

# MOVIE RECOMMENDATION SYSTEM

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DSWP -> Batch-5

# What Are Recommendation Systems?

- Recommender systems are the systems that are designed to recommend things to the user based on many different factors.
- These systems predict the most likely product that the users are most likely to purchase and are of interest to.
- Companies like [Netflix](#), Amazon, etc. use recommender systems to help their users to identify the correct product or movies for them.

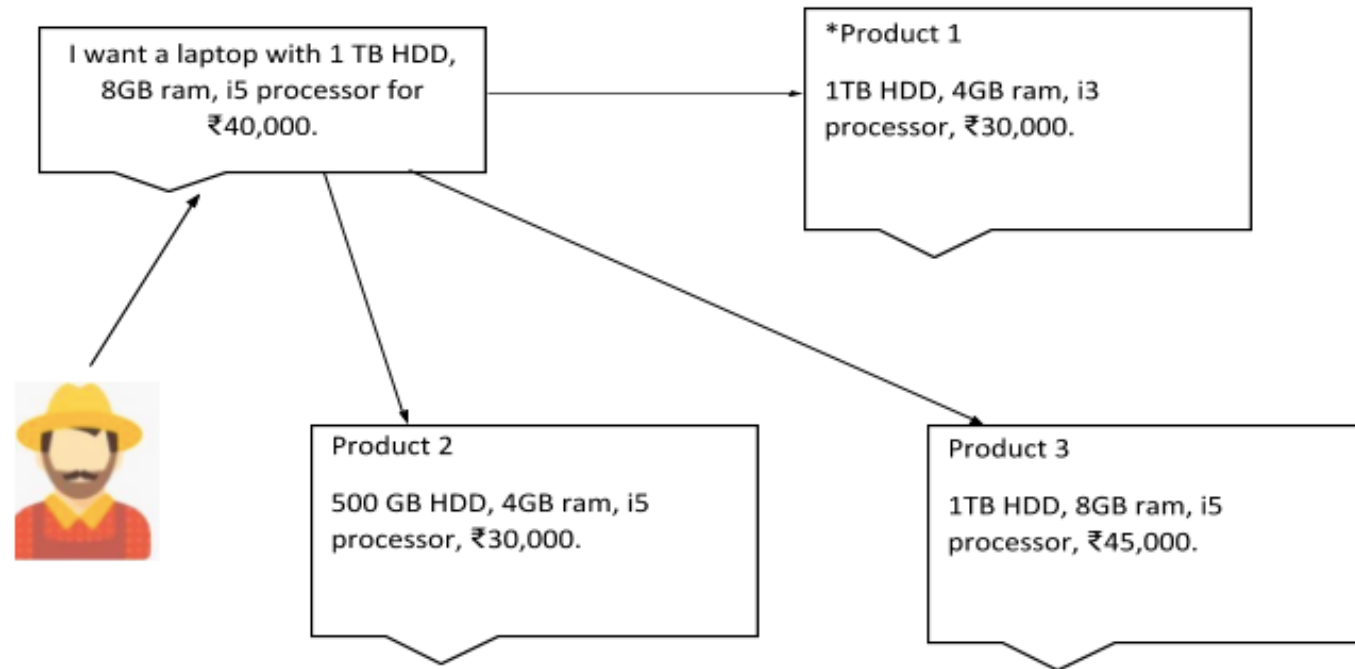
# Why Recommendation system?

- Benefits users in finding items of their interest.
- Help item providers in delivering their items to the right user.
- Identity products that are most relevant to users.
- Personalized content.
- Help websites to improve user engagement.

# What can be Recommended?

- There are many different things that can be recommended by the system like movies, books, news, articles, jobs, advertisements, etc.
- Netflix uses a recommender system to recommend movies & web-series to its users.
- Similarly, YouTube recommends different videos.
- There are many examples of recommender systems that are widely used today.

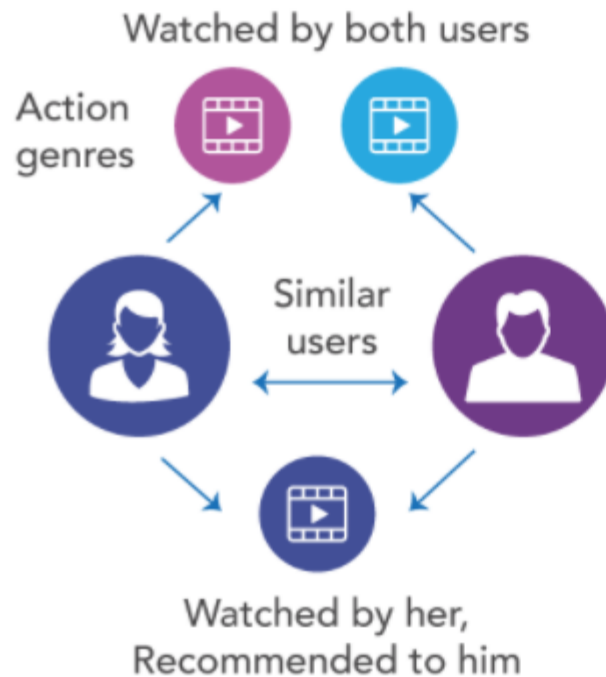
# Example:



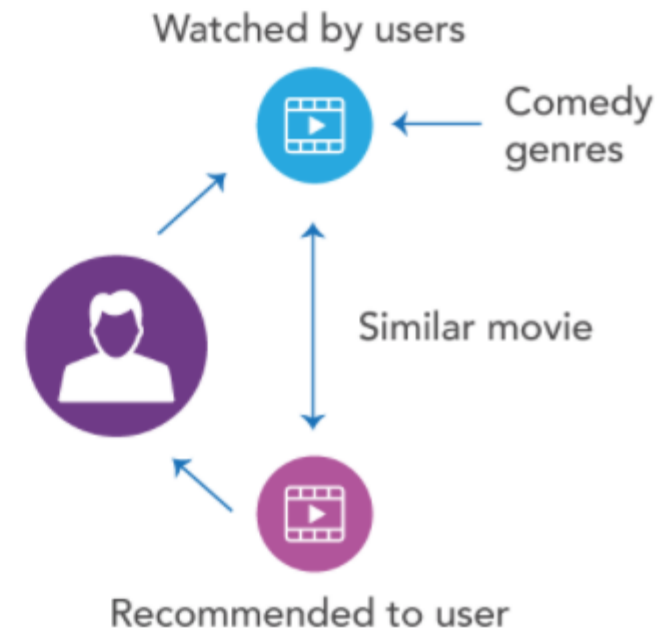
# Types of Movie Recommendation Systems

## Data Science Project-Movie Recommendation

### Collaborative Filtering

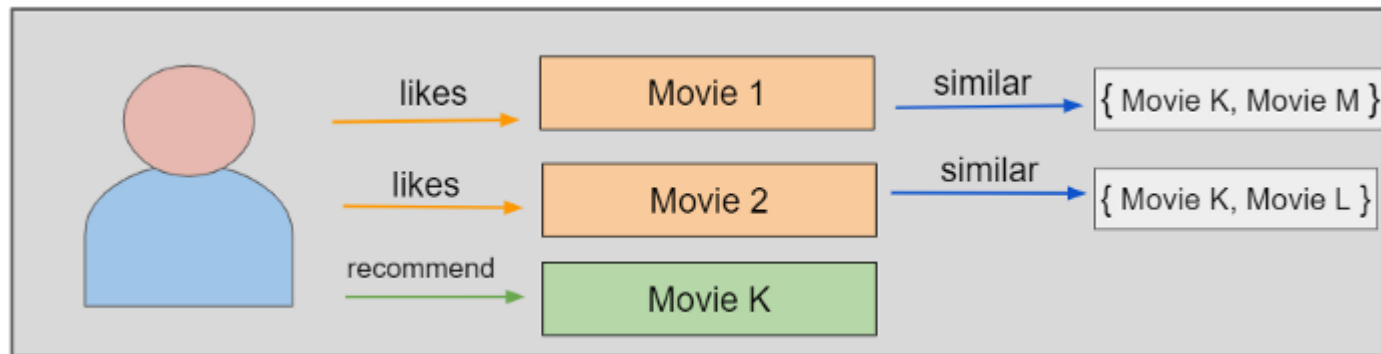


### Content-based Filtering



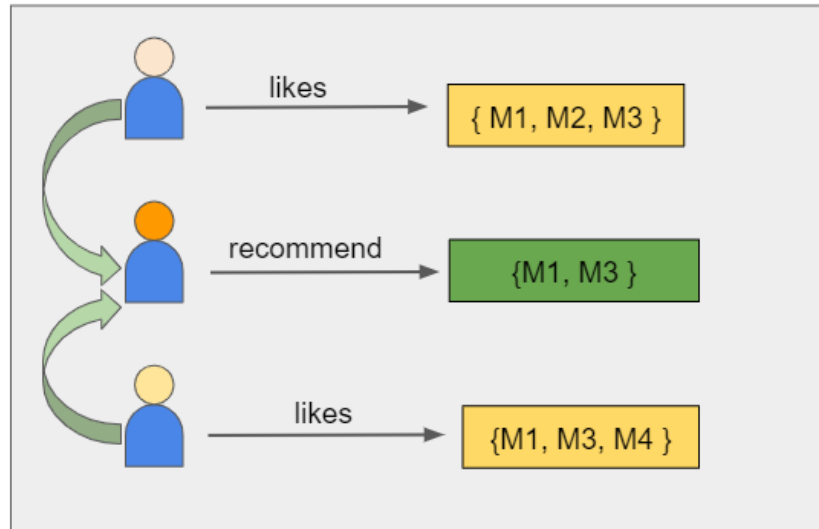
## A) Content-Based Movie Recommendation Systems

- Content-based methods are based on the similarity of movie attributes. Using this type of recommender system, if a user watches one movie, similar movies are recommended. For example, if a user watches a comedy movie starring Adam Sandler, the system will recommend them movies in the same genre or starring the same actor, or both. With this in mind, the input for building a content-based recommender system is movie attributes.



## B) Collaborative Filtering Movie Recommendation Systems

- With collaborative filtering, the system is based on past interactions between users and movies. With this in mind, the input for a collaborative filtering system is made up of past data of user interactions with the movies they watch.
- For example, if user A watches M1, M2, and M3, and user B watches M1, M3, M4, we recommend M1 and M3 to a similar user C. You can see how this looks in the figure below for clearer reference.





# Limitations of a recommendation system

- **The cold-start problem:** Collaborative filtering systems are based on the action of available data from similar users. If you are building a brand new recommendation system, you would have no user data to start with. You can use content-based filtering first and then move on to the collaborative filtering approach.
- **Scalability:** As the number of users grow, the algorithms suffer scalability issues. If you have 10 million customers and 100,000 movies, you would have to create a sparse matrix with one trillion elements.
- **The lack of right data:** Input data may not always be accurate because humans are not perfect at providing ratings. User behavior is more important than ratings. Item-based recommendations provide a better answer in this case.

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**THANK  
YOU**

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