

## Movie Booking System

Create a simple Movie Booking System using basic **OOP principles** in Java. The system must allow a user to select a movie, choose a showtime, pick seats, and make a payment.

### System Requirements

#### 1. Movie

A movie should have:

- ID
- Title
- Rating

Movies should be **sortable by rating** (use Comparable).



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#### 2. Theater & Seats

A theater should have:

- Name
- A seat layout using a **2D array** (rows × columns)
- A list of showtimes

Use an **enum** SeatType:

- REGULAR
- PREMIUM (first row only)

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#### 3. Showtime

Each showtime should have:

- A movie
- A theater
- Start time
- A seat matrix for that show

Showtimes should be **sortable by time** (Comparator).

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## 4. User

A user has:

- Username
- Full name

Store users in a **Set** to ensure uniqueness.

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## 5. Booking Flow



A booking should:

1. Let a user pick a showtime
  2. Let them choose seats (one or multiple)
  3. Check if seats are already booked
  4. If booked → throw **BookingException**
  
  5. Calculate price:
    - Regular = 100
    - Premium = 200
  6. Process payment
  7. Confirm booking
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## 6. Payment (Polymorphism)

Create an abstract class **Payment** with an abstract method `process()`.

Create the following payment types:

- CreditCardPayment
- UPIPayment
- CashPayment

Each should **override process()**.

This demonstrates **runtime polymorphism**.

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## 7. Booking

A booking includes:

- User
- Showtime
- Seats booked
- Amount paid
- Payment method used



Use **StringBuilder** for printing booking details.

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## 8. Collections (Basic)

Use:

- List for movies, showtimes
  - Set for users
  - (Optional) Map if needed
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## 9. Exceptions

Create a custom **BookingException** for:

- Invalid seat selection
  - Seat already booked
  - Payment failure
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## Expected Output

- List of movies sorted by rating
- List of showtimes sorted by time
- Successful booking summary
- Error shown when trying to book an already booked seat

