
Software Requirements Specification

for Legacy Rentals

Version 1.0 approved

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Table of Contents

Table of Contents	ii
Revision History	ii
1. Introduction	3
1.1 Purpose	3
1.2 Document Conventions	3
1.3 Intended Audience and Reading Suggestions	3
1.4 Product Scope	3
1.5 References	4
2. Overall Description	4
2.1 Product Perspective	4
2.2 Product Functions	5
2.3 User Classes and Characteristics	17
2.4 Operating Environment	18
2.5 Design and Implementation Constraints	18
2.6 User Documentation	18
2.7 Assumptions and Dependencies	18
3. External Interface Requirements	18
3.1 User Interfaces	18
3.2 Software Interfaces	22
3.3 Communications Interfaces	22
4. System Features	22
4.1 System Feature 1	22
4.2 System Feature 2	23
4.3 System Feature 3	24
4.4 System Feature 4	25
4.5 System Feature 5	26
4.6 System Feature 6	26
4.7 System Feature 7	27
4.8 System Feature 8	28
5. Other Nonfunctional Requirements	29
5.1 Performance Requirements	29
5.2 Safety Requirements	30
5.3 Security Requirements	30
5.4 Software Quality Attributes	30
5.5 Business Rules	31
6. Other Requirements	31
Appendix A: Glossary	31
Appendix B: To Be Determined List	32

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This document entails a detailed description of the Legacy Rentals car rental web service. Included are the systems purpose and features along with a detailed description of the system's interface and function. This document is intended for investors and developers of the Legacy Rentals web service.

1.2 Document Conventions

Section titles are italicized and bold. Priorities for higher-level requirements are assumed to be inherited by detailed requirements after. UML diagrams will be followed up by a detailed description. Use case diagrams shall clearly show actors as well as use cases. Class diagrams shall clearly show the distinction between all classes in the system.

1.3 Intended Audience and Reading Suggestions

This document is intended for investors and developers of the Legacy Rentals web service. Developers entail project managers, programmers, testers and documentation writers. Investors include stakeholders of the service. This SRS contains

an overall description of the project, requirements, system features and interfaces. It is intended to be read following the order as shown in the glossary.

1.4 *Product Scope*

This software will be a web based service for customers of Legacy Rentals. This service will be designed to provide an easy to use interface for customers of Legacy Rentals as well as employees. The service will allow customers to rent cars at any of the Legacy Rentals locations world-wide. Employees of Legacy Rentals will be able to control stock and availability of stock at designated locations of employment. Both customers and employees shall be able to log in to the web service using the same interface. Benefits of this web service include but not limited to an easy to use web based service for customers of Legacy Rentals to receive world-wide rental cars. Goals of this service include but not limited to provide a world-wide accessible web-service for renting cars.

1.5 *References*

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

Software Requirements Specification Template. Karl E. Wieger, 1999.

2. Overall Description

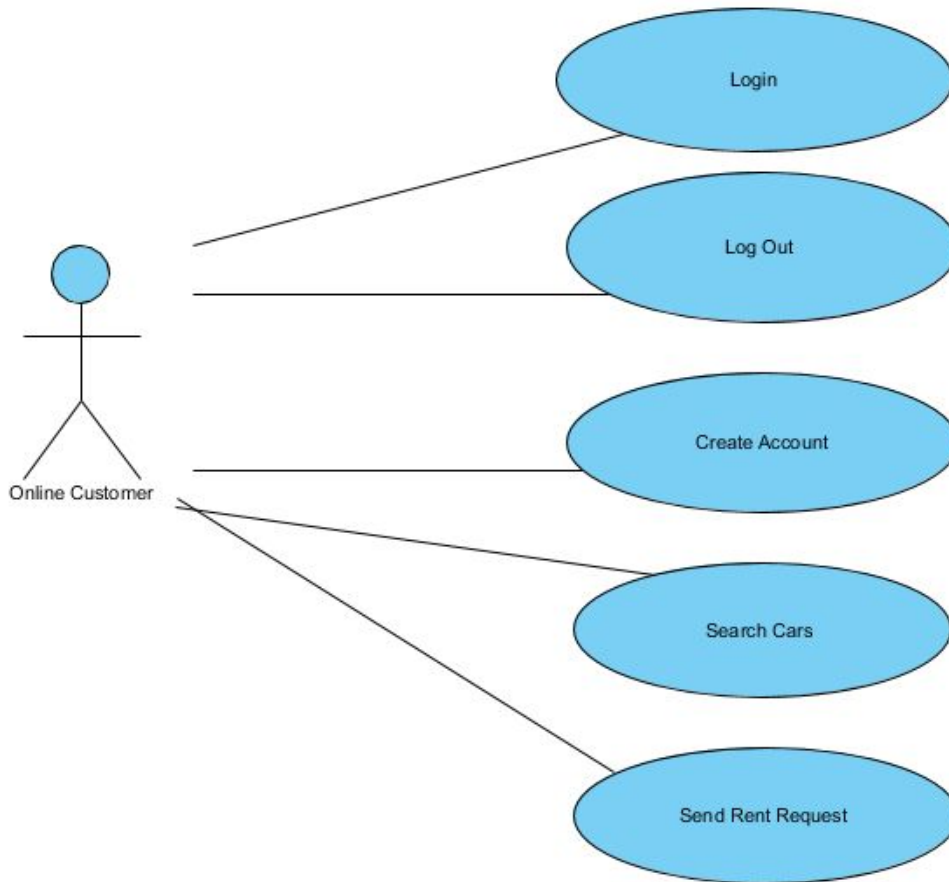
2.1 *Product Perspective*

Legacy Rental is a new, self-contained product. See case specifics in section 2.2

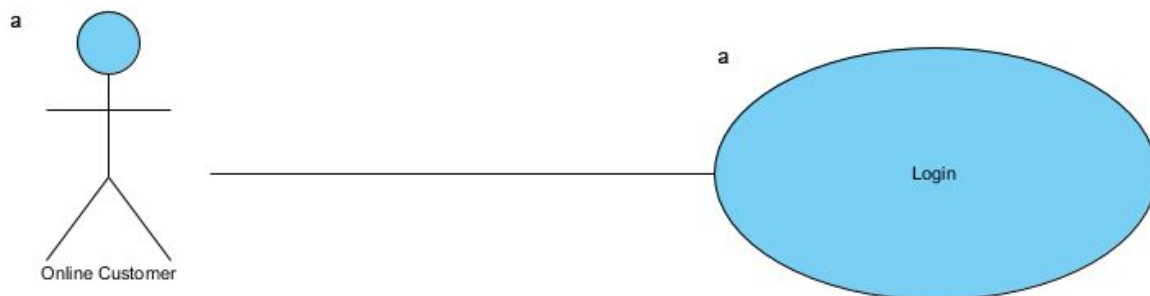
2.2 Product Functions



2.2.1 Online Customer Use Cases:



2.2.1.1 Use Case: Login



General Description:

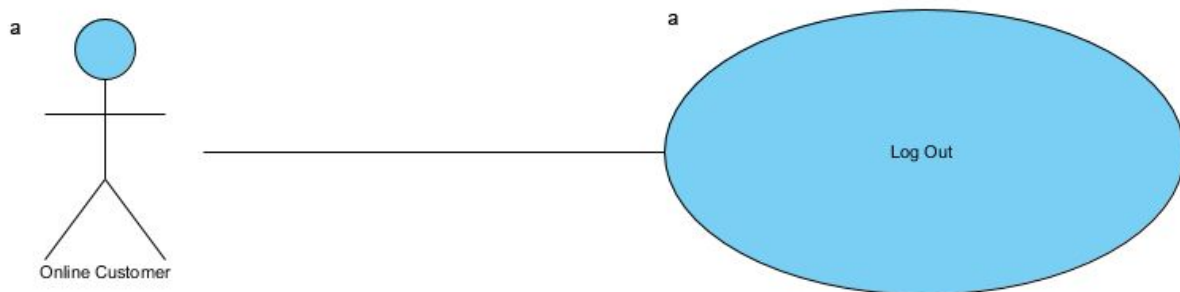
The Online Customer logs into the Legacy Rentals Website.

End Result:

The user is now logged into the current web session.

See case specifics in section 4.1.1

2.2.1.2 Use Case: Log Out



General Description:

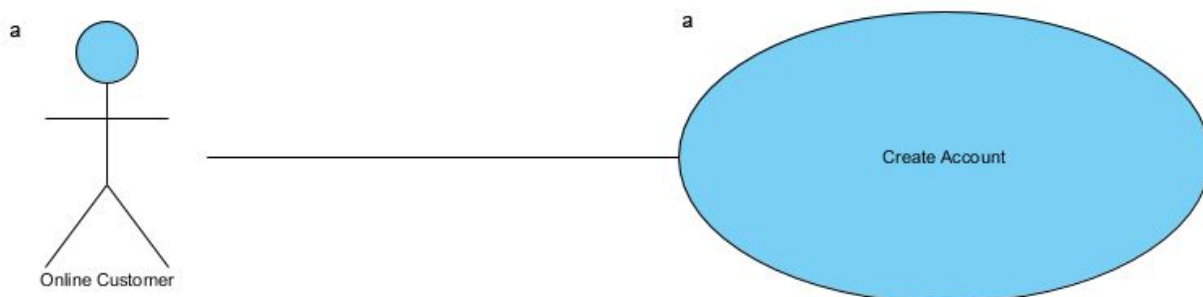
The Online Customer logs out of the Legacy Rentals Website.

End Result:

The user is now logged out of the current web session.

See case specifics in section 4.2.1

2.2.1.3 Use Case: Create Account



General Description:

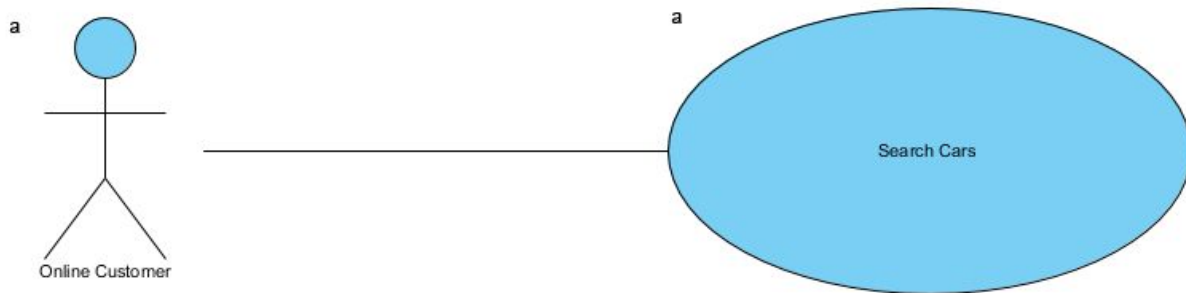
The Online Customer creates an account for the Legacy Rentals web page.

End Result:

A new account has been added to the system database.

See case specifics in section 4.3.1

2.2.1.4 Use Case: Search Cars

**General Description:**

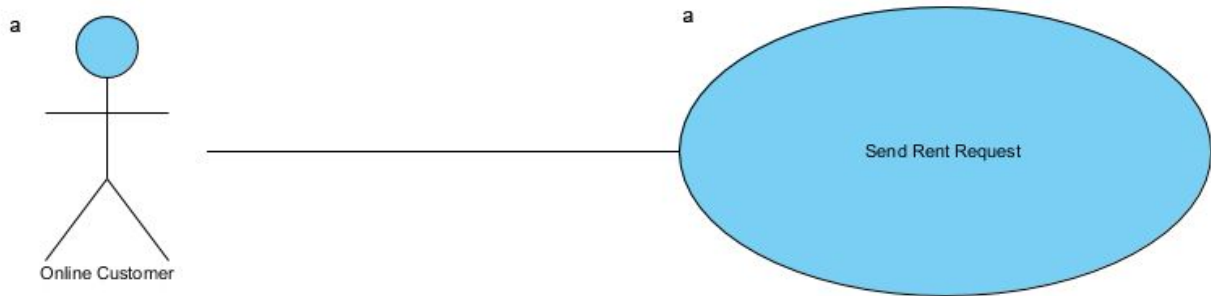
The Online Customer uses the search function on the Legacy Rentals web page.

End Result:

A list of rental options are displayed to the user.

See case specifics in section 4.4.1

2.2.1.5 Use Case: Send Rent Request

**General Description:**

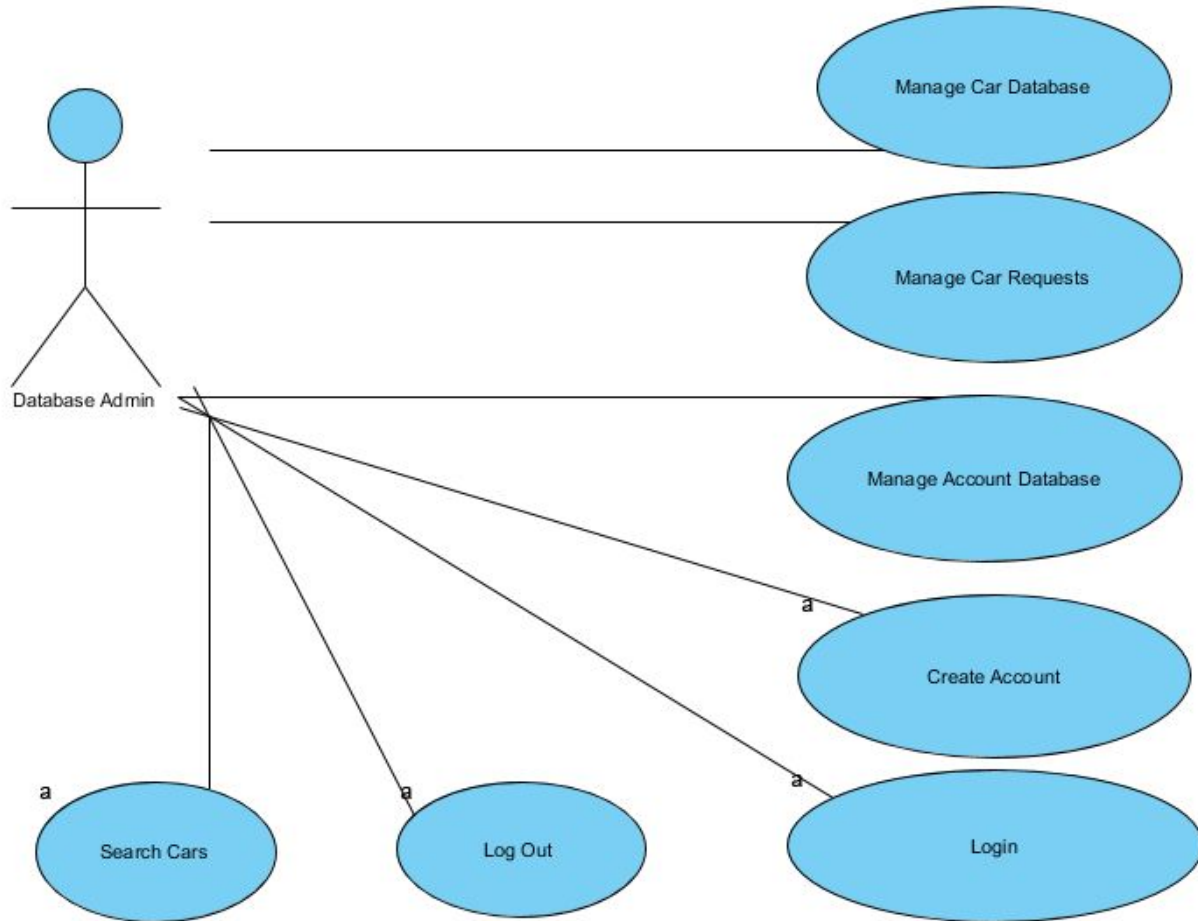
The Online Customer sends a rent request to the Legacy Rentals system.

End Result:

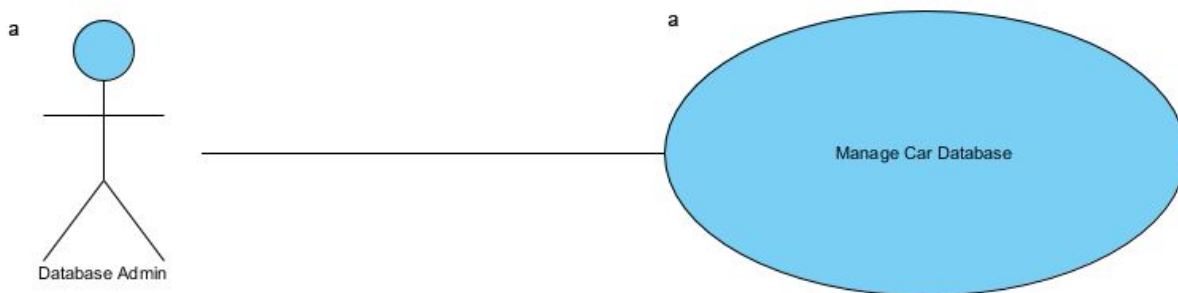
A rent request is sent to a dealership.

See case specifics in section 4.5.1

2.2.2 Database Admin Use Cases:



2.2.2.1 Use Case: Manage Car Database



General Description:

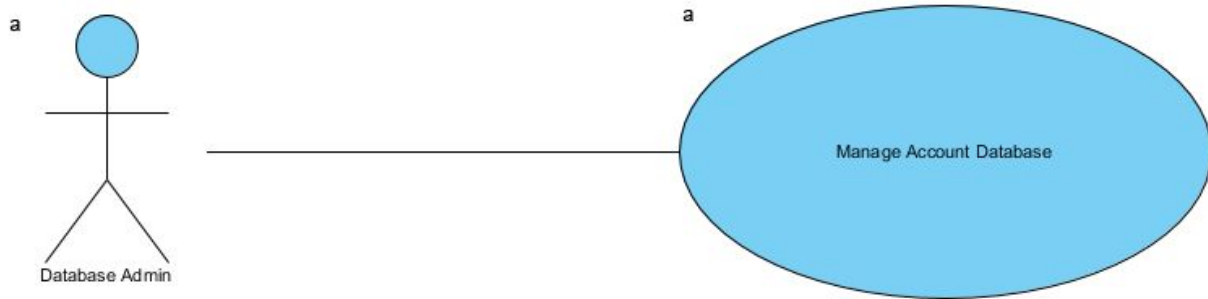
The Database Admin adds or removes an entry in the car database.

End Result:

A car database entry is added or removed.

See case specifics in section 4.6.1

2.2.2.2 Use Case: Manage Account Database



General Description:

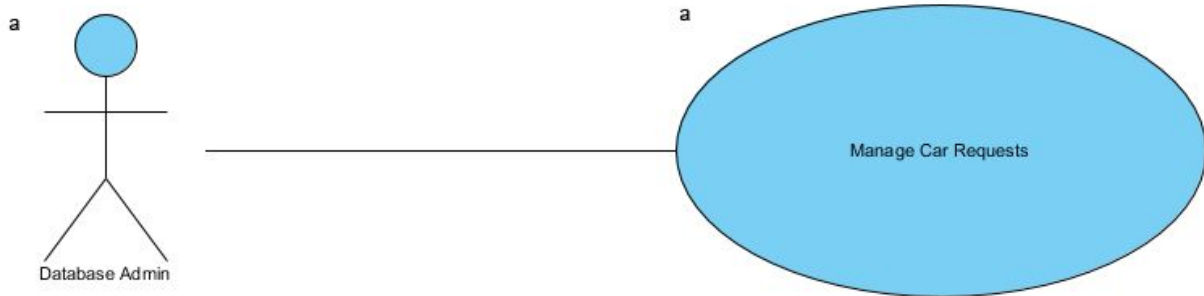
The Database Admin adds or removes an entry in the account database.

End Result:

A account database entry is added or removed.

See case specifics in section 4.7.1

2.2.2.3 Use Case: Manage Car Requests

**General Description:**

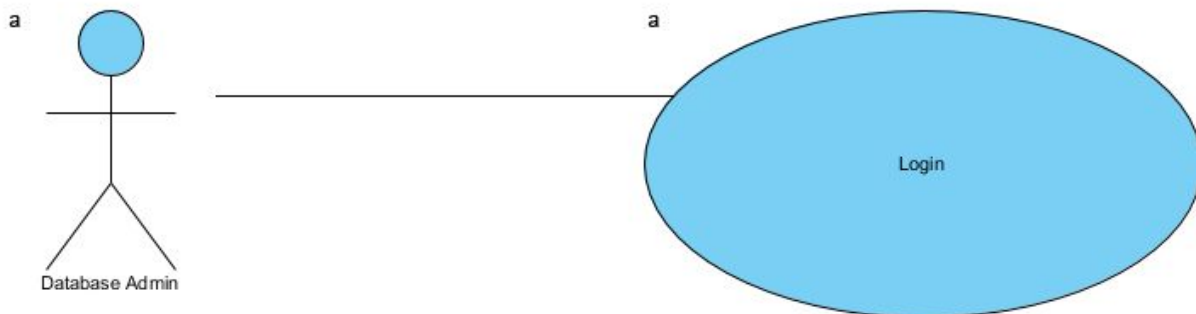
The Database Admin views pending car requests and may remove a pending request.

End Result:

The user has viewed and managed car requests.

See case specifics in section 4.8.1

2.2.2.3 Use Case: Login

**General Description:**

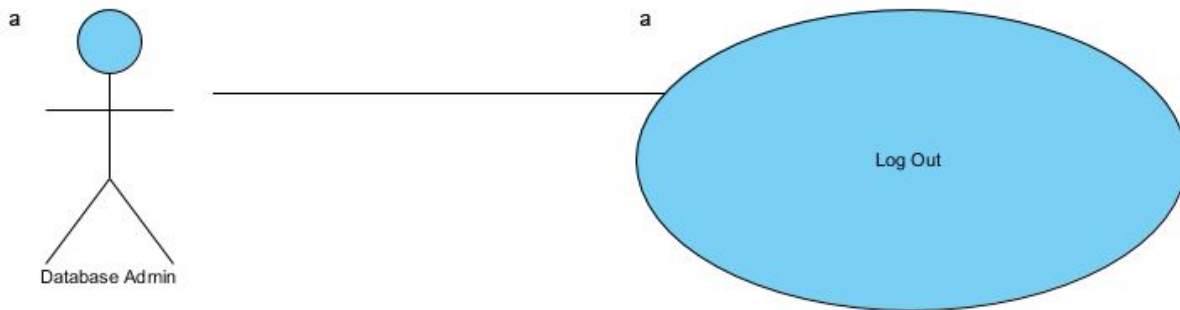
The Database Admin logs into the Legacy Rentals Website.

End Result:

The user is now logged into the current web session.

See case specifics in section 4.8.1

2.2.2.4 Use Case: Log Out

**General Description:**

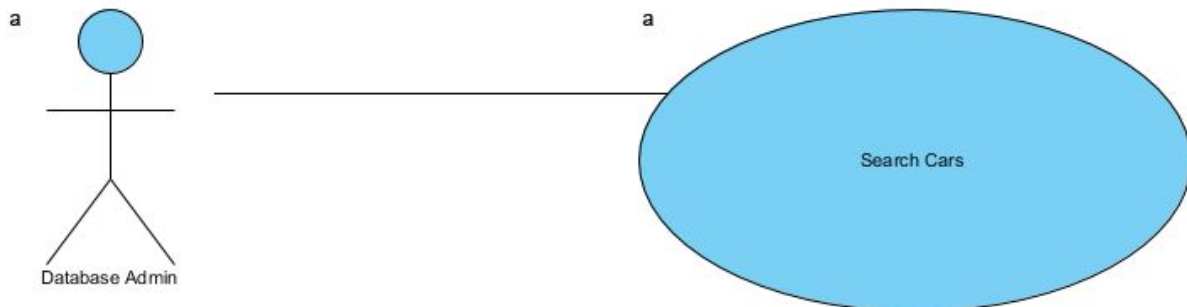
The Database Admin logs out of the Legacy Rentals Website.

End Result:

The user is now logged out of the current web session.

See case specifics in section 4.2.1

2.2.2.5 Use Case: Search Cars

**General Description:**

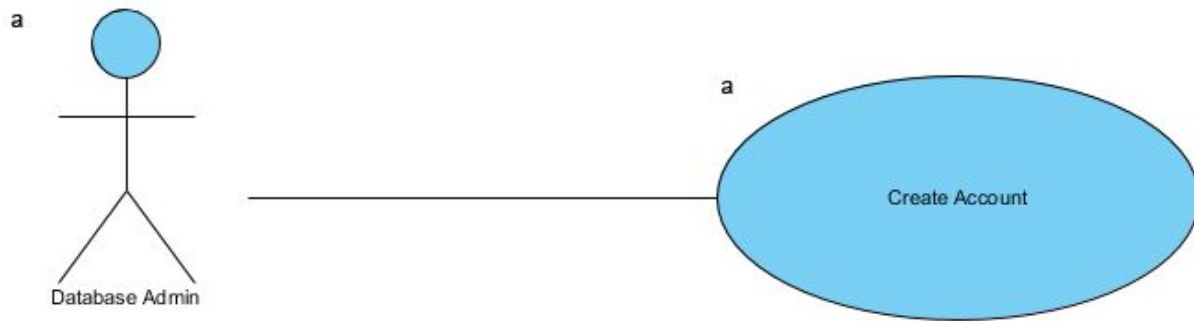
The Database Admin uses the search function on the Legacy Rentals web page.

End Result:

A list of rental options are displayed to the user.

See case specifics in section 4.4.1

2.2.2.6 Use Case: Create Account



General Description:

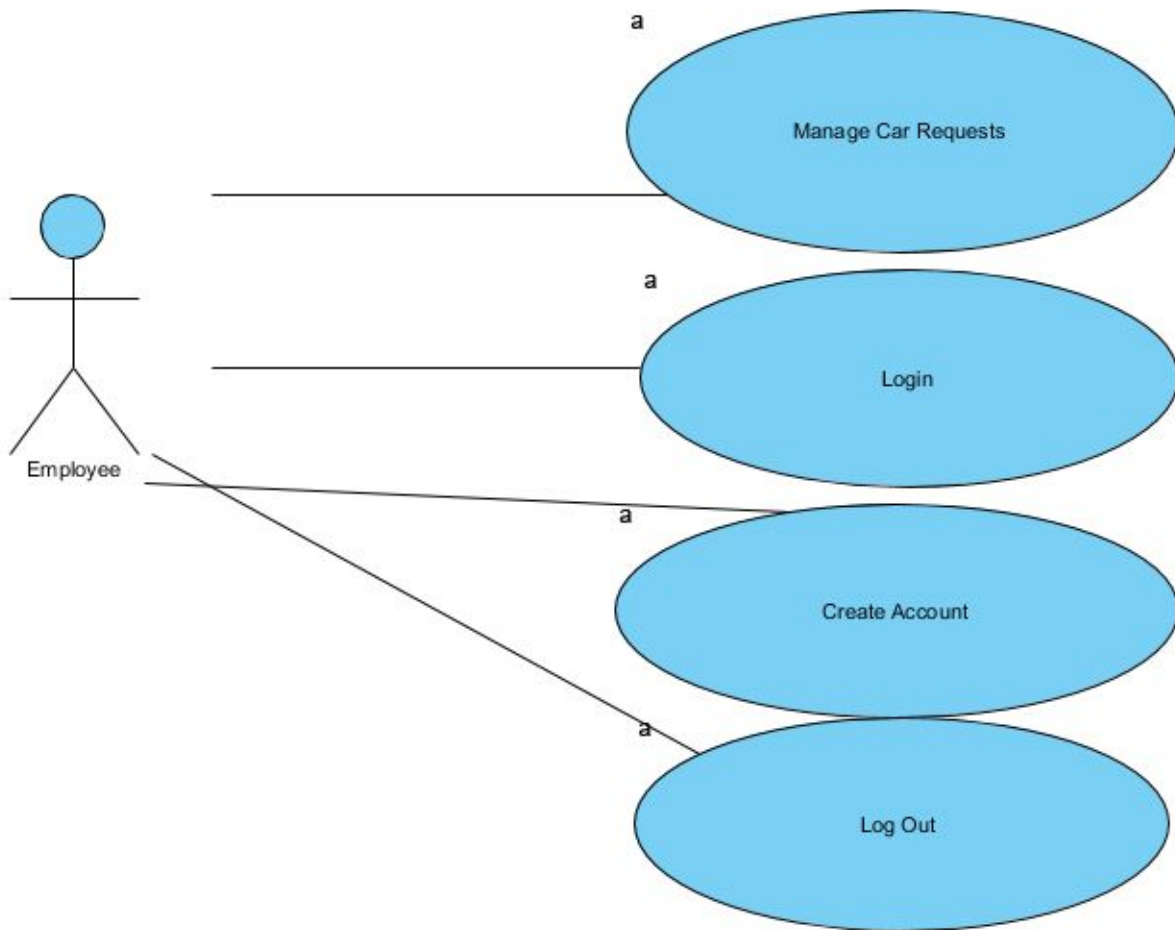
The Database Admin creates an account for the Legacy Rentals web page.

End Result:

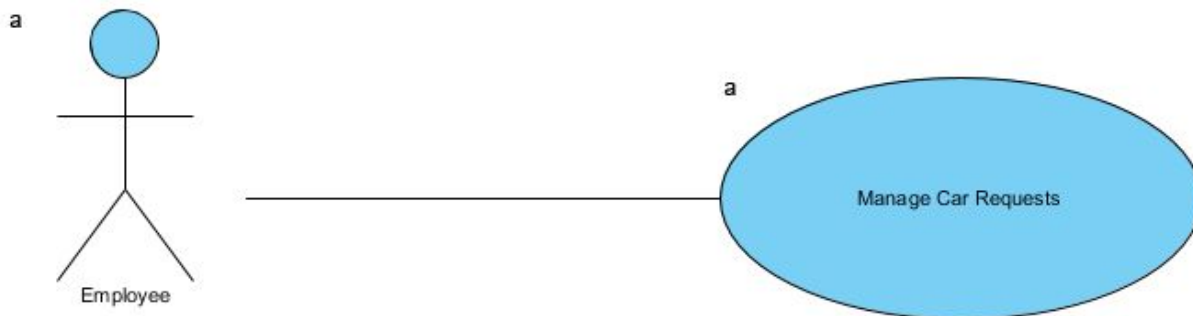
A new account has been added to the system database.

See case specifics in section 4.3.1

2.2.3 Employee Use Cases:



2.2.3.1 Use Case: Manage Car Requests



General Description:

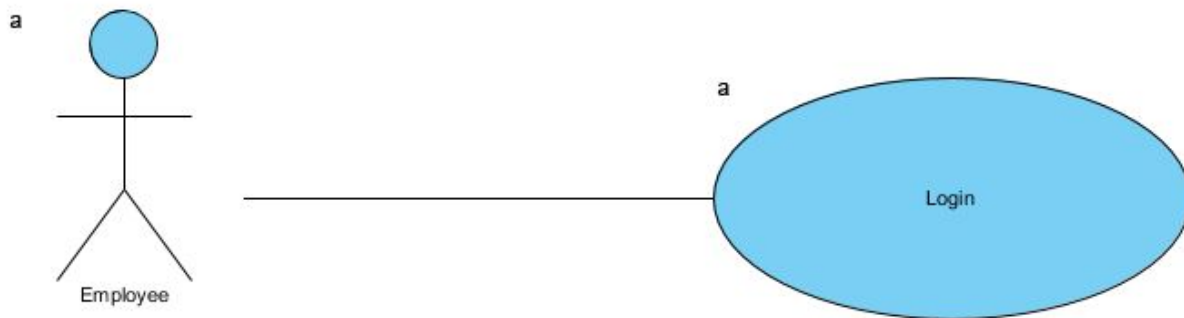
The Employee views pending car requests and may remove a pending request.

End Result:

The user has viewed and managed car requests.

See case specifics in section 4.8.1

2.2.3.2 Use Case: Login

**General Description:**

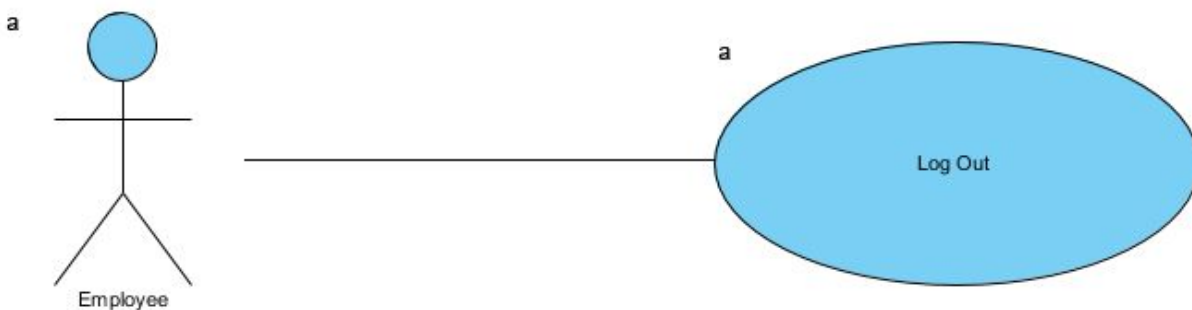
The Employee logs into the Legacy Rentals Website.

End Result:

The user is now logged into the current web session.

See case specifics in section 4.8.1

2.2.3.3 Use Case: Log Out

**General Description:**

The Employee logs out of the Legacy Rentals Website.

End Result:

The user is now logged out of the current web session.

See case specifics in section 4.2.1

2.2.3.4 Use Case: Create Account



General Description:

The Employee creates an account for the Legacy Rentals web page.

End Result:

A new account has been added to the system database.

See case specifics in section 4.3.1

2.3 User Classes and Characteristics

Customers are those who use the program in for the purpose of renting cars to drive. They are expected to have a valid driver's license (which will be checked on-site during their first rental). General knowledge of how to operate a search bar and filter results is also expected, although the UI will contain textual cues to help guide those who are not so confident.

2.4 Operating Environment

The software will operate on both Windows OS and Android devices. It will be accessed using either Google Chrome or Mozilla Firefox as the browser.

2.5 User Documentation

No user documentation will be delivered along with this product. This product is intended to be used as a web service and be accessible and easy to use for the general public as well as Legacy Rentals employees.

2.6 Assumptions and Dependencies

Third-party components will include Google secure login and an external third-party commercial database. The project may be affected by downtimes in either of the third-party services listed above.

3. External Interface Requirements

3.1 User Interface

3.1.1 General

The user shall interface with the web service through a browser, which shall display web pages and allow input from the keyboard and mouse. Every page will have a small and simple logo in the top left corner which can be clicked to return to the homepage at any time. If the user is logged in, there will also be a “logout” button in the top-right corner at all times, which will log the user out (thus removing the logout button) and then return them to the homepage.

3.1.2 Home Page

The homepage can have several different sets of buttons on it, but will always feature a large and colorful logo.

When the user navigates to the website and has not logged in, the homepage will have two buttons: login and create account. Clicking these will navigate to their respective pages (see 3.1.4 and 3.1.5). The homepage will reset to this state whenever the user logs out.

If the user logs in as a customer, the homepage will display a search button which will bring them to the search page if they click it (see 3.1.3).

If the user logs in as the database administrator, the homepage will display a “view request” button and a “manage” button to click on in order to access those pages (see 3.1.6 and 3.1.7).

3.1.3 Search Page

The search page shall feature a drop down allowing the user to choose between a search by car type or a search by car dealership. Below this will be the search bar itself. The bar itself shall initially have text in it to prompt the user to enter their search terms. The prompt text will disappear when the user starts filling the search bar, or if they click on the search bar. Underneath the search bar will be a search button which can be clicked to submit search keywords in the search bar, or the user can press the enter key to submit their search.

Once the user has submitted their search, they shall quickly be presented with a results page. This shall be a list of cars that are relevant to their search terms and included in their filters. It will also have a search bar and filters at the top so that users can

continue to search without returning to the initial search page. For each car in the list both a small picture and a descriptive name will be displayed on the left, as well as some basic metadata, in a consistent and organized fashion. All the way to the right of each entry on the list, there will be a button that can be clicked to send a rent request.

3.1.4 Create Account Page

Here, the user will be presented with several text fields to fill out. The uppermost two will be for their account name and password, respectively. Below those will be a field for their credit card number. All fields will be clearly labeled. After the user has entered all of this info, they can hit enter to submit it. Any error messages will appear in bright red just under the billing field, and these may cause the text fields to reset.

3.1.5 Login Page

This page will prompt the user to type their username and password in two separate and clearly labeled text fields, which shall be submitted either by pressing enter or clicking a button below. If their entries do not match correctly, the fields will reset to empty and a message will display in red indicating that they did not enter a valid username/password combo, and thus should try again. Once the user enters a correct pair, they shall be immediately redirected to the home page.

3.1.6 Car Request Page

This page has a labeled text field for the administrator to search for a dealership to view the requests of. If they successfully type the name of a dealership, a list of the requests for that dealership is displayed under the search bar, which remains operational to do another search if needed.

Each request in the list has the information of the car on the left and the information of the customer making the request in the center. All the way to the right is a button that can be clicked to remove the request from the list.

3.1.7 Manage Page

This page is not intended to be seen or used by anyone except for an administrator. As such, it shall not have any colorful logos on it, and neither shall its sub-pages. It shall simply have two buttons: one brings the user to a page for managing the car database (see 3.1.8) and the other brings the user to a page for managing the user account database (see 3.1.9).

3.1.8 Car Database Page

The Car Database Page will feature an empty text field for every type of data a car entry can have. The user must type a unique car id in to modify the database, but all other information shall be optional at this step. Below the fields will be a dropdown menu with the options “add” and “remove”. Selecting one of these and pressing enter will either add a car with the submitted id and info to the database or remove the car with the submitted id from the database. Any error messages related to this will appear bright red below the drop down, but none of the text fields will be reset.

3.1.9 Account Database Page

The Account Database Page will feature an empty text field for every type of data a car entry can have. The user must type a unique account id in to modify the database, but all other information shall be optional at this step. Below the fields will be a

dropdown menu with the options “add” and “remove”. Selecting one of these and pressing enter will either add an account with the submitted id and info to the database or remove the account with the submitted id from the database. Any error messages related to this will appear bright red below the drop down, but none of the text fields will be reset.

3.2 Software Interfaces

The program will only require a browser to be accessed by users. The interface will be connected through the backend to the database. Data going into the system are data from search queries. Data going out include renting vehicles and search items.

3.3 Communications Interfaces

Web-browser communication include HTTPS for secure login and purchasing functionality. Billing information forms will be sent to the database hashed. Logins will be conducted through Google for secure login security and encryption.

4. System Features

4.1 Use Case: Login

4.1.1 Detailed Description

General Description:

The Online Customer logs into the Legacy Rentals Website.

Precondition:

The user is not currently logged into the web session.

Specific Description:

1. The user selects the “login” button from the system homepage and is directed to the login page.
2. The user is directed to the “log in” web page.
3. The user enters their account name and account password into labeled text boxes.
4. The user presses the “enter” button and the entered information is submitted.
5. After the system verifies the submitted information the user is logged into the current web session.

Alternative Path Description:

- If the information provided in step 4 is not found in the database, the text fields will be cleared and an error message will occur.

Exception Path Description:

- The user may move to a different page before producing to step 4, in which case, the use case is canceled.

End Result:

The user is now logged into the current web session.

4.2 Use Case: Log Out

4.2.1 Detailed Description

General Description:

The Online Customer logs out of the Legacy Rentals Website.

Precondition:

The user is currently logged into the web session.

Specific Description:

1. The user presses the “logout” button on any page of the system web page.
2. The user is that is currently logged into the web session is then logged out of the web session.
3. The user is directed to the system homepage.

Alternative Path Description:

- If the user initiates the use case while already on the system homepage the page, step 3 instead refreshes the page.

Exception Path Description:

None.

End Result:

The user is now logged out of the current web session.

4.3 Use Case: Create Account

4.3.1 Detailed Description

General Description:

The Online Customer creates an account for the Legacy Rentals web page.

Precondition:

The user is not currently logged into the web session

Specific Description:

1. The user presses the “create account” button on the system homepage.
2. The user is directed to the “create account” web page.
3. The user enters an account name, password, and billing information into provided text boxes.
4. The user presses the “enter” button thus submitting their information.
5. The system creates a new account entry with the submitted information.

Alternative Path Description:

- If the information provided in step 4 is already found in the database, the text fields will be cleared and an error message will occur.

Exception Path Description:

- The user may cancel the operation at anytime

End Result:

A new account has been added to the system database.

4.4 Use Case: Search Cars

4.4.1 Detailed Description

General Description:

The Online Customer uses the search function on the Legacy Rentals web page.

Precondition:

The user is logged in

Specific Description:

1. The user presses the “search” button on the homepage and is directed to the search page.
2. The user chooses to search by car type or car dealership
3. The user enters their search text into the provided textbox and presses enter.
4. The system provides a list of rental options based on the search type. If the search is by car type then the system provides a list of all car dealerships with that car available. If the search is by car dealership then the system provides a list of all cars available for that particular car dealership.

Alternative Path Description:

- If the information provided in step 3 is not found in the system database then a “not found” result is shown in step 4.
- If a car that is searched for in step 3 exists but has no cars available for rent then a “not available” result is shown in step 4

Exception Path Description:

- The user may cancel the operation at anytime.

End Result:

A list of rental options are displayed to the user.

4.5 Use Case: Send Rent Request

4.5.1 Detailed Description

General Description:

The Online Customer sends a rent request to the Legacy Rentals system

Precondition:

The user is logged in and has found a car they would like to rent using the search function.

Specific Description:

1. The user presses the “rent” button associated with the car they would like to rent.
2. The system sends an alert to the dealership associated with the requested car. The request contains the billing information associated with the account that is currently logged in.

Alternative Path Description:

None

Exception Path Description:

None

End Result:

A rent request is sent to a dealership

4.6 Use Case: Manage Car Database

4.6.1 Detailed Description

General Description:

The Database Admin adds or removes an entry in the car database.

Precondition:

The Database Admin is logged into the system.

Specific Description:

1. The user presses the “manage” button from the website homepage.
2. The user is redirected to the management page.
3. The user presses the “car database” button and is directed to the car database management page.
4. The user types in a database entry into provided text boxes.
5. The user selects “add” or “remove” from a dropdown menu.
6. The user presses the enter button and the database changes based on the dropdown menu selection. If “add” is selected a new entry is created in the database. If “remove” is selected an entry matching the user entry’s unique identifier is removed from the database. The unique identifier for the car database is the “car id”.

Alternative Path Description:

- In step 6 if “remove” was selected in step 5 and there is no entry that matches the user entry’s unique identifier, a “entry not found” message is displayed instead of normal operation.

Exception Path Description:

- The user may cancel the operation at anytime.

End Result:

A car database entry is added or removed.

4.7 Use Case: Manage Account Database

4.7.1 Detailed Description

General Description:

The Database Admin adds or removes an entry in the account database.

Precondition:

The Database Admin is logged into the system.

Specific Description:

1. The user presses the “manage” button from the website homepage.

2. The user is redirected to the management page.
3. The user presses the “account database” button and is directed to the car database management page.
4. The user types in a database entry into provided text boxes.
5. The user selects “add” or “remove” from a dropdown menu.
6. The user presses the enter button and the database changes based on the dropdown menu selection. If “add” is selected a new entry is created in the database. If “remove” is selected an entry matching the user entry’s unique identifier is removed from the database. The unique identifier for the account database is the “user id”.

Alternative Path Description:

- In step 6 if “remove” was selected in step 5 and there is no entry that matches the user entry’s unique identifier, a “entry not found” message is displayed instead of normal operation.

Exception Path Description:

- The user may cancel the operation at anytime.

End Result:

A account database entry is added or removed.

4.8 Use Case: Manage Car Requests

4.8.1 Detailed Description

General Description:

The Database Admin views pending car requests and may remove a pending request.

Precondition:

The Database Admin is logged into the system.

Specific Description:

1. The user presses the “view request” button from the website homepage.
2. The user is redirected to the car request page.
3. The user types in a dealership name in the provided textbox.
4. The user presses the “enter” button and a list of current requests for the provided dealership is displayed.

5. The user may press the “remove” button located next to a request in order to remove the request from the list.

Alternative Path Description:

- In step 4 if the dealership name is not found in the system database, a “entry not found” message is displayed instead of normal operation.

Exception Path Description:

- The user may cancel the operation at anytime.

End Result:

The user has viewed and managed car requests.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The website shall never load more than 200Mb of data at once in the client computer’s memory. This will ensure compatibility with older computers and devices with lower technical specifications, including those with 32-bit operating systems which are typically limited to 4Gb of memory.

Additionally, the server shall process any search request in at most one second and any page navigation shall be processed in at most half a second. This will ensure that the customers will be able to use the website efficiently, and will give a better impression to the user than if the web service was slow, unresponsive, and/or inconsistent in its speed.

5.2 *Safety Requirements*

Legacy Rentals is not responsible for any damage incurred by the renters. Legacy Rentals is not responsible for any lost or stolen items. In regards to the system, Legacy Rentals guarantees the security and safety of all use data, including billing information. See Section 6 for additional safety information.

5.3 *Security Requirements*

User data will be securely stored in a database. Authentication will be conducted by the web service to ensure that all user data is transferred securely. Security requirements entail that only employees may be able to change location stock information and only customers shall be able to view their personal account information such as billing information, email address and legal name.

5.4 *Software Quality Attributes*

Additional quality characteristics for the web service that are important for both customers and developers include but not limited to adaptability, availability, reliability and reusability. Adaptability will entail the ability of the web service to be ported to a wide array of web platforms in the future. Availability will entail the ability of customers to access the web service. Reliability will entail the ability for customers and employees to easily use the web service. Customers shall be able to easily rent vehicles and employees shall be able to easily update stock at their employed location. Reusability entails the ability for the web service to be reused in the future for any possible updates, rewrites of the service or the edge case of the company being bought out in the future.

5.5 Business Rules

Both customers and employees may log in to the web service. Customers may only search, view and rent cars at Legacy Rental locations. Employees may only update stock at their currently employed location.

6. Other Requirements

This service is restricted to US citizens with a valid driver's license only. Legality of said drivers license worldwide is valid with purchase of renters insurance at time of rental. Legacy Rentals does not hold any responsibility of damages incurred by renters.

Renters must be over 18 years of age and show a valid driver's license on rental pick-up.

Appendix A: Glossary

Term	Definition
SRS	Software Requirements Specification document that describes the functionality of the Legacy Rentals web service.
Database Admin	Person who is employed at a Legacy Rentals location. Has access to the web service. Can access employed locations stock and update stock accordingly.
Customer	User of the Legacy Rentals web service. Can rent cars at any of the Legacy Rentals locations world-wide. Has an account on the service to store personal information such as billing info, age and drivers license information.
Web Session	A particular instance of a web page. A new session is created whenever a user visits a website for the first time or after performing a hard refresh . Ex: If you visit a website, turn off your computer, then visit the website again, you will have created two different web sessions.

Appendix B: To Be Determined List

1. Shall a user be able to delete their account.
2. Shall an employee account have the ability to be removed.
3. Shall unavailable cars be shown in gray or not show at all