SPAC DRIVE

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Abstract — *This android application is used by people like by any students and employee, because of its convenience, safety, better and its price. It is introduced as an application for easer process of getting a bike by just few taps away using mobile phones. It will be use by mostly young generation like any kind of students and employee, because of its convenience, safety, better and its price. It is introduced as an application for easer process of getting a bike by just few taps away using mobile phones. Bike-pooling commonly known as ride-sharing. Using bike-pooling idea people can share bikes that are travelling to same destination. Bike-Ride sharing applications depend normally on an architecture that includes two user's android devices and a server that collects the bike-riders available and the ride requests. The SPAC DRIVE is an android application which will provide the better way to request for bike service and further services through this android application. With the help of this android application traffic problems on road will be reduced. Thus, this application will help to reduce the problems of traffic jams. Fuel combustion also will be reduced. Application also helps to control the pollution and maintains green environment (GREEN ENVIRONMENT).*

Keywords- *GPS, Google map's, Euclidean Distance, Displacement Vector, GIS, GPS Trajectory*

I.   INTRODUCTION

Travelling is a major issue in our world. SPAC drive is a solution to the problems of traffic jams, pollution and extra use of fuel. Our application is an attempt to make a system which is user friendly and provides an opportunity to share rides on bike. The service will allow users to offer and request ride sharing journeys using their Android enabled phones. Using this application, we are offering rides and requesting rides to many users consistently as many people can use it for traveling purpose. Using this developed android app the user will get the source, destination, time of getting the ride and real time location of the user. And ride seeker will be able to search and browse the rides by providing inputs like source, destination, and time. The dynamic bike ride sharing system relies on the information from two users i.e. ride creator or driver and ride seeker.

II.   GOALS AND OBJECTIVES

* The main goal of the project is to design an android application for people (especially college students, employees) for daily transportation with less cost and time.
* In this application, we are trying to satisfy the user need for transport by using real time tracking of user and pointers on GOOGLE maps

III.   LITERATURE SURVEY

* In [1] proposed an" Implementation of Dynamic Carpooling System on Android Platform", Here (Android platform is used), but we observe the method is more usable for allowing a large number of passengers and rivers to be matched with each other automatically and instantly wishing to travel the same destination .and major limitation is Pre-Registration is required. And advantage is Eco friendly way to travel.

* In [2] proposed an "Real Time Carpooling System for Android Platform", Here Android platform is used the application will enable to let people know if vehicle is available for carpooling in their desired path and major limitation is cost is too high and advantage is effective to reduce pollution.

* In [3] proposed an "Real Time City-Scale Taxi Ridesharing", In this paper request generator is developed in terms of stochastic process modelling real ride requests learned from dataset but we observe that major disadvantage is it doesn't identify travel time estimation. An advantage of this paper is that there is a detailed interaction between user and driver respectively.

❖ In [4] proposed an "T-share: A Large-Scale Dynamic Taxi Ridesharing Service", In this paper real time requests are send by taxi drivers to user and generates ride sharing schedules. Each time a query is entered to send a request. The major disadvantage Is that the pre-estimated time is not evaluated and the major advantage is GPS trajectory is excellent.

❖ In [5] proposed an "Carpooling optimization :A case study in Strasberg(France)",In this paper in which there is a case of group of faculty in Strasberg who commute a significant distance from their home to their workplace they need to manage a timetable and has to work according it as the paper presents a decision support system and helps with the planning process the major disadvantage is the rate fare is maximum for a particular ride and the advantage is it uses flexibility .

❖ In [6] proposed an "An Interactive-Voting Based Map Matching Algorithm", In this paper an interactive voting based map matching algorithm based. They evaluate the IVMM algorithm based on user label of a real trajectory, dataset. The major disadvantage is cost effective and the advantage Is investigating problem of map matching for low sampling rate for GPS trajectories.

❖ In [7] proposed an "Intelligent Management Functionality for Improving Transportation Efficiency by Means of Car Pooling Concept", In this paper Bayesian network for developing a ca pooling system is used. The advantage is increasing the transportation efficiency. The main disadvantage is it will allow any user without getting proper information.

❖ In [8] The "Tic-Tac from Transfer-Incapable Carpooling to Transfer-Allowed Carpooling", This paper is inspired by the "store and forward" strategy used by in Delay Tolerant Networks (DTN). The advantage of this system is that ridesharing is done here. The disadvantage is allowing more than one transfer does not brings us any noticeable benefits.

❖ In [9] proposed "SMARTBIKE: Policy making and decision support for Bike Share systems", inspired by a dynamic visualization tool to support decision making. a three-layer SMARTBIKE system has first layer of the proposed tool includes *k*-means clustering technology to understand the true demand of the city bike share system. We designed a novel station network analysis in the second layer to provide insights on system usage patterns and to help with the rebalancing strategy. The third layer provides rebalancing support at the facility and operation level. The advantage of the system is first layer uses a big data approach to integrate multiple datasets in order to better estimate demand, the second layer is to understand the bike flow patterns with a network community detection approach, the third layer is designed to help city managers with decision making for system rebalancing.

❖ In [10]" Optimal Routing and Charging of an Uber-like Electric Vehicle Considering Dynamic Electricity Price and Passenger Satisfaction" this paper explores and presents a detailed mathematical model for optimal routing and charging of an Uber-like electric vehicle (EV) taking into account dynamic electricity price and passenger satisfaction. Based on an extended Pickup and Delivery Problem (PDP). Advantage is the proposed optimization problem aims at the determination of the best route from the start node (origin) to the end node (final destination) while satisfying the requirements of all passengers (e.g., travel time and travel distance), together with reducing the driver's operation cost (e.g., electricity charging cost).

IV.   DISADVANTAGES OF EXISTING APPROACHES

❖ Pre-Registration is required.
❖ Cost is too high.
❖ It doesn't identify travel time estimation.
❖ The pre-estimated time is not evaluated.
❖ The rate fare is maximum for a particular ride.
❖ It will allow any user without getting proper information.

V.   PROPOSED TECHNIQUE

This android application is used by people like by any students and employee, because of its convenience, safety, better and its price. It is introduced as an application for easer process of getting a bike by just few taps away using mobile phones.
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Convenience, safety, better and its price. It is introduced as an application for easer process of getting a bike by just few taps away using mobile phones.

Bike-pooling commonly known as ride-sharing. Using bike-pooling idea people can share bikes that are travelling to same destination. Bike-Ride sharing applications depend normally on an architecture that includes two user android devices and a server that collects the bike-riders available and the ride requests. The SPAC DRIVE is an android application which will provide the better way to request for bike service and further services through this android application.

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VI.   THE ADVANTAGES

- ❖ System is better than other system or app.
- ❖ The time factor regarding to this app is better than other system or application.
- ❖ Less pollution and congestion on road (Green Environment)
- ❖ Short-cuts can be found for a particular path requested by user

VII.   DISADVANTAGE

- ❖ Safety measures are not as good as those in four-wheeler.
- ❖ Our app usage depends on the season wise use as in rainy season bikes are not as good as car or four wheelers for travelling.
- ❖ Only two people including driver will be there on a bike so it's not as efficient as four wheelers as the cars have maximum capacity of four to five people.

VIII.   CONCLUSION & FURTURE WORK

We have shown the real-time location of driver on map. In future, the security regarding the user shall be increased by attaching the necessary information about the user like the guardians no. so that the guardian can get the real-time location of the user if any accident happens. If any Driver cancels the ride, then a notification is send to the user for it so that the user can request for another ride.

- ❖ Give notification to the user when the ride canceled by the driver.
- ❖ System will link the simple information about their guardians to the as per app registration so that if any accident happens to the user, guardian can get the real-time location of the user.

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