# Software Requirements Specification

# For

# Car Rental Management System

**Eclipse IDE 2020-03**

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# 1. INTRODUCTION

Transport facility is a headache for those people who do not have any personal transport. On occasions like weddings, Vacations, house shifting, and tours and in many other situations they feel the necessity of a vehicle to sort out the problems. Therefore, people come to car renting places like Prasanna car renting company to get vehicles for rent.

So, it's not an easy task to manage this car renting company. If it is possible to design or develop a software system for availing the processes of this car renting company, then it will be beneficial for both customer and company staff.

Therefore, it’s proposed to create a new computer-based car rental system which facilitates company by managing car renting processes efficiently.

## 1.1 Purpose

The purpose of this document is to build a computer-based system to manage car renting bookings, customers and vehicles to ease the managing and decision making for a car renting company.

## 1.2 Intended Audience

This project is a prototype for the car rental management system. This has been implemented under the guidance of my project supervisor. This project is useful for the company management team and as well as to the customers.

## 1.3 Project Scope

The purpose of the car renting management system is to create a convenient and easy-to-use application for company staff to manage renting of vehicles. The system is based on a relational database with its order management and vehicle reservation functions. We will have a database server which has a storage capacity of 50GB. In a case if it’s not sufficient we can extend the storage capacity of the database server according to the situation. Above all, we hope to provide a comfortable user experience along with the best pricing available

## 1.4 Definitions, Acronyms, Abbreviations

| Term | Description |
|---|---|
| Order / Bookings | Order accepted by the company after taking an advance. |
| Customer | Person who takes vehicles for rent. |
| Staff | People employed by the particular organization. |
| Owner | Owner of the vehicle. |
| Driver | Driver is given by the company. |
| Pre-Order | Customers can reserve the vehicle they want by paying an advance. |
| Payment | Process of paying for the meal |
| Surface computer | Build on the table with menu |
| Tablet | Wireless mobile computer provided for customers, waiters and chef |
| Display | Touch screen to provide menu or order to the customer or waiters and chef |
| Menu | Represent the available menu on the surface computer |
| Server | Backend of the system |
| Pre-processes | System processes done before coming to the computer-based system. |

| Acronym | Description |
|---|---|
| SRS | Software Requirement Specification |
| DBMS | Database Management System |
| GUI | Graphical User Interface |
| LAN | Local Area Network |

Table 1.4 Table of Definitions, Acronyms, Abbreviation

## 1.5 REFERENCES


- www.cse.msu.edu
- www.Scholarworks.gsvu.edu
- www.academia.edu
- www.krazytech.com
- www.emerald.com

# 2. OVERALL DESCRIPTION

## 2.1 Project Perspective

A distributed relational rent a car database system stores and retrieves the following information.

- Order details: It includes the originating flight terminal and destination terminal, along with the stops in between, the number of seats booked/available seats etc.
- Customer details: It includes customer id, name, address and phone number. This information may be used for keeping the records of the customer for any emergency or for any other kind of information.
- Vehicle details: It includes vehicle number, vehicle model, model year, vehicle color, number of passenger seats, chassis number, current mileage, last service mileage.

## 2.2 Project Functions and Features

This software will have following functionalities,

- Car rental management
  Sales officers can record a new order or edit an existing order through the system, so order data will be stored in the database.
- Checking for availability of cars
  The sales officer can check for the availability of the car. using this proposed system. If no any car is available it is the responsibility of the employee to provide alternative option.
- Pop-up notification messages about service level reached cars.
- Issue receipts and invoices for customers.
- Registering customers to the system (customer management).
- Provide sales reports to the executive staff.

## 2.3 Operating Environment

Operating environment for the car rental management system is as listed below

- Eclipse Java IDE 2020-03
- Microsoft windows 10
- MySQL Database
- Wamp Server

## 2.4 Design and Implementation Constraints

- It’s a must to use the recommended software versions.
- This system can be only implemented under minimum hardware requirements given above.
- This system can be only used on desktop pcs and laptops only.
- In any case of system failure, we recommend you to contact us for help.
- Some processes cannot be used using sales officer’s account, those processes can be only used by the admin according to the security reasons.

# 3. SPECIFIC REQUIREMENTS

## 3.1 External Interface Requirements

### 3.1.1 User Interface

The goal is to design the software used for proper management of renting vehicles and automate the current process. The required user types and their special capabilities are as follows,

I. Sales Staff
   - Can record a new order
   - Can edit advance amount, trip end date, receiving balance money and existing order.
   - Can create a new customer, can edit customer details.

II. Administrator (Owner or Higher Management)
   - Can do all the tasks allowed for the sales officer.
   - Can cancel an order.
   - Can delete a customer
   - Can add a new vehicle
   - Can edit a vehicle
   - Can delete a vehicle
   - Can access reports

Our goal is to develop a software that should be easy to use for all types of users. Thus, while designing the software one can assume that each user type has the following common knowledge and skills:

I. The user is a computer-literate and has little or no difficulty in using the software keeping in mind the software is user friendly.
II. In order to use software a user must be aware of the internal working and expected to know how things work.
III. All the guidelines about the use of software will be informed to the user once the user signs up on the software.

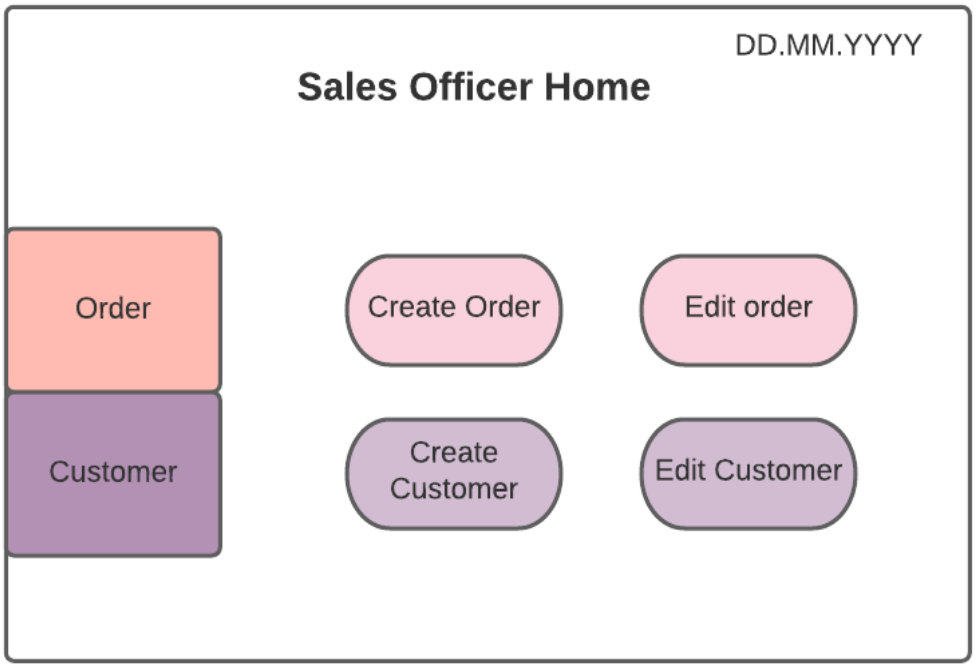



Table 1.4 Required Home Interface for Sales Officer

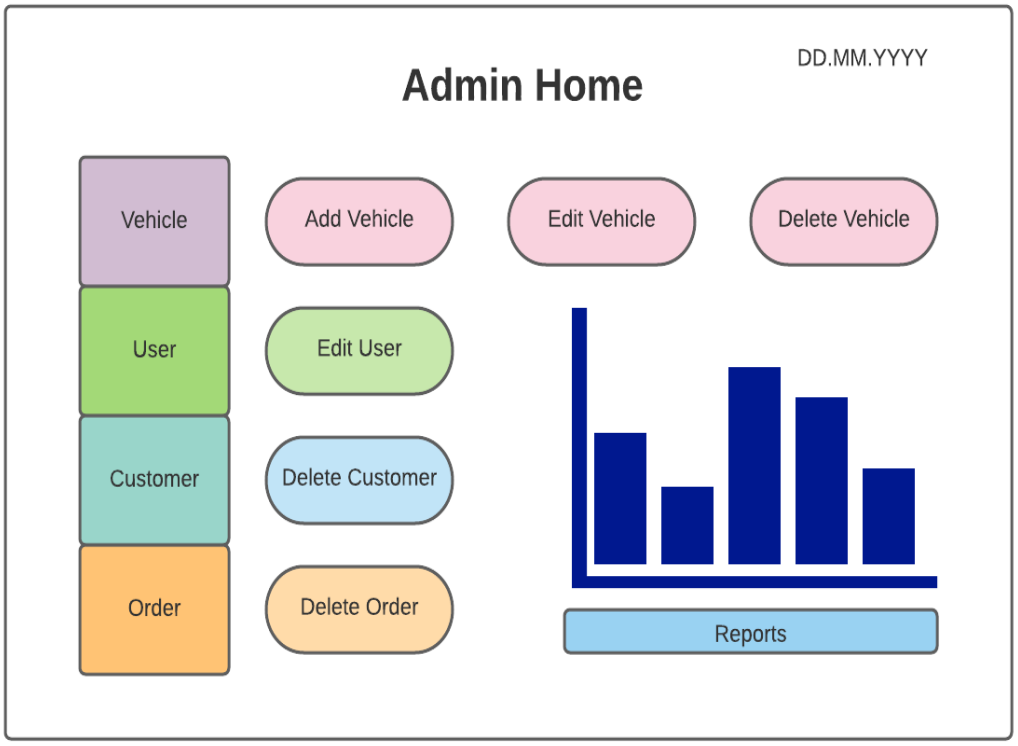



Table 1.4 Required Home Interface for Admin

### 3.1.2 Hardware interface

I. Computer: A computer will be required to use the software.
II. Printer: A printer will be required to print customer invoices.
III. Mouse & Keyboard is required to use as input devices.

### 3.1.3 Software interface

I. A SQL Database Server will be required to store and retrieve data.
II. JDK should be installed on the host computer.
III. MySQL Connector for java should be installed on the host computer.

## 3.2Functional Requirement

The below use case diagrams show the detail description of interaction between the actors and their use cases. (Complete process including pre-processes).


Figure 3.2 Use Case Diagram of the Vehicle reservation Process

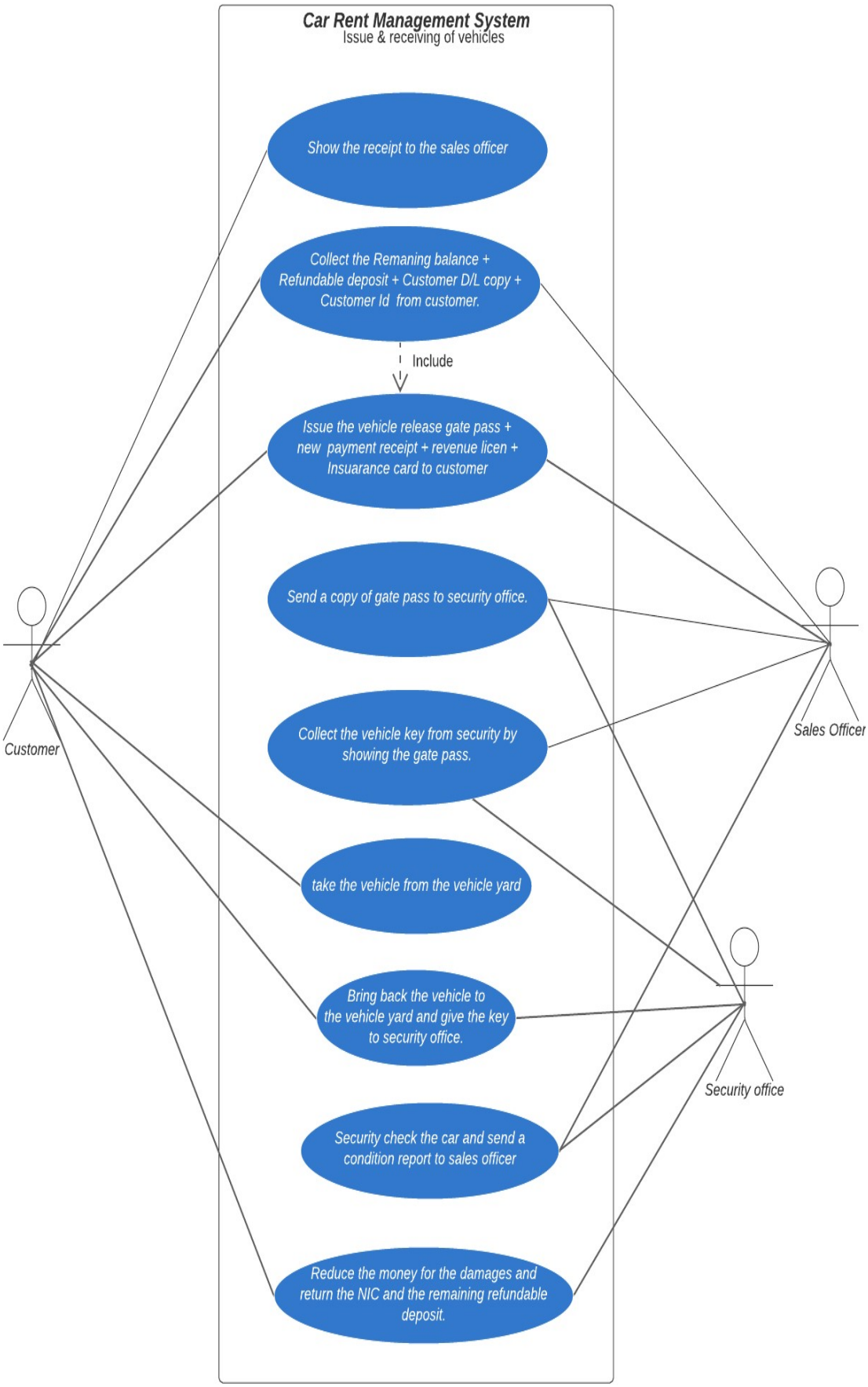



Figure 3.2 Use Case Diagram of Issue and Receiving of Vehicles

### 3.3 Non-Functional Requirements

| | |
|---|---|
| Safety | The system allows restoring data and information itself. |
| | The system allows the display menu at all times. |
| Security | System user passwords should be stored in an encrypted format. |
| | The password of the user accounts should be changed 4 times per year. |
| Performances | The system should be able to run with minimum PC requirements. |
| Availability | The system should be available at any time of the day. |
| Adaptability | The system should be able to start and close at any time in the day. |
| | The system should be compatible with different screen sizes. |
| Usability | The system should be very user friendly. |
| | The system should be very fast. |

Table 3.3 Non-Functional Requirements

### 3.4 Database Requirements

| | |
|---|---|
| User | This table is required to store details of system users. |
| Order | This table is required to store customer orders. |
| Customer | This table is required to store details of the customer. |
| Vehicle | This table is required to store details of the vehicles that are given for rent. |

Table 3.4 Database Requirements for car rental management system.

# 4. ANALYSIS MODEL

## 4.1 Sequence Diagram

The following sequence diagram show the flow of messages from one object to another, and as such correspond to the methods and events supported by sales officer. (excluding pre-processes).

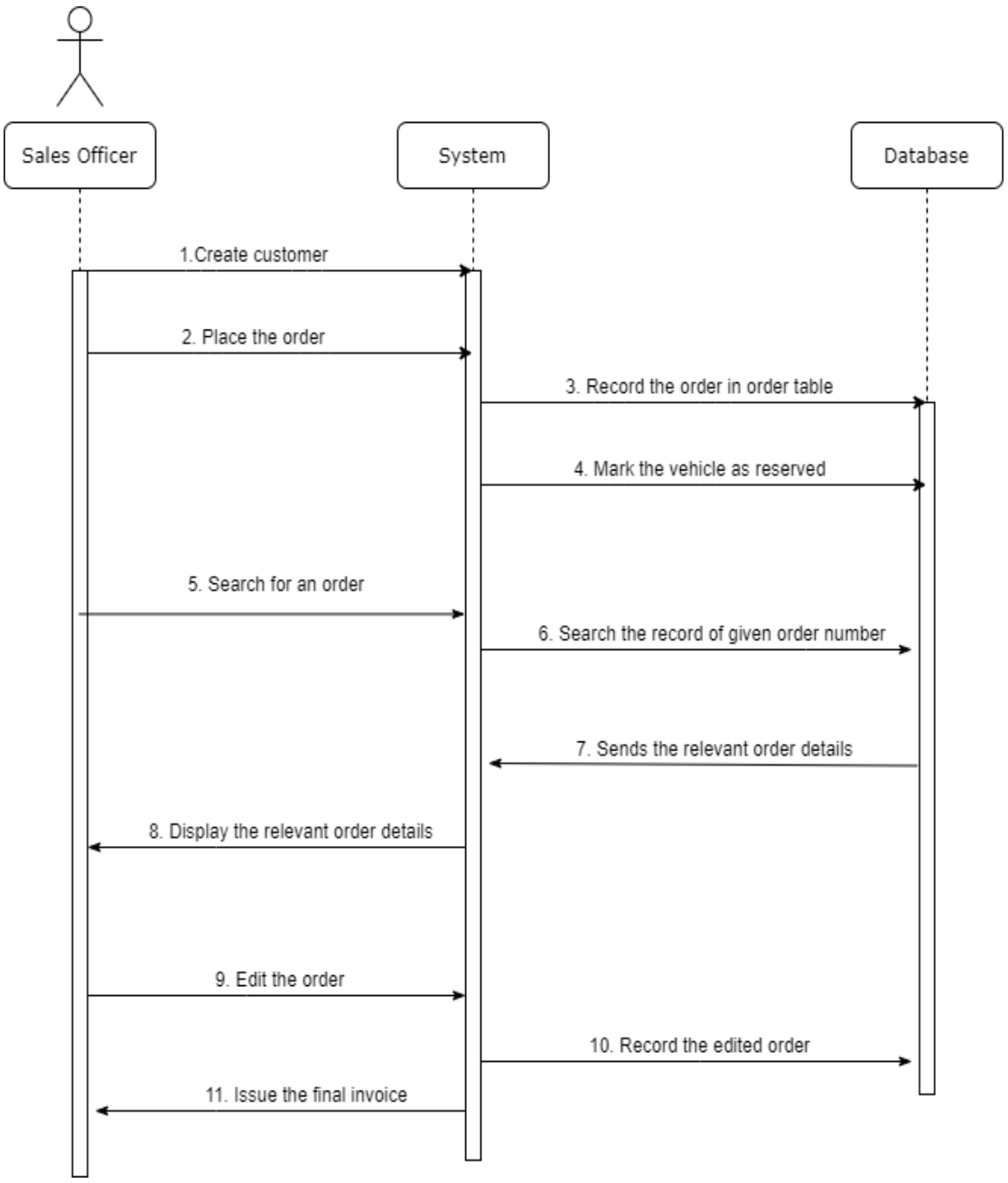



Figure 4.1 Sequence Diagram for car rental management system

## 4.2 Class Diagram

Following is the data Class diagram for proposed car rental management system.

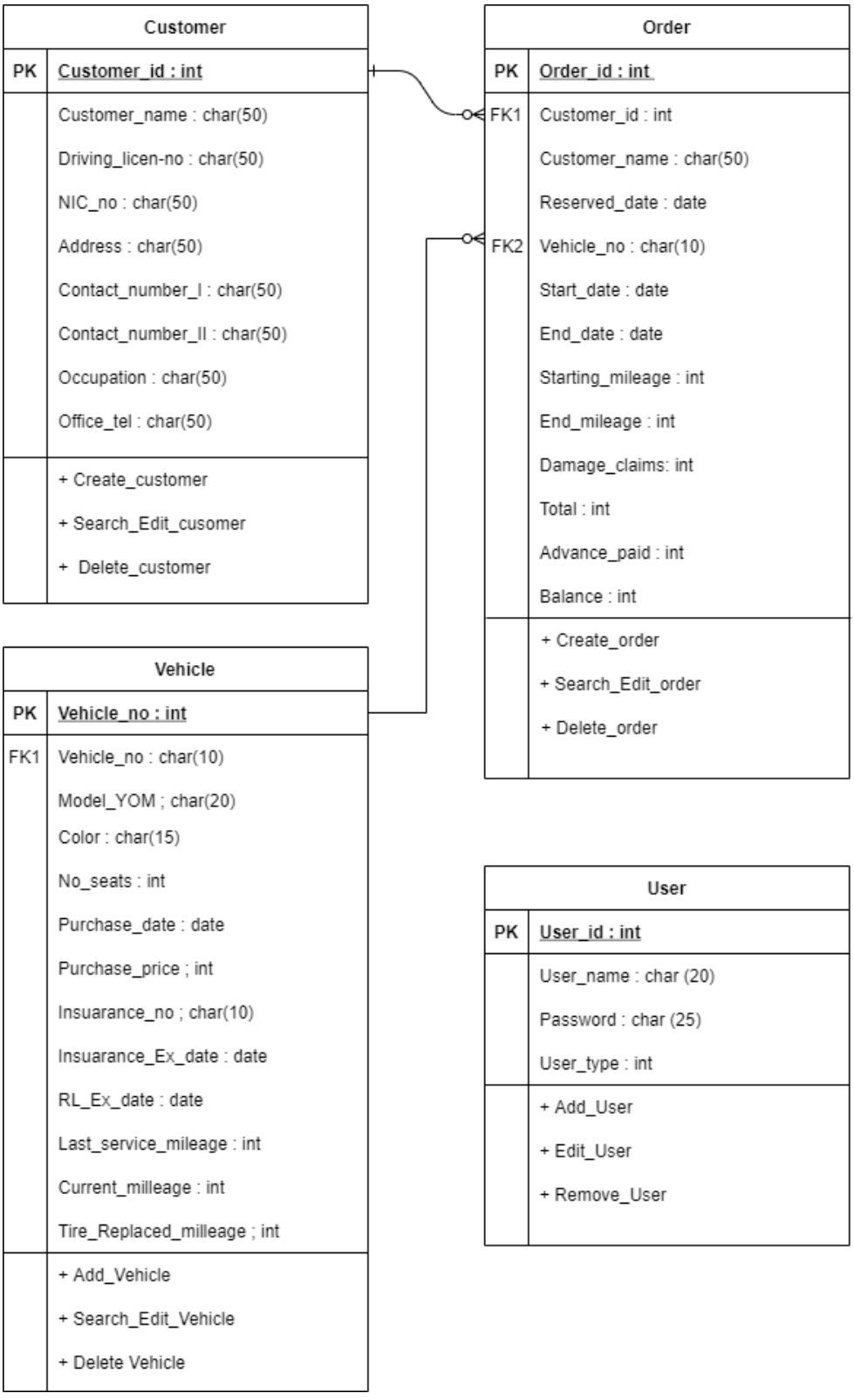
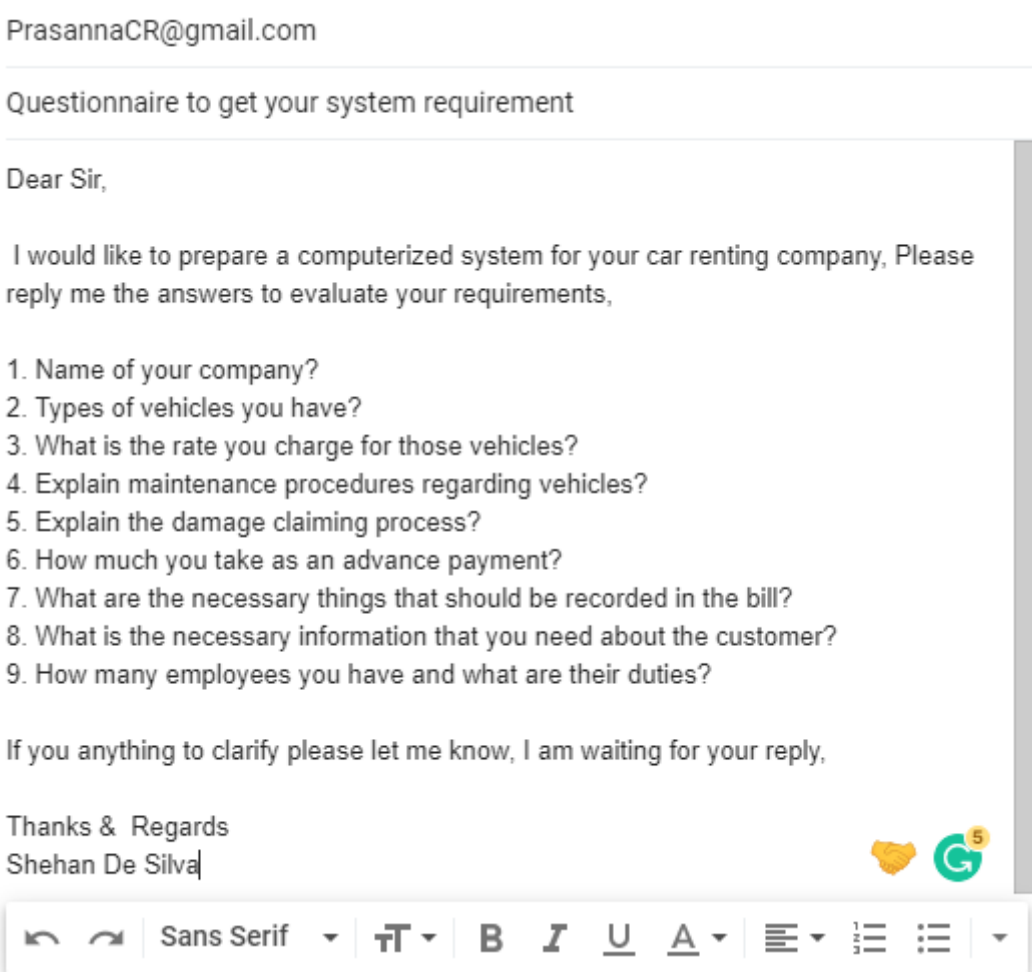



Figure 4.2 ER Diagram for car rental management system.

# 5. APPENDICES

This is a transcript of the e-mail requesting company owner's ideas & requirements.



PrasannaCR@gmail.com

Questionnaire to get your system requirement

Dear Sir,

I would like to prepare a computerized system for your car renting company, Please reply me the answers to evaluate your requirements,

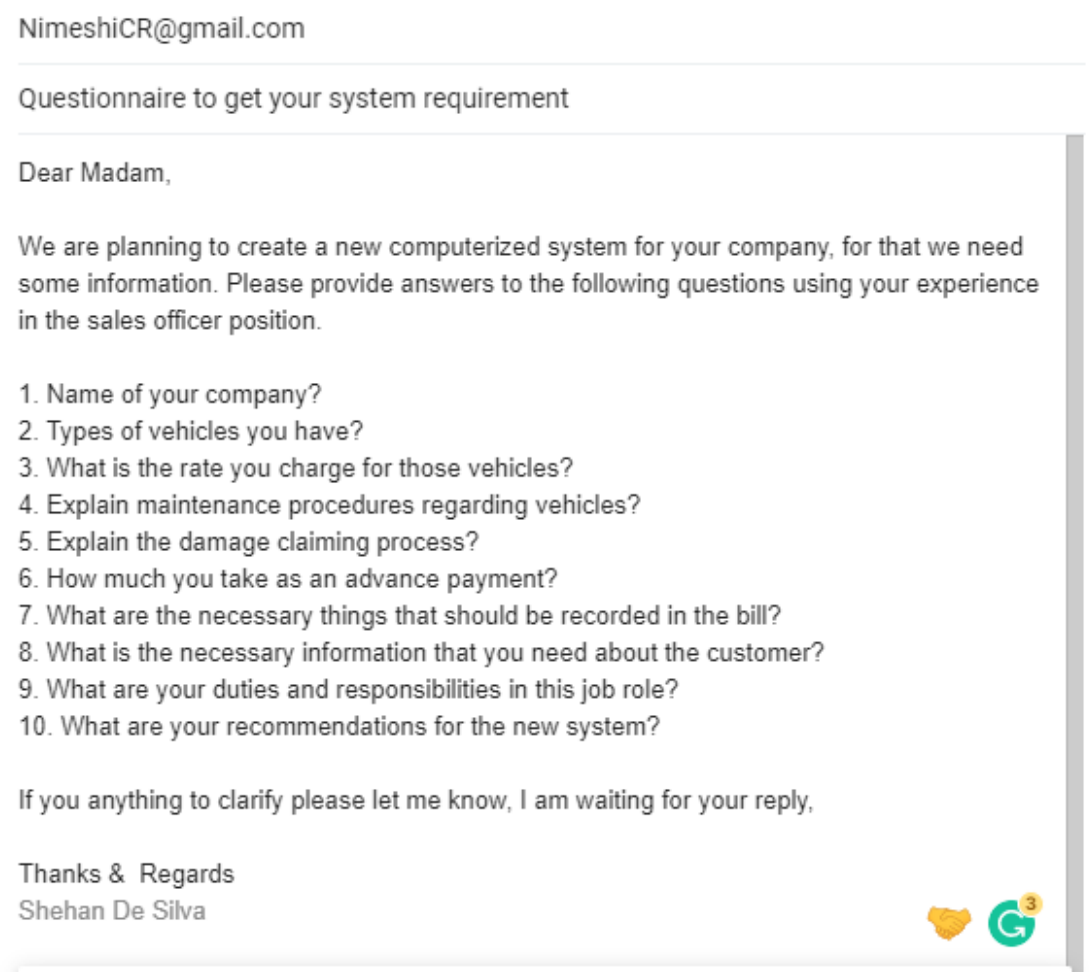
1. Name of your company?
2. Types of vehicles you have?
3. What is the rate you charge for those vehicles?
4. Explain maintenance procedures regarding vehicles?
5. Explain the damage claiming process?
6. How much you take as an advance payment?
7. What are the necessary things that should be recorded in the bill?
8. What is the necessary information that you need about the customer?
9. How many employees you have and what are their duties?

If you anything to clarify please let me know, I am waiting for your reply,

Thanks & Regards
Shehan De Silva

Sans Serif

This is a transcript of the e-mail requesting company sales officer's ideas & requirements.



NimeshiCR@gmail.com

Questionnaire to get your system requirement

Dear Madam,

We are planning to create a new computerized system for your company, for that we need some information. Please provide answers to the following questions using your experience in the sales officer position.

1. Name of your company?
2. Types of vehicles you have?
3. What is the rate you charge for those vehicles?
4. Explain maintenance procedures regarding vehicles?
5. Explain the damage claiming process?
6. How much you take as an advance payment?
7. What are the necessary things that should be recorded in the bill?
8. What is the necessary information that you need about the customer?
9. What are your duties and responsibilities in this job role?
10. What are your recommendations for the new system?

If you anything to clarify please let me know, I am waiting for your reply,

Thanks & Regards
Shehan De Silva

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