ANDROID APPLICATION TO FIND BUS ARRIVAL TIME

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ABSTRACT

The presentation of transmit following and appearance time forecast in littler travel offices. It is a framework utilizing GPS (Global Positioning System), GSM (Global System for Mobile Communication) and Microcontroller for following the voyagers. The ongoing co-ordinates got from the GPS gadget will consistently screen a moving vehicle and report the situation of the vehicle on solicitation to travellers. Android application to decide the estimated time of appearance of an open vehicle transports to the client. To begin with, the module that acquires data on schedule and goal of the vehicle transport is planned and actualized. Second, a web server is built up that forms the information got from the vehicle transport, just as from the client. Third, a versatile application is made that appears on an intuitive guide the data prepared by the web server (area and inexact time of transport client appearance). An ongoing vehicle following framework utilizes a worldwide situating framework (GPS) innovation module to get the area of the vehicle, to advance into microcontroller and to associate system by a general packet radio service (GPRS) innovation for showing a constant on the site or android map created by Google Map which permits investigation of vehicles consistently.

KEYWORDS: GPS, GSM, GPRS, Bus Tracking.

1. INTRODUCTION

The system provides the relevant information regarding all the bus numbers going from users source & destination along with the route details , real time location. Generally our system is operated by GPS which is attached with the bus. Firstly GPS receives the satellite signals and then the position co-ordinates with latitude and longitude are determined by it. The location is determined with the help of GPS and transmission mechanism. After receiving the data the tracking data can be transmitted using any wireless communications systems. GSM/GPRS is used generally to transmit the data. Generally remote user can access this information of a bus based on users source and destination. our proposed system gives the real time location of bus. Bus tracking technology is advantageous for tracking and monitoring a bus.

It is a very cost effective mode of transport. Due to cause of heavy traffic and roadwork etc., most of the buses are delayed in time. At the bus terminus people have to wait for long time without even knowing when the bus will arrive. Anybody who want to use the public transportation system, can't find the time of arrival of particular bus at the particular destination even at their homes and plan their departure from home accordingly. But due to unexpected delays in traffic congestion the bus arrival time cannot be guaranteed . Our main focus is to provide such a system to remote user which will reduce waiting time for bus and will provide him with all necessary details regarding the arrival/departure time of the bus, its real location and expected waiting time.

Our proposed system can find the location of the bus and inform the central controller at the bus terminal. Once this information is uploaded in the server and then the commuter can access the information via the web based application using internet even at their homes or any work place. Additionally, our system also provides a web based application which is interfaced with Google Maps which displays all transmitted information to the end user along with location of the bus on the map.

Our goal is to increase the public transportation and satisfaction of current public transportation users and help to

motivate more people to ride. If remote users who wish to use public transportation had an easy way to see which bus is near to their location and approximate time it will take to reach the particular stop, in real time, then they can make a more accurate decision of whether or not to wait at a stop.

MOTIVATION

The proposed framework is effectively planned, executed and tried and the accompanying ends are made. Our framework lessens the sitting tight time of remote clients for transport. The framework the tracks the transport at any area whenever. All the present data is put away to the server and it is recovered to remote clients by means of online application. This framework is more easy to use for clients to get data outwardly appeared on Google Map. Client can openly get this online application for ongoing following of transport which give intuitive interface condition. So by utilizing this application remote client can simply pause or they may reschedule their excursion as indicated by the accessibility of transport.

2. IMPLEMENTATION

System implementation is the important stage of project when the theoretical design is tuned into practical system. The main stages in the implementation are as follows:

- Planning

- Training

- System testing and

- Changeover Planning

Planning is the first task in the system implementation. Planning means deciding on the method and the time scale to be adopted. At the time of implementation of any system people from different departments and system analysis involve. They are confirmed to practical problem of controlling various activities of people outside their own data processing departments. The line managers controlled through an implementation coordinating committee. The committee considers ideas, problems and complaints of user department, it must also consider;

- The implication of system environment

- Self-selection and allocation form implementation tasks

- Consultation with unions and resources available

- Standby facilities and channels of communication

3. SYSTEM ARCHITECTURE

The Broadcast receiver in the GPS module work in tandem to establish connection & report location, the fragments in the activity class manage all the methods in listing peers. To search for a bus, client has to enter the bus number in the search bar of the application. Then the map is displays the current location of the bus.

The workflow of this system proceeds as follows. First, the GPS module which is fixated in the bus starts sending data in the form of latitude and longitude which is stored in the computer system. At the same time, a user can enter the source and destination of the bus number of which it seeks the location. To identify every bus among the varied buses here ID is taken. Each bus has given one distinctive identification number. The server is the most significant module during this system which acts as a central repository of the system. In this system, the whole information is stored and maintained by the server. The server is the intermediate between bus module and user module. The user side module is nothing but an interactive web-based application that services the various function of the system to remote users. If the bus is in range, the search also looks up for the in-between bus stops and the active buses in that particular range. After this, it matches the bus location with the passenger's source location and calculates the time required for the active bus to reach the passenger location.
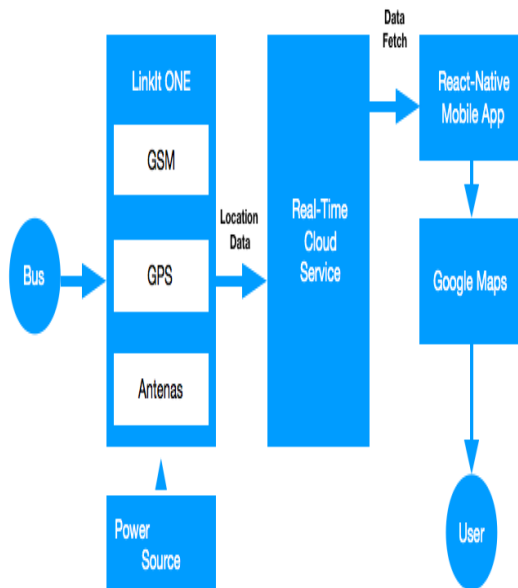
Fig No:1 System Architecture

4. EXISTING SYSTEM

In existing framework the client demands the web server transport client separation data, the transport speed and the surmised time of appearance of the transport, which is gotten by the client's cell in a realistic configuration coordinated into an intelligent guide where the transport is voyaging. Geolocation module is utilized in the current framework. The current framework gave just the appearance time and flight time of Busses at their source and goal. Some of them, if time-tables, however even they were not precise as they didn't consider the postponement because of flighty variables like – traffic, brutal climate circumstance, and so on. It doesn't make some genuine memories transport following assistance or doesn't produce maps for the clients ease. It doesn't show the travelers current area regardless of whether he/she is associated with the GPS. It doesn't give data about the backup courses of action.

4.1 DISADVANTAGES

- ➢ High Cost
- ➢ Required High Speed Net
- ➢ Uses more Hardware
- ➢ No Accuracy.
- ➢ Android is easy to handle and is not user friendly

5. PROPOSED SYSTEM

Without using GPS we can able to provide the information to the user. GPS modules cost high and it does not require that much cost to provide information. A proper database and user interface with the server is enough to provide the information.

This interface is provided by an Android application. Application that priorities the speed by which the destination is arrived. It gives the rush rate of the transport. The goal is to mitigate the problems of the commuters and overcome the drawbacks of previous systems to generate accurate results in less time. Adding a GPS tracker to track the bus and provide accurate timings and updating the information timely is also a goal of the system. Input will be selection of source and destination and output will be display of possible routes with maps and location tracking of the bus.

5.1 ADVANTAGES

➢ Cost Efficient

➢ Android is easy to handle and is user friendly

➢ Moderate Internet is Enough to Retrieve Internet

➢ Simple User Interface

➢ The details of buses will be stored in the database and be retrieved whenever needed.

➢ Information of all routes in cities will be included in the application.

➢ The application will be updated from time to time, so that all changes in the bus timings and the routes are recorded.

6. METHODOLOGY

Server Side

In server side module, used to stored data which is updated by the GPS installed inside bus. If any user can request to particular bus location or arrival time of the bus, then server can sent information to that particular user which are stored in his database.

Inside the Bus

In inside bus module, GPS devices has installed in bus that device have minimum 12v battery backup. GPS device continuousaly collect the information and that information sent to server. The Routes of all Buses are recorded by Bus In-charge. For this reason we have used php-server side scripting. So the management can login the website and update/modify the bus details and details regarding its routes. Now, the request made by the client for the bus information will be fetched from the database and delivered to client through server.

Users (Android)

In user side module, each client have android application through that application client can send request to server for getting information about bus location and arrival time of bus where the user waiting at our bus stop.

Maps

The application is developed using android API which has a very simple User Interface to use it. Google maps API is the core component used in it, which is very easy to use and explore maps with simple gestures such as pinch to zoom tap to point etc. The Location information is fetched from the online database which recieves the data regarding the location from the arduino module in the bus. This helps in maintaining the uniqueness of the bus while displaying its location in the map.

Central control unit

Central control unit is nothing but admin module whose task is to upload all static information about bus i.e. to add stops, add routes etc to the database.

User module

The user side module is nothing but an interactive web based application which services the various function of system to remote users.
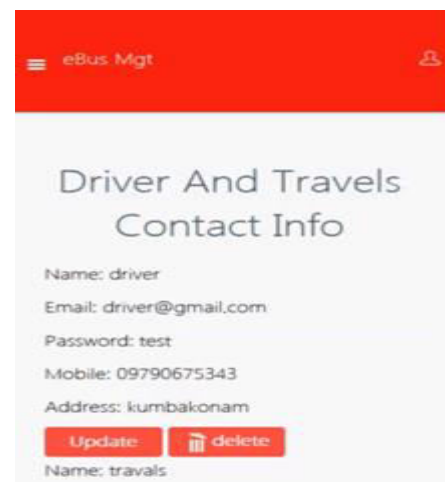
7. RESULTS AND DISCUSSION

Home Page

Fig No 2 Home Page

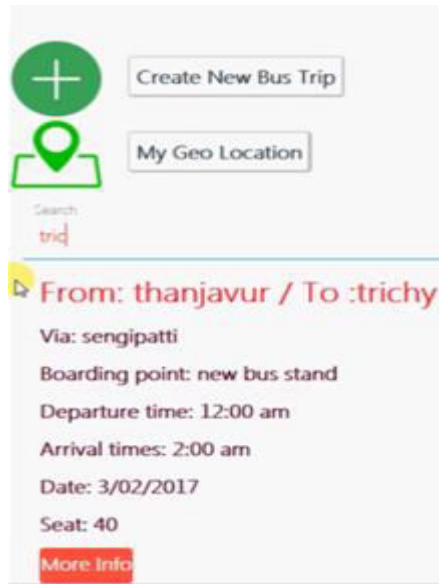**Driver Details**

Fig No 3 Driver Details

Bus Details

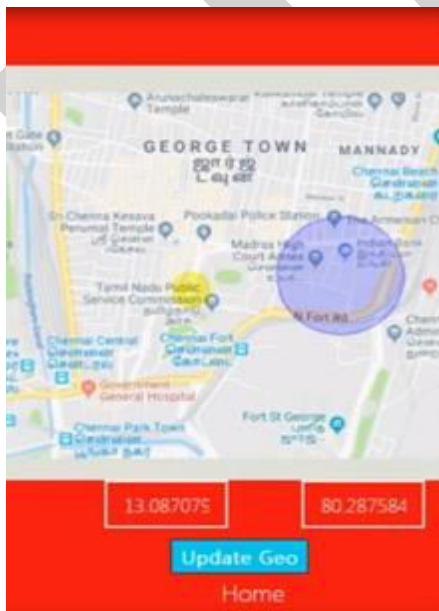
Fig No 4 Bus Details

Geo location

Fig No 5 Geo location

8. CONCLUSION

We present a GPS based transport appearance time forecast framework. Basically depending on cheap and broadly accessible cell flags, the proposed framework gives cost-productive answers for the issue. This undertaking is actualized utilizing Android and the SQL area. Utilizing the GPS framework, the application will consequently show the transports on guide and its courses to the various areas and furthermore track the transport area utilizing customer server innovation and forward it to the customer gadget. Explicit area subtleties are furnished to the client alongside the transport area so the individual can recognize the transport accurately. It utilizes remote server as its database. Because of this, the records can be effectively introduced on the client"s gadget itself with the goal that the server trouble get decreased. For future improvement, we can build up a vehicle observing framework utilizing GPS and GSM module with rapid processor. The framework will have most recent innovation and improved calculation with

moderate expense. The framework may concentrate on precise appearance time forecast and ongoing situation of vehicle. The framework can be introduced in transports, vehicles and trucks this venture is having a wide extension. This can be utilized to give data explicit to those zone to the specific client on his/her following visit to the software.SMS can likewise be sent to the client in the event of App upgradation or any news with respect to transport administrations.

9. FUTURE ENHANCEMENTS

For future enhancement, we can develop a vehicle monitoring system using GPS & GSM module with high speed processor. The system will have latest technology and optimized algorithm with moderate cost. The system may focus on accurate arrival time prediction and real time position of vehicle. The system can be installed in buses, cars and trucks this project is having a wide scope. This can be used to provide information specific to those area to the particular customer on his/her next visit to the software. SMS can also be sent to the user in case of App upgradation or any news regarding bus services.

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