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Online Library Management System

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Abstract: Internet and Distributed Network System created scope for research in the area of information system and its related fields. Digital Library, one of the most recent development in Library and Information Science, which help its user to seek information through web browser. Digital Library is organized assortment of information, with its supported services and a place where the information is kept in digital format and can be retrieved over a networks. Since last one decade researchers are focusing on the users of Digital Library to develop more efficient and effective system to provide quality service to users. The aim of this paper is to provide literature on Digital Library with respect to its users that may be helpful for future research. The paper discusses about the users centric approach in the context of Digital Library. Researchers are working on the system upgradation by using wireless technology to connect with end users directly with libraries. Further, other areas such as user's Perception, Attitude, Adoption and Satisfaction with respect to digital library are also discussed

Key Words: Library, Database, DBMS, SQL, Management system

1. INTRODUCTION

Significant changes seen by society through the transmission of information around the globe and it is accountable to the evolution of information technology. Now it is possible to archiving and accessing knowledge in the digitized form besides preservation of traditional knowledge due to use of information technology. Demand for electronic information increasing day by day and at the same time traditional format of library becoming more and more expensive and complex to maintain. Now it is time for libraries to capitalize these challenges and meet demands and expectations of digital users. Libraries has to redesign their services to create value addition to satisfy the user's community making the process of requesting and ordering of books lot easier than the traditional method of standing in long queues for claiming a book.

2. RESEARCH METHODOLOGY

2.1 Surveying Existing System

Subsequent to experiencing a portion of the project with respect to usage of Library database management system, it was found that this idea is searched a lot among students and is a mainstream idea which is still in advance. Current system includes the software details about library management system which includes feature blocks of admin and user page. It also includes other additional features such as issuing, ordering, returning and fine in cases of late return depending upon the cases.

2.2 Main body

This project discusses about the management of library system to help moderate the database single handedly due to being easy for understanding and being manageable under a single person. It also helps an admin to moderate the number of books, amounts of books, ordering new books, and uploading additional new books as well as students on the databases on the tip of the fingers. As the system is based on website development along with databases and hence can be used on mobile devices as well making it easy for the admin to

moderate the stuffs according to their ease. The structure of Library management system (LMS) designed is easy to understand and all options for various properties being clearly visible on the navigation bar.

2.3 Objective

The objective of the project is to design a management system for library database, making it easier to manage the books given to the students as well as the number of students being late enough for returning the books. It also focuses on stuffs including to moderate the number of books issued and the number of books present in the database system i.e., the library hence filling the stocks of books and updating the required outdated books making it easily manageable by a single person. It also focuses from the student view of issuing and returning the book as well as suggesting new copies of books to the admin and hence making it less tedious jobs as everything is present a click away.

3. PROPOSED SYSTEM

As being under the 21st century the traditional system of library being managed by many staffs for managing the books and they have to align and arrange the books on the shelves and marked it. Missing or theft of the book builds a serious issue and confusion to the librarians. While collecting the book from the students they have to verify the penalties of the books. Therefore it causes a monotonous among the staff. Apart from the staffs the students have to stand in long queues to issue or return a book making it even more tiring uninteresting feeling among the students. To evoke the library into the technological era, we presented a system called LMS aka Library Management System. It is an automatic system that reduces the work burden of the staff/librarians through a single click. It will manage, organize and oriented the library task. The LMS supports the librarian to add/view/delete/update details from the library stock. Here we integrate all the library data into the SQL server. Preliminarily the librarian has to add student book details into the database. After that he/she can view/delete/update those details through the Library Management system. On account of this, the user can access the library at any time. Hence making it easier for the admin staff as well as the student as it being easy to understand.

4. Methodology

Fig 4.1 depicts the block diagram of the proposed Library Management system (LMS). The LMS contains an Admin module where it demonstrates the activates of the admin. Admin is considered as the authorized person to access the LMS system. He/she can access the LMS system through their user id and password. At the time of login, the system is loaded and opens the Home page where he/she has to enter the Id and password which is illustrated in fig 4.3



Functional Block Diagram

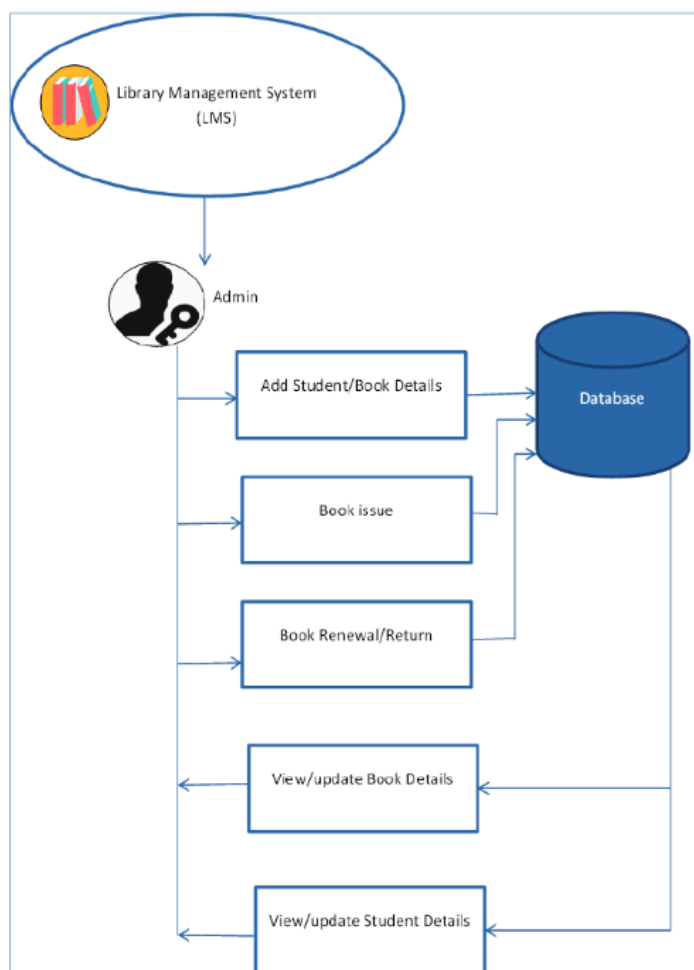


Fig : 4.1 Block Diagram of the proposed LMS.

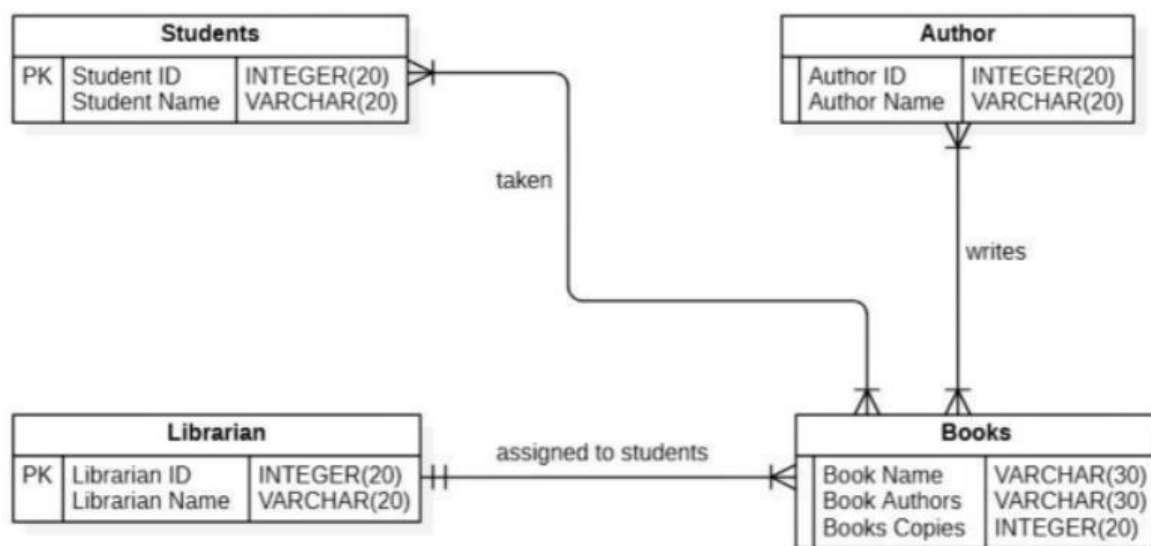


Fig: 4.2 Entity Relationship model of LMS

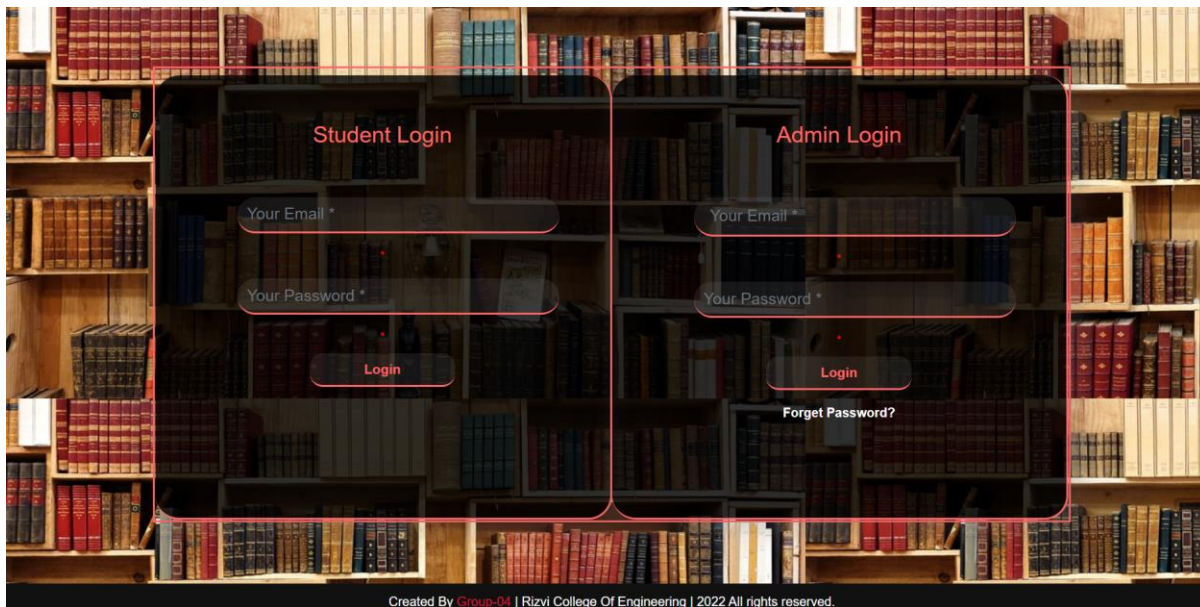


Fig :4.3 Login page for student and admin

Once the user enters into the database they can access and modify the data of the LMS. The admin can add books, students, issues the book, add a book according to the details, return the book, view/update the book, and view/update the student details. Illustrated in Fig 4.4

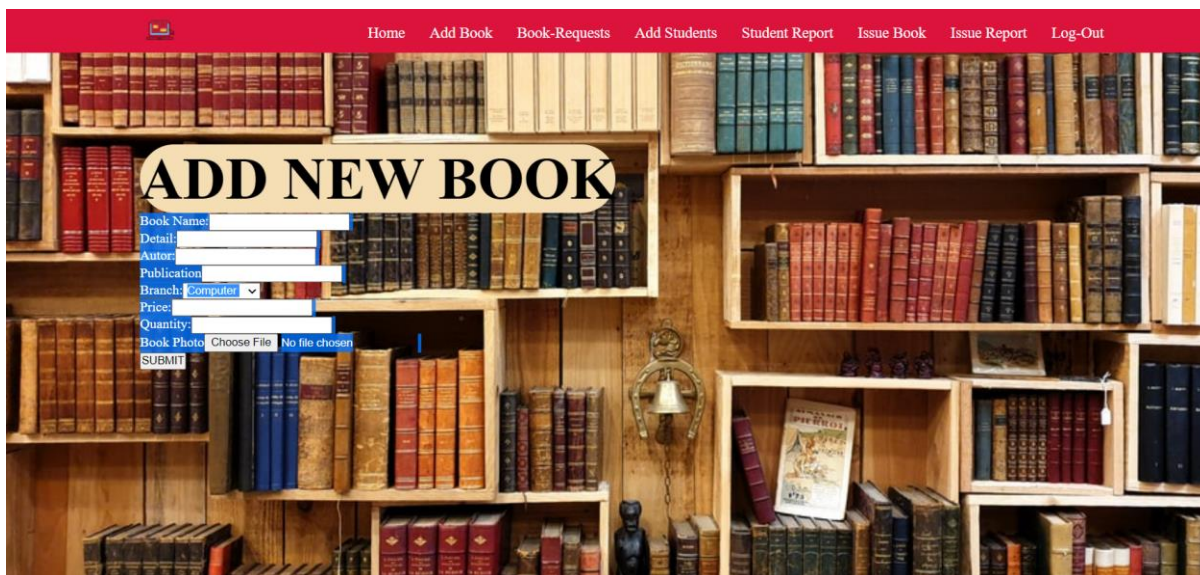


Fig : 4.4 Adding new books in the LMS

The student details can be updated in the LMS accordingly by selecting the add students navigation bar. It also allows it create a password for the user so the student user can access the LMS independently. Illustrated in figure 4.5

Home Add Book Book-Requests Add Students Student Report Issue Book Issue Report Log-Out

ADD STUDENT

Name:
 Password:
 Email:
 Choose type: student ▾
 SUBMIT

Fig 4.5 Add new students in the database

Student Report

Name	Email	Type
Danish Jamadar	danish@gmail.com	student
Muzaffar Khan	muzaffar@gmail.com	student
Badreen Jaffar	badreen@gmail.com	student
Mujaffar Bhali	mujaffar@gmail.com	student
Aftab	aftab@gmail.com	student
Aejad	aejad@gmail.com	student

Issue Book

Choose Book: ENGINEERING MATHEMATICS ▾ Danish Jamadar ▾
 Days: SUBMIT

Issued Books

Issue Name	Book Name	Issue Date	Return Date	Fine	Issue Type
Danish Jamadar	os	29/03/2022	05/04/2022	0	student

Fig 4.6 Book and student report in LMS

As depicted in Fig 4.6 the admin gets the information of the issued books, books to be issued and the student report that is the number of student user in the database on the page links given by the navbar on the top of the page. It allows the admin the check the amount of days the book should be issued, keep a tab on the return date and manage fines and have a check on all the new and existing student user in the LMS.

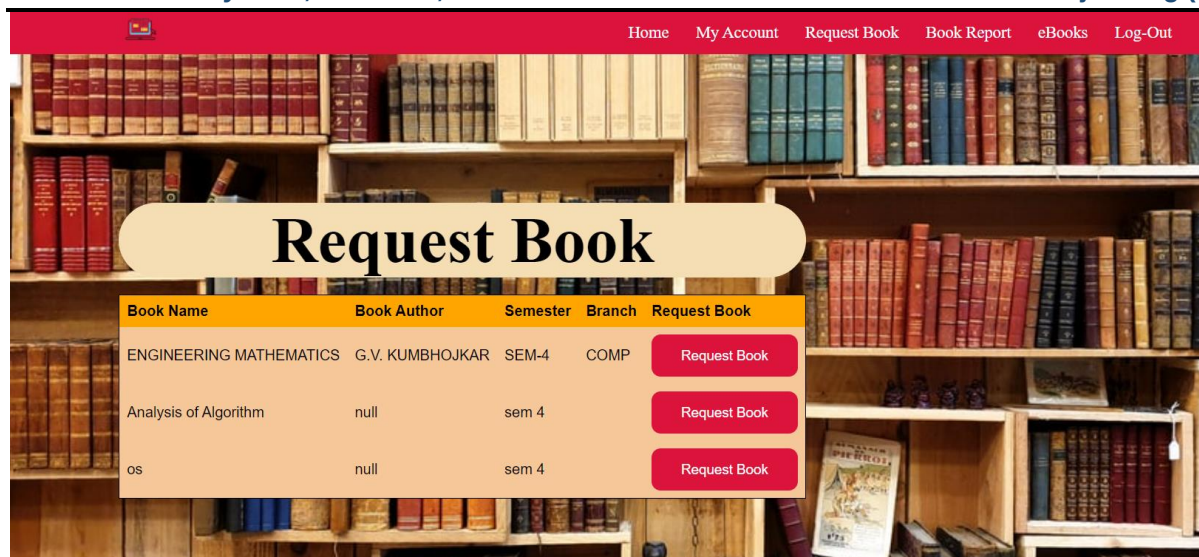


Fig 4.7 Student's Book request procedure

The LMS also provides options to the user student to select the book of their choice from the list of the books given according to the author and branch and issue it accordingly. Figure illustrated in 4.7

Apart from requesting book for issuing an additional feature is added in the LMS which allows the student to download an e-copy of the book in other words pdf of the same. This makes it easier for the student to refer the book at any time as it would always be available and also no return date for the same would make it a boon for the students. The e-books in the page will be divided up according to the semesters allowing the students to download whichever section want to have a referral on. Illustrated figure on 4.8

Subjects	Semester 3	Semester 4
Maths	Sem3 Maths Links	Sem4 Maths Links
Data Structures	Sem3 Data Structures	None
Analysis Of Algorithms	None	Sem4 AoA
Operating System	None	Sem4 mp
MicroProcessors	None	Sem4 MP
DSGT	Sem3 DSGT	None
DLCOA	Sem3 DLCOA	None
CG	CG	None
DBMS	None	Sem4 DBMS
Curricular Coding Language	JAVA OOPS	Python

Fig 4.8 E-book Section

5. Conclusion

The hindrance and issues of the traditional library are identified and promote it to easy access for the libraries. In the Library Management system, the librarian can add/update/remove the student and book details into the database. The students have a Unique ID for accessing any book from the library as well as having two options to access the books. Through the ID, the librarian can check the user details, fine payment, and book details. The LMS reduces labor work and makes the system efficient. In future work, we planned to enhance the LMS by integrating the Library Management System with Local area Network (LAN) which would increase the efficiency of the system. Other future upgrade ideas to modify the LMS includes adding a chat and notification system to notify the students or to ask queries directly through the website to the admins thus saving time and making the LMS more efficient.

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