**Project: Movie Ticket Booking System**

**Overview**

This project aims to develop a web-based movie ticket booking system that allows users to browse movies, select showtimes, choose seats, and make online payments. The system will provide a user-friendly interface and secure payment processing.

**Requirements**

**Functional Requirements:**

* **User Registration and Login:**
  + Allow users to create accounts and log in.
  + Store user information securely.
* **Movie Information:**
  + Display a list of currently running movies.
  + Provide movie details like title, genre, duration, and synopsis.
* **Showtime Selection:**
  + Display available showtimes for each movie.
  + Allow users to select a preferred showtime.
* **Seat Selection:**
  + Display a seating arrangement for the selected showtime.
  + Allow users to choose seats.
* **Payment Processing:**
  + Integrate with payment gateways (e.g., PayPal, Stripe) for secure online payments.
  + Generate payment receipts.
* **Ticket Booking Confirmation:**
  + Send email and SMS confirmations to users with booking details.
* **User Profile Management:**
  + Allow users to view their booking history and cancel tickets.
  + Provide options to update personal information.

**Non-Functional Requirements:**

* **Security:**
  + Implement strong security measures to protect user data and prevent unauthorized access.
  + Use encryption techniques for sensitive information.
* **Performance:**
  + Ensure the system responds quickly and efficiently.
  + Optimize database queries and minimize response times.
* **Scalability:**
  + Design the system to handle increasing user loads and transaction volumes.
  + Consider load balancing and horizontal scaling techniques.
* **Usability:**
  + Provide a user-friendly interface with clear navigation and intuitive design.
  + Conduct usability testing to identify and fix usability issues.
* **Reliability:**
  + Ensure the system is highly available and fault-tolerant.
  + Implement backup and recovery procedures.

**Functionality:**

1. **User Interface:**
   * Home page: Display featured movies and latest releases.
   * Movie listing: Show detailed movie information and trailers.
   * Showtime selection: Allow users to choose a preferred date and time.
   * Seat selection: Visualize available seats and block selected ones.
   * Payment gateway integration: Seamlessly process online payments.
   * Booking confirmation: Generate and send electronic tickets.
   * User profile: Manage personal information and booking history.
2. **Backend System:**
   * **Database:** Store user information, movie details, showtimes, bookings, and payment records.
   * **Server-side logic:** Handle user authentication, ticket booking, payment processing, and email/SMS notifications.
   * **Security:** Implement robust security measures to protect user data and prevent unauthorized access.

**Technologies:**

* **Frontend:** HTML, CSS, JavaScript (e.g., React, Angular)
* **Backend:** Node.js, Python (Django, Flask), Java (Spring Boot)
* **Database:** MySQL, PostgreSQL
* **Cloud Platform:** AWS, Azure, GCP
* **Payment Gateway:** PayPal, Stripe

By adhering to these requirements and functionality, we can create a robust and user-friendly movie ticket booking system that caters to the needs of both users and theater owners.