**CHAPTER 2**

# PROJECT DESIGN

**2.1 System Architecture**

**User Management:**

User management in a movie booking system program is a critical feature that ensures seamless interaction and security for users. It includes functionalities for user registration, authentication, and profile management, allowing customers to create accounts, log in securely, and manage personal details such as contact information. User roles, such as regular users and administrators, can be defined to control access to various features. For example, regular users can browse movies, book tickets, while administrators manage movie schedules, ticket availability. Robust user management also incorporates password encryption and provide a personalized efficient booking experience.

**Movie and Show Management:**

Movie and show management are a core feature in a movie booking system, enabling efficient organization and display of available films and showtimes. This functionality allows administrators to add, update, and remove movies, specifying details such as title. It also includes scheduling showtimes, managing theatre screens, and ensuring no overlap in bookings. Real-time updates ensure accuracy, reflecting ticket availability and changes in show schedules, while automated notifications inform users about new releases, cancellations, or rescheduled shows. This streamlined management system ensures a smooth operation for administrators and an engaging experience for moviegoers.

**Seat Selection and Booking:**

Seat selection and booking are essential features of a movie booking system, providing users with a seamless and interactive way to reserve seats. Customers can view a real-time seating layout for their selected show. The system allows users to select preferred seats based on availability and budget, with options to book multiple seats in one transaction. Once seats are selected, a secure payment gateway finalizes the booking, and a confirmation receipt or ticket is issued digitally. This process ensures convenience, reduces errors, and enhances user satisfaction by giving customers control over their movie-watching experience.

**2.2 Use Case Diagram**

**Actors:** User & Administrator:

**User:**

The user interacts with the system primarily to explore, book, and manage tickets.

Typical actions include:

**1. Search and Browse**:

* Search for movies by title, genre, or release date.
* View movie details (e.g., synopsis, cast, showtimes, trailer).

**2.Booking Tickets**:

* Select showtimes and seats.
  + Add tickets to a cart and proceed to payment.
  + Receive e-tickets after successful payment.

**3.Account Management**:

* + Create or log into an account.
  + View and edit personal information.
  + Access booking history and tickets.

A person holding a string

Description automatically generated

**A diagram of a network

Description automatically generated**

**Administrator**:

The administrator manages the backend of the system to ensure smooth operation. Responsibilities include:

**1.** **Movie and Show Management:**

* Add, edit, or delete movie listings.
* Schedule and manage showtimes.

**2.Theatre Management:**

* + Configure seating arrangements.

**3.User Management:**

* + View or manage user accounts.
  + Resolve disputes or issues raised by users.

**4.Payment and Revenue:**

* + Oversee payment processing and resolve failed transactions.
  + Monitor revenue from ticket sales.

**5.System Maintenance:**

* + Ensure the platform runs without glitches.
  + Update software and security settings as needed.

**6.Reporting and Analytics:**

* + Generate reports on movie performance, revenue, and user activity.
  + Use data to inform scheduling and marketing decisions.

**Use cases: Login, View Movies:**

**Login in a Movie Booking System:**

Login allows users or administrators to access the system by verifying their identity with credentials such as a username and password.

Features of Login:

**1.For Users:**

* + Enables personalized access to the system.
  + Provides access to booking history, saved preferences, and account details.
  + Facilitates payment and e-ticket delivery.

**2**.For Administrators:

* + Allows administrators to manage the backend of the system (e.g., add movies, monitor bookings, generate reports).
  + Ensures secure access to sensitive data and system settings.

**Process:**

Input Credentials**:**

Enter username/email and password (or use third-party logins like Google or Facebook if supported).

**View Movies in a Movie Booking System:**

**View Movies** allows users to explore the list of currently available and upcoming movies, providing details to help them make informed booking decisions.

**Features of Viewing Movies:**

1. **Search Functionality:**
   * Users can search for movies by title, genre, language, or release date.
2. **Filter and Sort Options:**
   * Filter movies by genre (e.g., action, comedy), rating, or available theatres.
   * Sort by popularity, release date, or alphabetical order.
3. **Movie Details:**
   * Title.
   * Cast and crew information.