Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Title of the Project

Development of an Online Cinema Ticket Reservation System.

Abstract of the project

The online cinema ticket reservation system is a dynamic and user-friendly platform aimed at enhancing the movie booking experience for cinema-goers. This system allows users to browse an extensive catalog of movies, view showtimes, select seats in real-time, and complete secure payments—all from the convenience of their devices. It eliminates the need for physical visits to cinema halls and minimizes the risk of overbooking by integrating real-time seat availability and transaction processing.

The platform is designed to provide seamless functionality for both users and cinema administrators. Moviegoers can filter movies by genre, rating, or showtime and interact with an intuitive seat selection system that provides a visual representation of the theater layout. The system's responsive design ensures compatibility across various devices, from desktops to mobile phones. In addition to booking tickets, users can leave reviews, provide ratings, and receive notifications about their bookings, special offers, or upcoming movie releases.

Administrators benefit from a robust dashboard that offers insights into booking trends, ticket sales, and customer preferences, helping them make data-driven decisions about movie scheduling and theater management. The system also allows cinemas to manage promotions, discounts, and customer loyalty programs, fostering engagement with frequent moviegoers.

Security is a key aspect of the platform, with secure payment gateways ensuring safe transactions through credit cards, digital wallets, and other popular payment methods. The system can easily scale to accommodate multiple cinemas, offering each one the flexibility to manage their own pricing, movie schedules, and seating arrangements.

You will develop this website to capture the functionalities mentioned above, offering a comprehensive online ticket reservation system for cinemas.

Keywords

Generic Keywords

Databases, Middleware, Programming

Specific Technology Keywords

HTML, CSS, JavaScript, React.js, MySQL, RESTful APIs, Payment Gateways

Project Type keywords

Analysis, Design, Implementation, Testing, Graphical User Interface

Functional components of the project

Following is a list of functionalities of the system. Additional functionality can be added if deemed appropriate. In cases where the description of functionality is not adequate, appropriate assumptions can be made to proceed.

Users of the system :

- **Customer**: The end-user who can browse movies, select seats, and book tickets.
- **Administrator**: The super-user who manages the system, including movie schedules, seat availability, and reporting.

When the user enters the URL of the website, a Welcome Page is displayed, which includes a navigation menu on the left-hand side, a banner at the top, and links to relevant pages. This page contains an Online Movie Catalog where users can browse movies and showtimes. The user must log in before proceeding with the booking. The Login functionality will authenticate the user using the database.

The menu should contain following screens:

- Registration Screen
  If the user is not registered, a registration screen should be provided. New users will be prompted to create an account by providing personal details such as name, email, password, and payment method.

- Movie Listings and Showtimes
  This screen displays the list of movies available for booking, along with their showtimes, movie ratings, and genres. If possible, provide a movie poster or image for each film. On selecting a movie, the user will be shown available showtimes and seats for the selected cinema.

- Seat Selection Screen
  The user can view the available seats in a graphical representation of the cinema layout. They will be able to select their preferred seats, and the system will update the price based on the type of seat (e.g., regular, VIP). Upon confirming seat selection, the system will check availability in real-time and update the seating chart accordingly.

- Booking and payment

After selecting the seats, the user will proceed to the payment screen. The total amount will be calculated based on the selected seats and any additional charges (e.g., taxes). The user can complete the payment using credit cards, digital wallets, or other integrated payment gateways. Once the booking is confirmed, an email or SMS notification will be sent to the user with their booking details and confirmation.

- Booking History and Catalog
  This screen allows the user to view their booking history. The screen displays past and upcoming reservations, including movie details, showtimes, seat numbers, and payment information. Users can also cancel upcoming bookings, if allowed by the cinema's policies.

- Terms and Conditions
  This screen provides a brief text explaining the terms and conditions for booking tickets online. Users should be able to print a copy of the terms and conditions for reference.

Steps to start-off the project

Microsoft platform: The system can be developed using technologies like React.js or ASP.NET for the front-end, with SQL Server or MySQL for the back-end.
Or
Java Platform: Alternatively, the system can be developed using JavaScript frameworks (React.js or Vue.js) for the front-end, with Java Servlets or Spring Boot on the back-end, and MySQL or MongoDB as the database.

The following steps will be helpful to start off the project
1. Get a firm grasp on the above technology.
2. Decide on the number of users and their profile, number of products, type of products, business rules.
3. Make a super user who will be able to assign users to groups and will be able to assign rights to a group.
4. Help should be very user friendly.
5. UI should include good images and have a constant look and feel throughout the application.

Requirements

Hardware requirements

Number	Description	Alternatives (If available)
1	PC with 5 GB hard-disk and 512 MB RAM	Not-Applicable

Software requirements

Number	Description	Alternatives (If available)
1	Windows 95/98/XP with MS-office	Not Applicable
2	MS-SQL server/Oracle	MS-Access
3	Linux	Not Applicable
4	IIS for MS	Tomcat for java

Manpower requirements

2 to 3 students can complete this in 4 – 6 months if they work fulltime on it.

Milestones and Timelines

Number	Milestone Name	Milestone Description	Timeline Week no. from the start of the project	Remarks
1	Requirements Specification	Complete the specification of the online cinema ticket reservation system, with clear assumptions for user profiles, roles, and functionalities. A detailed document outlining these should be created, followed by a presentation.	2-3	Add any additional relevant features like real-time seat selection,payment integration, etc.
2	Technology familiarization	Understand the technology stack required for the project, including front-end frameworks (React.js),and databases (MySQL)..	4-5	Present technology choices from a practical standpoint rather than theoretical knowledge.
3	Database	Design and set up the	5-7	Finalize the database design

	creation	database for storing user information, movie data, booking details, and payment records. Create a database with at least 20 movies and 100 user profiles for initial testing.		at this stage to proceed with development and testing.
4	High-level and Detailed Design	Listing down all possible scenarios and then coming up with flow-charts or pseudocode to handle the scenario.	7-9	Cover all functional aspects like seat availability, payment gateway integration, and admin dashboard functionalities.
5	Implementation of the front-end of the system	Implement the core front-end screens, including login, movie listings, seat selection, and payment processing. Ensure responsiveness for different devices.	10-12	Start working on a test plan to ensure smooth transitions between front-end components.
6	Integrating the front-end with the database	Integrate the front-end with the back-end to handle real-time updates for seat availability, booking confirmations, and payment processing. Ensure the database is updated with each booking.	12-13	Prepare for integration testing. Ensure secure communication between front-end and back-end components.
7	Integration Testing	Thoroughly test the integrated system by running test cases for all scenarios (e.g., booking process, admin controls, notifications). Address any issues found during testing.	14-15	Allocate additional time to handle bugs and system optimization. Prepare for final presentation/demo.
8	Final Review	Resolve all issues identified during testing and ensure the	16-18	Validate that all project goals and user requirements have been fulfilled.

		system meets all the requirements set in milestone 1. Conduct the final system review and prepare for deployment.		

Guidelines and References

https://www.geeksforgeeks.org/react/(React.js tutorial)

http://www.functionx.com/sqlserver/ (SQL-server tutorial)