RESEARCH ARTICLE

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College Bus Tracking Based On Web Application

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ABSTRACT

The college bus tracking system tracks your bus by receiving the GPS information from the smart phones used by the drivers. It will update the location of each bus with particular bus id. For this we collect the latitude and longitude with using Google maps. The GPS modem will continuously give the data indicating the position of the bus is demanded. The request by the passengers is send to the number at the GSM modem, system automatically sends a return reply to that mobile indicating the position of the bus in terms of latitude and longitude in real time. It is not only for the passengers to locate the current running status of the buses but also allow users to register to the college, View assigned buses and routes and also can update their status through the application. The college bus tracking system help users to know the bus location so that user neither gets delayed nor does arrive at the stop too early thereby overcoming increased waiting time and uncertainty in bus arrivals. *Keywords: — Global Positioning System (GPS), Internet, Bus Tracking, GSM.*

I. INTRODUCTION

Even though our college make all-out effort to run all the buses on time, sometimes buses get delayed, rescheduled, traffic issues, cancelled or diverted to another route resulting in change in the actual arrival/departure time from scheduled time. In such situation, it is better to check the current bus running status beforehand to avoid any inconvenience.

In our day today life students and faculties faced a big issue, they can't reach on correct time on their stop. By using this application, they can find out the current status of the running bus. It is a web application. This application uses the GPS function also, available in most smartphones today, to pin point your location fairly accurately. User has to select the route. This application will show you the bus timing with the accurate fare as per your source and destination.



Fig1.Tracking the location

GPS tracking for buses uses satellite technology and sophisticated computer modelling to track buses on their route. Bus estimated arrival times can be predicted with extreme accuracy, since estimates are constantly being updated in real time. GPS bus tracking is designed to improve bus operation, user friendly tool to help in managing and reporting the current status of the bus location.it is not only for the passengers to locate the current running status of the buses but also allow the conductors to registers to the college, view assigned buses and routes and also can update their status through this application.

II. NEED FOR THE COLLEGE BUS TRACKING SYSTEM

Main objective of College Bus Tracking System is to get the real time location of the college bus. Parents can track the location of the bus of their children. College authorities are aware of student's whereabouts, providing extra safety. By using the system, we can reduce the waiting time, reduce the uncertainty time, greater feel of security.

III. EXISTING SYSTEM

Nowadays the students who are depending on college buses for their journey will have to manually find the bus timings, scheduling and bus current running positions. There are situations such as buses get delayed, chances of missing bus, rescheduled, cancelled or diverted to another route, resulting in change in the actual arrival time from scheduled time. Location of the bus is unknown thus we need to ask the bus information for respective persons. In such cases, it is difficult to get the current status manually. Web based vehicle tracking system comprises of the vehicle mounted tracking devices, central server system and web based application.

IV. PROPOSED SYSTEM

As population increases in cities, so does the number of vehicles, especially buses can prove to be impractical for those who must adhere to a strict schedule or depend on them for emergencies. Buses that are running particularly behind schedule can lead to late arrivals or missed connections while buses running ahead of schedule can indirectly cause travelers to be late if they end up waiting for a bus that has already passed. While these variations from the official bus schedule are understandable and largely unavoidable, the lack of discourages communication adoption at а rate disproportionate with their actual likelihood. Even if a bus is running exactly on schedule, bus users have no easy way of knowing that information and those that have alternative modes of transportation will be less likely to ride the bus regardless of its actual timelines. In the modern era of technological communication, it is increasingly easy for people to stay in contact at all times with the use of smart phones and other internet capable mobile devices.

Our project is proposed that to provide an effective solution for delay time. We are expecting to find the location of the bus and let the users know the location. It is one of the most worrying concern among the inability to track the bus realtime, students are waiting for long time, current running status of the bus, parents can't get the information about the students when they are late, traffic issues etc. Even it will effectively provide solution to find out the best possible route to reach all the pickup/drop points efficiently.

Also the students can handle the bus fees through online and we can easily trace the students that who were travelling without fees. By using this the students and faculties can find if the buses are left or not. Traffic issues like road accidents, problems occur between persons and traffic polices etc., due to these reason buses were late. So the driver sends the information to the parents and college via messages. So that one can manage their stop just before the bus arrives or take an alternative means of transport if they miss the bus or they are running late.

Fig. 1 Overview of tracking system



V. METHODOLOGIES

The project is divided into five modules are administrator, faculty, driver, student, and parent. This will make the development and maintenance easy as each module under takes distinguishable tasks.

A. Administrator

Admin can login to the admin account after authentication and authorization. He can enter new route details and also he can select the route from the list of routes and then the corresponding stops are displayed. He has the option to add or remove a route. He also has the option to modify or remove a stop from the route. If the admin wants to say any information to the driver, then he sends the message to the driver's mobile via the browser. He can also enter new student details and view the list of students. He has the options to add or remove a student details.

B. Faculty

Faculty can enter into the web page with their own user id and password. They can view the students who are travelling in the college bus and their payment details, complaints about the driver. Also add the details of students and parents.

C. Driver

Bus Driver is the second important user of the system. Bus Driver is the one who update the information while bus driver is on bus operating hours. Bus Driver is able to update bus status accordingly in order to inform bus users about immediate situation.

Driver also enter the bus number, route id, and mobile number to login the application. Driver works is only start and stop the bus. When the application is launched, the home activity fetches the routes from the server and binds it to the spinner for the driver to select it. If the driver selects start option, then the location of the bus will be uploaded to the server. If the driver selects stop option, then the uploading of location of the bus is stopped. When unexpected issues occur in the road, driver will generate notifications for any unscheduled stops. Information about traffic jams or any emergency through real time bus tracking. Drivers can generate emergency alerts to the concerned person if the bus breakdown or in case of any other emergency situation. They can view all possible routes to a particular location and subsequently best route can be chosen.

D. Student

Student is the main user of the proposed system because the main objective of bus tracking system is to provide estimated bus arrival time for students. The student must able to retrieve real time estimated bus arrival time for every bus stop. While waiting in bus stop, student able to access bus tracking system with mobile device. This is the main purpose of bus tracking system in mobile application is developed. The system is provided real time bus tracking system with mapping feature, which mean student able to view the bus position with a map. With this mapping technique, students able to know where is a bus position based on the map in real time.

Student can enter into web page using their id number and password. Create their own web page for each student. Search the current running status location of the bus. So they can easily trace the bus and reach the bus stop on correct time. There by reducing the delay time. If the bus will leave the stop, it will notify on the student's web page.

E. Parent

Parents can login with their user id and password. Each parents get their child information such as if they are present or not inside the bus, current running status location of the bus. If any traffic problems occur, get a notification on their web page. So this will help the parents for worrying about their own children's safety.

Parents can easily come to know about the performance their student in the college without contacting the faculty so that their time can also be saved. Easy for parents to know the travelling details of the students at any time, instant updates about on and off the college bus can also availed. Due to any reason, if vehicles change their route, it will be communicated to parents.

VI. ADVANTAGES

- Reduce the delay time.
- Improve the accuracy.
- Have a proper plan about travelling.
- User friendly system to track the location.
- Provide security for students.

VII. DRAWBACKS

- GPS based location system may not work properly during inappropriate weather conditions.
- Location cannot access without internet.
- The GPS signals not accurate due to some obstacles to the signal such as buildings, trees and sometime by extreme atmospheric conditions such as geomagnetic stones.

VIII. CONCLUSIONS

In this project, we have to track the college bus without time delay. It also provides an alert message in case of any emergency situations. The modules also alert the authorized person in case of any emergency situation like breakdowns, accidents etc., via SMS. It is not only the college management but also parents who enjoy peace of mind when it comes to safety of the students while on the move. This increases the accuracy of the system as it also takes into account the traffic conditions during that day of week and time of the day. Also reduces the waiting time of remote users for bus and provides bus tracking at any location.

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