Robust Real Time Bus Imprint System

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ABSTRACT: The movement of college buses is affected by different uncertain conditions as the day progresses such as traffic congestion, unexpected delays, and randomness in passengers demand and many more incidents. Many students and staff members are often late for colleges because they decide to wait for the bus instead of using and alternate transportation.

To reduce this confusion and in-convince, a message will be shown on the application that will provide the real-time information about the bus showing its arrival time which could reduce the anxiety of students and staff waiting. A GPS & GSM Based Vehicle Tracking Security System combine installation of an electronic device in vehicle, with purpose-designed computer software to enable to track the vehicle's location. In vehicle tracking systems Global Positioning System technology is use for finding the location of the vehicle. Vehicle location information can be viewed on electronic maps via the Internet or specialized software.

This system is useful for car theft situations, for adolescent drivers being watched and monitored by parents exceeding speed limit, or leaving a specific area. It also used for safe transportation in industries. The real-time bus tracking system uses GPS technology to fetch data and display the data using software allowing a user to monitor a particular route. When the information is presented to the students and staff members by wireless media or application, they can manage their time efficiently and reach the bus stop just before they arrives, or take the alternate means of transport if the bus is delayed. The system provides web based application which gives the real time location of a bus on user interface screen to the remote users. This will make the collage transport system smooth and passengers friendly.

KEYWORD: Microcontroller, GSM, GPS, Accident, Android, Tracking, Safety.

I.INRODUCTION

Public transport has become a part of live. Most people reach from homes to workplace or school using public transportation. People can lose time in transportation because of unwanted waiting. Also, Staff/Students have the right to know where the bus is now and how long time it takes bus to reach bus stop.

The services provided to passengers by transport systems are very important. There are two kinds of service that all transport systems must provide: (i) route and schedule information (maps, schedules, and information on connections) (ii) basic information (fare policy, stop locations, etc.). These types of information are delivered in a variety of ways: (a) traditional delivery methods include printed maps and schedule cards, and "rider guides." These are often distributed physically onboard buses and at key transit locations. (b) As with other types of information, the majority of distribution has moved to the Internet. Nearly all transport systems now provide service information on their websites where users can either view it electronically or print it at home or in their office. (c) Third party distribution systems have also become increasingly common. Most major transport systems now present route and schedule information through Google Transit, and smaller transit systems are also moving in this direction.

Many transport systems are also now making their Google Transit data publicly available for use in the development of third party smart phone applications. If we look in terms of delivering service information, our study is included in the last way. In this smart bus system, users can access real-time passenger information such as schedule, bus location, via Smartphone's at their bus stops. Real time tracking system that provides accurate localization of the tracked vehicle by using GPS and GPRS modules.

By means of GPS receiver, proposed system has ability of tracking current position of the vehicle in any specific time. In this paper, we proposed a location-aware smart bus system that provides the Staff/Students about the current location of their route bus.

User can view bus routes on the map with the geographic attributes. Google Maps are used for displaying current location of busses on the maps, together with the related route information. If users are registered to the system, they can be informed of routes and bus arrival times via SMS.

II.LITERATURE SURVEY

Real-time tracking and management of vehicles has been a field of interest for many researchers and a lot of research work has been done for tracking system. Recently the various anti-theft modules like steering wheel locked equipment, network tracking system and traditional electronic alarm are developed along with client identification and real time performance monitoring.

The paper presented by El-Medany, W.; Al-Omary et al describes a real time tracking system that provides accurate localizations of the tracked vehicle with low cost. GM862 cellular quad band module is used for implementation. A monitoring server and a graphical user interface on a website is also developed using Microsoft SQL Server 2003 and ASP.net to view the proper location of a vehicle on a specific map. The paper also provides information regarding the vehicle status such as speed, mileage.

Hu Jian-ming; Li Jie; Li Guang-Hui describes an automobile anti-theft system using GSM and GPS module. The system is developed using high speed mixed type single-chip C8051F120 and stolen automobile is detected by the use of vibration sensor.

Le-Tien, T.; Vu Phung describes a system based on the Global Positioning System (GPS) and Global System for Mobile Communication (GSM). It describes the practical model for routing and tracking with mobile vehicle in a large area outdoor environment.
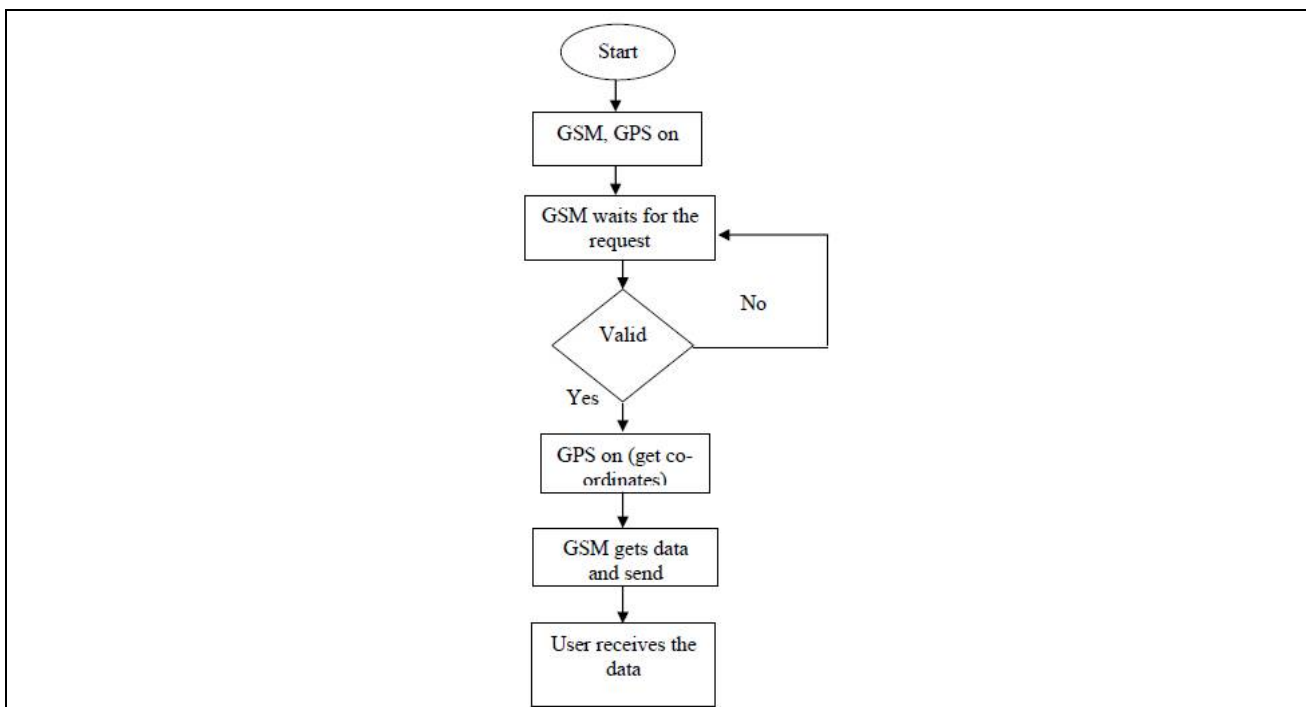
III.PROPOSED SYSTEM

Fig: Flow chart of tracking system

HARDWARE MODULE: In the Hardware Module we are basically using GPS module to locate the current location of the bus and send the data in the form of latitude and longitude form with the help of GPS Satellite the data is transferred to requested user as well as the college control room.

SOFTWARE MODULE: In the Software module basically we are representing the system implementation. With the help of Hardware the location of the Vehicle is seen in to requested interface as well as the Control Room. The

Representation we are doing with the help of Android Application. The Android Application has easy interface to easily understand the architecture of the tracking system. We also provided the spot to Spot pixels to locate the Bus as well as the Stops where bus has reached.

IV.SYSTEM IMPLEMENTATION

This system acts on Global System for Mobile Communication (GSM), Global Positioning System (GPS) and General Packet Radio System (GPRS) which are utilized for vehicle tracking and monitoring. The SIM908 Module is applied which incorporates three techniques to be specific GPS, GPRS and GSM. GPS gives the vehicle location coordinates, GPRS transmits these data to the server and finally the GSM transmits warning message to the vehicle owner phone.
This paper exhibit the evolution of the vehicle tracking system prototype which is used in the vehicle. In particular, the framework will use GPS to acquire a vehicle location coordinates and send it utilizing GSM modem to the owner phone and to the web server. After that, the browser can carry on the PHP site page that utilizes Google maps to display the place in a real time. To define the location accuracy of the suggested system, we compared the system proposed results with the different commercial GPS devices.

LOCATION INDICATOR: This system has provided certain features like location indicator, as the bus proceed to their defined path the pixel indicator were the indicate the actual location of the bus. A the bus reaches certain stop it indicates the location, in addition to this if their certain case were arrive that the distance between two stops is very much then we added the addition pixels so that the location can be visible to the monitoring system between the path.
ACCIDENTAL VIBRATION: This system has provided the accidental alert as it come in case of accident. As the bus had an accident then it send the co-ordinates of the bus to the control system with the accidental message. For this we have added certain sensors to it that will activate only when the bus has an impact reaches to the level which we had set.
SENSORS: In our project we have used the impact measuring sensors to detect the impact of the bus to decide whether it is an accident or not.

VI.CONCLUSION

In this paper, we have presented a smart bus tracking system. It is based on GPS, GSM and Google's map technologies. The proposed system, basically tracks the busses, estimates their arrival times at specific bus stops and informs the users through 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 use 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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