



SARTHI: CARPOOLING APPLICATION

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Abstract

From some times the level of pollution tremendous increasing and some features in vehicles has a very bad impact on environment. The vehicles exhaust carbon dioxide (CO₂) gas and increasing the air pollution as well as the sound of the horns and vehicles produce noise pollution. In the 21st century the use of vehicles increased day by day that's why we can face the problem of traffic excess use of natural resources to run the vehicles. So at one day all the resources we lost them. This problem has one solution is to pool the vehicles and implement it we can introducing the carpooling system by adopting this application user ,can reduce each person travels costs such as fuel cost, parking space, tolls and stress of driving. Carpooling is more suitable especially during high fuel prices and high pollution periods. Carpooling is android based application that provide more security and easy to way to find a car for journey. In this system we will use the GOOGLE navigation and GPS system

Keywords: GOOGLE navigation and GPS system

INTRODUCTION

Shared-use mobility is a term used to describe transportation services that are shared among users, including public transit; taxis and limos; bike sharing; cars haring (round trip, one-way, and personal vehicle sharing); ridesharing (carpooling, vanpooling); ride sourcing/ride-splitting; scooter sharing; shuttle services; neighborhood jitneys; and more.

Short-term bike rental, usually for individual periods of an hour or less over the course of a membership (periods which can range from a single ride, to several days, to an annual

membership). Information technology-enabled public bike sharing provides real-time information about the location and demand for bikes at docking stations throughout a community.

A service that provides members with access to an automobile for intervals of less than a day. Major cars haring business models include traditional or round-trip, which requires users to borrow and return vehicles at the same location; one-way or free-floating, which allows users to pick up a vehicle at one location and drop it off at another; and peer-to-peer (p2p), which allows car owners to earn money at times when they are not using their vehicles by making them available for rental to other carshare members.

A system of transporting individuals (other than by aircraft), including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including, but not limited to, specific public transportation service, on which a vehicle is operated along a prescribed route according to a fixed schedule. Regular, continuing shared-ride surface transportation services that are open to the general public or open to a segment of the general public defined by age, disability, or low income. Public transportation does not include: intercity passenger rail transportation (provide by Amtrak, or any successor); intercity bus service; charter bus service; school bus service; sightseeing service; courtesy shuttle service for patrons of one or more specific establishments; or intra-terminal or intra-facility shuttle services.

2.SURVY

Mayur K Thorat and Rahul M Lahakare 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.[2]

R. Manzini and A. Pareschi 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. The famous taxi-hire application “taxiforsure” 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.[2]

Uber

Without a doubt, Uber is the most successful provider in this business. It is also the most valuable startup in the world at the moment, valued at 18 billion dollars as of June of 2014. Uber is a ridesharing service that connects passengers to drivers for hire, its success is due to the low fees provided. Such fees became very competitive with the traditional taxi services as they claim to have prices of 40% in average lower than these. Uber’s added value is in the concept of ride on demand and once it is requested, the user can track his driver’s location on his smartphone until he arrives. Uber recently launched a new feature, that it is similar to the carpooling concept we are exploring. Uberpool allows to passengers find other passengers on the way to the same destinations as yours and split the costs accordingly. The differentiation is in the luxury service they provide at relatively low cost, sometimes it may be the same price as a taxi service but that is what you pay for getting a cab service that is very reliable, punctual and comfortable, characteristics that may be hard to find in the traditional taxi services.

Lyft

Lyft is the biggest competitor of Uber but has a slightly different approach, it promotes ridesharing as a fun and social experience. Just like Uber, payments are made through the application and they get a cut. Again, like Uber, they also have a ‘track your driver’ features that

lets you know exactly when to expect your ride. Just as Uber recently launched the Uberpool, Lyft recently launched Lyft Line, which is also to share rides with other passengers with shared routes. Both startups claim that this carpooling method can save 40% on Uber and 60% on Lyft comparing to the traditional version of ridesharing on Uber and Lyft respectively.

Other carpooling services

The services discussed next are not as big as Uber and Lyft but have they have the advantage of having their own territory, european territory which is an area where these two mentioned services do not operate as heavy as in the United States.

Sidecar is very, very similar to Lyft, they have their own background checks and document verification. The reason there is space for both Lyft and Sidecar is that it is a big market and they are both good tools to get around public transportation services.

BlaBlaCar - It’s an international service and recently arrived to Portugal. To increase the security and trust has a rating system, users rate each other and can write reviews, it is possible to read the classification of the other users before the lift takes place. It also has an experience level: users acquire experience by the number of reviews, lifts taken/given, completion of profile (sits on the concept of the more you say about yourself the more people will trust you) and for how long you’ve been registered on the site. BlaBlaCar has a moderation from real administrators that analyze profiles, photos and comments from the users to guarantee a certain level of quality of service.

boleia.net - It’s a portuguese platform, like BlaBlaCar has a rating/review system, users need to setup a profile with a minimum amount of information and also has the ability to connect to facebook and google plus.

Aamovens - pretty similar to blablacar, its a spanish startup that is trying to expand to portugal. unlike blablacar, already has an application for smartphones (android and ios) and offers a voice system to get in contact with the other users as soon as possible. premade groups - social networks allow people to find common ground and connect them. facebook for instances has countless ‘groups’ where the only goal is for people to give, search and share their seats from and to many different cities. in these

groups there's almost no moderation, people use their facebook profiles to do so.

2.1 Problem Definition

Today 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 less 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.

As said, the expenses, both environmental and fiscal, of single occupancy vehicles could be reduced by utilizing the empty seats in personal transportation vehicles. Carpooling and ride-sharing target those empty seats: taking additional vehicles off the road reducing traffic and pollution, whilst providing opportunities for social interaction. However, historically carpool scheduling often limited users to consistent schedules and fixed rider groups—carpooling to the same place at the same time with a set person or a group of people. To make that problem worse, the leading problem concerns, given in a 2009 survey about why people don't carpool, were difficulty to organize carpools and inconvenience of organization. We feel both of those can be addressed by employing some novel web technologies and modern day available data stores which hold social and location based individual user's data. Besides having to solve the aforementioned problems for making a carpooling and ride-sharing solution that users will want to use.

2.2 Existing Systems

Many carpool service systems have been proposed which can be divided into two broad categories based on their features. The first of these comprises systems which are web-based and which transmit carpool information to an online community platform. One such system is Carpool Global which supplies an interfacing service for willing drivers and passengers. These Systems do not include Location Display of user (GIS) & not real-time. The second category of carpool service systems provides digital GIS support in order to match requests via location information an example system of this category is the ShareYourRide platform by which users

can readily submit carpool requests and offers via its map-based interface. In addition, ShareYourRide supplies a GIS-based routing service. This system has limited functions in situations requiring instant service due to the fact that it cannot support the use of Global Positioning System (GPS) handheld devices which provide pertinent information regarding user location. Many carpool systems have been developed to decrease lessen traffic congestion .Of these, many systems supply simple carpooling functions including the option to send requests for a specified date and time, and search for applicable users. In addition, several systems feature a digital GIS mapping ability by which to provide a visual tool with accurate location information to users. Unfortunately, these systems are neither efficient nor convenient for users who need real-time carpool matches. Our proposed system incorporates mobile communication technology with GIS to create a carpool service which is operable in real time. Subsequently, users can instantly submit carpool requests to the intelligent carpool system which reflect their current locations via the use of smart, handheld, communication devices which feature GPS capabilities. The system will use the carpool matching algorithm to generate and return match results within a short amount of time.

2.3 Applicability

SARTHI : Carpooling application can be used by any user or passenger who have or does not have his own car and wants to travel only by a private vehicle. The user will be able to filter in accordance with his destination and middle point (if there are two different routes to reach some destination middle point will help us to filter it precisely). The user will select for a trip or can manually search his source and destination and will upload a trip to our application

2.4 Need

- 1) Generally, cars travelling at peak hours consist of office goes which use a car in which a single person drives to his/her office.
- 2) Today the fuel cost and the traffic on the road are increases. A better way is to group up with travelers who destined to the same place. This will reduce fuel cost and to reduce the traffics on road.
- 3) The main impediment when it comes to carpooling is how to find out who travels to the

same destination as yours every day or who is interested in carpooling.

4) If the regular poolers don't work on days you do, e.g. Tuesday, then it helps to find new members for Tuesday.

3. PROPOSED SYSTEM AND METHODOLOGY

Carpooling system is dynamic system which based on two underlying sources of information which includes routes announcement by the user, route selection and registration by customers. The user who is going to travel by his/her car will mention source and destination along with the route which is selected his/her. He will also mention the capacity of vehicle user who find the path as per his request can register for the trip. Carpooling system has detail phased registration system for displaying routes and user positions we used GOOGLE maps.

Addition thing we are using payment mode system for the digital payment. We will send you car details and estimate cost of fair. The two kinds of trips are single, which are trip between two cities and frequent trips which are given commuters do every day the application is design to be scalable, extensible, high available and good performance.

3.1 System Architecture

The Architecture of the proposed system is as shown below in Figure

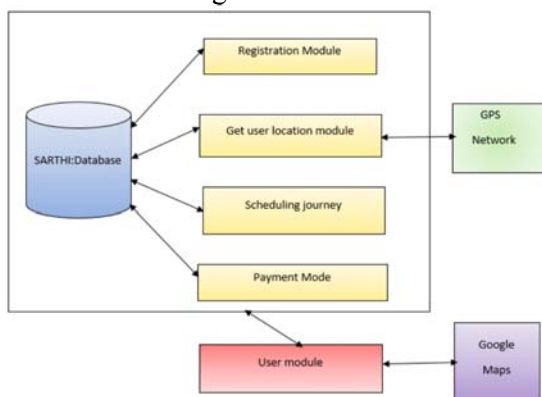


Fig.3.1 System Architecture

4.OBJECTIVE

The main objective of the work presented throughout this report is to develop an enterprise-class server that represents the backbone of the application an example of a client Android application is developed for the users to access the services of the application from handheld devices and serve as a companion during travelling.

The objectives of the “SARTHI : Car Pooling Application” can be stated as follows:

1. To create an Android mobile application to provide user interface to interact with the system.

2. Enable users to create events that would specify the following information-

- The total seats availability in the car.
- The journey starting time.
- The Final destination.

3. Development of the logic that would enable-

- Poll in the location information of all the intended recipients.
- Take decision based on the context on the location.
- Send “SMS” to the passenger and the driver/owner of the car

4. Generate a Google Map that shows the initiator the map between his location, all the recipients that agreed to his car pooling event and the final destination.

5. Reducing overall traffic congestion on the roads.

5. EXPECTED RESULT

5.1 Login

Since all the operations that can be done using the application requires both the driver and passenger to be logged in. After the user authorizes the application to access his account, the server retrieves his info. If he has never logged to the application before, a new account is created for him.

5.2 Modify profile information

The users of this app can modify their profile information. The profile information contain: name, phone number, email, DOB. The user can easily edit these information in order to be contacted and recognized.

5.3 Create new regular trip

The driver/car owner can create a new trip by adding their toured details such as source, destination, arrival time, journey date, number of seats are available, pick up points/ Stopover points and all the required details for the carpooling.

5.4 Search for trips and reservation

When a passenger needs to find a car for a destination, he/she can perform the search task on to the app 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 in by clicking a button which will open the activity for booking the passenger can fill all the required details and pay for the seat reservation. The car driver and passenger gets the SMS for booking successful to the passenger and pickup point and passenger name to driver.

5.5 Check-in trip

Whenever the driver or passenger arrive to the pickup point at the time agreed upon, he can check-in the pickup point in order to notify the other user and to show his punctuality. The application will use the devices GPS in order to make sure that the users are in the meeting point. When somebody checks in, a notification is sent to all the carpoolers saying that somebody is in the meeting point.

5.6 Pay through the app

Payments for trips should be done by our application.

6. CONCLUSION

SARTHI is very effective way to reduce pollution and the congestion of vehicles on the

roads in cities. It also provides an eco-friendly way to travel in both intercity and intracity trips. It also provides an occasion to meet new people. 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 system will be effective in reducing environment pollution.

This carpooling application is an application that complies to the enterprise class application principles. It is designed to be performing, scalable, extensible, and highly available. It also ensures the privacy of the users' data and secures its access. Given that it may be improved in many ways, the application is also easily maintainable.

7. REFERENCES

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