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Content Based Movie Recommendation System

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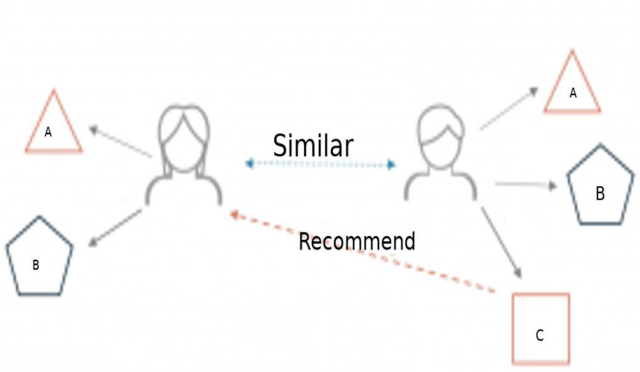
Abstract: ***Recommender System is a tool which helps users find the required content and overcome information overload. It predicts interests of users by using Machine Learning algorithms and makes recommendation according to the interest of users. The primary content-based recommender system is the continuation and development of collaborative filtering, which does not need the user's appraisal for items. Instead, the similarity is calculated based on the data of items that are selected by users, and then make the recommendation appropriately. With the augmentation of machine learning, the current content-based recommender system can build profile for users and products respectively. Building or renewing the profile according to the perusal of items that are bought or seen by users. The system can differentiate the user and the profile of items and then recommend the most resembling products. So, this recommender method that compel user and product directly can't be brought into collaborative filtering model. The groundwork of content-based algorithm is acquisition and quantitative analysis of the content. The research of acquisition and filtering of text information are fully fledged, many current modified content-based recommender systems make recommendations according to the analysis of text data. This paper introduces content-based recommendation system for the movie websites. There are a lot of factors extracted from the movie, they are diverse and unique, which is also different from other recommender systems. We use these aspects to construct movie model and calculate similarity. We introduce a new outlook for setting weight of features, which improvises the representation of movie recommendations. Finally, we evaluate the approach to illustrate the improvement.***

Keywords: Recommendation system, content-based filtering, collaborative filtering, similarity, movie

I. INTRODUCTION

Everyone loves movies regardless of age, gender, race, skin color or geographic location. We are all connected in some way through this amazing medium. But what's most interesting is how unique our choices and combinations are when it comes to movie tastes. Some people like movies of a certain genre, such as thrillers, romances, sci-fi, while others focus on starring and directing. All patterns of behavior, not just from the audience, but from the film itself. The recommender system is a simple algorithm whose goal is to provide users with the most relevant information by discovering patterns in a data set. Algorithms rank the items and show users the items they rate highly. An example of a recommendation in action is when you go to Amazon and see that some products are recommended for you, or Netflix recommends a particular movie for you. It's also used by music streaming apps like Spotify and Deezer to recommend music you listen and movies to your liking as well.



Two users buy the same product A and B in an e-commerce store. When this happens, a similarity index is calculated for these two users of hers. Depending on the score, the system can recommend item C to other users. These two users of hers are perceived as similar in terms of the items they are purchasing.

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II. OBJECTIVE

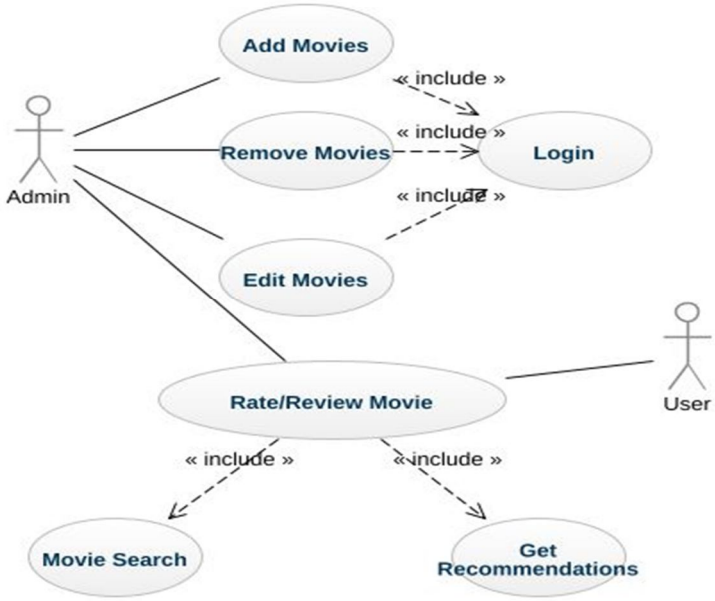
The purpose of content-based filtering is to categorize products by specific keywords, know customer preferences search databases for those terms, and recommend similar ones

III. LITERATURE REVIEW

After research was done to recommend items from fixed databases, two major recommendation techniques emerged: content-based and collaborative. Content-based recommendation recommends articles that are similar to the user, while collaborative recommendation identifies users with similar tastes and recommends articles they like. Later, with the development of recommender systems, hybrid methods were invented, combining two or more methods. Before the invention of recommendation systems, you had to read reviews and choose the movie that best suited your interests or choose a movie at random based on other criteria. The rapid increase in the number of movies available online made this difficult.

IV. METHODOLOGY

A. User Case Diagram



B. Work Flow Diagram

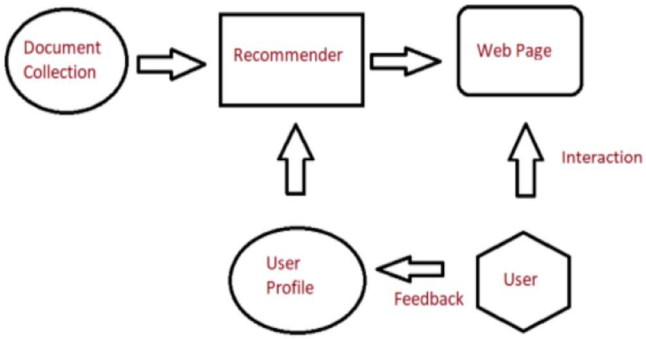
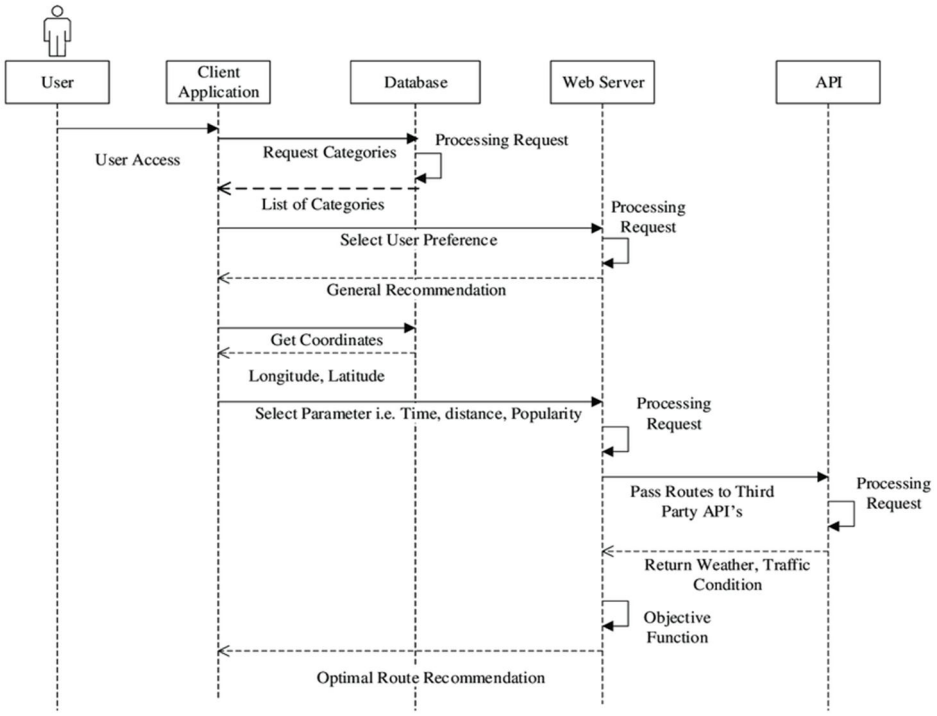
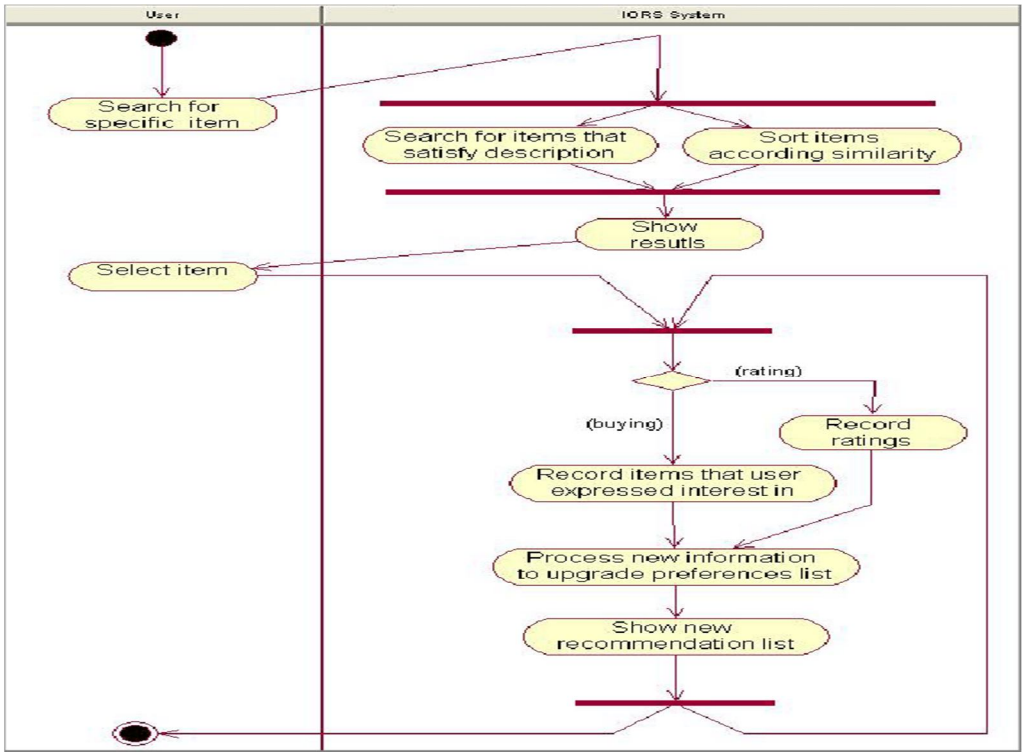


Fig: Recommender System

C. Flow chart



D. Activity diagram



V. WORKING AND ITS PRINCIPLE

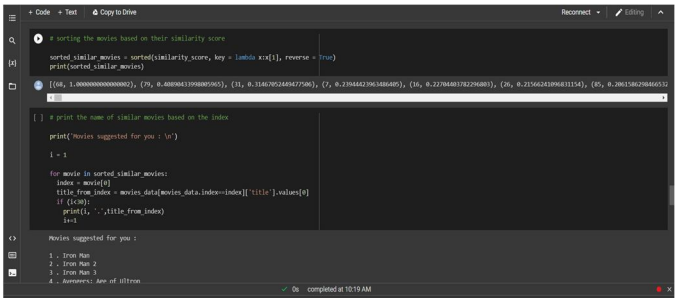
Content-based filtering is a type of recommendation system that tries to guess what a user might like based on their activity. Content-based filtering uses keywords and attributes associated with objects in your database (such as items in an online marketplace) and matches them to user profiles to make recommendations.

User profiles are built on data derived from user actions such as: Purchases, ratings (likes and dislikes), downloads, items searched on the website and/or items placed in shopping carts, and clicks on product links. Let's say you have just purchased a smartphone from your website and want to recommend accessories to users who have previously purchased smartphone accessories. In addition to keywords such as smartphone make, brand, and model, user profiles indicate that previous purchases included previous purchases included phone owners with credit card cases. Based on this information, the recommendation system can suggest similar phone mounts for new phones with attributes such as an RFID blocking fabric layer to help prevent fraudulent credit card scans. In this example, the user would expect similar cell phone recommenda - tions, but the RFID blocking feature could be an unexpected but welcome feature nonethless .

A. Code and execution

1) Import the dependencies
2) Data collection and pre-processing(loading the data from csv file to pandas dataframe).
3) Selecting the relevent features for recommendation.
4) Replacing the null values with null string.
5) Combining all the selected features.
6) Converting the text data to featurr vectors.
7) Getting the similarity scores using cosine similarity.
8) Getting the movie name from the user.
9) Creating a list with all the movie names given in the dataset.
10) Finding the close match for the movie name given by the user.
11) Finding the index of the movie with title.
12) Getting a list of similar movies based on index value.
13) Sorting the movies based on their similarity scare. Print the name of similar movies(30) based on the index.

VI. RESULTS



VII. CONCLUSION

Recommendation systems can be very powerful tools in an enterprise's arsenal, and future developments will add even more business value. Some applications include the ability to predict seasonal purchases based on recommendations, identify key purchases, and provide customers with better recommendations that can increase retention and brand loyalty. increase. Most businesses will be able to use recommendation systems, so I encourage you to learn more about this fascinating area. The importance of recommendation systems is increasing due to information overload. Especially in content-based recommendation systems, we are trying to find new ways to improve the accuracy of movie representation.

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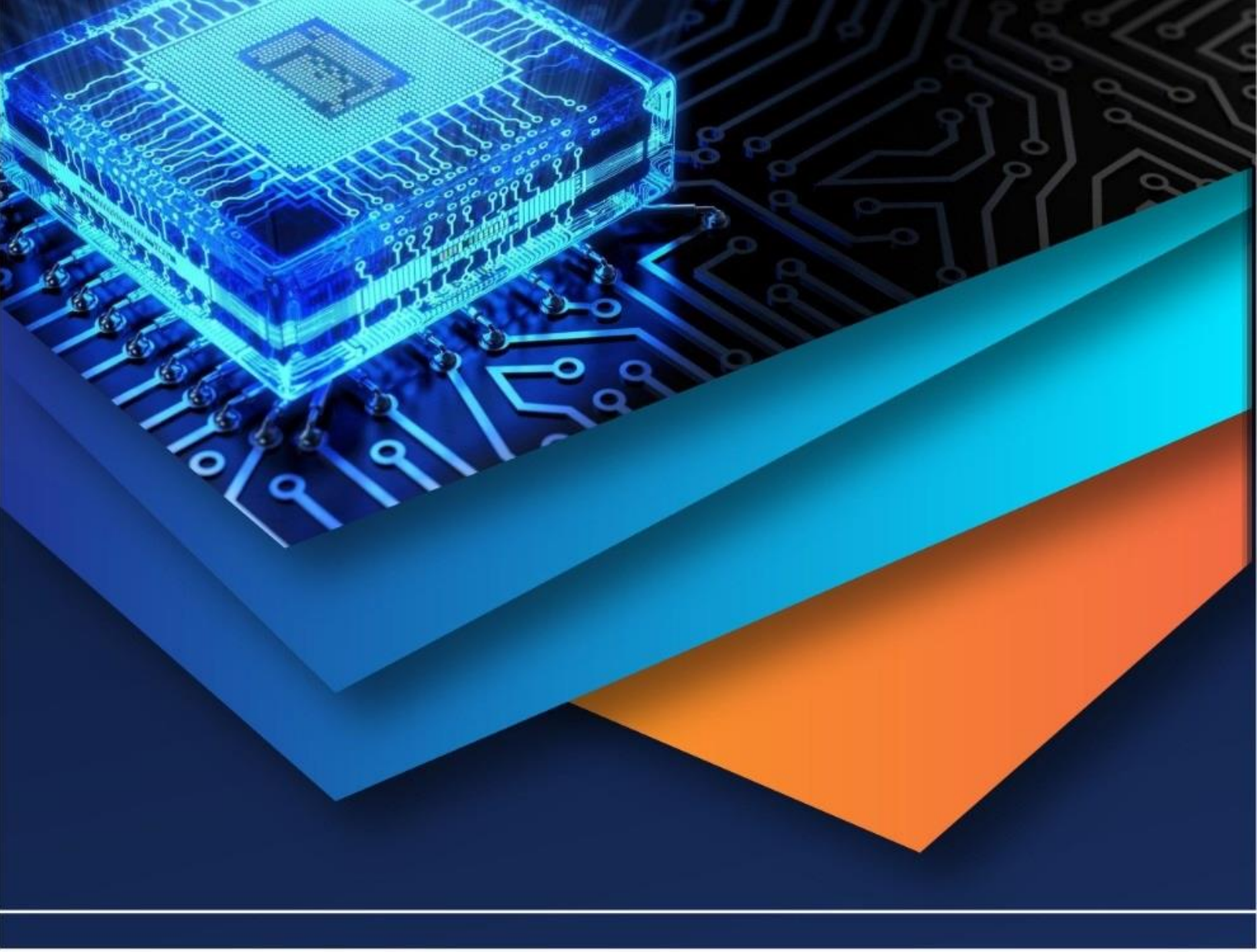

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