

SECJ1023 Programming Technique II

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Group Project Deliverable 1 Project Proposal

MOVIE RECOMMENDATION SYSTEM

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Table of Contents

The system idea/ concept :

- Synopsis and general idea
- System objectives and/or purpose
- How to use the system
- Reporting



Synopsis & General Idea

A movie recommendation system is a type of information filtering system which attempts to predict the preferences of a user. By analysing users behaviour such as ratings, movie recommendation system aims to offer personalized recommendations that align with individual tastes and interests. It employs algorithms to match users with films that they are likely to enjoy in order to enhancing their overall viewing experience.

Furthermore, this system is able to collect information about users' choices and can use this information to improve their suggestions in the future. For example, it may track which movies users watch, how they rate them, and which recommendations they follow. These are allowing the system to give more suggestions accurately to each user. Sometimes, the recommendation systems can make improvements based on the activities of a large number of people too. For example, if the system observes a large number of customers who watch the latest movie, they can recommend the movie to a new user who has just download the movie recommendation system.

Three main approaches are used for our recommender systems which is demographic filtering, content-based filtering and collaborative filtering. For demographic filtering, they offer generalized recommendations to every user based on movie popularity and genre. The basic concept is movies that are more popular will have a higher probability of being liked by the average audience. Next, content-based filtering involves profiling users' interests using information collected and recommend items based on that profile. The other is collaborative filtering aim to group similar users together and use information about the group to make recommendations to the user.



System objectives and/or purpose

1.

Tailoring movie suggestions based on the preferences and actions of our user.
The recommendation system can increase user satisfaction and retention by suggesting relevant and interesting movies based on an analysis of users' viewing history, ratings, and interactions with the system.

2.

Helping users in finding hidden gems and underrated movies that they would not have encountered.
The recommendation system can highlight independent or niche movies, broadening viewers perspective and encouraging a wider selection of films

3.

Gathering insightful information on the preferences, habits, and patterns of movie-watching among users.
Analyzing user data can make a better decision making and company growth, which can also be used to guide marketing efforts, platform enhancement, and content acquisition plans

Array of objects

- It can be used to store the collection of primitive data types such as int, string, double, char and other particular type.
- For instance, Movie genre [15]. This means this is an array of objects having a maximum limit of 15 genre.

Encapsulation

- This system will consist 8 classes which are username, password, genre, recommendation, rating, review, language and history.
- For those attributes, they will be put under private part in order to apply data hiding function.

Association

- Composition refers to the relationship between users and movie. It means that each user interacts with multiple movies and each movie is interacted with multiple users. For example, combining genre information, director details and user ratings can provide a richer understanding of a movie's characteristics and its appeal to users. Thus, it will generate basis understanding and recommendations.
- Aggregation is a special type of association which is one way relationship. It can also make a summary of attributes to derive meaningful insights that drive recommendation generation. For instance, consider aggregating user ratings for a movie.



Inheritance and polymorphism

- Inheritance provides a way to create a new class from an existing class
- eg : a movie can be a thriller or romantic
- The base class is movie, thriller and romantic are the derived class.

- Polymorphism refers to the ability of objects to perform the same actions differently
- For instance, polymorphism can be applied for recommendation based on different criteria

Exception handling

- Indicate that something unexpected has occurred or been detected. This allow the program to deal with the problem in a controlled manner.

- For example, if user tries to search for a non-existent movie, or an error occurred while fetching movie data, appropriate exceptions should be raised and handled to prevent the system from crashing



How to Use The System

User Registration

The user can establish an account using an email address and password in order to keep their information and data accessible from any device. A variety of data, such as preferences, settings, and any other relevant information on the app, can be stored once they have an account. This allows the user to have a personalized experience while using the app.

Preference Selection

Users can choose their movie preferences, such as genres, year of release, actors, and directors, based on their interests. Users have the right to customize their movie preferences in order to enhance their overall app experience and make the app more personalized based on individual taste.

Personalized Recommendation

Collect feedback and reviews from the users within the app, where they can rate the recommended movies on a scale of 5. This enables the system to create better future recommendations and also improves the user's app experience.

Movie Matchmaker

The system will provide a personalized movie recommendation based on the user's preferences. Users are allowed to browse and select the recommended movies that they are interested in. This browsing and selection process gives users the opportunity to explore recommended movies at their own pace. It also improves their movie-watching experience by offering personalized suggestions that match their tastes.

Feedback

A feature within the system that is designed to adapt to users' moods on any given day. This feature will suggest films based on their current feelings at the moment. Additionally, this feature also offers a random option, which is perfect for users who struggle with decision-making.

Reporting



- A list of personalized movies for users based on their preferences and past data. Relevant details such as title, genre, year of release, synopsis, director, and cast will be included.
- In order to refine and improve the future movie recommendation, the user will be asked to rate the recommended movie on a scale of 5.
- The system will also display additional information, such as trending movies and upcoming releases.



**Thank you
very much!**