:

1. Customer reapplies for loan.

2. Loan is approved.

   a. Sale continues.

3. Loan is again denied.

   a. Customer proceeds with other options.

2c. Customer pays in full independent of third party.

1. Customer does not purchase vehicle.

   a. Sale is voided.

2d. Customer does not have valid vehicle insurance:

1. Customer purchases insurance after sale completion.

2. Bank and company are sent proof of new insurance.

3. Customer leaves with vehicle.

2e. Company holds vehicle while customer obtains insurance.

1. Company holds vehicle for 3 business days.
2. Customer returns with proof of insurance.
   a. Sale continues.
3. Customer does not obtain insurance.
   a. Sale is voided.

2f. Customer cannot obtain insurance.

1. Customer cannot take vehicle until he/she or other driver proves vehicle is insured.

2g. Customer does not purchase vehicle.

1. Sale is voided.

2h. Customer does not have valid license:

2i. Customer obtains valid license after sale.

1. Customer returns provides proof of valid license.
2. Customer leaves with vehicle.

2j. Company holds vehicle while customer obtains license.

1. Company holds vehicle for 3 business days.
2. Customer returns with proof of license.
   a. Sale continues.
3. Customer brings another driver with valid license.
   a. Sale continues.
4. Customer does not return.
   a. Sale is voided.

2k. Customer brings another licensed driver to take vehicle.

1. Sale continues.

2l. Customer does not purchase vehicle.

1. Sale is voided.

2m. Customer cannot pay down payment:

1. Company holds vehicle for 3 business days.

2. Customer returns with down payment.

    a. Sale continues.

3. Customer does not return with valid payment.

    a. Sale is voided.

2n. Customer decided not to purchase vehicle:

1. Sale is voided.

Special Requirements:

• Copy machine or scanner required to save license and proof of insurance.

Frequency of Occurrence: When customer wishes to purchase vehicle.

Open Issues:

What are requirements for obtaining license plate and registration in state?

Use Case UC15: Vehicle Turnover

Scope: Vehicle Database

Level: User Goal

Primary Actor: On Sight Attendant

Stakeholders and Interests:

- Company: Wants to make returned vehicles rentable again as fast as possible to maximize profit.

- On Sight Attendant: Wants to efficiently log vehicle turnover and deal with issues.

Preconditions: A vehicle is returned by a customer.

Success Guarantee (or Postconditions): The vehicle is inspected, washed and rentable again. The system is updated to reflect this.

Main Success Scenario (or Basic Flow):

1. Customer returns rental vehicle.

2. On Sight Attendant gets vehicle washed.

3. On Sight Attendant inspects vehicle and any damage is logged or it is recorded there was no damage.

4. On Sight Attendant Gas fills tank and amount put in is recorded.

5. On Sight Attendant parks vehicle in the rental lot.

6. System is updated to reflect the care is available again.

Extensions (or Alternative Flows):

*System Fails.

25. System restarts.

26. User logs in.

27. System reconstructs prior state.

3a. Vehicle requires repairs.

1. Vehicle is sent to mechanic and repaired.

2. If vehicle is deemed totaled, it is decommissioned.

3. On Sight Attendant begins process to bill customer who caused damages.

4. Vehicle is returned and placed back in rental lot.

3b. Vehicle is decommissioned.

3c. Vehicle is sold to customer.

3d. Vehicle is resold to manufacturer.

3e. Vehicle is sold at wholesale at auction.

3f. Vehicle is sold for parts or to a salvage yard.

Frequency of Occurrence: Every time a vehicle is returned; could be nearly continuous during hours of operation.

Use Case UC16: Manage Personnel

Scope: User Database

Level: System Goal

Primary Actor: System Admin

Stakeholders and Interests:

- System Admin: Wants efficiently edit personnel profiles.

- Personnel: Wants to perform quality service and retain employment.

- Company: Wants encouraging, manageable personnel.

Preconditions: Personnel have manageable accounts and information pertaining to their employment.

Success Guarantee (or Postconditions): All personnel are accounted for within the system, allowing for easy contacting.

Main Success Scenario (or Basic Flow):

1. Personnel are hired for a specific task.

2. System confirms that the information is correct for their profile.

3. System Admin uses the personnel profile to assign necessary tasks.

4. Personnel perform the tasks, logging hours associated with their profile.

Extensions:

*System Fails.

28. System restarts.

29. User logs in.

30. System reconstructs prior state.

Use Case UC17: Maintain Payroll

Scope: System Database

Primary Actor: System Admin

Stakeholders and Interests:

- System Admin: Wants to update users in the database, including removing inactive users, old representatives, and adding new representatives.

Preconditions: Administrator has access to the system and an account.

Main Success Scenario (Basic Flow):

1. Admin logs on to the system.

2. Admin navigates to representative page.

3. System displays list of representatives.

4. Admin navigates to payroll for representatives.

5. System displays the payroll for all representatives.

6. Admin selects representatives that need their payroll updated.

7. System displays the selected representative's payroll information.

8. Admin changes the amount a representative is paid and submits the changes.

9. System updates the payroll information in the database for the representative.

Extensions (Alternative Flow):

1.a Admin login or account is invalid.

1. System asks user for different account or to create a new one

2.a Link navigates to somewhere other than representative page

4.a Link navigates to somewhere other than payroll page

6.a Link navigates to somewhere other than the selected representative's payroll page

8.a Admin inputs data that is not accepted in the payroll field

1. Display error and request correct data

Use Case UC18: Request Help

Scope: User Database

Level: User Goal

Primary Actor: All Users

Stakeholders and Interests:

- User(s): Wants fast responses, great UI, and various preset topics.

- Company: Wants feedback for constant improvement.

Preconditions: The user has an account already (in the database) and is not flagged.

Success Guarantee (or Postconditions): User's feedback (in the form of an email) is sent.

Main Success Scenario (or Basic Flow):

1. User wants help with an issue.

2. User selects the need help button to request assistance.

3. User composes an email.

4. User submits the email to the support page.

5. System sends the email to the correct help email.

Extensions:

*System Fails.

1. System restarts.

2. User logs in.

3. System reconstructs prior state.