



# Факультет программной инженерии и компьютерной техники

Информационные системы и базы данных

## Курсовая Работа

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## Objective of Stage 1

Stage 1 involves defining the subject area, detailing the business processes, identifying the actors and their roles, outlining the system's features by actor types, and describing user stories for each feature. It also includes listing all entities, their attributes, and any association tables for many-to-many relationships.

## 1 Subject Area

### Description

The movie ticket booking system is an online platform designed for booking and purchasing movie tickets. It aims to provide a convenient and efficient way for users to secure tickets and offers tools for administrators to manage movie listings and user bookings.

## 2 Business Description

### Actors in the System

- **Users:** Individuals using the system for browsing, booking, and reviewing.
- **Administrators:** Manage movie listings, theaters, showtimes, and user activities.

### Features by Actor Type

#### For Users

- **User Registration:** Users can create an account by providing their full name, email address, and creating a password.
- **User Login:** Registered users can log in to the system using their email address and password.
- **Profile Management:** Users can edit their profile information including name, email, password, and contact number.
- **View Booking History:** Users can view a list of their past bookings, showing movie titles, theater names, showtimes, and seat numbers.
- **Browse Movies:** The system displays a list of available movies, showing each movie's title, release date, and a brief synopsis.
- **View Movie Details:** On selecting a movie, users can view detailed information including genre, duration, director, cast, and user ratings.
- **Select Theater and Showtime:** Users can choose a theater based on location and select a showtime for a movie from the available options.
- **Seat Selection and Booking:** Users can choose their seats using an interactive seat map of the theater's layout, showing available and occupied seats.

- **Secure Payment Processing:** Users can complete their ticket purchase using various payment methods like credit/debit cards, online wallets, or net banking.
- **Write Movie Reviews:** Users can submit reviews for movies they have watched, providing a star rating and a text review.

#### For Administrators

- **Add New Movies:** Admins can add movies by entering information such as title, genre, duration, director, cast, synopsis, and release date.
- **Edit Movie Information:** Admins can update existing movie information, including modifying any of the previously mentioned details.
- **Remove Movies from Listing:** Admins can remove movies from the system, which will no longer be displayed in the user interface.
- **Manage Theaters:** Admins can add new theaters by entering details like theater name, location, and number of screens. They can also update this information as needed.
- **Schedule Movie Showtimes:** Admins can schedule showtimes for movies, specifying the theater, screen, date, and time for each showtime.
- **Manage User Accounts:** Admins can view all registered users, activate or deactivate user accounts, and reset user passwords if necessary.

## 3 Entities and Attributes

### Entity Descriptions

- **Movie**
  - ID
  - Title
  - GenreID (Foreign Key to Genre table)
  - Duration
  - Synopsis
  - Release Date
  - User Ratings
- **Genre**
  - ID
  - GenreName
- **Theater**
  - ID
  - Name
  - Location

- NumberOfScreens
- **Screen**
  - ID
  - TheaterID
- **Showtime**
  - ID
  - ScreenID
  - MovieID
  - Date
  - Time
- **Seat**
  - ID
  - ScreenID
  - SeatNumber
  - SeatType
  - Availability
  - Price
- **User**
  - ID
  - Name
  - Email
  - Password
- **Booking**
  - ID
  - UserID
  - ShowtimeID
  - BookingDate
  - TotalPrice
- **Ticket**
  - ID
  - BookingID
  - SeatID
- **Payment**
  - ID

- BookingID
- Amount
- PaymentMethod
- PaymentDate
- **Review**
  - ID
  - MovieID
  - UserID
  - Rating
  - Comment

## Associations and Relationships

- **Movie to Genre:** A many-to-one relationship, where each movie is associated with one genre.
- **Theater to Screen:** A one-to-many relationship, as a theater contains multiple screens.
- **Screen to Showtime:** A one-to-many relationship, where each screen can have multiple showtimes.
- **Showtime to Booking:** A one-to-many relationship, each showtime can have multiple bookings.
- **User to Booking:** A one-to-many relationship, a user can have multiple bookings.
- **Booking to Ticket:** A one-to-many relationship, each booking can include multiple tickets.
- **Booking to Payment:** A one-to-one relationship, each booking has one payment.
- **User to Review:** A one-to-many relationship, users can write multiple reviews.
- **Movie to Review:** A one-to-many relationship, each movie can have multiple reviews.
- **Ticket to Seat:** A many-to-many relationship, managed through the Booking entity.

## Association Tables

- **Ticket\_Seat:**
  - TicketID
  - SeatID