

ENSF 480 Term Project

Group: 5

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Brief Description of the System

The **Movie Theater Ticket Reservation System** is a Java-based GUI application designed to allow users to reserve movie tickets in an intuitive and user-friendly manner. The system provides two types of users with tailored functionality: **Ordinary Users (OUs)** and **Registered Users (RUs)**.

Features of the System

1. For Ordinary Users (OUs):

- **Search and Select Movies:** Browse a list of available movies across multiple theaters.
- **View Showtimes:** See available showtimes for selected movies.
- **Seat Selection:** Graphically view available seats for a specific show and choose a preferred seat.
- **Payment Processing:** Pay securely using a credit card.
- **Email Notification:** Receive the ticket and payment receipt via email.
- **Ticket Cancellation:** Cancel tickets and receive a credit with a 15% administrative fee deduction, valid for one year.

2. For Registered Users (RUs):

- **Exclusive Benefits:**
 - Exempt from the 15% admin fee for ticket cancellations.
- **Priority Booking:** Up to 10% of the seats are reserved exclusively for RUs.
- **Membership Management:** Pay an annual fee of \$20 to maintain their registered status.
- **Saved Information:** Store user details, such as name, username, password, and payment information, in the system's database for faster transactions.

Technical Implementation

- **Java GUI:** The application utilizes Java's graphical user interface (GUI), ensuring an interactive user experience.
- **Database Integration:** A backend database stores information about movies, theaters, users, seats, transactions and more.
- **Payment System:** Includes credit card validation for transactions.
- **Seat Management:** Dynamically updates seat availability and enforces the 10% seat allocation rule for RUs.
- **Cancellation Policy Enforcement:** Tracks ticket purchases and calculates refund credits based on admin fee policy.

- **Email Integration:** Automatically sends tickets and receipts to the user's registered email address upon successful payment.

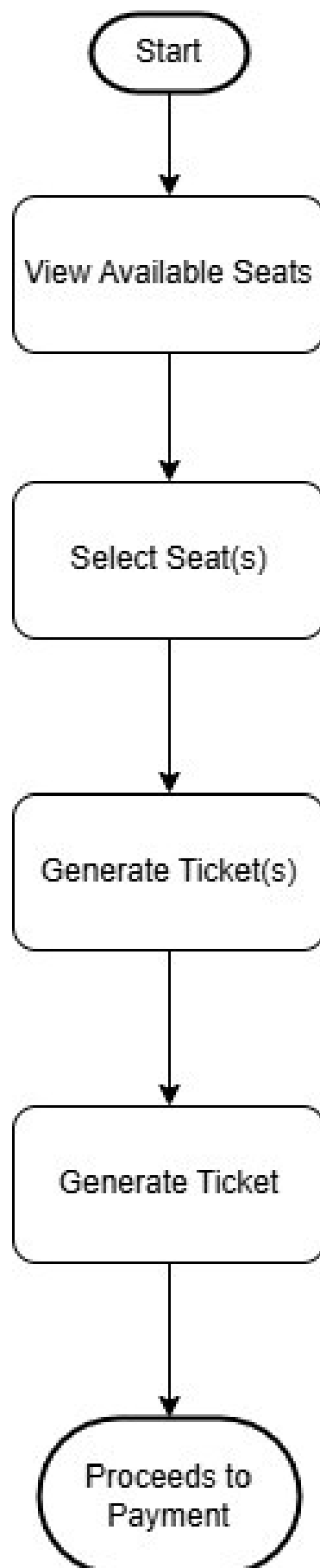
Advantages

- The system provides a seamless experience for both ordinary and registered users.
- RUs enjoy enhanced privileges and exclusive benefits.
- The seat allocation rules ensure fairness while maintaining priority access for RUs.
- A well-designed GUI improves usability and accessibility, making the ticket reservation process smooth and efficient.

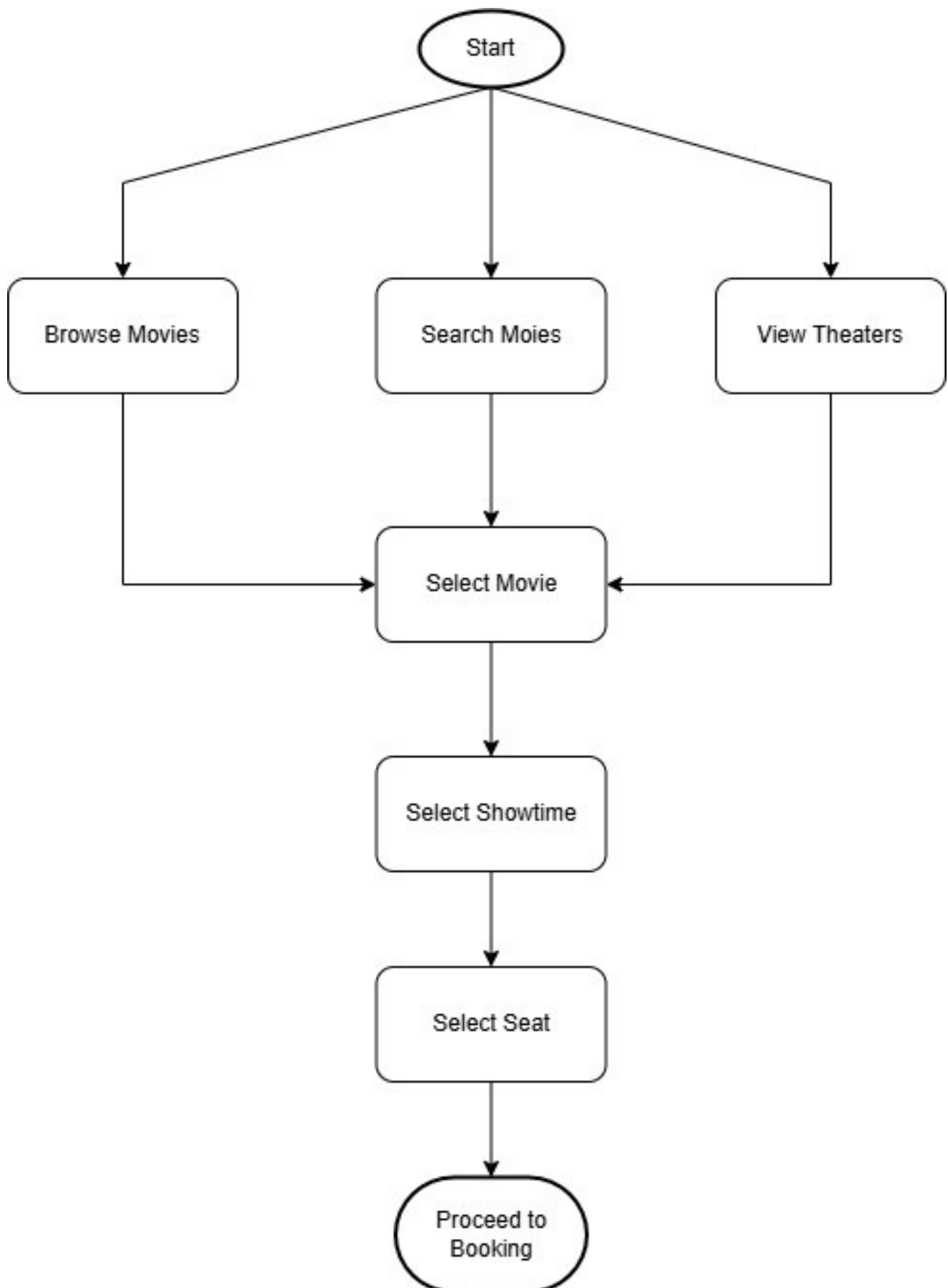
Use Case Diagram



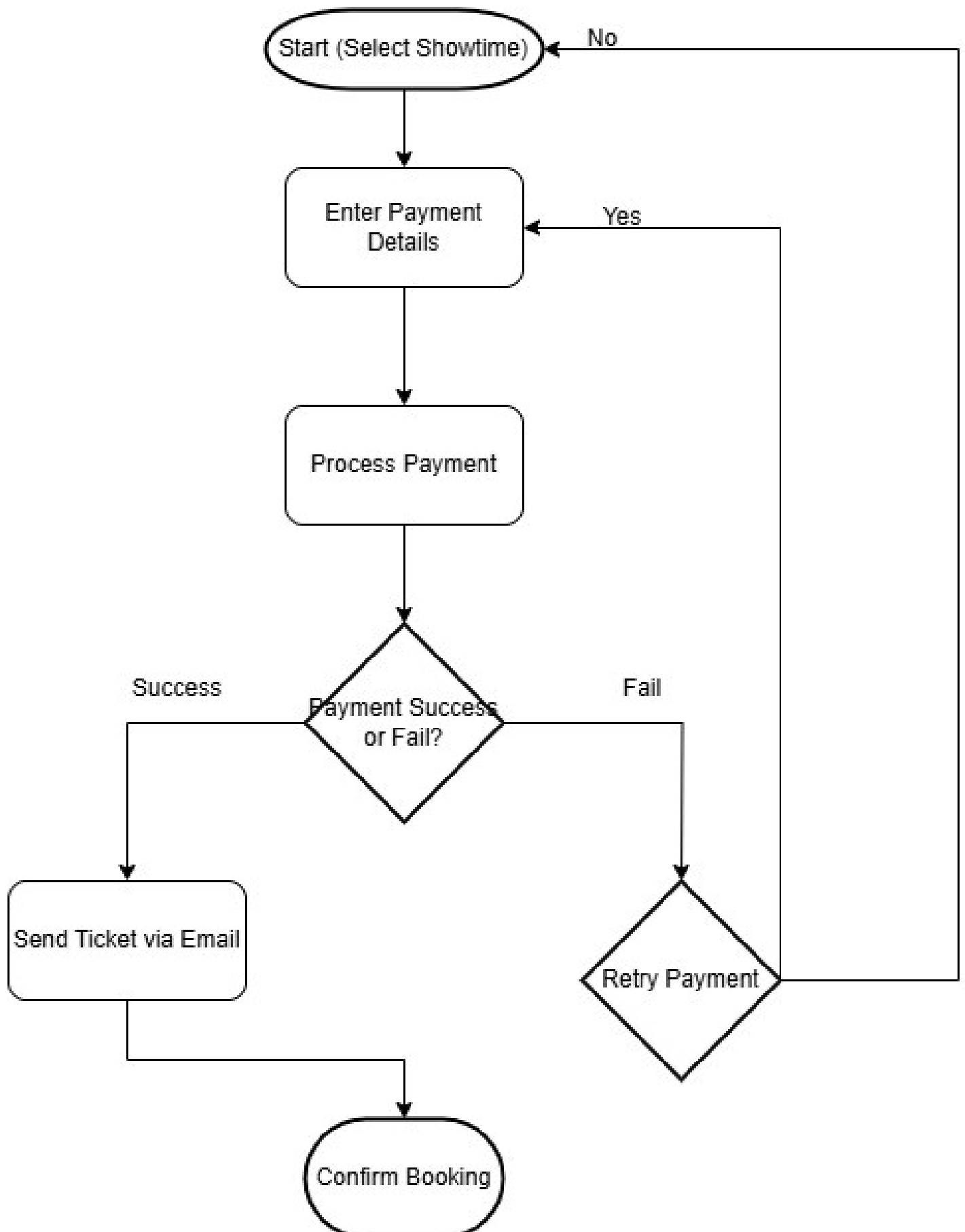
System Activity Diagram – Booking



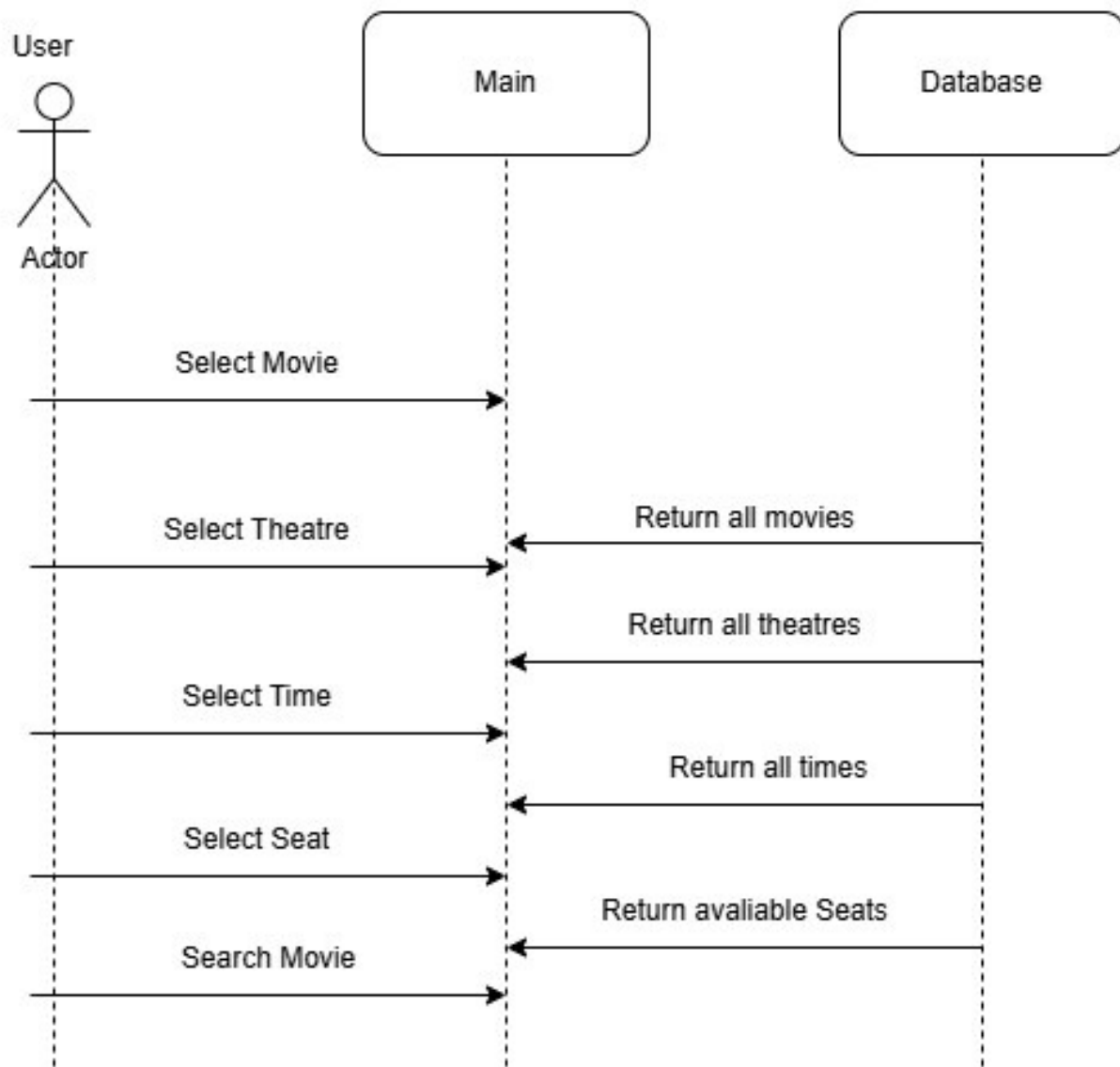
System Activity Diagram – Browsing



System Activity Diagram – Payment

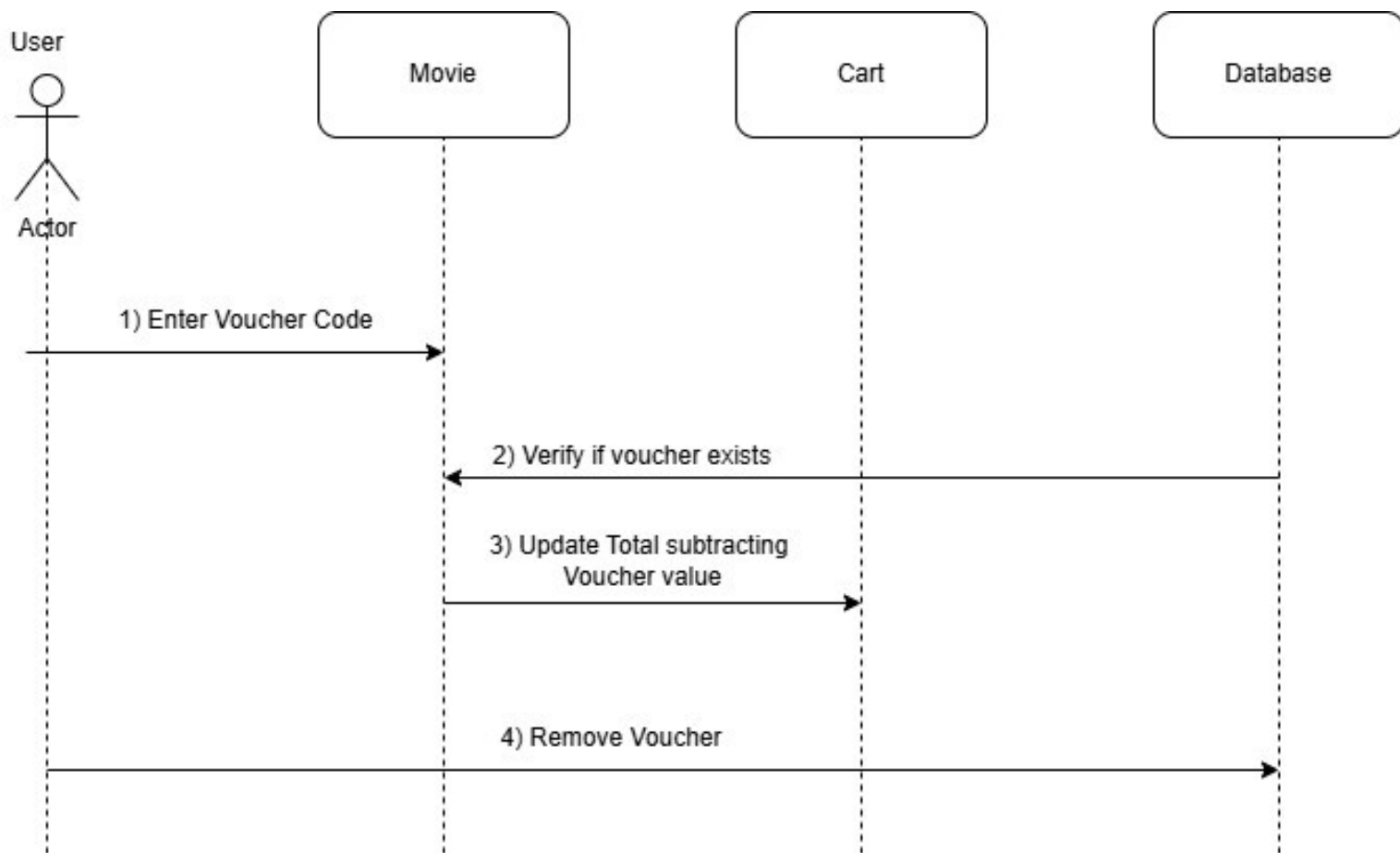


Select/Search Movies, Theatres, Showtimes, Seats interaction diagram



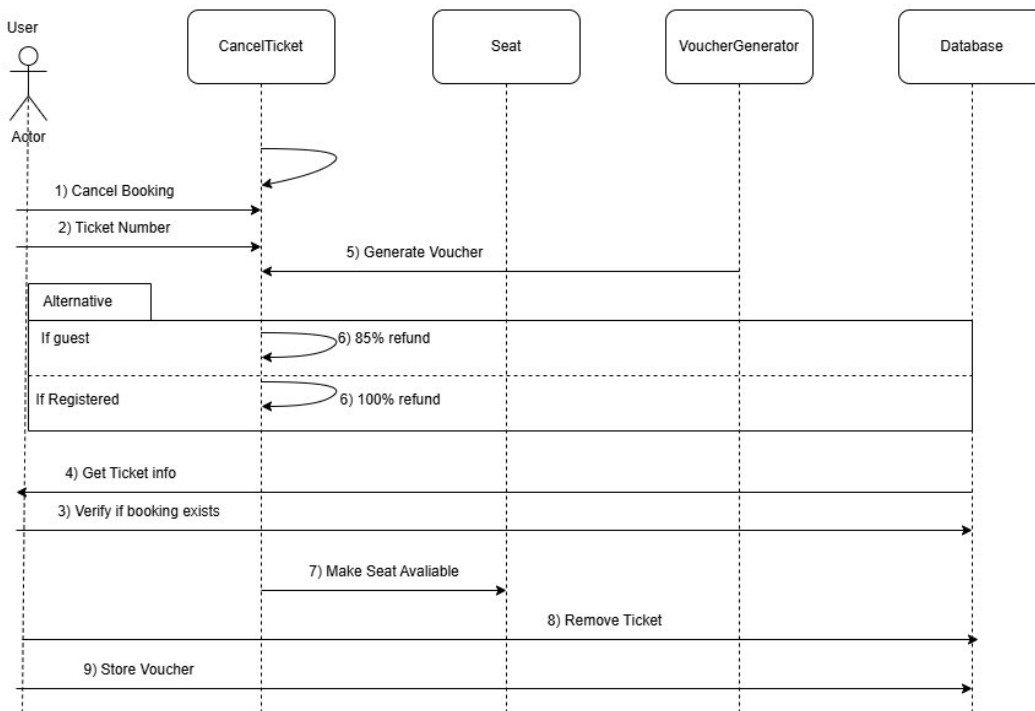
By: Taiwu Chen

Voucher redeeming interaction diagram



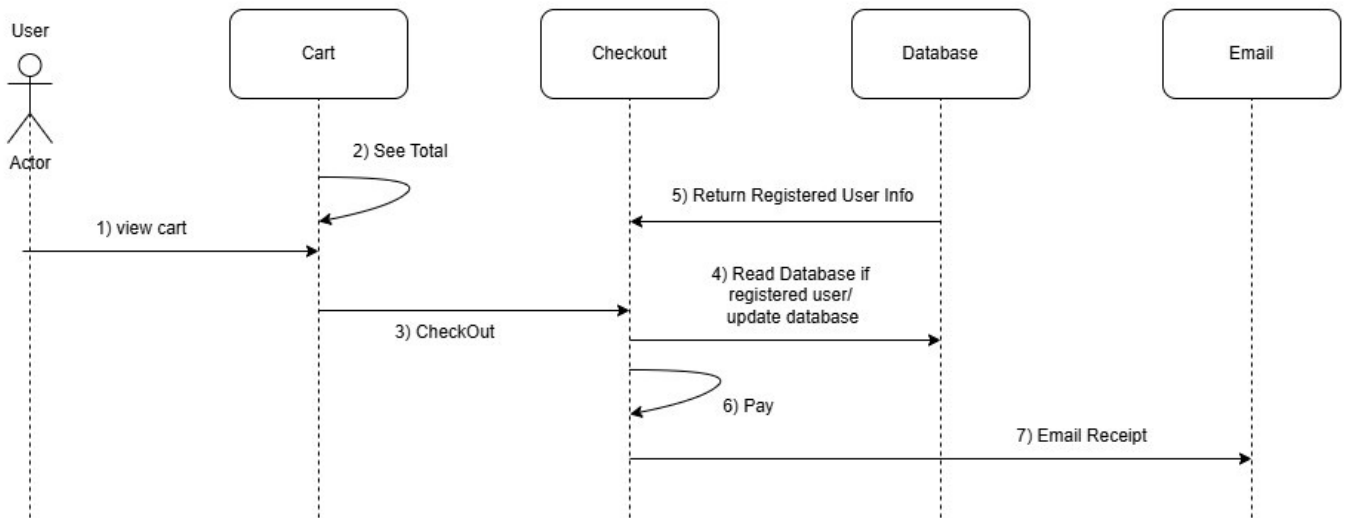
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Cancel Ticket interaction diagram



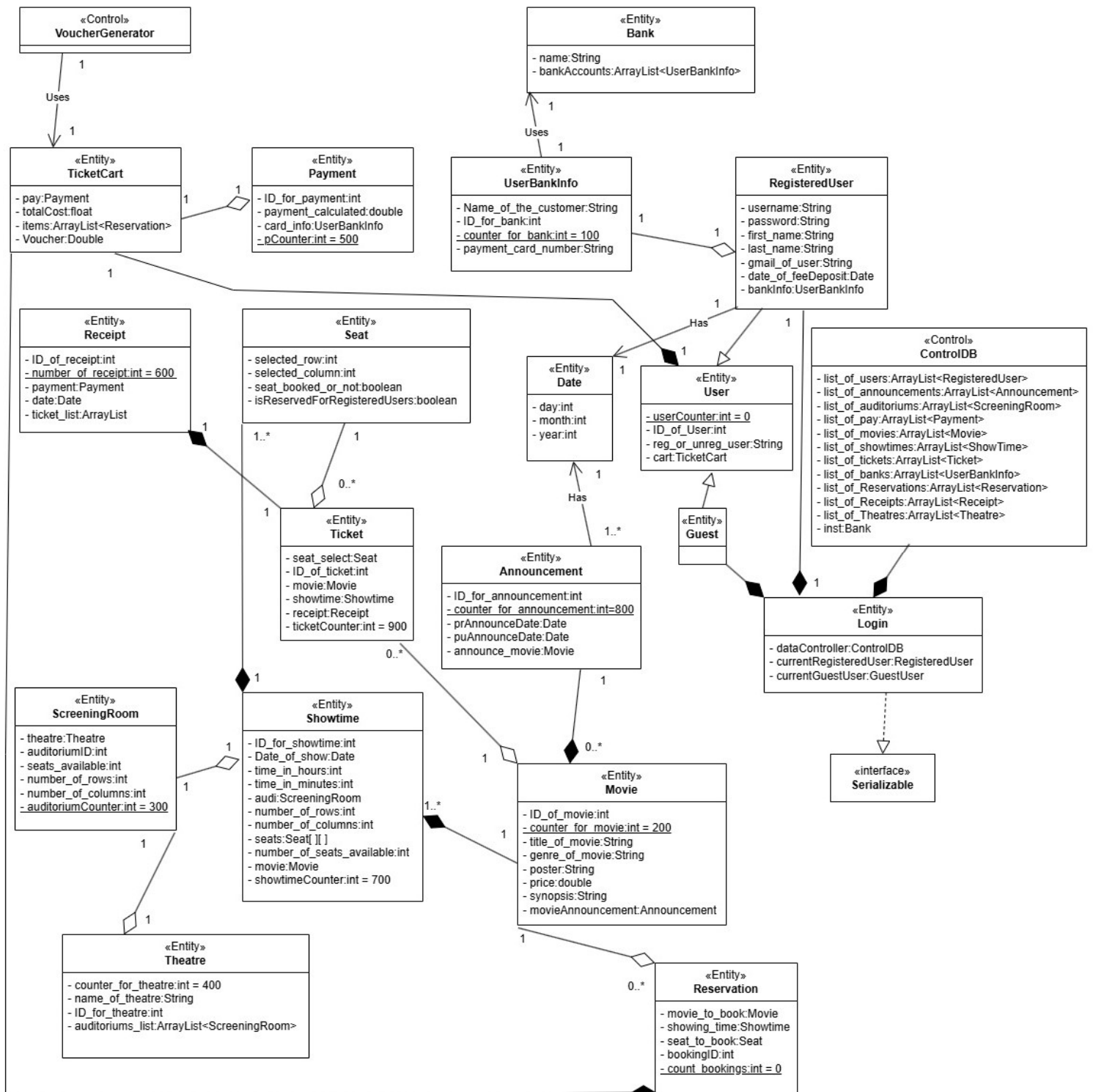
By: Abdul Rafay

Payment interaction diagram

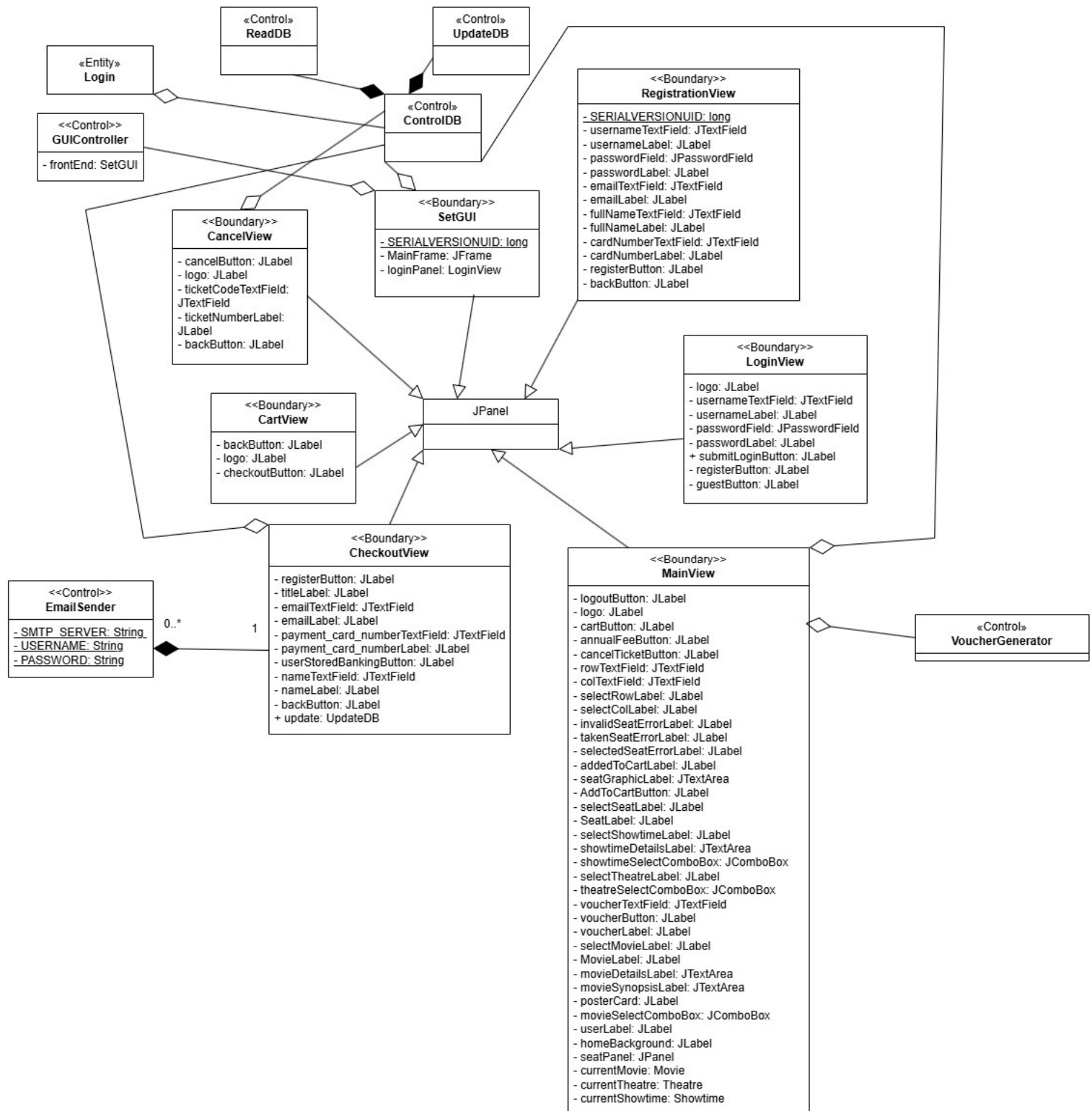


By: Mohammed Azmath Khan

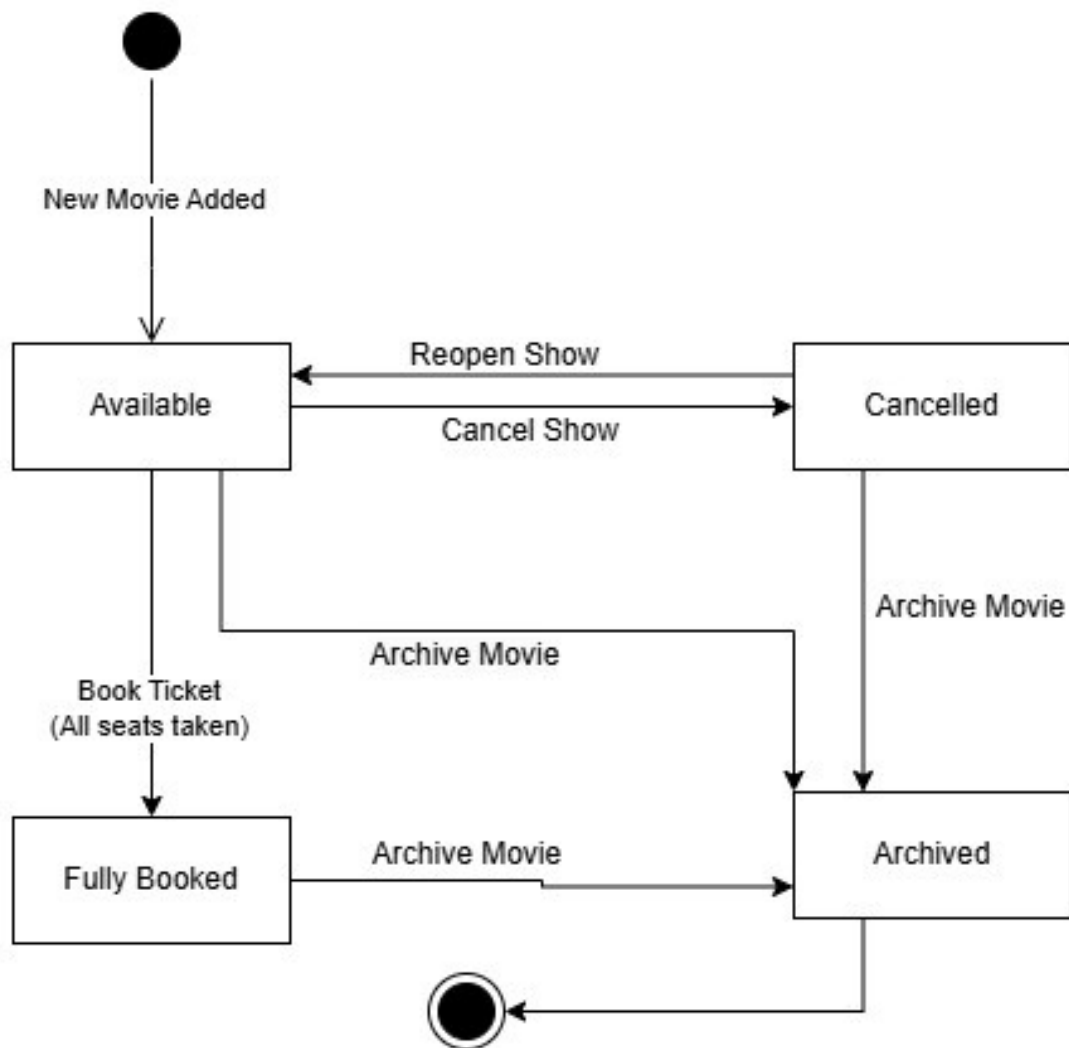
Domain Layer Class Diagram



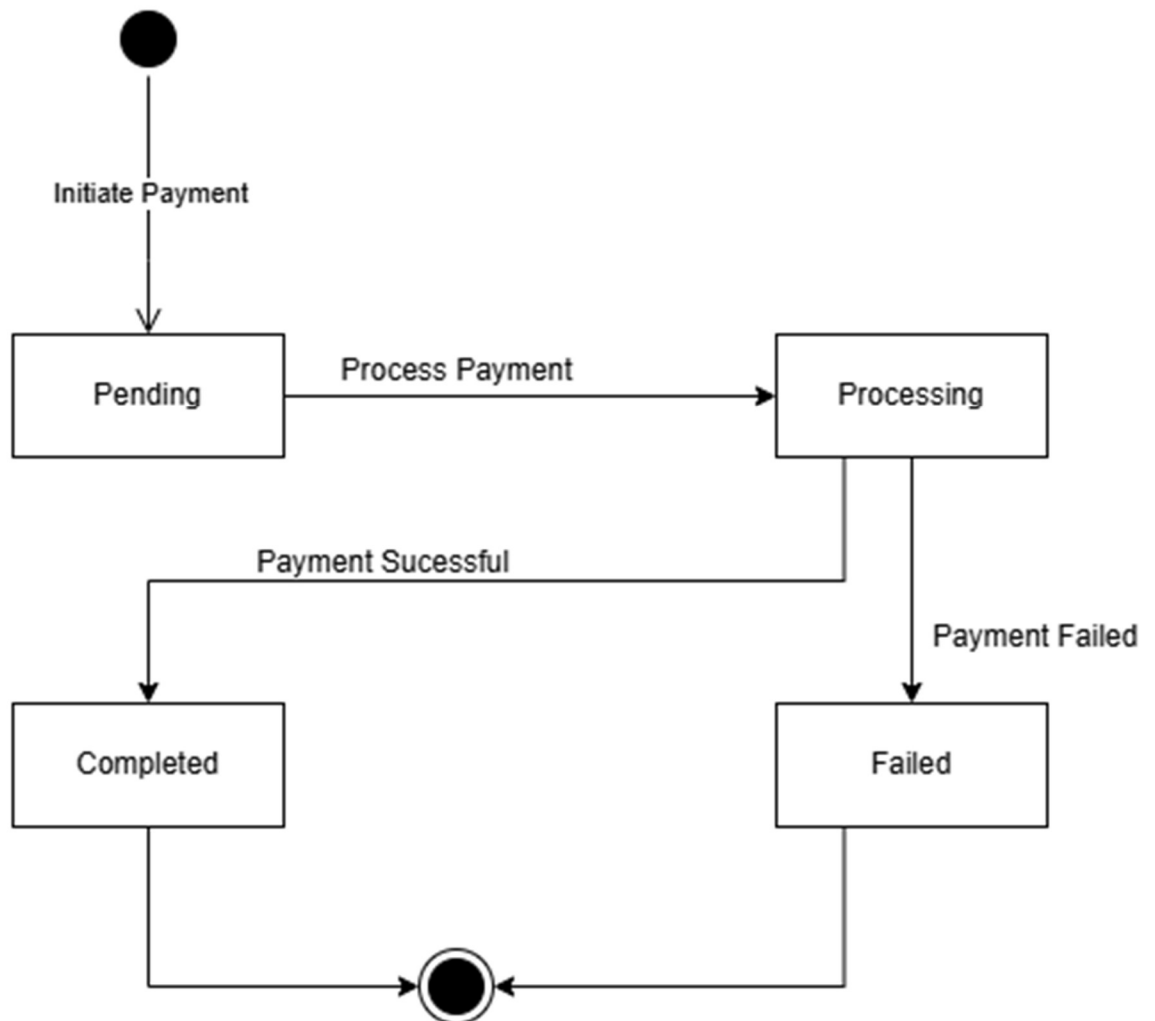
Presentation Layer Class Diagram



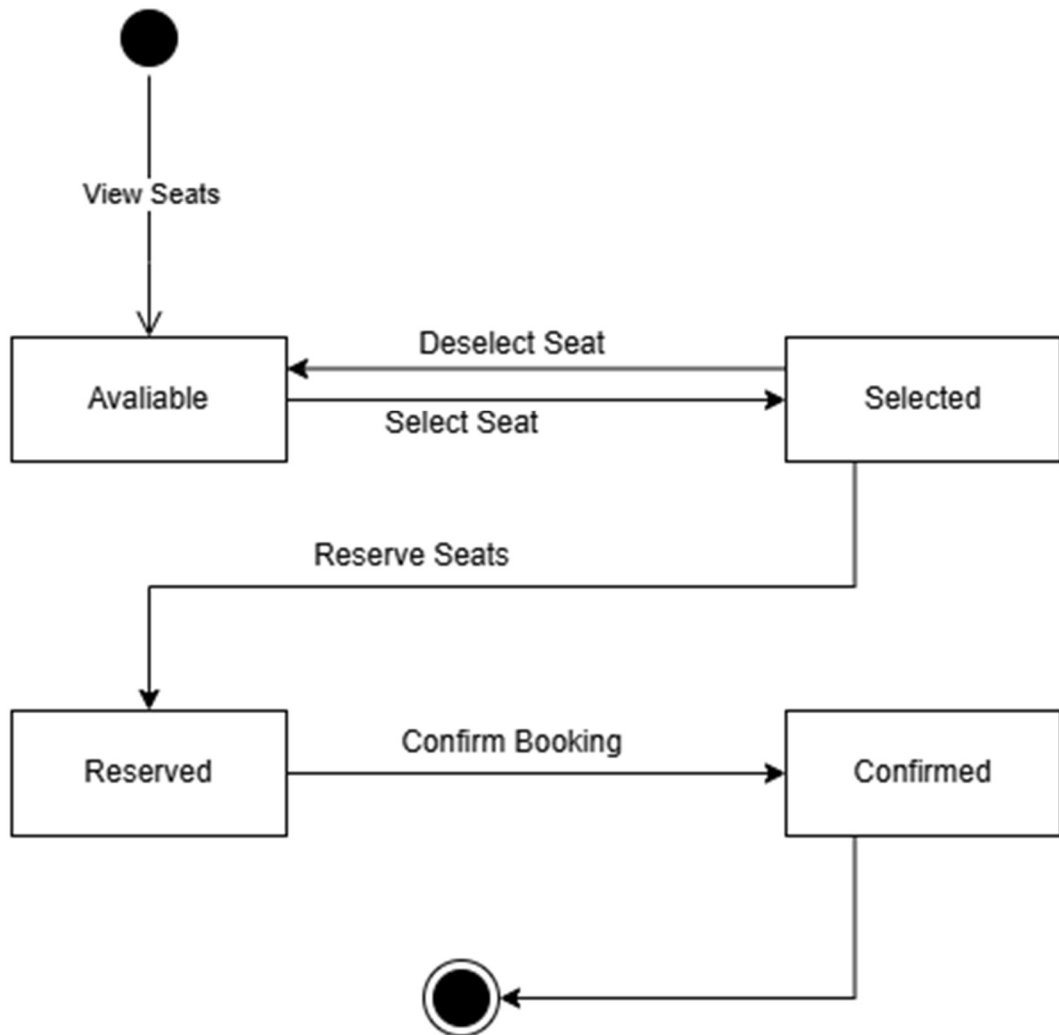
Movie State Diagram



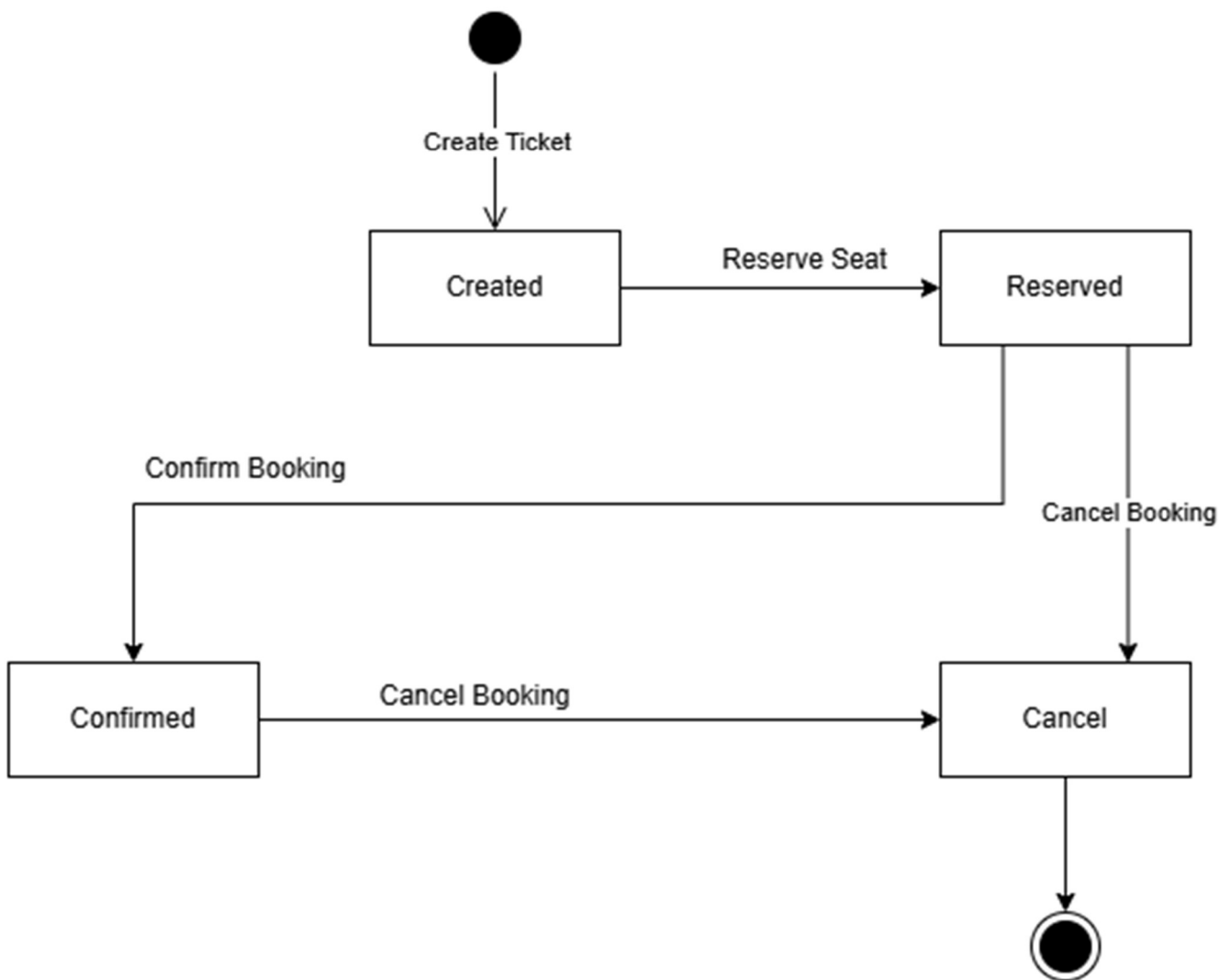
Payment Process State Diagram



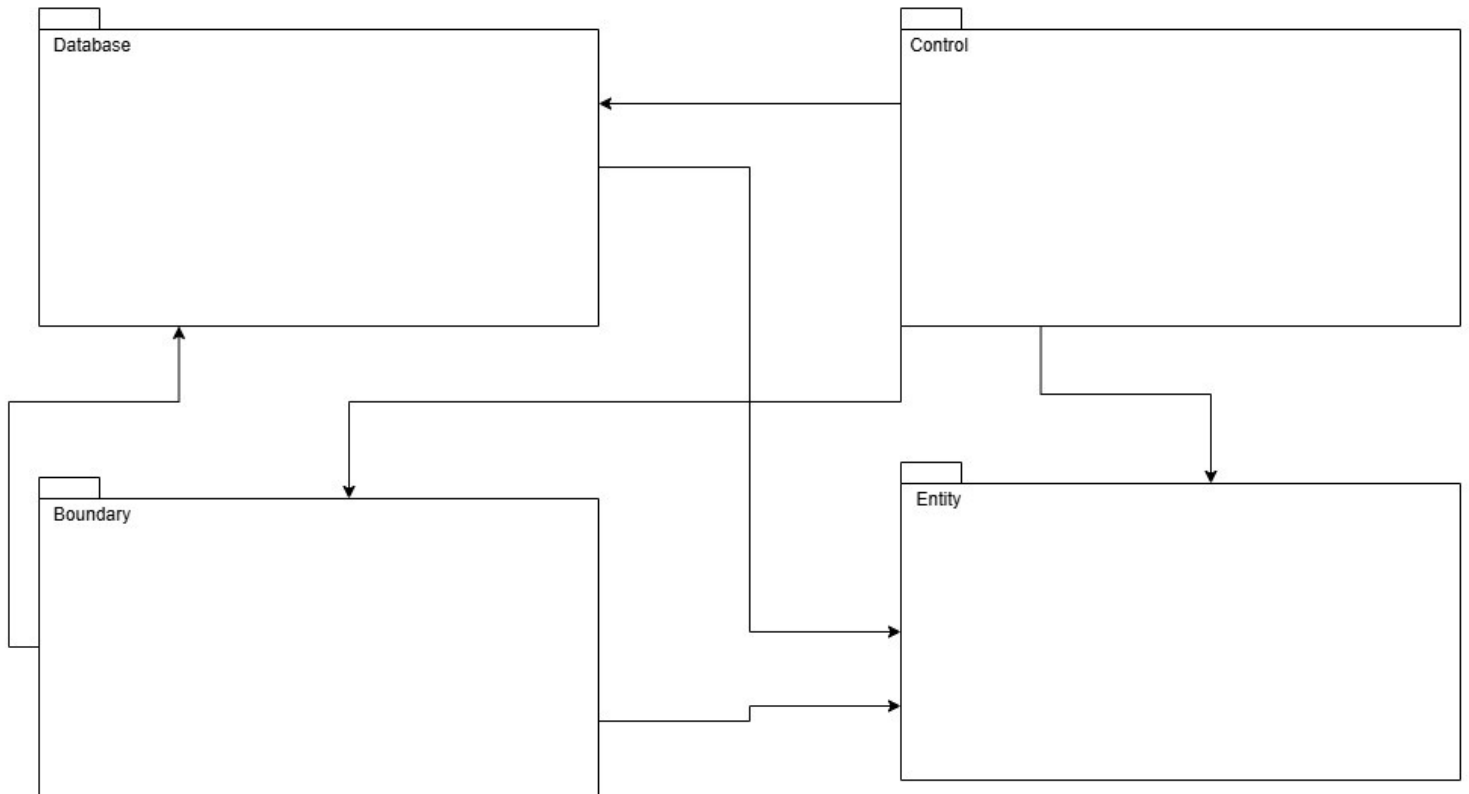
Seat Selection State Diagram



Ticket State Transition Diagram



Package Diagram



Deployment Diagram

