FORMAN CHRISTIAN COLLEGE

(A CHARTERED UNIVERSITY)

Movie Recommendation System

COMP-220 (Software Engineering)

Section A

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Submitted To: Dr. Saba Khalil Toor

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Introduction

This report presents the structure impedes that were expected to assemble our undertaking, a film suggestion motor. In the first place, we characterized the venture in an undeniable level way with a specific degree of reflection. We characterized the extension and area of the venture. After this, you will observe that we made sense of the SDLC utilized for the undertaking and how the work breakdown structure was worked to upgrade the improvement cycle. This segment is trailed by the prerequisites, practical and non-utilitarian, which are thusly trailed by the normal functionalities of the task. We have likewise incorporated a Utilization Case Outline so the peruses of this record can more readily comprehend how our proposal motor functions. We have made 14 completely dressed use cases, and gave their class outlines, space models, and arrangement charts.

About

Introduction:

A proposal framework is a kind of data sifting framework which endeavors to foresee the inclinations of a client and make ideas considering these inclinations. These have become progressively well known throughout the most recent couple of years and are currently used in most web-based stages that we use. The substance of such stages differs from motion pictures, music, books, and stories via web-based entertainment stages, to items on internet business sites, to indexed lists returned on Google. Frequently, these frameworks can gather data about a client's decisions and can involve this data to work on their ideas later. With a great many motion pictures to browse, individuals some of the time feel overpowered. In this way, a productive film suggestion framework is important for the interest of clients, as the clients will have no more aggravation to settle on choices on what to watch.

The target of this venture is to foster a Film Proposal Framework. The framework will decide and prescribe the clients as indicated by the class of the film the client is watching in the given time and give a rundown of film suggestions in view of the client's watch history. We will utilize network factorization to fabricate our framework. Lattice factorization is a class of cooperative separating calculations. Our framework utilizes a dataset that will be totally separated to acquire clients' thoughts for motion pictures.

Objectives:

- Make a Film Proposal Framework that will actually want to prescribe motion pictures to the client in light of which classification the client is watching, at a given time.
- Foster a functioning framework equipped for giving clients the simple entry to films of their #1 classes.
- Investigate the film real time features accessible these days searching for a total and uninhibitedly available motion pictures list and free web-based features.
- To augment the exactness of our AI model

Requirements

- The framework ought to have the option to prescribe proper films as indicated by client's past watch history.
- The framework ought to have the option to give priority to proper channel, i.e., kind, cast, chief and so forth.
- The framework ought to have the option to precisely distinguish and perceive language inclination while suggesting a film.
- The framework ought to have the option to monitor client's age, contrast it with the film's evaluating, and afterward give out a suggestion.
- The framework ought to have the option to track client's watch history.
- The framework is expected to show the film data alongside the proposal. This data might contain, yet isn't restricted to; cast, chief, plot, IMDB rating, and film age rating.

The system is required to sort recommendation results in order of priority, keyed in by the user. For example: If the user wants to sort recommended movies in ascending order of their IMDB ratings, the user should be able to accomplish that with this system.

Risks:

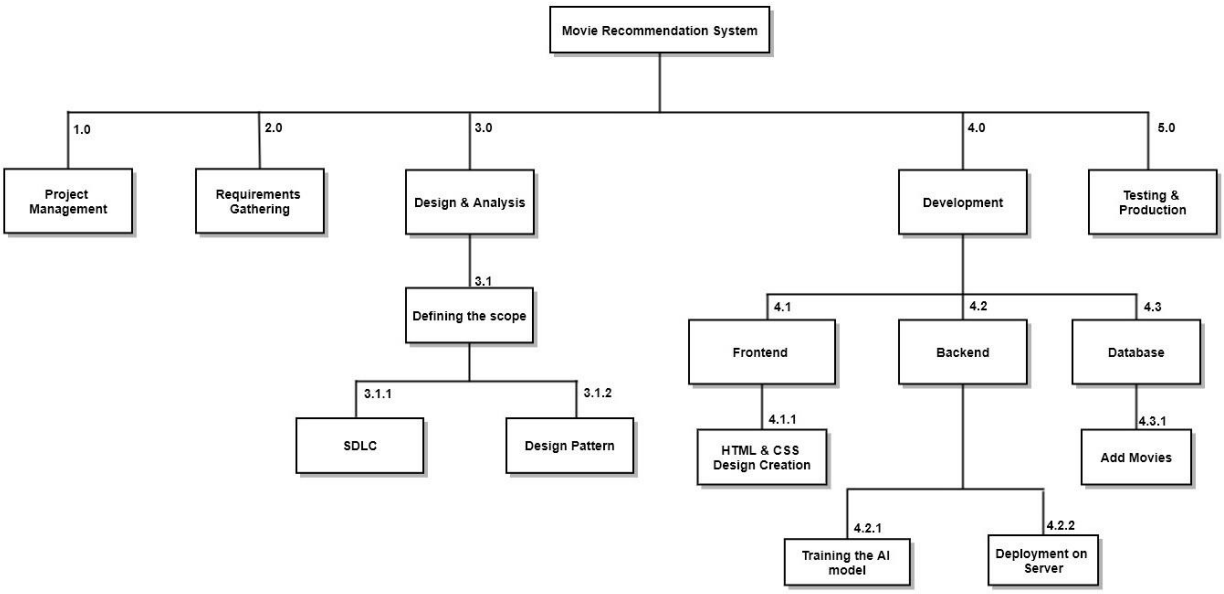
Since the nature of this project is not high-risk and this is not a critical system, there are not many risks involved except for a select few. These risks are:

- Sooner or later, the framework might neglect to prescribe films that are like the client's advantage.
- The framework might suggest NSFW (Undependable for Work) films to explicit age gatherings.
- The expectation of this work isn't to make a major film recommender or a major film streaming site. The actual application remains as an information authority and as a benchmark for checking assuming that the information got from web administrations is substantial to be utilized for proposal purposes. The gamble here is that information from web administrations may not be bona fide or substantial.
- The framework will most likely be unable to accurately arrange films into classifications and sub-sorts.
- The framework will most likely be unable to accurately plan films to language inclinations and may toss a special case on a clashing worth, like a named form of a film.
- The framework might hoard a great deal of memory due to putting away individual watch chronicles.

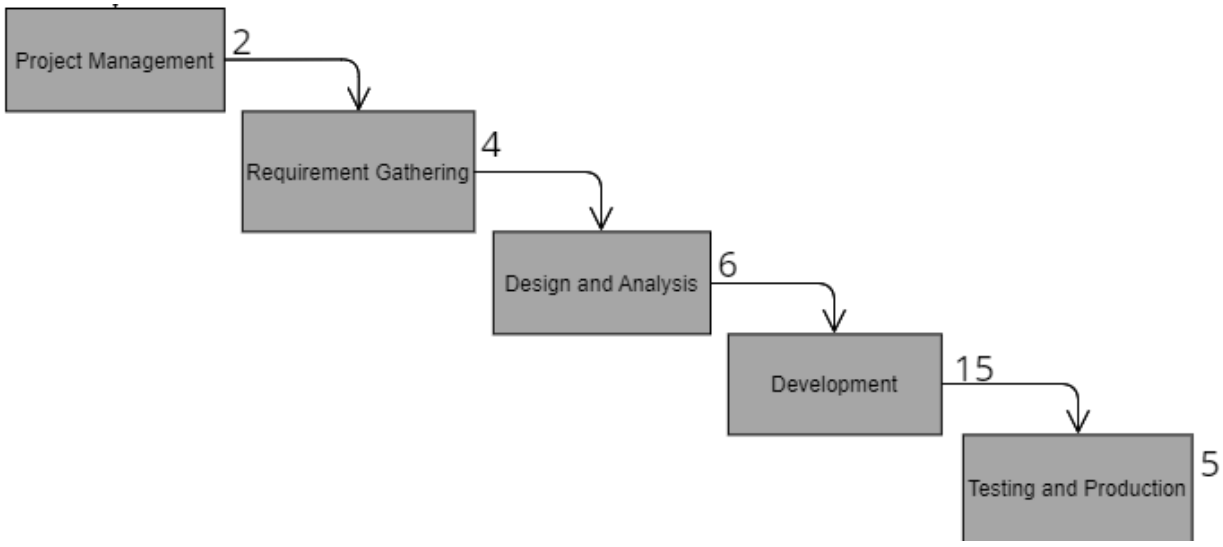
Software Development Lifecycle

To streamline the improvement cycle of building our film proposal motor, we picked the Waterfall model. The actual venture alongside the extent of the task was helpfully little. The main things required were a dataset, which was preprocessed and taken care of to an AI model for preparing. The successive idea of the task made the Waterfall model the best fit for the SDLC to be utilized. There is almost no equal handling expected to construct this application as first you should preprocess the information, i.e., use include extraction, appoint marks, and so forth. After the preprocessing is finished, you can code a framework factorization-based model which will take the preprocessed information as info and train on it. The essential component is the need to focus on detail at each step as information is involved and the cleaner our information will be the more exact our model will be from here on out. We are not worried about fostering a web application so that essentially lessens our responsibility and subsequently gave us additional opportunity to spend on preparing and testing the model.

Work Breakdown Structure



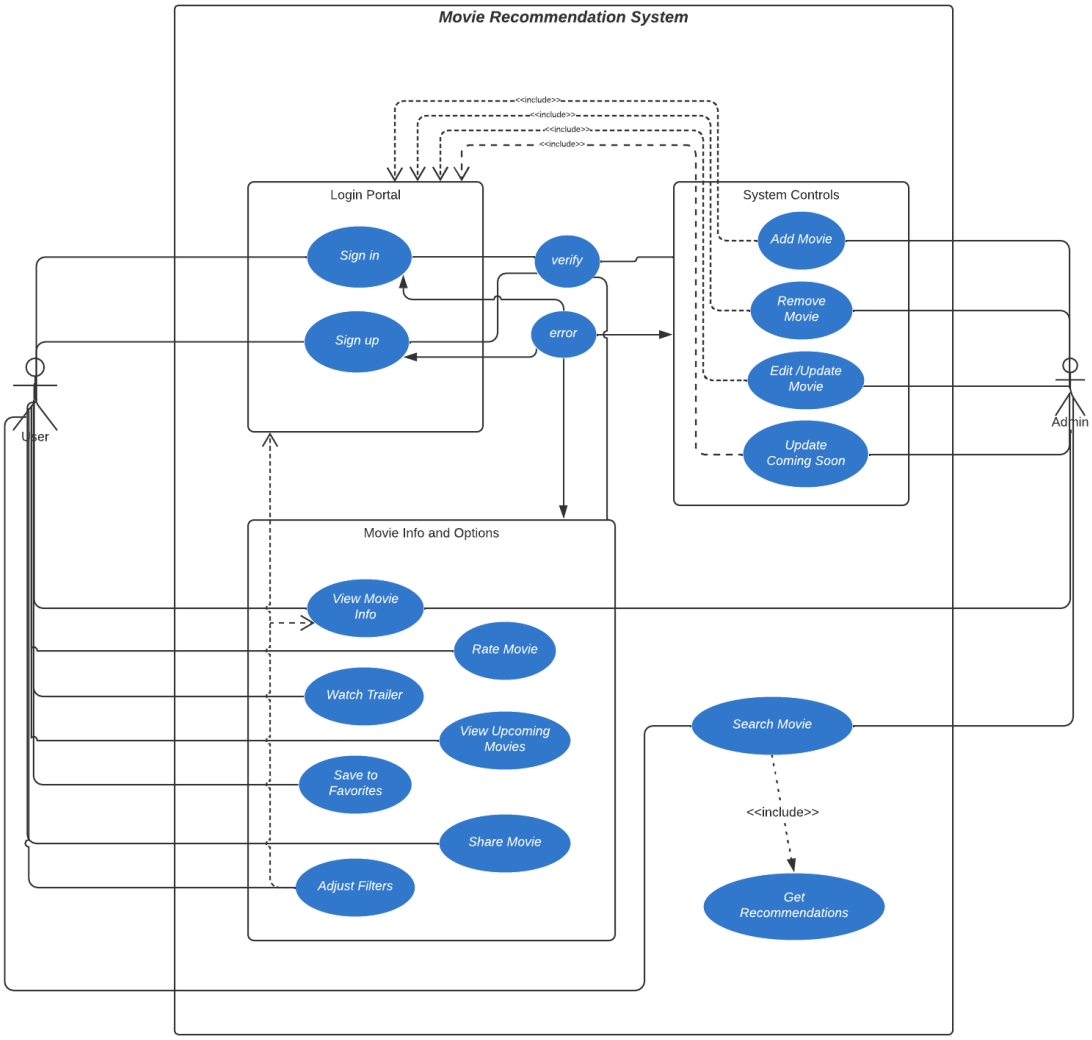
Activity-on-Node Diagram



Use Cases

Diagram

After collecting the user requirements for this system, we have deduced the requirements into the following diagram:



Fully Dressed Use Cases:

USE CASE: Sign up
USE CASE ID: 01
ACTOR: User
Description: A user must sign up to use the system. To sign up, the user must provide their name, age, email, and password, which are the required fields. If the user fails to fill any required entry, the user will get an error prompt. Upon signing up, the user will be asked to select their top 5 preferred genres of movies, which will be optional.

USE CASE: Sign in
USE CASE ID: 02
ACTOR: User
Description: The user keys in their username and password that was emailed to them upon signing up. The password and/or username will be verified. In the event of failed identification, the user will be prompted with an error.

USE CASE: Search Movie
USE CASE ID: 03
ACTOR: User
Description: The user of the system should be able to apply different search filters and search the movie.

USE CASE: View Movie
USE CASE ID: 04
ACTOR: User
Description: The user of the system should be able to view the movie, look at its cast and rating, and read its plot.

USE CASE: Watch Trailer
USE CASE ID: 05
ACTOR: User
Description: The user should be able to click on a button that says “trailer” and that button will direct the user to the trailer of the movie on YouTube.

USE CASE: Save Movie to Favourites
USE CASE ID: 06
ACTOR: User
Description: The user can click on the button that says, “add to favourites” and store that movie in their favourites list which is accessible to them from their console.

USE CASE: Update Movie Database
USE CASE ID: 07
ACTOR: Admin
Description: On new releases, the admin can update the database which contains data of all movies. Moreover, he can edit and view any of the existing data.

USE CASE: Adjust Filters
USE CASE ID: 08
ACTOR: User
Description: The user can adjust filters when searching for movies by name, genre, cast, director, etc. To narrow down a rather unseeingly broader range of movies into a few specifics that match most with the user’s preferences.

USE CASE: View Coming Soon
USE CASE ID: 09
ACTOR: User
Description: The user can click on the tab that says “coming soon” to learn about new movies that are yet to be released.

USE CASE: Update Coming Soon
USE CASE ID: 10
ACTOR: Admin
Description: The admin will be able to update the “coming soon” database.

USE CASE: Share Movie
USE CASE ID: 11
ACTOR: User
Description: The user can share the movie recommended to him/her by clicking the “share movie” button. This will give the user the IMDB link of the movie that the user can share with their contacts.

USE CASE: Rate the recommendation
USE CASE ID: 12
ACTOR: User
Description: The user can rate the recommendation of the movie (1 to 5 stars) recommended to them via the system.

USE CASE: User’s Data
USE CASE ID: 13
ACTOR: Admin
Description: Admin will be able to see the user’s data such as watch history, favourites list. So that will be helpful for optimizing the recommendation model, which will lead to a better user experience.

USE CASE: Active User’s
USE CASE ID: 14
ACTOR: Admin
Description: Admin will be able to see the number of users of the system.

Test Cases

TEST CASE: Sign-Up
Description: A user must sign up to use the system.
TEST STEP: User Enters ‘Username’ and ‘Passwords’
Expected Result: User has created an account successfully.
STATUS: Pass/Fail

TEST CASE: Sign-In
Description: A user must sign in to use the system.
TEST STEP: User Enters ‘Username’ and ‘Password’, which meets the database correctly
Expected Result: User has logged in his account successfully.
STATUS: Pass/Fail

TEST CASE: Search Movie
Description: The user of the system should be able to search movies via filters and just by name.
TEST STEP: User Enters ‘Movie Name’ and ‘Apply filters’ to search for a Movie.
Expected Result: User has found the desired Movie.
STATUS: Pass/Fail

TEST CASE: View Movie
Description: The user of the system should be able to watch the movie, look at its cast, rating, and read its plot.
TEST STEP: User watches the desired movie along with its cast and plot.
Expected Result: User is watching desired Movie.
STATUS: Pass/Fail

TEST CASE: Watch Trailer
Description: The user should be able to click on a button that says “trailer” and that button will direct the user to the trailer of the movie on YouTube.
TEST STEP: User watches the desired trailer.
Expected Result: User has watched the desired trailer.
STATUS: Pass/Fail

TEST CASE: Save Movie to Favourites
Description: The user can click on the button that says, “add to favourites” and store that movie in their favourites list which is easily accessible to them.
TEST STEP: User saves movie to their favourites list.
Expected Result: User has saved a movie in their favourites list.
STATUS: Pass/Fail

USE CASE: Update Movie Database
Description: On new releases, the admin can update the database and add new movies to it.
TEST STEP: Admin has added a new movie to their system’s database.
Expected Result: Admin added a new movie and user is able to find it easily.
STATUS: Pass/Fail

USE CASE: Adjust Filters
Description: The user can adjust filters when searching for movies by name, genre, cast, director, etc. Which defines user’s preferences.
TEST STEP: User adjust filters to find the desired movie and set their preferences.
Expected Result: User has set their preferences and is able to search for movie using filters.
STATUS: Pass/Fail

Test Case: Active Users
Description: Admin has the access of all the users logged in from the system
Test Step: Administrator has the entrance of the relative multitude of clients signed in from the framework.
Expected Result: User must be active or might get logged out if away for too long.
Status: Pass or Fail

Test Case: User’s Data
Description: Admin will want to see the client's information, for example, watch history, top picks list. So that will be useful for enhancing the suggestion model, which will prompt a superior client experience.
Test Step: Overseer will really need to see the client's data, for instance, watch history, top picks list. So that will be helpful for improving the idea model, which will provoke an unrivalled client experience.
Expected Result: The recorded data gives insight to the newcomers and provide better preferences.
Status: Pass or Fail

Test Case: Rate the recommendation
Description: The client can rate the suggestion of the film (1 to 5 stars) prescribed to them through the framework.
Test Step: The client can rate the idea of the film (1 to 5 stars) endorsed to them through the structure.
Expected Result: The ratings will be there to show others and get insight of a critic.
Status: Pass or Fail

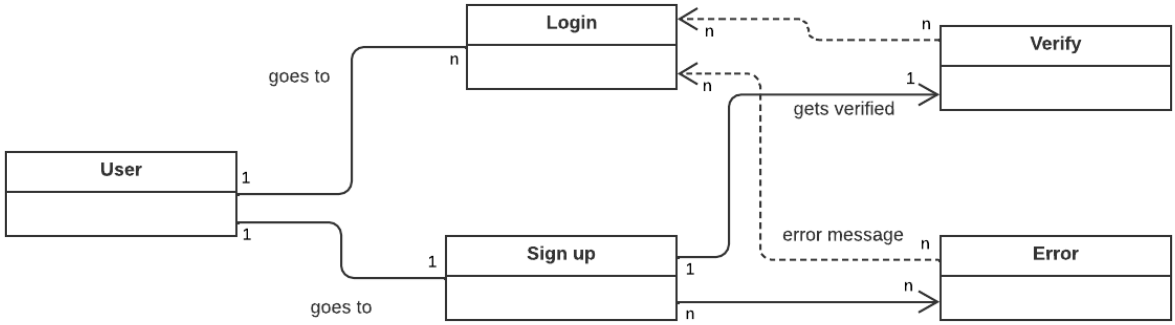
Test Case: Share Movie
Description: The client can share the film prescribed to him/her by tapping the "share film" button. This will give the client the IMDB connection of the film that the client can impart to their contacts.
Test Step: Share the movie buttons will redirect to the original movie page for further details.
Expected Result: The authenticity of our recommendation system will be increased.
Status: Pass or Fail

Test Case: Update Coming Soon
Description: The admin will want to refresh the "just around the corner" data set
Test Step: Administrator has the entrance of the relative multitude of clients signed in from the framework.
Expected Result: Admin can update the dataset and include latest movies.
Status: Pass or Fail

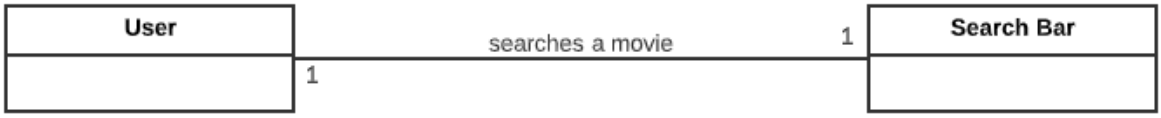
Test Case: View Coming Soon
Description: The client can change channels while looking for motion pictures by name, class, cast, chief, and so on
Test Step: Administrator has the entrance of the relative multitude of clients signed in from the framework.
Expected Result: The page will show the upcoming movies release date and rumours.
Status: Pass or Fail

Domain Model (for each use case)

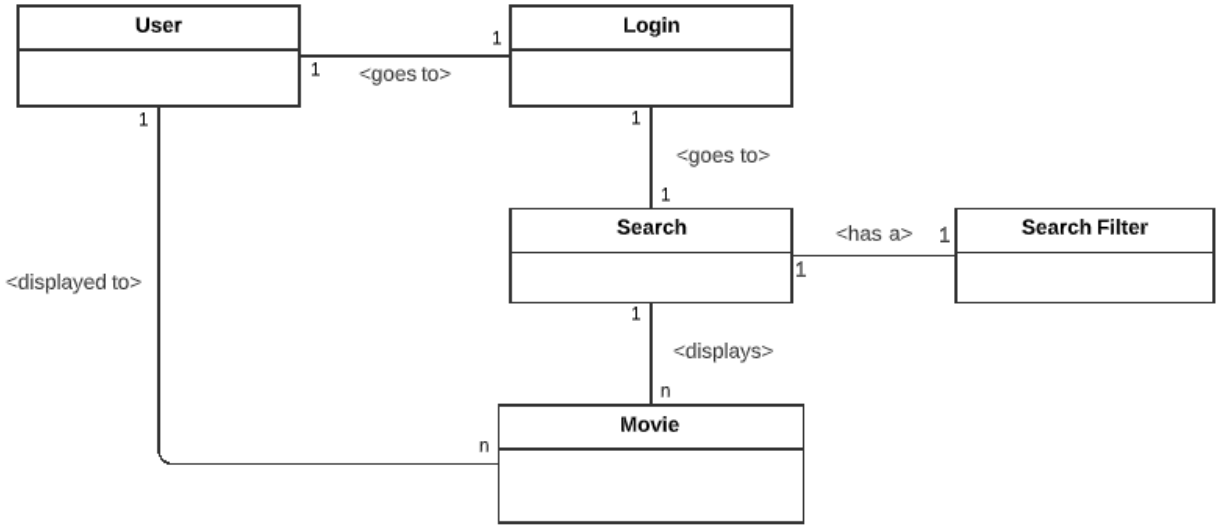
1) Login/Sign up Page:



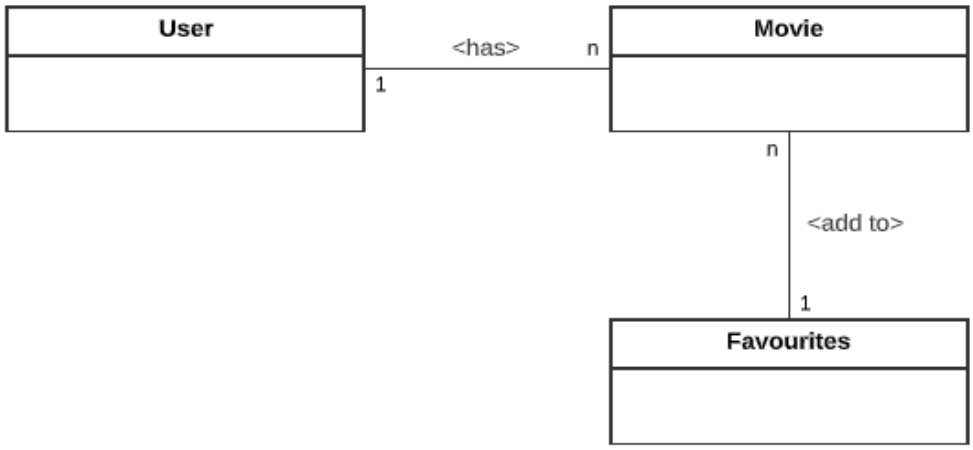
2) Search Movie:



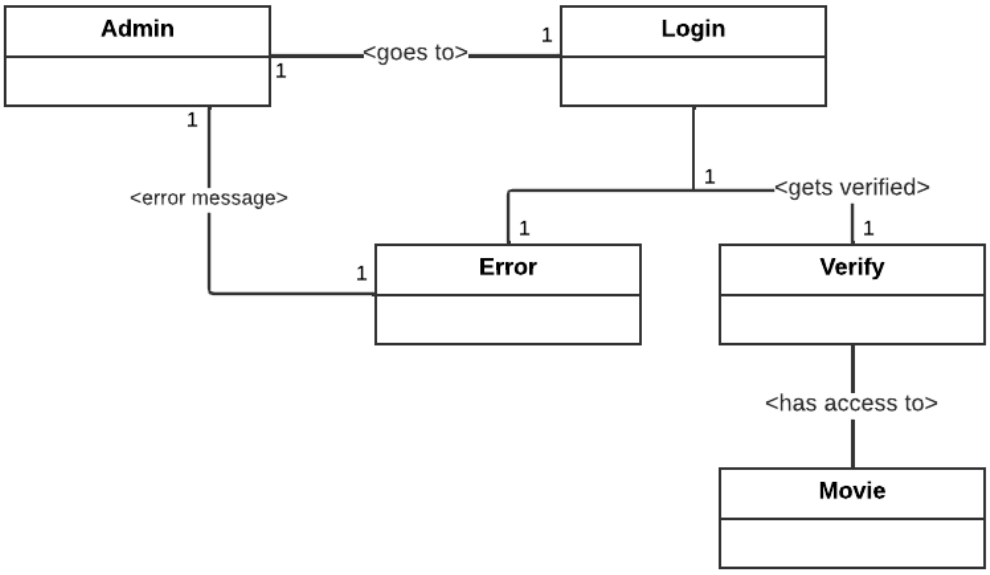
3) Display Movie Info:



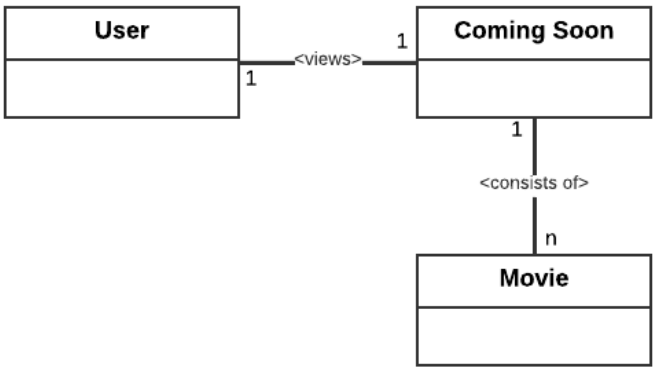
4) Save Movie to Favorites:



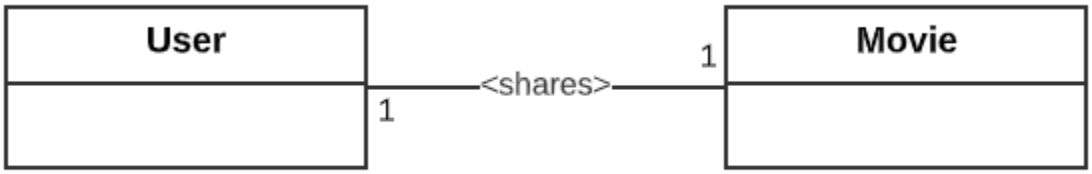
5) Movies database handled by Admin:



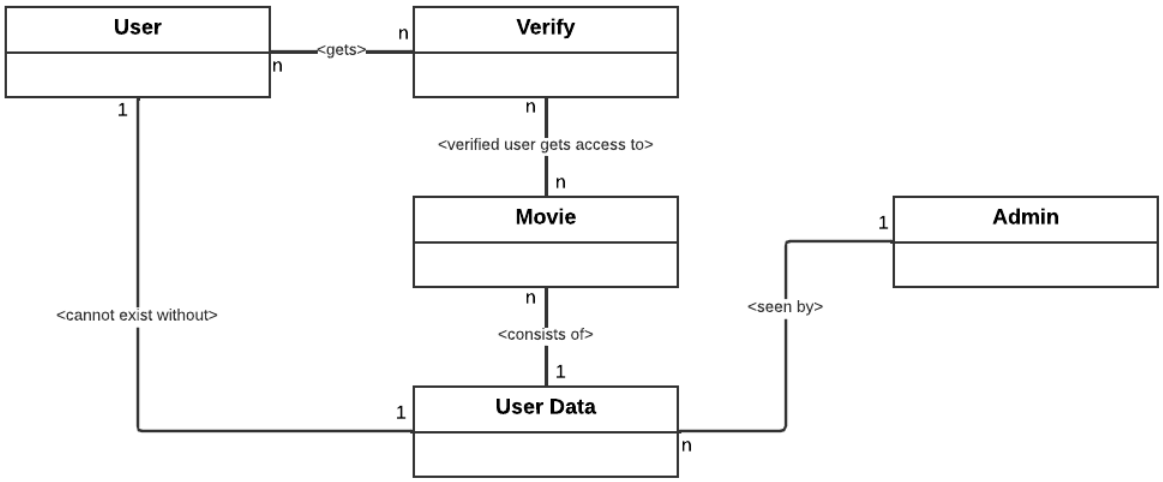
6) View Coming Soon Movies:



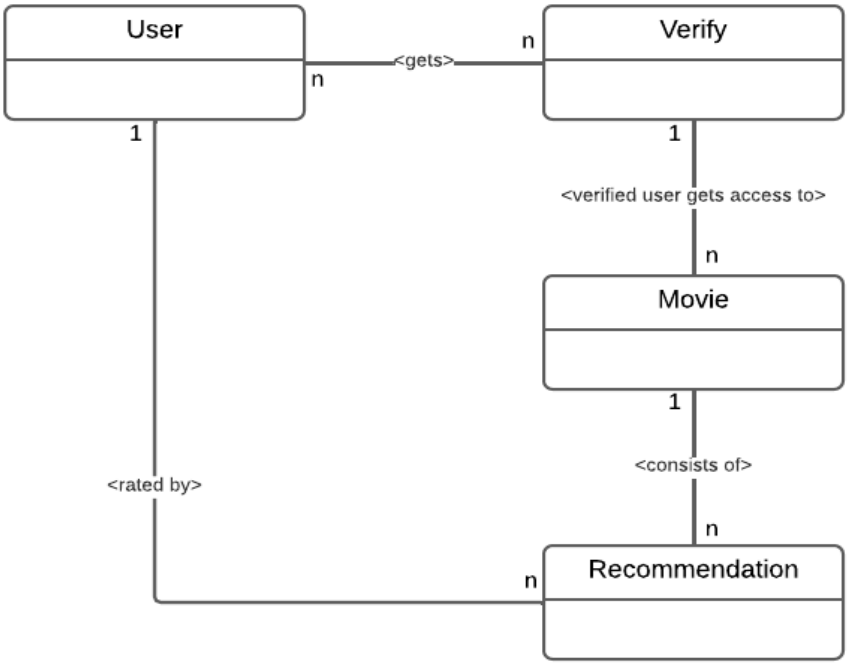
7) Share Movie:



8) User's data handled by Admin:

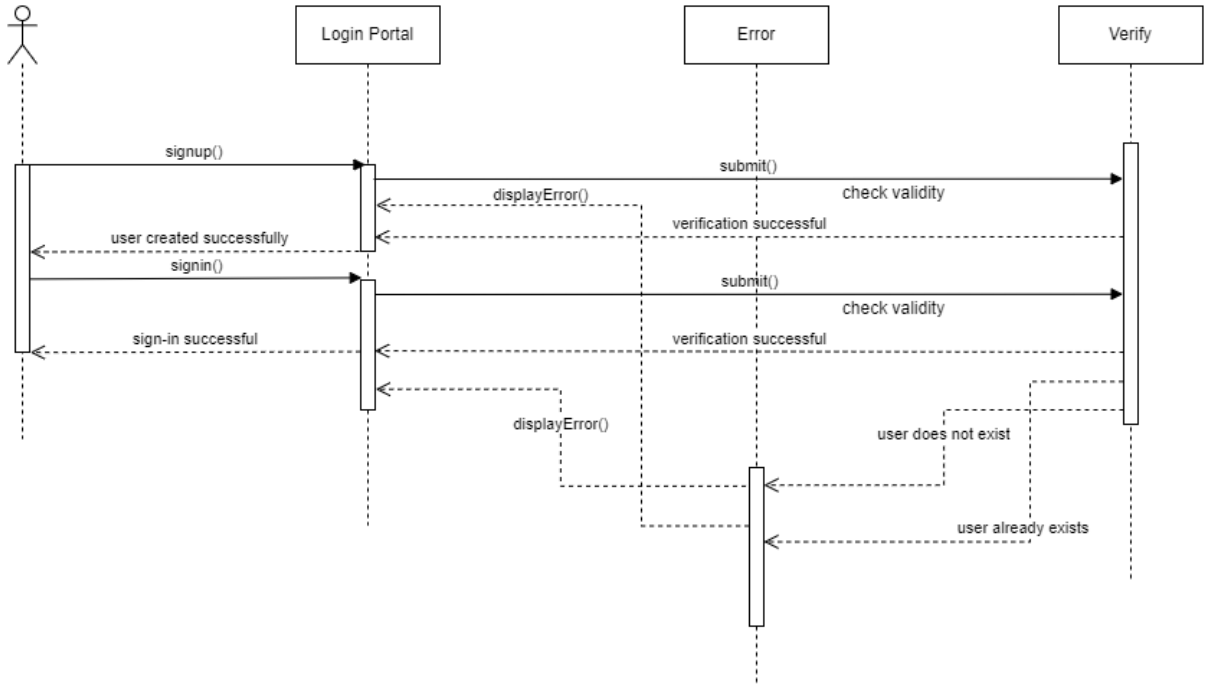


9) Rate the recommendation made by the system:

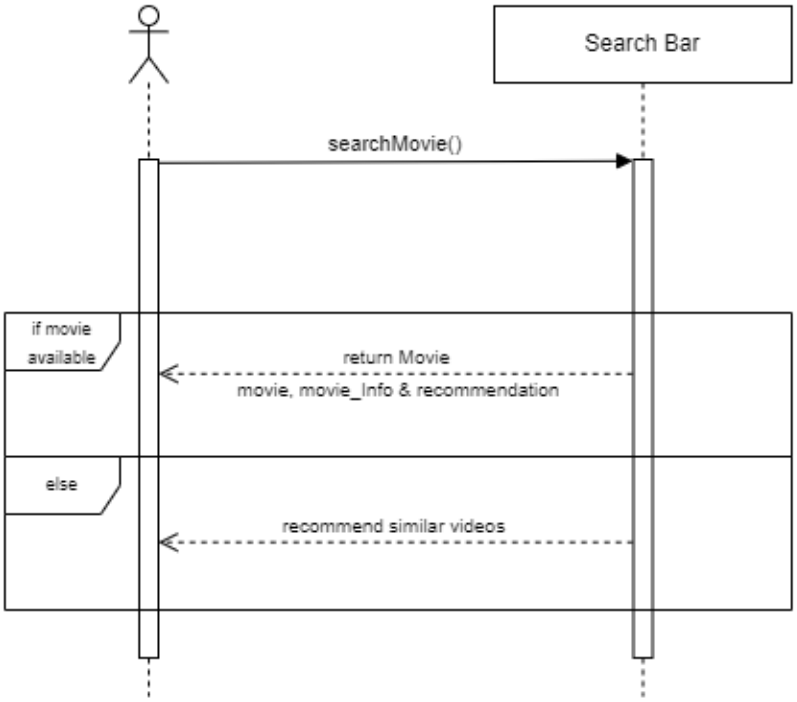


Sequence Diagrams

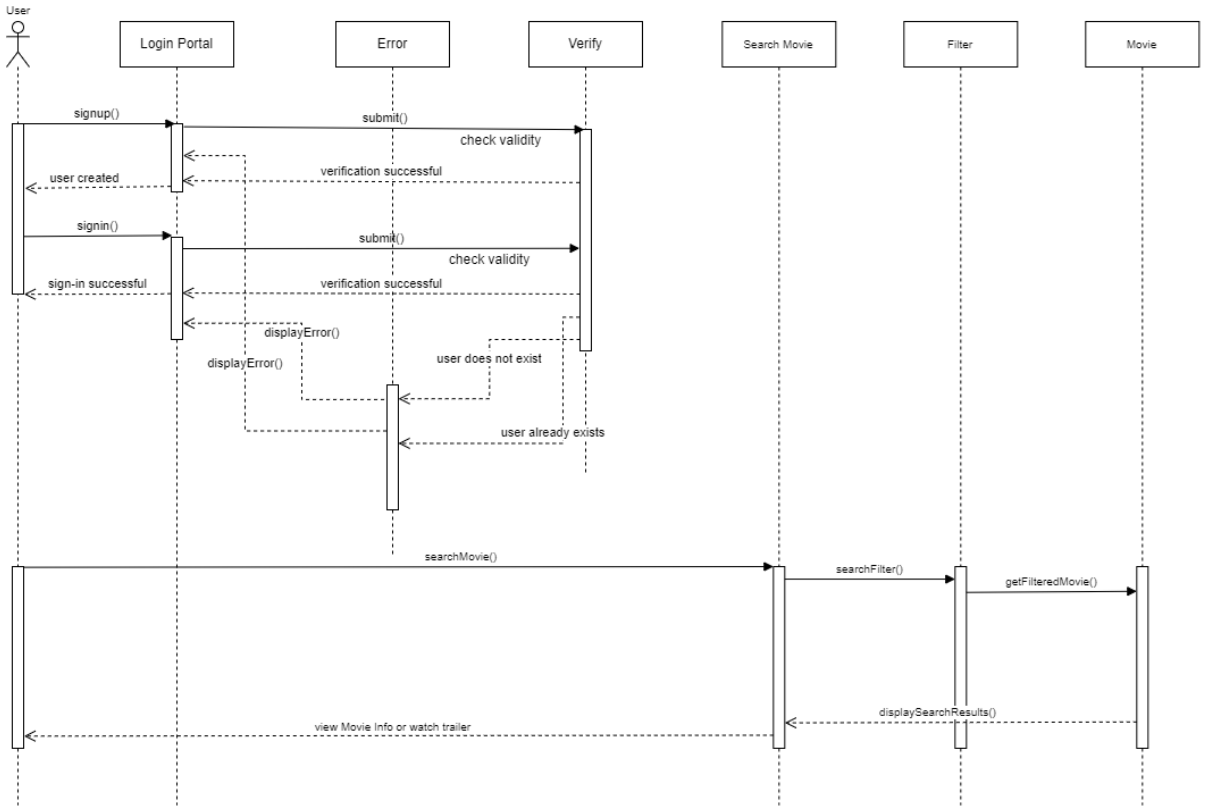
1) Login/Signup Portal:



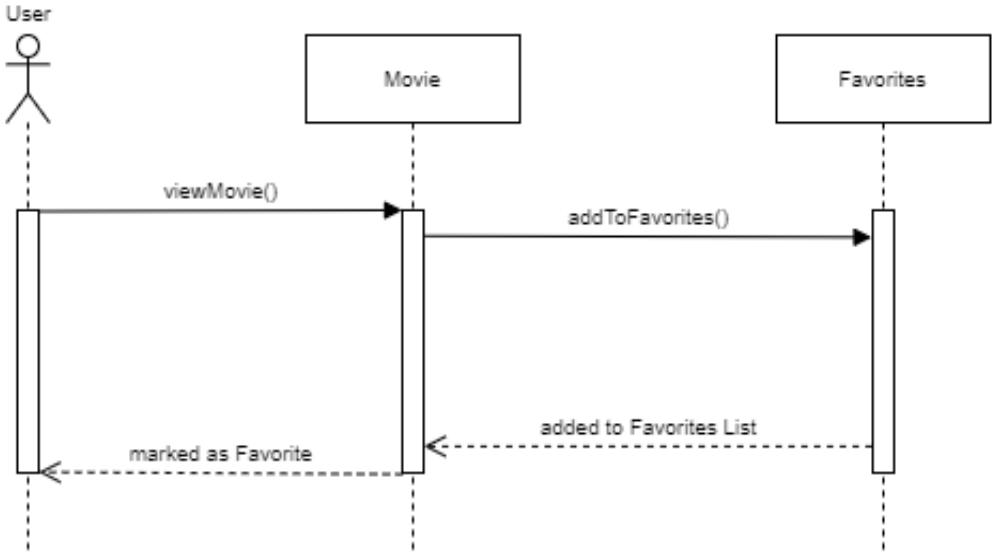
2) Search Movie:



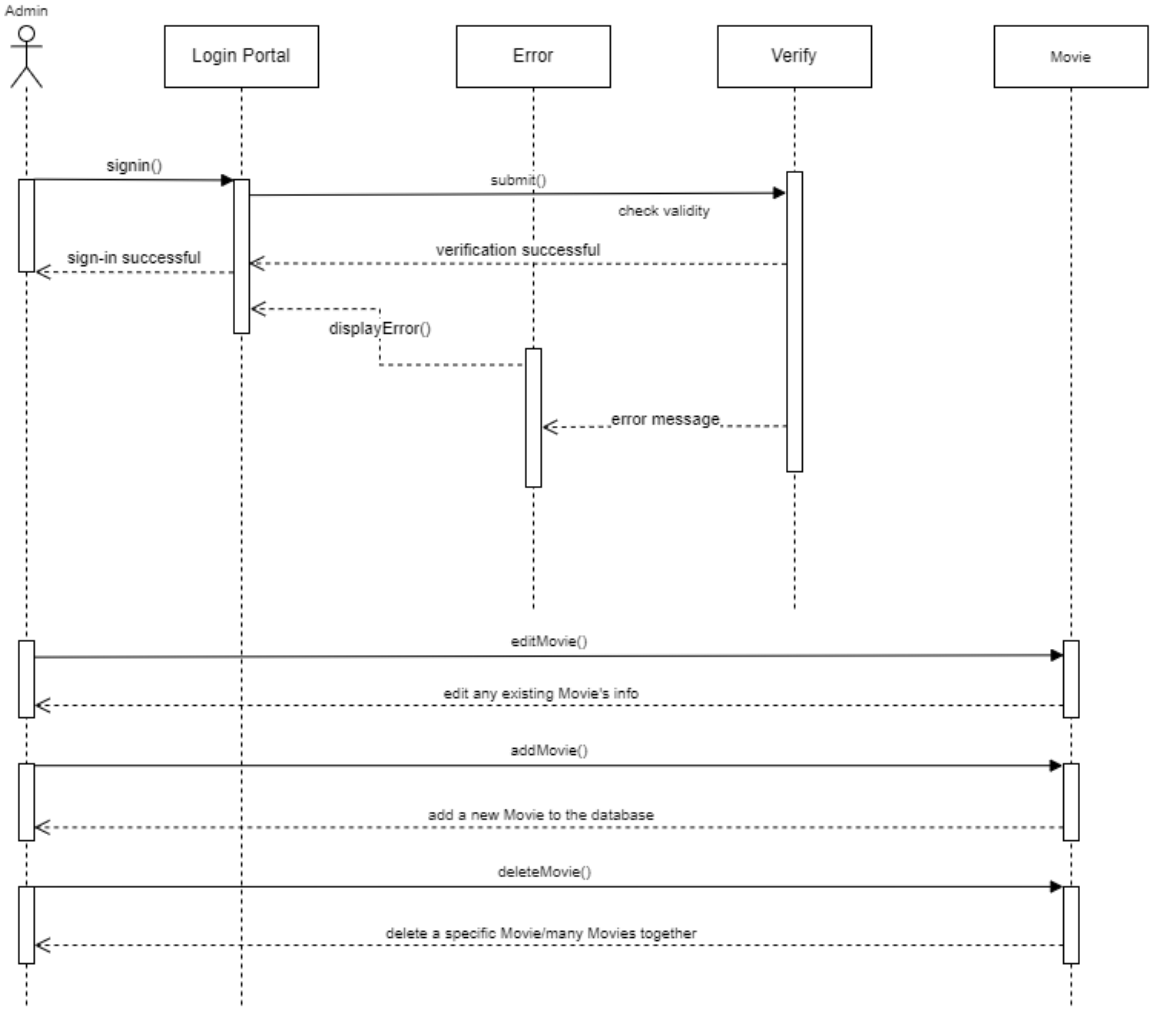
3) Search Movie by filter:



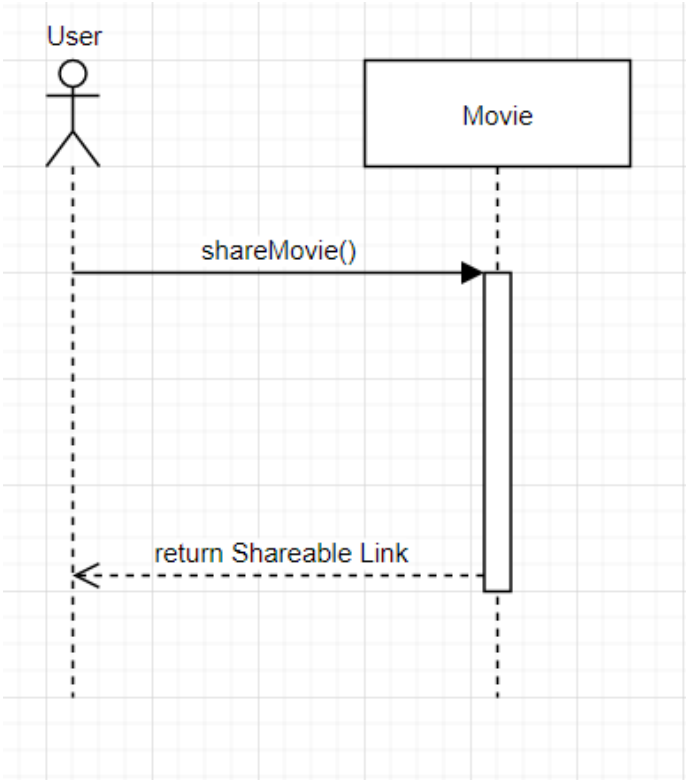
4) Add Movie to Favorites:



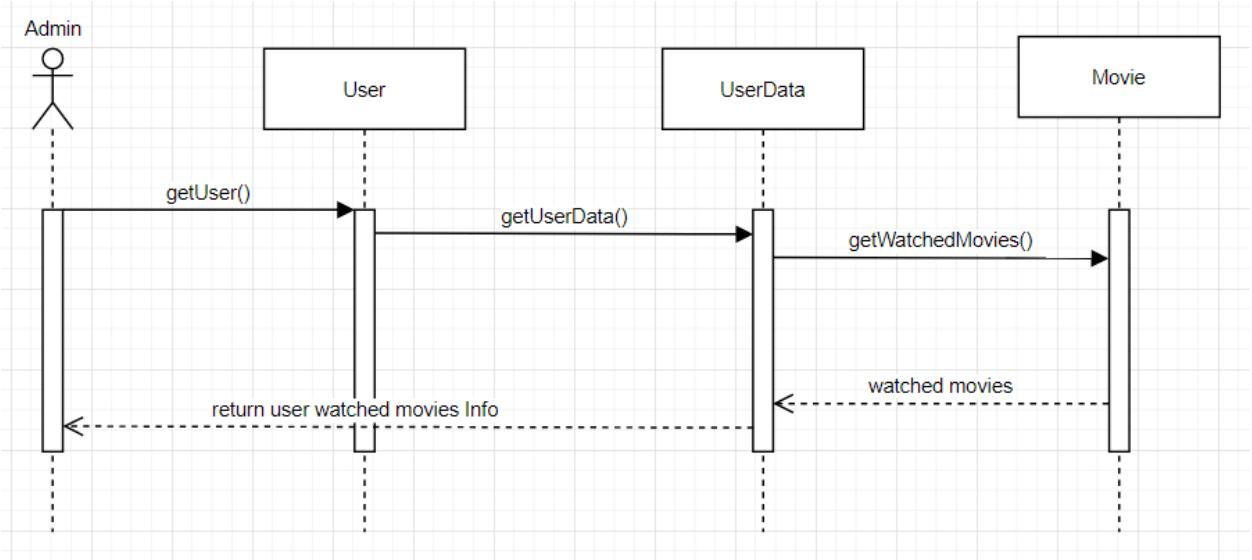
5) Movies database handled by Admin:



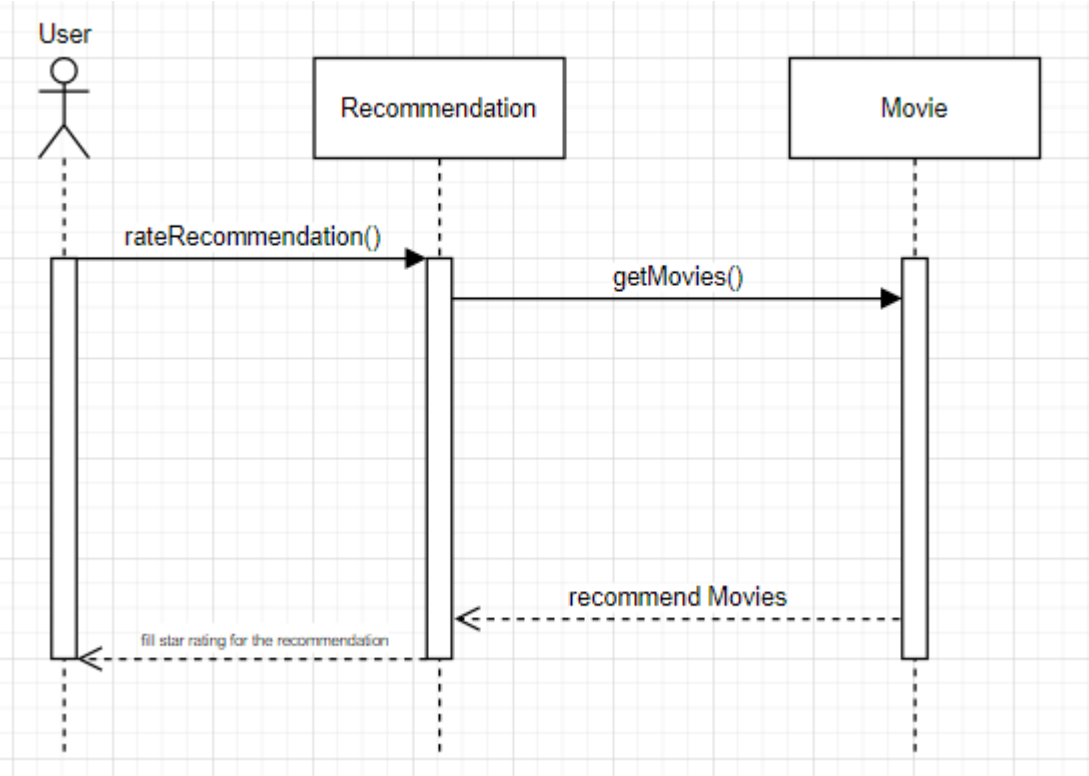
6) Share Movie:



7) User's data handled by Admin:

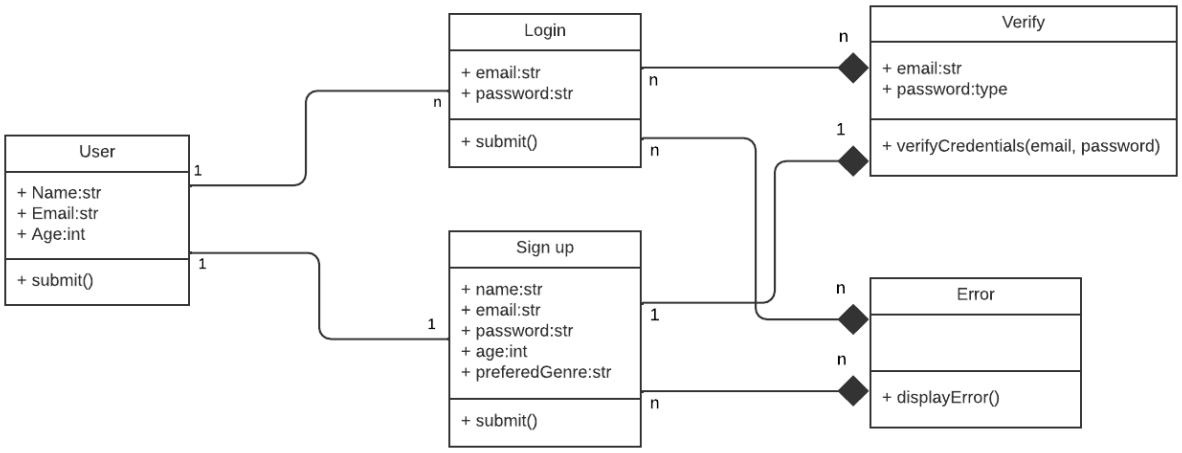


8) Rate the recommendation made by the system:



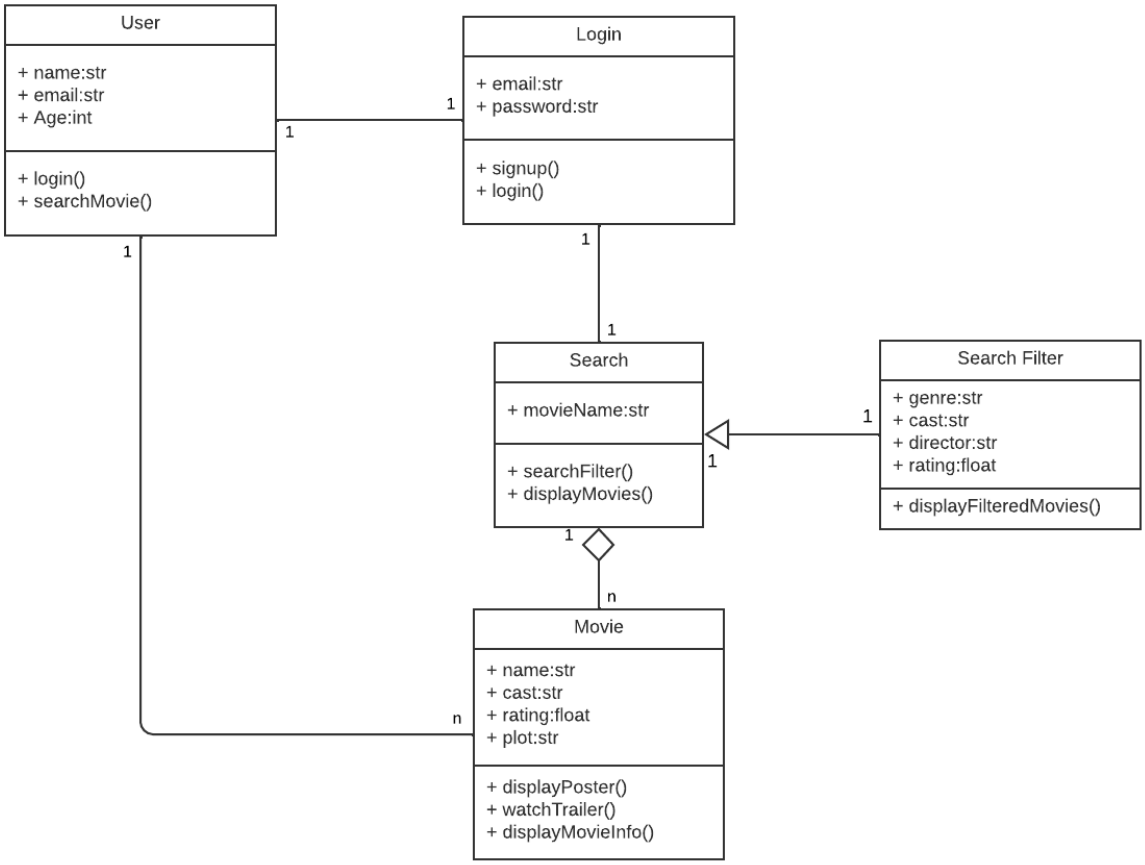
Class Diagrams

1) Login/Signup Portal:

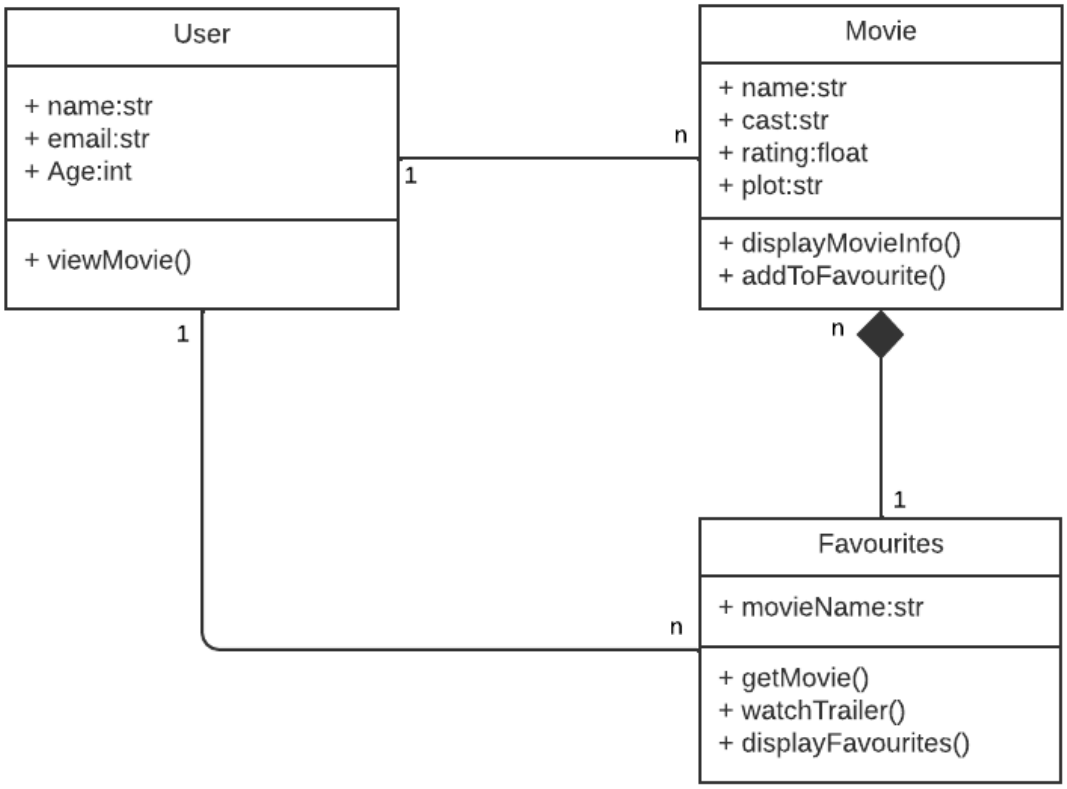


2) Search Movie:

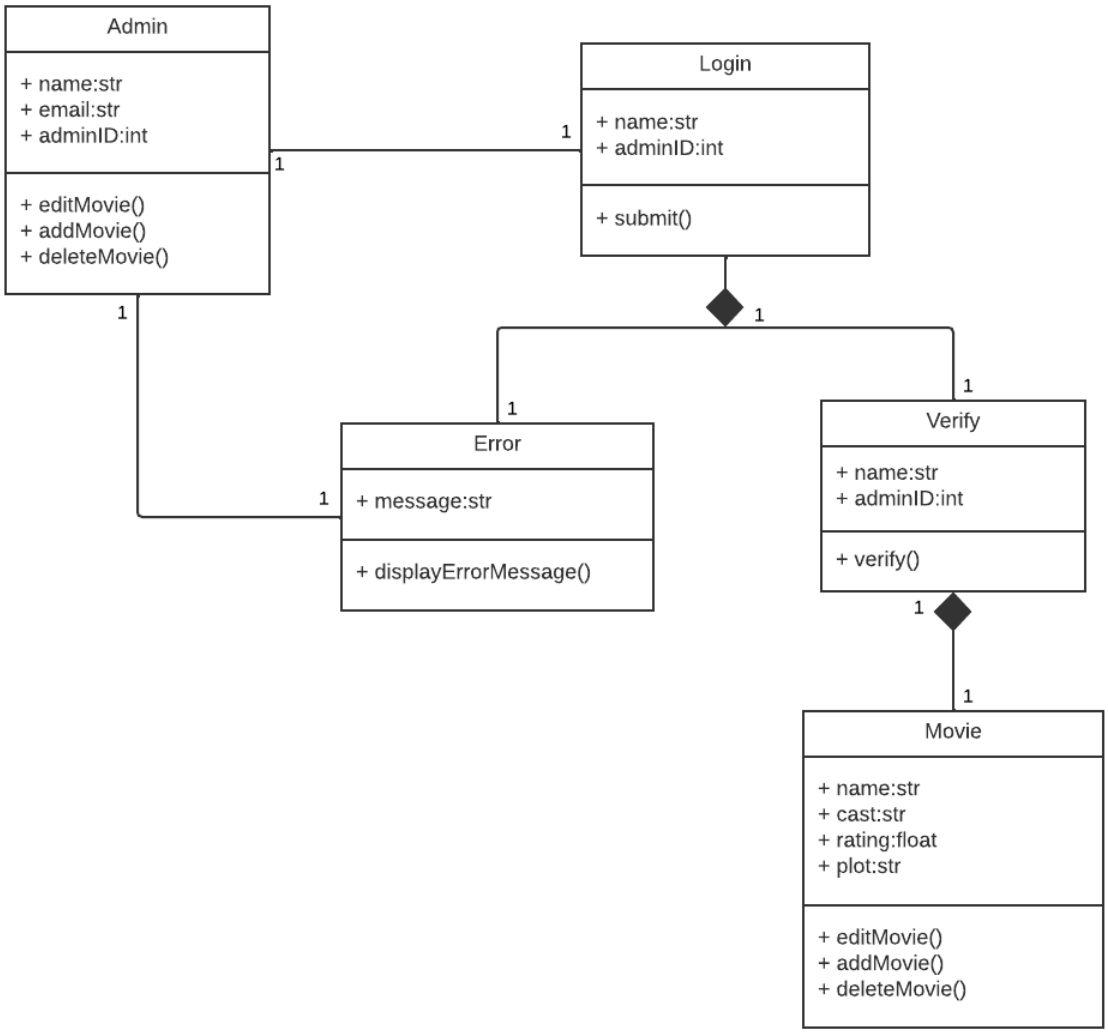
3) Display Movie Info:



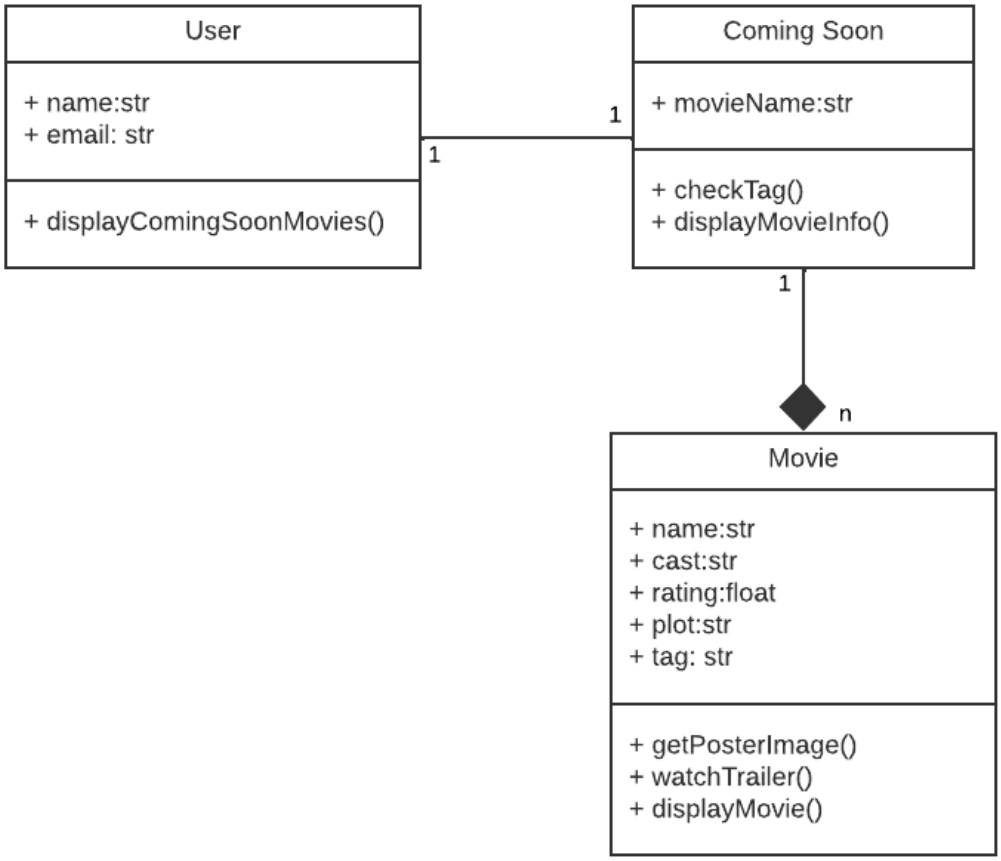
4) Save Movie to Favorites:



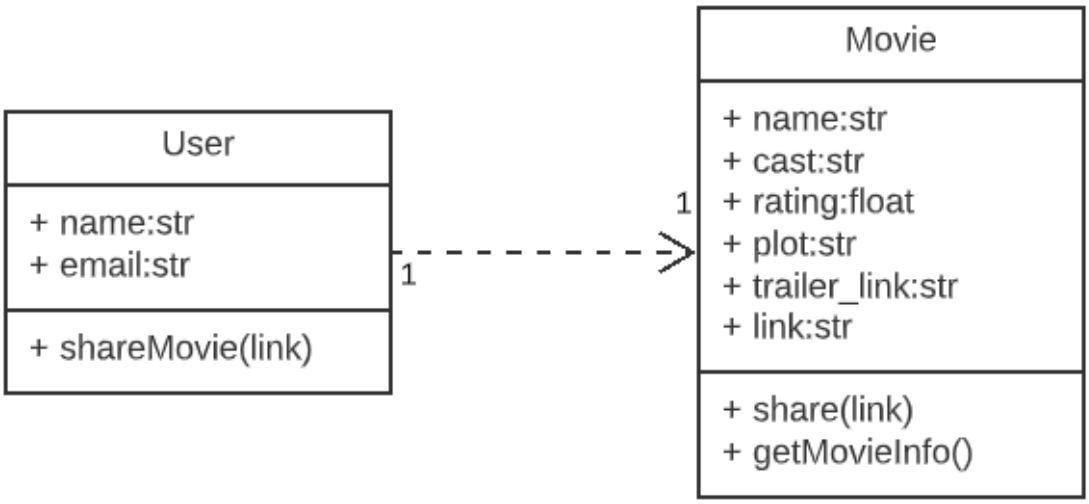
5) Movies database handled by Admin:



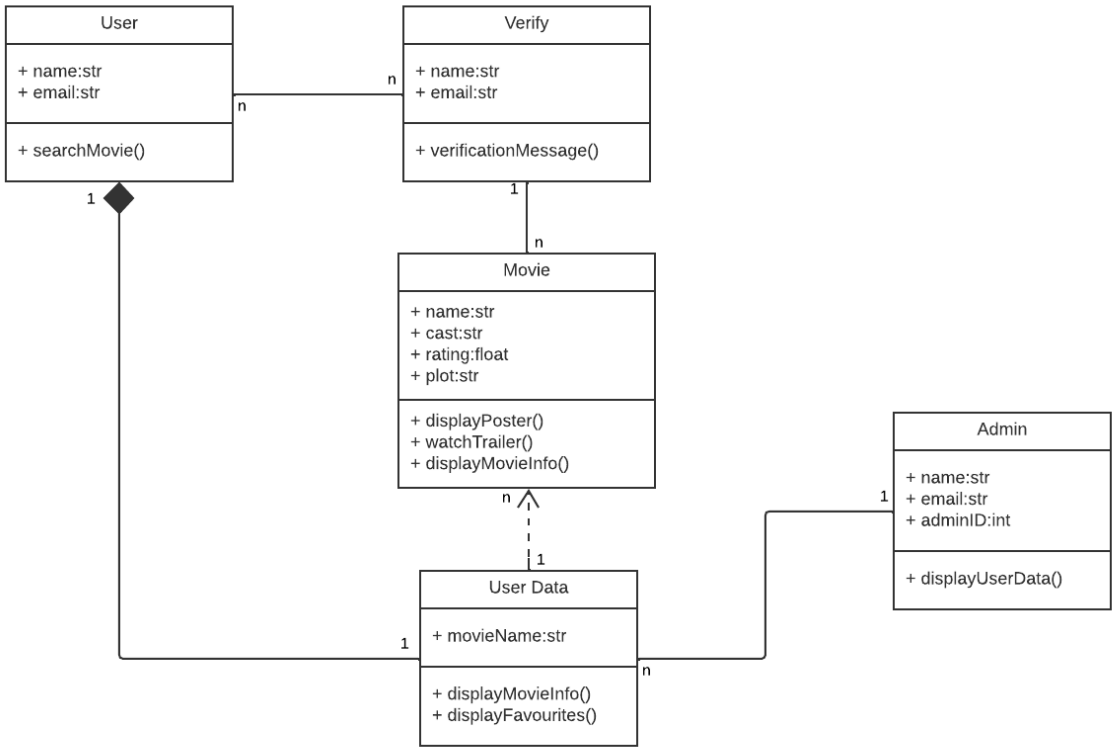
6) View Coming Soon Movies:



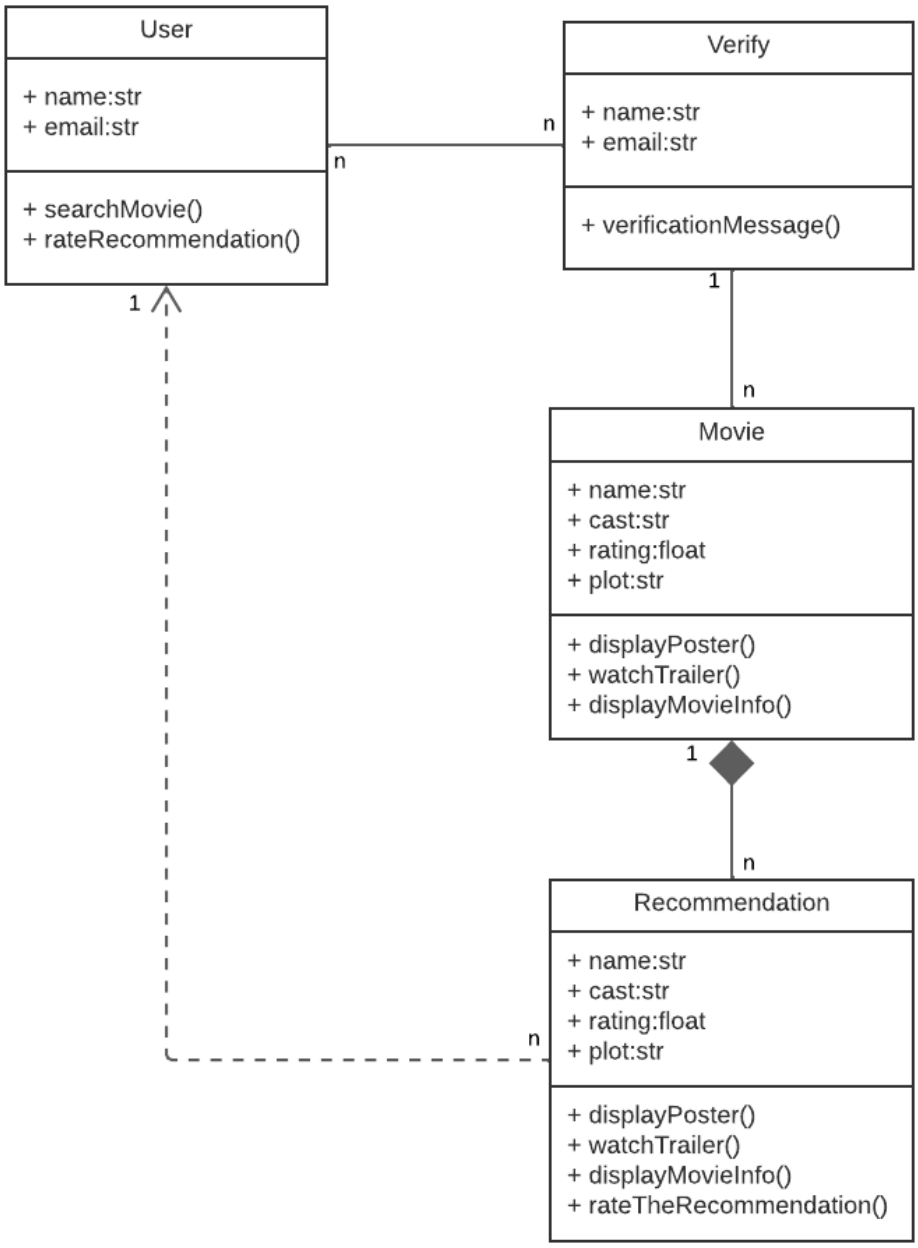
7) Share Movie:



8) User's data handled by Admin:



9) Rate the recommendation made by the system:



Future work

The future work with respect to our film proposal motor is as per the following:

- Coordinate it in a web application.
- Incorporate a streaming module that permits clients to watch the film
- Coordinate a portable application rendition of the motor.
- Add usefulness to interface with different clients on the application and offer proposals/watch motion pictures together.

Conclusion

Despite the fact that we have a great deal of film suggestion motors/web-based features accessible as of now, for example, Netflix, the objective of this application is to be wide open. The client is shown various motion pictures as for the class of the film which the client is looking for. The survey module came about to show the username and their relating audit on a specific film. The film list shows every one of the fitting insights regarding each film encased in the rundown. Thus, as per the class, the motion pictures are arranged from most elevated to least evaluating, the proposal is given to the client. The framework outline itself is an imaginative way to deal with film perusing and finding including effective suggestion highlights. The framework will be totally executed utilizing open-source instruments and modules.