Car Rental System

SSE 657

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# Scope

## Identification

Create an application for a car rental company that operates as a car rental system to reduce the company’s operation cost.

## 

## Overview

The Car Rental System application is a tool that centralizes inventory and booking organization for a car rental company. The application is created based on the companies given requirements including some improvement proposals.

# Requirements

## Application Requirements

### APPLICATION\_POWER\_UP

Upon power up, the application shall display a login screen with fields for a username and password.

### VERIFY\_LOGIN\_DATA\_FILLED

Upon user selection of the login button, the application will validate that a password and username has been inputted.

### SEND\_VALIDATION\_REQUEST

Upon user selection of the login button, the application will send a validation\_request message to the database.

### ENCRYPTED\_PASSWORD

The application shall not transmit a plain-text password.

### LOGIN\_SUCCESS

Following receipt of a successful “login\_response” message, the application will display the home screen.

### LOGIN\_FAILURE

Following receipt of an unsuccessful “login\_response” message, the application will display an error message and highlight the error fields in red.

### DISPLAY\_UPCOMING\_RESERVATIONS

Upon displaying the home screen, the application will display the users current/upcoming car reservations or “No reservations”.

### NEW\_RESERVATION\_FIELDS

Upon user selection of the create new reservation button, the application will display a date range selection field, car make/model selection field, and pick-up/return location fields.

### DISPLAY\_PRICE

Upon completion of the final user-selectable field, the total price will be displayed, including all applicable discounts and taxes.

### SEND\_BOOKING\_VALIDATION

Upon user selection of the book button, the application will send a “booking\_validation” message to the database.

### BOOKING\_RESPONSE\_SUCCESS

Following receipt of a successful “booking\_resonse” message from the database, the application will inform the user and display the booking in the "upcoming bookings" section.

### BOOKING\_RESPONSE\_FAILURE

Following receipt of an unsuccessful “booking\_resonse” message, the application will display the error and highlight the errored fields in red (such as no cars available at this location).

## Application Specifications

### Vehicle can be taken from one location and can be returned to the same or different location with an additional cost.

### Mainly passenger cars, but make it expandable to other types of vehicle rental.

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### Different makes, from different manufacturers, and each make may have several models (Toyota has Corolla, Camry, and more). Models are grouped into a small number of price classes.

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### Information shall be available on the models of the car (such as automatic or manual gear change, two or four doors, and sedan or hatchback).

### Rental prices may be different for different options in which customers should be informed when reserving a car.

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### Keep track of the rental car purchase, repair, maintenance, and disposal information (e.g., depreciation of the rental cars).

## 

## Database Requirements

### DATABASE\_TYPE

The database will use PostgreSQL.

### RESPONSE\_TIMING

Following receipt of a query, the database must respond within 5 seconds or return an error message.

### STORE\_ENCRYPTED\_PASSWORD

The database shall not store a plain-text password.