DESIGN AND DEVELOPMENT OF AN AUTOMATED LIBRARY MANAGEMENT SYSTEM FOR MEHRAN UNIVERSITY LIBRARY, JAMSHORO

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ABSTRACT

This study aims to seek the requirements of the integrated library management system proposed and developed for the Mehran University Library as a step to automate its library services. Study used models to come up with the system. Met most of the goals of the system by enabling library staff follow their clients and resources that they manage. A report generation as easy as all the information has become easier to manipulate because of the nature of electronic storage. Find reading material has been made easy because different criteria can be used to accomplish the task. The user interfaces are friendly and there was a need for re- training other than orientation. The researcher recommends that this system will be built on an ongoing basis to take care of library services other management includes serials and periodicals , and reservations book , e-mail notification automatic reminder , and the use of bar codes , scanners and labels , and the use of RFID (Radio Frequency Identification) tags to reduce thefts book[1]. It is also recommended that the library system, go online so that access to books and lectures over the Internet by users.

KEYWORDS: Library Management, Network, Service Delivery

INTRODUCTION

Information technology (IT) has revolutionized and made life easier by different types of applications. In light of the rapid changes in the use of information technology, there are many tools and techniques and systems that have been produced and invented. Information technology is a combination of computer technology and telecommunications, which makes it possible for systems and new products to be developed to help people at work, in education and at home. In the modern world, many processes may take place at the same time and in place so that there is a need to integrate all the processes, and create paperless environments and also to ensure efficient management tasks[1,2]. The purpose of the integration of computer -based systems to help increase market share and making it very easy for customers to use. Computer systems are increasing demands that are being made by customers and for those companies that are not directed to the computerization is bound to lose because of the intense competition and efficiency resulting from computing.

BACKGROUND

Mehran College affiliated to the University of Sindh in Jamshoro in the year 1986 a change in the Mehran University of Engineering and Technology; Jamshoro since its inception, MUET has seen a steady growth in both the number of students and faculty members. This growth is putting a lot of pressure on the services provided by the library. Library building became too small for the growing number of students, and services such as borrowing and lending of resources are managed manually using the log book kept by various libraries. Users find it difficult not only to search for

the books they need , but is also unable to find out if they need books that are available or not**[1,3]**. This leads to a lot of frustration and a waste of time. Moreover, you may run the management staff of the library space to give up the additional books that they receive.

This has led to the stacking of books on each other making retrieval very difficult. It is also difficult to trace manually and lend books that have been returned from making or accountability problem. Since the borrowed books are recorded in a book, and there is great potential for this record to get lost or misplaced. This can lead library fail to recover the borrowed books. So the goal of this project is to develop and implement management system electronic libraries that will enable easy and effective management of library services , and easy Utilities literature search and expand access reading materials by enabling users to access e-books from anywhere within the university . This is expected to significantly decongest Library users can also access to the literature by using personal computers in their classrooms. All this has been working through the review of the current manual systems, libraries, and review the documents in question, and to identify strengths and weaknesses in the system and then propose the best system to satisfy both users and management. The study was guided by the following specific objectives for: i) the study of the current library system; b) put the system requirements for the proposed system; and III) and the design of the proposed development of the library system.

METHODOLOGY

The qualitative study majorly in nature, where I met a researcher library users, library staff, and note the use of the library. Has approached users (students and staff) at their convenience in the library , while the library staff to reach in office , noted researcher for easy access to books and shelves general atmosphere in the library. This approach was used because it could give first-hand information that directed to seek quick requirements. Between the requirements that have been identified user requirements functional and non- functional, and other system requirements and system specifications. Information system has been broken down, small units can be controlled (ie, borrowing, and return, download, etc.) other than being treated as one large task. Such as structured design technique encourages the design from top to bottom where the system is divided into separate units for ease of understanding and design. The prototypes were used to develop the system. Gave the models the actual opportunity to work with the functional aspects of the proposed system a long time ago and are implementing this system. In the models, the researcher analyzed the current situation to determine information needs and develop a model of the proposed system**[3,4]**. The system has been implemented using the cell as a background and PHP for the front end. MySQL is an easy to use and open source, and is used widely and powerful software. It can run on many platforms and is capable of maintaining large relational databases. MySQL is also the availability of safe and has a wide range of technical support on the internet. The system is based on client server architecture. The database management system and application server all running on the same computer. The arrival of the client to the database server through the web server.

INTEGRATED LIBRARY MANAGEMENT SYSTEM

It includes library management system integrated collection and acquisition, and the classification of physical loading,cataloging,circulation, and reference service series, and, and access to information and retrieval. When these computerized library services, then it is termed as library automation. Is defined as the automation and technology concerned with the design and development process and systems that reduce the necessary human intervention in their
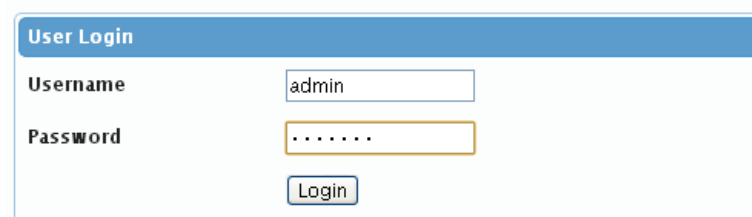
operations**[5]**. Library automation is a general term for information and communication technology (ICT), which are used to replace manual systems in the library. Is justified automate the library through the following factors: i) and resulted in the growth rate of the information they provide is very high in the bulk of the information in libraries. Become difficult to handle and arrange information with traditional methods;ii) It is difficult to update the information because of the huge increase and a rise in the degree of specification concerned; iii) resource sharing between libraries and users can be handled easily by automating the library in the hope of achieving some savings; IV) gives automation feature high speed, more accurate and extensive storage capacity; V.) library automation and improves the efficiency of our work provides consistency and admired our control; VI) also reduces automate repetitive work, and VII) and allows bibliographic controls, check and update. In library automation and one uses computers to perform library services. He notes that computers are increasingly becoming both exercise books and textbooks for college students**[5,6]**. This means that students who did not promote new technologies will be left far behind because the current information can be available now easily through the use of computers. Most of the lecturers and now preparing presentations using their own computers and replaced by some school boards chalk boards with smart. This shows clearly that the management of library services is bound to be ineffective if they are not adopting new technologies for the organization of these offers. Library information for generations to come can only be possible if it is digitized and stored in the electronic media that are small, portable and secure. With the advent of computers in the world and education, and it is no longer necessary to break into the libraries or book stores for books because people use e-books and other soft copies. Someone just needs to carry the flash disk, CD or laptop instead of books. Soft copies are not huge, is crafted in such a way that is easier to use than textbooks and easier to navigate. The writer also noted that the soft copies and cost-effective compared with textbooks as one copy to Soft can be accessed by many people. Copies can also soft animation, which is not possible with the hard copy, and are rarely destroyed. The user needs a computer or reading device to read some of the e-book**[8]**.

ILMS MODULES

The following units are available in the integrated system for the management of the program. Each unit has a login and password separately [9]. All units are easy to operate and menu-driven.

ILMS User Administration

The management module allows users to use a specific user him / her login ID and password for each user of the service in charge of library users.

Figure 1: User Login

Physica lprocessing Module-01

In favor of the acquisition of a very simplified in the library in the various steps required by users, and check

duplication, and quotations necessary, check prices, place an order, and so very fast technique using information and communication technology. With the help of library information and communication technology to save him / her time to the use of libraries and publishers' sites on the Internet. Available orders placed in the form provided on the Internet. To make the web faster and avoid delay mailing bills can be downloaded from websites publisher. E-mail helps send reminders to publishers, vendors, and even to borrowers of books. It also helps in the process of control of the series in the university library. It helps in the preparation of the list of Union serials and helps to circulate via e-mail to the branch libraries.

Figure 2: Acquisition (Accession Register)

Physical Processing Module-02

In physical therapy to keep a record of the automatic joining of books. In this process are not automatically assigned to join. Barcode printing information from a separate book spine slips of paper and is able to paste a sticker on the books.

Figure 3: Acquisition-Part-Ii (Accession Register)

Technical Processing

Create links with library catalogs helps the user to know the details of this item are ready to services for users. With the help of database software it is very easy and quick for employees to allocate numbers to call for new books added. In this section, there is no duplication of work to prepare a catalog card. ICT has revolutionized the practice of indexing in the library. With the help of OPAC users to access libraries catalog holdings on their desktop across campus. It reduces the cost of maintaining a catalog. This service is a significant impact of information and communication technology in the technical department.

Figure 4: Technical Processing

Membership

System to fill the membership form set number of organic automatically every member in defeating any rules, without the identity of the members of all other areas of liberalization on the request of members. Download the image and then member of the member card is ready to print with his / her barcode of each user's library. Card can be printed by various means and one of the multiple cards. Members enter the deposit amount to more than the minimum of services Rs. 100 (hundred) for banking services book.

Figure 5: Membership Form

Circulation / Loan Module

Has been gathering information on the activities of trading such as the issue of the return of the documents and records Members, generating identity card, and so it seems that the basic function of the integrated system for the management of (the current) is where I started these systems. However, even here there is a path of interest in some environments at a number of trading systems and wide. For example, where the dividing line between the loan and circulation between the libraries becomes clear.

Book Bank

Scan Member id (Barcode) from membership cardof library member for his/her previous status of books and deposited amount. ILMS display Member detail as below (figure-6) Maximum five books are issued in book bank for 180 days on Rs. 10 rupees rental charges that are deducted at the time of issuance of books.

Figure 6: Circulation Process

Lending

Scan Member Card for his/her previous statuses of books issued in lending section, Maximum five books are issued in lending without any charges for 30 (thirty) days free, after 30 days Rs. 01 Rupee per day charges on users.

ILMS OPAC

ILMS OPAC allows library users to retrieve information from all defined catalogs, databases, and websites with simple, intermediate or advanced interfaces. An OPAC (Online Public Access Catalogue) interface is providing material status means is available or issued to users. This is web-based application used for users.

Figure 7: OPAC (Online Public Access Catalogue)

TECHNOLOGIES AND ARCHITECTURE

Technologies: ILMS is built with such technologies as,WAMP Server, PHP, HTML, CSS, Adobe Dream wear, Adobe Photoshop and MySQL for database structure.

Architecture: ILMS is fully web-based integrated library management software that runs on distributed computers through a network or server. It can also run on local area networks without access to the internet, although some of the advantages of using it via the web will be lost. It uses a number of well supported and widely used, platform-neutral, and uses the following related software technologies in its

SUGGESTIONS /RECOMMENDATIONS

After using ILMS for more than three years in the MUET Library & Online Information Center, it is felt that it requires improvements in some areas:

- More flexibility is to be provided for library staff for customizing different modules as per their requirements.

- Dues challan management at the time returns books.

- In report module to generate list of books by different user needs. (Budget year, department wise, subject wise, etc.).

- List of books in the library or the usage statistics of different types of patrons (say faculty, students, etc.).

- SMS alert to members for any update news about Library.

- No-dues Certificate Print for Final year Students on staff request by members.

- Member browed books list facility available for member on request.

- Books statically report how many times this book is issued to users in detail report.

- Thumb scanning of member to recognizer his/her service facility.

- In binding management, bills cannot be generated for a partial supply of bound documents (as per the work order) by the binding firm.

DISCUSSIONS

The study discovered that with the proposed library information system there was significant improvement in service and use of library facilities. The librarians can easily locate a literature source, tell who borrowed what books, when and when is it due returning. Students no longer crowd book shelves in search of literature, instead with use of their laptops within the radius of hotspot, students can access them.

CONCLUSIONS

This system was developed for **MUET** as a step to automate its library services. The system met most of the objectives by enabling the library staff keep track of its clients and resources they manage. Report generation was made easy as all the information has become easier to manipulate due to the nature of electronic storage. Searching for reading material has been made easy since different criteria may be used to accomplish the task. The interfaces were user friendly and there was no need for retraining other than orientation. The researcher recommends that this system be continuously built to take care of other library services which include management of the serials and periodicals, book reservations, automatic email notification for reminders, use of bar codes, scanners and labels and use of RFID (Radio Frequency Identification) tags to mitigate book thefts. It is also recommended that the library system, go online so that books and lecture notes are accessed over the internet by users especially from study centers.

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