

COLLEGE BUS TRACKING USING GLOBAL POSITIONING SYSTEM

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ABSTRACT

Our Application is designed for Students to track the College Bus through GPS Technology which helps the students and teachers to reach the college. Android operating system is at the top in gadget market because of its features like portability and low memory consumption. As android operating System is used in mobile phones, tablets and laptops it has covered more than 80% of the gadget market. Transportation details can be easily managed and provides the current information to the students and staffs regarding the busses. However a notification can make a lot of difference. To make it more efficient on time, our application provides the notification alarm when the college bus has arrived to the particular location so that the students need not have to check the updates of the bus. Lastly it is useful for admin, driver and students to make the transportation more efficiently.

Keyword: - waypoint , notification, GPS location.

1. Introduction

They are student, driver and admin. Initially first the user or student can register in the application then he will know the bus id so he can enter the bus id so that he can locate then when the bus is nearby to his stop he will get an alarm notification this is done by using the waypoints in the maps to get the location. Secondly next the DRIVER will have a login he also should register and when the driver logs in the student's login that particular bus will be getting notification.

The ADMIN is the final in which he can update the bus timings and routes to the students if there are any sudden changes in the timings of the bus lastly we will be maintaining a database for the students to get details and also we will be having login verification and validation details in the database' we will maintain a database and there are two applications in which one is used for the student and the next is for all the three we will be using server communication to interact between the two applications. To develop bus tracking system to monitor and manage the college bus transportation system. To provide students and teachers with exact location and scheduled time of buses through notification alarm which is more convenient with android application. The difficult situation for a student and teacher is missing their buses. However a notification can make a lot of difference. Using this notification alarm they can easily fetch the bus on time. So this project can be equipped for the simple reason that it lets the teacher and student have peace of mind.

Android has become very popular in the world since it is an open source and there are no extra fees for Java Virtual Machine (JVM). In today's world, the time is more important for students. Being a product of high technology, mobile phones are more widely used and are becoming more and more popular. A vehicle tracking system is a commonly used application for tracking vehicles. Due to traffic congestion and road works, most of the students are not able to reach their bus on time. People have to wait for their bus at the bus stops for a long time without even

knowing when the bus will arrive. Thus, the arrival time of the bus cannot be guaranteed. The main focus of the project is to save the waiting time of students and provide them the details of the bus by generating an notification alarm when the bus reaches the student location. We proposed a new notification alarm which is triggered when driver initially login to his desired id and the second notification alarm triggered when the bus reaches the desired location which is marked by the student or staff. Even admin can update the bus information to the driver and students can also receive the update once they choose their desired source and destination places. Not necessary to keep on tracking the bus. Missing the bus will be reduced by students and staffs

A feasibility analysis usually involves a thorough assessment of the operational, financial and technical aspects of a proposal. Feasibility study is the test of the system proposal made to identify whether it satisfies student's needs may be satisfied using the current software and hardware technologies. However to check whether the system will be cost effective from the business point of view and whether it can develop with the given budgetary constraints. It is carried out to determine whether the proposed system is done with the available resources.

This feasibility study presents tangible and intangible benefits from the project by comparing the development and operational cost. This technique is often used as a basis of assessing economic feasibility. This system needs some more initial investment than the existing system but it will improve quality of service. Some of the following points are: Time comparison. Improvement resulting over the existing method in terms of accuracy and waiting time Technical feasibility includes whether the application is available in the market for its development. The assessment of technical feasibility must be based on an outline design of system requirements in terms of input, output, files , program's and procedure. This can be qualified in terms of volumes of data, trends, frequent activity in order to give an introduction of technical system. This analysis involve how it will work when it is installed and managerial environment in which it is implemented. The new proposed system is very useful to the students in many ways and therefore it will be encouraged by many students in future

2. RELATED WORK

The Location Based Service (LBS) applications can help user to find hospitals, school, gas filling station or any other facility of interest indicated by user within certain range [1]. Just like a GPS device its location will also be updated as soon as user changes his/her position. Android can be considered as a unified software package. This software package includes an operating system, middleware and core applications. Android SDK provides some tools and API's which are required to develop Android applications using the programming language of Java. Android platform provides open system architecture along with a powerful debugging environment. It is also characterized by optimized graphics systems, rich media support and a embeddable web browser.

A Location Based Service (LBS) is an information and entertainment service, accessible with mobile devices through the mobile network and utilizing the ability to make use of geographical position of the mobile device [2]. A LBS services can be used in a variety of contexts, such as health, work, personal life, etc. LBS include services to identify the location of a person or object, such as discovering the nearest banking cash machine or the where about of a friend or employee. LBS services include parcel tracking and vehicle tracking services. LBS have two major actions, that is: 1. Obtaining the location of user 2. Utilizing this information to provide a service.

Location-based services or LBS refer to 'a set of applications that exploit the knowledge of the geographical position of a mobile device in order to provide services based on that information.' Location-based services (LBS) provide the mobile clients personalized services according to their current location [3]. They also open a new area for developers, cellular service network operators, and service providers to develop and provide value-added services: advising clients of current traffic conditions, providing routing information, helping the users to find nearby shopping malls.

The idea of using the mobile handsets and phones is to deliver the valuable services. Location-based services or LBS refer to 'a set of applications that exploit the knowledge of the geographical position of a mobile device in order to provide services based on that information [4].' Location based services (LBS) provide the mobile clients personalized services according to their current location. They also open a new area for developers, cellular service network operators, and service providers to develop and provide value-added services: advising clients of current

traffic conditions, providing routing information, helping the users to find nearby shopping malls. Location-based services offer many merits to the mobile clients. For the mobile user, the examples of location based services [2] are:

- Profile changer based on place or area
- Person Location tracking by Family Member (SMS)
- Nearest Friends notification reminder

3. EXISTING SYSTEM

In existing system there is no notification alarm which is going to be used by students and staffs. We have to keep track the bus over the map or call which minimizes our time for college preparation and consumes more time. When we are using the mobile on roads by tracking the bus, it may cause some troubles.

DISADVANTAGES:

1. Consumes more time on mobile
2. Should keep on track the bus

3.2 PROPOSED SYSTEM

We proposed a new notification alarm which is triggered when driver initially login to his desired id and the second notification alarm triggered when the bus reaches the desired location which is marked by the student or staff. Even admin can update the bus information to the driver and students can also receive the update once they choose their desired source and destination places.

4. System Working



Architecture Diagram

Initially all the three user's i.e., driver, admin and student need to register in the application. After the registration the driver and the student will login using their id and password. When the driver login to the application the student will receive a notification regarding the bus location and the start time of the bus. As the bus is in moving the GPS API used in the application will be fetching the location frequently and update it to the server based on the location given by the student, when the bus arrives at the particular location an notification alarm will be generated by the application based on which the student can start from his/her home location to the bus stop.

This module is for the bus driver. The authorized bus drivers are provided with their unique log in credentials. They need to register and log in and then have to start their location service before driving. The current location of the bus will be updated from driver's mobile to the student when the bus driver start the bus from the home location. The location of the bus will be getting updated in the server for every few seconds so that the student will get the exact location of the bus.

Global Positioning System (GPS): Technology has rapidly advanced in the past few years and it has become very easy for the average person to use a tracking system. GPS stands for Global positioning system has wide number of

application today popularly in the field of navigation, tracking etc. A GPS is a space-based navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. This GPS technology is being used in our application for tracking the location of the bus and send the latitude and longitude status to the server and the student login then he will mark his destination point on the map so when the bus arrives at the particular location and alarm will be generated.

Student has to enter the login id and password to login into application. To search for a bus, Student has to enter bus number in the search bar. Then map will be displayed which shows the current location of bus. He/she can also receive an alert notification from the maps when the bus arrives at the specified location. When the student selects a route, corresponding stops will be fetched from the server.

ADVANTAGES:

1. Not necessary to keep on tracking the bus
2. Missing the bus will be reduced by students and staffs

4. CONCLUSIONS

We developed an Android Application to track the college buses and provide relevant information to their users. This paper has described the design and architecture of our college bus tracking system. Our system is composed of smart phones and a server. The system is able to demonstrate its performance to track college bus from any area. Furthermore, our system is low-cost as it doesn't require any external hardware for location tracking.

6. REFERENCES

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