DEVELOPMENT OF AN ONLINE AND TRAIN BUS TICKET RESERVATION SYSTEM FOR A TRANSPORTATION SERVICE IN MUMBAI (QUICK-BT)

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Abstract— The use of bus traveling is a large growing business in India and other countries; the manual use of bus reservation is presently very strenuous and also consumes a lot of time by having to stay on a long queue. For this reason, an efficient system is to be proposed in this paper to ease the issue of bus reservation amongst indigenes within the country. The system is a web – based application that allows visitors to check bus availability, buy and pay bus ticket online. In order to achieve the design, Bombay Electric Supply & Transport (BEST) was chosen as a case study because of its strategic importance. Structured Systems Analysis and Design Methodology (SSADM) will be adopted. In this paper, the proposed bus reservation system was developed using Extensible Hypertext Markup Language (XHTML), PHP Hypertext Preprocessor (PHP), Structure Query Language (SQL), Ajax, Cascading Style Sheet (CSS), and JavaScript. This document gives formatting instructions for authors

I. INTRODUCTION
The Online Bus and Train Ticket Reservation System is a web-based application that allows visitors check bus ticket availability, buy bus ticket and pay the bus ticket online. This system is established for all the home/office users after gaining access from the administrator. Online Bus Reservation System provides bus transportation system, a facility to take tickets, cancellation of tickets and different types of enquiry which need an instant. This system can be used by the users in performing online reservation via internet for their all business purposes. Users can use this program directly on their websites and no need to install it. The use of bus and train traveling is a large growing business in India and other countries; hence bus reservation system deals with maintenance of records of each passenger who had reserved a seat for a journey. It also includes maintenance of information like schedule and details of each bus and train along with

II. METHODOLOGY
A. Description of Proposed System
The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features:
- It will ensure data accuracy.
- Records will be efficiently maintained by DBMS.
- Availability of seats can be enquired easily.
- Passengers can also cancel their tickets easily.
- Minimum time needed for the various processing.
- It will provide better Service.
B. Requirement Specification
Requirement Specification a complete description of the behavior of a system to be developed and may include a set of use cases that describe interactions the users will have with the software. In addition, it also contains non-functional requirements. Non-functional requirements impose constraints on the design or implementation (such as performance engineering requirements, quality standards, or design constraints).

C. Functional Requirements
Functional requirements define the specific functions that the system performs, along with the data operated on by the functions. The functional requirements are presented in scenarios that depict an operational system from the perspective of its end users. Included are one or more examples of all system features and an enumeration of all the specific requirements associated with these features.
- The system shall incorporate mechanism to authenticate its users
- The system shall verify and validate all user input and should notify in case of error detection and should help the user in error correction
- The system shall allow sharing of files in the system
- The system shall allow quick messages to be exchanged without face to face interaction

D. Non-Functional Requirement
Non-functional requirements address aspects of the system other than the specific functions it performs. These aspects include system performance, costs, and such general system characteristics as reliability, security, and portability. The non-functional requirements also address aspects of the system development process and operational personnel. It includes the following:
- The system shall be user friendly and consistent
- The system shall provide attractive graphical interface for the user
- The system shall allow developer access to installed environment
- The system shall target customer base

E. Architecture of The Proposed System
This process supports existing infrastructure requirements and provides specific recommendations for hardware and network solutions based on existing and projected user needs. Application requirements, data resources, and people within an organization are all important in determining the optimum hardware solution. It is represented using a three-tier architecture that comprises of user interface, process management, and database management system (DBMS). It shows the components of the system, the services they provide and the way they communicate to bring about the system functionality.

F. User Activities
The most common activities carried out by user are illustrated below
- The user can search for the seat
- The user can sign up/do registration with the system
- The registered user can login to the proposed system
- The user can check for the available seat
- The user can also do payment for the seat on the proposed system
- The user can print receipt on the system as evidence of payment

G. Administrator Activities
- The administrator will verify all the registered user and allow them to login to the system
- The administrator gives acknowledge to any payment made on the system
- The administrator can add vehicle, driver, and generate report as well

H. Data Flow Diagram
Data flow diagram is used to show the flow of data from external entities into the system. It is used to represent the physical and logical area of an information system. The data flow diagrams are pictorial or graphical representation of the Online Bus Ticket Reservation System. The data flow diagram covers all the processes and data storage area, which takes place during any transaction in the system.
The above Fig. 1 is workflow diagram of website we have created separate panels for both the admin and user. Users can register by providing their details and, upon successful registration, they can log in using their specified user ID and password. Admins can also log in using their admin ID and password. Once logged in, users can book train and bus tickets.

Additionally, if users require any assistance regarding their bookings or any other related issues, they can interact with our chatbot, which is available on our website.

III. RESULT AND DISCUSSIONS

The proposed bus reservation system was developed using Extensible HyperText Markup Language (XHTML), PHP Hypertext Preprocessor (PHP), Structure Query Language (SQL), Cascading Style Sheet (CSS), and JavaScript. The relational database was adopted because it is made up of a group of logically connected tables (data that has a relationship to other data). Therefore, establishing a relational database management system is a great way to increase data integrity, efficiency, ask questions, sort and filter data, provide stronger security, and share information, ease of use, data independent among others. Some user and database table are shown in this section.

A. Database Section

In this section we all will get database tables and in this application we have use 5 tables which are shown below.
In Fig. 2 we can see table, which is used to show all registered users in the database.

In Fig. 3 we can see table, which is used to show all registered admins in the database.
In Fig. 4 we can see a table, which is used to show the details of ticket bookings for only trains in the database. The table contains information about the ticket, including the ticket number, email, source, destination, name, class, type, NoOfPass, card_no, expmonth, expyear, cvv, pin, date, and amount.

In Fig. 5 we can see another table, which is used to show the details of ticket bookings for only buses in the database. This table also contains the same information as the previous one, including the ticket number, email, source, destination, name, bus_no, no_of班子, card_no, expmonth, expyear, cvv, pin, date, and amount.
In Fig. 6 we can see table, which is use to show table all train timing details in the database.

B. Application Running

This will show running of application and how the ticket is booked in this application/website.

![Fig. 7 Landing page](image-url)
In the above Fig. 7, we can see it is the landing page of our application/website where you can register if you are a new user or sign in if you have already registered yourself.

Fig. 8 Train Ticket Booking

Now for booking a local train ticket we need to go to “Train Ticket” as you can see in Fig. 8 and enter source and destination along with train class, journey type and total number of passengers. Train tickets are only of Mumbai cities only. Also note that more than 5 passengers are not allowed to book ticket together.

Fig. 9 Train Ticket confirming details

After booking, the portal will verify the details and show you the price and ask you to checkout with your process as shown in Fig. 9. Click on checkout to move on to payments or go back if any correction.
After you click on checkout, then it will redirect you to payment via card and you have to fill all your card details and complete payment as shown in Fig. 10. After that you will get OTP on your card registered number and put that, then payment will be successful.

Once the payment is done, the website/application will take you can see booking summary as shown in Fig. 11 and there you can print your ticket or save it in your device thought clicking on “Print Ticket”.

Fig. 10 Train Ticket payment

Fig. 11 Train Ticket Booking Summary
In above Fig. 12 we can see it is the ticket which we get after booking train ticket. Similarly, you can also book local bus tickets in Mumbai through the same application in above same way.

Now if somehow you lost your digital ticket so you can go to “User Booking” as shown in Fig. 13 and click there “View Train Booking” if its train ticket or if its bus then click on “View Bus Booking”.

After clicking on “View Train Booking you can see there your all previous tickets details along with option to download your ticket again as shown in Fig. 14. Similarly, you can view for bus as well.
In case you have any query or problem you can contact us through mail and if we don’t response within 24 hours you can directly call us to our helpline or WhatsApp us. This you will find below all our booking sections as shown in Fig. 14 also. You can also use our chatbox AI for your help in case of emergency which you will find on landing page which is shown in Fig. 7. You can see how it works as shown in Fig. 15.
IV. CONCLUSIONS

It can be observed that computer applications are very important in every field of human endeavor. Here all the information about customer that made reservation can be gotten just by clicking a button with this new system, some of the difficulties encountered with the manual system are overcome. It will also reduce the workload of the staff, reduce the time used for making reservation at the bus terminal and also increase efficiency. The application also has the ability to update records in various files automatically thereby relieving the company’s staff the stress of working from file security of data. It has been developed in XHTML, PHP, CSS, JAVASCRIPT and database has been built in MySQL.

By using this application, the company can provide reservation services and information to their customers without the limitation of office hours or manpower. Not only does it let customers book trips around the clock from any location with an internet connection but it is also designed for use by the company to internally manage their business processes; minimizing human errors and overcoming difficulties and problems that arose in the previous system.

V. REFERENCES

[1]. Rachel Harrison, Derek Flood and David Duce, 2013, Usability of mobile applications, Retrieved from http://www.journalofinteractionscience.com/content/1/1/


