

# GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES: A Literature Survey On Library Book Based Analysis System

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**Abstract-** In this project by using the various analyzing tools and various algorithms we are proposing a “Library Book Based Analysis System”. The use of the current library database makes this project relevant as the results generated by this project are much relevant. The extensive use of the old system architecture makes it less efficient as compared to modern technologies available today. In the project there is implementation the stock analysis of the book records by eliminating the manual transcription, using the existing record data of the library by the use of the data mining. and data analytics techniques. we are analyzing the existing Database of the library and generating a stock analysis of the books which represents which particular books are used extensively in a particular period of time. Data clustering algorithms and various association mining rules i.e., K-means algorithm, Apriori algorithm, Association rules etc. are used in this proposed system.

**Keywords-** K-Means; Apriori; Analytics; Mining; Clustering; Algorithms

## I. INTRODUCTION

As we all know we are living in a modern era i.e., The 21ST century. As the traditional way to approach things is eradicated as the time progressed ahead in the timeline many traditional worked habits also changed. People are more aware of the technologies that are being used right now. Many organizations are shifting towards more reliable and more accurate systems using various modes of computing in different fields. Whenever we consider a library management system, the modules which completes a proper management system are a well-organized solution for a library. A Database which is constantly managed and updated. A user can get full information of the books of the library easily. All the books are virtually accessible by the user without doing it manually. In the traditional library systems numerous fields are being considered from the perspective of the administrator and the user of the system. Various fields define the system i.e., book details, book ID, author name, etc. It is observed that this existing system uses old algorithms for the systems which are outdated and are less efficient. The tedious task of the system is to manage the records which represents which books are

particularly used in a specific time period from the entire library. Earlier library systems were partially computerized that means keeping the records of the library books were done manually, the generation of the reports of the entire database was a manual task which is done by the working officials of the library. As the systems of that time are not fast or more advanced enough to calculate or analyze that amount of data in fraction of seconds. Here we are proposing a system where we are analyzing the existing Database of the library and generating a stock analysis of the books which represents which particular books are used extensively in a particular period of time, using the data analytics and the various data mining techniques.

## II. SYSTEM ARCHITECTURE

Our proposed “Library Book Based Analysis System” is comprised of numerous operational modules which are essential for the key operations in the system. Each module holds a specific functionality regarding the database and the datasets which are processed into the system architecture. The system have the following operational flow and it is shown by the figure given below

The flow diagram above represents the various modules in which the data is being processed at the time of operation.

## III. LITERATURE REVIEW

[1] The proposed that with the constant development of modern library, the function of library has changed gradually. How to improve the utilization rate of library resources, how to serve readers better, and how to play more active roles, all have been becoming the concrete task of library in future. Clustering analysis is the process of grouping a set of physical abstract objects into classes of similar objects, and it has a very good application in library. The clustering analysis of readers’ behavior features in library automation system helps library improve services quality greatly, provide effective decision-making support for resource optimization, provide personalized information services for readers, and made library play more active roles in serving readers. [1]

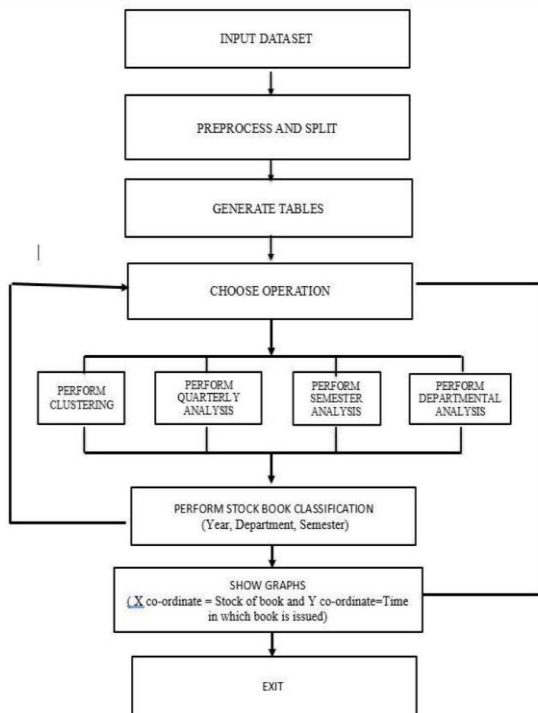


Fig.1:Flow diagram of the proposed analysis system

The author proposed that with the continuous development of librarianship, the functions of university library change. How to analyze the needs of university library users more effectively and rationally, thus provide corresponding service for the readers, has become a specific task which the future development of library will face. Data mining techniques can transform the collected data as questionnaires seeming to be uncorrelated and discrete into usable reference information provided to the library decision makers, which results in the effective dispose of the factors restraining users from using the library digital resource. Librarians not only should pay more attention to the specialties and academics research of all subjects, but also should not ignore the needs of some of small departments. And then, the library also can focus on recommending books to the active groups, have interactive communication with readers, and play more active roles to achieve the goal of efficient access to the reader needs and the reasonable books procurement based on the results of clustering. [2]

The author here proposed that the increase in universal data volume, the technology of big data and its analytical processes are generally used to provide the description about massive datasets. Compared with other traditional datasets and its processes, big data includes semi structured and unstructured data that need more real time analysis. Big data also gets details about new prospects for determining new values, supports us to improve an in-depth understanding of the hidden values, and also incurs new challenges. [3]

The author proposed that the field of Information Technology (IT) is improving a lot recently, this generates the data more easily. For instance, for every minute approximately 72 hours of video files are uploaded to YouTube by the people. This data growth challenges the field with the main problems of gathering and integrating huge volume of data from widely distributed data sources such as social media applications. [4] The author proposed that a study made an analysis of stock verification process in 12 academic libraries in Coimbatore district. This study reveals that, 66.67 percentage of colleges take stock verification through separate library committee from outside, 58.33 percentage of colleges take stock verification for the purpose checking the availability of books. 33.33 percentage of colleges lost 50 to 100 books at the time of stock verification, 58.33 percentage of colleges take responsibility for the loss of books by the college management, 58.33 percentage of the colleges measure the loss through 3 percentages of total circulation of books in the library. In the context of libraries, verification of stock is different from the verification of stock in stores in Private or Government business organizations, the purpose of the job and the difference in the meaning of 'Store' and 'Stock' are concerned. The collection in the libraries contains various types of information sources. The library is a public institution and collections subjected to accounting and checking, verification and reporting [5]

#### IV. OBJECTIVES

By using the various algorithms and data analytics techniques, we've the following objectives for this project:

- To provide a new mechanism for providing the stock analysis of the books available in the library database.
- To show which book has been issued mostly by the students as compared to the other books available for the same subject.
- To provide an analysis which will help the librarian to understand which books have the maximum uses which will help them to refill the stocks of those particulars' books easily and to satisfy the need of a student or reader in time.

#### V. CONCLUSION AND FUTURE SCOPE

This system will be effective in analysis of the books of the library as well as predicting the stock out of the particular books in the quarter of time. This will be done by utilizing the existing database of the library. The separation is done according to departmental basis i.e., user can generate the analysis after selecting the department, the semester of which the report or analysis is to be generated. This system will be very much useful from the perspective of Librarian because in traditional library systems, there is a lack of module which can show the stocks of library books by predicting the usage of the particular books in particular time period. The existing system lacks this kind of facility for the stock management and verification, therefore our system will be a important

factor for the upcoming management systems.

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