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BUS SCHEDULER

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Abstract

Public transports like buses provide economical, expedient, time-effective means of transportation. But the main problem arises in the bus system is its management and booking fails many times, passengers also don't have the option to select the seats according to their convenience and even the passengers id card is not checked or linked when booking is made. People who rely on public transport suffer a lot due to lack of positioning feature in current bus system.This advanced bus scheduler is used for obtaining the location of bus and information about passengers and driver. The main objective of this system is to develop pliable, user friendly and secure bus management system that caters the needs of passengers and also ensure the smooth booking and travelling experience for the passengers.

Keywords: Location-based services, Advanced Public Transport System, Digital geographic database, management, security

1. Introduction

Since old times, public transport systems dominated by buses are the most widely accepted means of transportation as they are cheap mode of transportation and they provide convenience. But there are certain problems that urban cities experiencing these days that include delay of the buses due to traffic congestion, limited facility of carriers for passengers in volume and timeliness, poor management of traffic, poor condition of roads, attitudinal behaviour of drivers, and others. So, keeping these in minds, there's a requirement in the improvement of bus operation activities most of which require location-based services to enhance the service performance of transportation facilities.

These days, system having barcode scanning software program is used for managing all the buses by scanning individual bus which is very difficult and time-consuming task for the company . Therefore, for minimizing the difficulty of managing the buses and improving the facility and security to the passengers, a bus management system having advanced public transport system that includes digital geographic database that allows maps of the service area to be displayed to the operator and the clients on the computer screen, GIS systems that are used as tools for creating, managing, analysing, and displaying location data also electronic fare collection is done through efficient cashless passenger fare payment system that can be on-board or off-board the bus , is planned which is used to find the current location of bus and in obtaining the information of the passengers and drivers.

Therefore, the main aim of this project is to develop a software equipped with advanced public transport system. Basically, the project describes how to manage for good performance and better services for clients.

2. iterature Review

The bus scheduler have proper scheduling of buses, routes,availability, real time location.It also aims for business process automation and ease for both admin and the user side. The availability of buses is uncertain especially on peak hours for which passengers have to wait for longer duration of time. By doing the analysis of

data we can resolve all the conflict and issues caused by miss-management of manual transportation services of buses. With the help of analytics all the problems caused such as proper scheduling of buses, waiting of buses for a longer period of time and also real time location of the buses are resolved at a very high extent.

3. Proposed Methodology

Existing proposed systems have certain problems and drawbacks that consist of:

- No proper scheduling
- No information about routes
- Non availability and delays of bus
- No proper safety of passengers
- Lack proper tracking of buses
- Identity check of passengers is not done

So, we try to propose a new system that solves the problems of the current system. Our system handles all the data like current location of bus, management of buses, its schedule and security of passengers. Several technologies like GIS is used for development purposes. Our system provides the relevant information regarding all the buses from source and destination with the route details, real time location, availability, and passenger's information through their genuine ids and security, and driver details.

Also, the basic system of GIS works as it receives signal from satellite and then position co-ordinates with latitudes and longitudes determined by it.

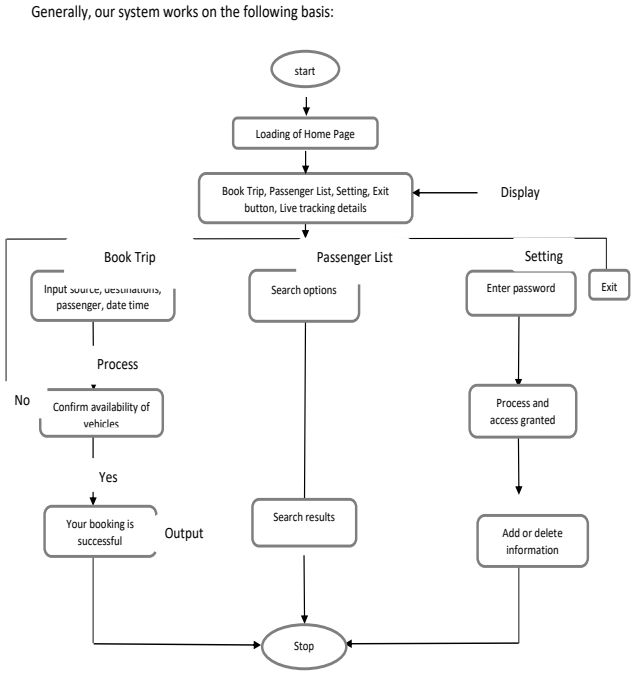
The proposed system has the following requirements:

- System need to maintain records of driver and passenger.
- System should have agile tracking feature. System need to maintain update and delete records.
- System needs to maintain records for new user entries.
- System needs a security mechanism to prevent data.
- System also needs a search area.

Features of Bus scheduler module:

- Product and component based.
- Creating and changing issues at ease.
- Reporting and charting is more user friendly.
- Query issue list to any depth.
- Robust database back-end
- Real identity check using govt.id proof .
- Well designed reports.
- Many filters options are available for better search experience.
- Easy to update information.

Generally, our system works on the following basis:



4. Experimental Results

Software Cost Estimation models can be possible by several estimation models such as Line of Code, Function Point and Constructive Cost Model (COCOMO). Using this model we can estimates the cost of the software very easily. The basic objective of COCOMO Model estimates the cost of the software and helps the developers for further estimation.

4.1 Evaluation of Cost Estimation:

This paper follows the principles and creating an E-Commerce web application of an online shopping. The application consists of fifteen web pages written in JSP, Servlet. All fifteen pages were fully designed to have different content and perform different web tasks. Then, they were coded and connected together as per the design. The pages are a demo experience of how a real user would buy a computer online.

4.2 Applying COCOMO

Sub-model Used: Basic COCOMO

Model Used: Organic

Formula Used:

Effort Applied (E) = $2.4(KLOC)^{1.05}$ [man-months]

Development Time (D) = $2.5(\text{Effort Applied})^{0.38}$ [months]

People required (P) = Effort Applied / Development Time [count]

5. Conclusion

In this paper we have audited the various existing techniques of bus schedulers and making it an advanced public transportation system having sundry features for user. By implementing the ideas, we can improve the transportation safety and the quality of services of the bus reservation and make it more convenient for the customers to use the application. The system will have latest technology for accurate tracking and optimized algorithms with moderate cost. This system gives the information about the bus location, arrival, routes ,booking of seats and passenger details. Passenger details will also will linked with their govt id proof to ensure the identity and maintaining security purposes more prominent.The proposed system is more user friendly and it also gives greater performance. This system may cornerstone on accurate arrival time prediction and real time position of bus ,seat selection facility according to their convenience ,real identity check of passengers which will enhance the security feature and ensure a congenial journey for the passengers.

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