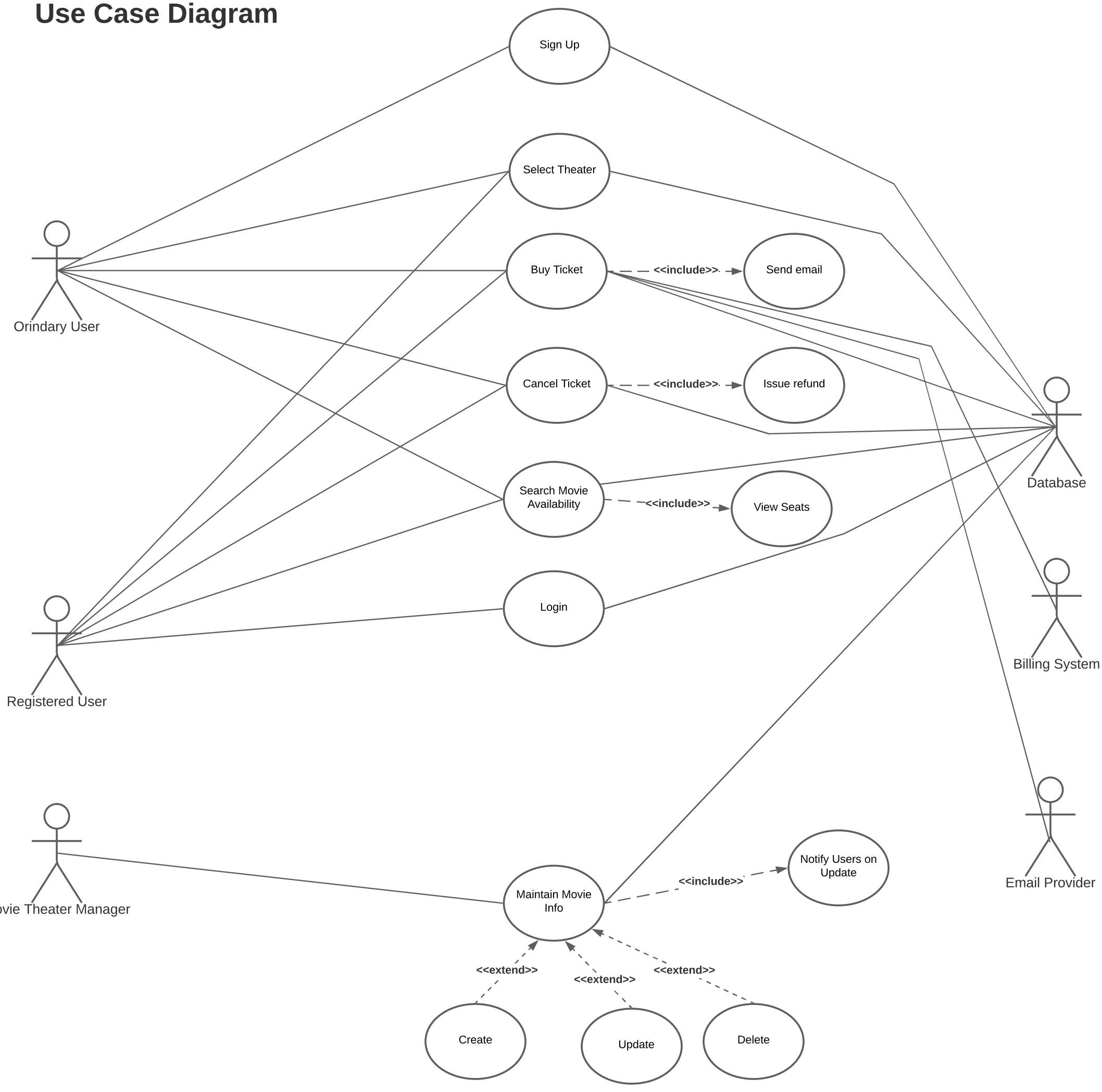
ENSF614: Advanced System Analysis

Group 8 Final Project:

Course instructor:	Dr. Moussavi
TA	Anja & Yobbahim
Date of submission:	November 29th 2021
By	Alex Leakos (10083280)
	Melissa Liao (30139264)
	Michael Lee
	Hamza Luqman (30144869)

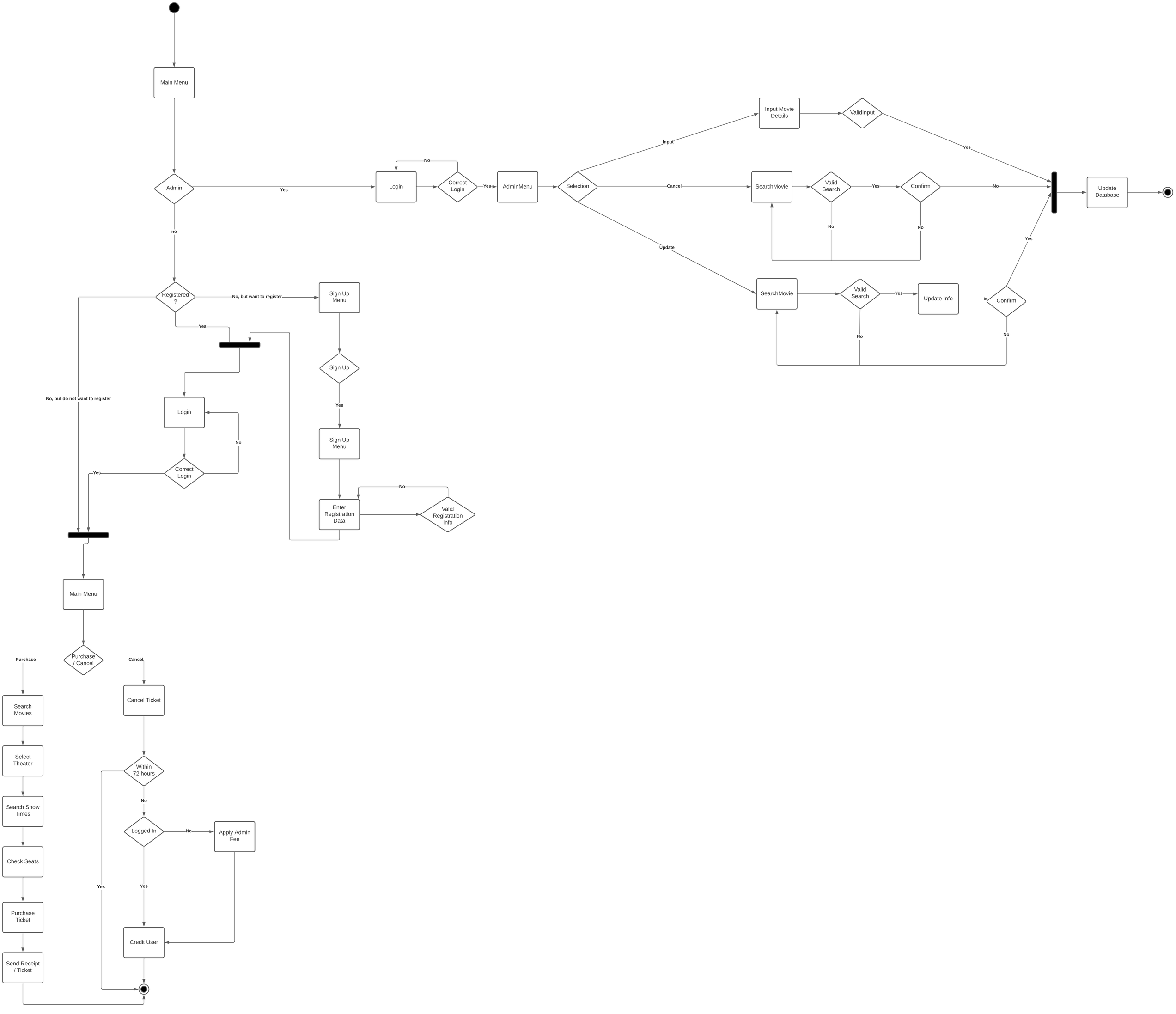
Use Cases:

Use Case Diagram



Activity Diagrams:

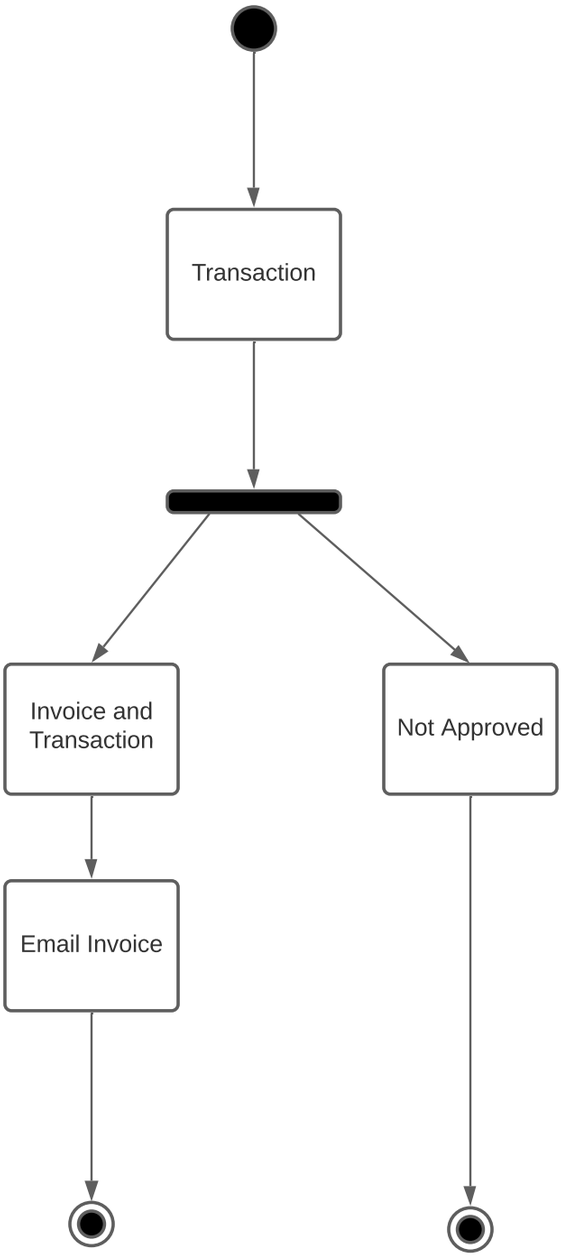
Activity Diagram



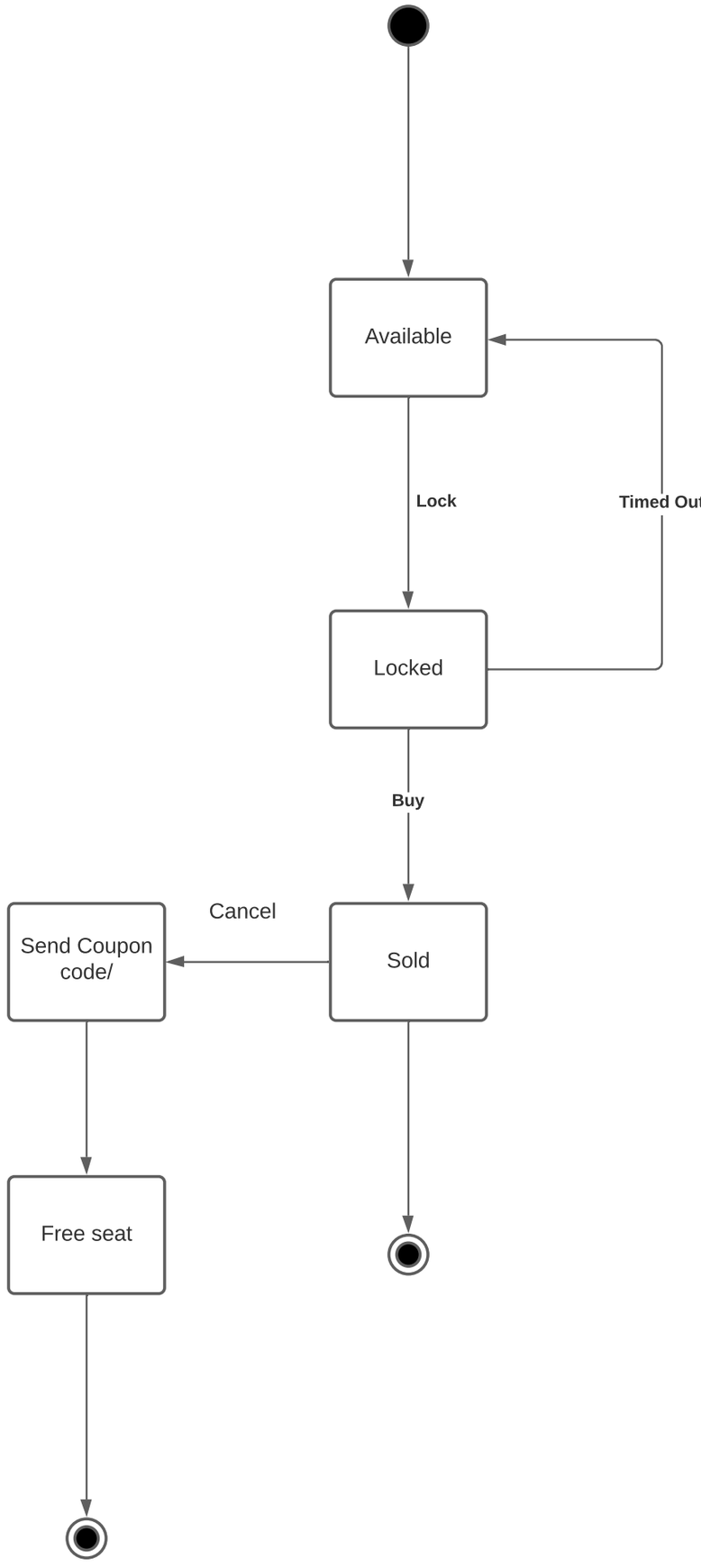
State Transition:

State Transition Diagram

Payment State Diagram:



Ticket State Diagram:



Detailed Scenarios:

ENSF 614 Use Case Scenario

Login:

John is a registered user who wants to login to the system. John enters the main menu and clicks on the login option and enters his username and password. The system validates the credentials input by John.

If John's credentials match the database, he is granted access to the system and enters the main menu. if John's credentials do not match the database, He Is prompted to re-enter his username and password.

Register:

John is currently an ordinary user (OU) and wants to be registered. John enters the main menu and clicks on the sign-up option. The system takes John to the sign-up form where John is required to input his first name, last name, email address, credit card or debit card information. The system display's that John will need to pay a $20.0 annual membership fee where the first payment occurs at registration. Once John clicks submit, the system verifies that the required information is present and debits $20.0 from John's credit/debit card. John is now added to the registered user's database.

Buy Ticket:

As an ordinary user, Jane enters directly to the main menu of the system. She clicks "Select Movies" and the system views her a list of movies available for the public. Jane looks through the movie catalogue and selects a movie called "Titanic". The system views her all the theaters available in the database for the movie "Titanic". Jane selects to watch the movie in the "Blue Theater" and the system views her back with the show times available in the Blue Theater. She selects the show time at "8:30 PM". The system reads her choice of movie "Titanic in Blue Theater at 8:30 PM. System views a graphical layout of available seats to choose from in the Blue Theater. Jane clicks on a seat icon and selects seat "M15". To proceed with the payment, Jane clicks on "Proceed to Checkout" to confirm her choice.

The system prompts Jane to fill out her credit card information, email and any applicable credit coupon code. Jane remembers she has a credit coupon code from a ticket cancelled 6 months ago, so she proceeds by entering her coupon code and confirm if it is still usable. The system validates the coupon code in the database and verifies if it still valid from the time cancelled. The system confirms the coupon code is less than a year, so it tells Jane that her coupon code is valid. Jane is happy that the coupon is still usable and proceeds with completing her credit card information and email. Once all her payment information is filled out, she clicks "Confirm

Payment" to finish her purchase. The system immediately validates her credit card information with her bank and validates whether her email address is deliverable. The system checks all her information is correct. It indicates Jane that the transaction is complete and automatically sends a copy of the ticket and receipt to her email address.

Cancel Ticket:

Jason has bought a ticket and wants to have it cancel 5 days prior to the show. Jason enters to the main menu of the system, and clicks on cancel ticket. System then prompts Jason to enter the ticket# as well as credit card number from which it is paid. Jason enters the required information and press the confirm button to confirm the cancellation.

System verifies ticket# and credit card number against its transaction records. System, after successfully verified the entry, calculates the difference between the show date and the date of cancellation to make sure it is more than 72 hours. Once successful, the system emails Jason a coupon code that is discounted at 85% of the purchase value of the original ticket, as well as the expiration date, which is exactly 1 year after the date of refund.

Pre-sale ticket:

System admin (manager) adds movie "The Attack of the Observer Pattern" and system sends email to it's registered users that they can buy ticket for this movie prior to the official public announcement. Michael, a registered user, received this email, and quickly access the menu of the system.

Michael press login and the system prompts for username and password. Michael enters username and password and the system validates the input information against its records. The system flows back into the Main Menu, and Michael then press "Select Movies". The System returns a view with a list of movies available, including the selection "The Attack of the Observer Pattern" that is not viewable by nonregistered users.

Michael selects "The Attack of the Observer Pattern" and system shows a list of theaters that this will be shown. Michael selects "Red Theater", and the system shows a list of available showtimes this movie is available in the particular theater. Michael selects December 10, 021 9pm, and system shows view with button for user to click to confirm payment.

ENSF 614 Use Case Scenario

Michael clicks confirm payment button, and system process payment using the stored credit card information. The system indicates that transaction is complete. The system emails Michael a copy of ticket and the receipt.

Adding a movie:

Alex is a theatre manager and needs to enter a new movie that is playing at his theatre**.** In his theatre movies only play on one screen and a theatre can only play one movie on a given date.

Alex receives news that his theatre will now be showing "The Attack of the Observer Pattern" and he decides this movie will be playing in theatre 3**.**

He logs in with his username and password. After the system verifies these Alex can proceed.

Alex opens up the admin gui and selects "Input Movie" and inputs the movie info into the update movie gui. He needs to input the Title of the Movie, length of the movie, for the movie, and the price of the ticket, he also needs to select which screen this movie is being played on.

He needs to select the start time of the first showtime as well as the start time of the last movie showing, and input a number of dates that the movie will run.

Based on the length of the movie above, as well as the start time of the first and last showings, show times are automatically generated and input into the database**.**

The system displays a confirmation that all the notice to subscribers has been sent.

ENSF 614 Use Case Scenario

Update a movie:

Alex is still the theatre manager. He needs to make a change to the start time of "The Attack of the Observer Pattern" on December 10, 2021. He's going to a birthday party that day and wants to change it so that the last show time is at 8pm.

He logs in with his username and password. After the system verifies these Alex can proceed.

Alex now needs to open the gui and select "Update Movie". Alex searches the movie database by inputting the title of the movie in a search bar. A result comes up for "The Attack of the Observer Pattern" showing an editable list of the dates playing, theatre, start time, and last show time.

Alex updates the row for December 10, 2021 and changes the "Last Show Time" column to 8pm.

Alex presses "Proceed" and updates the status of any movies after 8pm to "cancelled".

Cancel a movie:

Once again, Alex is still the theatre manager. He has received news about "The Attack of the Observer Pattern" - apparently one of their stars made some-off colour remarks and now theatres across the country are pulling the movie.

He logs in with his username and password. After the system verifies these Alex can proceed.

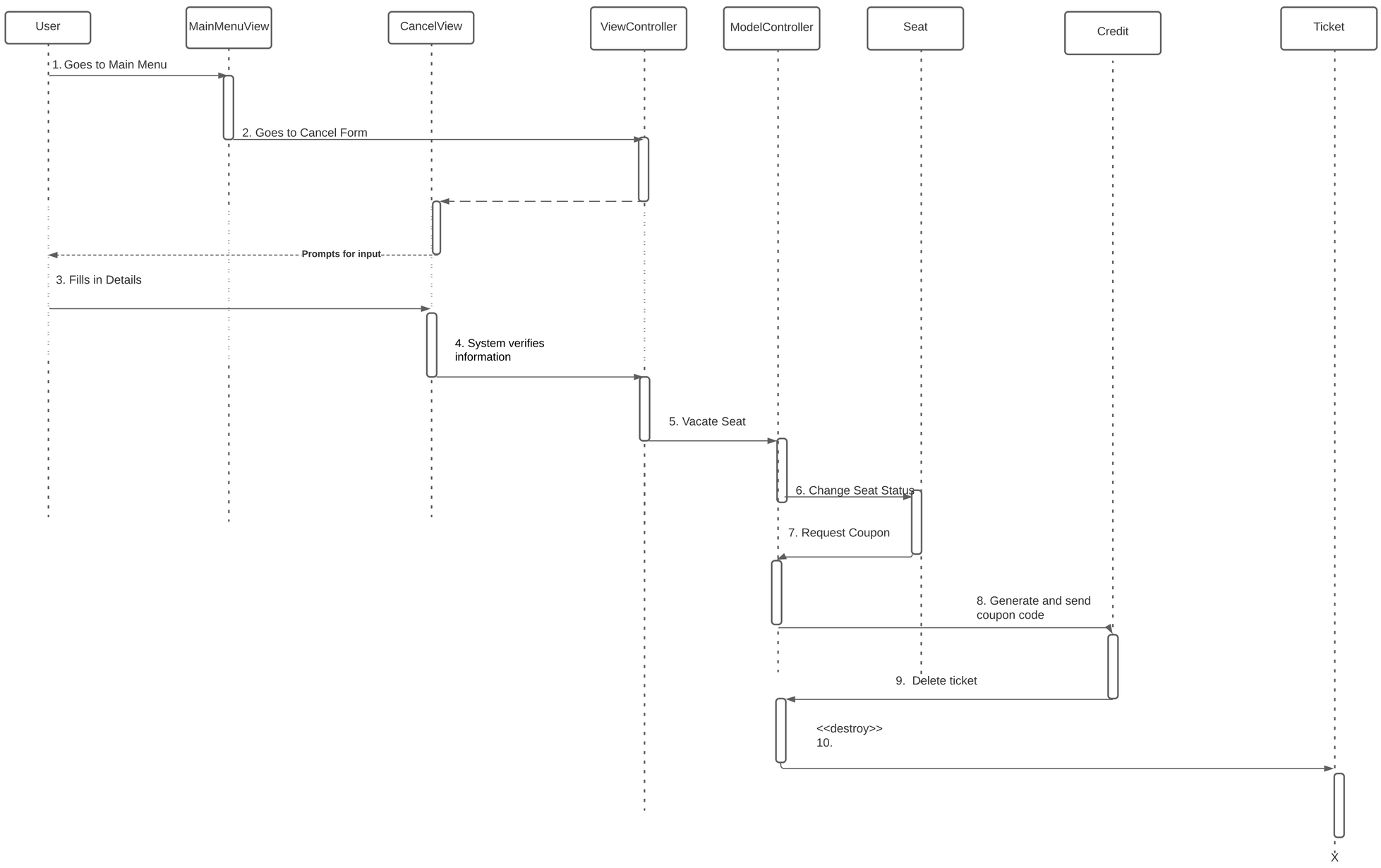
ENSF 614 Use Case Scenario

Alex now needs to open the gui and select "Cancel Movie". Alex searches the movie database by inputting the title of the movie in a search bar. A result comes up for "The Attack of the Observer Pattern". Alex selects this movie and clicks "Cancel".

The database updates the status of the movie from "Active" to "Cancelled"

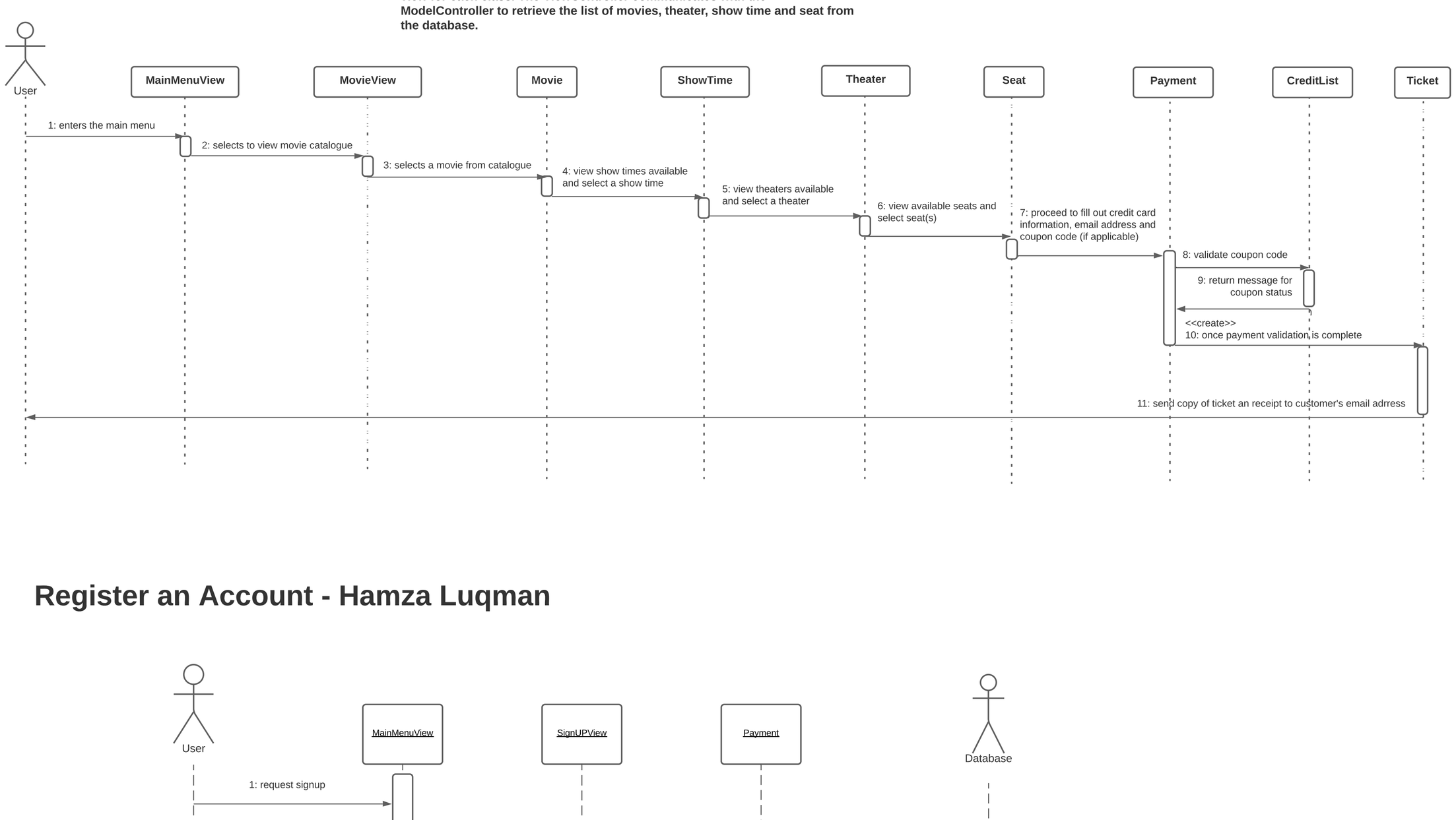
Sequence Diagrams:

Cancel Ticket - Michael Lee

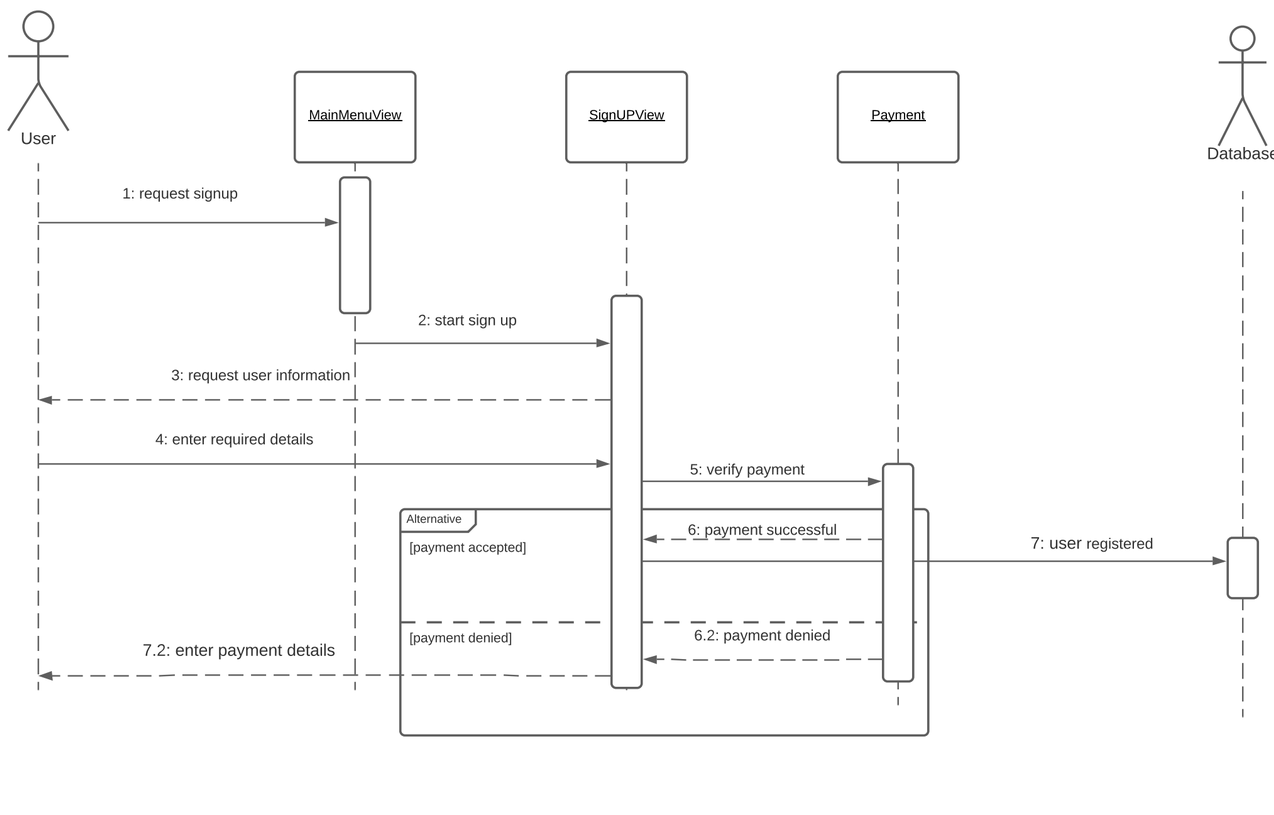


Buy Ticket - Melissa Liao

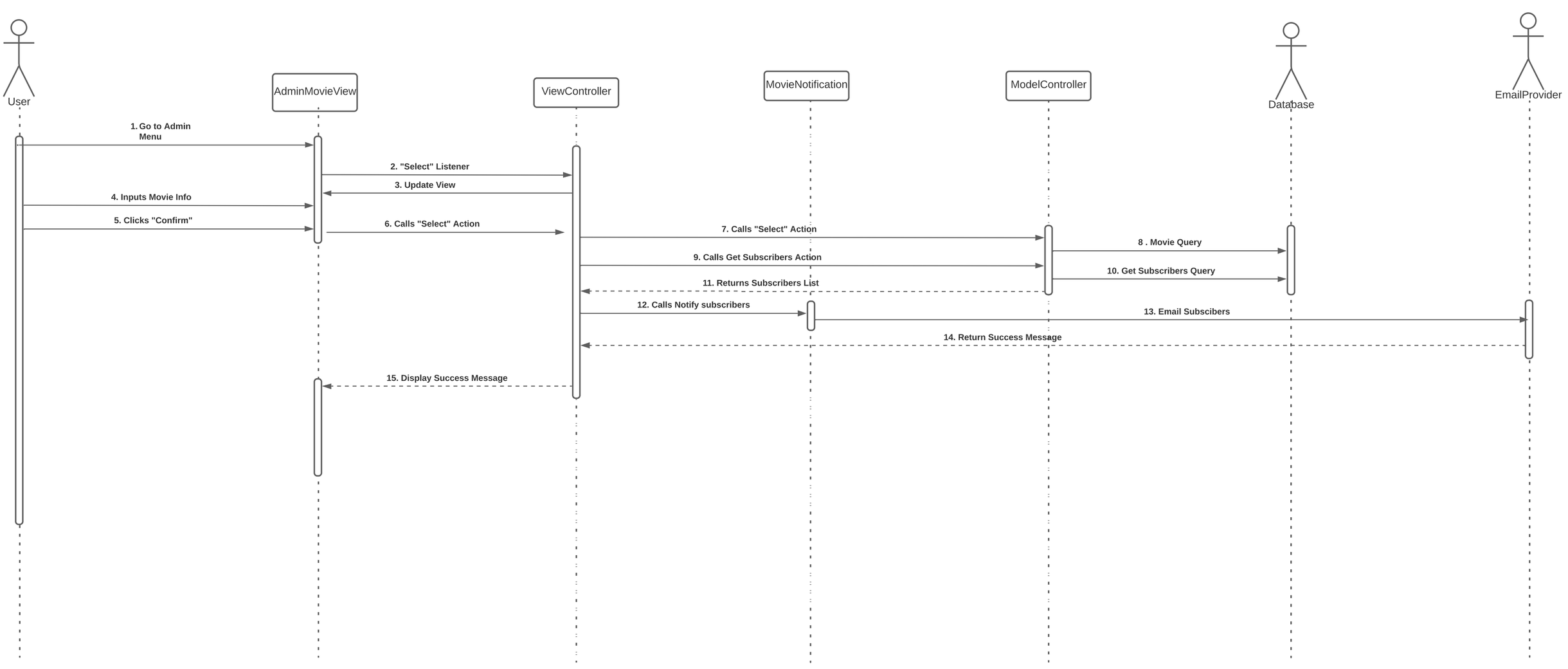
Note: **For every entity class, we access to the ViewController to retrieve the view for each class. The ViewController communicates with the ModelController to retrieve the list of movies, theater, show time and seat from the database.**



Register an Account - Hamza Luqman

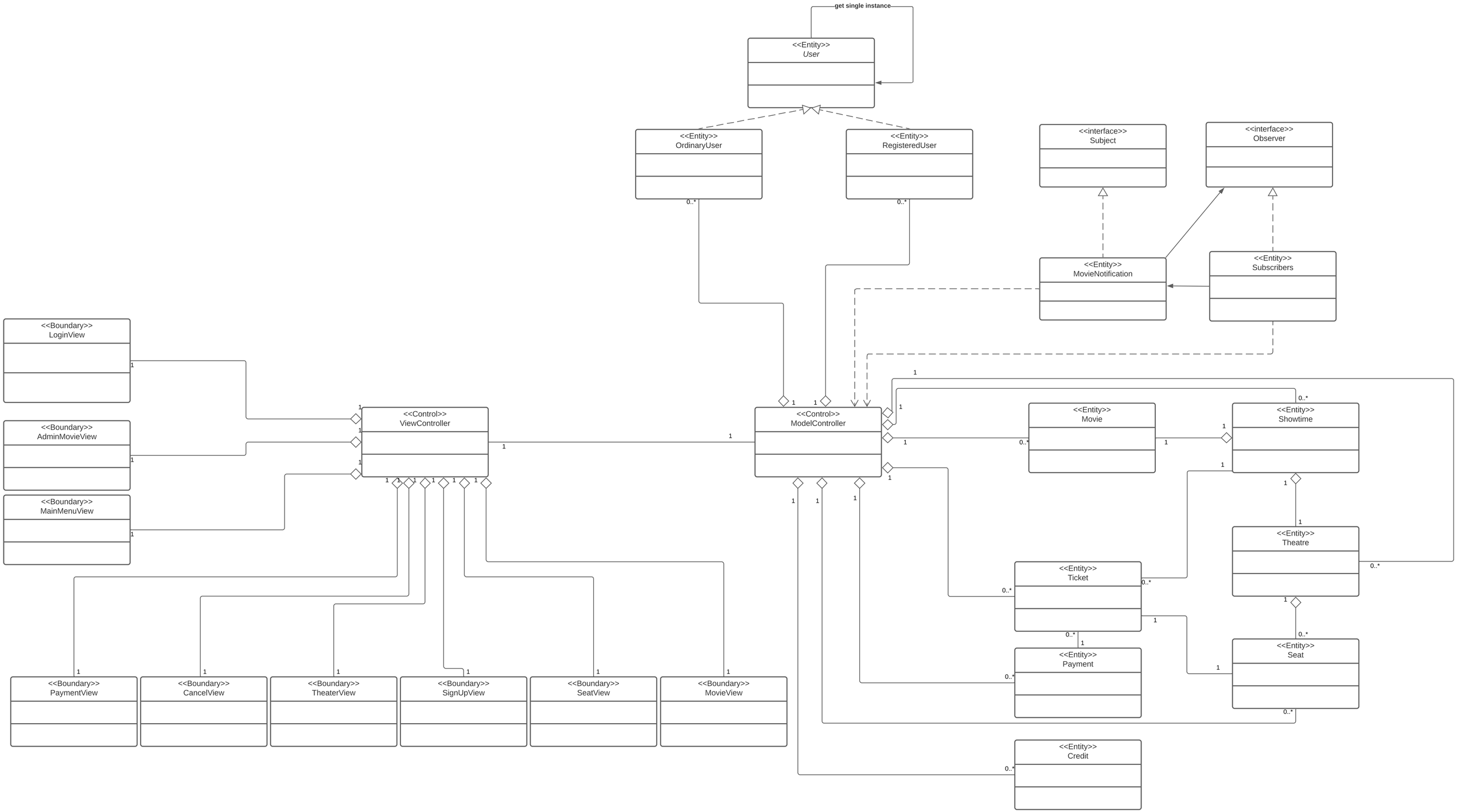


Update (Add/Delete) Movie - Alex Leakos



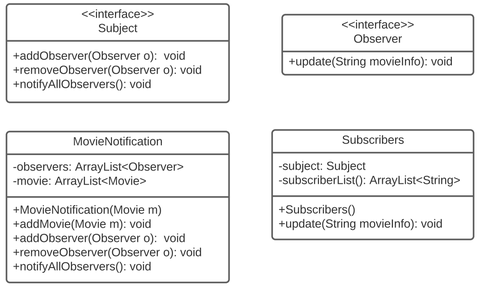
Class Diagrams:

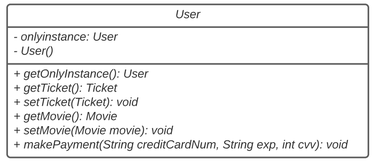
Class Relationship Diagram

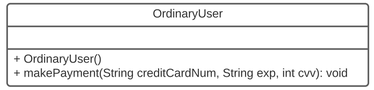


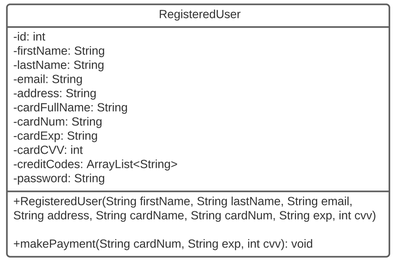
Detailed Classes:

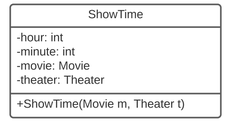
Class Diagrams - Attributes and Behaviours

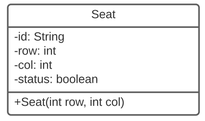


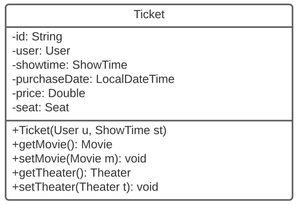


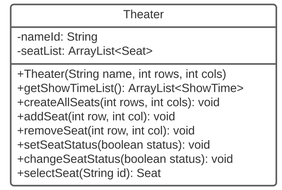


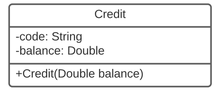


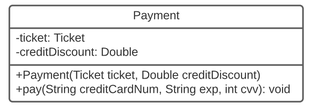


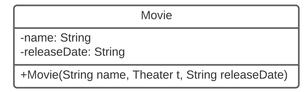


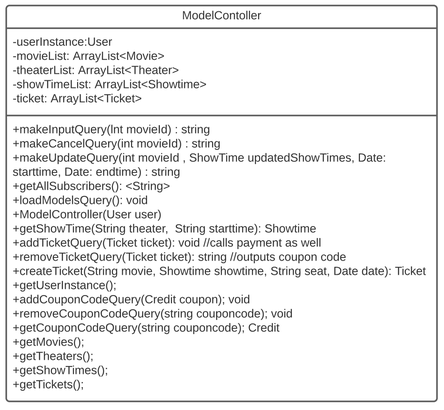


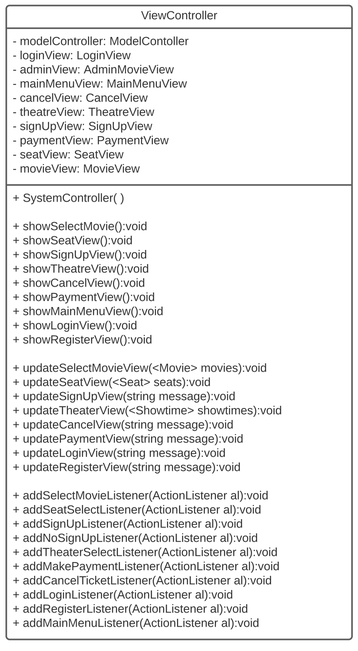


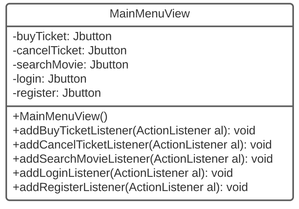


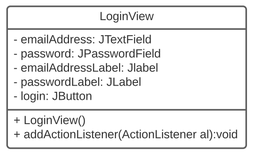


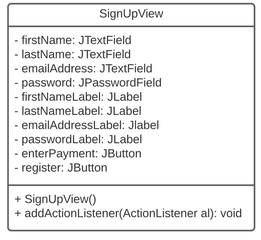


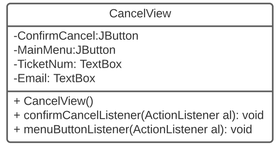


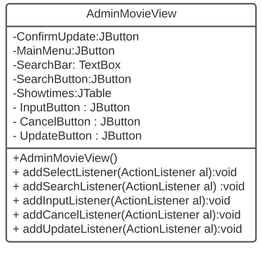


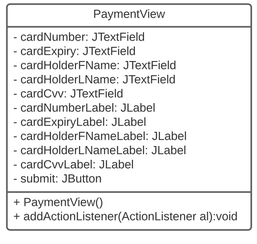


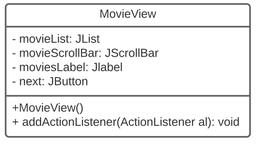


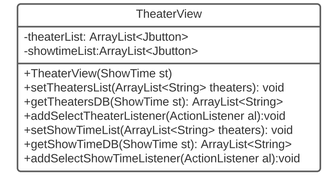


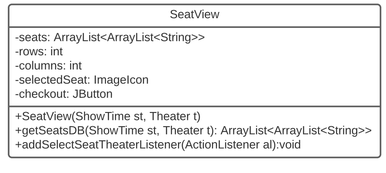






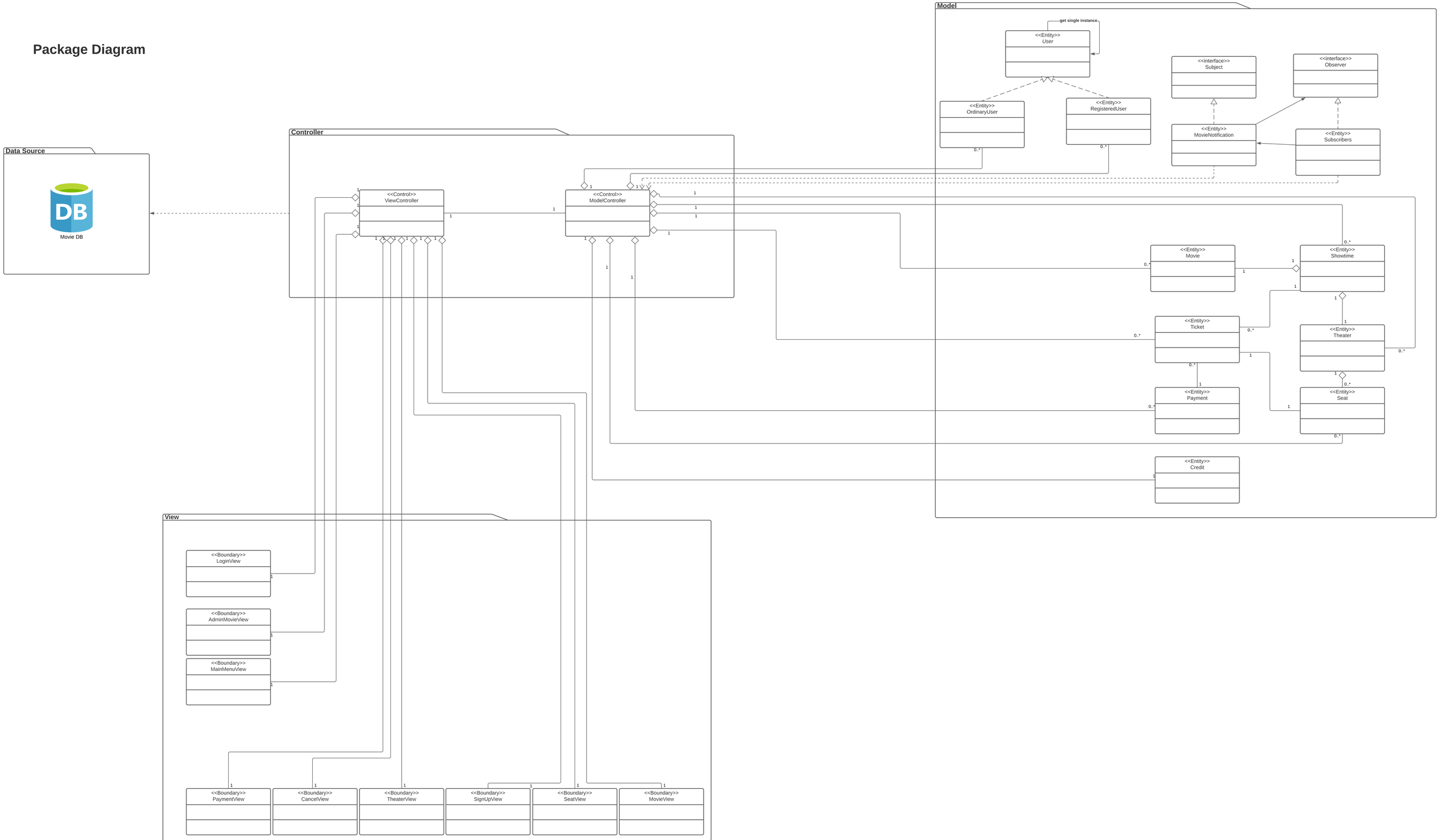






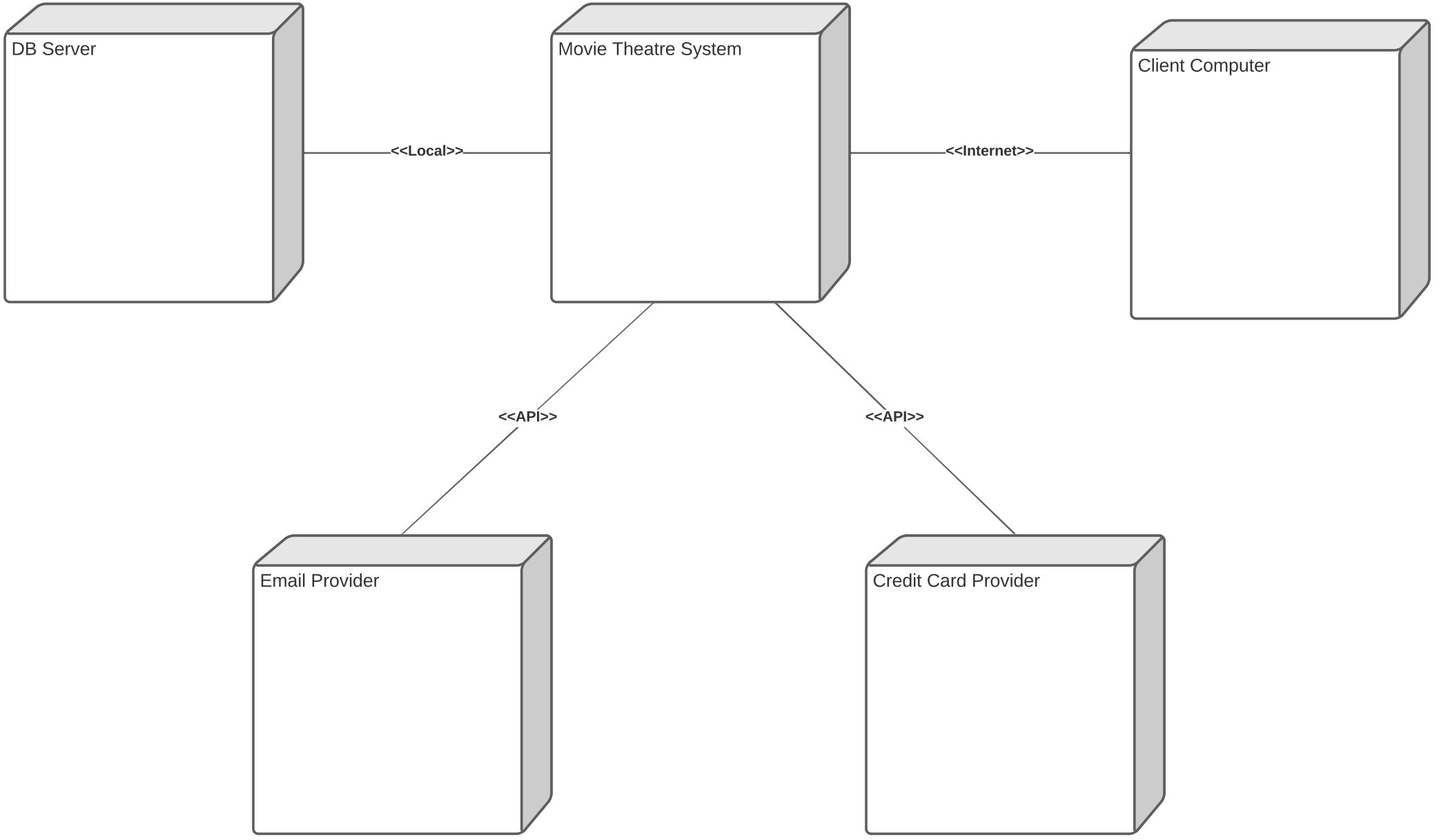
Package Diagram:

Package Diagram



Deployment Diagram:

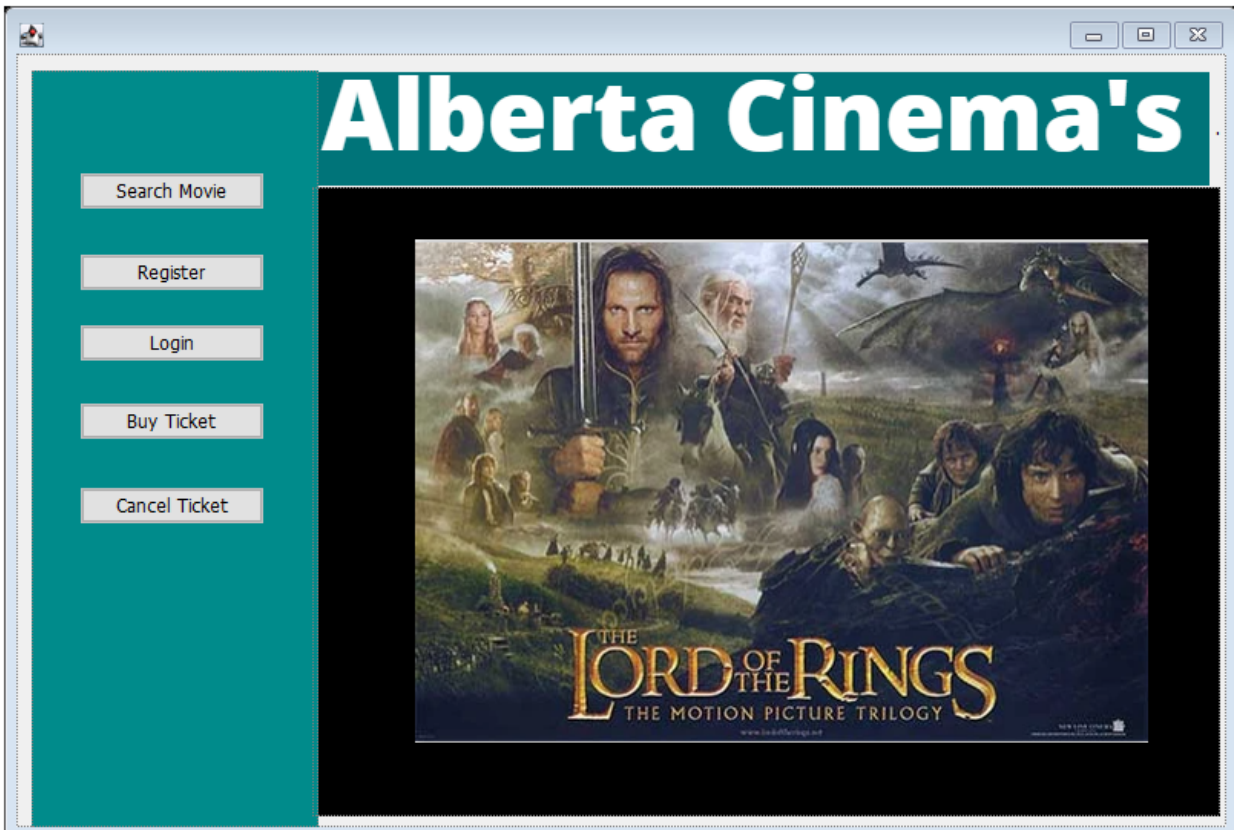
Deployment Diagram



Appendix - GUI Examples:

GUI Examples

MainMenuView Snapshot



SeatView Snapshot