

SAFETY NOTIFICATION AND BUS MONITORING SYSTEM

Balakrishnan.C¹, Dharshini.N², Harini.V², Kamali.V²
Associate professor¹, Student² Department of Computer Science & Engineering
S.A. Engineering College
Chennai, India

Abstract

The Android application is widely used in all sectors. In our application it helps to track the location of the bus. By waiting near the bus stop for a long time this application helps to reduce the waiting time of the students using Google map. The arrival time of a bus is calculated based upon the pickup point and the starting time of a bus in the shuttle routes. Providing the accurate bus timing will be helpful for all the students, staff to catch the bus at the right time. In a college bus driver is assigned with a mobile phone where we can use to track the current location of the bus. Notification will be sending to the students and parents once the bus is nearby pick up point and drop point by using Geo-fencing. Quick Response code is used to track the attendance of the student whether they boarded the bus at the pickup point. Common alert message will be sent to students, staffs and faculty about the holidays or any crucial information.

Keywords-Geo-fencing, Google map, GPS (Global Positioning System)

I. INTRODUCTION

In today's world, vehicle tracking system is one of the most important systems which are mostly used by drivers and the vehicle owners. The driver will use the Google map to track the vehicle. Google map is important to track any vehicle. It displays all the information to the end user along with the location of

bus on the map. We suggest that the Vehicle tracking system became so advanced and simple with various advance technologies. Nowadays, many organizations are being working for tracking system for the safety purpose. It is a concern to have a vehicles tracking system as for the better implementation of a vehicle, as well as for safety. Mostly in all tracking systems, internet and external data servers are used as a primary requirement. Hence, this system causes investing of a huge amount of money. So in this paper, a survey is done by aiming to reduce costs in tracking systems and making it feasible to implement on school and college bus which take a specific route on a daily basis for the better management of time and safety. Students have to wait for their bus until the bus arrives. Thus our project is to save the waiting time and provide the current location of the bus. Track used to GSM and GPS modules helps to track the system and display the current location of the bus lively on the Google Map. GPS-GSM based tracking system will inform where the vehicle is and where it has been, how long it has been. From the Global Positioning Satellites, the system will fetch the geographic location and time information. The system takes advantage of wireless technology in providing the better way of vehicle tracking system. It is the technology that is used to determine the location of a vehicle. It is a system mostly used to keep an eye on the moving objects and using surveillance systems such as Global Positioning System is the best way to finding the position of the object. This survey found GPS system can observe the vehicle.

II. RELATED WORKS

In this paper we track the vehicle for an organisation in order to find addresses of their vehicle and locate their positions. This is an Android application that is equipped with GSM and GPS. They have used GNSS, GLONASS, and GALILEO services for location information on Google maps. They used 32 Satellites and one scheme called CDMA. This system used modulation schemes such as BPSK, BOCs in and TMS320C4X. It can be used in Security Police Department, Military Department and mainly for Bus tracking [1].

The paper describes a model for tracking and routing of vehicles in large area. It is based on GPS and GSM. It works when the vehicle is in movement only. It should be install the GSM module in both Transmitter and Receiver section. Here they have used 32 bit ARM7 LPC2148 Microcontroller. The main reason for this system is car theft. This includes alarm system in car. Whenever the alarm is triggered it senses and sends SMS to the person. We have used two software: one is Arm processor and Visual basic software is used [2].

In this system each student is assigned to a RFID Tag. This tag is used to sense the presence of each student in the bus and send the alert notification to parents. Speed is detected and alert message is send to the parents in case of emergency. They used different sensor like Fire sensor, IR sensor etc. Fire sensor is used to detect any fire accident while travelling. IR sensor is used to detect any student is present inside the bus after reaching to corresponding place. They have used PIC16F877 Microcontroller in which all the input devices are connected to this controller [3].

This system helps to find the location of vehicle. In this system the owner needs to send a message to vehicle tracking system. When request is passed to the GSM modem then the system process and send a reply to mobile. It will indicate the position of vehicle with latitude and longitude. It will process in very quick time. They used RF Transmitter, receiver, push-pull button, RS232 cable. It used for both business and personal purpose. [4]

The main use of this application is to provide exact location of college bus by using Google map. Intimate the time required to reach a particular stop on its route. This is client-server technology, Java virtual machine is used for the process. This system includes only the

details about the driver details. Driver details include the Name, Bus ID, and Driver ID by means of this system we able to find the details of driver only. It cannot send the alert notification message in case of emergency. It will be monitor the driver detail only [5].

This system is used to find the current location of the bus and it also provides the distance between the bus and the student to alert where the bus is exactly. This distance and the position are displayed using Google map. Thus the movement of the bus is always displayed. GSM module only used to find the location. The main drawback of this system is no alert notification is sent in case of emergency. There is no any guarantee that students were going in right bus [6].

In this system we have four applications. They are, It provide the current location of bus, it send a group message for those who waiting at the next bus stop. It provide e-bus pass. It sends alert notification in case of emergency, like accidents. This system uses some sensor like accident detection sensor. It uses microcontroller to attach the input device. It is based on embedded system. GPS module is used to locate the bus. Since this is embedded system cost is very high [7]. Nowadays the vehicle tracking, alerting, monitoring is challenging problem. In this system RFID is used to monitor system. GSM is used for alerting system. It will calculate the arrival time and delay time of the vehicle. It will track large number of buses. It will alert the vehicle like car, truck, cargo, bike and bus. The monitoring system of a vehicle is integration of RFID technology and tracking system. The proposed system to overcome problem of public transportation. Wireless sensor network used for monitoring of bus transportation system and record of arrival time of buses at bus stops [8].

In this paper, we will present a vehicle tracking system that uses a GPS module and GSM to find the location of a vehicle. The aim of this project is to remotely track a vehicle's location, remotely switch ON and OFF the vehicle's ignition system and remotely lock and unlock the doors of the vehicle. An SMS message is sent to the tracking system and the system responds to the users request by performing appropriate actions. The location of the vehicle is tracked using Google map. They used relay based control concept, to control the features of the vehicle. [9]

This application is used to show the current location of the bus according to source and destination. This will be processed by the central server with relational database which contain all the records of the bus and their routes. The user will get the exact location so that the user need not able to wait for the bus. They consist of two android applications. They are one need to look for the current location of the bus and another application which will be installed on the mobile of the conductor. It will update the location of the bus to the server so that when a user search for a bus on a particular route user can get the complete information about that bus. Suppose in case of bus delay, user will get the notification about that delay. This is done using the Client-Server technology. It is divided into three modules: Admin app, Client app, Conductor app. The project was developed to guide the daily user with bus routes, bus stops, bus schedule from source to destination. It also display the route maps and track real time bus locations and display the estimated remaining time required to reach destination.[10]

In this system, the movements of bus and operations of the bus is monitored using GPS module device. This device is used to give the live updates to the passengers like location of the bus, arrival of the bus, delays, traffic etc., these operations are done by the GPS receiver which is connected to the computer(server) and the driver. Driver will update the data to the server and the computer retrieve the data and display it to the passengers with the help of GPS device.[11]

III. PROPOSED SYSTEM

Our application is used to get the current location of the college bus using Google map. They can able to manage their work, time efficiency and their pick-up point at correct time. Mini attendance system is used to track all the students using quick response code. Each student will get the alert message that the bus is near to your region using firebase.

Student presence message is sent to both the parents and staffs.

Conclusions

Thus, in this paper comparison and further more differences between the proposed system and the existing system. We have tried to recover all the disadvantages of the existing system. The proposed system helps to find the shortest distance, reduces the waiting time of the user and hence-forth it also gives the intimation message for both parents and helps the faculty to maintain the mini-attendance system.

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