

A Survey on: Real time Smart Car Pooling and Ride Sharing System using Android Application.

Akshay Raut, Rushikesh Bhosale, Kalpesh Avhad, Mahesh Swati, Somesh Jadhav.

(Students, Department of Information Technology, D.Y.Patil college of Engineering, Akurdi, Pune, Maharashtra, India)

A.S.Gaikwad

(Guide, Department of Information Technology, D.Y.Patil college of Engineering, Akurdi, Pune, Maharashtra, India)

Abstract- Carpooling also commonly known as car-sharing, ride-sharing and lift sharing, is the sharing of car journeys so that more than one person can travel in a car. With the enormous increase in number of vehicles on road, people around the country especially in metro cities have started facing problem now due to increase in traffic which added an hour or so to their daily travelling time. Carpooling is seen as a more environmentally friendly and sustainable way to travel as sharing journeys reduces carbon emissions, traffic congestion on the roads, and the need for parking spaces.

This paper gives a survey of different techniques used by the researchers for carpooling. An abstract view of the proposed system that we are going to implement helps to enable its user a safe and secure way to share cars.

Keywords: Carpooling, Car Sharing, Mobile communication systems, Android, Ride-Sharing, GPS Navigation, Ride-Seeker

I. INTRODUCTION

Population growth and increasing population density, particularly in metropolitan areas, have brought about an increase in the number of vehicles on the roads, by a few percentage points per year. The Carpooling is not a new concept in the field of car sharing. Decades ago during oil crises in Europe, people were encouraged to share their vehicles. Carpooling tries to reduce the cost of journey for travellers who commute to work daily which not only will save their pocket but will also reduce the usage of most important nonrenewable resource we have i.e. fuel, which is declining at rapid pace. Carpooling is commonly implemented for commuting but is increasingly popular for longer one-off journeys, with the formality and regularity of arrangements varying between schemes and journeys.

There is serious problem of traffic on roads these days and the increasing fuel prices making the condition worst. Also use of vehicles causes pollution which has its adverse effects on our environment. Car sharing is a solution to this problem but issues like security and trust can arise. Solution to this problem is mobile based Carpool system. The Carpool system would enable its user a safe and secure way to share cars. This could include both short daily journeys such as going to workplace within the city and also long inter-city trips.

The carpool application is not susceptible because it was not able to fulfil the requirements which are listed below:-

- Cannot be used on other operating systems.
- More Expensive.
- Security issues.

II. LITERATURE REVIEW:

Mayur K. Thorat and Rahul M. Lahakare [1] have given an overview of Carpooling system With SMS alerts emphasizing more on overcoming issues encountered before and how to make it more secure. They gave the idea of using it for both inter-city and intra-city travels. They tried to expand their user base to blind people also who can use speech recognition technique to precisely know the location at any time.

R. Manzini and A. Pareschi [2] have given a decision support system for the application of carpooling system. This will be used to support passengers to in determining which cars to use. Swati. R. Tare, Neha B. Khalate and Ajita A. Mahapadi [3] have contributed by suggesting ideas on how

make this application more user-friendly for passengers and not only for drivers. They especially worked on reliability of Real time System and security of woman travellers.

BlaBlaCar is the world's largest long-distance ridesharing community [4]. Conceived in December 2003 by FrédéricMazzella, and founded in 2006, BlaBlaCar connects drivers and passengers willing to travel together between cities and share the cost of the journey. BlaBlaCar has more than 20 million members across 19 countries. [3] Members must register and create a personal online profile, which includes ratings and reviews by other members, social members show how much experience they have of the service, meaning those with more-known as “ambassadors” - attract more ride shares. One major shortcoming of this application is that it only offers inter-city carpooling options which our application aims to rectify and add intra-city commuting options too.

FolksVagn offers a community-based system that helps people share rides with others. While the passengers get rides at costs much cheaper than a regular taxi service, the car owner gets a share of the fare. It is open only to corporate clients as it requires a corporate email for registration and has a prepaid account or online wallet system to pay for the ride.

System to pay for the ride. The famous taxi-hire application “taxi for sure” [5] on android platform is the first car sharing application who took the initiative and introduced Carpooling for “Vacationers” .i.e. for those who are on vacations and want to spend less on travelling to save their pocket. They started it for some particular routes only like “Chandigarh-Delhi”, “Mysore-Manali” etc. and they are looking forward to reach out the masses in coming future.

III. PROPOSED SYSTEM.

1. Login

Since all the operations that can be done using the application requires all three the rider, passenger and admin to be logged in, they can use the login forms by entering their required credentials (User name and password).

Rider:-

The rider is any person that owns a car/bike and wants to go from one place to another and publishes his trip on the application in order to find passengers to share the ride with.

2. Ride Scheduling

The rider can schedule two types of the rides a) Regular rides and b) Frequent rides;

a) Regular Rides

i) Create new regular ride:-

- The rider can create a new ride to be displayed when passengers search for ride. The application will prompt the information of the regular ride which consists of destination, origin, meeting, departure time/date, estimated arrival time and traveling preferences.
- After providing this information, the rider publishes it in order to find passengers.

ii) Check-in trip

- Whenever the rider or passenger arrives to the meeting point at the time agreed upon, he can check-in the meeting point.
- The devices GPS is used in order to make sure that the users are in the meeting point.

b) Frequent Rides

Frequent trips are trips that occur on a weekly basis.

i) Add frequent ride

- The rider can create a frequent trip where they show the origin and destination, departure and return times in addition to the frequency (daily and weekly).

3. Get Paid for Offered Rides

The passenger will pay for the respective ride. The passenger can also get some offers like; payment will be made at the end of the month

Passenger:-

Passenger is any person that doesn't own a car and wants to join a rider in a ride. The passenger posted and agrees to all the conditions specified (price and general behavior).

a. Find Ride:

When a passenger needs to find a rider for a destination, he can use a search form which asks for destination, origin, departure date/time. He can also specify the travelling preferences.

i) Search for regular rides and reservation

- When a passenger needs to find a rider for a destination, he can use a search form which asks for destination, origin, departure date/time. He can also specify the travelling preferences. When he finds a suitable trip, he can reserve a spot easily and the app will send the send a notification to the rider telling him that a passenger has reserved.

ii) Search for frequent rides.

- A passenger can search for a frequent ride that he can join. The passenger should specify the departing neighborhood, destination, departure times and frequency. The application will try to match it with the best trip. If the passenger is satisfied, he can register to the frequent ride.

b. Select a bike or a car:

Select the vehicle type according to the no. of the passenger's request. The vehicle type can be either a bike or a car respectively.

c. Choose Ride:

When he finds a suitable trip, he can reserve a spot easily and the app will send the send a notification to the rider telling him that a passenger has reserved.

d. Pay for Ride:

The passenger will pay for the ride as the payment will be auto deducted at the start of the ride

Admin:-**a. Payment reports**

The History of the payment transactions will be displayed and managed by the admin

b. Ongoing trips details

The admin can track the currently scheduled rides/trips.

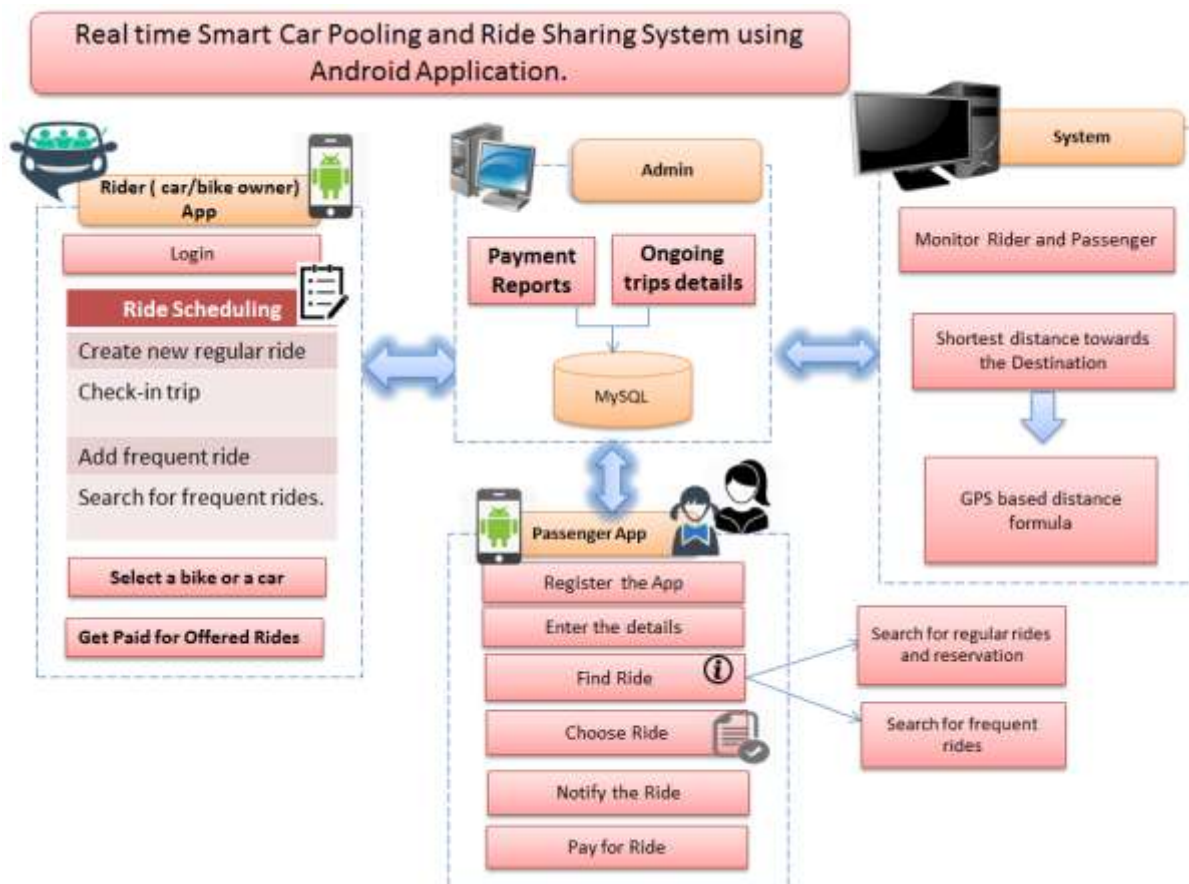


Figure: - Proposed System Architecture.

VI. CONCLUSION

In this paper, Carpooling system is an effort to reduce consumption of fuel, our most important nonrenewable resource and traffic congestion on roads by encouraging people to use car sharing. So it is an environment-friendly social application and also helps people to reduce their journey time. This paper elaborates the literature survey of the different researchers on the carpooling system. Carpooling is done in many different techniques like carpooling by using SMS alert, carpooling by GPS tracking and so on.

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