

# ONLINE BUS TICKET RESERVATION SYSTEM TO THE NATIONAL TRANSPORTATION SERVICE IN SRI LANKA

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**Abstract** — The distance bus ticket reservation has been one of the major concerns in the National Transport Commission (NTC) in Sri Lanka. However, the current process of bus reservation is conducted manually and it is a very energetic and time consuming process. We aim to address this lacking by providing web based application that allows passengers to check availability, buy and pay bus ticket online. It would benefit both passengers as well as those involve in national transport service. To accomplish this, the Online Bus Ticket Reservation System (OBTRS) was developed. The outcome of this study also offers solution to overcome very energetic and time consuming that may occur in the manual bus ticket reservation process.

**Keywords**— Online Bus Ticket Reservation System, Digital ticketing machine.

## I. INTRODUCTION

The distance bus ticket reservation has been one of the major concerns in the National Transport Commission (NTC) and other transports commissions in new world. There is a growing demand and trend in moving to online bus ticket reservation systems which are based on national transport in Sri Lanka. User's (passenger) self-interaction in ticket reservation has been changing in a positive way with the introduction of these systems. With the evolution of these new coming systems it will cause the traditional bus ticket reservation space to be changed.

At present the current bus transportation system use both manual tickets and digital ticketing machine that printed tickets. Digital ticketing machine commonly practice in highway bus transport service, Western Province and on a limited inter buses. These novel digital machines have the ability to store and process data and thus provide the conductor with a number of significant statistics at the end of the day. For illustration, the quantity of tickets delivered and the amount of money collected for each trip. Beside the fact of the technique of give out tickets to commuters, the transaction is done innocently in cash. As usually existing process easy to issues fake ticket and some cases balance bus fare amount not return to commuters.

Investigating substantive findings as well as theoretical and methodological contributions, the literature review can be used to form the solutions for the particular research problem and the points to look at the solution in different perspectives (Oloyede et al., n.d.). A number of industries are with technology and the developments of software and internet to maintain and monitor their industry transactions (Dine, 1993).

However the Online Bus Reservation System (OBTRS) is a web based application that agree to passengers to check bus ticket availability and buy bus ticket through the online payment (Al-Hijaj et al., n.d.). Proposed system well-known for all the home/office users after in advance access from the administrator. According to annual report (ANNUAL REPORT 2010, n.d.), Online Bus Reservation System make available a facility to provide available seats or notify alternatives bus routes that can use, cancellation of seats and different types of request for information which need prompt and quick reservation. In that case this system facility to send complete bus ticket reservation notification through e-mail and SMS. Adding to Sri Lanka Transport Board (SLTB) provide special section for foreigners to reserve special luxury buses to transport services and provide fully information about route direction details and country information's. System users carrying out online bus ticket reservation via internet for their business purposes (Melisa et al., n.d.).

Rest of the paper arranged as follows. Section 2 describes existing bus ticket reservation systems. Section 3 discuss research design/ methodology. Section 4 gives the implementation. Finally concludes the paper with a note on further works.

## II. EXISTING BUS TICKET RESERVATION SYSTEM

Different system of government and those who are involved in online bus ticket reservation at ease development use several evaluation tools consist of validate the usability of the online bus ticket reservation.

N. Sendhi Kumar design his Online Bus Ticket Reservation System (OBTRS) to reduce the possibility of passengers to select dissimilar option based on their bus travel

conditions. This development is a web based application that passengers to check transportation access, buying and pay for transportation ticket on the web. (Kumar, n.d.)

Online Bus Ticket Reservation System (OBTRS) web portal is fully web based, operations contribution is the benefit for proper management of bus schedules, bus tickets booking, ticket issuing, generate reports and additional business functions rated with sales the bus ticket. (Oloyede et al., n.d.)

In E-Ticketing systems are not only means of payment but procedure huge amount of facts which suggestion a large range possibility to make European transport easier to use, manage and switch. They suggestion as well opportunity to make known to integrated pricing construction that are not easy to implement with traditional method as a smart card. For that reason, the long term objectives is for the users to be able to pay for transport without having to demonstration or validate any card, depend on fully automatic fare payment. (Mezghani, 2008)

Evaluation of Online Bus Ticket Reservation is another following factors consider. In financial terms consider Maiké Johanna Puhe design could decrease administrative cost as smaller amount cahiers are required, fare handing out time could be reduced and improved amount passengers could be acceptable. Tourism sector integrated facts that is composed of different element as public transportation, hotels, bars and restaurants, tourist offices, local attractions and event. (Puhe, n.d.)

Smart & Integrated Ticketing Report for Scotland describe fare evaluation and deception resulting from payment handling may well be reduced and better value variation would be possible in public transportation. (*Smart & Integrated Ticketing Report for Scotland*, 2011)

Andrew Wood, Kate Downer and Annalise Toberman research report shows combined schemes gives the impression to be above all price tag intensive, as different online applications essential to be connected. (Wood et al., 2011)

Once exploring these research studies, it can be visibly experimental that the lack of reliability reporting and assessments quantification.

### III. METHODOLOGY

#### A. Description of proposed system

This proposed system is preliminary use to solve the problems that arise from the existing bus tickets reservation system running in the national transportation service environment. By this system it mainly focusing on how to overcome the gap between the passengers' self-reservation process and the facility of providing best self-reservation environment with more interaction and collaboration of the system.

This system is intend to provide the users a robust bus tickets reservation environment with self-directed reservation in which the reservation effects for its users rely more on initiatives and activities of the users themselves. Based on the presenting problems mentioned above the existing bus tickets reservation system result some limitations as narrow tickets reservation environment for the passengers and limitations with more self-reservation and self-directed ticket reservation process. This proposed system will focus to,

- Increase the user's capability and enrollment for involving in the reservation process which provide through the system.
- Provide the bus seat availability with a flow of content, which will cause user to easily go through as self-reservation.
- Passenger can cancel their bus tickets easily.
- Records will be efficiently kept by DBMS
- Available of seats can be enquired easily.
- System will provide better service.

This system will provide reservation contents as a whole completed manner. At the beginning of the configuration of a reservation, the user is able to manage the reservation by selecting and adding details for the bus ticket reservation. In that case each reservation may have SLTB and private bus sections.

According to the selecting details wise availability will be different. As an example for a select particular date, route and bus it provide available seat or notify alternatives bus routes that can use. Also system provide fully route direction map for customer.

By enabling these passengers can buy the bus ticket over the Internet any time and the bus ticket can't be missing, taken or left behind. In addition, the Online Bus Ticket Reservation System lets the passengers check the availability of the bus seats before they buy ticket.

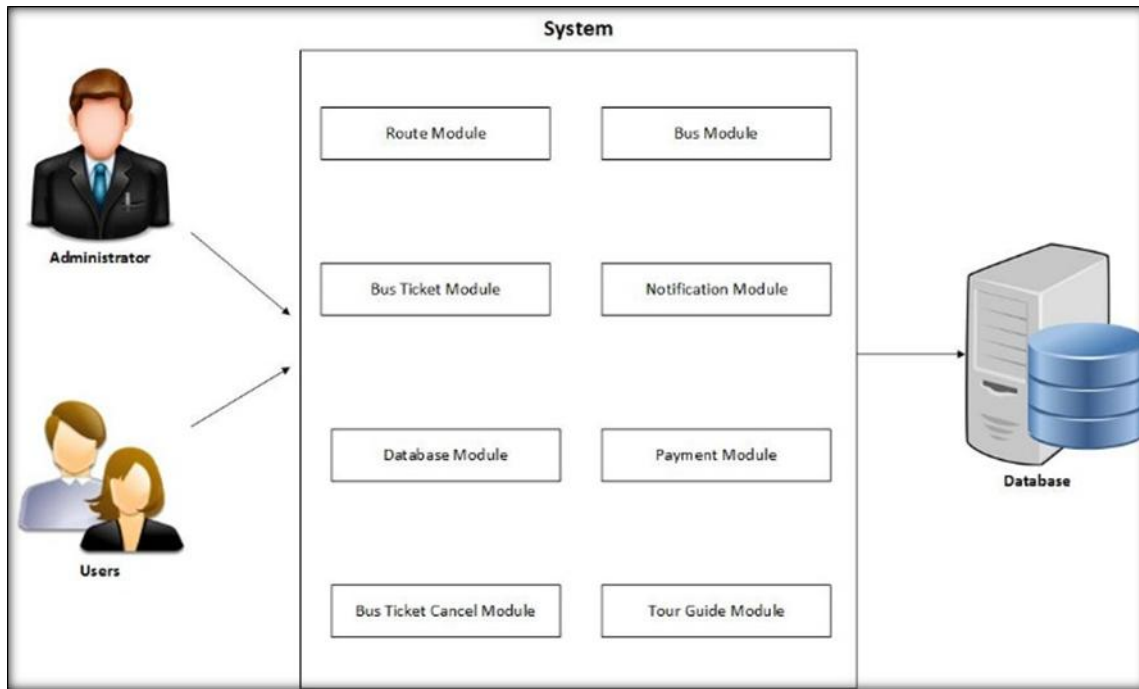


Figure1. Top level diagram of proposed system

In hear complete reservation notify through e-mail & SMS. And also customer need to cancel their tickets online very easily.

Furtherer more, special bus reservation section for foreigners to reserve bus ticket in transportation purpose. In that case SLTB provide special luxury buses for transport services for them. This section provide fully information about route direction details and country information's.

Figure 1 explain the task to interpret in all facts into technical specification that correctly describe design of the system and that can be used as input to system structure.

**B. System Requirement**

The requirement description concerned with the study of the existing system with the aim of defining and put together the requirement of the proposed system. It is accomplished with the aid of user requirements. The analysis stage was in details carried out in focus of the functionality top level diagram at National Transportation Commission (NTC) transport division.

**C. Requirement Specification**

Requirement Specification a whole explanation of the activities of a system to be developed and may include a set of top level diagram that describe connections the users will have with the software. In addition it also

comprises non-functional requirements. Non-functional requirements carry out constraints on the design or implementation (such as show engineering requirements, quality standards, or design constraints).

**D. Functional Requirements**

In the current system at national transportation service in Sri Lanka the online bus ticket reservation and environment does not seem as providing efficient and self-reservation perception for the user. In that system the user is not more self-directed and does not provide the open environment in bus tickets reservation. And the availably issues of the ticket reservation also effected the passenger in engaging in reservation. Without having a flow of information in preconfigured bus schedule the passengers are unable to continue the reservation process.

But the new system is intend to align the passengers with bus ticket reservation in tough manner. By providing the correct flow of reservation details will allow the users to engage in reserve ticket effectively. Accessing the details which have been enabled for particular bus route will assist the user in interactive manner. This will reduce the gap of users (passengers) of the existing system engaging in reservation and the motivation of the users engaging in online bus ticket reservation in national transportation service in Sri Lanka.

- System should be able to create user accounts for several users
- System should be able to keep records with customer details

- The system should provide the user to create the newly alternate route for reservation.
- The user should be able to add details under the particular ticket reservation.
- The system should be able to ability to show available seat and contents as a flow in the correct order and the facility to add particular reservation for each user perception.
- The user should be able to manage online payments
- The system should provide SMS and E-mail notification to verify the reservation
- The system should be able to show route direction map for each user perception

System should enable web services such as face book sharing, blogs in order to user to share experience and interact with each other

#### E. NON Functional Requirements

Non-functional requirements statement features of the system other than the detailed functions it performs. These features include system performance, expenses, and such common system characteristics as consistency, safe keeping, and portability. The non-functional requirements also talk aspects of the system development process and in use personnel. It includes the following:

- The system provides the easy ticket reservation environment for the user with self-directed.
- Efficient usable interfaces will allow the users to navigate through the reservation easily.
- Because of the user is preregister, and then user will have a reliable to access anytime he wanted.
- with the enhanced collaborative tools, it will enable user to interact in studying efficient way
- The system act as an "open" platform, then user have a flexible searching environment.
- User friendly interfaces.

#### IV. RESULTS AND DISCUSSIONS

The suggested Online Bus Reservation System (OBTRS) was developed using Hypertext Markup Language (HTML), PHP Hypertext Preprocessor (PHP), MySQL, Ajax, Cascading Style Sheet (CSS), JavaScript and Web Services Description Language (WSDL).The database was take on because is complete up of a group of logically linked tables. For that reason, creating a relational database management system is a best way to increase data integrity, competence, request the inquiries, sort and filter statistics, make available durable safe keeping, and share facts, ease of use, data self-governing surrounded by others.

#### A. Presentation of the application interfaces

The presentation is create on the interface of the system and the productions from the back end and the system interfaces be made of several windows that enable different types of users to interact with the system. This consist of some user pages, administrative pages and some respective outputs.

- 1) *Welcome page interface:* The welcome page interface display to get users attraction and select to possible understanding language. Figure 2 explain the welcome page of a system title, three main language and attractive background.



Figure 2. Interface of welcome page

- 2) *Home page interface:* The Figure 3 explain the home page of the Online Bus Ticket Reservation System (OBTRS) displays several menus of the application. Forms were advanced to enable the users perform the searching tasks. User's selected start location, End location with date.
- 3) *Seat booking interface:* The figure 4 explain the seat booking interface that display several available buses according to searching details. Interface show fully descriptive information and seat arrangement diagram. User selected their seat, amount will automatically calculate and display with the seat numbers.
- 4) *Payment page interface:* Payment page display after complete booking seat details page. Depending upon user to enter information's into the application and select the payment type to enter account details. After complete submission user received bus ticket conformation message through the e-mail and SMS.

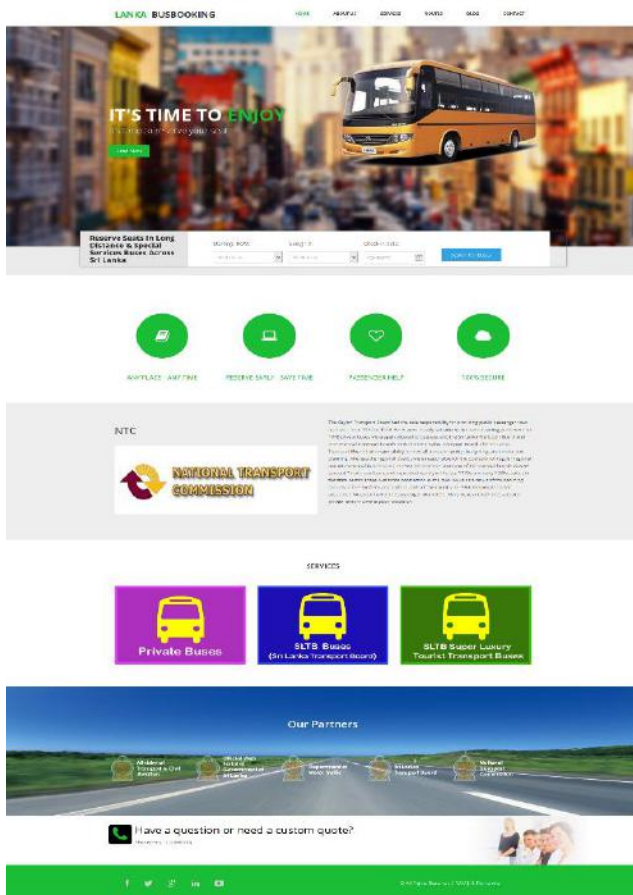


Figure 3. Interface of home page



Figure 3. Interface of seat booking page

## V. CONCLUSION

These days, bus agencies are capturing significant role in Sri Lanka transportation and to make reservation consistent to essential a strong system that they will make bus tickets reservation easier, more rapidly and safer. This project planned to come across requirements of an online bus tickets reservation system. It has been technologically progressive in HTML, PHP, CSS, JAVASCRIPT and database has been built in MySQL. By using this application, the

National Transport Commission (NTC) can provide reservation services and facts to their consumers without the drawback of office hours or manpower. Not only does it consumer's reserve journeys around the clock from any location with an internet facility, but it is also planned for use by National Transport Commission (NTC) to internally manage their business processes: reducing human errors and overcoming difficulties and problems that get up in the earlier system

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