Real Time Bus Tracking System

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Abstract— Transportation becomes very difficult in cities like Mumbai. The public transports, especially buses are developing around the world. Such public transports reduce the usage of private vehicles thus reducing fuel consumption and mollifying traffic congestion. The problem with buses is that the commuters do not know the complete information namely the number of buses that go to the required destination, bus numbers, bus timings, the routes through which the bus would pass, time taken for the bus to reach, maps that would guide the passenger with his/her route and most importantly, track the current location of the bus and give the correct time for the bus to reach its bus stop. This leads to waiting for buses for unknown time as the commuters are not aware at what time exactly the bus is to arrive. The approximate arrival time of buses is known but there may be delay in arrival due to traffic. Seeing that people started avoiding public transports and started using private vehicles, many applications were developed; but these applications were unable to mitigate the problems. Some applications provided only the arrival time and departure time of buses at their source and destination. Some of them, provided time-tables, but even they were not accurate as they did not consider the delay due to unpredictable factors like – traffic, harsh weather situation, etc. the time-tables were not timely updated thus leading to waiting for buses. And due to all these reasons commuters opt for different alternatives to ally their problems. The proposed system deals with overcoming the problems stated above. The system is an Android application that gives necessary information about all the City-Buses travelling in Mumbai.

Key words: Tracking, Approximate Time, Android Application, Analysis, User-Friendly

I. INTRODUCTION

Bus tracking is an application that tracks a bus. Tracking System involves the installation of an electronic device in a vehicle but electronic device is costly so we can use Android App for Bus tracking with an installed Android App on any SMART phone .User get the vehicle's location. There are two applications one for server and the other for the client. Bus driver start application on their Android phone to track their positions. By this positions to server are periodically updated. Client application displays map showing the position of bus. It shows where buses are on a map and provide users the updated information at different time interval. The server will monitor location and will store its data in the database.

The main objective of this application is to reduce the waiting time of the users using this application. As in today's world time is more valuable than money, Hence our primary focus is to minimize this unnecessary wastage of valuable time. This application has an upper hand over the existing system as it provides real time position of the city bus unlike the existing one which is static in nature and provides only that data which is stored in the database. Our application provides user with the exact position of the city bus on the Google Map. Emergence of Android as a platform to provide useful application to the common man has proved a boon in many ways. Thus our application can reach to mass audience through android market and will benefit many travelers.

II. ARCHITECTURE

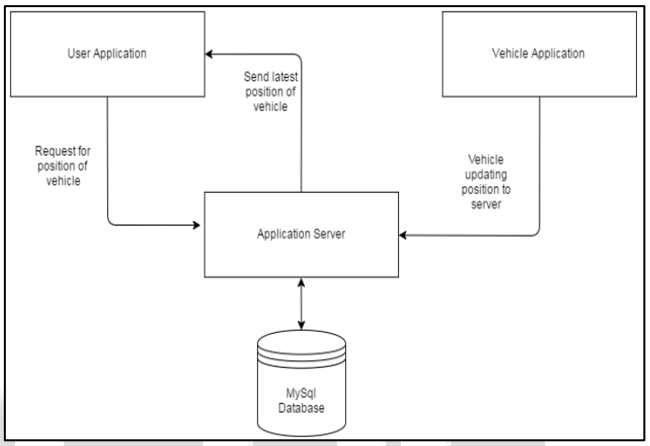

Fig. 1: Architecture

- Bus driver will have to first login and then according to bus location GPS will update its location and send to application server and then application server will store updated location of the bus in the database.
- When user requests for nearest bus by entering source and destination application server will respond with the nearest bus ID.

III. FLOWCHART

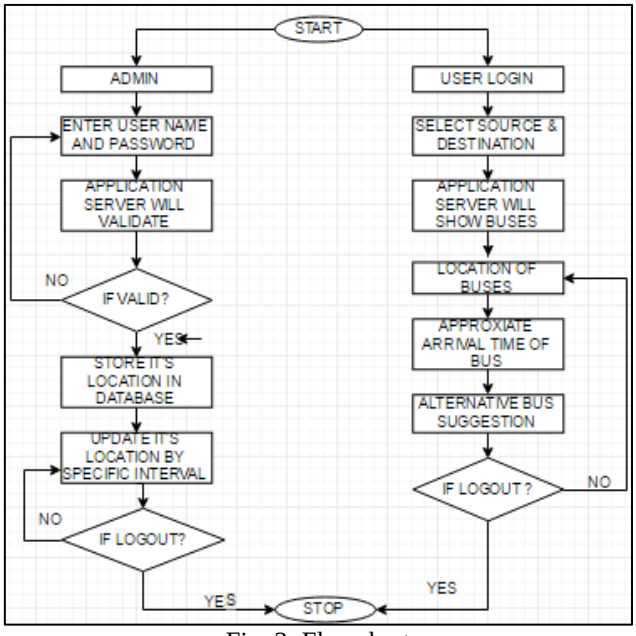

Fig. 2: Flowchart

There are two types of login admin login and user log in. If you are login as an admin then admin have to enter id and password after entering this server checks it is valid or not if it is valid then it starts to save location of the bus. If it is not valid then it asks admin to log in again .If admin log out then application will stop.

If you are log in as a user then you have to put source and destination. After putting source and destination server give all information to user. If user log out then application will stop.

IV. PROPOSED SYSTEM

There are two main modules in the application one for server side and the other for the client. Bus drivers will start an application by login into admin section on their Android phone. By this current bus positions to the server are periodically updated. In the client section user enters the source and destination as input and in the output get the details of the bus no, ticket fair, alternative bus suggestion for the selected bus, map showing real time location of the bus on the Google Map and approximate arrival time.

V. SCREEN SHOTS

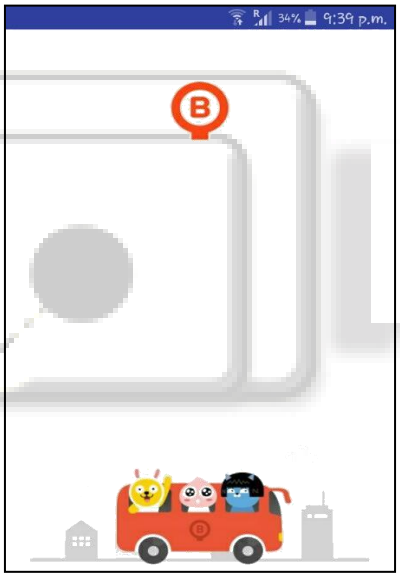

Fig. 3: First Screen

Whenever user login in the application this is the first screen.

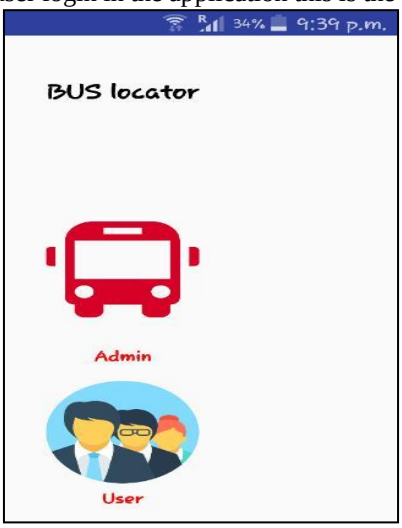

Fig. 4: Second Screen

This is the screen where user chooses the mode of using the application.

User can login as a login either bus driver or as a user.

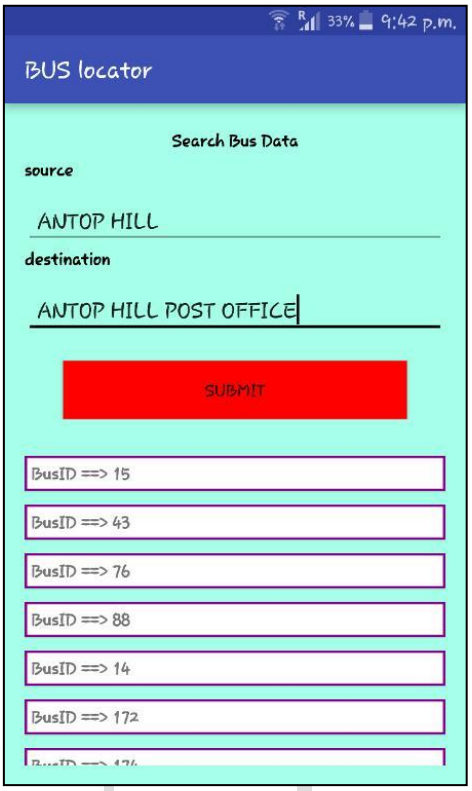

Fig. 5: Third Screen

This screen comes when user make choice as a user. User enters source and destination then server will show all buses to the destination.

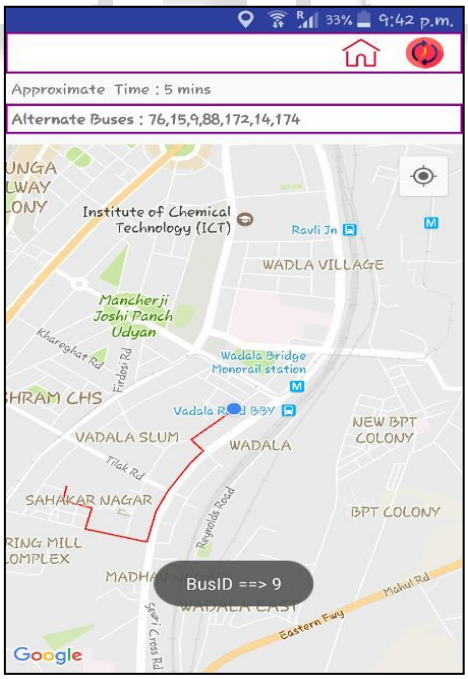

Fig. 6: Fourth Screen

This screen comes when user selects particular bus .It shows path between you and selected bus and approximate time of bus.

VI. CONCLUSION

In this paper, we have presented a smart bus tracking system. It is based GPS and Google's map technologies. The proposed system, basically tracks the buses, estimates their arrival times at specific bus stops. It prevents passengers unnecessarily to wait at bus stops and enables them to use their time more efficiently. In the future, we plan to enhance the system with some other estimation tools and statistical analysis. This might be used not only by public users but also by decision makers in the local municipalities. Moreover, since the system is developed with open standards and open sources, it is easily extended with future technologies according to users' needs.

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