

## BOOK STORE MANAGEMENT

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**Abstract**— Online Book store is an online web application where the customer can purchase books online. Through a web browser the customers can search for a book by its title or author, later can add to the shopping cart and finally purchase the books. The Online Book Store (OBS) application enables vendor to setup online book store, customers to browse through the books, and a system administrator to approve and reject requests for new books. Online Book Store” is to provide an essence of online book store via a simple and yet powerful medium. The project has been designed to simulate the working of an actual online book store. which user can put details of books and user can search it, can be member of site, buy online books, and see other related books of same author or same category. User can view online book detail from anywhere through internet. This Online book selling websites helps to buy the books online with Recommendation system which is one of the stronger tools to increase profit and retaining buyer. The book recommendation system must recommend books that are of buyer’s interest. Recommendation systems are widely used to recommend products to the end users that are most appropriate. This system uses features of collaborative filtering to produce efficient and effective recommendations. Collaborative recommendation is probably the most familiar, most widely implemented and most mature of the technologies. Collaborative recommender systems aggregate ratings of objects, recognize commonalities between users on the basis of their ratings, and generate new recommendations.

**Index Terms**— book store, collbrative filtering, Recommendation System, Rating

### I Introduction

Most organizations have their recommendation system when they sell products online. But almost all the websites are not developed of the buyer interest; the organizations' force add-on sells to buyers by recommending unnecessary and irrelevant products. A personalized recommendation system (PRS) helps individual users find exciting and useful products from a massive collection of items. With the growth of the internet, consumers have lots of options on products from ecommerce sites. Finding the right products at the right time is a real challenge for consumers. A personalized recommendation system helps users find books, news, movies,

music, online courses, and research articles. echnological breakthrough in the fields like the internet of things (IoT), artificial intelligence (AI), quantum computing, etc. The economic boom improves the living standard of people and elevates the purchasing power of individuals. Nowadays, physical visits to shops and libraries have beendradastically reduced due to their busy schedules and COVID-19 pandemic. Instead, e-marketplaces and e-libraries became popular hotspots. E-book reading platforms and online purchasing tendencies made users discover their favorite books from many items. As a result, users tend to get swift and smart decisions from an unprecedented amount of choices using expert systems. Thus, recommendation systems came into the scene to

customize users' searching and deliver the best-optimized results from a multiplicity of options. A personalized recommendation system was initially proposed by Amazon, which contributed to raising Amazon's sales from \$9.9 billion to \$12.83 billion in 2019 (second fiscal quarter) that was 29% more than the previous year

The recommendation systems' algorithms were usually developed based on content-based filtering [2], associative rules, multi-model ensemble, and collaborative filtering. Multi-model ensemble algorithms can be used for personalized recommendation systems, but content-based filtering needs a massive amount of real-world data to train the predictive model. Apriori algorithm is used to find the association rules and degree of dependencies among rules. Multiple classifiers are typical for multi-model based RS. In that case, two different layers can be enforced. In the first layer, a few basic classifiers are trained, and in the second layer, the basic classifiers are combined by using ensemble methods like XGBoost or AdaBoost. A multi-model ensemble algorithm is also used in spatial pattern detection. It can calculate the spatial anomaly correlation with each other and can cluster the anomaly correlations. The clustering technique works as a filter to detect spatial noise patterns [3]. Collaborative filtering filters items based on the similar reactions. It searches a large group of people and can detect a smaller set of users who have a similar taste for collecting items. The similarity measure is a significant component of collaborative filtering. It can find the sets of users who show the behavior to select items [4].

## 2 Literature survey

Recommendation systems (RSs) or recommendation algorithms are immensely used by personal and corporate entities for searching news and information, pursuing online shopping, engaging in social dating, executing search optimization, etc. [5] [6]. Recommendation systems escalate user adhesion, elevate user experience, and accelerate the use of efficiency of the system. With the rising popularity of ebook reading tendency, and readers

increasing demands for finding desired book, book recommendation system plays a significant role [7] while choosing books. a comparison of machine learning-based book recommendation systems with limitations, descriptions, and used machine learning algorithms. Most of the researcher prefers collaborative filtering to the developed recommendation system. Collaborative filtering requires a vast amount of real-time user data that is not realistic for most recommendation systems. Besides, Table I shows that some researches have low accuracy, and some face overfitting due to small data size. In the paper, we proposed a cosinedistanced recommendation system that uses both user information and preferences

Collaborative filtering is a very common technique for book recommendation [18] [19] [20]. But the accuracy of this technique was 88% [21] or 89% [22], which is comparatively low. However, a content-based recommendation system needs an enormous amount of training data set, which is not feasible for real-world scenarios [2]. When Jaccard similarity was added with collaborative filtering, it achieved the highest recall. The major drawbacks of a collaborative recommender system are sparsity and cold-start issues. These issues can be removed using a kernel-based fuzzy technique that scored a 95% accuracy rate [23].

The content-based filtering method [2] [24] was used to recommend items based on the Similarity among articles. The major drawback of this method is that it ignores current users' ratings when suggesting new items. But user rating is relevant for recommending new books or journals. As the user rating information is missing in the documents, the content-based filtering has low accuracy in the current book or journal recommendation.

Most of the systems are powered with Artificial Intelligence that search items on popularity, correlation, and content of books [25]. Other popular techniques for RSs are listed as influence discrimination model [26], linear mix model [27], transfer meeting hybrid for unstructured text [28], pseudo relevance feedback [29], fixed effect model

[30], natural language processing with sentimental analysis [31], opinion leader mining [32], fuzzy c-mean clustering [33], knowledge graph convolution network, a personal rank algorithm using neural network [34], k-nearest neighbor, and frequent pattern tree [35]. Online search has an abnormal effect on the recommendation system. For example, clicking on high ranking books has no impact but clicking on low ranking books has a positive impact [30]. Data sparsity is another major problem for the traditional book recommendation system, which can be solved using a personal rank algorithm using a neural network [34]. Both k-nearest neighbor and frequent pattern tree are highly efficient for recommending scientific journals for academic journal readers [35]. Moreover, several context-aware rule-based techniques [36], and their recent pattern-based analysis [37] or classification-based techniques [38] [45] [46] or rule-based belief prediction [39] [40] [41] can be used to build the recommendation systems. In this paper, a clustering-based recommendation system was used to achieve the highest accuracy.

### 3 Implementation Study

Though internet provides a quick and easy way to purchase a product, some people prefer to use this technology only in a limited way. They regard internet as a means for gathering more information about a product before buying it in a shop. Some people also fear that they might get addicted to online shopping. This is that they are providing the books at cheapest price but this benefits is still awaited in rural areas, search something, I find it easier and faster when searching it in a real book. Well, the problem with setting up an online book store is that it is extremely difficult to differentiate your product, as books are generic and universal. The only way one can differentiate itself from existing. The traditional shopping exercise provides lot of fun in the form of show-room atmosphere, smart sales attendants, scent and sounds that cannot be experienced through a website. Indians generally enjoy shopping. Consumers look forward to it as an opportunity to go out and shop.

### 3.1 proposed methodology

The online bookstore has gained much popularity with consumers in recent years. Online bookstores offer a host of benefits, from customer convenience and access to a greater variety of books to significant cost savings. Here are some of the greatest advantages of shopping at an online bookstore. The average online bookstore offers the consumer huge savings over traditional brick and mortar stores. They are able to pass on these savings to you for a variety of reasons. Rental costs for online stores tend to be cheaper, as they operate out of warehouses rather than in prime retail space. Some stores also contract directly with suppliers, forwarding customer orders directly, which eliminates inventory costs as well. As with all Internet shopping, online bookstores offer great convenience to the consumer. Not only do they cut out travel time, but with the help of the store's search engine, finding exactly what you're looking for has never been easier. Another advantage is that you're not constrained by the store's hours; instead, you can shop 24/7, whenever you find the time. Physical bookstores are typically limited on what they're able to stock in terms of space and budget; on the contrary, an online bookstore is restricted by neither. Online bookstores tend to work with multiple suppliers, which allows them to offer a wider variety of books than a traditional retail store without accruing a large, costly inventory. With the rise of Internet shopping, it is much easier to access products from around the world, and books are no exception. The online bookstore makes it possible to get your hands on books

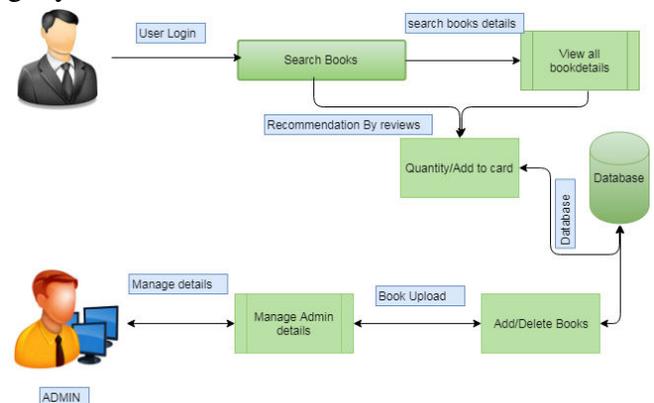


Fig 1: - flow of proposed system

### 3.2 Methodology

#### 3.2.1 COST SAVINGS

The average online bookstore offers the consumer huge savings over traditional brick and mortar stores. They are able to pass on these savings to you for a variety of reasons. Rental costs for online stores tend to be cheaper, as they operate out of warehouses rather than in prime retail space. Some stores also contract directly with suppliers, forwarding customer orders directly, which eliminates inventory costs as well.

#### 3.2.2 RECOMMENDATIONS AND CUSTOMER FEEDBACK

One of the greatest benefits of an online bookstore is the access these venues allow to reader recommendations and customer feedback. Many sites allow customers to rate their books and provide information as to why or why not they would recommend the product to fellow readers. This can give the book shopper wonderful insight as to whether or not a particular title right for them.

#### 3.2.3 MANAGING USER ACCOUNTS

Each user should have an account to access all the functionalities of website. User can login using login page and logout using the logout page. All the user sessions will be saved in the database.

#### 3.2.4 SEARCH

A search by keyword option is provided to the user using a textbox .The keyword to be entered should be the book title. If the user would like to know details about a book he can click on the title or the image from where he will be directed to a Book description page. It includes the notes of the book content.

## 4 Results and Evolution Metrics

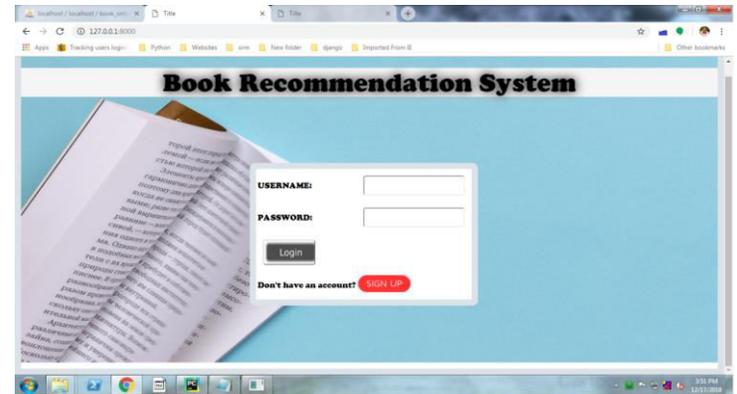


Fig 2: \_ home screen

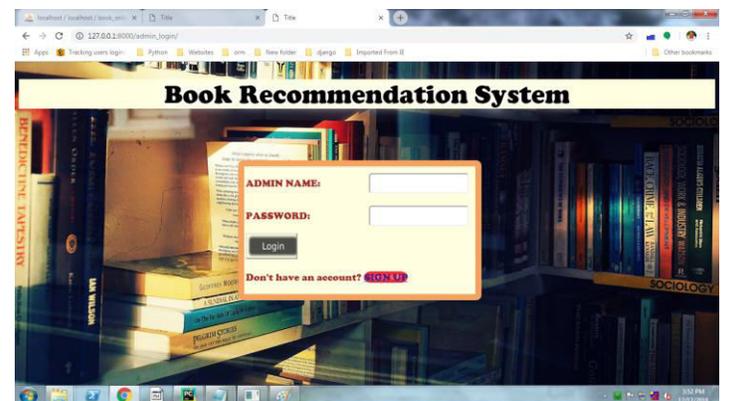


Fig 3: admin login page

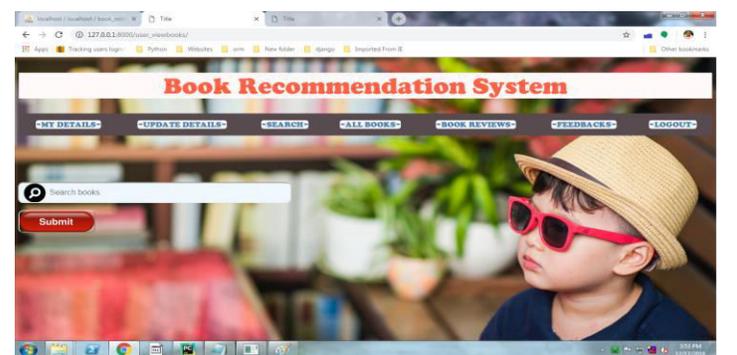
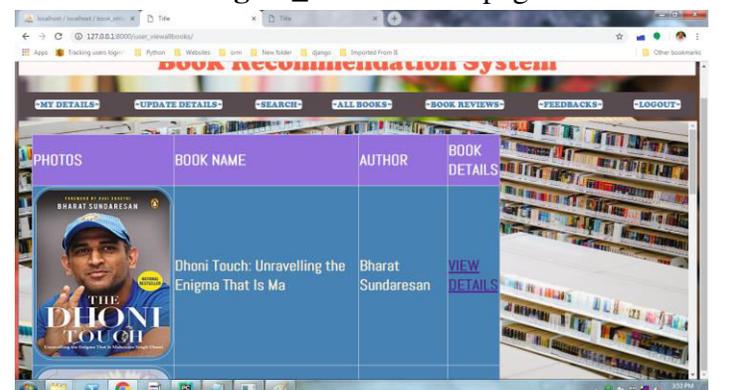


Fig 4: \_ admin home page



**Fig 5:** \_ book details**Fig 6:-** Recommended books using collaborative filtering

## 5 Conclusion

Online Book store is an online web application where the customer can purchase books online. Through a web browser the customers can search for a book by its title or author, later can add to the shopping cart and finally purchase the books.

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