PES UNIVERSITY, BANGALORE

Department of Computer Science and Engineering

Software Requirement specification for Car Pooling system

Version 1.0

Prepared By,

R Karthick Manikandan

N R Ramith

Jyothiraditya S

Adarsh Puranik K

25-08-22

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Table of Contents

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Introduction

Purpose

The purpose of Car pooling system is to provide transportation facility at a lower cost and service at a faster rate without compromising on the disadvantages of the traditional Car pooling system. This includes providing sense of security without hindering with the privacy of the users.

Intended Audience

This document is intended for developers, project managers, marketing staff, testers and documentation writers and clients. The professors who would review the document and finally

The first chapter, that is the Introduction section of the document is intended to introduce the reader to the product and the customer

The Second chapter gives a brief of the product, it's services and it's various functionalities, and the software & design constraints.

The Third chapter gives you an idea of the different user views for the different types of users, the tools used and the protocols for communication.

Chapter Four depicts the model for the desired product.

Chapter Six gives details of the non functional features such as the performance, saftey and security desired for the product.

Product Scope

The software being developed is a web based model view controller system. The product will help the users to easily travel from one place to another quicker and its cost effective. This software would enable its user a safe and secure way to share cars. Our project is going to be a web portal. It is going to provide communication environment for users (drivers and users). Every user has their own profiles and they can have access with given password to the system.

The system will bring many advantages. For instance, the drivers and users spend less money by sharing on vehicles. Moreover, traffic jam and air pollution will be decreased. And everyone benefits from these advantages.

Overall Description

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Product Perspective

Car pooling is helpful for commuting quickly and in a convenient manner for a very low cost. This product replaces the traditional car pooling system in which the privacy of the passengers is compromised from sharing of their information with an unique system which allows for eliminating the disclosure of passenger information with the other car pooler. The increase in privacy does not compromise on the safety of the passengers, this is achieved by using the admin system in which the admin verifies the FIR document submitted by the user.

Product Functionality

The functionalities of desired system are:

- Car pooling System
- Car owner: Pick as many customers as possible within
- Car poolers: Calculating the cost of their commute, Calculating rewards based on the

passenger's journey.

- Document Submission System
- Document Verification System

User Classes and Characteristics

The system will support 3 types of user priveliges:

- Event Manager
- Team Head

- Volunteer
- Employer

The various users that we expect the software to be used by are:

1.	Professional Event managers	Professional Event Managers are individuals with prior experience on organizing events.
2.	Novice Event Manager	Novice Event Manager is a first time event organizer who has been entrusted with the responsibility of organizing an event.
3	Team head	Team head is an individual who is responsible for all the actions undergoing under his/her team of volunteers.
4.	Volunteers	A volunteer refers to the manpower available to the organizer for helping him organize the event.
5.	Employer	Individual who has contacted the event organizer.

Operating Environment

The software will be designed to work on any version of Windows(8.1 and above), Linux (kernel 2.7 and above) and Mac platform. The software is completely web based and runs on popular web browsers namely firefox, chrome, internet explorer (IE8 and above).

Design and Implementation Constraints

We have to design different pages for different types of users such as car driver ,the user and the admin who has the only control of changing the database. In the implementation part we will use tools like React js ,Node js ,MongoDB , Atlas. But, we

have a clear picture as to how our pages would look. The communication protocol will be http. There are a number of tools which can be used for its implementation.

Assumptions and Dependencies

Assumptions

The user is familiar with internet and web based software like social networking sites.

The browsers which the user is using is either Google Chrome 10.0 and above or Mozilla Firefox 4.0 and above.

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External Interface Requirements

User Interfaces

Registration page for the user to sign up themselves with the website.

Login page for the user to enter their credentials to enter into their account.

Activity page for the user to choose whether they want to book/host a ride or issue a complaint for car mates details.

Host page for the car owner who wants to host a ride to enter their route/travel details.

Booking page for the car poolers to upload their travel details.

Journey page for user which shows the distance and time to reach their destination.

Amount page for passenger which displays the total fare for the ride.

Profile page which displays information about the user.

Payment confirmation page for car owner to confirm the payment made by the passenger.

Admin page to allow access of car mates information on users screen.

Website logo, home button, profile , log out button and reward points displayed on all the screens.

Forgot password page for user to find out password.

Available page for user to find available rides.

Sample screenshots:

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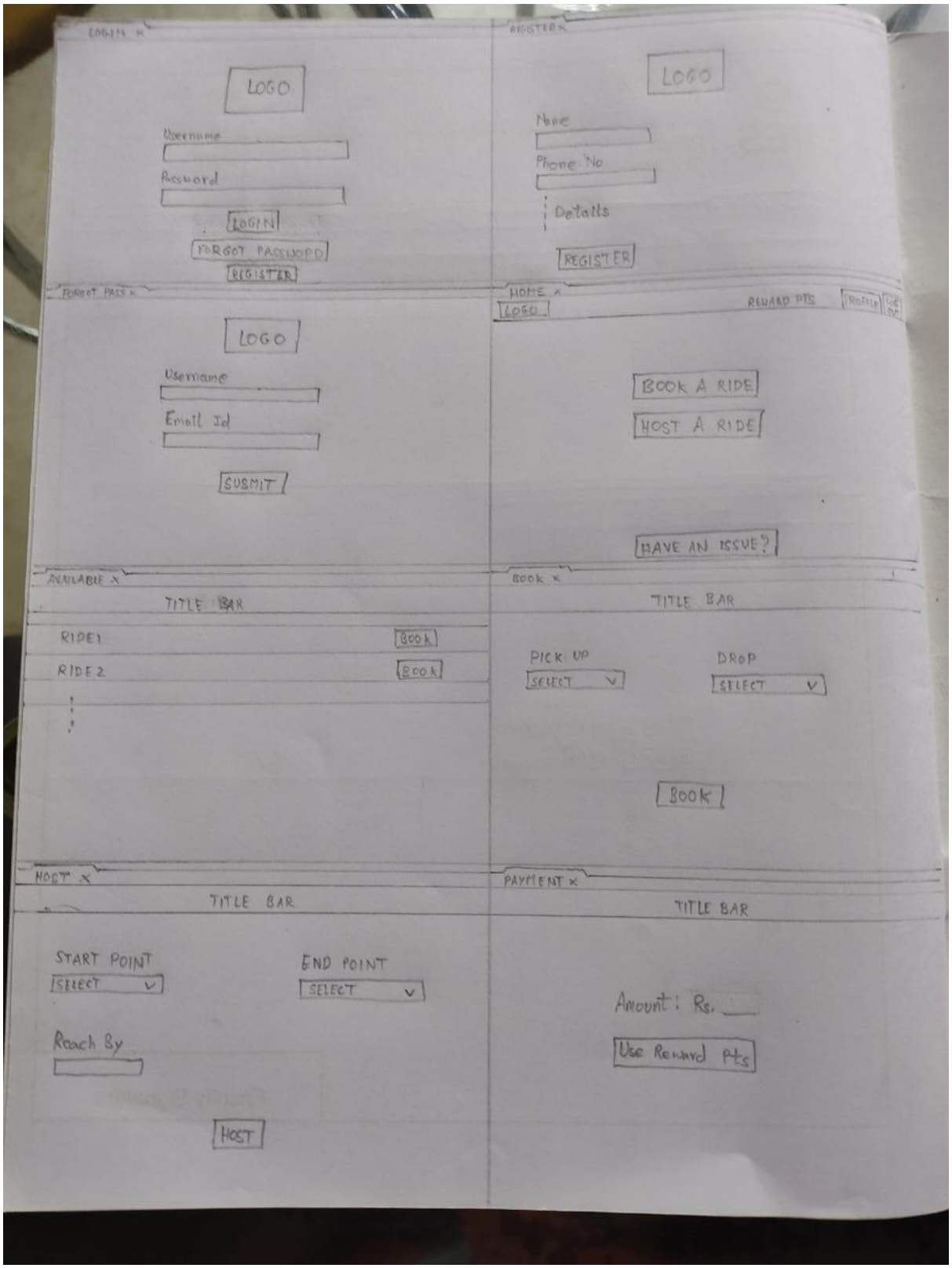

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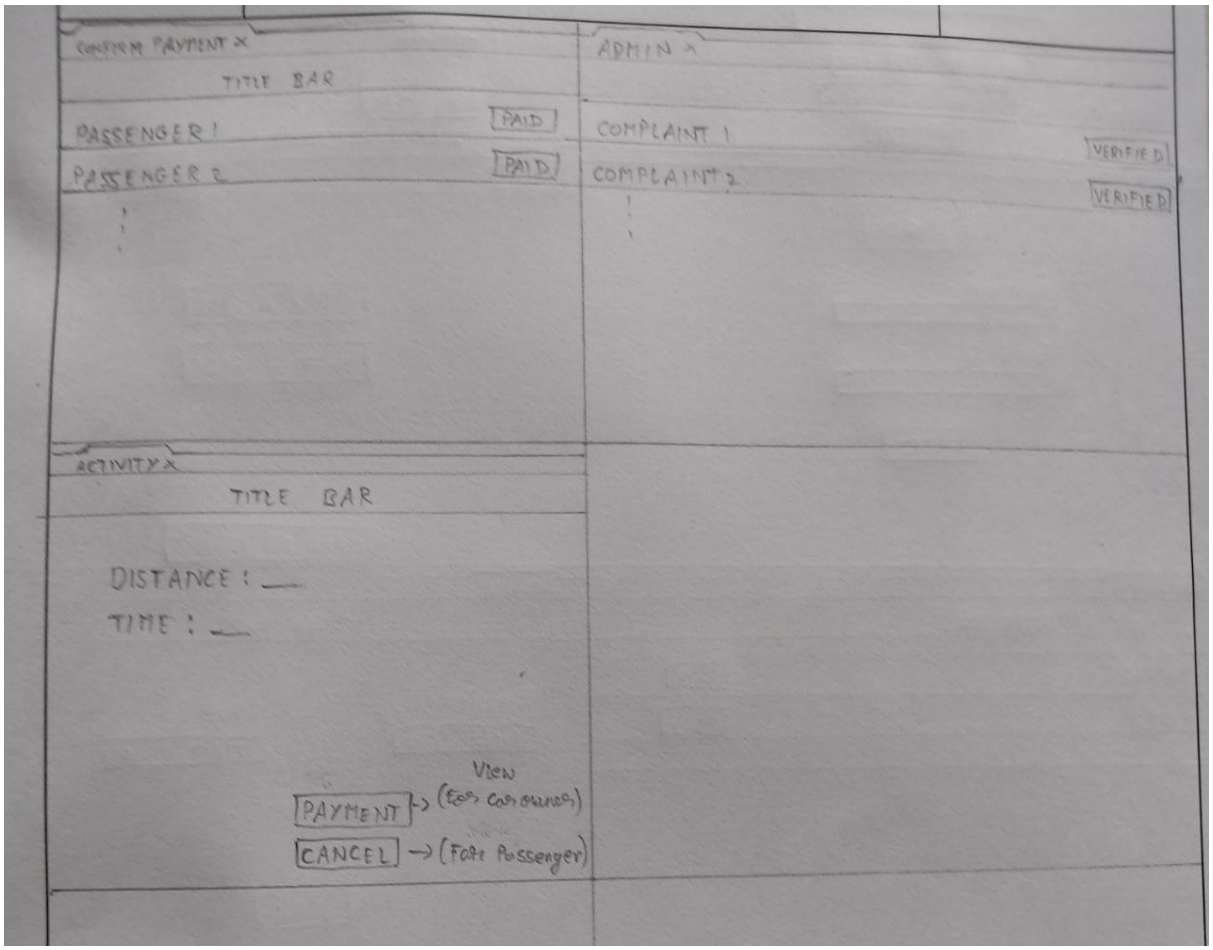


Software Interfaces

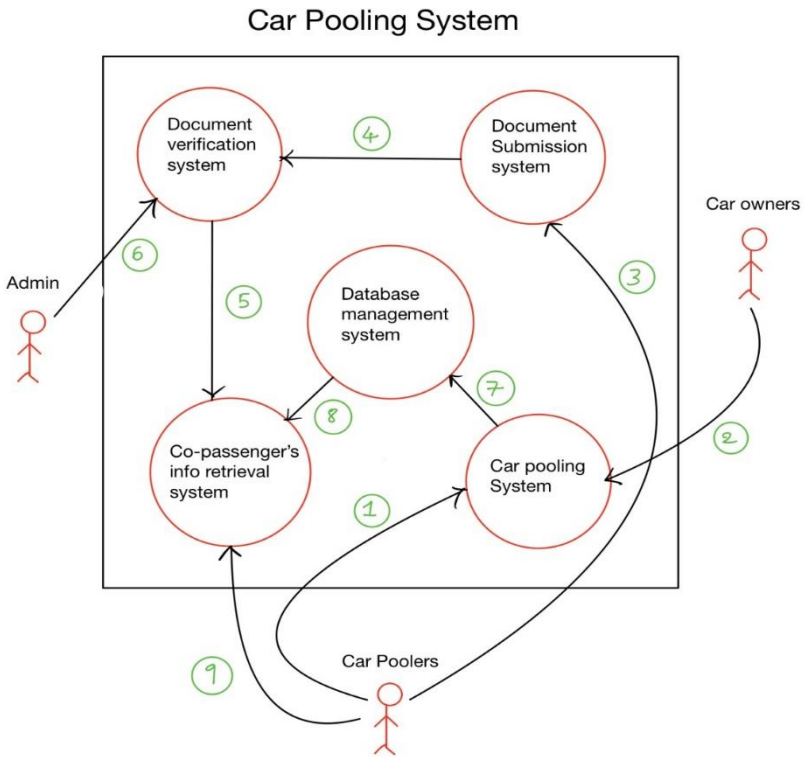
- The system is compatible on all cross platforms
- We will be using React to build the front end of our database.
- We will use MongoDB to manage the database on our server.
- NodeJS will be used to connect to MongoDB.

Communications Interfaces

- HTTP protocol is used for transferring data between the server and the client.

- We will be using HTTP for establishing connection between user and database.
- We will be using NodeJS along with SMTP authentication to send and receive email.

Analysis Models



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1. Car pooler uses car pooling system to book a car and for getting the cost of the travel
2. Car owner uses the car pooling system to scan for passengers and for getting the drop off locations
3. Car pooler uses the document submission system to upload the FIR document
4. The document submission system notifies the verification system that a client has requested for verification of the FIR document.
5. The document verification system tells the co passenger's info retrieval system about the result of the verification
6. Admin will verify the document and submits the result of the verification
7. Car Pooling system submits the info of newly registered users to the database management system
8. When the verification is approved, the co passenger's info retrieval system gets the info of the requested co passenger's info from the database
9. The car pooler can access the info of the co passenger

Other Non-functional Requirements

Performance Requirements

An internet connection is needed for the users using this website and the user interface of the website should be user friendly.

Safety Requirements

If some unauthorized person get access to the site he can damage the site, therefore the system shouldn't allow the user to access, until he provides correct username and password.

Security Requirements

- Only Admin has the access to update and delete the data in the database
- User can only search or host for carpool. He/she should be registered.
- The system shouldn't allow the user to access, until he provides correct username and password.

Software Quality Attributes

- A healthy internet connection having a good speed is to be use to get a better response time.
- This website is available 24X7.
- This website is easy and very flexible so that the user can update the car pools information anytime.

Business Rules

The user who created carpool has complete access over the car pool and on the members joining the carpool.