



**ENHANCED BOOKING AND TRACKING SYSTEM FOR TRANSPORTATION
COMPANY**

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ABSTRACT

Online Transport Booking System can be characterized as the utilization of web administrations to book a seats or tickets through electronic booking system without needing to really go to the station where it is been issued. In this era of technological advancement transportation companies have upgraded from manual to automated method of managing their passengers and drivers records in the area of booking and tracking, but despite this method there are still some enhancements that need to be done which include no means where passengers can track the information of their bus that has been booked either the bus has been departed, arrived, or the trip has been cancelled, lack of application that manages scheduling of buses in all bus stations or terminals of a transport company which include departure time, route, vehicle type, and driver for all terminals, no means where passengers would also be able to track bus real time schedules and make plans for a trip. These challenges led to the development of an Enhanced Booking and Tracking System for Transportation Company where passengers can track the information of their bus that has been booked to know when the bus will be departing and if the trip has been cancelled, transport company will be able to manage bus Schedules in all branches, terminals and also print reports and manage terminals and bus stations and finally passengers can track bus information to know the name of the driver, bus number, bus type, time of departure and status of the bus. Prototyping methodology was adopted to carry out this research, it was chosen because it allows users to evaluate

developer's proposals and try them out before implementation. It also helps understand the requirements which are user specific and may not have been considered by the developer during product design. The tools used in developing the system was Hypertext Preprocessor (PHP) for the server-side which was used to connect the input field to database, Cascading Style Sheet (CSS) was used to structure the web page, JavaScript was used for validation, My Structured Query Language (MYSQL) was used as the database.

KEYWORDS: Transport booking, Tracking, Bus scheduling, Seat reservation

1.0 INTRODUCTION

Transport or transportation is the movement of humans, animals and goods from one location to another. Modes of transport include air, land (rail and road), water, cable, pipeline and space. The field can be divided into infrastructure, vehicles and operations. Transport is important because it enables trade between people, which is essential for the development of civilizations. Transport infrastructure consists of the fixed installations, including roads, railways, airways, waterways, canals and pipelines and terminals such as airports, railway stations, bus stations, warehouses, trucking terminals, refueling depots (including fueling docks and fuel stations) and seaports. Terminals may be used both for interchange of passengers and cargo and for maintenance. Vehicles traveling on these networks may include automobiles, bicycles, buses, trains, trucks, people, helicopters, watercraft, spacecraft and aircraft. Motor pack is generally a name given to a place where passengers have to wait to board a bus [3].

According to [7] Online Transport Booking System can be characterized as the utilization of web administrations to book a seats or tickets through electronic booking system without needing to really go to the station where it is been issued. It can likewise be carried out in the vehicle and amusement industry where one can book for Airline tickets and diversion tickets individually. Contemporary approach incorporates using the state of-the workmanship strategy for transportation to prevail over those regular issues of the outdated street transport framework. This forefront system for transportation joins Internet work places to offer access to the customers at the remote zones. Transportation could simply be described as the advancement of people and stock beginning with one zone then onto the following. All through history, the fiscal wealth and military impact of people or nation have been almost joined to

profitable systems for transportation. Transportation offers access to typical assets and advances exchange, permitting a country to gather riches and effect. Transportation framework and the courses they utilize have exceptionally affected both how and where individuals live. Reliable transportation permits an individual's to turn into all through a nation's range and to live charmingly in remote ranges a long way from amassing plants and homes. Transportation is principal to a nation's economy so reducing the cost of transporting trademark advantages for creation ends of the line and moving finished items to the business is one of the key components in fiscal contention. Transportation is by and large orchestrated by the medium in which the improvement happens, for example, area, air, water or pipeline. Inside each of the three media, numerous distinctive routines are utilized to move individuals and merchandise from spot to place. Pipelines are utilized basically for transportation of fluids or Various Organizations oblige a system to allocate their resources for customers or parts early. This is called 'making a booking'. A 'booking system' handles the project of allocating resources for a set measure of time to customers [1].

According to [4] Online Transport Booking System is essentially a database information system is utilized multi-client environment idea through the client or server systems. Online Transport Booking System is a stage where the clients just need to sit before computer to make a booking by means of Internet [8].

Due to immense development in technology, every field is making the best use of technology so why not our public bus transportation. Today's transportation system still uses the traditional ways for ticketing. Also people need to stand in queues for long hours. Therefore user needs a smart system which provides real time information of bus and gives an easy way to purchase a ticket. So we proposed an Enhanced transportation booking and tracking system which overcomes the disadvantages of the current public transportation system.

This project will be able to manage the scheduling of buses in all bus terminals of a transport company. With this project, a dispatcher can manage bus stations/terminals, departure time, route, vehicle type, and driver for all terminals. Passengers would also be able to view schedules and make plans for a trip and finally this Enhanced booking and tracking system is created to track the location of the buses and to manage the schedule of the buses in every

branch location. The passengers can track the scheduled of the buses in every bus terminal. Whether the bus is On Travel, Arrived, Delayed, or Cancelled trip and they can view where the location of the buses in every terminal and this system can generate reports.

1.1 Statement of Problem

In this era of technological advancement transportation companies have upgraded from manual to automated method of managing their passengers and drivers records in the area of booking and tracking, but despite this method there are still some enhancements that need to be done which include the following:

1. There is no means where passengers can track the information of their bus that has been booked either the bus has been departed, arrived, or the trip has been cancelled.
2. Lack of application that manages scheduling of buses in all bus stations or terminals of a transport company which include departure time, route, vehicle type, and driver for all terminals.
3. No means where passengers would also be able to track bus real time schedules and make plans for a trip.

1.2 Research Aim/Specific Objectives

The aim of this paper is to develop an Enhanced Booking and Tracking system for Transportation Company. The objectives are as follows:

1. To create a module where passengers can track the information of their bus that has been booked to know when the bus will be departing and if the trip has been cancelled.
2. To develop a module that will be able to manage bus Schedules in all branches, terminals and also Print Reports and Manage Terminals and Bus stations.
3. To create a platform where passengers can track bus information to know the name of the driver, bus number, bus type, time of departure and status of the bus.

1.3 Review of Related Works

The movement of people, goods and services from one place to another is very important in human existence. This movement is called Transportation and could be carried out by means of trekking, use of animals such as donkeys and horses, cars, buses etc. Transport demand in most Nigerian cities has increased significantly due to increase in population as a result of both

natural increase and migration from rural areas and smaller towns. Fast growth of Nigerian's population like other developing countries has triggered a greater need for organized public transport system. [6] Automation of Bus transport has been gaining more importance because they provide accurate information of buses like reservation, fare charges, route information, and bus information from anywhere and anytime. Bus automation covers all aspects of Bus and Taxi transportation and is made up of six modules based on the functionalities of the system namely, Information System Module (ISM), Reservation System Module (RSM), Administrative Management System Module (AMSM), Fleet Management System Module (FMSM), Warehouse Module (WM) and Financial Module (FM). These modules have been designed to build up an integrated system to cover various aspects of Automated Bus Transport Management System. They provide information about the Bus enquiries, Buses schedules, Buses fares, Buses ticket reservation, Buses time table enquiry. Based on the study by [6], the Information Management System module is expected to provide detailed information about the Bus transport system namely vehicle registration, route, reservation, cancellation, fares etc.

Also, [9] in his work developed an Intelligent Campus Bus Identification, Monitoring and Management System using Radio Frequency Identification (RFID) and sensing technologies. A theoretical framework and interface algorithm utilizing RFID and communication technologies, i.e. Global Positioning System (GPS), General Packet Radio Service (GPRS) and Geographic Information System (GIS), were developed for a prototype. The interface algorithm in the control center is able to analyze the location of the bus, information about the driver and the status of the bus, and whether it follows the schedule.

Taxi management is not only an issue of transportation, but also an issue of supply chain. The daily taxi supply and customer demand are very dynamic and unpredictable. CabLink advocates its world's first and largest automated taxi dispatch facility by integrating Interactive Voice Response (IVR) and Global Positioning Systems (GPS). CabLink also brings obvious financial benefits to both the company and the drivers.

Many passengers are usually late to work, students are late for classes as a result of they decide to anticipate the bus rather than simply merely using another alternate transportation. A variable message shown on the web which will be real time info regarding the bus showing the

time of arrival at a particular bus stop might scale back the anxiety of passengers expecting the bus [9].

With the advent of GPS and also the ubiquitous cellular network, real time vehicle tracking for higher transport management has become attainable. These technologies can be applied to conveyance systems particularly buses, which are not ready to adhere to predefined timetables owing to reasons like traffic jams, breakdowns etc. [4].

The increased waiting time and the uncertainty in bus arrival build conveyance system unattractive for passengers. The real-time bus position and time observance system uses GPS technology alongside totally different application to fetch knowledge and with code that displays the information online on with different buses on a special route to the user. When this info is conferred to the traveler by wired or wireless media or online internet media, they can use their time with efficiency and reach the stop simply before the bus arrives, or take alternate means of transport if the bus is delayed. They can even arrange their journeys long before they really undertake them. This will build the general public transport system competitive and passenger- friendly. The use of personal vehicles is reduced when additional individuals use transit vehicles, which in turn reduces traffic and pollution [9].

1.4 The Proposed System

The proposed system is a web based application that has three users the administrator, dispatcher and the general public. The administrator will login to the system to register various users, drivers, buses, branches or terminals and schedule buses for trips. The administrator will be able to view all registered buses, drivers' information, branches or terminals, registered users and scheduled buses. The dispatcher will login with correct username and password to dispatch buses to their various terminals and finally the general public will access the system to track bus information to know when their buses will depart, arrive, and to know the terminal.

1.5 System Modeling

System modeling is the interdisciplinary study of the use of models to conceptualize and construct systems in software development. Figure 1 and 2 shows the data flow diagram and use case diagram of the proposed system.

The dataflow diagram which shows the overall system process as just one process and shows the data flows to and fro from external entities. The main processes involve in this system is documented in this diagram. The diagrams below describe the flow of information in the proposed system and also dictate how the system works.

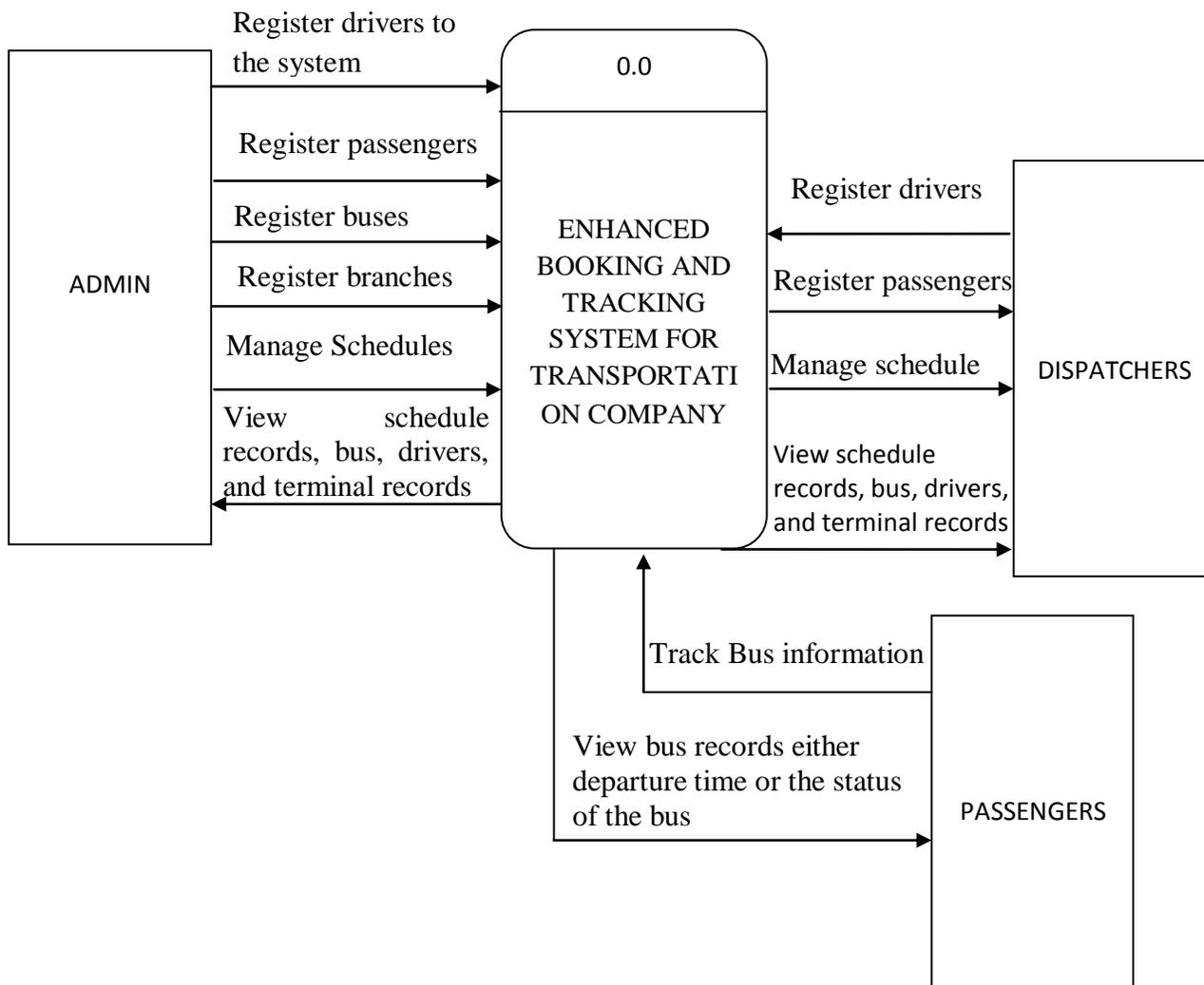


Fig 1: Dataflow Diagram of the Proposed System

Use Case diagram is a diagram that describes a set of sequence in which each sequence indicates the relation with outside things. It involves the interaction of the Actor (user) and the system. In this paper, it involves the interaction of admin, dispatchers and passengers.

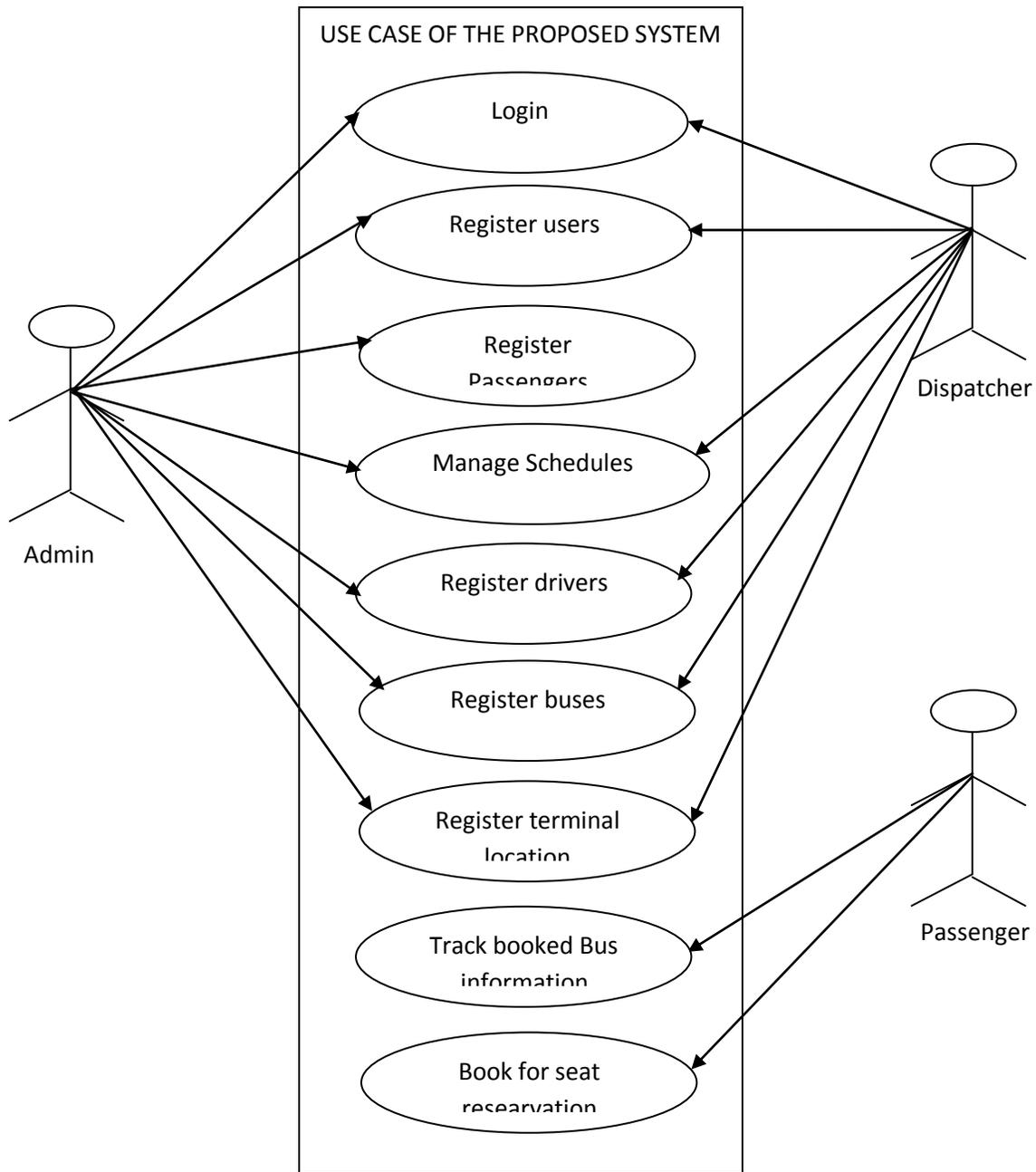


Fig 2: Use Case Diagram of the Proposed System

1.6 System Implementation

In the design of this system, Adobe macromedia Dreamweaver was used as the Integrated Development Environment and also the front end design of the application, server side language PHP Hypertext pre-processor (PHP) to connect the text field to the database, MYSQL was use as the back end design to store all the information of the complete system.

1.7 System Deployment

Enhanced Booking and Tracking System for Transportation Company work strictly with internet and can be access with any browser. The system is hosted on a server and a domain was registered in other for the system to be accessed worldwide.

1.8 Conclusion

Enhanced Booking and Tracking System has therefore been discussed in this paper. As a consequence of the difficulties confronted with the current process, certain objectives were derived as a focus to accomplish effective and viable online booking system and tracking system. The study was cantered towards inspecting the existing system, designing and actualizing another system with the point of handling the difficulties confronted with current procedure.

The background of the paper was accomplished and after that, the problems were clearly stated, and also, the aim and objective was equally stated. An in-depth review of existing systems was executed and a new system was proposed. With the developed system the general public will be able to tracking information of their bus by checking to know the time their bus will be leaving, and equally the bus number. The administrator will be able to schedule buses for different trips across the nations and equally register all the branches.

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