

Library Management System

Smita S. Mande¹, Rachit Nimje², Rachit Malara³, Ved Rahangdale⁴, Rahul Daga⁵, Rahul Lade⁶

¹Department of Engineering, Sciences and Humanities (DESH), Vishwakarma Institute of Technology, Pune

²Department of Engineering, Sciences and Humanities (DESH), Vishwakarma Institute of Technology, Pune

³Department of Engineering, Sciences and Humanities (DESH), Vishwakarma Institute of Technology, Pune

⁴Department of Engineering, Sciences and Humanities (DESH), Vishwakarma Institute of Technology, Pune

⁵Department of Engineering, Sciences and Humanities (DESH), Vishwakarma Institute of Technology, Pune

⁶Department of Engineering, Sciences and Humanities (DESH), Vishwakarma Institute of Technology, Pune

Abstract - There are books of every sort available at libraries. Web-based software called Intranet Library Management System is used. This system has a list of all the books and allows remote users to view it simultaneously from wherever on campus. However, users need to be signed up for that. Two tiers of architecture make up this system. Students submit requests, which the server receives, processes, extracts data from the database, and then returns the completed request back to the client. This system offers a unique interface and login for students and librarians. Students may look for books online and renew their books. The librarian can change the database. They may simply send messages to the librarian from any location within the campus to propose new books. They may examine the due dates and issuance and return dates for any books. This system produces reports that may be used to evaluate the performance of the library. The management can then take the necessary action to upgrade the facilities.

Keywords : Library Management System, Two Tier architecture

1. INTRODUCTION

An online program called Library Management System is used to maintain records for purchases, maintenance, searches, catalogue issues, returns, and other necessary requirements for the library's day-to-day operations. The Library Management System is a software program used to maintain the records for purchases, maintenance, searches, catalogue issues, returns, and all other necessary requirements for the library's day-to-day operations.

Library Management System is a tool to assist any libraries who are still managing their libraries in the traditional manner. The traditional method of looking for a book by doing human labour is cumbersome, it is impossible to generate reports quickly, information on issues with returns of the books is not kept up to date, and no central database can be formed since the data is not readily available. However, the user can overcome all

the issues listed above by using the LMS. This system is capable of overseeing all library activities. This system can manage all aspects of book transactions, including book searching, book availability, book data and appearance, personal book borrowing history, and more. This approach is appropriate for both small and large libraries, including those at colleges, schools, universities, and legal libraries.

The manual process of entering data into a paper base is provided by the library management system. LMS are a crucial component of the rapid and effective recording of specific information on books and members in the majority of developing nations, including Eritrea. Effective information management systems for conventional libraries are extremely uncommon in Eritrea, and many documents frequently get lost because of the absence of computerized systems. The much-needed information repository that the libraries require, containing the relationships between administrators, users, and members, will be made available by this system. Currently, many book transactions in the LMS are performed manually, which adds extra time to processes like borrowing books, returning books, looking for books, and adding new members. The physical library has been experiencing several issues because of the ineffective administration of the library. Most errors in recordkeeping are caused by human mistakes, such as lost or destroyed handwritten documents from inefficient use.

Even if it causes chaos and takes time, the effort put into finding books that can be deemed inadequate in terms of book management is an issue in the manual library.

While the need for physical storage of files and records grows, there is a corresponding lack of space for retaining records as more records are added to the library. If there isn't a computerized system in place, the demand for books and records will continue to be very expensive. These issues may be resolved in addition to the difficulties in the manual library using the newly created computerized project technique [2].

Our website application for our books in pdf now has a word-

to-speech capability that allows users to hear the words read aloud using their device's audio system.

2. LITERATURE REVIEW

The benefits of utilising effective management in an information system and the sustainability of library systems are described in those works [6], [7]. They claimed that the rapidly expanding variety of data makes it harder to obtain correct information. Our solution, however, concentrates on creating more useful data for ACCE library users, and the admin has complete control over managing the updated data. The library offers resources and services that are critical to knowledge acquisition and skill development. Even if we have a cooperative plan for conserving their documents, the long-term viability of the library system and information resources.

According to [8], management is "the art of performing things through people." A manager is recognised as someone who drives people to work effectively in order to achieve the organization's objectives. Additionally, it is debatable whether management is a science or an art [9], but it is certain that in the era of technology, modern management is moving in the direction of becoming more of a science than an art. Additionally, we define management for Management Information Systems (MIS) as the process for organising, staffing, coordinating, and regulating the actions of the organization's members to achieve the goals that have been collectively determined.

Parallel to our study [11], this author described the as a rapidly expanding database for information retrieval, the library system aims to create computerised systems to maintain the library's regular operations. Well, electronic users will benefit from the library's quick and efficient service. The systematisation is indicated by their library system. largely utilised towards library upkeep and activities

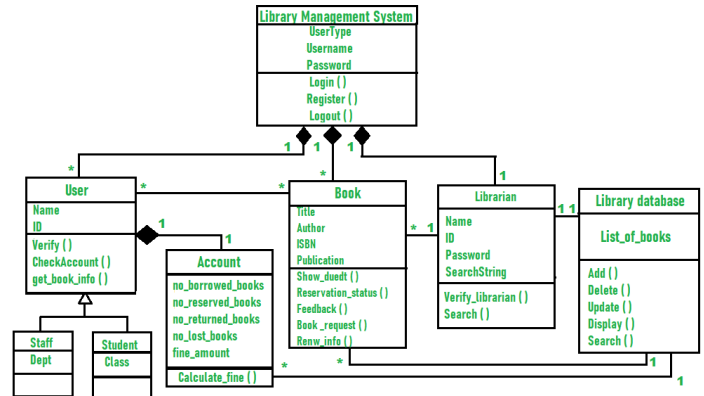
computerised. Many structures in their work, which are mostly not accessible in a manual LMS, such as the user login feature. In addition to the resemblance between our work and theirs, we also suggested the electronic files can be stored in a digital archive. This a recently constructed system features an admin login feature wherein the administrator can keep an eye on the entire system. The development and creation of the database are the study's goals for the computer's records and other resources application. to offer a variety of search options for users to compare the ease of using library books to create a list of books.

3. METHODOLOGY/EXPERIMENTAL

a. Synthesis/Algorithm/Design/Method

A system development methodology in software engineering is the framework that is used to organize, schedule, and manage the process of constructing an information system. The procedures we employ to create software are defined by software development techniques. Additionally known as software development process models, these approaches. Each methodology adheres to a set of procedures particular to its kind

to achieve success during the software development process. A software process is a collection of connected tasks that results in the creation of software.



CLASS DIAGRAM FOR LIBRARY MANAGEMENT SYSTEM

Fig -1: Flow Chart of working of the project.

b. *Waterfall Method:* The waterfall model is a sequential method in which each key action in a process is represented as a distinct phase and is organized in a linear fashion. This style is plan-driven, requiring that actions be planned and scheduled before beginning. A process that is driven by a plan is one in which all of the actions are first planned, and then each accomplishment is assessed in relation to the plan. Contrarily, the Agile method incorporates incremental planning, and it is much simpler to modify the procedures to consider a change in demand.

The Waterfall Method

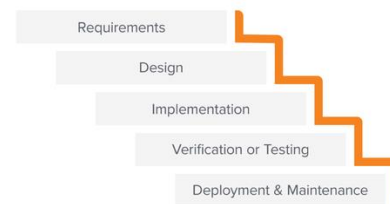


Fig -2: Waterfall Method

c. *Database Design:* Any collection of data or information that has been particularly organised to allow for quick computer search and retrieval is referred to as a database. Databases are designed to make it simple to store, retrieve, modify, and delete data while carrying out various data-processing tasks. A database is kept as a file or series of files on a secondary storage media like an optical disc, magnetic disc, or tape. A database is any collection of facts or information that has been well structured to permit speedy

computer search and retrieval. When performing different data-processing operations, databases are made to make it simple to save, retrieve, edit, and remove data. On a secondary storage medium such an optical disc, magnetic disc, or tape, a database is maintained as a single file or as a collection of files.

4. RESULTS AND DISCUSSIONS

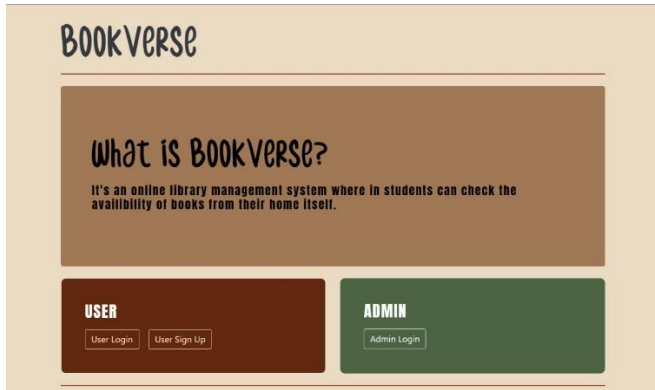


Fig -3: Index Page

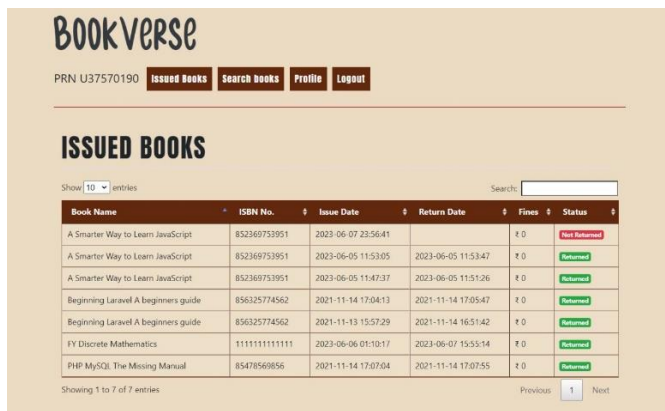


Fig -4: User: Issued Books Page

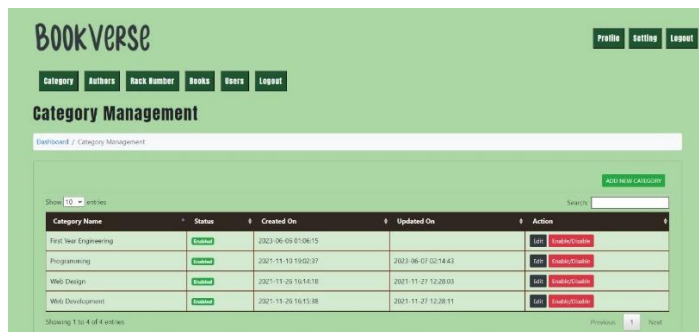


Fig -5: Admin: List of Books Page

4. FUTURE SCOPE

We want to add a sizable number of books as well as the ability to organize, search, and filter books based on student and instructor needs.

5. CONCLUSION

Computerization of different operations is a result of the objective to simplify life and speed up processing. Numerous industries have been transformed by computer technology, notably education. A Web-based LMS has been created to handle all library operations, including the addition of new books, updating user records, the procedure of borrowing books, etc., in order to promote technology-driven education. In conclusion, it can be fairly said that the created system is an effective, useful, and dependable LMS based on careful study and assessment. It is functioning well and effectively satisfies the first suggested minimal requirements. The efficient use of the library system is anticipated to be an advantage of the novel approach for both users and employees.

ACKNOWLEDGEMENT

Our team would like to thank Smita S. Mande for accepting our proposal for a web application, mentoring us through the project, supporting us when we got stuck, and providing us with a ton of additional suggestions for how to make the application better.

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