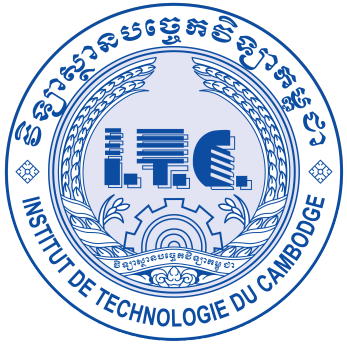

Book Recommendation System

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January 25, 2024

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Introduction

Navigating the vast world of books can be overwhelming, with countless options making it challenging to find the perfect read. This project tackles this issue by creating a smart book recommendation system.

Types of Recommendation System

- **Popularity Based recommendation system** : is a system that recommends based on the popularity of certain things, for example: famous authors, famous books, etc.
- **Collaborative Filtering Based recommendation system** : When user A and user B read the same book, then user A read another book, then that book will be recommended to user B.

Types of Collaborating Filtering System

- **Model-based CF** : uses machine learning algorithms to predict users rating of unrated items. There are many model-based CF algorithms, the most commonly used are matrix factorization models such as to applying a SVD to reconstruct the rating matrix.
- **Memory-based CF** : use user rating historical data to compute the similarity between users or items. The idea behind these methods is to define a similarity measure between users or items, and find the most similar to recommend unseen items.

Two Types of Memory Based

- **User-Based:** makes recommendations based on the users preferences that are similar to other users. For example, if a user gives a similar rating to movies as the user in question. We could assume that they have similar interests. Thus, if the other user has seen and liked a movie that the user hasn't seen, we would recommend it.

- **Item-based:** suggests items similar to other items the active user liked. For example, if a user liked a Lord of the Rings book, then we would recommend another Lord of the Rings book.

Conclusions

- We used Two types of Recommendation : Popularity Based and Collaborative Filtering.
- In CF, we used KNN algorithm for Memory Based that will recommend books based on the similary of users ratings.
- We also used SVD technique for Model Based to predict the rating of a certain book from a certain user with $RMSE = 1.6485$

References

- RadhikaRM from Github
- DSwithBappy from Youtube
- imdb