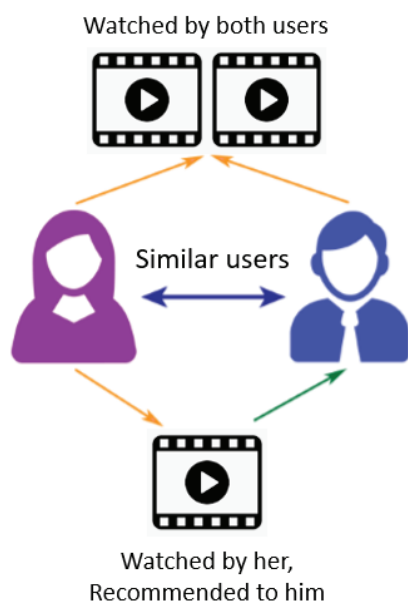# Problem 3: Movielens Movie Recommendation System (Bonus)
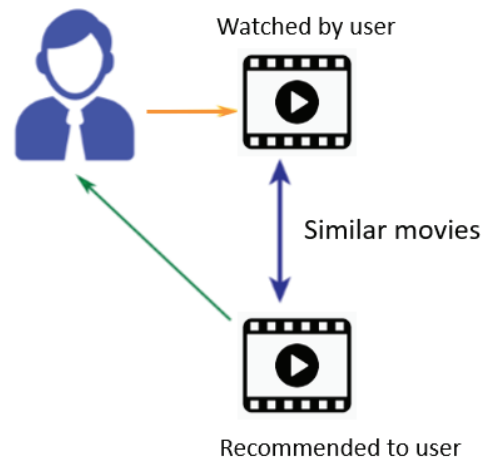
Idea:

- **We will build a recommender system that recommend movies to user based on history of watched movies and based on a current movie**
- **We will use two methods which are :**

  1. **Collaborative Filtering**
  2. **Content Based**

Collaborative Filtering

Watched by both users

Similar users

Watched by her, Recommended to him

Content-Based Filtering

Watched by user

Similar movies

Recommended to user

1)Collaborative filtering is a technique that can filter out items that a user might like on the basis of reactions by similar users. It works by searching a large group of people and finding a smaller set of users with tastes similar to a particular user. It looks at the items they like and combines them to create a ranked list of suggestions

2) Content-based filtering system:

Content-Based recommender system tries to guess the features or behavior of a user given the item's features, he/she reacts positively to.

Steps of formation:

1-Loading data:

We will load the data of movies, ratings and users

2- we will make Pivot Table with respect to ratings given by users to movies.

3- Machine Learning Model training for Recommending movies based on users ratings:

We will use the K- NearestNeighbors algorithm in this question for both methods collaborative and content.

4-we will try both collaborative filtering and content based for recommendation based on movie and for recommendation based on history every time after adding 5 movies

Resources:

- https://developers.google.com/machine-learning/recommendation/collaborative/basics
- https://developers.google.com/machine-learning/recommendation/content-based/basics
- https://www.geeksforgeeks.org/recommendation-system-in-python/

Note: The reason of choosing this data is because it is more simple than collegescorecard data also Movielens is an amazing and popular site that helps you find movies you will like.