**Problem Definition**

The Movie Ticket Booking System addresses the complexity and inconvenience of traditional methods of booking movie tickets. The project provides a digital solution for booking movie tickets, allowing users to select movies, showtimes, and seats conveniently through a JavaFX-based application.

**Objectives**

1. Simplify the process of booking movie tickets.
2. Efficiently manage data related to movies, showtimes, and seat availability.
3. Provide smooth navigation between different application views.
4. Validate and confirm bookings while ensuring data integrity.
5. Allow users to view and manage their bookings easily.

**Justification for Chosen Data Structures**

* **HashMap**: Used for booking management to enable efficient storage and quick lookup of booked seats for each movie and showtime combination.
* **ArrayList**: Employed to store lists of movies, showtimes, and seats, allowing easy iteration and updates.
* **Stack**: Used for managing scene transitions, enabling smooth navigation back and forth between application pages.
* **Doubly Linked List**: Implemented to facilitate navigation between Bollywood and Hollywood movie categories, ensuring efficient forward and backward traversal.

**Anticipated Challenges**

1. Avoiding seat conflicts during booking, especially for simultaneous users.
2. Ensuring smooth navigation between application pages without errors.
3. Maintaining data integrity across different components, especially when multiple bookings are processed simultaneously.
4. Providing clear and intuitive feedback to users for invalid operations, such as booking already reserved seats.