Web based Carpooling Android Application

Anuja Ghode
UG Student
Department of Computer Science & Engineering
Prof. Ram Meghe Institute of Technology & Research, India

Ayushi Agrawal
UG Student
Department of Computer Science & Engineering
Prof. Ram Meghe Institute of Technology & Research, India

Shivani Diware
UG Student
Department of Computer Science & Engineering
Prof. Ram Meghe Institute of Technology & Research, India

Iskra Daware
UG Student
Department of Computer Science & Engineering
Prof. Ram Meghe Institute of Technology & Research, India

Komal Hole
Assistant Professor
Department of Computer Science & Engineering
Prof. Ram Meghe Institute of Technology & Research, India

Abstract

Carpooling is also known as car-sharing, ride-sharing or car-lifting. Carpooling is the sharing of car journeys so that more than one person can travel in a same car. Due to the increase of population and rapid increase in urbanization, there is lot of problems in transportation especially in India. This tends to problems like increase in number of vehicles, traffic, fuel combustion, heavy cost on resources, parking problems and stress. To overcome this hurdles, a quite different but realistic solution called “Carpooling” can be used. We are working to make an ANDROID based application that will enable to let people know if vehicles are available for carpool in their desired path and they can register for it. This will enable people using this application to share their everyday expenditure on travelling, not worry about hiring a cab and making new connections. People can have this application on their cell phone as well as on their tablets and can easily carpool with unacquainted people.

Keywords: Carpooling, Android, Ride-Sharing, GPS Navigation, Ride-Seeker

I. INTRODUCTION

With the increase of environmental concerns and the congestion of roads, carpooling has gained a lot of popularity when it comes to environment-friendly and cheap ways of travelling. Carpooling is when two or more persons share a ride in one of their personal cars. Carpooling reduces pollution since we have fewer cars on the road. It’s also economic since the travel expenses are shared among the riders. Travelling alone may be stressful, so having other persons with you on a trip reduces the stress and is also the occasion to socialize and make the trip funnier. Finding people to share a ride with is the challenge of carpooling as it is difficult to find a person going to the same place as you at a given time. The proposed system is developed in android. There are two main reasons for choosing Android operating system instead of another one. First is that Android is an open source operating system and thus allows reusing some pieces of program to create a new application. It is quite well documented and sources can be found on internet to learn how developing applications for this platform. Second is that Android is fast growing operating system and hence it will help for bringing more and more users for ridesharing. The purpose of this project is to develop an application that tries to overcome the disadvantages of the other available applications. The application is to be generic, which means that it may work for any car-pooler in any country in the world. ‘PoolMyCar’, is the name chosen for this application. It would help the users to upload, view and register for journeys both short distance (daily commute to work) and long intercity trips. The system will be designed taking into consideration the users need about safety. ‘PoolMyCar’ is also a real-time application. People will not only share expenses but also will not have to worry about reaching late while making new connections.

II. PROBLEM DEFINITION

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 users 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.
III. LIMITATION OF PREVIOUS SYSTEM

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

- User/Passenger cannot track the driver
- Cannot be used on other operating systems.
- More Expensive.
- Security issues.

Carticipate tends to struggle from lack of users. Only 10.8% of all commuters carpool due reasons such as finding people willing to carpool with them. There are different websites which help in carpooling but fails at some level while dealing with issues like payment, security and real-time tracking.

IV. PROPOSED SYSTEM

Fig. 1: System Architecture with internet access.

Carpooling system is a dynamic system which based on two underlying sources of information: which includes route Announcement by the user and route selection and registration by passengers. The user who is going to travel by his/her car will mention source and destination along with the route which is selected by him/her. He will also mention the capacity of vehicle. The user (passenger) who finds the path as per his request can register for the trip. Carpooling system has detailed phased registration system. For ensuring trust and security the system will check for any valid identity proof such as UID, users can also enter the pan card number provided by government. For displaying routes and users position we use digital maps. The systems GUI (graphical user interface) will be user-friendly and standard. Modules of Carpooling systems are:

A. Registration Module

In carpooling apps, basically there are two modules that is driver module and passenger module, both have to register their devices so that server can get their location details using GPS and other contact details such as name, mobile number, vehicle type, vehicle capacity, vehicle description etc. All the details of passenger and driver are stored in SQL server on web and location of the passenger and driver are updated regularly using web service. We are going to transfer data from client to server or server to client by using PHP connectivity.

B. ShareCar Module

Once the registration is completed, there are two options, either one can offer a ride who is ready to share his car or one can find a car for his journey. The person who wants to share his car has to mention his desired location. After that server sends the available root to the driver and then driver will select the appropriate route for his specified destination. All this information is saved on a server. In passenger side server also sends the available route for destination is display to passenger with available seats and other person who is finding ride have to select appropriate vehicle.

C. Once the request is accepted

Whenever there is search either from driver side or passenger side, there is update on server on notification table and services running on both driver and passenger side get activated and get the updates from server and can be seen as a notification.
V. REQUIREMENTS

Carpooling mostly uses following three recent technologies:
- GPS Navigation Device: GPS Navigation device is used to determine driver’s route. In this, the user with current location retrieves the list of users whose location is near to the user by using the Google maps who wants to join ride.
- Smart Phone: For a passenger to request a ride from whenever they happen to be.
- Social Networks: To establish trust between driver and passenger.

VI. BENEFITS

There are many great benefits of carpooling, many of which people do not know about or even think about. With these benefits in consideration, it will be easier than ever to see why making the switch, even for just a few days a week; it will be good idea for you and your commute. Some important advantages are as follows:

A. Carpooling Helps save You Money

You can save money on fuel and such by divying up the fuel prices among your carpool passengers. The more people you have, the more you can save. Carpooling application also helps you save on the cost of vehicle repairs and maintenance by rotating vehicle use among the members of your carpool team. Additionally, everyone else can save some money on road fees because with more carpooling there are fewer cars on the road and therefore less wear and damage to the roads that need to be repaired each year using taxpayer’s money.

B. Carpooling Helps the Environment

Carpooling lowers the number of cars and vehicles on the road. Fewer number of cars means there is less emission of co2 and other gasses that causes pollution. This prevents the environment by keeping the air, water, and land cleaner.

C. It is good for you

According to numerous health reports and research, air pollution caused can increase in the health issues such as asthma, allergies, lung cancer, etc. So by using carpooling you can actually contribute to welfare of your society as well as to your environment.

D. Carpooling is a Very Convenient Option

Carpooling is a way of sharing car that can give you great flexibility. If you want to carpool three days a week or five, you can do so. Whatever your needs are, you can look for people who need that same schedule or who can add you to their drive path on the days you need a ride. The flexibility makes it a very convenient option for any long commute.

E. It Helps You Make New Friends

Carpooling is also a wonderful way to meet people, get to know the people you work with or go to school with, and to make new friends! Carpooling application helps to saves money and reduces congestion on our roads and highways. This application also gives you the opportunity to develop friendships with co-workers or other commuters. There are a number of benefits when two or more people share a ride in one vehicle.

VII. CONCLUSION

This paper describes the implementation of a Real-Time ridesharing Android application over Android system based on Linux. As it is an Open source operating system used worldwide (90.12% people use android phones around the world). This application is highly useful for in areas where it is densely populated and where there is no convenient mode of transportation. Also Carpooling system is very effective way to reduce pollution and the congestion of vehicles on the roads in cities. It provides an eco-friendly way to travel in both intercity and intra-city trips. It also provides an opportunity to meet unknown person. As today most people prefer private vehicle to travel due to delay caused in public transport system. Pre-registration ensures that only verified people get into the vehicle so that trust can be established. Thus the proposed carpooling application is beneficial in both social as well as environmental aspect.

REFERENCES

