Digbook – Book Recommendation System

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Abstract:
Books are knowledge fountains that also help the heart discover a way to use that knowledge wisely. You haven't found the proper book if you don't enjoy reading. With the amount of information available today, picking the right book is one of the most difficult challenges in gaining a thorough understanding of an idea.As a result, recommendation systems assist in navigating quickly and receiving important information.This study proposes a quick and user-friendly book recommendation system to assist readers in finding appropriate books. Based on the popularity filtering method, we applied data preprocessing and a collaborative filtering method. Finally, results based on online data are discussed.
Key Word*: Recommendation system,Popularity filtering,Collaborative filtering*

I. Introduction

In today's world, we have access to more information than ever before, thanks to the internet and other technological advancements. Finding the precise information you're looking for can be challenging given the abundance of information available[1]. Recommendation systems aim to solve this kind of problem. With their help, one can quickly access relevant information without searching the web manually[2].As such many websites today benefit from recommendation systems.

In this paper we propose using recommendation systems for recommending books. We developed a system, which provide popular books and recommend similar books to users according to their input.A book recommendation system can take the input of the user into account and recommend similar books by filtering user ratings.

The following contributions will be presented in this paper.

1.A review of related works
2.Deployment of the proposed system.
3.The results are presented using a recommendation system.

II. Literature Survey

By examining existing book recommendation algorithms, we conducted a detailed literature review.Some book recommendation web services are :

BookBub : Based on the genres you choose when signing up, BookBub will send personalized recommendations of ebooks that can be purchased for a reasonable rate.

WhichBook : On Whichbook, book recommendations are calculated by one out of two categories: 1. Mood, or 2. Character, setting, and plot. There is also the option to select your desired character characteristics, the story setting, and/or plot points that you'd like included in the recommendation.

Readow : Readow starts by asking you some simple questions about recent reads and uses AI technology to pair you with the next great book.

ReadGeek : In order to get ahold of book suggestions, simply rate a few books that you've read on a 1–10 scale. After you finish rating as many as you'd like, Readgeek calculates which books you'd most likely enjoy based on your previous ratings.

Gnooks : Simple AI-driven recommendation site is Gnooks. Pop in your three favorite writers and you'll get a recommended author to try. It doesn't end there, though: you can rate whether or not you like the author suggested for even more recommendations.

In this study, we present a book recommendation web system that gives users with recommendations of related books based on information provided about their favourite book. This system's advantage is its speed and simplicity. Most existing services require a profile history and other information that takes time to provide consumers with recommendations, whereas our goal was to provide recommendations for users quickly.

III. Proposed System

The proposed method is to develop a web application that allows users to obtain the top 50 books based on ratings and recommend similar books depending on user input. The user gives the title of their favorite book. To train the classification model, a data set is collected to which data science techniques and data pre-processing techniques are applied for the sake of extraction.

Implementation Technologies
Data Preprocessing :
Data Preprocessing is a data mining technique used to turn the raw data into a format that is both practical and effective.

Popularity based Filtering:
As the name indicates Popularity based filtering works with the current trend. It basically uses the items which are in swing at present. This is the most basic filtering technique which provides generalized recommendation to every user depending on the popularity. Whatever is more popular among the general public that is more likely to be recommended to new customers.

Collaborative Filtering:
Collaborative filtering (CF) is a technique used by recommender systems. It is the process of filtering for information or patterns using techniques involving collaboration among multiple agents, viewpoints, data sources, etc. Applications of collaborative filtering typically involve very large data.
In our paper,we used cosine similarity measure to calculate the similarity.It can be applied to items available on a dataset to compute similarity to one another via keywords or other metrics.

$$cos(\theta) = \frac{A.B}{||A||.||B||} = \frac{(\sum_{i=1}^{n} Ai.Bi)}{\sqrt[2]{\sum_{i=1}^{n}(Ai)^2} \sqrt[2]{\sum_{i=1}^{n}(Bi)^2}}$$

The CS score of two vectors increases as the angle between them decreases.

Implementation Methodology
A huge dataset where the data is pre-processed and finally the model is trained. Users can view the popular books in home page. In recommend section, the user gives their favorite book as the input into the application, which evaluates and recommends the similar books according to his/her input. The final output is then sent to the user.
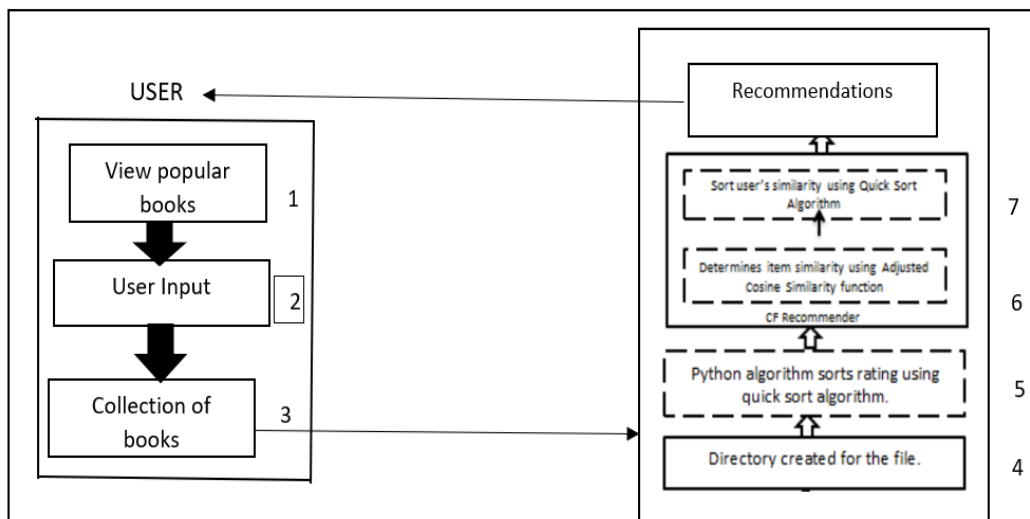

Fig. 1 – Architecture of the proposed system

The sequence of the application is as follows:
1. The initial step in our project includes collection of dataset and applying some techniques to perform pre-processing of the data.
2. Now the model is ready to view the popular books and accept input from the user.
3. In the developed Web interface, the user enters to home page and view popular books.
4. In the recommend section, the input is passed to the trained model.

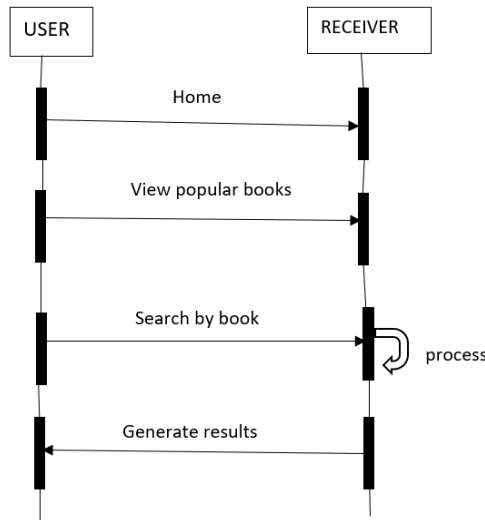5. The model evaluates the inputs based on user input. This result is sent to the user as final output.

Fig. 2 Sequence Diagram

IV. Discussion

When a user visits the homepage, it initially displays the top 50 books based on ratings and then give a book of preferred/favorite choice in the recommended books section.
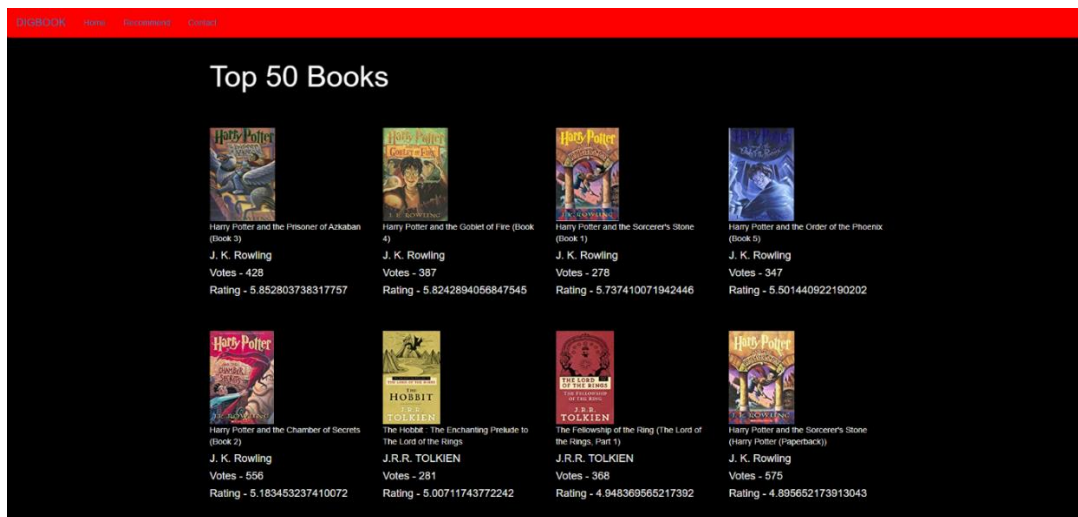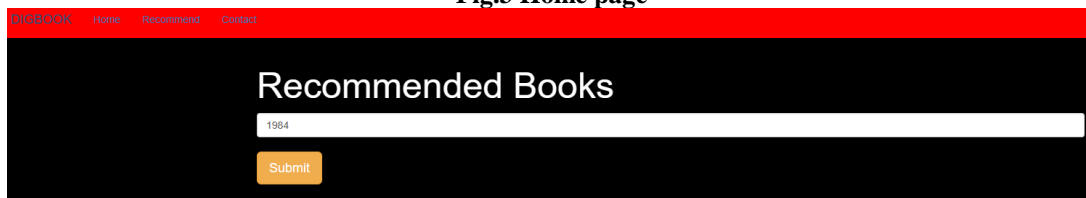

Fig.3 Home page

Fig.4 Recommend page

Based on the inputs given by the user,the recommendation system gives us the insights of similar books.
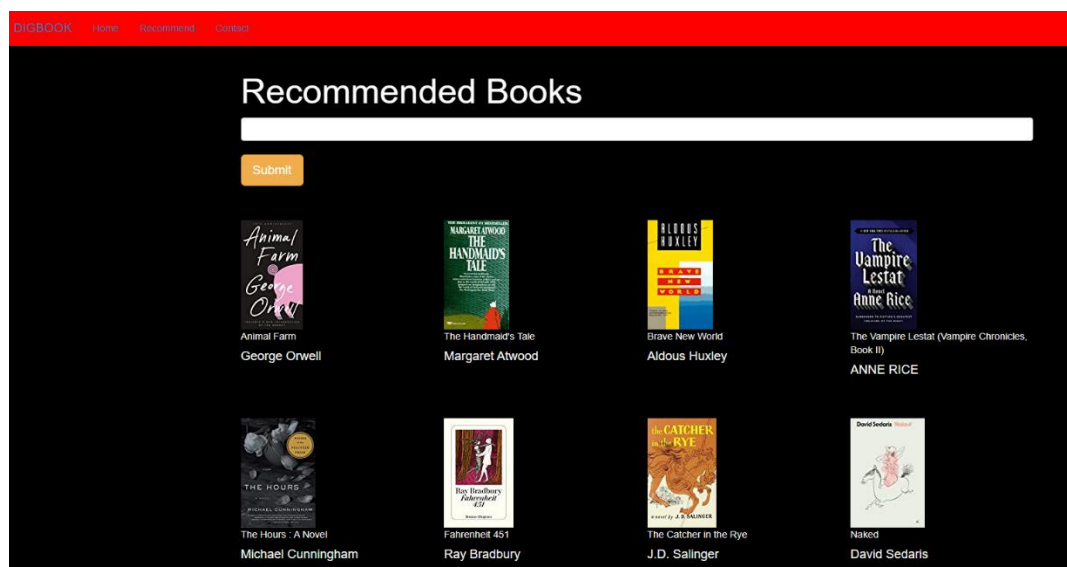
Fig.5 Recommended Books

V. Conclusion

In this study, we describe a collaborative filtering-based recommendation system. In this study, we describe a collaborative filtering-based recommendation system. The primary objective was to design a system that can deliver quick recommendations to users without requiring them to be registered and have a profile information.The results of this study imply that the suggested strategy provides insightful recommendations.

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