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BUS TICKET BOOKING WEBSITE

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ABSTRACT
Bus Ticket Booking Website is a web-based application designed to simplify and enhance the process of booking bus tickets. In a time where digital solutions are transforming everyday activities, this system offers a modern and convenient alternative to traditional ticket booking methods. The website enables users to check available buses, view seat availability, select travel routes, and make bookings – all from the comfort of their home or mobile device. Developed using HTML5, CSS3, JavaScript, PHP, and MySQL, the website combines an intuitive user interface with robust backend logic to deliver a seamless booking experience. Features such as user registration, secure login, real-time seat tracking, and payment integration ensure that the platform is not only user-friendly but also highly functional and secure. Additionally, the system includes an admin module for managing buses, schedules, routes, and bookings. With email confirmation and booking history features, users can keep track of their journeys efficiently. This project contributes to the digital transformation of transportation services and provides a scalable solution for improving the travel experience across regions.

KEYWORDS: *Bus Ticket Booking Website, PHP and MySQL, Web-Based Application, User-Friendly Interface, Real-Time Seat Availability, Admin Management Panel.*

I. 1NTRODUCTION
Bus Ticket Booking Website is a user-friendly and responsive platform designed to simplify bus ticket reservations. It allows users to effortlessly search for buses, compare prices, and book seats from any device—desktop, laptop, or mobile. The system enhances convenience with features like SMS and email notifications for booking confirmations and trip reminders. Users can easily manage bookings, including cancellations and rescheduling, without visiting a physical counter. A multi-language interface ensures accessibility for a diverse user base, while advanced search filters help users quickly find suitable buses based on destination, bus type, and travel date. The platform supports secure payment options and provides a dashboard for users to manage profiles and view booking history. Operators benefit from an admin panel to handle schedules and ticket management. Overall, the system offers an efficient, accessible, and reliable solution for modern bus travellers.

Back Ground of the Study
In the digital age, the demand for efficient data collection, processing, and distribution has transformed how services are delivered, especially in industries like transportation. As the world becomes increasingly reliant on information systems, there is a pressing need for smarter, technology-driven solutions to manage operations and customer interactions. In the transportation sector, this need is particularly evident in the area of ticket booking and travel management. Traditional bus ticket booking methods often involve manual processes, long queues, and limited access to real-time information. These challenges create inconvenience for passengers, especially during peak travel periods, leading to dissatisfaction and inefficiency. Despite the availability of internal systems in some transport offices, many users still need to physically visit booking counters to inquire, reserve, or purchase tickets, which adds unnecessary effort and time to the process. To address these challenges, the development of an online.

Bus Ticket Booking Website introduces a modern, streamlined solution. E-ticketing systems have become a global standard for improving convenience, ensuring transparency, and reducing administrative overhead. This project aims to provide a digital platform that allows users to book tickets, view schedules, choose seats, and make secure payments—all from any internet-connected device. By automating the booking process, the system not only improves user experience but also supports transport companies in managing operations more effectively. Features like instant confirmation through SMS or email, booking history, and multi-language support cater to a wider audience and help build trust in the service. The implementation of such a platform demonstrates a progressive move toward digital transformation in public transport, opening up new possibilities for growth, investment, and enhanced service delivery.

Description of Modules
1. User Module
   Manages user registration, login, profile management, and booking history. Offers a secure, personalized, and multi-language experience.
2. Search and Booking Module
   Enables users to search buses by route and date, view real-time seat availability, select seats, and complete bookings with instant ticket confirmation.
3. Admin Module

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Allows administrators to manage bus routes, schedules, ticket pricing, and monitor overall bookings. It also handles user issues and generates reports.

4. Notification Module
   Sends automated SMS and email alerts for booking confirmations, payment receipts, journey reminders, and schedule updates.
5. Database Module
   Securely stores and manages user data, bus details, transactions, and booking records. Ensures reliable data handling and retrieval.

Front-End Technologies

The front end of the Bus Ticket Booking Website is created employing a mix of HTML, CSS, and JavaScript to provide a responsive, user-centric, and attractive front end. HTML (HyperText Markup Language) is the structural backbone of the website, which arranges content and identifies components like search forms, booking pages, and user interfaces. CSS (Cascading Style Sheets) is used for styling, bringing consistency in layout, typography, color palette, and responsiveness to every device. It is a significant contributor to a clean and professional appearance and accessibility. JavaScript adds interactivity to the site, facilitating dynamic updating of content, checking seat availability in real-time, form validation, and smooth user interactions without page reload. Collectively, these technologies provide a seamless and intuitive experience for users on desktops, tablets, and mobile devices.

Back-End Technologies

The system backend is driven by PHP (Hypertext Preprocessor) and MySQL (Structured Query Language) to create the server-side activity backbone, process data, and manage secure transactions. PHP controls user authentication, session handling, booking logic, and database communications. PHP is the glue between the back and front end, providing dynamic content based on user interactions and real-time updates. MySQL is employed to maintain the database, storing essential information such as user data, bus routes, booking histories, and transaction histories. Strong security protocols like password hashing, prepared statements, and input checking are used within the system to guard against popular vulnerabilities such as SQL injection and XSS. PHP and MySQL, when combined, form a powerful backend setup that enables a secure and scalable ticket-booking system for both the administrator and the user.

II. SYSTEM STUDY

Existing System

Existing bus ticket reservation systems provide minimal functionalities such as ticket search, reservation, and payment gateway. However, they tend to miss real-time seat availability, advanced search filters, and flexible features for editing or cancelling reservations. Key functionalities such as SMS/Email alerts and multi-language support are typically absent, restricting user convenience. Most systems also fail to offer personalized dashboards or robust security for online transactions, resulting in usability and reliability problems.

Proposed System

The proposed bus ticket booking system provides a contemporary, easy-to-use interface with live bus schedules, seat availability, and instant confirmations on bookings. It accommodates secure online payment processing, user account handling, tracking of booking history, multi-language support, and real-time notifications through SMS and Email.

The system also provides administrative controls for handling buses, routes, and transactions with ease. In sum, it improves accessibility, user happiness, and ease of operations for users and administrators alike.

III. SYSTEM DESGIN AND DEVELOPMENT

Input Design

The input design provides a seamless and user-friendly experience by giving intuitive forms for inputting travel information like source, destination, and date. Inputs are labelled and allow real-time filtering based on fare, departure time, and bus type. Users can engage with a visual seat map for picking available seats. For registration and sign-in, basic input fields gather user information such as name, email, and password, as well as email verification and password reset options. When paying, secure and encrypted forms get card information (number, expiry date, CVV) to provide secure payments. The aim is to reduce effort but maximize input accuracy and convenience.

Output Design

Output design emphasizes the presentation of crisp, dynamic, and informative information. Search results are presented instantly, revealing bus information such as departure time, fare, and available seats—without a page refresh. Icons and labels allow for easy and effective comparison. Upon booking, users are provided with confirmation outputs like ticket information via email/SMS, and booking history is reflected in their profile. The design makes all the critical information visually apparent, enabling users to make fast and decisive choices.

DATA FLOW DIAGRAM

Level 0 – Context Diagram

- Represents the whole bus booking system as a single process interacting with:
- Users (search, book, pay)
- Admins (manage buses, routes, users)
- Payment Gateway (process payments)

Level 1 DFD – Main Processes

- User Management – Register/Login, manage profile
- Bus Search & Selection – Search for buses based on source, destination, date
- Seat Booking – Select seats, confirm booking.
- Payment Processing – Online secure payments
- Admin Functions – Administer buses, routes, and users

Level 2 DFD – Detailed View

- Booking Process: Seat selection → lock seat → confirm booking → update DB
- Payment Process: Validate → process via gateway → confirm → save payment details.

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- Notifications: Auto email/SMS alerts after booking

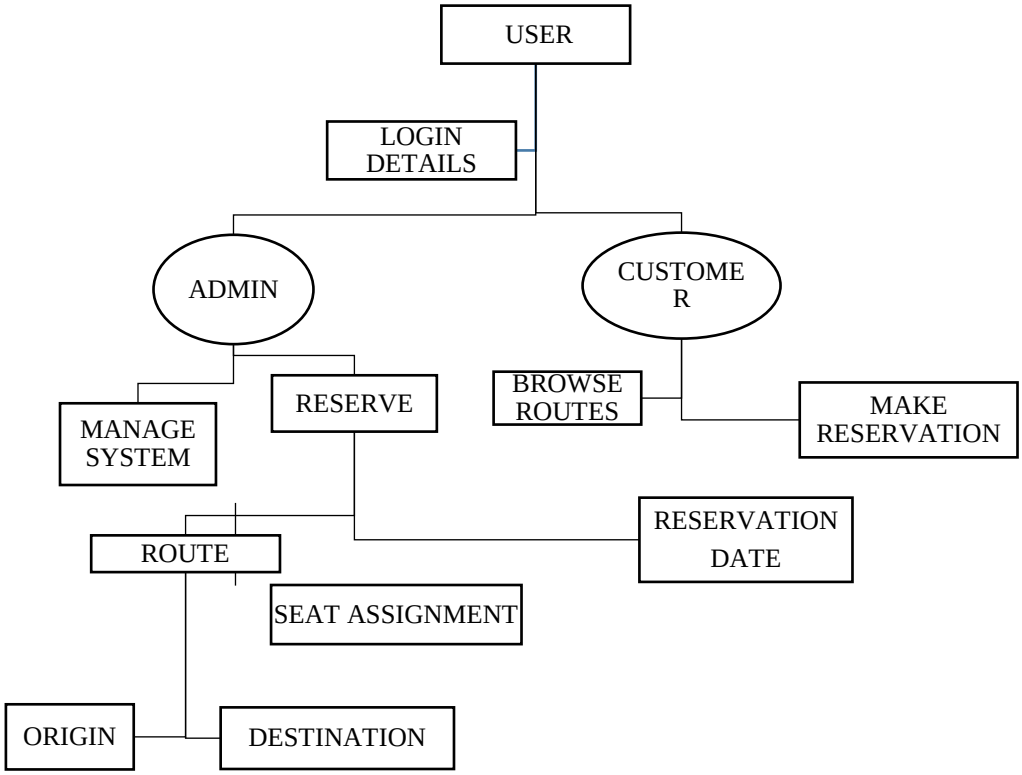


Figure: 2.1 Full view of Bus Ticket Booking Website

IV. SYSTEM TESTING AND IMPLEMENTATION

SYSTEM TESTING

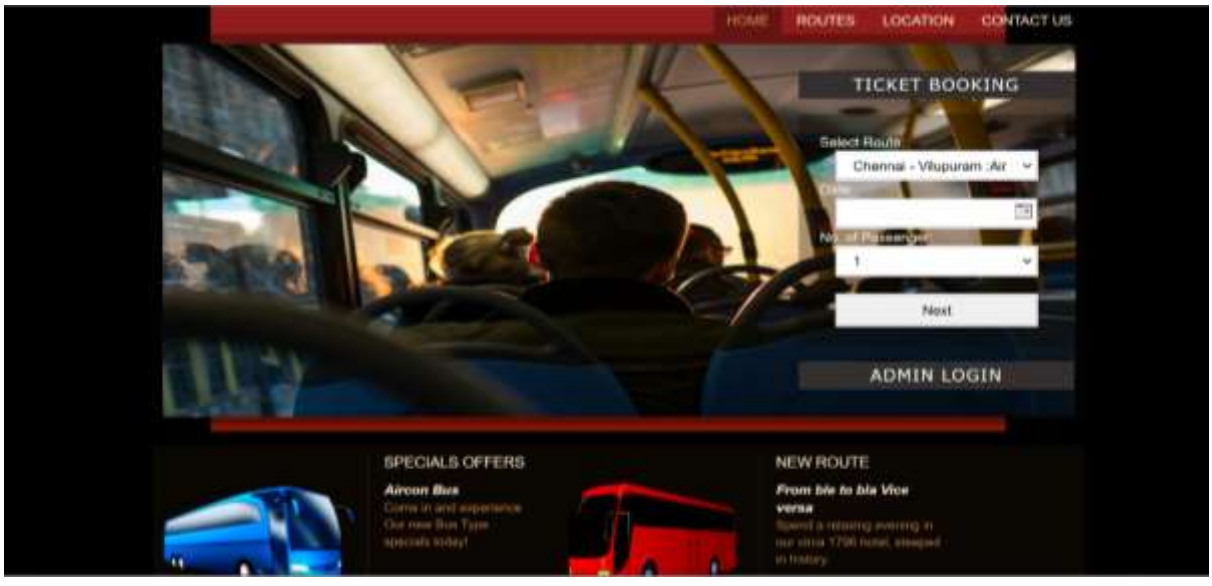
System testing is a crucial phase in software development, ensuring that the entire system functions as expected. The testing process involves multiple strategies, including functional and structural testing.

1. Functional Testing

Guarantees the system performs as anticipated according to user requirements.

2. Structural Testing (Unit Testing)
   Tests every component separately before integrating them.
3. Validation Checks

This Is the Login Window and Customer



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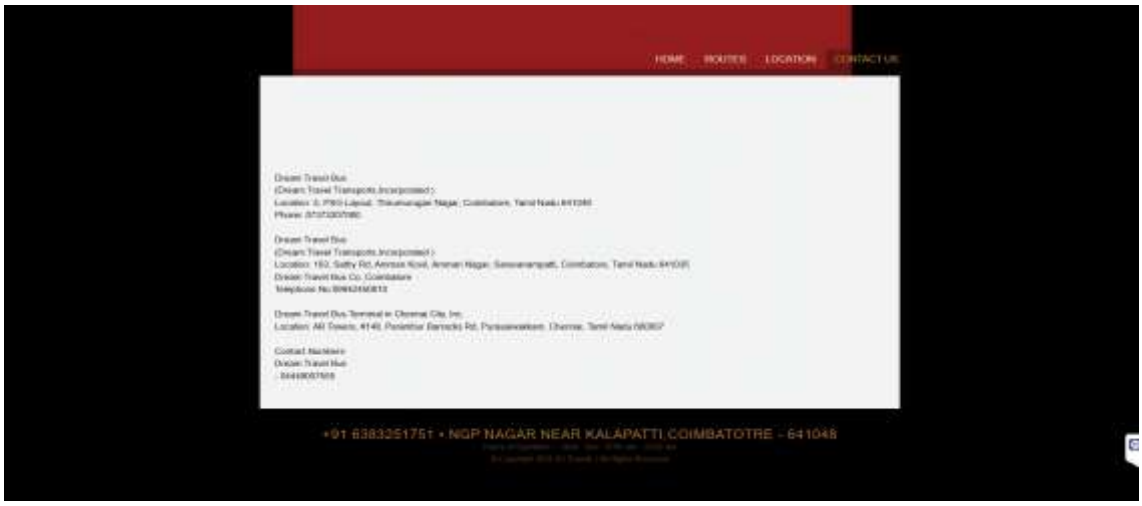
The Admin Interface Is Appears Here

The Address Page of the Site Appears Here.



V. CONCLUSION

The Bus Ticket Booking Website provides a convenient, reliable, and speedy platform for booking tickets online. It offers real-time seat availability, instant confirmation, and safe digital payments, replacing conventional approaches, for the convenience of travelers. The system enhances work efficiency by streamlining operations such as seat bookings, cancellations, and ticket handling. Schedules can be easily managed, bookings monitored, and queries handled by admins via a special panel. Robust security measures such as encrypted transactions and user verification safeguard user information. In summary, the project successfully overcomes the shortcomings of manual systems and provides a smart, scalable solution. With the addition of live tracking and mobile app integration in the future, the platform can further develop and enhance user experience.

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