

Real Time Bus Tracking and Trip Planning System

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Abstract: Public transport systems can be confounded to utilize when the client is venturing out to another area. This remains constant for both rare commuters and routine commuters who need to make a trip to an area with which they are not familiar.

In these circumstances, enough on-trip route data can essentially facilitate the utilization of public transportation and be the driving element in persuading travelers to lean toward it over different methods of transportation. We evaluate pertinent plan issues for a secluded cost-productive easy to understand on-trip Navigation administration that utilizes position sensors. By helping commuters move from single occupancy vehicles to public transportation frameworks, this can decrease traffic blockage just as its ecological effect.

Keywords: Android, Java, GPS

1. Introduction

Now-a-days, because of developing world and significance of the time in everyday life there is need of uncomplicated transport. So we are giving an Android application which will give the data of vehicle location tracking. It likewise incorporates a feature which will keep the user up to date with the location of the bus.

The purpose of proposed framework is to give a prudent, adaptable and solid framework for vehicle tracking. The main purpose of vehicle tracking frameworks is to find the vehicle's location and its status. These frameworks are completed using a couple of cross breed techniques that include remote correspondence, embedded applications and geological locating.

Physically following the transport which the commuter needs to board is dependably difficult. An individual can't persistently bother the people in transport calling and texting to enquire the status of the transport. An ever-increasing number of transports are getting GPS frameworks. Proposed system resolves these issues.

2. Literature Review

A. Design and development of GPS-GSM based tracking system with google map-based monitoring

- 1) GPS is one of the technologies that are used in a huge number of applications today. One of the applications is tracking your vehicle and keeps regular monitoring on them.

- 2) This tracking system can inform you the location and route travelled by vehicle, and that information can be observed from any other remote location.

B. Real time web based vehicle tracking using GPS

- 1) Tracking systems were first developed for the shipping industry because they wanted to determine where each vehicle was at any given time. Passive systems were developed in the beginning to fulfill these requirements.
- 2) For the applications which require real time location information of the vehicle, these systems can't be employed because they save the location information in the internal storage and location information can only be accessed when vehicle is available.

C. GPS/GSM Based Bus Tracking System (BTS)

- 1) Vehicle tracking systems are available vastly in market, but a good and effective product tends to be of more cost. This paper is proposed to design and develop a tracking system that is much cost effective than the systems available in the market.
- 2) The tracking system here helps to know the location of the college bus through mobile phone when a SMS (Short Message Service) is sent to a specific number thus noticing the bus location via SMS. By incorporating a GPS (Global Positioning System) and GSM (Global System for Mobile communication) modem the location of the device by sending a SMS to the number specified. No external server or internet connection is used in knowing the location at user end which in return reduces the cost.

D. Design and development of android mobile based bus tracking system

- 1) Tracking of organization buses while moving on highway is a crucial task. A person patiently waiting for the bus may want to enquire about the position of current location of the bus. Phone discussion is not always possible due to traffic disturbances.
- 2) Mobile based Bus Tracking System provides a solution to this problem which helps anyone to retrieve the location of the bus without calling or disturbing the person travelling in the bus.

E. GPS supported city bus tracking & smart ticketing system

- 1) Now-a-days increasing density of vehicles on road is becoming the problem for the traffic control. Ultimately arising obstacle in the managing and tracking of the vehicle. Because of the problem state, it is necessary for every organizations and individuals to track the vehicle.
- 2) People will monitor and track their vehicles for the safety concerns with the help of our Android app. Public transport and private buses tracked to citizens with traffic and transportation details like location, crowd.

3. Proposed system

System and technology is growing even in nanoseconds.

In this era of IV Generation Smartphone and palmtops have become a valuable part of the human beings. We often listen words Android and Maps. These are its pick of success not only amongst the youth but entire community. Android Application that meets the user’s need has become a key idea with the rapid growth and huge advances in Android. Android device has become a powerful device which provides much more than basic facilities. Android has provided the developers with a platform that makes a simple phone to a smart phone. Android is based on open Linux Kernel. Also it utilizes a custom virtual machine that is made to optimize hardware resources and memory in mobile environment.

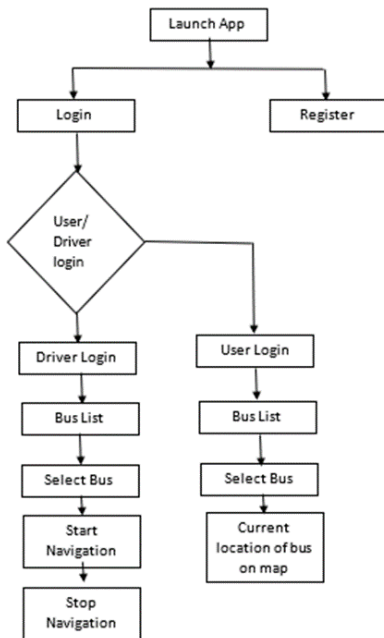


Fig. 1. Architectural diagram of our system

4. System Requirements

A. Hardware requirements

1. A Compatible Computer System
2. Machine with minimum 4GB RAM

B. Software requirements

1. Windows Operating System (Windows 7 onwards)
2. Server (XAMPP or WAMP or LAMPP)
3. Java
4. Android Studio

5. Implementation Details

A. The admin module

Once logged in as the admin you can either add a bus or a driver to the existing list. The new entries will be appended to the existing list.

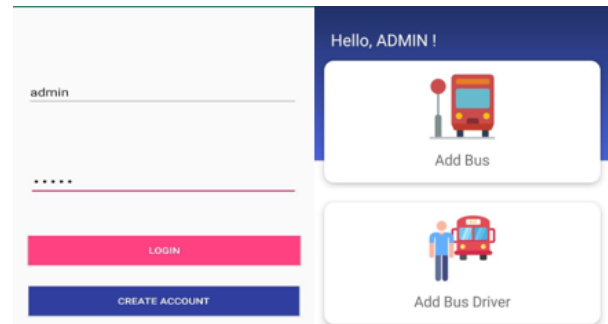


Fig. 2. Admin view

B. The driver module

The Driver after registering can login. After the driver logs in he can see the bus list of which he can select the bus he is about to drive, after selecting the bus he will get an option to start tracking.

The driver can select a bus from the list he is about to drive and start tracking, so that the user will be able to see its current location.

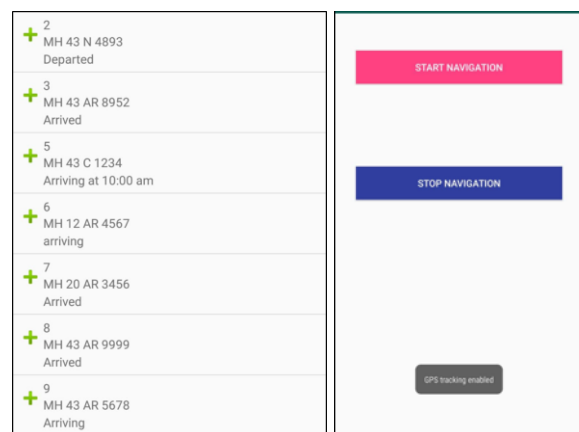
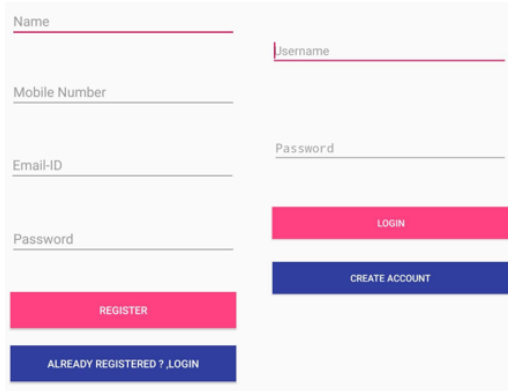


Fig. 3. Driver view

C. The user module

The User will have to first create an account. After registering, the user can login. After login the user will see a list of buses of which he can select a bus to see its current location on the map.



The form is divided into two columns. The left column contains input fields for Name, Mobile Number, Email-ID, and Password. The right column contains input fields for Username and Password. Below the input fields are four buttons: a pink 'REGISTER' button, a blue 'ALREADY REGISTERED ? ,LOGIN' button, a pink 'LOGIN' button, and a blue 'CREATE ACCOUNT' button.

Fig. 4. User Registration/Login

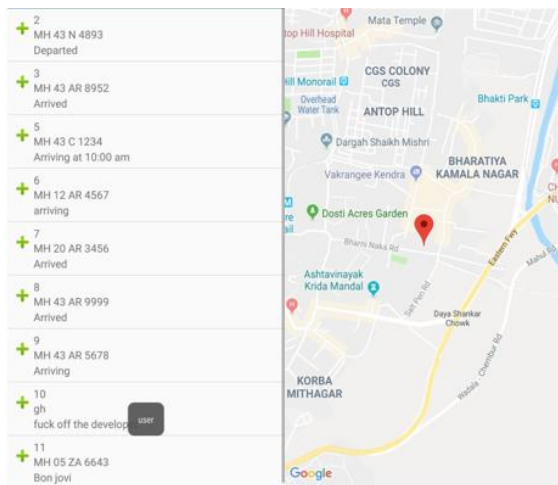


Fig. 5. User view

6. Results and Analysis

A. Analysis

In this phase, we studied existing systems, and understood their drawbacks. Requirements of the Bus Tracking System are understood in detail by conducting literature survey. We studied and finalized different data sets available for experimentation i.e. the data from organizations. The requirements of both system and software were studied and finalized.

Bus tracking framework is valuable and essential predominantly in urban communities. This framework has numerous benefits like simple to use, wide coverage area, simple to actualize in vehicles, optimum, gigantic limit and so forth.

This framework was made utilizing GPS available in

smartphones to get to dynamic vehicle location and send it to server. At that point individuals can get to this data from their android cell phones.

7. Conclusion

The outcomes determined in the paper can possibly bolster canny transportation frameworks. The strategy for mapping handover zones as system side information obtaining is effectively executed with no extra equipment organization.

This additionally indicates how location information securing method can widen the range of location-based systems. This can be productively utilized for indicating elective paths when a specific path is blocked and can function as an intelligent framework.

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