Multiple Library Management System

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Abstract— The development of technology has made it necessary to elevate all systems to a user-friendly state. Traditional libraries can be converted to digital libraries with the help of the Library Management System (LMS). In traditional libraries, the students/user needs to look for books which are bother procedure and there is no adequate maintenance of database about issues/fines. The overall progress of work is slow and it is impossible to generate a fast report. Librarians are required to sort and arrange books in the book sales. They also need to keep an eye on the details of the lend/borrow book and its fine at the same time. It is a tedious process to work simultaneously in different sectors. LMS will assist the librarians to work easily. The librarians have to assess the system and provide an entry in it. Through LMS the librarian can find the book in the bookshelves. The LMS is designed with the basic features such as librarian can add/view/update/delete books and students' details in it. Once he/she ingress into the system they can modify any data in the database. The complete model is developed in Dot net technology, the C# language is used to build the front-end application whereas the SQL server is exploiting as database. The authorized person can only access the LMS system, they have to log in with their user id and password. As aforementioned that the LMS is designed in a user-friendly manner, so the admin can smoothly activate the system without expert advice. Every data is storing and retrieving from the SQL database so it is highly secure. Thus, our system contributes its new approach towards the digital library setup.

Keywords: Management System, .Net, SQL, Server, LAN, DBMS

I. INTRODUCTION

A library is a location where patrons can access a vast collection of books and other materials. It serves as the institutions' brain. It facilitates the students' acquisition of information and spiritual civilization. The abundance of books and research projects is inspiring students to expand their knowledge from all angles. It helps the pupils advocate for their opinions in a different way. This information helps the learner build their personal skills and do better academically. The need to improve the traditional library setup to a digital one arises from technological advancements. To examine any data then they have to refer the notebooks. At the same time while distributing the books to the students they have to enter into the notebook where they need to represent the book id, distribution and renewal date, and student id. The librarians/staff have to assign a tag for each book and provide an id for it. 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. Consequently, it builds an uninteresting among the student due to the slow progress of the staff. To evoke the library into the technological era, we presented a system called the Library Management system (LMS). 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 and 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. The librarians can assist the data without any confusion. Each data are retrieved from the database. if he/she access any user details then it shows username, id, book details, and penalty details. They no need to write it on paper for any references. By editing the data they can change the parameter in it. In spite of working on the manual, the librarian can feel easy to handle the automatic system. It has more additional features such as librarian can maintain library records, student's history of penalties and issues. It always tracks the count of the book in the library and issued book details. This causes a flexible service for librarians and students. It is a user-friendly interface, so basic computer knowledge is enough to access the LMS. The system is a customizable and user-configurable one which causes it to use in different organizations. We represent the LMS with Admin module. As aforementioned the data's are stored and secured in the database. The related data are stored together and maintained properly. It allows the user to create their database as per the requirement. The database gets manipulated by the programs which provide an interface between the databases. The database management system (DBMS) receives the command from the administrator based on the instruction it changes the data in the database. This instruction may load, retrieve or modify the existing database. It is better to assign a DBMS as a centralized one which helps multiple users , to access the database in a controlled manner at a different location. Based on the scheme of DBMS, the system can assign a view mode for each user like some people can see only some data and authorized one can see all the data existing in the database. It offers both logical and physical data independence. The Open database connectivity (ODBC) provides an application programming interface that allows the client-side program to call the DBMS on the server-side.

1.1 SQL DATABASE

SQL is also known as Standard Query Language which is used as a medium for communicating with the database. SQL statements are utilized to execute the queries against the database and retrieve data from the database. We can create a new database, table, stored procedure and update, delete and add items to the table. We also can view the data and set permission to the view, procedure, and table.

2.RELATED WORK

Shasha et al[1], research on the library management system to upgrade the management to meet the need of the student demand. Honghai et al[2], proposed a paper where he represents the wasting of investment in CD which is attached along with the books. To save the cost of the library, he suggested cloud computing for data transfer. Bao et al [3] presented a paper on constructing the prediction model for the library. He introduced two models for predicting the process such as the co-efficient of simple determination and t-test. This analysis explains the strong relationship between lending and the number of readers. They mainly concentrate on library lending for designing the construction of the model library. Eraxiang et al [4], launched a paper where he highlighted the disadvantage of the traditional library management systems. He provided a solution for the disadvantage by utilizing struts and hibernate framework in MVC architecture. The MVC architecture is also called a multilayer tier where presentation, business, data persistence and database layer are available. These extra features improve the maintainability and reuse of the system. Zheng et al [5], introduced a paper based on UML for the Library Management system. Due to the good application prospect of UML, the LMS is designed and model based on this concept. Case diagram and analysis diagram are drawn after the analysis of simple LMS. Hitchense et al [6], proposed a paper on flexible usage of classes. He suggested the reuse of classes for some similar conditions. Yang et al [7], explained a tedious work on the manual process of the librarians. So he introduced an LMS through VB. Bretthauer et al [8] exposed information about the open-source software for libraries. He also explained the drawback of the open-source software. Brave et al [9], presented the various open-source software such as LMS, digital library software content, citation and knowledge, and journal management software, etc.. Albee et al [10], examined the staff satisfaction and attitude towards the open-source library. Singh et al [11], proposed a paper where comparison takes place between expectations and experience of the open-source library. Huang et al

[12] proposed a paper for learning the SQL database. It will provide students to test the SQL statement is working or not.

To improvise the design and progress of the library management system, we represented an LMS in .Net technology which can easily access by the librarians. It overcomes the drawbacks of the existing methods. The system is highly secure and provides an effective result to the users.

The rest of the paper is represented as follows. Section 3 briefly describes the architecture of the proposed system. Section 4, explain the conclusion part of the system.

3.METHODOLOGY
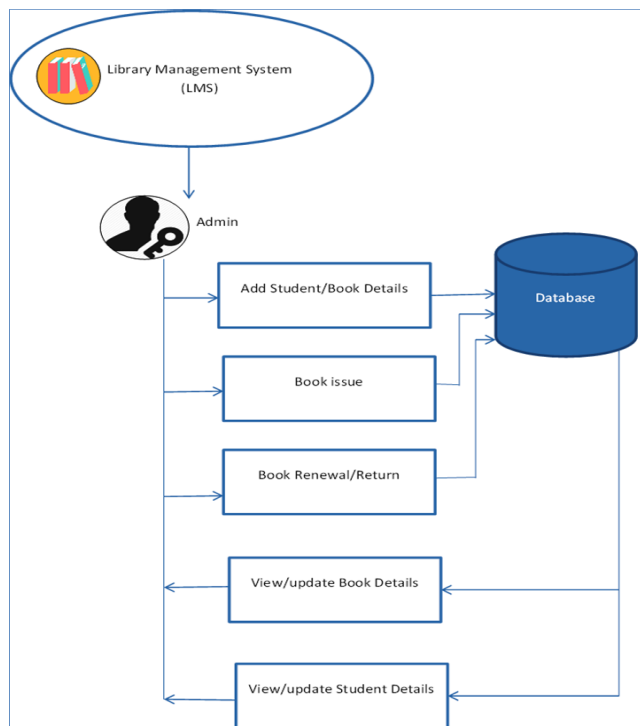
3.1 BLOCK SCHEMATIC

Fig 3.1 : Block Diagram of Proposed System

Fig 3.1 depicted 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 3.2.
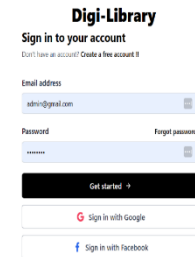

Fig 3.2: Login Page of Library Management System

Once he/she login to the system, then they can access/modify the data in it. The Admin can add students/Book details, issues the book, return the book, view/update the book, and view/update the student details.

In LMS, while adding the student's details we enroll the register number, name, date of birth, blood group, email id, mobile number, and gender, etc.. Similarly to add a new book we enroll the book id, author name, copies, prices etc.. Which is depicted in fig 3.4.
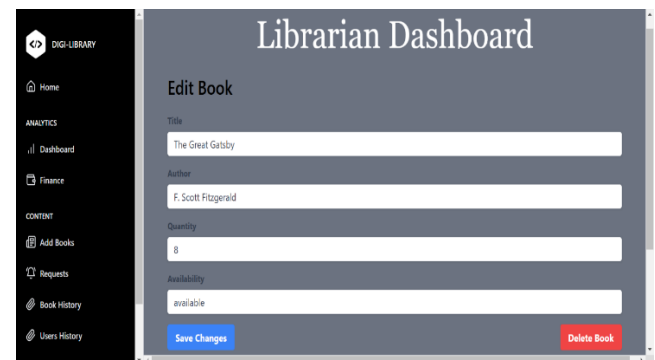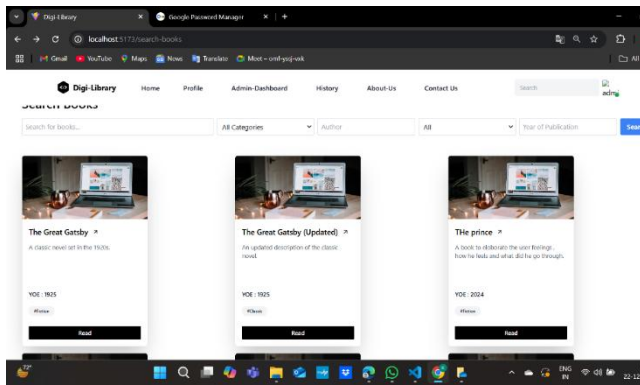

Fig 3.4: Adding new book to LMS

Fig 3.5: Searching book details in LMS

We implemented the library management system in .Net for front end and SQL for the back end. In the existing system, the users can illegally change the date of the entry because the entry will be in a notebook which can be overwritten. These disadvantages are surmounted by the LMS system. This system will support the librarians to work very fast and efficient. All the details will be updated on the LMS. So they can verify every book details in it. The clumsiness of the existing system is removed for the librarians. LMS provided a user-friendly environment for them. Thus the system enhances the library management to the next level. Thereby it creates fast progress in the library which makes a lot of patron's entries into the libraries. The missing of the book can also detect by verifying the database, the librarian has to check and maintained the database properly.

4.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. 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 LMS with Local area Network (LAN) which increases the efficiency of the system.

5.REFERENCES

[1].HonghaiKan,Zhimin Yang, Yue Wang, Nana Qi, "Research on Library Management System for CDs Attached to Books Based on Cloud Computing", in Proceedings of the 14th International Conference on Computer Supported Cooperative Work in Design 2010.

[2].Bao Sun, JiangweiFeng and Ling Liu, "A Study on How to Construct the Prediction Model of Library Lending of University Library", International Conference on Information Science and Technology March 26-28, 2011 Nanjing, Jiangsu, China.

[3].Erxiang Chen,Minghui Liu,"Research and Design on Library Management System Based on Struts and Hibernate Framework", WASE International Conference on Information Engineering2009.

[4].JianhuZheng, YunqingFeng, Yun Zhao, "A Unified Modeling Language-Based Design and Application for a Library Management Information System", in cybernetics and information technologies.

[5].Michael Hitchens, Andrew Firmage,"The Design of a Flexible Class Library Management System", in IEEE conference 1998.

[6].WeihongYang,"Design and Implementation of Library Management System", International Conference on Management Science and Innovative Education (MSIE 2015).

[7].Bretthauer, D. "Open source software in libraries. Library Hi Tech News, 18 (5), 8-9(2001).

[8].Barve, S., &Dahibhate, N. B.,"Open source software for library services", DESIDOC Journal of Library & Information Technology, 32(5)(2012).

[9].Albee, B. & Chen, Hsin-liang, "Public library staff's perceived value and satisfaction of an open source library system". Electronic Library, 32(3), 39.-402(2014).

[10].Singh, V.,"Expectation versus experience: librarians using open sourceintegrated library systems", The Electronic Library, 32 (5), 688-709(2014).

[11]. Ching-yu Huang and Patricia A.,"MorrealeA Web-based, Self-Controlled Mechanism to Support Students Learning SQL" IEEE Integrated STEM Education Conference (ISEC)2016.