Real-Time Carpooling System for Android Platform
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Abstract—Carpooling (also known as car-sharing, ride-sharing and lift sharing), is the sharing of car journeys so that more than one person travels in a car. By having more one vehicle, carpooling reduces each person’s travels costs such as fuel costs, tolls, and the stress of driving. Carpooling is also 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. Authorities often encourage carpooling, especially during high pollution periods and high fuel prices. We intend on making an ANDROID based application that will enable to let people know if vehicles are available for carpool in their desired path they can sign in for it. This will enable people using this application to share expense, not worry about hiring a cab and making new connections. People having this application on their cell phone can easily carpool with unacquainted people without worrying about security.

I. INTRODUCTION
Transportation is a major issue these days. One of the most used means of communication in roadways. One of the major forms of road transport consists of the private passenger car. These cars are generally used with only a single rider. An over abundance of cars creates various problems which includes increased traffic, increase pollution, parking congestion and many more.

Carpooling 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. Carpooling system has a detailed phased registration system. For security and ensuring trust come into picture. Can this problem be solved? 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.

II. PROBLEM DEFINITION
There is acute problem of traffic on roads these days and the increasing fuel prices add to the misery of daily users of personal vehicles. Also use of vehicles causes pollution which has its adverse affects. Car sharing is a solution but issues like security and trust come into picture. Can this problem be solved? 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.

III. CARPOOLING STRATEGIES
Carpooling is car-sharing; it helps save money and also is a way to minimize pollution. Carpooling is well established and used on daily basis in China and the US. We need to set up some strategies to encourage carpooling in India. These may include:
- Establish special carpooling agency by government to lead the carpooling propaganda, organization and service works. Encourage public carpooling institutions to promote the carpooling development.
- Implement carpooling incentive programs to improve the carpooling share in daily commuting modes.
- Carry out carpooling pilot projects to examine the effect and efficiency of carpooling programs.

IV. SYSTEM IMPLEMENTATION
Carpooling 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. Carpooling system has a detailed phased registration system. For security and ensuring trust the system will check for any valid identity proof such as UID, pan card number provided by government. 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.

VI. PROTOTYPE

In prototype a passenger submits a request for a ride or a driver offers a ride. If a member has the flexibility to be either a passenger or a driver, then option will be provided to select both. The unregistered users at the first can see the statistics of using the system which has different charts.

VII. CONCLUSION

Carpooling system is very effective means to reduce pollution and the congestion of vehicles in cities. It also provides an eco-friendly way to travel. It also provides an opportunity to meet new people. As today most people prefer private vehicle to travel due to delay caused in public transport system and luxuries provided by private vehicles. Pre-registration ensures that only identified people get into the vehicle so that trust can be established. The people registered are allotted specific days on which they should take their private vehicle, so that no inconvenience is caused to its registered passengers for daily commute. Thus the proposed carpooling system will be effective in reducing environment pollution.

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REFERENCES