SOFTWARE REQUIREMENTS SPECIFICATION

For

Car Rental System

Prepared by:-

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1. Introduction

1.1 Purpose

The main objective of this document is to illustrate the requirements of the project Car Rental System. The document gives the detailed description of the both functional and non-functional requirements proposed by the client. The purpose of this project is to provide a friendly environment to maintain the details of the car. The main purpose of this project is to maintain easy rental system using websites and to provide different reports. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

1.2 Document Conventions

- Entire document should be justified.
- Convention for Main title
  - Font face: Times New Roman
  - Font style: Bold
  - Font Size: 14
- Convention for Sub title
  - Font face: Times New Roman
  - Font style: Bold
  - Font Size: 12
- Convention for body
  - Font face: Times New Roman
  - Font Size: 12

1.3 Scope of Development Project

Car Rental System is basically updating the inventory database into an internet-based application so that the users can know the details of the cars, availability and maximum days of rental.

The project is specifically designed for incorporating various features and functionalities to meet the diverse needs of customers and businesses. The user can login to the system and check for availability of cars. The user specifies type of car and journey date and time. All the data regarding the rented cars are stored in MYSQL database.

The project can be easily implemented under various situations. We can add new features as and when we require, making reusability possible as there is flexibility in all the modules.
The language used for developing the project is Java as it is quite advantageous than other languages in terms of performance, tools available, cross platform compatibility, libraries, cost (freely available), and development process.

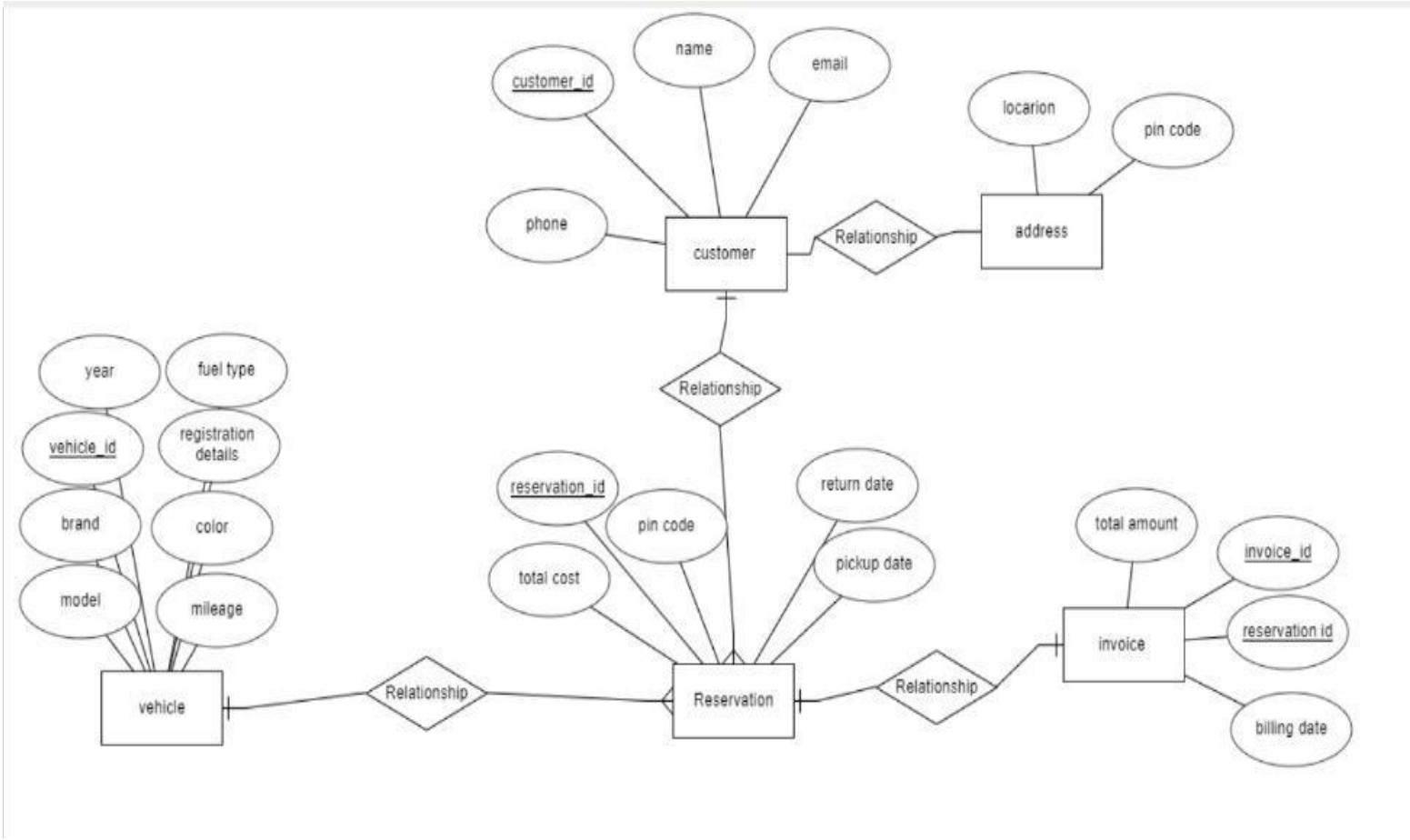
1.4 Definitions, Acronyms and Abbreviations

JAVA -> platform independence
SQL-> Structured query Language
ER-> Entity Relationship
UML -> Unified Modeling Language
IDE-> Integrated Development Environment
SRS-> Software Requirement Specification

1. Overall Descriptions

1.1 Product Function

Entity Relationship Diagram of Car Rental System



1.1 User Classes and Characteristics

The system provides different types of services based on the type of users[car provider, car renter].The car provider will provide all the necessary detail about the car that is to be rented using their login credentials. The customer who wants to book a car will act as their interface.

The Characteristic of Car Owners are:-

- Individual who own private cars
- Willing to rent out their cars for a specified period
- Can register and list their cars on the platform
- Can specify rental terms, pricing and availability.

The Characteristic of Customer are:-

- Individual looking to rent cars for personal use
- Can search for available cars based on various criteria
- Can view details, including model, condition and pricing
- Can make reservation and complete transaction

1.2 Operating Environment

The product will be operating in windows environment. The Library Management System is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer,Google Chrome,and Mozilla Firefox.Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.
The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

1.3 Assumptions and Dependencies

The assumptions are:-

- The coding should be error free
- The system should be user-friendly so that it is easy to use for the users
- The information of cars such as model , date of last service , condition must be stored in a database which is accessible by the application.
- The system should have more storage capacity and provide fast access to the database
- The system should provide search facility and support quick transactions
- The Car rental system do not have any time constraint.
- Users may access from any computer that has Internet browsing capabilities and an

Internet connection.

- Users must have their correct usernames and passwords to enter into their online accounts and do necessaries.

The dependencies are:-

- The specific hardware and software due to which the product will be run
- On the basis of listing requirements and specification the project will be developed and run
- The end users (admin) should have proper understanding of the product
- The system should have the general report stored
- The information of all the users must be stored in a database that is accessible by the Car rental system
- Any update regarding the car in the inventory is to be recorded to the database and the data entered should be correct

1.4 Requirement

Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.
Operating System: Windows NT, windows 98, Windows XP
Language: Java Runtime Environment, Net beans 7.0.1 (front end)
Database: MS SQL Server (back end)

Hardware Configuration:-

Processor: Pentium(R)Dual-core CPU
Hard Disk: 40GB
RAM: 256 MB or more

1.5 Data Requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. In this project the inputs will be the queries as fired by the users like creating an account for the person who is willing to rent their car, selecting the car based upon the customers requirement such as accommodation, availibility of car on the particular date and time, car model, preference for fuel and payment details.

2. External Interface Requirement

2.1 GUI

The software provides good graphical interface for the user and the administrator can operate on the system, performing the required task such as create, update, viewing the details of the car rental system.

- It allows user to view quick reports booking of a car in particular date and time.

- It provides information about the inventory and select the desired one based upon the criteria.
- The interface must be user-friendly and customizable according to the administrator
- All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined
- The design should be simple and all the different interfaces should follow a standard

Template.

- The user interface should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

Login Interface:-

The login interface is available to the car renter where he/she can create an account based upon the username and password. Once they login he/she can register by giving their certificate of verification and uploading the photos of car which they are interested in giving rent. If login credentials are mismatched an error message arises.

Search:-
The customer who wants to rent the car can select the car from different criteria according to their requirement.

3. System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

- User authentication and validation of members using their unique member ID
- Proper accountability which includes not allowing a member to see other member's account. Only administrator will see and manage all member accounts

4. Other Non-functional Requirements

4.1 Performance Requirement

The system we are going to develop will be used by everyone who wants to travel one place to another and need help for transportation. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the user.

The performance of the system should be fast and accurate

- Car rental System shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period. Thus it should have inbuilt error testing to identify invalid username/password
- The system should be able to handle large amount of data. Thus it should accommodate certain number of cars and users without any fault.

4.2 Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

4.3 Security Requirement

4.3.1 System will use secured database

4.3.2 Normal users can just read information but they cannot edit or modify anything except their personal and some other information.

4.3.3 System will have different types of users and every user has access constraints

4.3.4 Proper user authentication should be provided

4.3.5 No one should be able to hack users' password

4.3.6 There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

4.4 Requirement attributes

4.4.1 There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes

4.4.2 The project should be open source

4.4.3 The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database

4.4.4 The user be able to easily download and install the system

4.5 Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

4.6 User Requirement

The users of the system are car renters and car providers. The members are assumed to have basic knowledge of computers and internet browsing. The administrators of the system should have more knowledge of the internals of the system and can rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.
The admin provides certain facilities to the users in the form of:-

4.6.1 Backup and Recovery

4.6.2 Forgot Password

4.6.3 Data migration i.e. whenever user registers for the first time then the data is stored in the server

4.6.4 Data replication i.e. if the data is lost in one branch, it is still stored with the server

4.6.5 Auto Recovery i.e. frequently auto saving the information

4.6.6 Maintaining files i.e. File Organization

4.6.7 The server must be maintained regularly and it has to be updated from time to time

5 Other Requirements

5.2 Data and Category Requirement

There are different categories of users namely car providers and car renters. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, delete, append, etc. All other users except the admin have the right to retrieve the information about the database. Similarly, there will be different categories of cars available. According to the categories of cars their relevant data should be displayed. The categories and the data related to each category should be coded in a particular format.

Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

5.2.1 Administrator: A login id representing a user with user administration privileges to the software

5.2.2 User: A general login id assigned to most users

5.2.3 Client: Intended users for the software

5.2.4 SQL: Structured Query Language; used to retrieve information from a database

5.2.5 SQL Server: A server used to store data in an organized format

5.2.6 Layer: Represents a section of the project

5.2.7 User Interface Layer: The section of the assignment referring to what the user interacts with directly

5.2.8 Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed

5.2.9 Data Storage Layer: The section of the assignment referring to where all data is recorded

5.2.10 Use Case: A broad level diagram of the project showing a basic overview

5.2.11 Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system's cases, their attributes, and the relationships between the classes

5.2.12 Interface: Something used to communicate across different mediums