Software Requirements Specification

for

Hi Drive(A driver hiring web-app)

Version 3.0 approved

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Revision History

work	Date		Version
Readed research paper and build different interfaces	11/11/22		1.0
Build 1st basic model	29/12/22		1.0
Build static website	03/01/23		1.5
Developed frontend	20/01/23		2.0
Build backend	17/02/23		2.5
Generated first model	10/03/23		2.5
Build final product	10/04/23		3.0

1. Introduction

1.1 Purpose

The purpose of this work is to design a system for booking drivers. company with support for web apps.

1.2 Problem Statement

A car rental is a vehicle that may be rented for a price and utilised for a specific length of time. Getting a rental automobile makes it easier for people to travel around when they don't have access to their own vehicle or don't own one at all. A person who needs transportation must call a rental car company and sign a contract. This method improves client retention while also making car and employee management more straightforward

1.3 Intended Audience and Reading Suggestions

Our target or intended audience are the people who owns car but does not know how to drive and wants to hire a driver, this srs contains the information about our this project, the reader is prescribed to read the introduction section first then overall description then system features after that he/she can read the other sections.

1.4 Product Scope

Proposed system tracks the location and speed of car. Also maintains the driver's database and keep track of customers feedback. It gives the conditional offers to the driver as well as customer. Our system will mainly focus on booking driver and providing safety to our customers. It uses google maps, sensor and web services to implement our objectives. Sensors are used to detect the driving patterns of driver in order to evaluate driver's rating.

1.5 References

1) *Sandeep Gupta, Attaullah Buriro⁎, Bruno Crispo, "DriverAuth: Behavioral biometric-based driver authentication mechanism for on-demand ride and ridesharing infrastructure", DISI, University of Trento, Trento, Italy, ICT Express (2018), https://doi.org/10.1016/j.icte.2018.01.010, 24 January 2018.*

2) *Umberto Fugiglando, Emanuele Massaro, Paolo Santi, Sebastiano Milardo, "Driving Behavior Analysis through CAN Bus Data in an Uncontrolled Environment", IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, IEEE, 2018, 15249050*

3) *V. Hemanth Kumar and K. Sentamilselvan, "Customer Satisfaction towards Call Taxi Services A study with reference to Chennai", International Journal of Pure and Applied Mathematics, Volume 119 No. 12 2018, 14919-14928.*

4) *Dr. Ruchi Shukla, Dr. Ashish Chandra & Ms. Himanshi Jain, "OLA VS UBER: The Battle of Dominance", IOSR Journal of Business and Management (IOSR-JBM), VINC'17, 73-78.*

1.6 Product Perspective

Our product is the opposite approach of an app called zoom car which provide car to the customers who know how to drive our product provide the driver who drives the customer's car. It is an innovative approach to provide driver to the customer, the driver can be for one way trip or a round trip or the driver can be permanent driver.

1.7 Product Functions

System architecture shows the overall plan or model of a system consisting of all specifications that gives the system its form and structure i.e. the structural implementation of the system analysis. This application use to find out drivers which are nearest to current geographical location of mobile device. System Architecture There are two applications one for driver and one for customer. The mobile application will communicate with the server through web service calls using JAVA and PHP interface. After calling web service the query parameters will be send to PHP server and after processing of query on PHP server it returns back to mobile application in JSON format. Once a response is received on application side it parses the response and the operation is reflected on user interface. Both the applications are registered with the GCM in order to receive push notification.

1.8 User Classes and Characteristics

We will use certain previously designed system like features and classes used in an application called zoom car. We will also used k nearest neighbour algorithmand gps technology to enhance our application.

1.9 Operating Environment

The product will operate in an android studio and will use KOTLIN as a primary language for this operation other than this our product will also use JAVA and PHP for development phase. Our product will be an android app so the hardware environment of this product will be an android device.

1.10 User Documentation

Their will be an user manual when the customer will install and open our application the first thing he will get is the manual, the manual will be comprised of how to use this application and how to signup for driver as well as for the customers.

1.11 Hardware Interfaces

The hardware interface of our product will be an android simulator, as our product is basically an android application so the hardware interface will be the android mobile phones.

1.12 Software Interfaces

The software interface of our product is an android simulator which will use kotlin and java and php for the software development phase

1.13 Communications Interfaces

The web page of the car rental software must be simple and clean for the user to navigate. The simple layout must have home page features like explicit search bar, location functions, available car categorization, “pickup-drop” search bars and many more. Building an easy layout will aid customers of any demographic to easily navigate and find the content what they want.

1.14 System Features

<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>

1.15 System Feature

System analysis is a thorough examination of a system's different processes and their interrelationships both within and outside the system. The key question here is – why are there so many flaws in the current system? What measures should be taken to address the problem? When a user or management begins a study of the software utilising the current system, analysis begins. Data was collected on numerous files, decision points, and transactions handled by the current system during the analysis. For example Data Flow Diagrams, etc. are widely utilised in the system. For the collection of important information needed to create the system, training, experience, and common sense are necessary. The system's success is primarily determined by how well the problem is identified, fully studied, and appropriately implemented via the selection of a solution. A good analytical model should include not just methods for comprehending the problem, but also the framework for solving it. As a result, it should be extensively investigated by gathering data about the system. The suggested system should next be extensively examined in light of the requirements. System analysis is divided into four sections.

1. Initial research and system architecture.

2. Using analytic tools to do structured analysis.

3. Feasibility study.

4. Analyze the cost and benefits

1.16 . Functional Requirements

Requirement analysis is a software engineering approach that consists of a series of activities that establish the demands or conditions that must be satisfied for a new or updated product while taking into account the potential for competing requirements from different users. Functional requirements are those that are used to demonstrate the system's internal functioning nature, as well as the system's description and explanation of each subsystem. It comprises the task that the system should accomplish, the processes involved, the data that the system should contain, and the user interfaces. The functional requirements discovered are as follows:

1. Customer registration – New users should be able to register online and print membership cards.

2. Car reservation online – Customers should be able to utilise the system to book and reserve automobiles online.

3. Automatic database update once a reservation is made or a new customer is registered – The system should be able to update the database without any further effort from the administrator whenever a new reservation or registration is made

1.17 Non-functional Requirements:

It describes system elements that are concerned with how the system fulfils functional requirements. They are as follows:

1. *Security – Only authorised corporate workers may get access to the firm's secured page on the systems, and only users with proper passwords and usernames can log in to see the users page*

2. *. 2. Performance and Response Time – The system should have a high-performance rate while executing user input and should be able to offer feedback or a response in a short amount of time, often 50 seconds for extremely difficult activities and 20 to 25 seconds for less sophisticated jobs*

3. *. 3. Error handling – Errors should be avoided as much as possible, and a suitable error message should be supplied to help the user through the recovery process. The importance of validating user input cannot be overstated. In addition, the time it takes to recover from a mistake should be between 15 and 20 seconds.*

4. *4. Availability – This system must be accessible at all times, 24 hours a day, seven days a week. In the event of a catastrophic system failure, the system should be back up and running within 1 to 2 business days, ensuring that the business process is not disrupted.*

5. *5. Ease of use – Given the consumers' level of understanding, a basic yet high-quality user interface should be created to make it simple to comprehend and need minimal training.*

1.18 Software Quality Attributes

- *1.Facilitate automated check-in and checkout ...*
- *2.Allow online cancellation ...*
- *3.Should incorporate advanced search filters to ease the booking process ...*
- *4.Should facilitate dynamic pricing; allow comparison ...*
- *5.Driving license, documents verifier and scanner*

1.19 Business Rules

The business rules for a car rental system SRS can vary depending on the company's policies. However, some common business rules for car rental systems include:

1. Only customers with valid ID can rent cars.
2. Only customers with an unexpired driving license are allowed to rent a car.
3. Only customers with the age of 18 or above are allowed to rent a car.

These are just some examples of business rules that can be implemented in a car rental system. The specific business rules for a particular car rental system will depend on the company's policies and requirements.

I hope this helps! Let me know if you have any other questions.

2. Other Requirements

The requirements for a car rental system SRS can vary depending on the company's policies. However, some common requirements for car rental systems include:

1. The system should be able to manage information about cars, customers, and the system users related to the company.
2. The system should be able to provide a complete user interface for car rental.
3. The system should be able to use internet technology to project the rental company to the global world instead of limiting their services to their local domain alone.
4. The system should be able to provide online vehicle reservation tools through which customers can reserve available cars online prior to their expected pick-up date or time.
5. The system should be able to provide customer registration tools.

These are just some examples of requirements that can be implemented in a car rental system. The specific requirements for a particular car rental system will depend on the company's policies and requirements.

Appendix A: Glossary

1.1. Additional Drivers

The only drivers allowed to drive a rental car are the primary driver and those listed on the rental agreement. Car rental companies typically charge a few dollars extra per day for each for additional driver. There are a few other exceptions. In most states, car rental companies must allow your spouse to drive the vehicle. The conditions are that he or she must have a valid license and be at least 18 years of age. If you're renting with a company discount code, coworkers may be able to drive as well.

1.2. Additional Equipment

Based on availability, you may be able to request other items. These include infant and child booster seats or ski racks for a nominal additional fee.

1.3. Additional Rental Charges

If you return the car late, the rental company may charge you an extra day's rental for each 24-hour period following the return time at then current rental rates. Many companies allow a short grace period (typically 29 minutes) to return the vehicle after the return time without a penalty.

1.4. All Wheel Drive (AWD)

Rental car companies tend to lump AWD together with Four Wheel Drive (4WD), resulting a vehicle category that mainly includes SUVs and trucks. There are differences between AWDs and 4WDs. But in a nutshell: AWD can handle bad weather, while 4WD conquers tough terrain. Most renters look for AWD/4WD vehicles if they expect to drive in snow. That's because rental contracts usually do not allow off-roading.

1.5. Arena Center Surcharge

Taxing rental cars to pay for major projects like stadiums or convention centers is a frequent practice. For example, in Kansas City, you'll see a flat $4 fee on your bill to pay for an unoccupied arena in the downtown area.

1.6. Collision Damage Waiver (CDW)

This optional collision cover waives your responsibility to the rental company for damage to the rental vehicle if you have a collision with another vehicle. You may already have coverage through your personal car insurance or credit card benefits. (Typically synonymous with LDW, or Loss Damage Waiver.)

Before renting a car, check with your current car insurance provider to find out if your policy extends to rental vehicles. Also, check with your credit card company to see what protection it offers. Many cards provide automatic insurance coverage when you pay for a rental using that card.

1.7. Concession Recovery Fee (CRF)

Airports charge rental car companies for the privilege of doing business on site, and the rental companies pass this percentage-based fee on to the renter.

1.8. Contract Modification Fee

If the rental car company had to change your contract after you've picked up the car, you may see this fee. For example, if you return your rental car at a time that is earlier or later than what is on your contract, the company may lose revenue as a result.

1.9. Convention Center Surcharge

Taxing rental cars to pay for major civic projects like convention centers is a frequent practice. For example, in Boston, you'll see a flat $10 fee on your bill to pay for the construction and renovation of convention centers in five Massachusetts cities.

1.10. Corporate Discount Program (CDP)

Most rental car companies have partnerships with companies and organizations (e.g., AAA, AARP or Costco) that provide employees and members with lower rates than those offered the general public.

1.11. Customer Facility Charge (CFC)

The airport charges this daily fee and the rental car company collects it to pay for the maintenance of the car rental facility at the airport.

1.12. Diminished Value Fees

Been in an accident in your rental car? You may receive a bill for this charge, which covers the difference in resale value for the rental car before and after the incident. If you purchased the CDW/LDW at the rental counter or through a third-party insurer, you're in the clear. Your personal auto insurance policy may not cover diminished value. Few credit card companies cover this charge, even if you rented the vehicle with their cards.

1.13. Late Return Charge

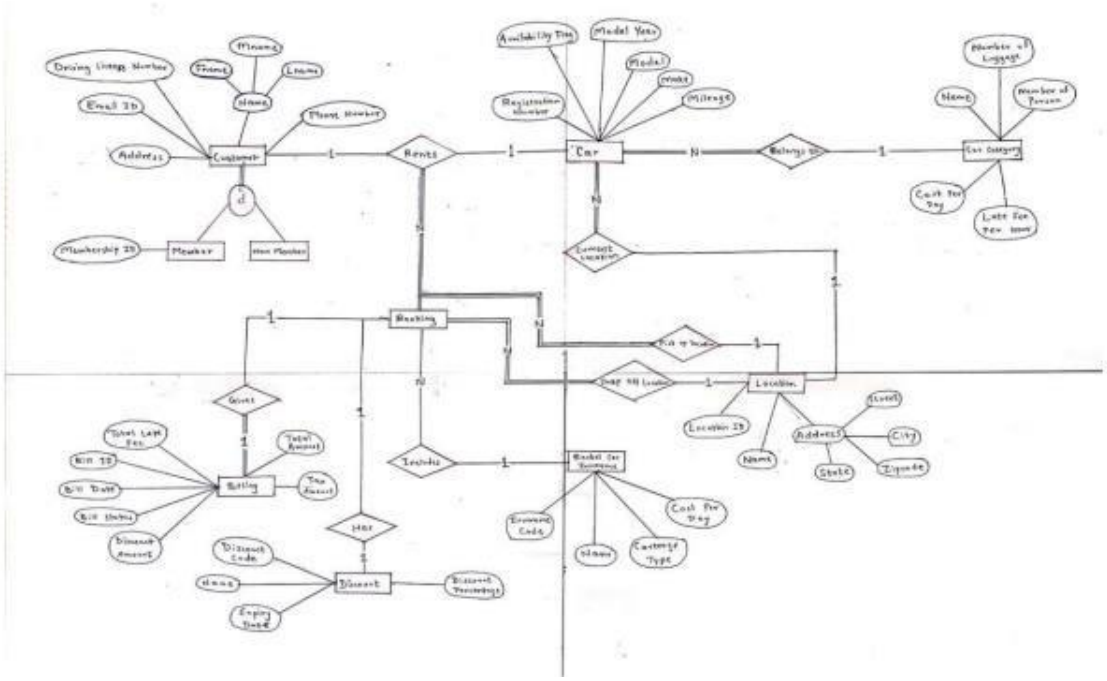
If you return the car late, the rental car company may charge this fee to compensate for any costs it incurs to find an alternate vehicle for the next customer for your rental car.

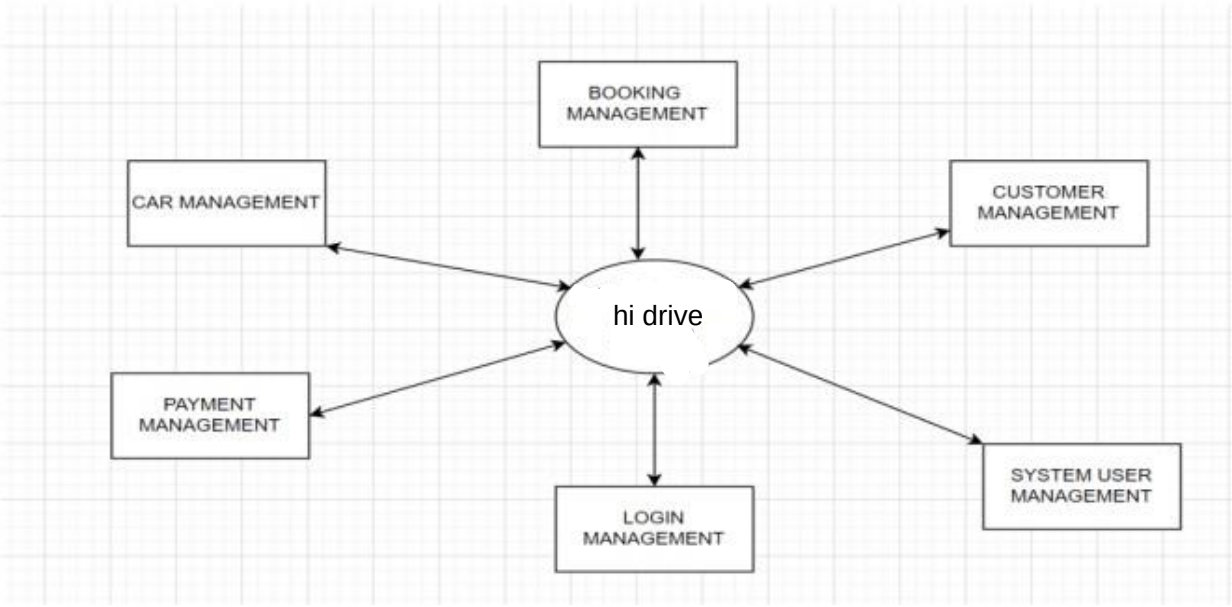
1.14. Loss of Use

Does your rental car need a trip to the auto shop? This fee, which may not be automatically covered by your personal car insurance, replaces the daily income the rental company loses while a damaged car is being repaired. You're automatically covered by your personal car insurance if you live in one of these

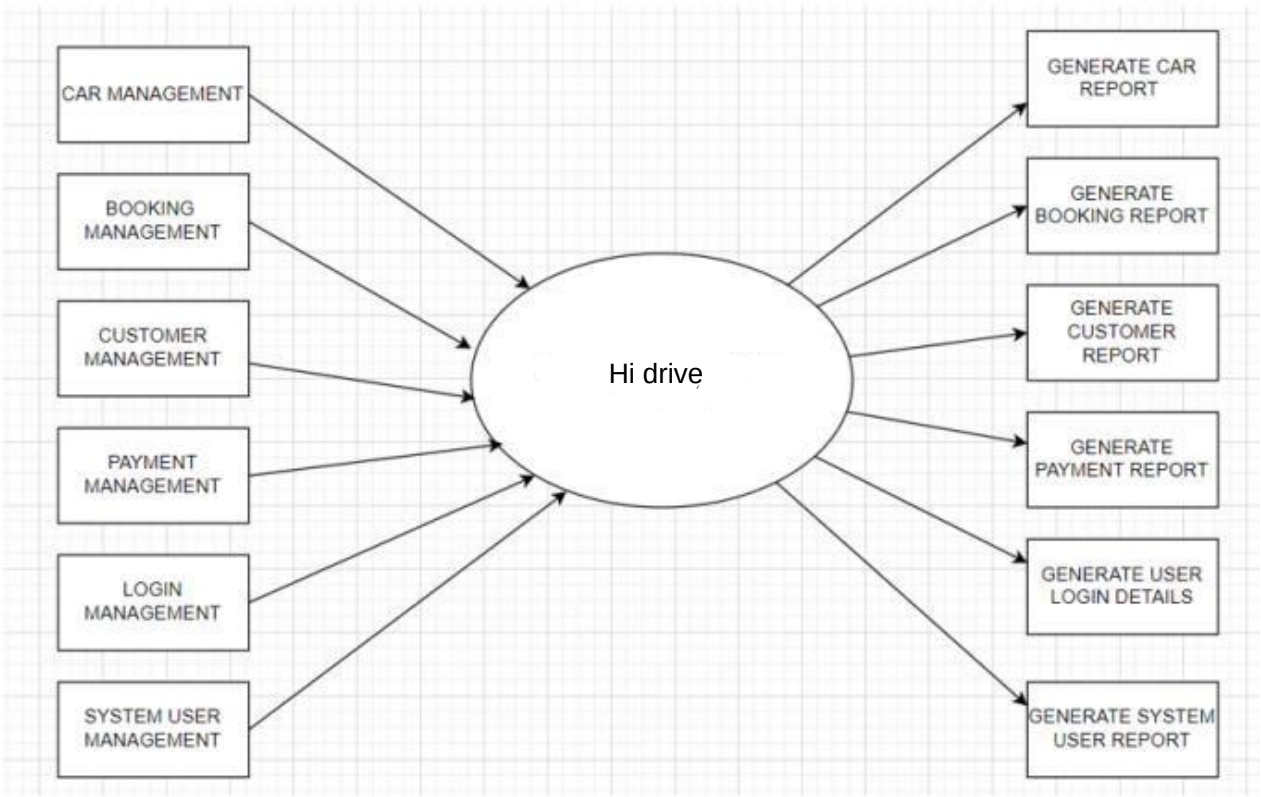
eight states: Alaska, Connecticut, Louisiana, Minnesota, New York, North Dakota, Rhode Island and Texas. Some credit card companies will also cover loss of use if you rented the car with their cards.

Appendix B: Some Realtime Images During Training





0 Level Data Flow Diagram



1 Level Data Flow Diagram