

# OYE- Web based Product Recommendation & Shopping System

Aayush Jain<sup>1</sup>, Shweta Rajeev<sup>2</sup>, Mayank Katiyar<sup>3</sup>, Shreya Sreenivasan<sup>4</sup>,

Mr. Mohammed Zabeeulla<sup>5</sup>

<sup>1</sup>Dept. of Computer Science and Engineering, Jain(Deemed-to-be University), Bangalore, Karnataka, India

<sup>2</sup>Dept. of Computer Science and Engineering, Jain(Deemed-to-be University), Bangalore, Karnataka, India

<sup>3</sup>Dept. of Computer Science and Engineering, Jain(Deemed-to-be University), Bangalore, Karnataka, India

<sup>4</sup>Dept. of Computer Science and Engineering, Jain(Deemed-to-be University), Bangalore, Karnataka, India

<sup>5</sup>Assistant Professor, Dept. of Computer Science and Engineering, Jain(Deemed-to-be University), Bangalore, Karnataka, India

\*\*\*

**Abstract** - Our Project is based on real time Shopping System. We are a team of young and vibrant brains uniting to form an exemplary Online Shopping book store. OYE-Web Based Product Recommendation and Shopping System recommends the client the best nearest product they wish to buy. The plan is to make available books, to aspiring youths directly, from the authors around the world. No intermediaries, no extra expenses and so no exorbitant price-tags. We first wanted to eliminate that hurdle and make Buying from our shop a walk in the park. So our team therefore stepped into "your shoes" as customers, and researched what are your needs as online customers. We feature all the latest books with their reviews to make the life of the customer much easier before picking their next book.

**Keywords:** electronic-commerce, economy, Recommender System, Collaborative Filtering, employment, distributor, retailers, ecommerce, geolocation

## 1. INTRODUCTION

Nowadays, when we browse an e-commerce website and hope to purchase an item, we must be aware that personalized recommender systems have brought us convenience, which could easily propose a product that we have not noticed about but would be probably fond of. It models the interests of users by analyzing their history behaviors and endorses the information that meets the user's need and interest. An online store is a virtual on-line store on the Internet where users can browse the catalog and select interesting products. The items picked can be collected in a shopping cart. At checkout time, the products in the shopping cart shall be presented as an order. At that time, more information can need to complete the transaction.

OYE is an e-commerce website, developed to use Recommender Systems, compares the costs of books and eradicate fake reviews while shopping online. It helps the end-users to completely rely on the website while shopping.

There are two kinds of applications: recommendation and predication. Collaborative filtering algorithm is one of the most important technologies used here. The bigger the scale of users and products become the more critical role recommender systems play. But there is also difficulty in analysing large-scale data. Traditional calculation methods face challenges. The algorithm is based on similarity measure between users or items predicates items that users have not noticed but might have interests. The system suggests items by filling user-item rating matrix. This project will focus on making use of context based approach in addition to CF approach to endorse quality content to its users. The project also aims at using soft computing technologies to create an automated process and develop an intelligent web application.

Our website works on the specific characteristics and requirements of the customer. As the World Wide Web becomes increasingly relevant as a source of information and a place to conduct business, web surfers face the daunting challenge on how to sift through a morass of knowledge to get to the correct one so, we use a hybrid model that supports dynamic recommendations or suggestions which removes this problem. In this way the system will not only use purchasing data as input, but also the customer reactions to the predictions, which is the most basic measure of its effectiveness. These predictions are a valuable service to the customers and a profitable service to the retailer. As a result, we are able to implement the same with complete assurance.

### 1.1 Objective

The aim of this project is to develop a general purpose e-commerce store where book items can be purchased from home through the Internet. This reduces lot of work load for customers as well as owner. This system helps to select products faster and easier at one place. As it is a virtual shop, it will remain open and operational 24x7 even if staff are not working. Safe and secure payment options and mechanism are provided for generating trust among

customers and building up their confidence towards our site. Customers can easily compare the prices and can purchase books accordingly.

### 1.2 Scope

The step is validating the presented statements by practical implementations of recommender systems. The experiences from these implementations will lead to further insights regarding the coordination of optimization techniques. More research is needed to develop instruments for adapting a general recommender system to a specific case. Three relevant aspects have been presented. Now, further work is needed to find out how the adaptation could be simplified not only for developers but also for the operating company.

### 1.3 Literature Survey

#### Recommender Systems -The need of the Ecommerce Era:-

Authors- Nayana Vaidya and Prof. Khachane A.R, Vidyalankar Institute of Technology, Mumbai, India

Recommender Systems are not new to programs today. Recommendation system makes the online user's job very easy by offering a set of items which a user may be interested in. Researchers are developing a huge number of data mining algorithms in this field.. Recommender systems are turning the site visitors into actual buyers. They will collect various types of data in future. In future the priority will be on multiuser recommendations. Future work should concentrate on describing the recommendations to customers by providing an interface about how nice they are. In future we will have real time recommendations or automatic recommendations as soon as the user logs in to the system. Now the future trend is to use a recommender system using **R programming** and **Apache Mahout**.

#### An e-commerce feedback review-mining for a trusted seller's profile by classifying fake and authentic feedback comments:

Authors- Sruthi Sathyanandan and Dhanya Sreedharan, Dept of Computer Science and Engineering, Sree Buddha College of Engineering, Alappuzha, Kerala, India.

In the proposed system we are using various supervised learning algorithms for the detecting fake and authentic feedback comments. Supervised learning is a method of machine learning task for identifying a function from a training dataset. Application of supervised learning task includes spam identification, retrieval of information and information extraction. The input is in vector form to the supervised learning and the output is a function that can

be associated with various class labels. Fake reviews can be found out based on writing style, level of details, understanding ability and by certain cognition indicators. Cognition measures are terms that can leak out due to failure in writing a fake review.

#### Infrastructure Cost Comparison of Running Web Applications in the Cloud using AWS Lambda and Monolithic and Micro service Architectures:

Authors- Mario Villamizar and Lorena Salamanca, Oscar Garces, Lina Ochoa, Harold Castro,COMIT Research Group, Systems and Computing Engineering Department Universidad de los Andes Bogota D.C., Colombia

Based on the performance tests carried out for a monolithic architecture, a micro service architecture operated by the cloud customer, and a micro service architecture operated by AWS Lambda, we can conclude that the use of micro services can help in reducing up to 13.42% of infrastructure costs. However, the use of emerging cloud services such as AWS Lambda, designed exclusively to deploy micro services at a more granular level (per HTTP request/function), allows companies to reduce their infrastructure costs in up to 77.08%.

## 2. METHODOLOGY

OYE is a web based system that stores the description about different books using database which makes users easier to buy a book of their choice by contacting us. Our users can easily buy their favorite book just by one click. We also provide valid user reviews which make it easier for the customers to purchase books using our website. This web based system can be also used to check the ratings of a particular book of your choice before purchasing it. Users get all the above services within a single website.

All the above services are provided just by registering to the application, all the user details and requests are stored safely and securely in mongodb database.

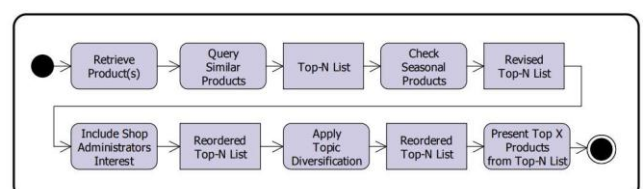


Figure 2. Methodology diagram

### 2.1 Architecture

Our website firstly greets the user with the sign-up page just like every other website. The architecture followed here is called as MEAN Stack architecture. The basic user details like name, email-id, password and confirm

password is entered and it will be stored in mongodb database. For users safety token based authentication is used in this project. The book information is stored securely using database which makes users easier to buy a book of their choice by contacting us. Once, the user is logged in he/she can browse for their desired book it can be checked for the ratings and user reviews. Here, the recommendation system comes into play which makes the use of the KNN algorithm. After selecting the desired book the user can add it to the cart and proceed to checkout. If the user wants to buy the book at our nearest store he/she can do so by selecting the pickup option before adding it to the cart. The cart is created using angular java script followed by a payment page that is integrated in our project. Finally, when the payment is done the user is directed to the ratings and the feedback page where the book ratings can be provided. The feedback page is valuable as it helps us to constantly improve and grow as a team.

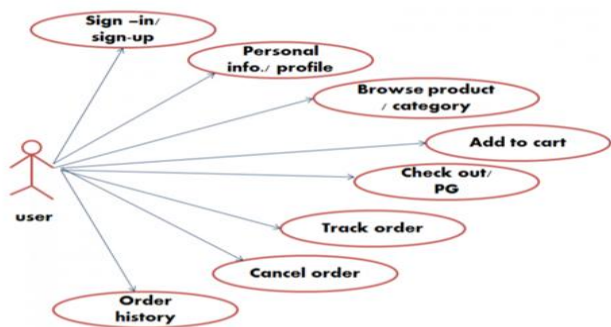


Figure 2.1 Dataflow Architecture Diagram

### 3. RESULTS

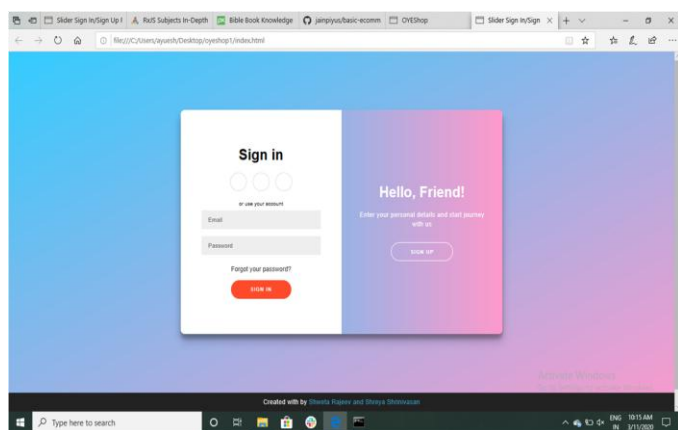


Figure 3.1 shows the sign in page using which the customer can sign in with an existing account to our website and continue shopping for books.

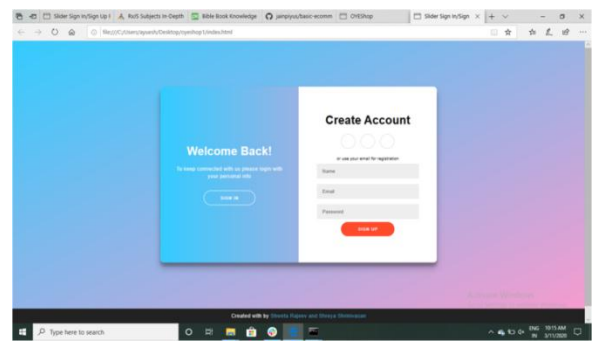


Fig 3.2 shows the create account page which can be used when the customer has no existing account.

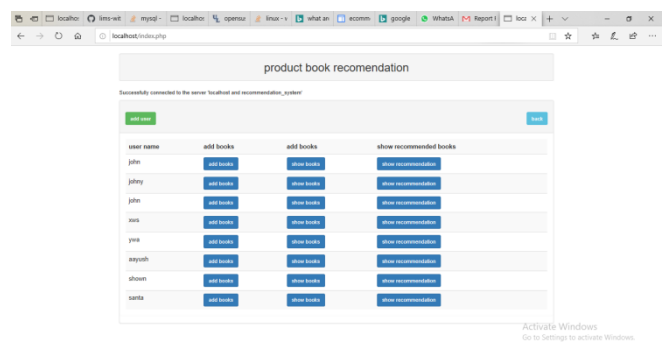


Fig 3.3 shows the book recommendation page using which the customer can review their experience based on ratings.

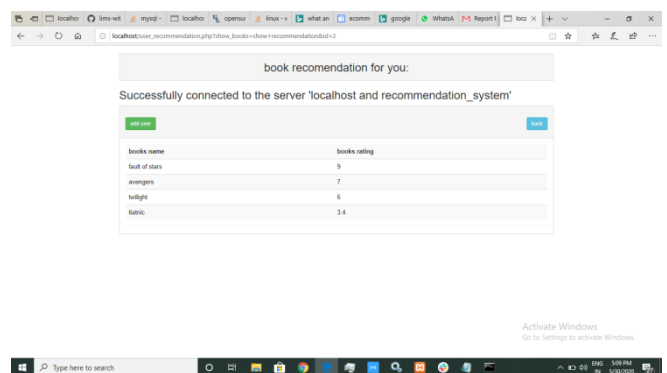


Fig 3.4 shows the ratings given by other users to the books based on their liking. Customers can use the add user button to share their own reviews with other users.

### 4. CONCLUSIONS AND FUTURE SCOPE

The analysis of recent collaborative filtering techniques and different alternatives to optimize recommendations shows that the implementation and optimization of a collaborative recommender system for online shops is an extensive process. To decide which kind of optimizations could suitably be incorporated in a specific case, a reference process is implemented. The reference process described should be a valuable means to expedite the implementation and optimization of a recommender system in an online shop. The selecting and adjusting of

the relevant parameters should be supported and the process of parameterization should be automated.

The researchers can use a variety of data mining techniques in terms of future scope to simplify perceptions and attitudes about customers. Any day, every hour, every minute, Retail managers / businesses produce tera-bytes of data from millions of shoppers.

Managers often come across specific information that can support retailers / researchers. Developing personalized tactics Retail, internet vending, sales tools, membership clubs, multi-level marketing areas etc. are also highly under-researched. Specific designs even at supermarket store these include supermarkets, hypermarkets, convenience stores, traditional open markets etc. are research areas of great relevance for the future.

## REFERENCES

- [1] Vala ali Rohani,Zarina Mohd Kasirun,Kuru Ratnavelu,“An Enhanced Content-Based Recommender System for Academic Social Networks”, 2014 IEEE Fourth International Conference on Big Data and Cloud Computing.
- [2] Intelligence and Intelligent Agent Technology, 2012.Sandra Elizabeth Salim, R. Jebakumar, “KBRS - Keyword Based Recommendation System in Social Networks”, 2015 International Conference on Innovation Information in Computing Technologies(ICIICT),Chennai, India.
- [3] R. Buyya, “Cloud computing: The next revolution in information technology,” in Parallel Distributed and Grid Computing (PDGC), 2010 1st International Conference on, pp. 2–3, Oct 2010
- [4] J. Lewis and M. Fowler, “Microservices,” 2014.
- [5] A. W. Services, “Aws lambda,” 2015.
- [6] Leo Iaquinta, Marco de Gemmis, Pasquale Lops, Giovanni Semeraro, Michele Filannino, Piero Molino, “Introducing Serendipity in a Content based Recommender System” ,Eighth International Conference on Hybrid Intelligent Systems.
- [7] <https://towardsdatascience.com/building-a-book-recommendation-system-using-keras-1fba34180699>
- [8] Zwass V. (2003) “Electronic Commerce and Organizational Innovation: Aspects and Opportunities “, 89-122
- [9] Balabanovic, M., and Shoham, Y. 1997. Fab: Content-based, collaborative recommendation. Communications of the ACM, 40(3): pp. 66-72.