SOFTWARE REQUIREMENTS SPECIFICATION

For

Car Rental System

Prepared by:

ROHIT .K.S
RAJESH KUMAR .M
SAKTHI VIGNESH .S

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 cars and users. The main purposeof this project is to maintain easy circulation system using computers 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

Customers will be able to reserve their vehicles from anywhere in the world due to the Car Rental System. Consumers provide information to this application by filling in their personal information. When a consumer creates an account on the website, he or she can reserve a car. The proposed system is an online system that is fully integrated. It effectively and efficiently automates manual procedures. Customers are aided by this automated method, which allows them to fill in the specifics according to their needs. It contains information on the sort of car they want to hire as well as the location. The goal of this system is to create a website where customers can book their automobiles and request services from anywhere in the world.

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

1.5 References

- Websites
  - **http://www.slideshare.net/**
  - **http://www.researchgate.net/**

2. Overall Descriptions

2.1 Product Perspective

Use Case Diagram of Car Rental System

system.The users of the system can request issue/renew/return of books for which they would have to follow certain criteria.

2.2 Product Function

Entity Relationship Diagram of Car Rental System

The Online Car Rental System provides online real time information about the books available in the Car and the user information. The main purpose of this project is to reduce the manual work. This software is capable of managing Book Issues, Returns, Calculating/Managing Fine, Generating various Reports for Record-Keeping according to end user requirements. The Librarian will act as the administrator to control members and manage books. The member's status of issue/return is maintained in the Car database. The member's details can be fetched by the librarian from the database as and when required. The valid members are also allowed to view their account information.

2.3 User Classes and Characteristics

2.4 Operating Environment

The product will be operating in windows environment. The Car Rental System is a Desktop Application . The requirement is windows 7 & Later .To use this application would be the internet connection.

The hardware configuration include Hard Disk: 4 GB, Monitor: 13" Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

2.5 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 all Users, Car and Rental price must be stored in a database that isaccessible by the website
- 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 System is running 24 hours a day
- Users must have their correct usernames and passwords to enter into their online accounts and do actions

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 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 System
- Any update regarding the Car is to be recorded to the database and the data entered should be correct

2.6 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 CPUHard Disk:

40GB

RAM: 256 MB or more

2.7 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 create an account, selecting cars and booking. Now the output will be visible when the user requests the server to get details of their account in the form of time, date and which cars are currently available.

3. External Interface Requirement

3.1 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 car.

- It allows user to view quick reports like cars booked in between particular time.
- The user interface must be customizable by 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:-
In case the user is not yet registered, he can enter the details and register to create his account. Once his account is created he can 'Login' which asks the user to type his username and password. If the user entered either his username or password incorrectly then an error message appears.

Search:-
The user can enter the type of car he is looking for , then he can search for the required car by entering the model name.

Admin's Control Panel :-
This control panel will allow Admin to add/remove users; add, edit, or remove a resource. And manage lending options.

4. 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 user ID
- Proper monitoring by the administrator which includes updating account status, showing a popup if the user attempts to book number of cars that exceed the limit provided by the Car policy, assigning extra chargers to users who delay the time of return
- Proper accountability which includes not allowing a user to see other user's account. Only administrator will see and manage all user accounts

5. Other Non-functional Requirements

5.1 Performance Requirement

The proposed system that we are going to develop will be used as the Chief performance system within the different Branches of the Organization which interacts with the Users. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the organization.

- 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 high number of bookings and users without any fault

5.2 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.

5.3 Security Requirement

- System will use secured database
- Normal users can just read information and perform bookings but they cannot edit or modify anything except their personal and some other related information.

- System will have different types of users and every user has access constraints
- Proper user authentication should be provided
- No one should be able to hack user's password
- 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.

5.4 Requirement attributes

- There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the users cannot do changes
- The project should be open source
- 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
- The user be able to easily download and install the application

5.5 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.

5.6 User Requirement

The users of the system are customers and Administrators of the organization who act as administrator to maintain the system. The customers are assumed to have basic knowledge of the computers and internet browsing. The administrators of the system should have more knowledge of the internals of the system and is able to 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:-

- Backup and Recovery
- Forgot Password
- Data migration i.e. whenever user registers for the first time then the data is stored in the server
- Data replication i.e. if the data is lost in one branch, it is still stored with the server
- Auto Recovery i.e. frequently auto saving the information
- Maintaining files i.e. File Organization
- The server must be maintained regularly and it has to be updated from time to time

6. Other Requirements

6.1 Data and Category Requirement

There are two categories of users namely customers and Admin. 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 only have the rights to retrieve the information about database. Similarly there will be different types of cars available. According to the type of the car their relevant data should be displayed.

6.2 Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Books, Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; L: Car , Librarian; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance,Perspective,Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

6.3 Glossary

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

- Administrator: A login id representing a user with user administration privileges to the software
- User: A general login id assigned to most users
- Client: Intended users for the software
- SQL: Structured Query Language; used to retrieve information from a database
- SQL Server: A server used to store data in an organized format
- Layer: Represents a section of the project
- User Interface Layer: The section of the assignment referring to what the user interacts with directly
- Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
- Data Storage Layer: The section of the assignment referring to where all data is recorded
- Use Case: A broad level diagram of the project showing a basic overview
- 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
- Interface: Something used to communicate across different mediums
- Unique Key: Used to differentiate entries in a database

6.4 Class Diagram