DATA STRUCTURES PROJECT PROPOSAL

**TITLE:** Movie recommendation system

**GROUP MEMBERS:   
Member 1:** Nashit Budhwani (20K-0274)

**Member 2:** Amin Farjad (20K-0344)

**Member 3:** Muhammad Shayan (20K-0494)

**Background Information:**

A recommendation system is a type of information filtering system which attempts to predict the preferences of a user, and make suggests based on these preferences. There are a wide variety of applications for recommendation systems. These have become increasingly popular over the last few years and are now utilized in most online platforms that we use. The content of such platforms varies from movies, music, books and video, to friends and stories on social media platforms, to products on e-commerce websites, to people on professional and dating websites, to search results returned on Google. Often, these systems are able to collect information about a user’s choices, and can use this information to improve their suggestions in the future. For example, Facebook can monitor your interaction with various stories on your feed in order to learn what types of stories appeal to you. Sometimes, the recommender systems can make improvements based on the activities of a large number of people. For example, if Amazon observes that a large number of customers who buy the latest Apple MacBook also buy a USB-C-to USB Adapter, they can recommend the Adapter to a new user who has just added a MacBook to his cart. Due to the advances in recommender systems, users constantly expect good recommendations. They have a low threshold for services that are not able to make appropriate suggestions. If a music streaming app is not able to predict and play music that the user likes, then the user will simply stop using it. This has led to a high emphasis by tech companies on improving their recommendation systems. However, the problem is more complex than it seems. Every user has different preferences and likes. In addition, even the taste of a single user can vary depending on a large number of factors, such as mood, season, or type of activity the user is doing. For example, the type of music one would like to hear while exercising differs greatly from the type of music he’d listen to when cooking dinner. The main approaches are widely used for recommender systems is content-based filtering, where we try to profile the user’s interests using information collected, and recommend items based on that profile. The other is collaborative filtering, where we try to group similar users together and use information about the group to make recommendations to the user .

#### ****Scope****

* **Work on several numbers of data:**

The number of choices for anything on internet is very high and it’s tedious to refine most wanted data by self while searching. The scope of this proposal system includes working within numerous data, with ease.

* **Saving of time:**

Many people have problem selecting the alternative item of movie due to lack of time and due to search issues. Also movie recommendations from friends can be time consuming. The system helps in saving lots of time.

**Proposed System**

Algorithm we have used for recommendation system are

* **Content based algorithm**

Content based system recommend items similar to that user has liked or purposed in the past. If any items are liked, similar items will be recommended. It is based on properties of each items to measure the similarity. The point of content based is that we have to know the content of both the user and items. Recommendations are based on the content of items rather than other user’s opinion.

* **Collaborative filtering**

Collaborative filtering method finds a subset of user who have similar test and preferences to the target user and use this subset for offering recommendations. In this method user with similar interest have common preferences. If a person A likes items 1, 2, 3 and B likes 2, 3, 4 then they have similar interest and A should like item 4 and B should like item 1. It is entirely based on the past behavior and not on the present context. It is not dependent on any additional information. It is used by ‘Amazon’.

**Functional Requirements**

* The system should to allow users to view the highest rated movies by fellow users.
* The system should maintain a log of the current movie and recommend the user.
* The administrator should be responsible for updating movies list, users cluster and recommend movies to the user.
* Log management: The administrator should be able to manage and view logs.
* Data base management: The dataset of the movies is required to give the sensible recommendation.

**Reference of dataset :**