Group: 26

Names: Elize Tran, Long Tran, Christina Truong, Jens Varughese

Class Exercise 2

Course Name: Principles of Software Design

Course Code: ENSF 480

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List of Actors Involved In System

- Ordinary User
- Registered User
- Database

Short Description About Each Actor

- Ordinary User: a user who is not registered in the system.
- Registered User: a user who has previously registered in a system. Receives some benefits.
- Database: Holds all the data for movies, accounts, and availability.

List of Possible Use Cases

1. Select Theater
2. Search Movie
3. Select Showtime
4. View Available Seats
5. Select Seats
6. Make Credit Card Payment
7. Cancel Ticket
8. Pay Account Fee
9. Receive Movie News
10. Manage Account

A Scenario for Each Use Case (Bold for Candidate Operations)

1. Select Theater
   Scenario: John **selects the city and country** he is currently in. A list of nearby movie theatres are **display**ed to him. He **selects** which theatre he would like to **purchase** a ticket from then the system moves to the next step.

2. Search Movie
   Scenario: This use case begins when the user has already **selected a theatre** and decided to proceed to **picking a movie**. John is shown a list of movies currently showing in the theatre he picked. John then **picks a movie** and proceeds to the next step.

3. Select Showtime
   Scenario: This use case begins when the user has already **selected her movie** and decided to proceed to **choosing a showtime**. The system **display**s a list of available showtimes from the selected movie. He decides on a timeslot he is available to attend the movie and selects it. The system moves John to **view available seats** at that time.

4. Select Seats
   Scenario: This use case begins when the user has already selected a showtime and decided to proceed to **picking a seat**. John is shown a list of available seats from the **showtime he picked**. He then **chooses an available seat** and the system moves to the next step.

5. Make Payment

Scenario: This use case begins when the user has already **select**ed a theatre, movie, showtime, and seats and decided to proceed to **paying for their ticket**. The fee is **charge**d to John's credit card if he is not **register**ed. In case he is a registered user, the fee is **charge**d to his account instead. The system then moves to the next step.

6. Receive Ticket and Receipt
   Scenario: This use case begins when the user has already **made their payment**. The receipt and the ticket are sent to John's email. This concludes the process of **booking a movie**.

7. Cancel Ticket
   Scenario I: John is a regular user. This use case begins when the user has already finished **booking a movie**. John decides that he no longer wants to attend the movie. He views his online ticket and selects "**Cancel Ticket**". The system prompts him for a confirmation and requests for an optional reason for cancellation. John confirms he wishes to cancel and receives credit for the previous payment of his ticket. However, he must **pay a 15% administration fee** for the cancellation.

   Scenario II: John is a registered user This use case begins when the user has already finished **booking a movie**. John decides that he no longer wants to attend the movie. He views his online ticket and selects "**Cancel Ticket**". The system prompts him for a confirmation and requests for an optional reason for cancellation. John confirms he wishes to **cancel** and receives credit for the previous payment of his ticket. The system adds John's credit to his account balance.

8. Pay Account Fee
   Scenario: John is a registered user. To maintain his status as a registered user. John must **pay** an annual fee of $20.00. He has an option where the fee is automatically **charge**d to the cards on his account every year. If this option is enabled, the fee is automatically **charge**d and John is notified of it. Else, the system **reminds him of this fee**. John can either **pay** to keep his status or refuse.

9. Receive Movie News
   Scenario: John is a registered user. A perk as a registered user includes **receiving news** about upcoming movie releases. John has already **register**ed his email with his account. As new movies are released, emails will be **sent** to John **notify**ing him that he is able to **purchase** tickets before regular users. The option to **purchase** tickets will only be available if less than 10% of the available seats are already sold to other registered users. Otherwise, he will be notified of the regular release date and provided the opportunity to **purchase** a ticket at the same time as regular users.

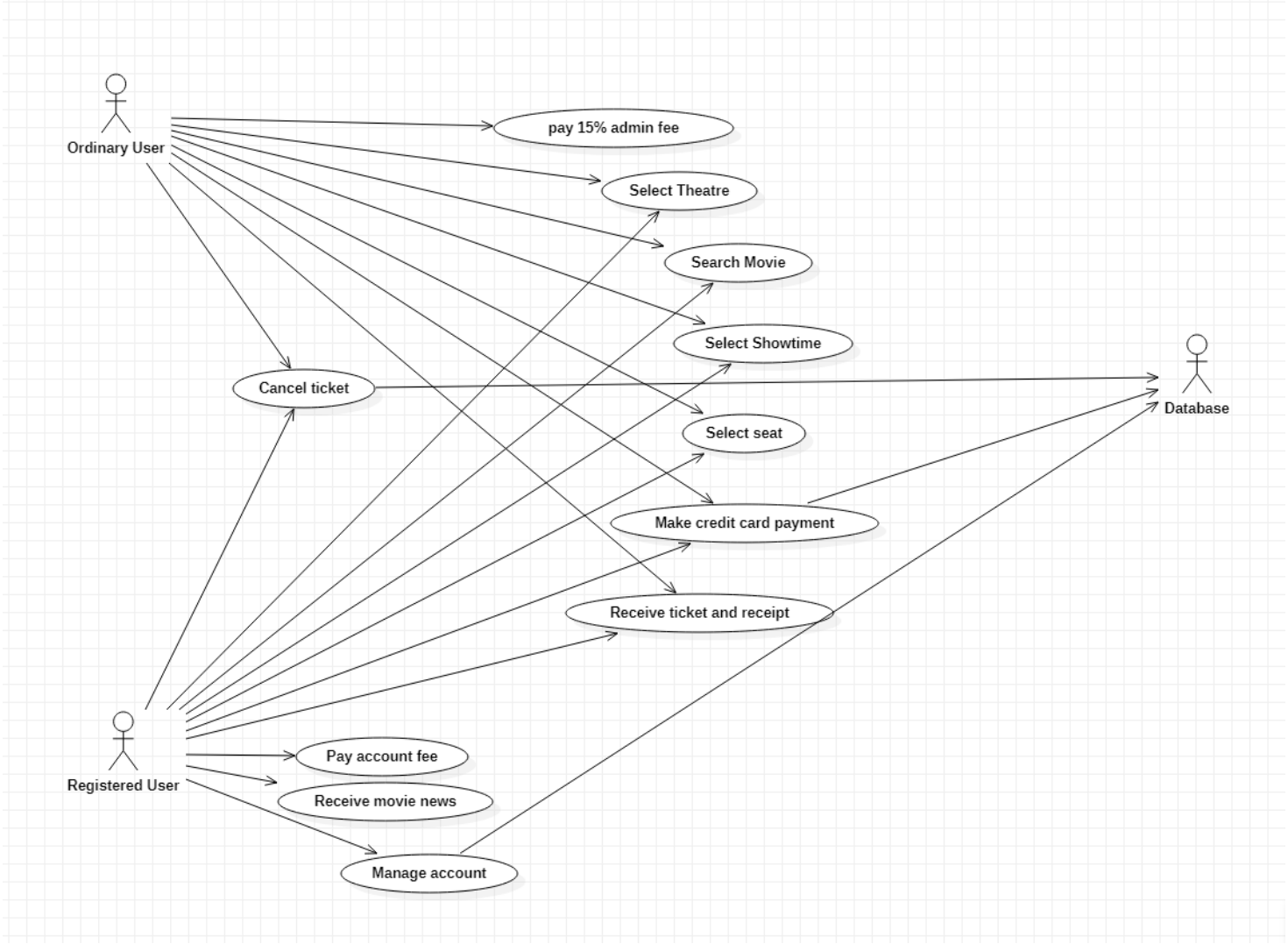
10. Manage Account
    Scenario: John is a registered user. As a registered user, John has the options to **change any of his account information** including username, password, address, credit and/or debit card. If he wants to **update any of this information**. He can enter the new info and the system will ask him to **confirm his decision**. If he confirms, his information is changed. Else, nothing happens.

List of Good-Candidate Objects from Nouns Mentioned in Each Scenario

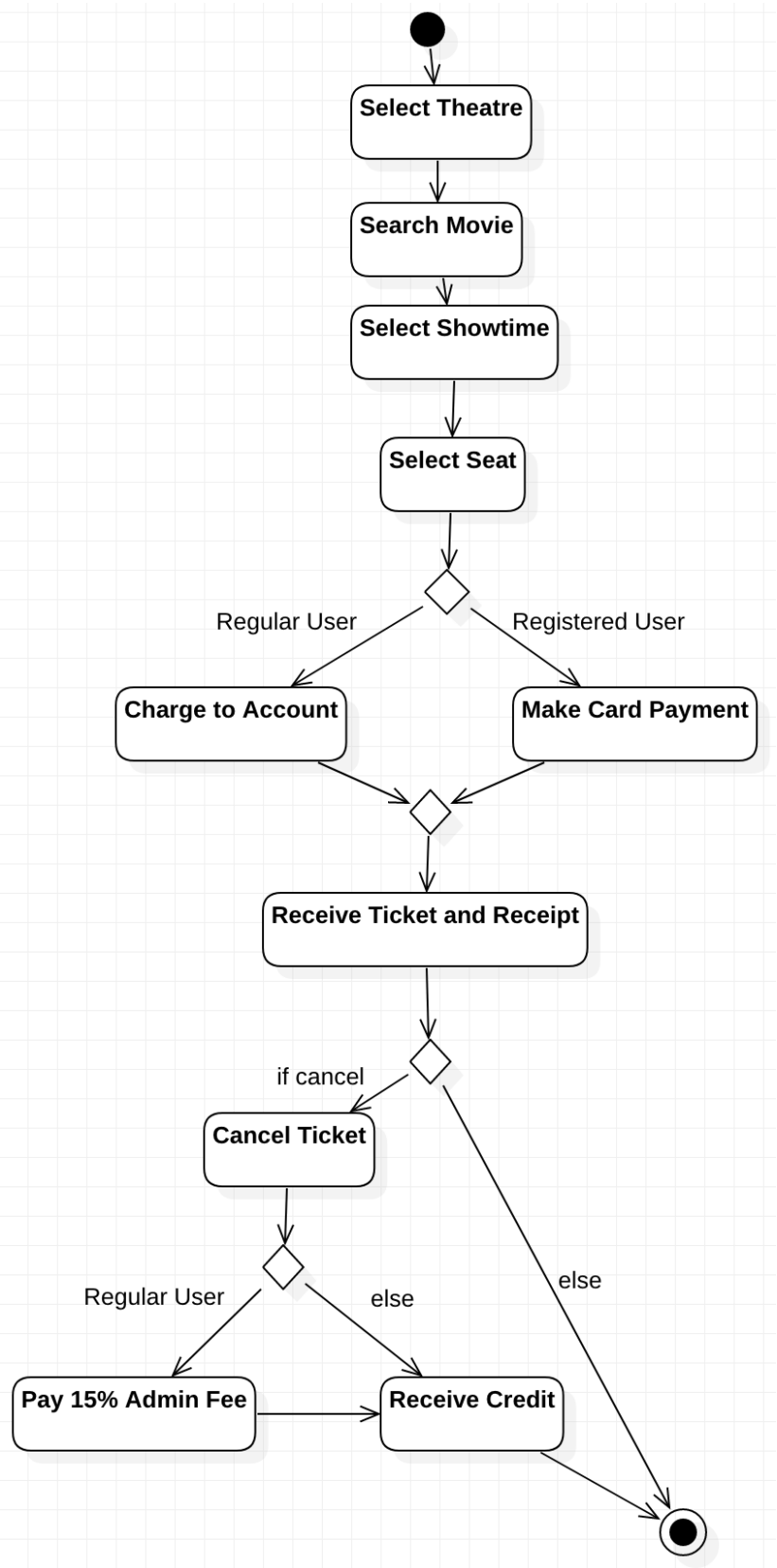
1. Select Theater
    - City
    - Country
    - Movie Theatres
    - Ticket
2. Search Movie
    - Movie Theatre
    - Movie
3. Select Showtime
    - Movie
    - ShowTime
    - Available Seats
4. Select Available Seats
    - Showtime
    - Available Seats
5. Make Payment
    - Fee
    - Credit card
    - Account
6. Receive Ticket and Receipt
    - Receipt
    - Ticket
    - Email
7. Cancel Ticket
    - Regular user
    - Online Ticket
    - Cancellation
    - Credit
    - 15% administration fee
    - Registered user
8. Pay Account Fee
    - Registered user
    - Annual fee
    - Account
    - Notification
9. Receive Movie News
    - Registered user
    - Movie Release
    - Email
    - Account
    - Tickets
10. Manage Account
    - Registered User
    - Account information

- Username
- Password
- Address
- Payment information

System Use Case Diagram

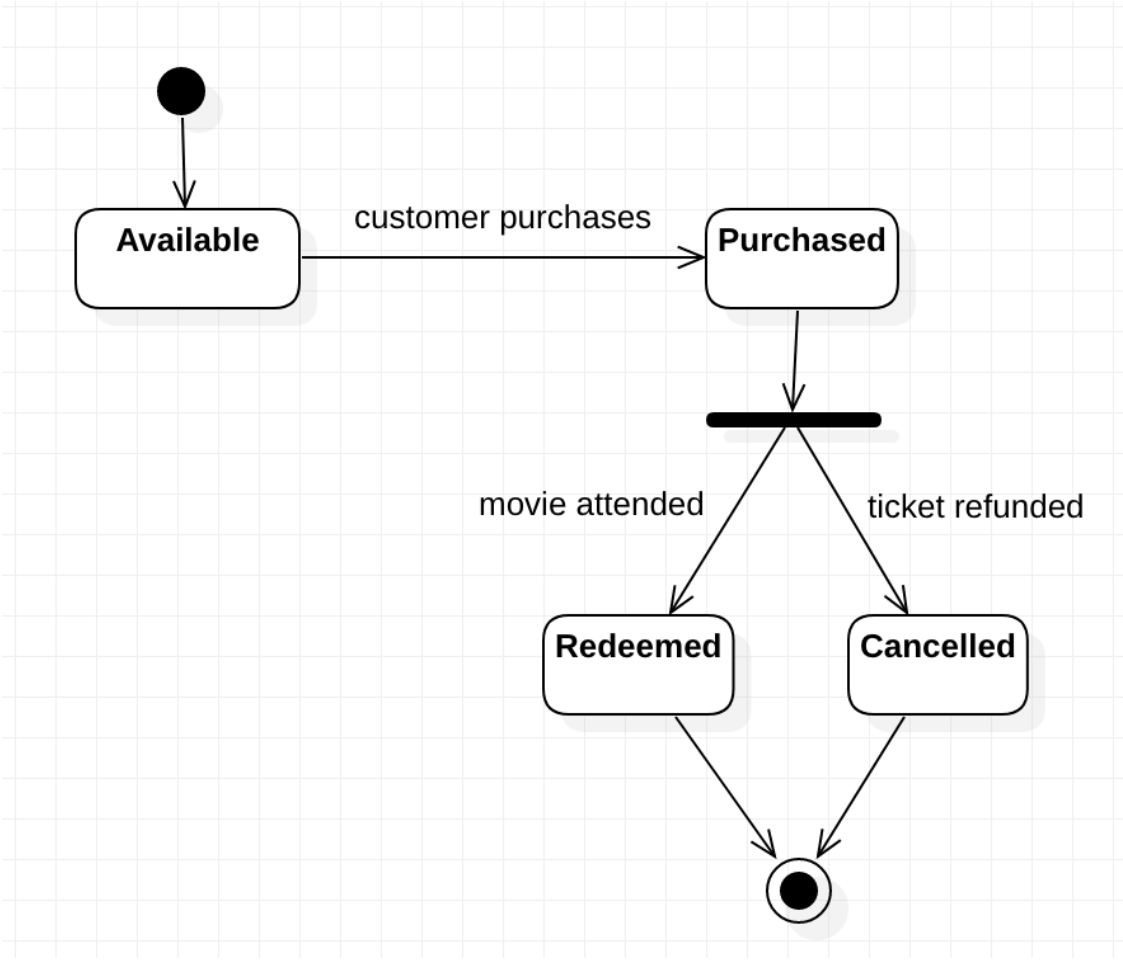


System Activity Diagram

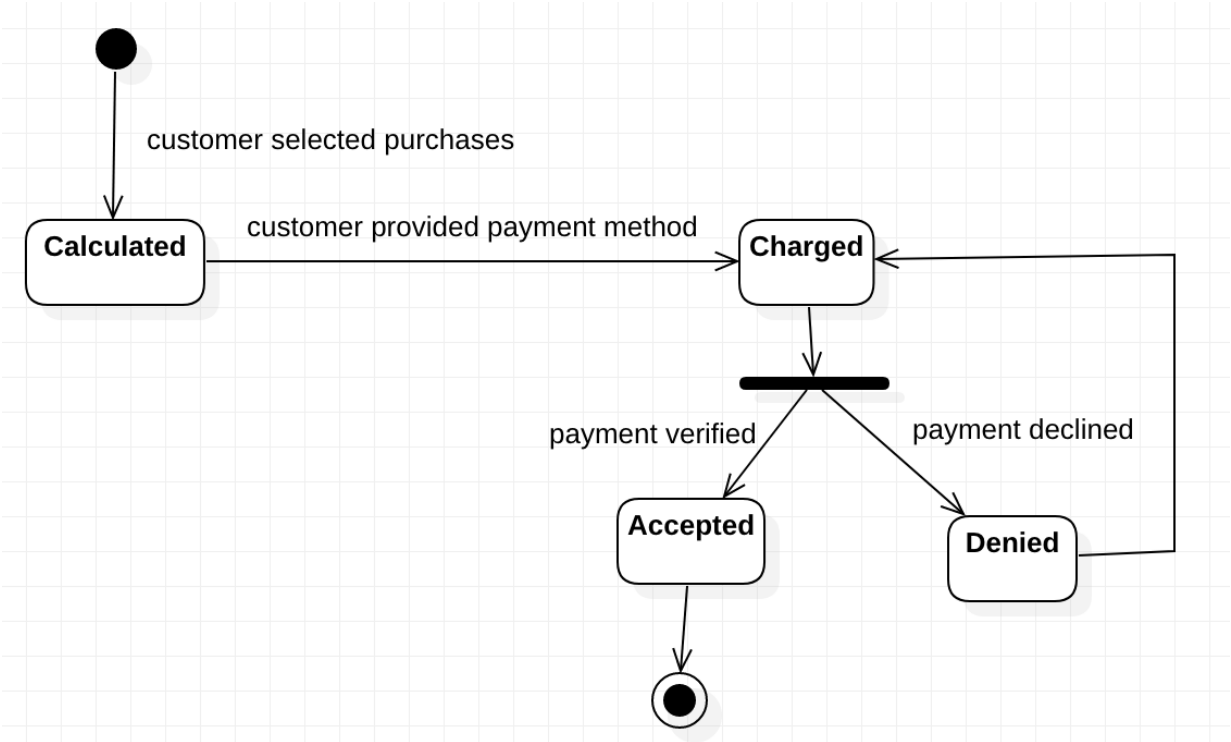


State Transition Diagram

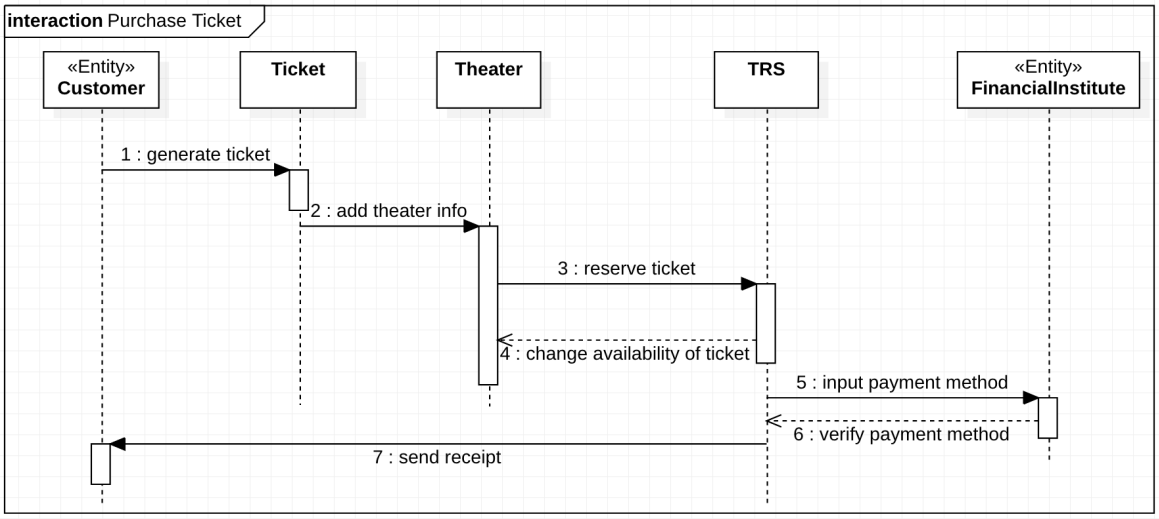
Ticket Object



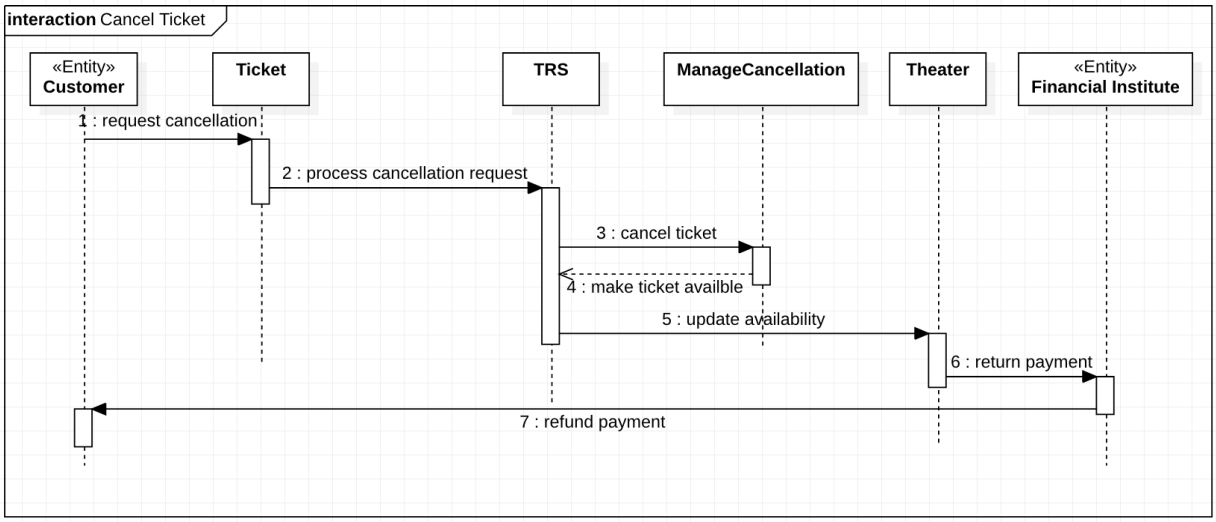
Payment Object



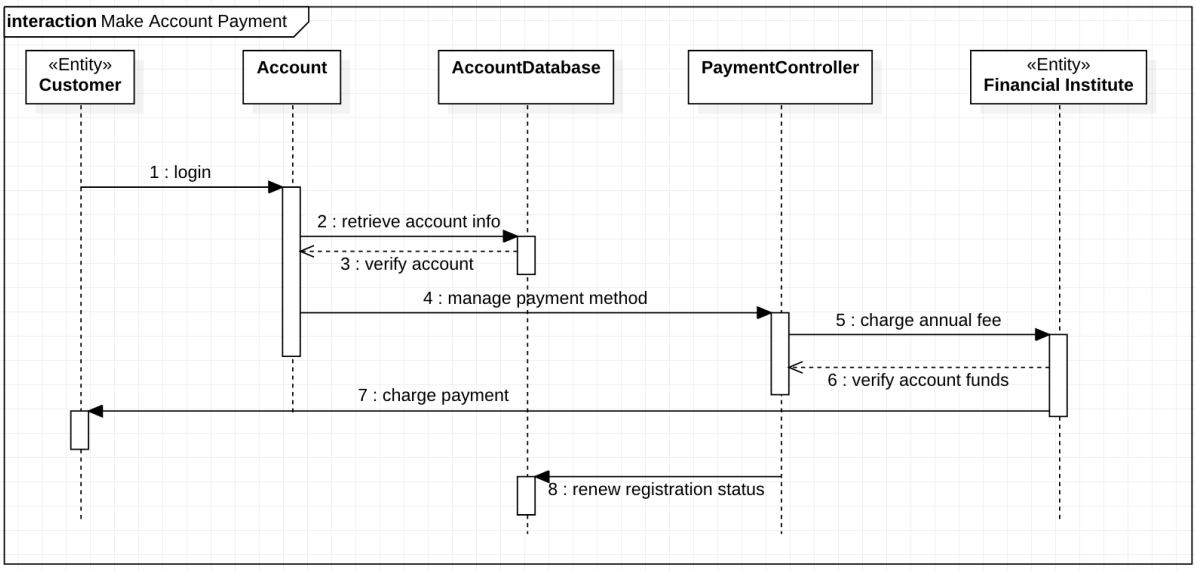
System Interaction Diagram for 4 Important Use Cases



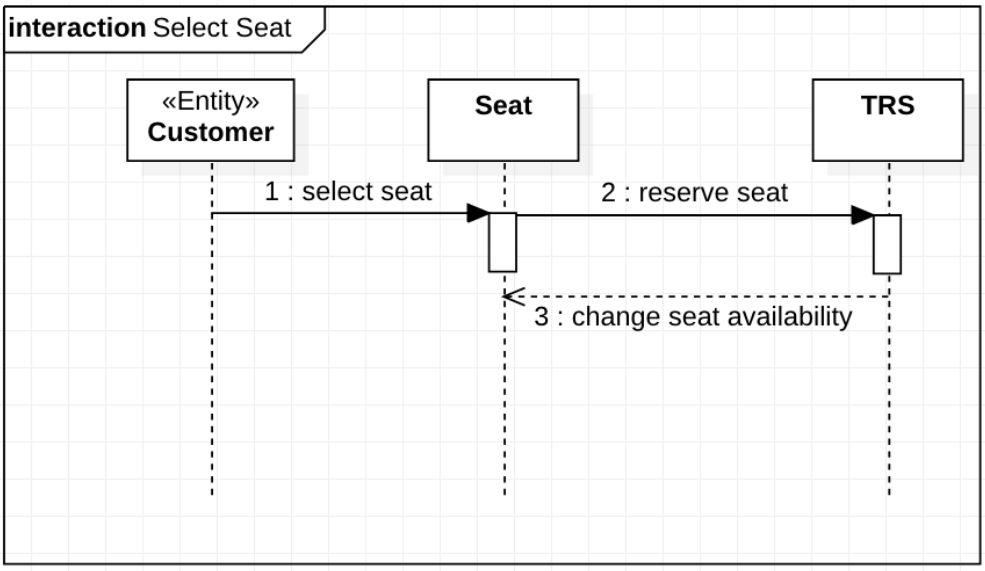
By: Elize Tran



By: Long Tran



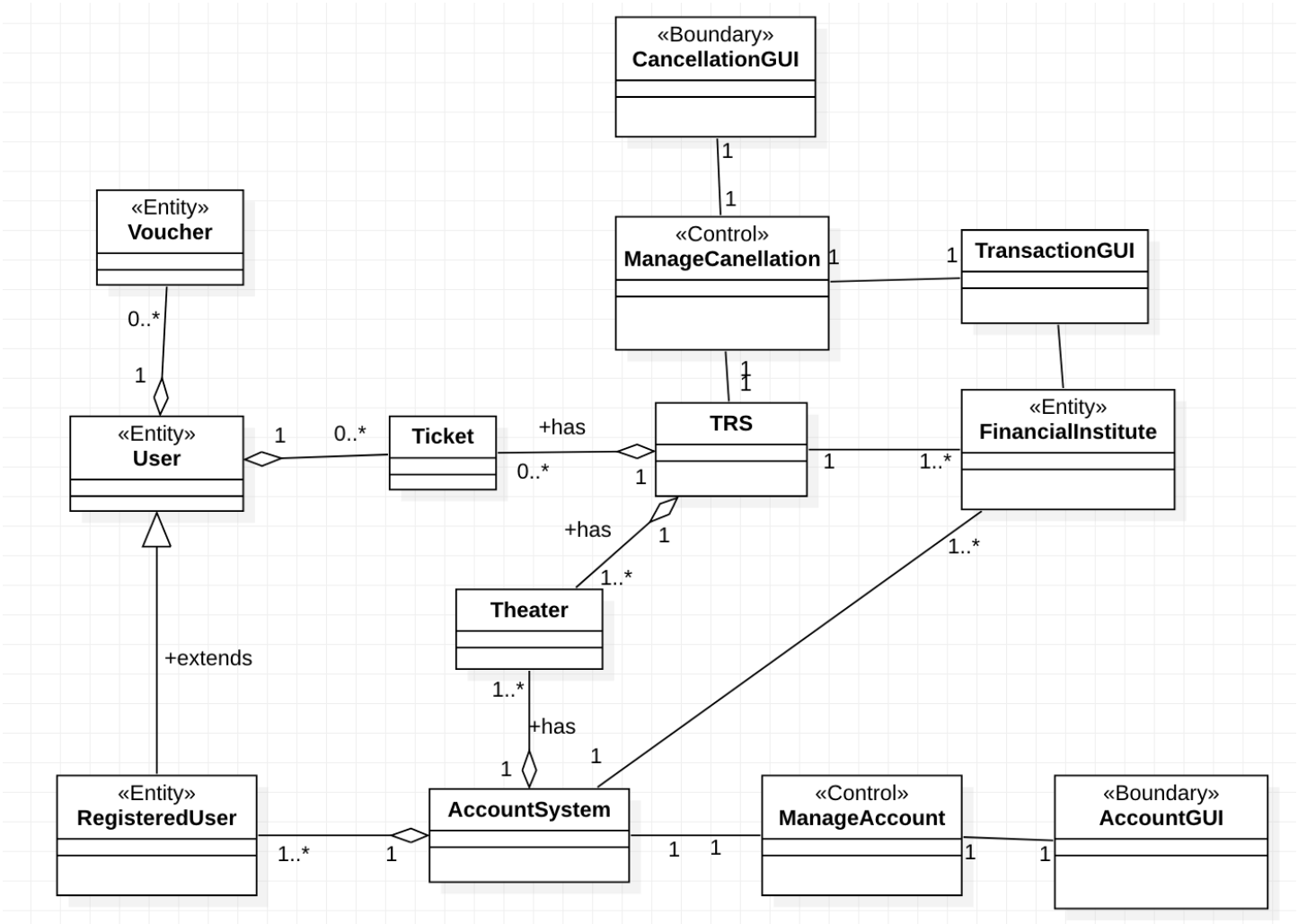
By: Jens Varughese



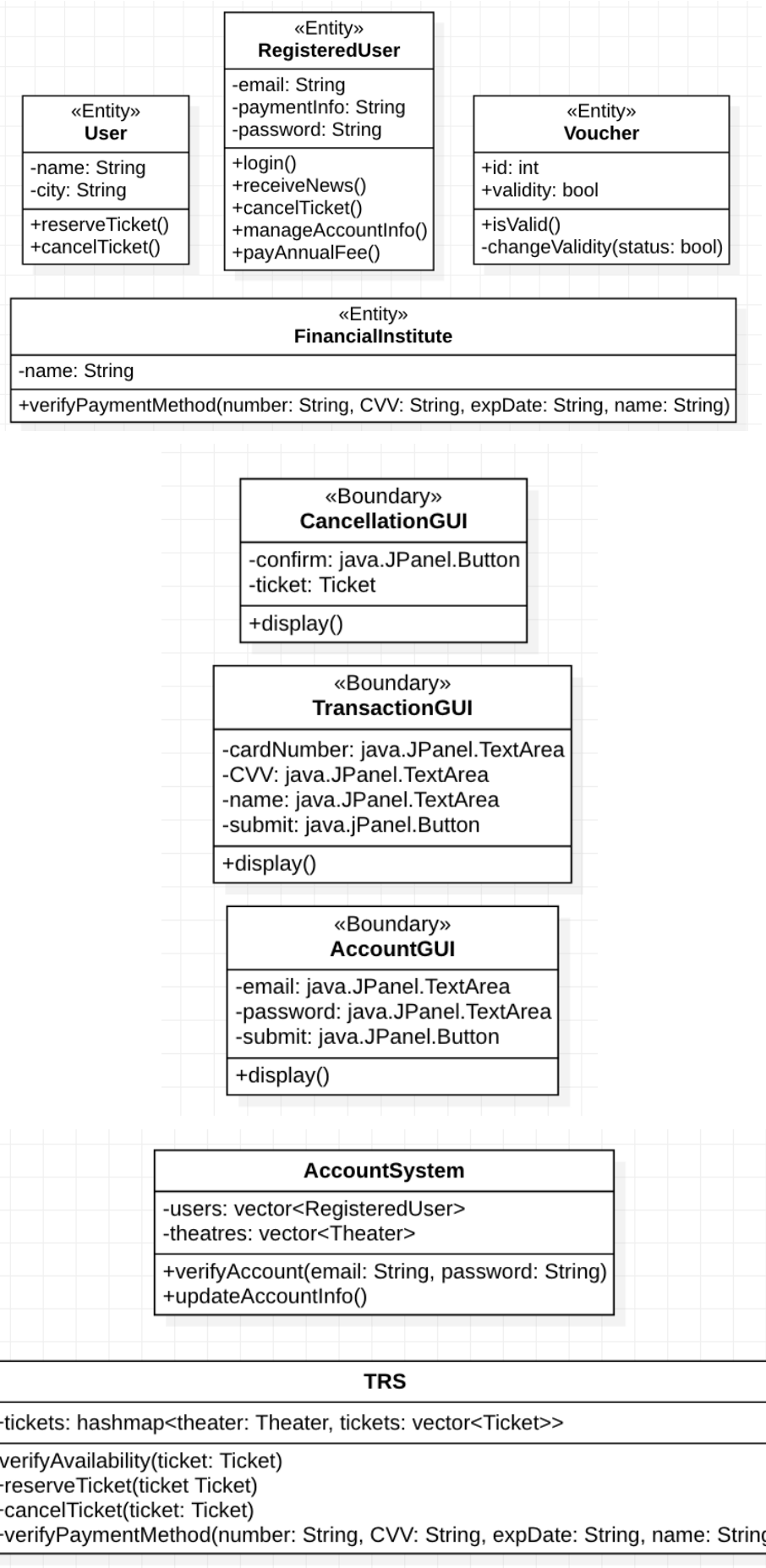
By: Christina Truong

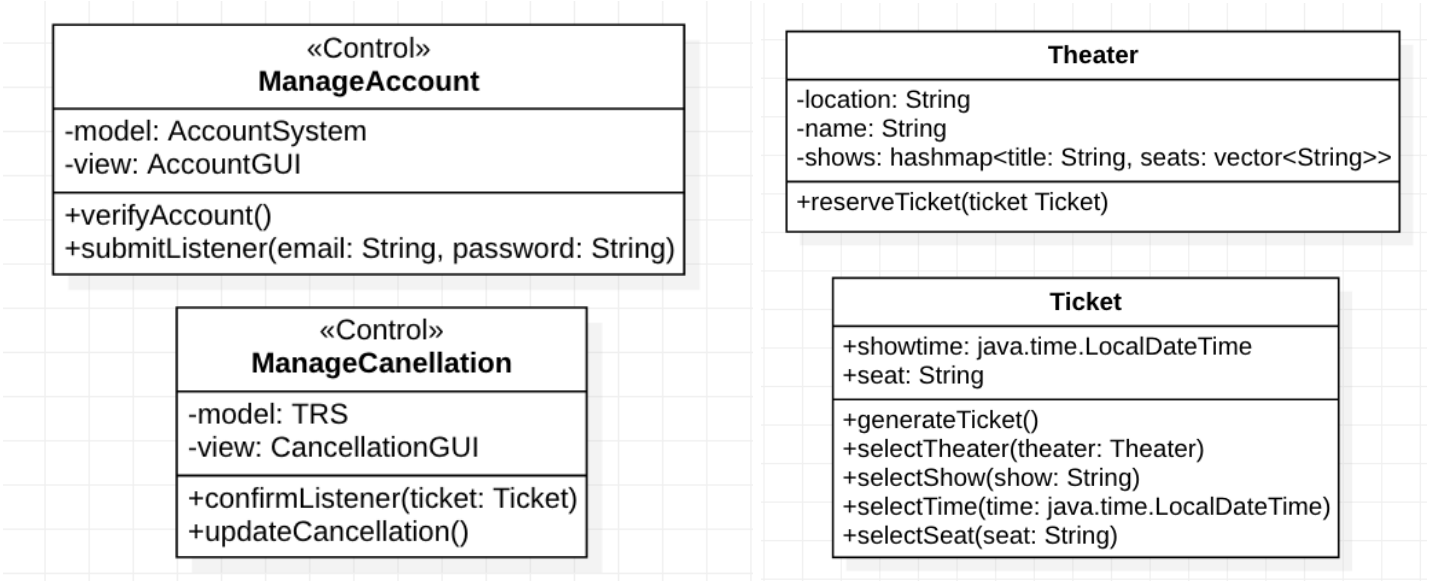
Design Level Class Specification

Relationship Class Diagram

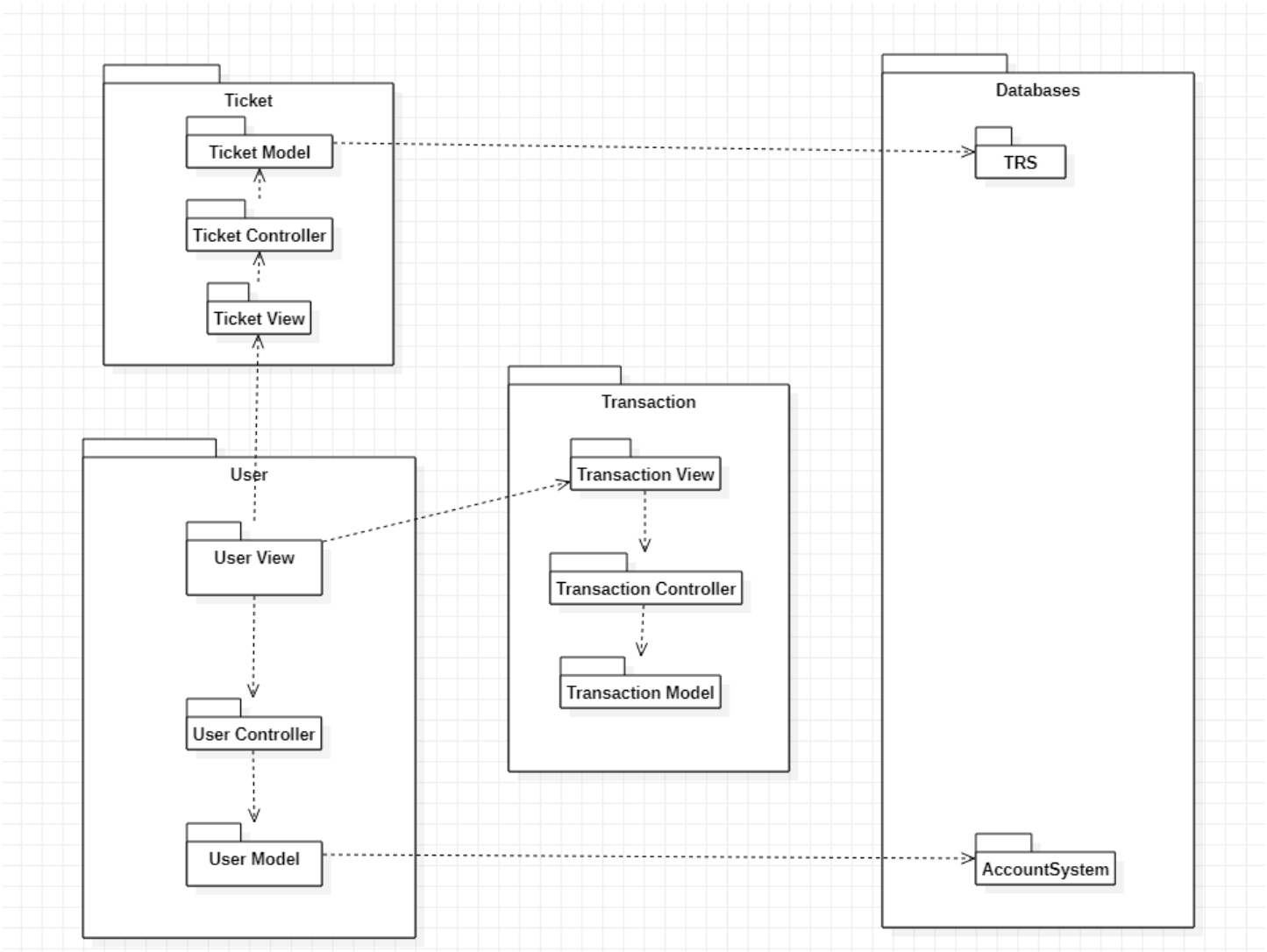


Attributes and Behaviours Class Diagram




«Control»
ManageAccount
-model: AccountSystem
-view: AccountGUI
+verifyAccount()
+submitListener(email: String, password: String)
«Control»
ManageCanellation
-model: TRS
-view: CancellationGUI
+confirmListener(ticket: Ticket)
+updateCancellation()
Theater
-location: String
-name: String
-shows: hashmap<title: String, seats: vector<String>>
+reserveTicket(ticket Ticket)
Ticket
+showtime: java.time.LocalDateTime
+seat: String
+generateTicket()
+selectTheater(theater: Theater)
+selectShow(show: String)
+selectTime(time: java.time.LocalDateTime)
+selectSeat(seat: String)

Package Diagram



Deployment Diagram