Online Movie Ticket Booking System

Overview:

An online movie ticket booking application is a digital platform that enables users to browse, select, and purchase tickets for movies showing at various theaters. Here's an overview of its key components and functionalities:

User Interface: The application provides a user-friendly interface accessible through web browsers or mobile apps. It should offer intuitive navigation and an attractive layout for easy exploration of movie options.

Movie Listings: Users can view a comprehensive list of movies currently playing in theaters. Each movie listing typically includes details such as title, genre, synopsis, cast, duration, and ratings.

Showtime Information: The application displays showtime schedules for each movie, specifying dates, times, and theater locations. Users can choose their preferred showtime based on their availability and proximity.

Seat Selection: Users can select their seats from an interactive seating map for the chosen showtime. The application should highlight available seats and allow users to visualize their seating arrangement within the theater.

Booking and Payment: Once seats are selected, users proceed to book their tickets securely through the application. Payment options may include credit/debit cards, mobile wallets, or other online payment methods. The application processes transactions in real-time and issues electronic tickets or booking confirmations.

User Accounts: Users have the option to create accounts/profiles within the application. This enables them to store personal information, payment details, and booking history for easier future transactions. User accounts may also offer features like booking reminders, loyalty rewards, and personalized recommendations.

Search and Filtering: The application provides search and filtering functionalities to help users find movies and showtimes based on specific criteria such as genre, language, location, or date. Advanced filters may include options like IMAX, 3D, or special screenings.

Notification System: Users receive notifications via email or mobile push notifications to confirm bookings, provide updates on showtimes, and inform them of any changes or cancellations.

Admin Dashboard: An administrative dashboard allows theater managers or system administrators to manage movie listings, showtimes, seating arrangements, user accounts, and bookings. It provides insights into sales data, occupancy rates, and user demographics.

Integration with External Services: The application integrates with external services such as payment gateways for secure transactions, movie databases for fetching movie information, and communication

APIs for sending notifications.

Accessibility and Multilingual Support: The application ensures accessibility compliance to accommodate users with disabilities. It also supports multiple languages to cater to a diverse user base.

Feedback and Rating System: Users can provide feedback and ratings for movies they have watched and share their experience with the booking application. This helps improve user engagement and provides valuable insights for future enhancements.

System Architecture
The system follows a client-server architecture, with a multi-tiered structure comprising:

Technologies
Front-end: HTML, CSS, JavaScript (React, Angular, or any other front-end framework).
Back-end: ASP.NET Core.
Database: SQL Server or any other relational database.
Payment Gateway: Integration with payment providers like PayPal, Stripe, etc.
Frontend: The user-facing interface built using modern web technologies (HTML, CSS, JavaScript) and frameworks like React or Angular, providing an intuitive and responsive user experience across desktop and mobile devices.
Backend: The server-side logic implemented using robust backend frameworks (e.g., Node.js, Django, Flask) to handle user requests, process business logic, and interact with the database.
Database: A relational or NoSQL database (e.g., MySQL, MongoDB) stores essential data such as user profiles, movie details, seating arrangements, booking information, and transaction records, ensuring data integrity and persistence.

Functional Requirements

1. **User Registration and Authentication**
   - Users can create accounts and log in.
   - Profile management, including personal information and payment details.

2**. Movie Search and Selection**
   - Users can search for movies by title, genre, or release date.
   - Display movie details including synopsis, cast, and ratings.

3. **Showtime and Seat Selection**
   - Show available showtimes for selected movies.
   - Interactive seat map for users to choose their preferred seats.

4. **Booking and Payment**
   - Users can book multiple tickets in a single transaction.
   - Secure payment gateway integration for processing payments.
   - Multiple payment options (credit/debit cards, digital wallets, etc.).

5. **Booking Confirmation**
   - Generate and send booking confirmation via email or SMS.
   - Provide a digital ticket or QR code for entry.

6. **Cancellation and Refund**
   - Allow users to cancel bookings within a stipulated time.
   - Process refunds according to the cinema's policy.

7. **User Reviews and Ratings**
   - Allow users to rate and review movies they have watched.
   - Display average ratings and reviews on movie detail pages.

8. **Admin Panel**
   - Manage movies, showtimes, and seat availability.
   - View and manage bookings and cancellations.
   - Generate reports on sales, occupancy, and user activity.

Non-Functional Requirements

1. **Scalability**
   - The system should handle a large number of simultaneous users during peak times without performance degradation.

2. **Performance**
   - Quick load times and fast response to user actions.
   - Efficient database queries to support real-time seat availability updates.

3. **Security**
   - Secure storage and transmission of user data and payment information.
   - Implement measures to prevent fraud and unauthorized access.

4. **Reliability and Availability**
   - Ensure high uptime with reliable server infrastructure.
   - Implement redundancy and failover mechanisms.

5. **Usability**
   - Intuitive and user-friendly interface.
   - Accessible on various devices including desktops, tablets, and smartphones.

6. **Maintainability**
   - Easy to update and maintain with clear documentation and modular architecture.
   - Support for regular updates and bug fixes.

7. **Compliance**
   - Adhere to local regulations and standards for data protection and financial transactions.
   - Ensure compliance with accessibility standards to accommodate users with disabilities.

8**. Internationalization and Localization**
   - Support multiple languages and currencies.

- Adapt the user interface to different regions and cultures.

gherkin features

Feature: Online Movie Ticket Booking

Scenario: User searches for movies
Given the user is on the homepage
When the user searches for movies
Then the system should display a list of available movies

Scenario: User selects a movie
Given the user is viewing the list of available movies
When the user selects a movie
Then the system should display details about the selected movie

Scenario: User selects a showtime
Given the user is viewing details about a movie
When the user selects a showtime
Then the system should display available showtimes for the selected movie

Scenario: User selects seats
Given the user is viewing available showtimes
When the user selects a showtime
And the user selects seats
Then the system should display the selected seats in the interactive seating map

Scenario: User books tickets
Given the user has selected seats
When the user proceeds to book tickets
And the user completes the payment process
Then the system should confirm the booking and issue electronic tickets

Scenario: User cancels a booking
Given the user has a confirmed booking
When the user requests a cancellation
And the cancellation is within the allowable time frame
Then the system should process the cancellation and issue a refund

Scenario: Admin adds a new movie
Given the admin is logged into the dashboard
When the admin adds a new movie with all required details
Then the system should display the new movie in the listings