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BUS ALERT SYSTEM: AN OVERVIEW

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ABSTRACT

The BUS ALERT SYSTEM is an essential time-management system and applicable for current busy life. It is highly productive in assisting people in planning their personal trips. In this paper we tried to throw light on the advanced BUS ALERT SYSTEM consisting of 3 tiers client side, application server and database. The basic function of the system is to receive, interpret and reply to passenger's SMS request the reply alert will be in the form of SMS to the passengers on their registered mobile numbers. This enable passengers to reach their stop just in time and board the bus without any waiting. The alert system should be fully automatic without any need for interaction with the bus driver or passengers. The passengers need only to register their mobile number on a central website of the bus for which they would like to get the alert. By specifying passenger's location and the required bus, the system will be able to reply the expected arrival time from the bus's current location to passenger's current location.
Key Words: *BUS ALERT SYSTEM; Client side; Application server; Database.*

Introduction:

Possessing own transportation has become more common nowadays. The number of vehicles on the road keep on increasing and most of us are eager to own personal vehicle as we can go anywhere without limitation. In case we are unable to afford personal vehicle, public transportation such as bus, train and cab is the most convenience options for us to get ourselves to another destination from time to time. In this project, we will concentrate the discussion on bus only. Undoubtedly, the existence of bus has reduced road traffic and taking bus is a good starting to inculcate the car-pooling value. Besides, it provides a low-cost transportation which means to the low-income family for travelling to another destination. However, things always don't come in time. The main drawback of travelling with bus is the inconsistence in arrival time which may be due to unforeseen circumstances. Even when we know the bus schedule well, there are number of reasons that buses may not arrive in time as expected. Traffic congestions, heavy downpour, bus breakdowns, accident and day-today problems faced by the bus company can delay or completely interrupt bus service. It is particularly annoying when a person has urgent appointment and also late due to the time-consuming of bus trip.

Existing system

- The existing system now a days is a common type system where there are several bus routes and timings and it is necessary for the passenger to wait in the particular bus stand for the required bus to come or he can go to a particular place where the bus arrives.
- For this various bus stops with prescribed bus numbers are provided.

Drawbacks of the Existing system

- Time wasted waiting for buses
- Unpredictable traffic conditions
- No proper Bus Stand Management

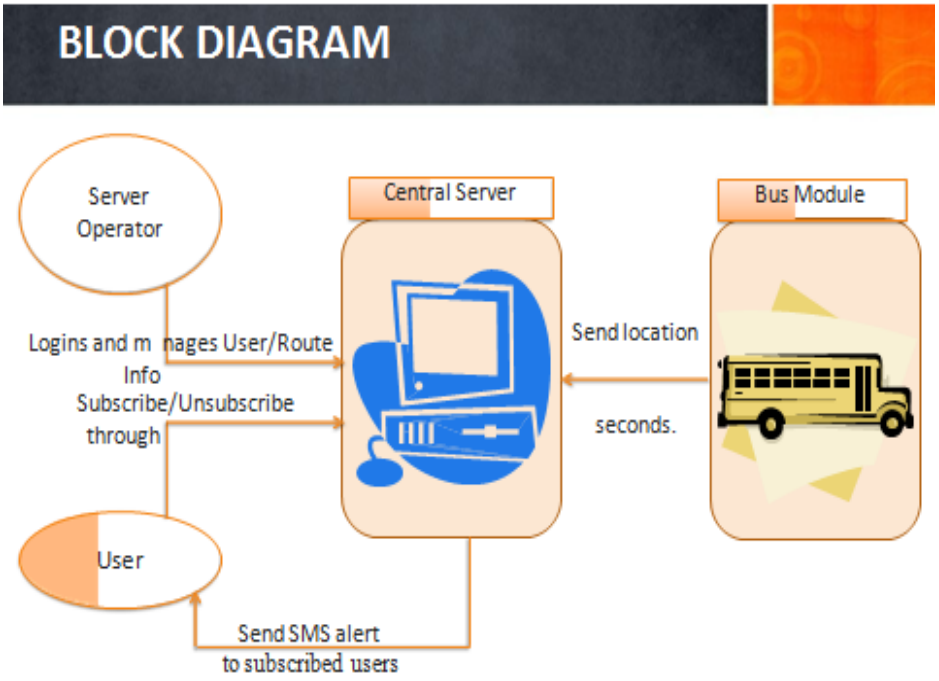
Proposed system

- In this system the user would be required to register on a website hosted on the central server. He would have to provide his mobile number, bus number, bus stop and time in case of multiple routes of the same bus through the same stop.
- Next a central server is maintained to manage the bus routes.
- For tracking the location of bus we require GPS[1,2] and for sending location data we require GPRS and we need to develop an interface between the two so that they can interact.
- So we can use a GPS/GPRS enabled phone to send the location data to the central server. So we will need to develop an application for this interface
- Now the central server will receive GPRS signals from the Bus Modules every 5 seconds and depending on the bus number and the location of the bus it would send the required SMS alerts to the Users registered for that stop. So this unit will have a module for GPRS [3] receiving and also a module for sending SMS.

Advantages of the Proposed System

- Fully Automatic system.
- No interaction with the Driver.
- User Friendly.
- Easy update of Routes and Stops.
- Handle multiple buses at same time.
- Automatic alerts to passenger when vehicle is approaching towards the desired location.

System Planning and Design
Overall System Design structure



Module Description

1. USER INTERFACE:

User is the passenger who would like to receive the service. The user would be required to register on a website hosted on the central server. He would have to provide his mobile number, bus number, bus stop and time in case of multiple routes of the same bus through the same stop.

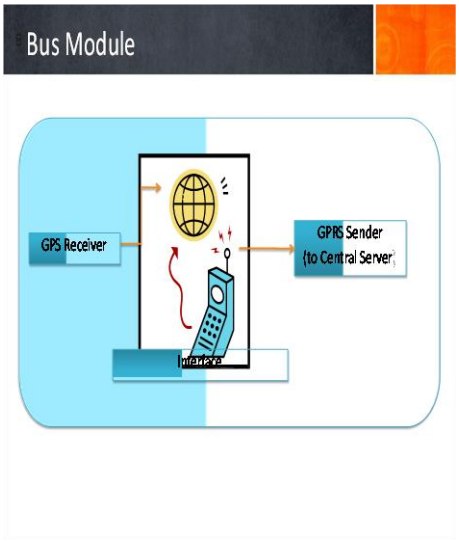
2. Server Operator:

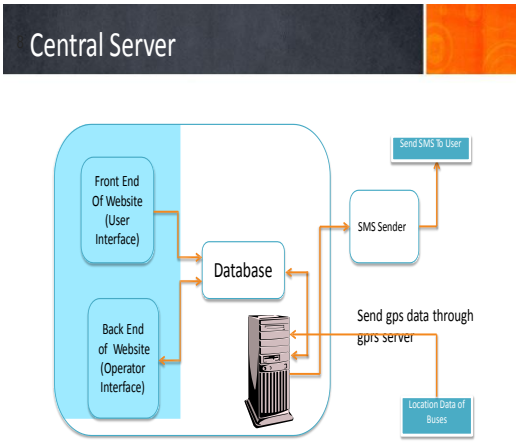
He will manage the bus routes on the central server. New Chartered buses will be introduced into the central server by the server operator. So in nutshell, he will do the upkeep and maintenance of the central server.

3. Bus Module:

It consists of a GPS system to get the current location of the bus and a GPRS system to send the location data along with the bus number to the central server. Also we require an interface between the two so that they can interact. So we can use a GPS/GPRS enabled phone to send the location data to the central server. So we will need to develop an application[4] for this interface.

4. Central Server:





This is the main operating unit. It will store all the user accounts and bus routes. It will receive GPRS signals from the Bus Modules every 5 seconds and depending on the bus number and the location of the bus it would send the required SMS alerts to the Users registered for that stop [5,6]. So this unit will have a module for GPRS receiving and also a module for sending SMSs.

Conclusion:

In this paper we are try to provide information about how automatic alerts to passengers corresponding to their respective bus stops helpful to reach their destination without any waiting. A passenger information system is the key communication link between a transit agency and their riders. Passenger information technology lets a transit agency communicate with its passengers to provide them with real-time bus location and status updates, schedule data and

timely announcements. It vastly improves the transit experience for riders and streamlines work for agency employees.

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