

Design Phase

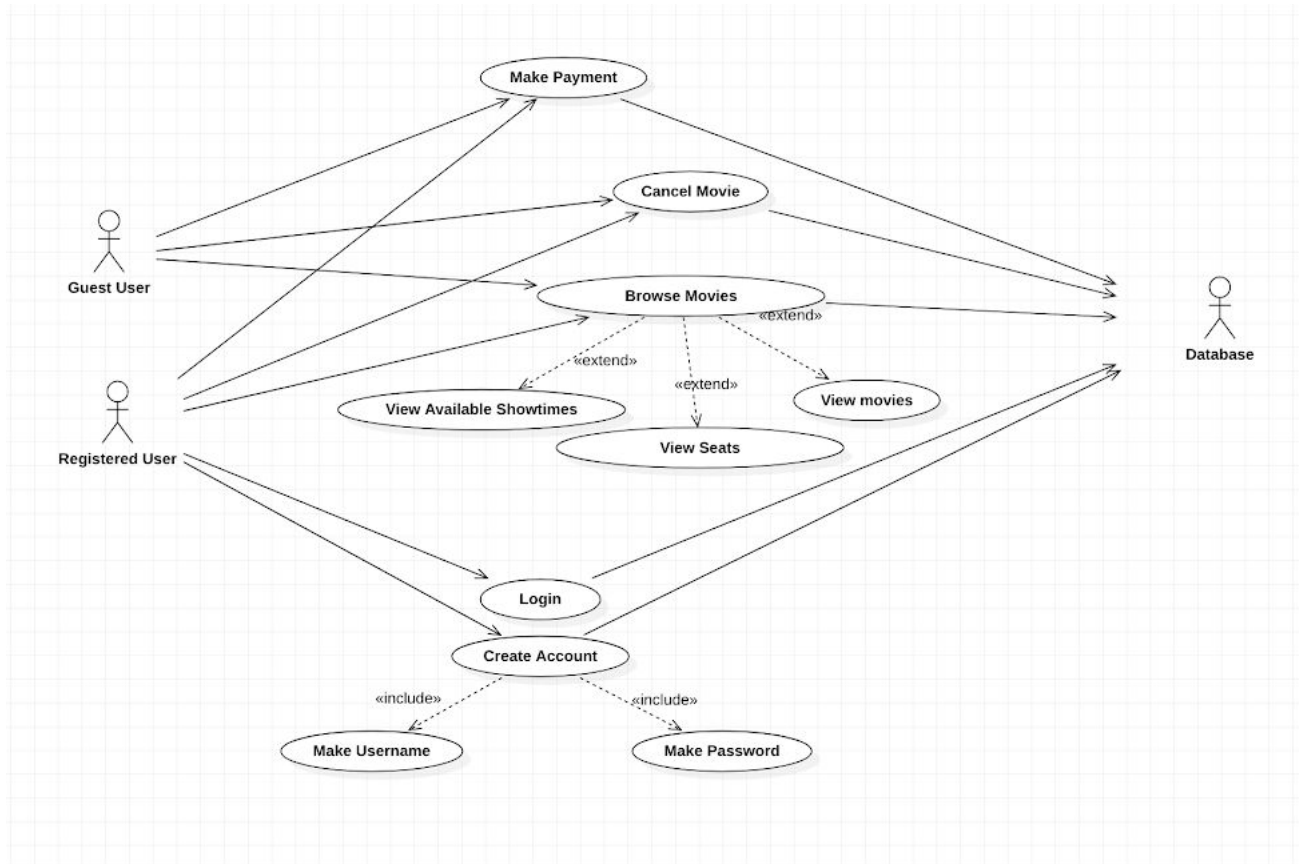
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Group #: 1

Course Name: Principles of Software Design

Submission Date: 23/11/2020

1 Use case Diagram (15%):



System Requirements:

Ordinary users:

- search for a movie
- select a specific theater
- View available showtimes
- view graphically available seats
- select the desired seat
- make payment by credit card
- receive a copy of ticket and the receipt, via email
- cancel ticket: only up to 72 hours prior to show and receive a credit with %15 administration fee for future purchase up to a maximum of one year expiration date.

Registered Users:

- Register: info(name, address, credit and/or debit card account) saved on the system's database

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- annual fee: pay \$20.00 annual account form card saved
- search for a movie that are not publicly announced
- select a specific theater
- View available showtimes
- view graphically available seats
- select the desired seat
- make payment by credit card (Saved)
- receive a copy of ticket and the receipt, via email
- cancel ticket: only up to 72 hours prior to show and receive a credit for future purchase up to a maximum of one year expiration date.

Database:

- Holds theater and seat information
- Holds movies and showtimes
- Holds the information of the registered users
- Holds ticket information

2 Scenarios (15%):

The candidate objects are underlined and **candidate operations are bolded and underlined**

Browse Movie (Guest User):

John goes to the theatre website as a guest user. The System will display a list of movie theatres. John then **selects the movie theatre**, Cineplex Odeon Sunridge. The system then displays movies available to watch and John begins to browse the movies. John then **chooses the movie**, Terminator 2. The system then displays available showtime. John **selects a showtime**, 2:30 pm. The system will then show all seats graphically. Available seats will be highlighted white and occupied seats will be highlighted red. John then **chooses an available seat**, J50. John receives confirmation of the booking which will also inform him which theatre the movie will be in.

Make Payment (Guest User):

This use case begins when John has already Browsed and selected a movie. Then John chooses the option to **checkout**. Then John will be asked to enter user information (Name, Address, Phone#, and Email) and payment-information (Card#, Expiry Date, cvv). Then John will **submit the information**. The system **confirms the completion** of the process. The system **sends a copy** of the booking which contains his ticket and his receipt to John's email.

Create Account (Register User):

John who is a guest user would like to **become a registered member**. The website prompts him to enter user information (Name, Address, Phone#, Email, username, and password) and payment-information (Card#, Expiry Date, cvv). The website **notifies** him that he is now a registered member and his account is created.

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Login (Register User):

John, who is already an account holder, wishes to use his additional benefits when using the website. John then **logs in** with his login information. The website will present two text fields. The first text field prompts John to **enter his username**, the second text field to **enter his password**. The Website **notifies** John that he is now logged in.

Browse Movie (Register User):

This use case begins when John has already logged in as a register user. The system will display a list of theatres. John then **selects the theatre**, Cineplex Odeon Sunridge. The system then **displays** movies available to watch publicly and movies that are not publicly announced. John begins to browse the movies. John then **chooses the movie**, Terminator 2. The system then **displays** available showtimes. John **selects a showtime**, 2:30 pm. The system will then **display** all seats graphically. Available seats will be highlighted white and occupied seats will be highlighted red. John then **chooses an available seat**, J50.

Make Payment (Register User):

This use case begins when John has already Browsed and selected a movie. Then John chooses the option to **checkout**, the system will allow him to make a payment. Then the **system will bill** John with the card on record. The system **confirms the completion** of the process. The system **sends a copy** of the Booking which contains his ticket and his receipt to John's email.

Cancel Movie:

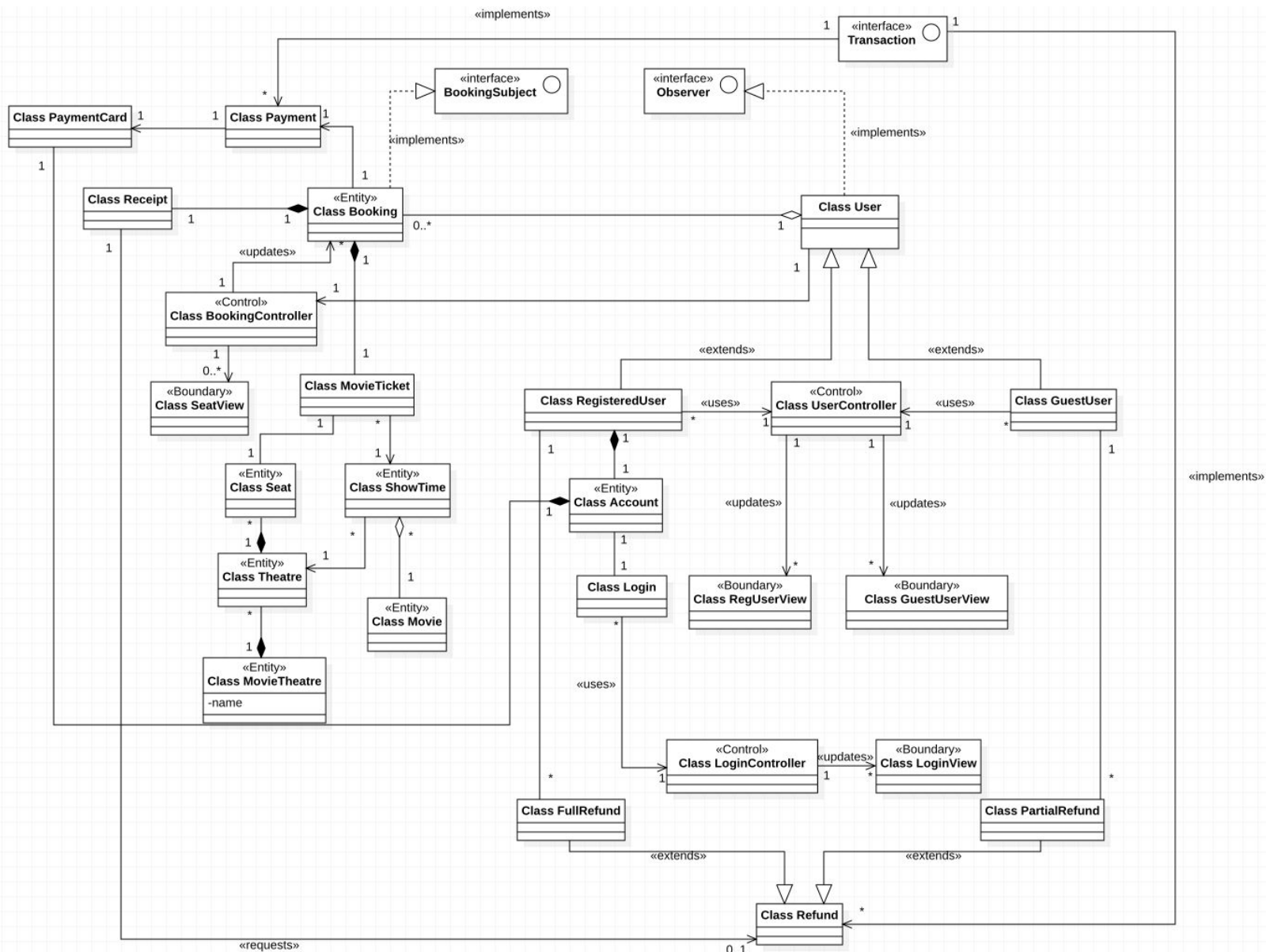
John goes to the theatre website. John will choose the **cancel ticket** option. He will then **enter** his ticket information. John will be returned 85% of his payment as movie credits. The credit(s) refunded are varying depending on the user type. If John is a guest user, then John will only be partially refunded (85% of original cost returned as credits). However, if John is a registered user, then the full refund in credit(s) will be returned. These credits expire within a year of the refund date for both types of users (i.e guest and registered).

3 List of Candidate Objects (15%):

- Theatre
- Movie theatre
- Movie
- Showtime
- Seat
- Payment Card
- Guest User
- Booking
- Account
- Login
- Ticket
- Receipt
- Payment
- Refund
- Registered User
- Full refund
- Partial refund

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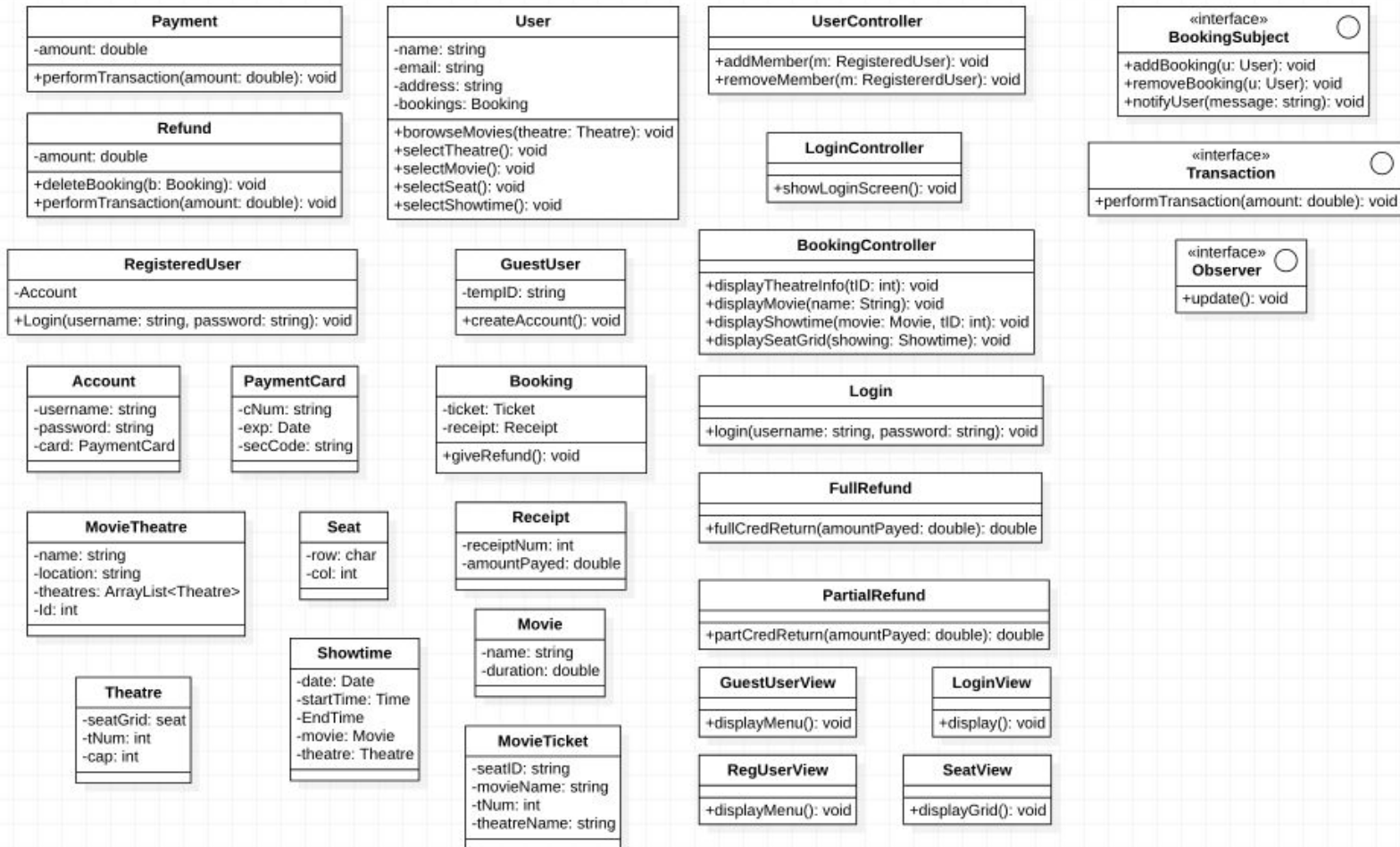
4 Class Relation Diagram (15%):



The above diagrams show the classes of the system and show the relationships and cardinalities between them.

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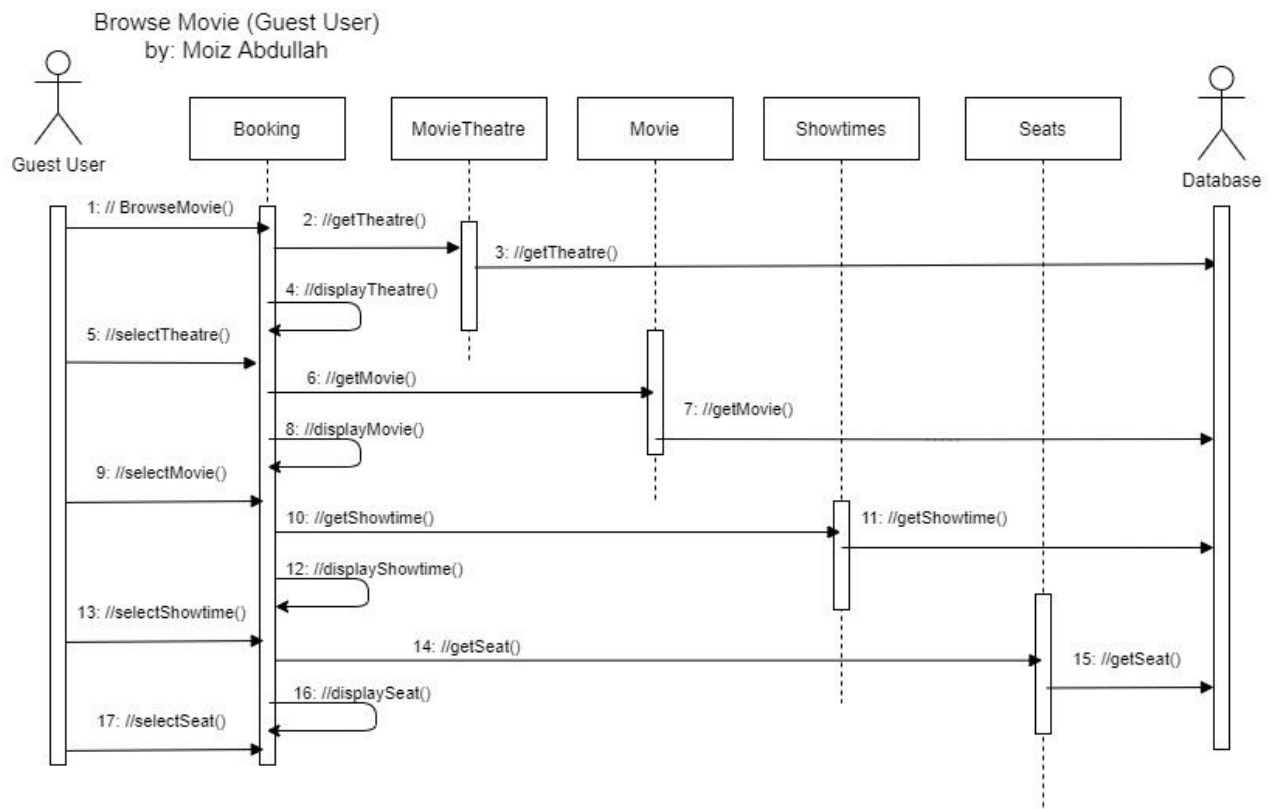
5 Class Property Diagram (10%):



The above diagram shows the attributes and operations of the participating classes

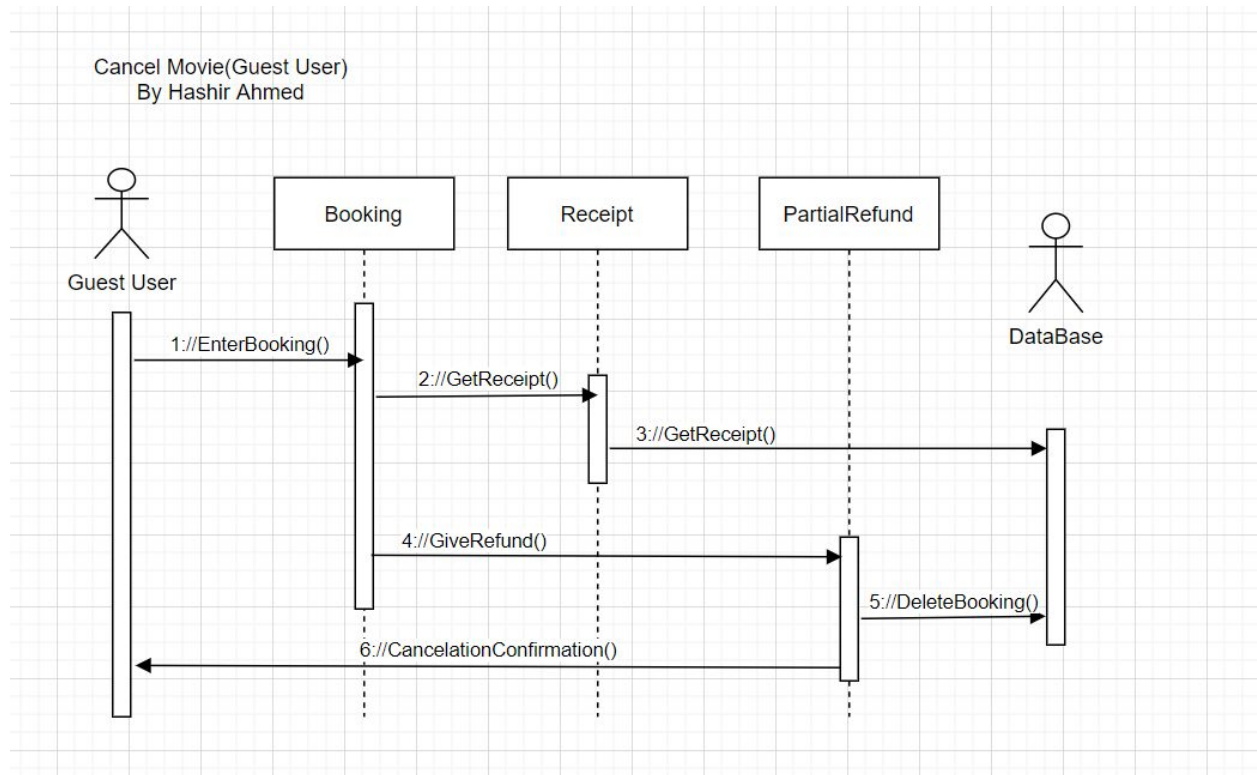
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6 System interaction (Sequence) diagram (12%):



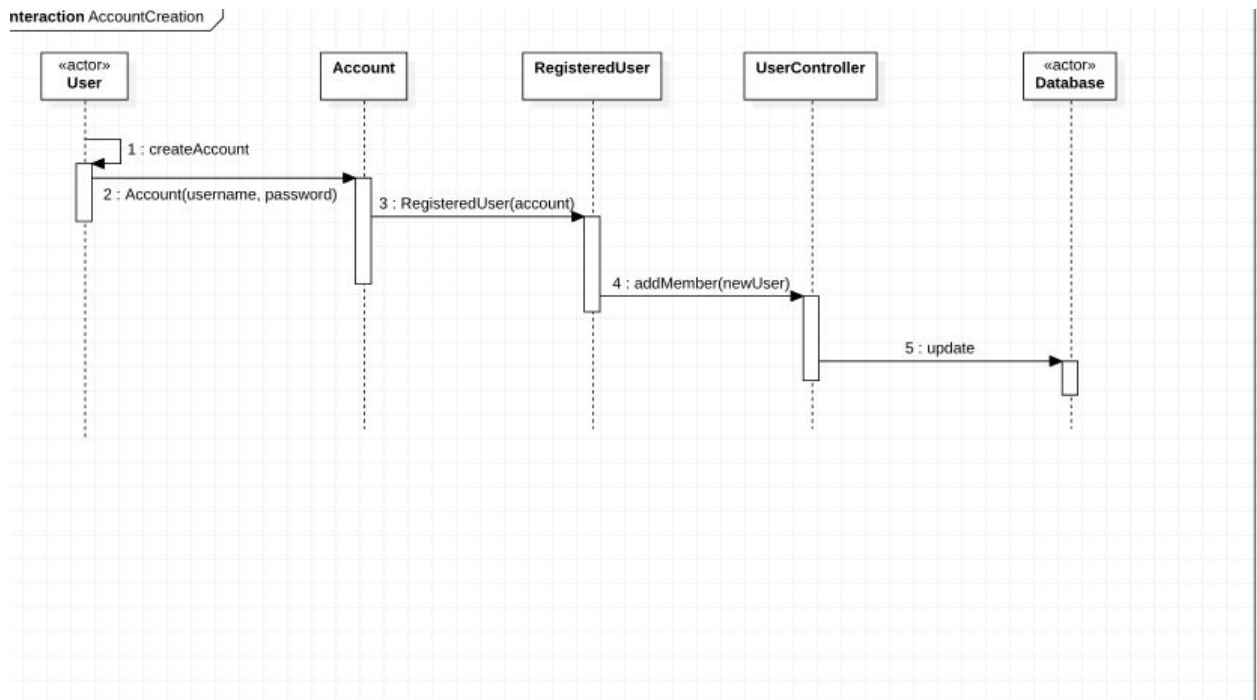
Activity diagram showing participating classes and behaviour flow of browsing a movie.

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Activity diagram showing participating classes and behaviour flow of cancelling a movie.

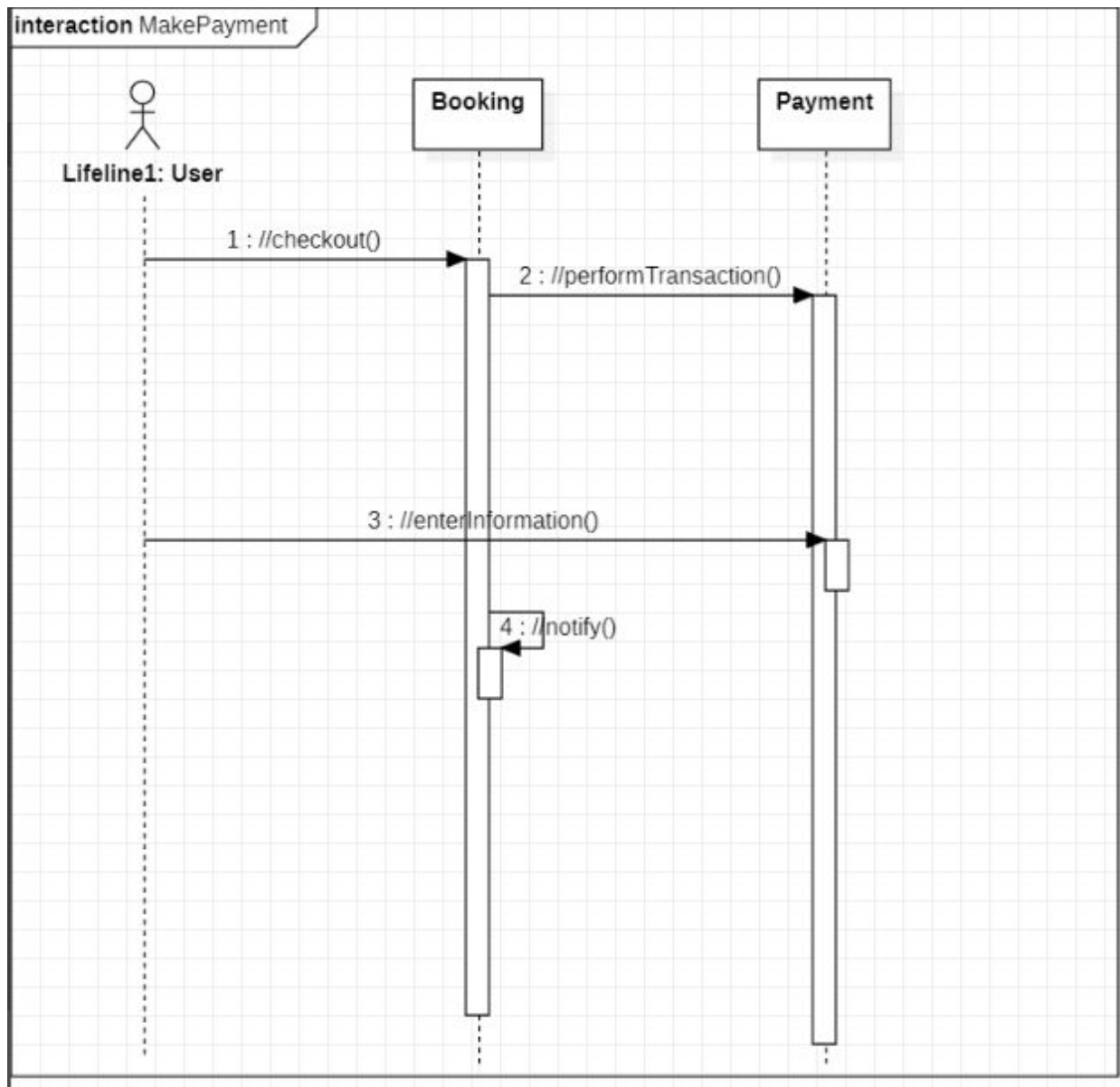
Youssef Abdel Maksoud (Account Creation)



Activity diagram showing participating classes and behaviour flow of creating an account.

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Elgiz Abbasov (Make Payment)

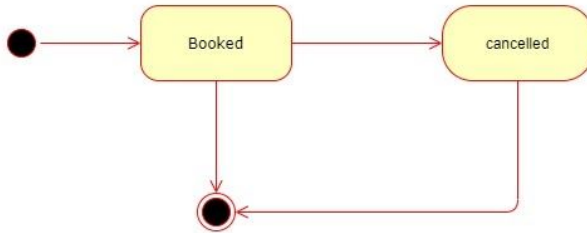


Activity diagram showing participating classes and behaviour flow of making a payment.

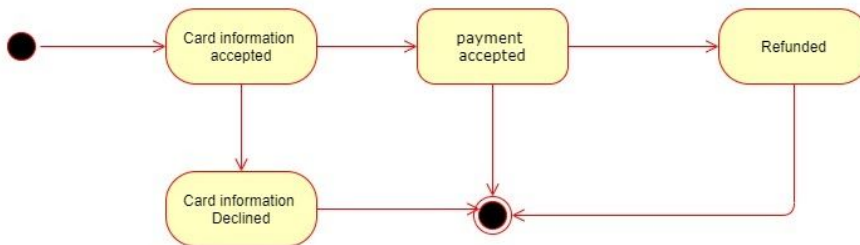
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7 State transition diagram (5%):

Ticket

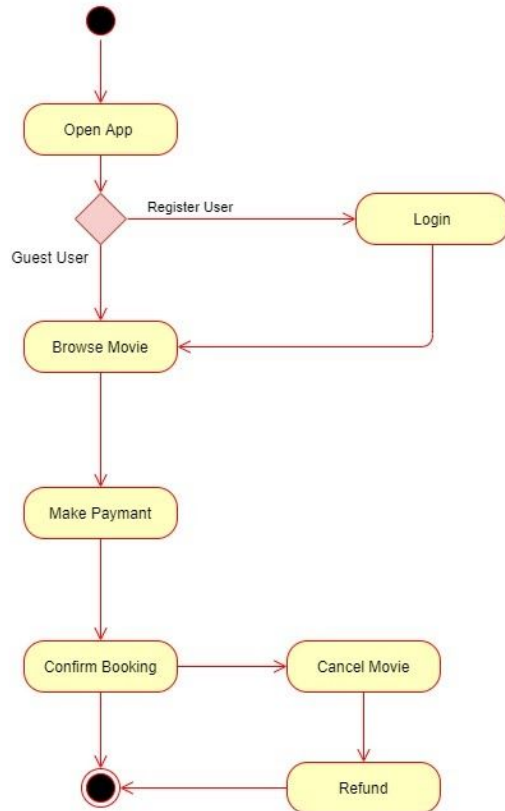


Payment



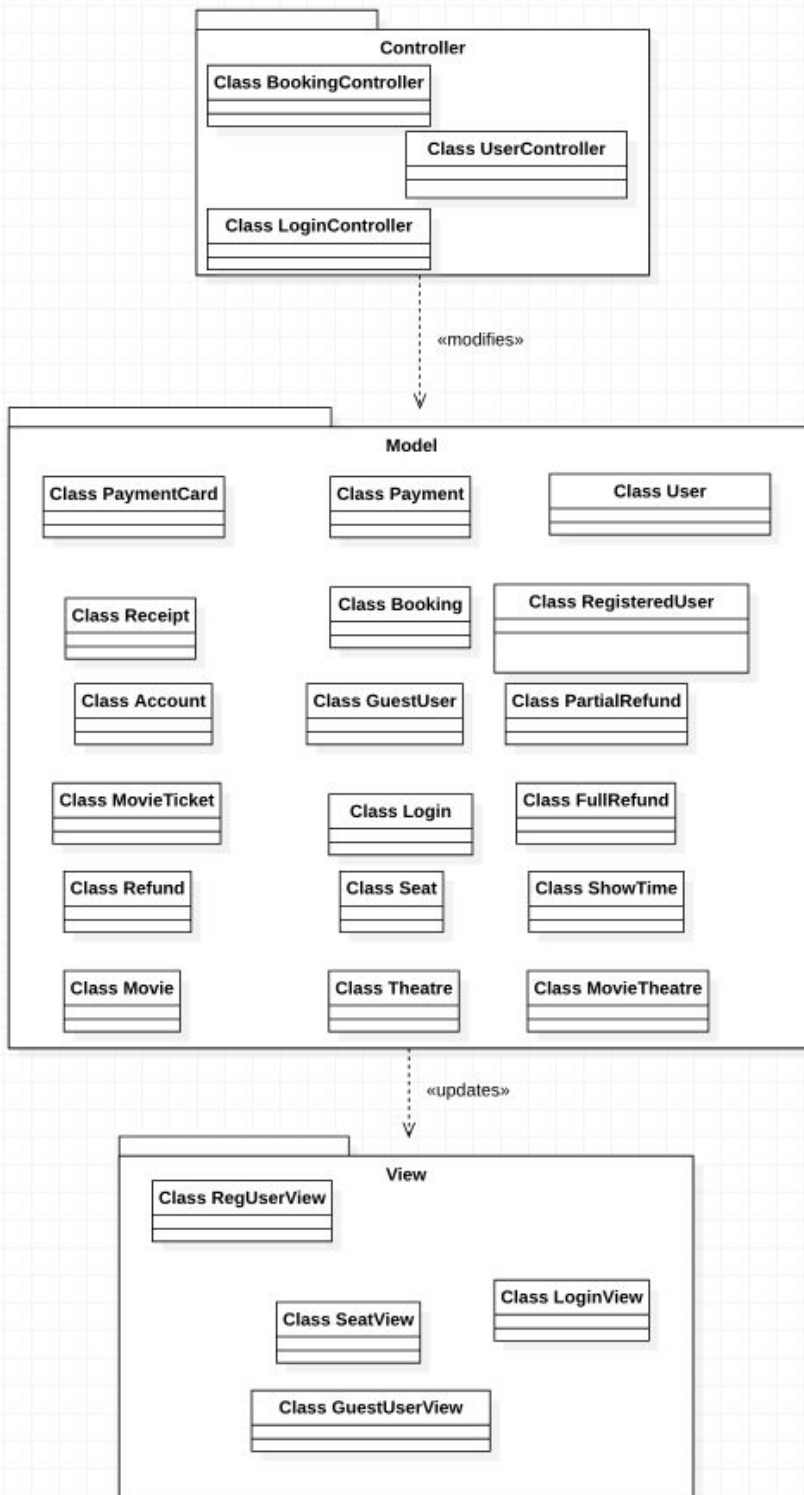
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8 System activity diagram (5%):



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9 System package diagram (4%):



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10 System deployment diagram (4%):

