Real Time Auto Pooling System

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Abstract: Traffic congestion, high petrol and gas price and inadequate public transportation are major challenges for any country, business or individual. The traditional approach to solving these problems has been to improve public transportation and use greener energy. These approaches require huge investment, research and time, and can only be carried out by governments or businesses. An alternative solution seeks to reduce the number of vehicles on the road based on ridesharing. Vehicle Sharing Systems, which aim to bring together travellers with similar itineraries and time schedules, may provide significant societal and environmental benefits by reducing the number of cars used for personal travel and improving the utilization of available seat capacity. Effective and efficient optimization technology that matches drivers and riders in real-time is one of the necessary components for a successful ride-share system. Proposed system is an android application of finding auto in which auto drivers who are traveling to a specific destination can ask for fellow passengers through our application. For those who find it difficult to find auto especially at remote locations use can use this application to find auto that are traveling to the same destination. This system will be a contribution towards less fuel consumption, less road traffic, less pollution which is the need and necessity of modern world and also the system will contribute for auto drivers to find customers quickly and for customers to find auto at their will.

Keywords: Auto Pooling, 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 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 carpooler in any country in the world. The proposed system will greatly contribute to fuel consumption and increasing traffic problem currently faced by society. Many cities in India have previously attempted to reduce the road traffic and pollution caused due to vehicles on road. One such attempt was made in Delhi the capital of India where government had passed a rule which state that on a specific day vehicles with odd number will run on road and the next day vehicles with even number will only run on road. This attempt wasa serious step towards the alarming rate of pollution faced by Delhi city previous years.The problems in such situation that was faced by Delhi public was that they had very less knowledge of how they can travel if their car number was not available on that specific day. Public transport by all means is very slow and many times for specific areas there is not option of public transport.Our proposed system will contribute in solving this problem by connecting the auto drivers to an auto pooling system which will consist of an android app for auto driver and the user. The user can easily search of auto from any location via their app. The auto drivers will benefit in this system as they can get passengers on their way which will greatly help them as most of the times their auto travel to one location and then the need to come back empty seat to their stop.

II. MOTIVATION

Nowadays Lots of people refer Cab for traveling around city. It was pretty much beneficial to people. But sometimes in particular area Cabs are not available so that will prove unbeneficial to user, because system was time consuming and so to overcome these issues we implement this system which will beneficial ,less time consuming and useful for people for short distance journey.

III. 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. Auto sharing is a solution to this problem but issues like security and trust can arise. Solution to this problem is mobile based Autopool system. The Autopool system would enable its user a safe and secure way to share autos. This could include both short daily journeys such as going to workplace within the city and also long inter-city trips.

IV. OBJECTIVES AND SCOPE

The objectives of the Real Time Auto Pooling Application can be stated as follows:
1) Provide a medium through which auto drivers and customers can interact and book the auto service.
2) Reduce traffic and pollution rate caused due to more auto traveling on road.
3) To make auto searching easy and fast so that more people can switch to auto and reduce use of private cars.
4) To help auto drivers in finding more passengers and reduce their empty seat traveling.
5) Generate a Google Map that shows the initiator the map between his location, all the recipients that agreed to his auto pooling event and the final destination.

We aim to demonstrate all these scenarios on the "Android Emulator".

V. PROPOSED SYSTEM

The Autopooling application will be implemented in Android operating mobile phones. The application will try to cover the following:

- User accounts for both the ride providers and the ride seekers.
- Use GPS to find nearby autopoolers. Find optimum paths and allow autopooler to choose one from it.
- Integrating google maps so that the ride provider can provide his detailed route and then the potential passengers can view and decide their boarding and de-boarding point.
- Option to choose the autopoolers so as to give women the option to travel with women only.

Profile rating to ensure the quality of ride.
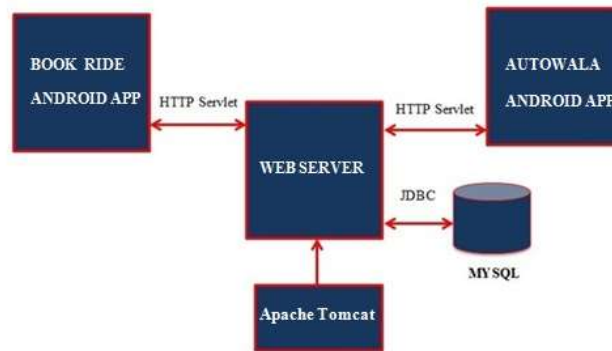
VI. SYSTEM REQUIREMENTS SPECIFICATION

A. Hardware Requirments:

Hardware	Specification
Processor	Intel Pentium 4 Onwards
Hard Disk	As per OS500MB of free Hard-disk space
RAM	512 MB

B. Software Requrements:

Software	Specification
Operating System	Windows XP ,Windows 7 etc.
Developing Tool	Net beans IDE, Android Studio
Database	MYSQL 5.0

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VII. SYSTEM DESIGN

There are Three main Components in the System.
A) Book ride Android App
B) Autowala Android App
C) Web Server

A. BOOK RIDE ANDROID APP:

The mobile application will be android application which user can install on their android smart phones. The front end of this application will be developed using android XML layouts. The backend code of the application will be in android java. This application will have following features:
1) User Registration
2) User Login
3) Search Auto
4) Send Request to auto driver
5) View and Track Auto Location
6) View Journey Bill

B. AUTOWALA ANDROID APP:

The mobile application will be android application which auto driver can install on their android smart phones. The front end of this application will be developed using android XML layouts. The backend code of the application will be in android java. This application will have following features:
1) Driver Registration
2) Login
3) View Ride Request
4) Accept/Reject Ride
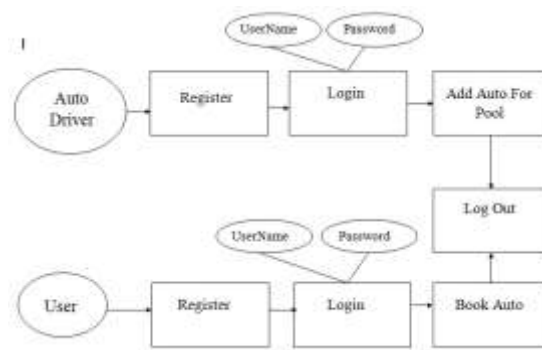5) Complete Journey

C. WEB SERVER:

The web server will be developed in net beans editor. The web server will include java servlets for each and every operation that server will perform. The web server will access database using jdbc connection. Web server is responsible for all the request and response handling mechanism. Web server will be driven by apache tomcat application server.

VIII. DFD DIAGRAM
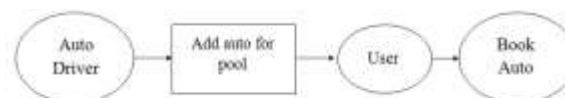
LEVEL 0 DFD

In level 0 DFD input is Farmer then farmer upload the products then food industry view the products as result.

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LEVEL 1 DFD

In level 1 DFD input is Auto Driver ,User complete the registration process then login app and upload its ride description then loggout.Same process followed by Auto Driver ,Auto Driver complete the registration process then login app view the products of User response to Book auto if Auto Driver needed then loggout.

IX. IMPLEMENTATION

The system for Auto Pooling is developed using Android Application. First the user will register through an android device, enter his/her details to the application, and enter the location where he/she wants to reach. The user will pick up from current location and drop to the desired destination safely with minimum cost. In this application User can register using his\her information like name,password, date of birth, Gender, etc. Registration process can be done using OTP. After registration user can login to the system. After Login he/she can fill the details of Auto and then he/she can schedule the ride. The User's and Auto Driver's current deviation can be shown using Google Map. Auto pooling system is a dynamic system which relies on two underlying sources of information: which includes route announcement by the uploader and route selection and registration by passengers. The user (uploader) who is going to travel by his/her vehicle will mention source, destination along with the route selected. He will also mention the capacity of vehicle. The user (passenger) who finds the path convenient can register for the trip. Auto pooling system has a detailed phased registration system. Our system will take feedback about users experience in trip. For displaying routes and users position we use digital maps. Additional thing we are using flexible drop off points. The systems graphical user interface will be user-friendly and standard.

CONCLUSION

The problems which auto passengers face due to lack of technology to search and locate auto at their remote locations and the problems for auto drivers of finding passengers when their auto is empty after completing a specific journey have made this mode of public transport more or less difficult and use of this medium has fallen to great extent. So the proposed system will contribute greatly to reduce the gap between the auto service and auto passengers and will prove to be helpful to both the users of system.

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