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BOOK RECOMMENDATION SYSTEM USING MACHINE LEARNING

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Abstract: Users will use book recommendation systems to look and choose books from variety of choices out there on the net or in different electronic data sources. they provide the user with a tiny low selection of products that square measure well appropriate to the outline, given a large cluster of things and an outline of the user's wants. Our system can merely offer recommendations. Recommendations can be generated supported the user's previous activity, like shopping for habits, reviews, and likes. In this system, we have a tendency to square measure a major issue: once a user buys a book, we would like to advocate different books that the user would enjoy. shoppers even have too several selections once it involves recommending the simplest and most relevant books for them. up user privacy whereas imposing the smaller and smaller loss of accuracy on recommendations. The projected recommender system can offer its user's the power to look at and search books and mistreatment Support Vector Machine (SVM), it'll list the extremely purchased and prime rated books supported the topic name given because the input.

Index Terms - **Recommendation System; Support Vector Machine; Machine Learning.**

I. INTRODUCTION

In easy words, a recommendation system is any system that mechanically suggests content for web site readers and users. These systems evolve an intelligent algorithm, which generates recommendations to users. Machine learning has been improvising the recommendation systems, additionally it brings a lot of prospects to boost performance of recommendation system. Recommendation systems square have wide custom-made that uses collaborative filtering and content-based filtering severally. Library book recommendation system is the web application which is used to manage the library's repository. It is helpful in preserving databases for the book purchases which are available in the library. This system tracks several categories like books, journals, magazines, etc[3].

- **OBJECTIVE**

The library book recommendations uses the library management system where the admin adds the books and several categories of the book. Here the admin can handle the user sent books borrowing request and also returns the request. Admin can view the users, feedbacks, and the chat history of the user. In this, User can post feedbacks, send request to borrow and return books.

II. RELATED WORK

Sr. No.	Title of Paper and Year	Methodology	Findings
1.	Library Intelligent Book Recommendation System Using Facial Expression Recognitions-2020IEEE[1]	Convolution Neural Network Model.	[1]Obtain face image data through real-time cameras for analysis to determine user preferences. The books are recommended on user preference in recommendation system.
2.	Book Recommendation Website with Chatbot - 2020IEEE[2]	Chatbot, named wannaRead, was developed by using Engati to created this chatbot[2].	[2]1) Testing search functions including a book list, a character list and a book category. 2) Keeping users' search log that they asked the chatbot about books but they did not know the book title they wanted. 3) Top ten search words that users asked the most in the experiment.
3.	Cloud Based Collaborative Filtering Algorithm For Library Book Recommendation System - 2020IEEE[3]	Collaborative Filtering Methodology.	[3]Library Management System is a web application that manages a library's repository. This helps preserve databases of whole book purchases available in the library.
4.	DIGITAL LIBRARY USING HYBRID BOOK RECOMMENDATION ENGINE – 2019IEEE[4]	Hybrid Recommendation Engine.	[4]This web application will give recommendations to the user based on its past searches. It gives suggestions based on the user searches that are done by users and the rating given to books. Users has permission to download the book, admin accepts the request.
5.	Enhancing the Performance of Library Book Recommendation System by Employing the Probabilistic-Keyboard Model on a Collaborative Filtering Algorithm – 2019IEEE[5]	Collaborative Filtering method.	[5] This system is reliable and is mainly developed for colleges and schools where the users can borrow and return the books.

Table-1. Summary of related work

The proposed study in this paper is used for library book recommendation system which uses facial expression recognition technology which is used to recommend books to users. Facial expressions are one of the most important features to reflect the human emotional state because they convey useful information to the observer[6].

The goal of the purposed Technical study presented goal is to remind and recommend best selling novels to those people because the reading is important. The benefit of reading is as follows: cognitive mental stimulation also brain exercising, vocabulary and knowledge expansion, lower levels of stress and tension relief, helps with depression and the dysthymia, memory improvement and better focus, strengthens your writing abilities, and so on [7].

To carry out the library's everyday work in a productive manner. A library is a website where the admin develops a system to store and retrieve books can from the database. The cloud-based library book recommendation system uses collaborative filtering algorithm to add books on category based and give recommendation of top-rated(5-star rating) books to the users from the admin[3].

The digital Library Management System with use of Hybrid recommendation is designed software for the collection of the material and the digital content, storing, available for the users, simplifying users search with recommendation[4].

III. PROPOSED SYSTEM

In the proposed system, an online application is developed for the library book recommendation. During this system, all books within the library are given ratings. The library users WHO borrow the books post their ratings (5-star ratings) and also the top-rated books will be presented the users during this system. This is an automated system which is able to facilitate the library user to settle on the best version of the book of his/ her space of interest at intervals a few seconds reckoning on the ratings given thereto book. The user will select the book, borrow the book and even get the book delivered to his/ her address by simply sitting before of a computer. this technique uses a cooperative filtering algorithmic rule which filters the books supported the ratings and recommendations to the users. this system takes the user ratings and also the user feedback into thought to advocate books to the users. though this technique gathers the user's identification and authorization before shipping the book to the user address.

This system is accurate, reliable and dynamic. The advantages of this system are it is time and cost-efficient and also reduces manual work. Below figure 1 shows the architecture of the overall system, which will be implemented to achieve the objective of the library to satisfy our goals.

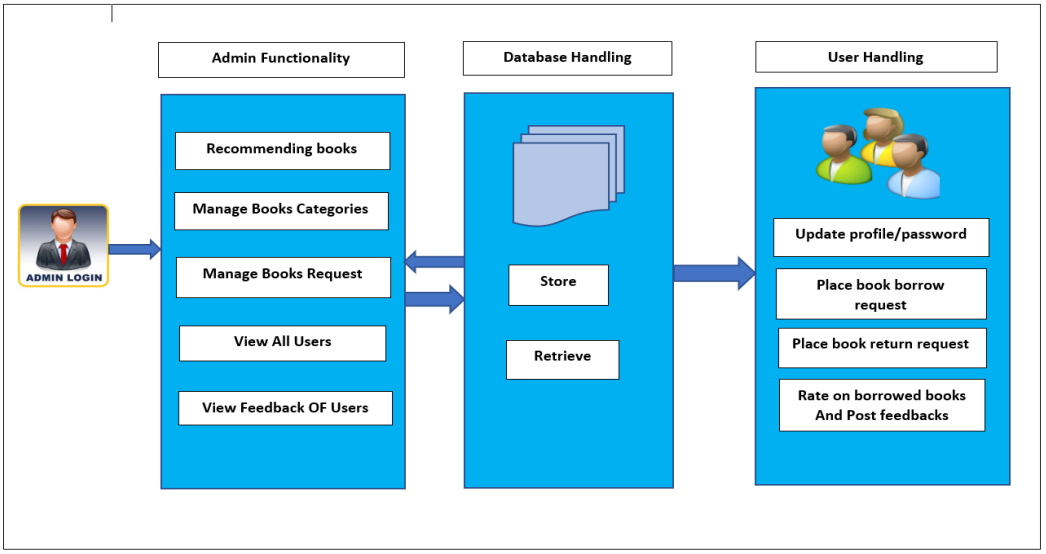

Figure -1: System Architecture

4.1 User Module:

User Plays a crucial role wherever the user needs to check if he/or she is the not the member of the library then after their registration the user will check in with the e-mail id and wod that's autogenerated within the user email id. After categories,read recommendation that's the top-rated books will be placed initial. The books borrowed by the user is been tracked down exploitation Collaborative filtering algorithm program technique.The user World Health Organization borrowed the books will solely give the ratings on the books and therefore the user feedback. At the time of confusion that book bought to be hand-picked the user will even get suggestions or have a live chat with alternative on-line users.

The below figure three shows the opertions or the flow of the user that may perform within the system from the signup to the sign-out method.

4.2 Collaborative filtering algorithm:

The Collaborative filtering algorithm is the technique which is used to filter the items that users may like on the basis of the users reactions by similarity users. In this algorithm, the users looks at the items they may like and combines the items to create a ranked list of suggestions[8]. In Collaborative Filtering algorithm, it finds similar users and recommends what the similarity users like. In recommendation system, it don't use the features of the items to recommend, rather we classify the users into the clusters of similar types, and recommend each user according to the preference of its cluster[9].

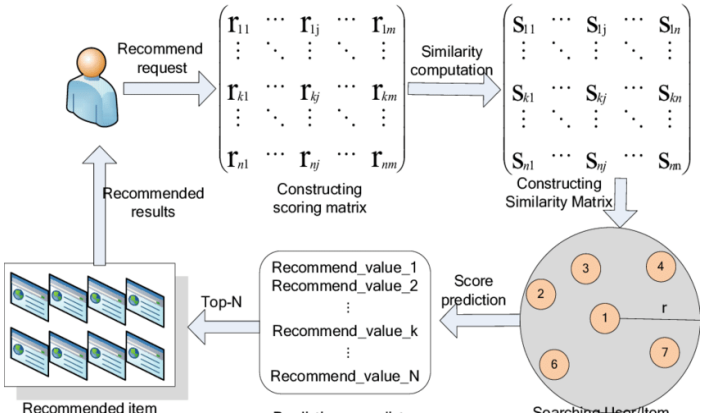

Fig.2. Collaborative Filtering Algorithm[10]

IV. CONCLUSION

The overall process of recommending books to the user of all age group category make use of collaborative filtering methodology where different users give ratings on the same book and the average number of rating is been calculated and the top-rated book is been recommended to the user. The system mainly focuses on the easy finding of best books which does not need much time or work. The process of this system is accurate, reliable and cost-free. The income of this system is penalty fee collection when the book is not returned within the due time. The cloud-based library book recommendation system can be used from mobile and pc as its user friendly, authentic and also time and cost-efficient[3].

REFERENCES

[1]Yizhu Zhao ,Jun ZengSchool of Big Data and Software Engineering Chongqing University Chongqing, China," Library Intelligent Book Recommendation System Using Facial Expression Recognition".2020IEEE

[2]Jaturawit Chaiwong, Nattapon Prajugjit, Kingkarn Sookhanaphibarn BU-Multimedia Intelligent Technology Laboratory,School of Information Technology and Innovation Bangkok University, Thailand," Book Recommendation Website with Chatbot".2020IEEE

[3]Anoop A Department of Computer Science, N Ayush Ubale Department of Computer Science Amrita School Of Arts And Science, Mysore Amrita Vishwa Vidyapeetham Mysore, India," Cloud Based Collaborative Filtering Algorithm ForLibrary Book Recommendation System"2020IEEE.

[4]A.B. BAGWAN,PRIYARANJAN SINGH, 3MOUMI SARKAR, SONALI SATPUTE, 5 SOPHIA SHIRSATH," DIGITAL LIBRARY USING HYBRID BOOK RECOMMENDATION ENGINE".

[5]Noor Ifada,Irvan Syachrudin,Mochammad Kaustar Sophan,Sri Wahyuni,"Enchancing the Performance of Library Book Recommendation System by Employing the Probabilistic-Keyboard Model on a Collaborative Filtering Algorithm.

[6]K. M. Goh, C. H. Ng, L. L. Lim, and U. U. Sheikh, "Micro-expression recognition: an updated review of current trends, challenges and solutions," vol. 36, no. 3, pp. 445-468, 2018.

[7]C. M. Ross, "Summer reading lists: The importance of reading," BAOJ Neurol, vol. 3, p. 040, 2017.

[8] https://realpython.com/build-recommendation-engine-collaborative-filtering/

[9]https://www.geeksforgeeks.org/collaborative-filtering-ml/

[10] https://www.researchgate.net/figure/General-recommendation-process-of-collaborative-filtering-algorithm_fig1_332293983

[11] Manojit Nandi developed " Recommender Systems through Collaborative Filtering"(July(2017)

[12] Priyadharshini.Et.alelucidated "Analysis and performance of collaborative filtering and Classification Algorithms", International Journal of applied engineering research, vol.10, pp.24529-24520,2015.

[13] K. M. Goh, C. H. Ng, L. L. Lim, and U. U. Sheikh, "Micro-expression recognition: an updated review of current trends, challenges and solutions," vol. 36, no. 3, pp. 445-468, 2018.

[14] The best free Chatbot Platform, 2018 (accessed December 31, 2019).[Online]. Available: https://www.engati.com

[15] R. Bell, Y. Koren, C.Volinsky, "Modeling relationships at multiple scales to improve accuracy of large recommender systems" KDD '07: Proceedings of the 13th ACM SIGKDD international conference on Knowledge discovery and data mining, New York, NY, USA, 2007, ACM pp. 95-104

[16] Yang yan and Li Jianzhong, 2005. Interest-based recommendation in digital library. J. Comp.Sci., 1: pp 40- 46 Tingting Zhu, Lili Zhang," Application of Data Mining in the Analysis of Needsof University Library Users", The 6th International Conference on Computer Science & Education (ICCSE 2011),pp.391-394, August 3-5, 2011.

[17] Poonam Ghuli, Atanu Ghosh, Dr. Rajashree Shettar," A Collaborative Filtering Recommendation Engine in a Distributed Environment", 2014 International Conference on Contemporary Computing and Informatics (IC3I), pp. 568-574, 2014.

[18] Chen C, Zhang L, Qiao H, Wang S, Liu Y, Qiu X. Book recommendation based on book-loan logs. In The 2012 International Conference on Asian Digital Libraries; 2012; Taiwan, China. p. 269-78.

[19] Jomsri P. Book recommendation system for digital library based on user profiles by using association rule. In The 4th edition of the International Conference on the Innovative Computing Technology (INTECH 2014); 2014; Luton, UK. p. 130-134.

[20] Konstan JA, Riedl J. Recommender systems: From algorithms to user experience. User Modeling and User-Adapted Interaction. 2012; 22(1-2): p. 101-123.

[21] Sarwar B, Karypis G, Konstan J, Riedl J. Item-based collaborative filtering recommendation algorithms. In The 10th International Conference on World Wide Web; 2001; Hongkong. p. 285-295.

[22] Lops P, Gemmis M, Semeraro G. Content-based recommender systems: State of the art and trends. In Recommender systems handbook.:Springer; 2011. p. 73-105.

[23] Ekstrand MD, Riedl JT, Konstan JA. Collaborative filtering recommender systems. Human–Computer Interaction. 2010; 4(2): p. 81-173.

[24] Amrita.R. Et.al added "An analysis on the performance Evaluation of collaborative filtering algorithms using apache mahout", International Journal of applied engineering research, (IJAER), vol.10, pp.14797-14812,2015

[25] V. Kavinkumar Reddy.Et.al interpreted "A hybrid approach for recommendation system with added feedback component", International Conference on advances in computing, communication and informatics,pp.745-752,2015.