

AcmePlex Movie Theater Reservation System

System Description

The AcmePlex Movie Theater Reservation System is an elegant and user-centric web application crafted to redefine the movie-going experience. Designed with cutting-edge technologies like Spring Boot and Thymeleaf, this system seamlessly integrates theater management, ticket booking, and advanced payment features into a cohesive and intuitive platform.

Key Features

1. Dynamic User Management

Effortless Access:

- Registered users can create an account, log in, and enjoy a personalized experience, including saved details and faster bookings.
- Guests (ordinary users) can bypass registration and directly access the booking page for convenience.

Tailored Experience:

- Registered users enjoy exclusive benefits such as no cancellation fees and priority access to early bookings.

2. Smart Search and Filter

- Discover movies effortlessly with the powerful search functionality:
 - Filter by movie title or release date.
 - Select theaters by location or name.
- Results are dynamically updated to ensure users find what they're looking for.

3. Interactive Seat Selection

- Experience the thrill of choosing seats through an intuitive graphical interface:
 - Real-time updates highlight available (green) and unavailable (red) seats.
 - Prevents double booking by instantly marking selected seats as unavailable.
- Every booking seamlessly updates the database, ensuring accuracy.

4. Seamless Ticket Purchase

Proceed to a detailed summary page displaying:

- Movie name, theater name, showtime, and selected seat numbers.

Secured Payments:

- Accepts 16-digit credit card numbers.
- CVV is encrypted using robust hashing techniques for maximum security.

Instant Confirmation:

- Upon successful payment, a confirmation email is sent to the user.
- Includes complete booking details: theater, movie, showtime, seat numbers, and ticket price.

5. Dedicated Support

- A user-friendly contact form allows customers to:
 - Report issues with payments or bookings.
 - Automatically forward inquiries to the theater's dedicated support team for rapid resolution.

Built-in Security

Data Encryption:

- Sensitive information, such as CVV, is encrypted and securely stored in the database.

Transparent Communication:

- Email notifications provide users with a detailed record of their transactions.

Database Integrity:

- Real-time database updates ensure accurate seat availability.

Error Handling and Security

- **Error Handling:** The system is equipped with a robust error handling mechanism to gracefully handle unexpected events, such as failed payments, invalid seat selections, and database errors. Users are presented with clear, user-friendly error messages to guide them through the resolution process, ensuring a smooth and uninterrupted experience. like 404 error messages. If any API not present in our project it will directly move towards the 404 error page rather than whitelabel.

- **Security: CVV Hashing:** The CVV (Card Verification Value) is not stored in plain text in the database. Instead, it is hashed using a secure algorithm, ensuring that sensitive payment data is protected from potential breaches.
- **Authentication & Authorization:** Registered users are authenticated via a secure login system, ensuring only authorized access to their account details and sensitive information.
- **Data Integrity & Encryption:** All sensitive data, including credit card information and user credentials, are encrypted both in transit (via HTTPS) and at rest in the database.

Technologies Used

- Frontend: Thymeleaf, HTML, CSS, Bootstrap (optional)
- Backend: Spring Boot, Java 17
- Database: MySQL with Hibernate/JPA
- Security: Encryption for CVV and secure email communication
- Build Tool: Maven