# ASSIGNMENT
# ON
# SOFTWARE
# ENGINEERING

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# SRS

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1st MCA B

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# 1. INTRODUCTION

Requirements specification is the starting step for the development activities. It is currently one of the weak areas of software engineering. During requirement specification, the goal is to produce a document of the client's requirements. This document forms the basis of development and software validation. The basic reason for the difficulty in software requirements specification comes from the fact that there are three interested parties- the client, the end users and the software developer.

## 1.1 Purpose

The purpose of this SRS document is to specify software requirements of the Car Rental Management System. It is intended to be a complete specification of what functionality the system provides. This system is intended to provide the user an efficient way to book a vehicle according to their choice. The system being developed is a system to handle the business needs of renting out vehicles to customers, maintaining records and data of various vehicles, operating the customer portal website, and reporting the state of the system to the company.

## 1.2 Intended Audience and Reading Suggestions

The users of this system will be:

1. Admin
2. Customer (User)

**Admin:** Super-User of the System

**Customer:** Sub- User of the System

## 1.3 Project Scope

Car Rental Management System is developed to provide the user an easier method to rent a car in according to their preferences. This system is very much useful to save the time of the user and also easy to analyse the car's availability. The data used by the system is stored in a database that will be the centre of all information held about cars and users. This enables things to be simplified and considerably quickened, making the jobs of the people involved easier. It supports the current process but centralizes it and makes it possible for decisions to be made earlier and easier way.

### 1.3.1 Goals

The main goal of the system is to automate the process carried out in the company with improved performance. Some of the goals of the system are listed below:

- To ease customer's task whenever they need to rent a car.
- To manage large number of customer details.
- To manage all details of users who booked for a car.
- To manage all information about different cars.
- View all the details of the cars.
- User friendliness.

### 1.3.2 Objectives of the Proposed System

The aim of the proposed system is to address the limitations of the current system. The requirements for the system have been gathered from the defects recorded in the past and also based on the feedback from users of previous metrics tools. Following are the objectives of the proposed system

- Centralized data handling -
- To ease customer's task whenever they need to rent a car.
- Cost cutting
- Operational efficiency

# 2. OVERALL DESCRIPTION

## 2.1 Product Perspective

- The web pages (XHTML/JSP) are present to provide the user interface on customer client side. Communication between customer and server is provided through HTTP/HTTPS protocols.
- The Client Software is to provide the user interface on system user client side and for this TCP/IP protocols are used.
- On the server side web server is EJB and database server is for storing the information.

## 2.2 Product Features

Some of the features are identified for the software. They are listed below:

- View Cars Information's: The user is able to login and can view different types of cars for rental.
- Book a car: The user can book a particular car after registration.
- Pickup and dropoff date,location: User can book the car according to his/her availability by entering the pickup date,location and dropoff date,location etc.
- Report Generation: The system supports generation of reports based on different criteria.

- Record maintenance: The system also must keep track the statistical reports of daily activities of the Car Rental Management System.
- Online Support : The user can contact the admin for any queries.

## 2.3 User Classes and Characteristics

### 2.3.1 User Characteristics

The Customer should have the basic idea to operate the system and should be familiar with the terms like login, register, booking, payment etc. Default Language is English.

### 2.3.2 User Classes

Some of the users identified for this system through use case analysis are listed below:

- Customers
- Administrator

## 2.4 Design and Implementation Constraints

Some of the design and implementation constraints identified are listed below:

- Since Car Rental Management System is a web based application, internet must be established.
- Customer have no rights to edit any data in the system.
- A booking can be rejected if the details provided by the customer found invalid. This system is not support distributed database Facility.
- System is limited to HTTP/HTTPS Protocols.

## 2.5 User Documentation

- A specific document should be prepared for the maintenance of the system and should say the system in easiest way.

## 2.6 Assumptions and Dependencies

- Each user must have a username and password.
- Roles and responsibilities are already established.
- There is only one Administrator and is already created.

# 3. SYSTEM FEATURES

## 3.1 FEASIBILITY STUDIES

Feasibility is an important phase in the software development process it enables the developers to have an assessment of the product being developed. It refers to the feasibility study of the product in terms of outcomes of the product, operational required for implement ting it. Feasibility study should be performed on the basic of various criteria and parameters.

## 3.2 REQUIREMENT ANALYSIS

Requirements Analysis is the process of defining the expectations of the users for an application that is to be built or modified. It involves all the tasks that are conducted to identify the needs of different stakeholders.

### (A) USER (Customer)

- USER LOGIN

Description of feature:

This feature used by the user to login into system. A user must login with his user name and password to the system after registration. If they are invalid, the user not allowed to enter the system.

Functional requirement

- Username and password will be provided after user registration is confirmed.

- Password should be hidden from others while typing it in the field.

- ❖ REGISTER NEW USER

Description of feature:

A new user will have to register in the system by providing essential details in order to view the products in the system. The admin must accept a new user by unblocking him.

Functional requirement

- System must be able to verify and validate information.
- The system must encrypt the password of the customer to provide security.

- ❖ RENT A CAR

Description of feature

After login the user will be redirected to the home page and from here user can see the option to see different categories of car. User can select on their own choice by checking their price, colour, availability etc. After booking confirmation , user will get the bill and can pay using debit or credit card. The finalized bill will be only issued when returning the car.

Functional requirement

- System must ensure that, only a registered customer can rent out a car.

**(B) ADMIN**

- MANAGE USER

  Description of feature

The administrator can view and verify the user.

- MANAGE CARS

  Description of feature

  The administrator can add cars, delete cars, change schedule etc.

- MANAGE BOOKINGS

  Description of feature

  The administrator can view, accept / reject the bookings.

- MANAGE PAYMENTS

  Description of feature

  The administrator can view and verify the payments.

  Functional requirements

  -The system must identify the login of the admin.

  -Admin account should be secured.

## 3.3 SYSTEM DESIGN

### MODULE SPECIFICATION

**Modules:**

**1.Admin**

- Add or delete Cars: Admin can add or delete cars
- View users: Admin can see the users who booked a car.

- View Feedbacks: Admin can view the feedback from the users.
- Manage Bookings: Admin can accept / reject booking , or can schedule the pickup date ,time and location.
- Manage Payments: Admin can verify the payments if it’s valid or invalid.
- View Enquiries : Admin can view enquiries from the users.

**2.User**

- Register: User need to register to get the credentials.
- Login: User can login using credentials.
- View Cars : Users can view different types of car in the home page
- Book a car : User can book a car for rent.
- Send Feedback: User can send their opinion or suggestions from the feedback page.
- Update profile : User can update their profile whenever they needed.
- Enquiries : User may have some queries about something, that can be asked from the enquiry page.

# 4. EXTERNAL INTERFACE REQUIREMENTS

## 4.1 System Interfaces

- Client on Internet: Web Browser, Operating System (any)
- Client on Intranet: Client Software, Web Browser, Operating System (any)
- Web Server: WAS, Operating System (any)
- Data Base Server: DB2, Operating System (any)
- Development End: Eclipse (J2EE, Java, Servlets, JSP), DB2, OS (Windows), Web
- server.

## 4.2 Hardware Interfaces

| **Client Side** | | | |
|---|---|---|---|
| | **Processor** | **RAM** | **Disk Space** |
| **Internet Explore 6.0** | Pentium II at 500 MHz | 64 MB | 1 GB |
| **Server Side** | | | |
| **Web sphere application server V5.0** | Pentium III at 1 GHz | 512 MB | 2 GB |
| **DB2 V8.1** | Pentium III at 1 GHz | 512 MB | 1GB(Excluding data size) |

## 4.3 Communication Interface

- Client on Internet will be using HTTP/HTTPS Protocol.
- Client on intranet will be using TCP/IP protocol.

### 4.4 User Interface

- The user interface for this system will have to be simple and clear. . The user should be able to easily enter and exit the mode with little or no effort. The color scheme should be appropriate and there should be no contrast issues. It is important to provide indicators consistently so that the user know about the doing work.

## 5. OTHER NON FUNCTIONAL REQUIREMENTS

### 5.1 Performance Requirements

Some Performance requirements identified is listed below:

- The software shall support use of multiple users at a time.

There are no other specific performance requirements that will affect development.

### 5.2 Security Requirements

Some of the factors that are identified to protect the software from accidental or malicious access, use, modification, destruction, or disclosure are described below. Specific requirements in this area could include the need to:

- Utilize certain cryptographic techniques
- Keep specific log or history data sets
- Assign certain functions to different modules
- Restrict communications between some areas of the program

### 5.3 Portability Requirements

Some of the attributes of software that relate to the ease of porting the software to other host machines and/or operating systems. This may include:

- Java is used to develop the product. So it is easiest to port the software in any environment.

## 5.4 Maintainability Requirements

The user will be able to reset all options and all stored user variables to default settings.

## 5.5 Reliability Requirements

Some of the attributes identified for the reliability is listed below:

- All data storage for user variables will be committed to the database at the time of entry.
- Data corruption is prevented by applying the possible backup procedures and techniques.

## 5.6 Usability Requirements

Some of the usability requirements identified for this system are listed below:

- A logical interface is essential to an easy to use system, speeding up common tasks.
- Error prevention is integral to the system and is provided in a number of formats from sanity checks to limiting free-text input.

## 5.7 Availability Requirements

- All cached data will be rebuilt during every startup. There is no recovery of user data if it is lost.