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MINI PROJECT REPORT

TITLE : BUS TICKET BOOKING SYSTEM

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MAHARANA PRATAP

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Project Synopsis

The Bus Ticket Booking System is a console-based application designed to streamline the process of booking bus tickets using C/C++. The system aims to provide an efficient and user-friendly platform for customers to browse and book bus tickets, choose their preferred seats, and make secure reservations.

Project Objectives

The primary objectives of the Bus Ticket Booking System are as follows:

- User-Friendly Interface
- Online Booking
- Seat Selection
- Payment Integration
- Bus Management
- User Accounts
- Booking Confirmation

Modules

- **User Registration and Login**

- Allows users to create accounts and log in using a username and password for a personalized

experience.

- **Bus Search and Selection**

- Provides a search and browse feature for users to find buses by route, date, and location.
- Displays bus details, including schedules, available seats, and amenities.

- **Schedule Selection**

- Enables users to choose schedules for a selected bus.
- Displays a list of available schedules with date and time options.

- **Seat Selection**

- Shows an interactive seating arrangement for the chosen schedule.
- Allows users to select seats and view ticket prices.

- **Booking and Payment**

- Facilitates the booking process, allowing users to review their selection and proceed with reservations.
- Simulates payment integration for a secure transaction process.
- Provides booking confirmation details.

- **User Profile**

- Allows users to manage their information, view booking history, and save preferences.

- **Admin Panel**
- Enables bus operators to manage buses, schedules, and pricing.
- Provides insights into reservation details.

Technologies Used

- **C/C++ Programming Language** : The core technology for developing the system.

- **Data Structures :** Utilize C/C++'s built-in data structures such as arrays, structs, and linked lists to manage bus data, user information, and reservation details.

- **File Handling :** C/C++ provides extensive file I/O capabilities. Use standard file operations to store and retrieve data from files.

- **Security :** Implement secure coding practices in C/C++ to protect against common vulnerabilities.

- **Authentication :** Develop user authentication mechanisms using C/C++ to secure user accounts and transactions.

- **Concurrency :** Use C/C++'s threading libraries if needed to handle multiple simultaneous user interactions and improve system responsiveness.

- **Algorithm Design :** Design efficient algorithms for tasks like seat selection and reservation management.

Conclusion

The Bus Ticket Booking System is a comprehensive solution developed using C/C++ to provide a user-friendly interface for customers and efficient tools for bus operators. It simplifies the ticket booking process, enhances the seat selection experience, and provides effective management tools for bus operators to optimize their operations. The system adheres to the objectives of providing a streamlined user experience and efficient reservation management.

d make secure online payments. It also streamlines the management of movie schedules, ticket availability, and sales for the theater owners.

Project Objectives

The primary objectives of the Movie Ticket Booking System are as follows:

2.1. User-Friendly Interface
2.2. Online Booking
2.3. Seat Selection
2.4. Payment Integration
2.5. Movie Management
2.6. User Accounts
2.7. Booking Confirmation

Modules

- **User Registration and Login:**
  - Allows users to create accounts and log in using email and password for a personalized experience.
- **Movie Search and Selection:**
  - Provides a search and browse feature for users to find movies by title, genre, release date, and location.

- Displays movie details, including trailers, descriptions, cast, and crew information.

- **Showtime Selection:**
  - Enables users to choose showtimes for a selected movie.
  - Displays a list of available showtimes with date and time options.

- **Seat Selection:**
  - Shows an interactive seating arrangement for the chosen showtime.
  - Allows users to select seats and view ticket prices.

- **Booking and Payment:**
  - Facilitates the booking process, allowing users to review their selection and proceed to payment.
  - Integrates with payment gateways for secure transactions.
  - Sends booking confirmation with a QR code for entry.

- **User Profile:**
  - Provides a profile section for users to manage their information, view booking history, and save preferences.

- **Admin Panel:**
  - Enables theater owners to manage movies, showtimes, and pricing.
  - Offers insights into ticket sales and occupancy.

Technologies and Libraries Used

- C Programming Language: The core technology for developing the system. C is a versatile and efficient language for building various components of the application.

- User Interface: You can create a text-based user interface (TUI)

- Data Structures: Utilize C's built-in data structures such as arrays, structs, and linked lists to manage movie data, user information, and booking details.

- File Handling: C provides extensive file I/O capabilities. You can use standard file operations to store and retrieve data from files.

- Data Serialization: When saving user profiles or booking information, you might consider using data serialization techniques to store data in a structured format

- Security: Implement secure coding practices in C to protect against common vulnerabilities such as buffer overflows and injection attacks.

- Authentication: Develop user authentication and session management mechanisms using C to secure user accounts and transactions.

- Concurrency: If needed, use C's threading libraries to handle multiple simultaneous user interactions and improve system responsiveness.

- Algorithm Design: Efficient algorithms are crucial for tasks like seat selection and availability management. Strong algorithmic and data structure design is essential.

- Error Handling: Implement robust error handling and logging mechanisms to ensure the system's reliability.

Conclusion

The Movie Ticket Booking System is a comprehensive solution for both customers and theater owners. It simplifies the ticket booking process, offers a rich user experience, and provides effective management tools for theater owners to optimize their operations. The system enhances the convenience and efficiency of movie ticket booking, making it a valuable addition to the entertainment industry.

From the inception of this project objectives were clear – to provide a user friendly interface, streamline the online booking process, enhance the seat selection experience, offer user account functionality, and provide booking confirmation for seamless theater entry. The modules and functionalities created within the system meticulously adhere to these objectives.