Software Requirements Specification

For

**Car purchasing web application**

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1. Abbreviations

|  |  |
| --- | --- |
| SRS | Software Requirement Specification |
| NFR | Nonfunctional Requirement |
| SIQ | Software Interactive Questionnaire |
| CR | Customer Requirements |

# Introduction

## Purpose

The online purchasing car is intended to provide complete solutions for customers who want to buy cars through a single gateway using the internet. It will enable the customer to browse through the online web application and purchase one car or more online without having to visit the car dealership physically. The administration module will enable a system administrator to add, delete and update the users and cars data.

This document is meant to discuss the features of online car purchasing web application, so as to serve as a guide to the developers on one hand and a software validation document for the prospective client on the other.

## Intended Audience and Reading Suggestions

This document could be reference for developers, project managers, marketing staff, users, testers, product owner, and documentation writers.

## Product Scope

This platform will host an enormous database of cars enabling the sellers to advertise and market their cars and to help the buyers to search for desired cars also users can buy car or more through online car purchasing web application.

## References

IEEE 830-1999 standard for writing SRS document.

# Overall Description

## Product Perspective

The online purchasing car web application is aimed to achieve the highest selling in the world of cars, and also facilitates the user needs. The online purchasing car dealership should be user-friendly, ‘quick to learn’ and reliable software for the above purpose. It is intended to be a stand-alone product and should not depend on the availability of other software. It should run on both UNIX and Windows based platform.

## Product Functions

Role 1: Administrator

Functions: Admin shall log in with valid account and he/she can remove a car from search page after 24 hours from reservation page if it is confirmed to be bought, also Admin can add, delete, and view users’ data.

Role 2: Customer

Functions: the user shall register in the online car purchasing , log in , view all cars in the application , search in the application based on different criteria ,browse through application and reserve a car or more.at the end the user can log out from this web application, any user can see most popular cars in the homepage without registration or login.

## User Classes and Characteristics

The customer shall be familiar with using the internet and online shopping, the administrator shall illustrate the rules of buying through the application.

## Operating Environment

The online purchasing car dealership is a website that shall operate in all popular browsers, like chrome, Internet explorer and Firefox.

# External Interface Requirements

## User Interfaces

The customer interface shall be contain login page, registration page, contact us, reservation page, the home page contains scrollable list of cars and search bar, about us page contains information about car web application.

The car description should contains the model year, Engine CC, color, gear transmission, condition (new or used), Kilometers (for used cars) and Price

## Software Interfaces

In this phase there is no interaction between this application and other application

## Communications Interfaces

The user shall register by name, email, phone, and address the communication between the customers and the responsible of the car web application will be through email, phone or address.

# System Features

The car purchasing application tailored to be web based application which help the user to access the system without specific tools or programs only just popular web browser.

The system will help the users to get any required information about any car model, the system contains several models with several colors and price list.

## Functional Requirements

**4.1 Customers**:

* + 1. **Registration**

Registration functionality is on a page which contains a form this form has six fields (unique username, password, password confirmation, phone, email and address) the user shall register in the application those mentioned data.

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| --- | --- | --- | --- |
| **Car\_SRS\_ID** | **Requirement** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_001 | The user can register using (username, address, email, phone number password, and confirmation password). | CAR\_CR\_01 | Car\_SIQ\_04 |
| Car\_SRS\_002 | The username shall be unique user name for every user. | CAR\_CR\_01 | Car\_SIQ\_04 |
| Car\_SRS\_003 | Password constraints contains (upper & lower case, numbers, special characters, and more than 8 characters). | CAR\_CR\_01 | Car\_SIQ\_02 |
| Car\_SRS\_004 | Unregistered users cannot reserve any car | CAR\_CR\_01 | Car\_SIQ\_08 |
| Car\_SRS\_005 | If the user tries to register with used email, an error message will appear in red color as following (This email is already used. Please try again) | Car\_CR\_01 | Car\_SIQ\_18 |
| Car\_SRS\_006 | If the user enter invalid password, less than 8 characters an error message in red color will appear “This is invalid password the password shall be at least 8 characters” | Car\_CR\_01 | Car\_SIQ\_16 |
| Car\_SRS\_007 | If the user tries to register without entering one or more data fields, an error message will appear in red color as following(all fields are mandatory please enter valid data) | Car\_CR\_01 | Car\_SIQ\_20 |
| Car\_SRS\_008 | The landing page has a list of free cars sorted by most popular car | Car\_CR\_01 | Cr\_SIQ\_09 |
| Car\_SRS\_009 | Unregistered users can see our products and search for cars | Car\_CR\_02 | Car\_SIQ\_08 |
| Car\_SRS\_010 | If the user tries to register with used username, an error message in red color will appear as following "This username is already taken. Please try again" | Car\_CR\_01 | Car\_SIQ\_17 |
| Car\_SRS\_011 | The mail shall be in this format “email@exampl.com  No special character allowed , the only allowed special character is \_ | Car\_CR\_01 | Car\_SIQ\_21 |

## Log in

The customer shall be registered and have a valid username and valid password, log in function has a very high priority if the customer want to reserve a car.

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| **Car\_SRS\_ID** | **Requirements** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_012 | The user can login using username and password. | Car\_CR\_01 | Car\_SIQ\_02 |
| Car\_SRS\_013 | If the user tries to login without entering the user name or the password, an error message shall appear "the all fields are mandatory. Please try again" | Car\_CR\_01 | Car\_SIQ\_19 |
| Car\_SRS\_014 | If an unregistered user hover on a car, a login button should appear on the tap beneath the car | Car\_CR\_01 | Car\_SIQ\_08 |
| Car\_SRS\_015 | If the user tries to login with invalid data an error message in red color will appear as following “The username and password you entered did not match our records. Please double-check and try again” | Car\_CR\_01 | Car\_SIQ\_16 |

**4.1.3 Searching**

The customer can search in the application search bar based on different criteria

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| **Car\_SRS\_ID** | **Requirements** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_016 | The home page contains scrollable list of cars and search bar. | Car\_CR\_01 | Car\_SIQ\_01 |
| Car\_SRS\_017 | Search criteria filter for car color. | Car\_CR\_02 | Car\_SIQ\_01 |
| Car\_SRS\_018 | Search criteria filter for car model. | Car\_CR\_02 | Car\_SIQ\_01 |
| Car\_SRS\_019 | Search criteria filter for car price from high to low. | Car\_CR\_02 | Car\_SIQ\_01 |
| Car\_SRS\_020 | Search criteria filter for car price from low to high. | Car\_CR\_02 | Car\_SIQ\_01 |
| Car\_SRS\_021 | When the user search in the search bar the search results shall be free cars only(not reserved cars) | Car\_CR\_02 | Car\_SIQ\_14 |
| Car\_SRS\_022 | The car are listed by their name and image | Car\_CR\_01 | Car\_SIQ\_10 |

* + 1. **Reserving a car**

The customers shall be logged in first so they can reserve a car.

The customer can select and reserve a car from the car purchasing web application

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| --- | --- | --- | --- |
| **Car\_SRS\_Res\_ID** | **Requirements** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_023 | If a registered user click on the "more details" button, it will direct the user to another page displays the car detailed specification, also this page contains the reservation button to reserve this car. | **Car\_CR\_03** | **Car\_SIQ\_10** |
| Car\_SRS\_024 | If an unregistered user click on the " more details" button, it will direct to the page where the user will be asked to either sign up or sign in | **Car\_CR\_01** | **Car\_SIQ\_10** |
| Car\_SRS\_025 | Reservation tap contains all cars that the user has reserved. | **Car\_CR\_03** | **Car\_SIQ\_10** |
| Car\_SRS\_026 | Reservation button shall change car status from free to reserved and removed from search page | **Car\_CR\_03** | **Car\_SIQ\_06** |
| Car\_SRS\_027 | The car description should contains the model year, Engine CC , color , gear transmission , condition(new or used) , Kilometers(for used cars) and Price | **Car\_CR\_03** | **Car\_SIQ\_10** |
| Car\_SRS\_028 | there is a tab beneath every car image and when the user hovers over it, it shall expand to unveil the car description and a button for more details shall be provided and by clicking on it, it will direct the user to another page displays the car detailed specification | **Car\_CR\_03** | **Car\_SIQ\_10** |
| Car\_SRS\_029 | If the car status is changed from reserved to bought, it will still be listed in the user reservations page | **Car\_CR\_03** | **Car\_SIQ\_12** |

**4.1.5 Log out**

The user can logout from the car purchasing web application

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| **Car\_SRS\_Logout\_ID** | **Requirement** | **Car\_CR\_ID** | Car\_SIQ |
| Car\_SRS\_030 | The customer can logout from the application by pressing on the logout button | Car\_CR\_01 | Car\_SIQ\_02 |

* + 1. **GUI Specification**

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| **Car\_SRS\_GUI\_ID** | **Requirement** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_031 | About us tap shall redirect user to about us page. | NA | Car\_SIQ\_05 |
| Car\_SRS\_032 | About us page contains information about car web application page. | NA | Car\_SIQ\_05 |

**4.2 Administrator:**

**4.2.1 Log in**

Admin can login in the application

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| **Car\_SRS\_Admin\_ID** | **Requirements** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_033 | The admin must login with admin credentials, the username and password for admin must be unique. | Car\_CR\_01 |  |

**4.2.2. Change car status**

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| **Car\_SRS\_Status\_ID** | **Requirements** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_034 | Admin can remove a car from search page after 24 hours if it is confirmed to be bought | NA | Car\_SIQ\_06 |
| Car\_SRS\_035 | All the reserved/sold cars shall be appear in the admin search page with their associated users and the time of the reservation/buy | NA | Car\_SIQ\_15 |
| Car\_SRS\_036 | Admin can change car status from reserved to bought | NA | Car\_SIQ\_07 |

**4.2.3 Add, View, and Delete Customer**

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| **Car\_SRS\_Admin\_F\_ID** | **Requirement** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_037 | Admin can add unregistered user from the admin panel control | NA | Car\_SIQ\_07 |
| Car\_SRS\_038 | Admin can delete customer from the web application from the admin panel control | NA | Car\_SIQ\_07 |
| Car\_SRS\_039 | Admin can view all registered customer from the admin panel | NA | Car\_SIQ\_07 |

# Nonfunctional Requirements

## 4.2.1 Performance Requirements

The system shall accommodate high number of cars and users without any fault.

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| **Car\_SRS\_NFR\_ID** | **Requirement** | **Car\_CR\_ID** | **Car\_SIQ\_ID** |
| Car\_SRS\_040 | The response time shall not exceed 10 seconds for 90 Percentile | NA | Car\_SIQ\_22 |
| Car\_SRS\_041 | when applying a load testing equivalent to 500 Transaction per second on the System APIs the system shall be stable | NA | Car\_SIQ\_22 |

## Software Quality Attributes

A very little knowledge and techniques are applied to ensure software quality attributes, quality characteristics for this product will be important to the customers and developers. Some to consider are: adaptability, availability, correctness, flexibility, maintainability, portability, reliability, reusability, robustness, testability, and usability. These techniques should be applied on the requirements and implementation of the requirements