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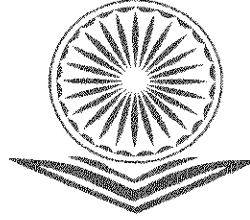
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**CONTENTS OF ENGLISH**

S. No.	Title & Author	Page No.
1	Modules of Library Management System in Higher Education and Higher Education Institutes Mr. Anjum Naeem Dakhwe	1-12
2	Connection between Library Management System and Radio Frequency Identification Dr. B. V. Chalukya	13-18
3	Formation of Call Number in Library Science: An Overview Ms. Rajshri Rohidas More Dr. Sharad Phulari	19-24
4	Application of Open Source Software for Library Management System in Colleges of India Amol V. Gaikwad	25-29
5	User Tracking System (UTS): Modernization of Libraries in the Age of Technology to Manage Library User's Footfalls Santosh M. Ankush Yogesh B. Daphal	30-34
6	Enhancing Library Service using Library Management System (LMS): An Overview Mr. Vitthal Naikwadi Dr. Sharad Phulari	35-44
7	Introduction to Library Management System Dr. Sharad Phulari Mrs. Jagruti Jadhav Mrs. Vandana Mathur	45-50
8	Data Flow Diagram (DFD) For Library Management System Dr. Sharad Phulari Mrs. Jagruti Jadhav Mrs. Rita Pal	51-56

**CONTENTS OF ENGLISH**

S. No.	Title & Author	Page No.
9	Library Management System-Comparative Account of NAAC Accredited Engineering Colleges Dr. Sharad Phulari Mrs. Jagruti Jadhav Mrs. Sonali Joshi	57-65
10	Library Management System-III- Corporative Account of NAAC Accredited Medical Education Institutes Dr. Sharad Phulari Mrs. Jagruti Jadhav	66-72
11	Library Management System and Social Media Dr. Sharad Phulari Mrs. Jagruti Jadhav	73-79
12	Library Management System with open Source Software Dr. Sharad Phulari Mrs. Jagruti Jadhav	80-89
13	Designing of Basics of LMS in Perspective of Users Dr. Sharad Phulari Mrs. Jagruti Jadhav	90-96
14	Library Management System-Comparative Account of NAAC Accredited Education Institutes-Arts, Science and Commerce Colleges Dr. Sharad Phulari Mrs. Jagruti Jadhav	97-105
15	Library Profession in the MOOC Environment Priyanka V. Naikwadi Dr. Sharad Phulari	106-111
16	Types of Library Management System Sunil Patil Ronnie Gonsalves	112-117

**CONTENTS OF ENGLISH**

S. No.	Title & Author	Page No.
17	Purpose of Library Management System Sunil Patil Ronnie Gonsalves	118-123
18	Mobile Technology in Libraries Mr. Nitin S. Joshi Shivaraj M. Madgu	124-131
19	Whatsapp: An Effective Mode of Information Communication in Library and Information Centres Mrs. Yamini P. Galapure Ms. Yogita Ahire	132-145
20	Checklist and Advantages of Library Management System Prof. Dr. Vishwas B. Chavan	146-153
21	Efficient Library Management System which can be Implemented by Institutions Dr. Seema Nahid Mohammad Ehsan Ansari	154-156
22	Today's Need and Purpose of LMS to Develop Academic College Library and Higher Education Muneshwar G. D.	157-162

**CONTENTS OF MARATHI**

अ.क्र.	लेख आणि लेखकाचे नाव	पृष्ठ क्र.
१	ग्रंथालय व्यवस्थापन प्रणाली: कार्य व महत्व डॉ. मधुकर रामचंद्र वेदपाठक	१-६
२	ग्रंथालय आणि आधुनिक तंत्रज्ञानाची गरज डॉ. म्हात्रे सुभाष ल.	७-९
३	ग्रंथालय व्यवस्थापन प्रणाली : महत्त्व व सेवा डॉ. देविदास रामभाऊ रौंदळ	१०-१६

**CONTENTS OF HINDI**

अ.क्र.	लेख और लेखक के नाम	पृष्ठ क्र.
१	शिक्षा प्रक्रिया में पुस्तकालय का योगदान प्रा. डॉ. नारायण नाना बागुल	१-३

1. Modules of Library Management System in Higher Education and Higher Education Institutes

Mr. Anjum Naeem Dakhwe

Librarian, Anjuman Islam Janjira, Degree College of Science, Murud-Janjira.

Abstract

Well established Library management system provides access to library material which is available in physical or digital form, which can be used to achieve the aim of higher education. Library management system leads to proper functioning of all library operations. The primary duty of library to organize its resources in the manner, which is helpful to those who use. It means that the arrangement of library resources should be in easy and convenient for information retrieval and these operations comes under the library management system. Through LMS We can easily handle all the data of the library. It maintains all the statistics and records of library in a proper way and we can retrieve it easily with high speed. Cataloguing of library material is very easy as compared to manually cataloguing and we can easily search the holdings of the library with the help OPAC in a short period of time. This article states that higher education in India, library management system, modules of library management system, need, objectives and advantages of library management system.

Keywords: Higher education in India, library management system, modules of library management system.

Introduction

Libraries area unit an important a part of an academic institute. Usually, it's to roll out fine however complicated tasks to keep up records of the books. Once the institute is that specialize in delivering quality academic services, a well- managed library is a component of the service. Libraries ought to be managed electronically to run the smarter institute. During this article, you'll get in-depth details regarding the modules of library management system and its edges to the education world.

Library

A library could be a service establishment. it's a store house of knowledge that is portrayed within the sort of books, periodicals, newspapers, manuscripts, films, maps, prints,

documents, microform, CDs, cassettes, videotapes, DVDs, Blue-ray Discs, e-books, audio books, databases, and alternative formats. These assortment of sources of knowledge and similar resources, created accessible to an outlined community or parent body for reference or borrowing.

Purpose and Objective of Academic Library

The aim and objective of educational library area unit terribly wide which offer support and contribution to education and analysis activities of their academic establishment. This area unit as follows:

- To extend the image of Associate in Nursing academy as a centre for excellence, particularly in respect of knowledge sources.
- To enhance the standard of education at each level of teaching and learning.
- Increase the number of knowledge obtainable for college kids' et al...
- Increase the worth of knowledge and facilitate in its most use through support service.
- Increase the analysis output by school and analysis students through effective provision of knowledge resources and therefore the support services.
- Develop the role of knowledge resources as Associate in nursing economic investment for getting funds for academy and its infrastructure.
- Increase the cooperation within the use of knowledge resources and facilitate within the. Development of networking.
- Increase the amount of cooperation with alternative establishment, industries, etc with respect of knowledge resources.
- Increase the effective use of expenditure throughout the university in effort, manufacturing and victimization info resources.
- Give personalised info system for supporting the college and students.
- Shield and promote academy's interest with respect of external policies by developing its ability to use info resources in support of its tutorial responsibilities.
- Develop the suggests that to claim that school and students have access to the technical info support required to use info resources effectively.
- Develop single purpose access to the complete vary of knowledge resources within the academy and its neighborhoods.
- Establish personal policies for full vary of workers involved with info analysis.

- Method info on to work station and resource utilization points and
- Project the academic's static's at a war front development in term of knowledge resources through academic, skilled, technical and technological studies.

In short, the library provides resources to encourage cultivation of curiosity, intuitive thinking, intellectual energy and live-long learning for the education community. Its main role is to supply info to academics and learners. Academic library could be a analysis, learning support entity in an educational atmosphere. There is a unit numerous sorts of info services provided by tutorial library that have user to spot the subject for analysis, and therefore the procedure for understanding, the information already glorious and punctually documented.

Higher Education in India

Education could be a basic would like for each soul within the world. The term 'education' has been taken by completely different individuals in numerous ways in which. Some individuals sit down with it as formal schooling or to long learning. Some others sit down with it as acquisition of information, skills and attitudes. Some say that education is nothing, however coaching of people's mind in a very explicit direction to originate desired changes.

"Education within the slender sense doesn't embrace self culture and therefore the general influences of one's surroundings, however solely those special influences that area unit consciously and by choice dropped at touch on the child by the adult persons of the community whether or not through the family, the church or the state." — Thomas Raymont (1906)

Higher education includes all post-secondary education, coaching and analysis steerage at education establishments like universities that area unit approved establishments of upper education by state authorities. It includes all the activities a given country deems to be instruction not solely people who come about at intervals standard universities and graduate faculties, however shorter term education and coaching courses (polytechnics, junior faculties, and varied kinds of technical specialty schools) that area unit 2-3 years long, and even correspondence courses that create use of knowledge technology and area unit targeted at a broad population of scholars. instruction establishments - most conspicuously universities - have 3 functions in total. additionally to education, these area unit analysis and tributary to society. The analysis and education functions area unit 2 sides of a coin; analysis makes the next level of education potential and education, in turn, develops the human resources to try and do analysis. Recently, contributions to society have progressively been demanded of upper education establishments.

this implies the upper education establishments ought to have activities to confirm that accumulated data is circulated directly back to society which they are doing not become “ivory towers.

Higher education is of important importance for the country, because it could be a powerful tool to create knowledge-based society of the twenty first Century. With the growing size and variety of the upper education sector notably in terms of courses, management and geographical coverage, it's become necessary to develop a sound information on instruction. Existing information base on instruction is insufficient and outdated. assortment and dissemination of information on instruction suffers from incomplete coverage, excessive break etc. because of this, Gross entry quantitative relation (GER), that is being calculated on the premise of accessible information, doesn't replicate the right image of the country's development in respect of upper Education sector. Government has set a target of skyrocketing the GER from the current level of regarding twelve-tone system to fifteen by the tip of XI 5 Year set up and to half-hour by the year 2020. Varied new initiatives are taken throughout XI 5 Year arrange to increase the GER. Reliable and comprehensive data-base is an instantaneous demand to live the particular GER and efforts taken to enhance the GER. A sound information on instruction is additionally needed for designing, policy formulation, fulfilling International Commitments, analysis etc.

As Per the MHRD Ministry, Government of India

Higher Education sector has witnessed an incredible increase within the range of Universities/University level establishments & faculties since Independence. The amount of Universities has accrued thirty four times from twenty in 1950 to 677 in 2014. The sector boasts of forty five Central Universities of that forty are underneath the orbit of Ministry of Human Resource Development, 318 State Universities, 185 State personal universities, 129 Deemed to be Universities, fifty one establishments of National Importance (established underneath Acts of Parliament) underneath MHRD (IITs - sixteen, NITs – thirty and IISERs – 5) and 4 establishments (established underneath varied State legislations). the amount of faculties has additionally registered manifold increase of seventy four times with simply five hundred in 1950 growing to thirty seven,204, as on thirty first March, 2013.

The quantum growth within the instruction sector is spear-headed by Universities, that area unit the very best seats of learning.

In India, "University" suggests that a University established or incorporated by or underneath a Central Act, a Provincial Act or a State Act and includes any such establishment as could, in consultation with the University involved, be recognized by the University Grants Commission (UGC) in accordance with the rules created during this regard underneath the UGC Act, 1956. Every year, various students from at intervals the country and abroad, enter these portals in the main for his or her graduate, post graduate studies whereas millions leave these portals for the globe outside.

Higher Education is that the shared responsibility of each the Centre and therefore the States. The coordination and determination of standards in Universities & faculties is entrusted to the UGC and alternative statutory regulative bodies.

The Central Government provides grants to the UGC and establishes Central Universities/Institutions of National Importance within the country. The Central Government is additionally answerable for declaring an academic establishment as "Deemed-to-be University" on the recommendations of the UGC.

At present, the most classes of University/University-level establishments area unit: - Central Universities, State Universities, Deemed-to-be Universities and University-level establishments. These area units delineated as follows:

Central University

A university established or incorporated by a Central Act.

State University

A university established or incorporated by a Provincial Act or by a State Act.

Private University

A university established through a State/Central Act by a sponsoring body viz. A Society registered underneath the Societies Registration Act 1860, or the other corresponding law for the nowadays effective in a very State or a trust or a corporation registered underneath Section twenty five of the businesses Act, 1956.

Deemed-to-be University

An Institution Deemed to be University, unremarkably referred to as Deemed University, refers to a high-performing establishment that has been thus declared by Central Government underneath Section three of the University Grants Commission (UGC) Act 1956.

Institution of National Importance

An establishment established by Act of Parliament and declared as Institution of National Importance.

Institution under State General Assembly Act

An Institution established or incorporated by a State general assembly Act.

Following are charts representing how universities and colleges are increasing in India.

Chart 1

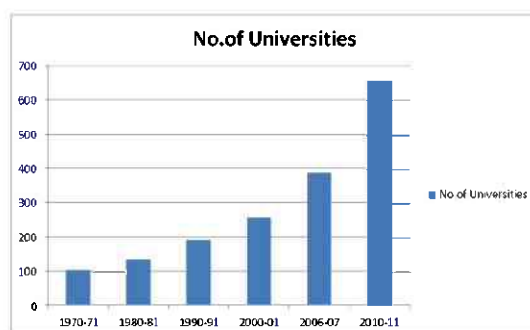
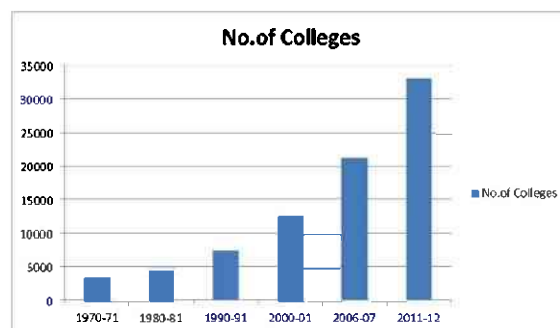


Chart 2



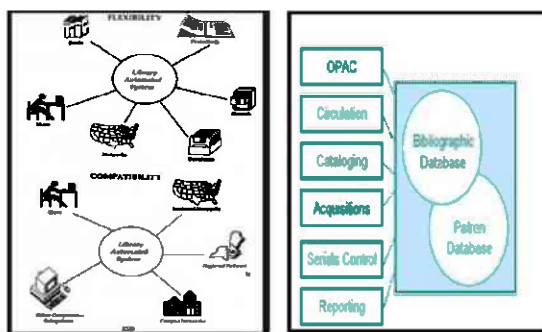
Modules of Library Management System in Higher Education and Higher Education Institutes

Libraries area unit a crucial a part of an academic institute. Usually, it's to roll out fine however complicated tasks to keep up records of the books. Once the institute is that specialize in delivering quality academic services, a well- managed library is a component of the service. Moreover, as good educational activity institutes operations area unit trending lately, libraries ought to be managed electronically to run the smarter institute. During this article, you'll get in-depth details regarding the library management system and its edges to the education business. Let's begin with understanding the fundamentals of library management.

What is A Library Management System?

The library management system is computer code to manage manual functions of a library. The computer code helps to manage the whole library operations from maintaining book records to issue a book. Additionally, it permits efficient management of fine details of books like author name, edition, and lots of alternative necessary details. So, it's easier to go looking for books and notice the proper materials for college kids and also the bibliotheca. The electronic management via the computer code is important to trace data like issue date, due date, World Health Organization has borrowed any material, etc. The system is developed and designed with an aim to facilitate economical management to the faculties to manage a contemporary library with correct information management. This system helps higher academic institutes to manage library functions mechanically. The prime edges of the machine-driven library management system area unit to scale back overheads and increase productivity. The librarians will maintain all library functions simply. In short, this technique supports keeping the records of all transactions of the books accessible within the library.

Following are the images to describe modules of Library Management System.



Need and Objectives of Library Management System

Information explosion has resulted in the production of a large amount of literatures in every field of knowledge. Accordingly the print documents are coming to the library in huge numbers which is not possible for a library to manage the collection manually.

Now a day no user has time to search the required and relevant information from the dense heap of information collection. They have no time to go shelf by shelf to pick up a book. So it necessitated for library automation. In most of libraries are yet to be automated.

Objectives of Library Management System

- To improve over the library collection.
- To have an effective control over the entire operations.

- To share effectively the resources among various libraries at a local, regional, national and international level.
- To avoid duplication and repetitive work/tasks.
- To obtain various services of the existing staff effectively.

Need and Importance of Library Management System

- Information explosion.
- Availability of information in various formats (print, non-print, graphical, audio-visual etc.)
- Different approaches and needs of the user.
- Limitation of library (time, space and human power)
- Increasing no of users.
- Speedup of searching for users.
- Better access to the collection.
- Allows easy sharing of resources with other libraries.
- More interface with the library users with other information resources.
- Better facilities for the users as other libraries are also automated.
- Enhances consistency in the collection, streamlines circulation.
- Time saving of clerical and repetitive tasks.
- Ease of maintenances of statistics and overdues.
- Immediate report to the management.

Library Management System Advantages and Disadvantages

The **library management system** is designed to contribute well-management of library functions. It offers ease to perform day to day library operations electronically. This practice being many advantages like;

- Simple and easy to operate
- Increase librarian's efficiencies
- Mobile access, anytime, anywhere
- Search, add, update, and view library materials online
- Helps to manage library functions constructively
- Saves time and reduces overheads

- Reduce library's operating cost
- Customized reports for better management
- Remove manual processes to issue books and maintain records

The advantage of library management software outweighs the disadvantages. But, there are few disadvantages factors are associated with the system.

- Online stored data is predisposed to cyber hacks. Opting for a reliable online system reduces the risk
- sometimes it is complicated to operate for first-time users
- Requires high-speed internet connectivity for a web-based system
- Risk of computer virus
- Unlike online systems that use cloud computing, Open source system stocks data on the computer's hard drive. This raises the risk of data loss.

Modules of a Library Management System

In order to keep up library management code, you'll have the subsequent set of elements. These elements square measure economical to manage library operations accurately.

Admin Login

The directors will access the whole practicality of the system via this element. The admin will maintain the records and track them as per necessity. Also, the admin will add or take away entries into the system severally.

User Login Section

The scholars, UN agency wish to access library materials, have to be compelled to do registration 1st. The registration permits for maintaining records accurately. Once registering, they'll cross-check and register the library material.

Add and Update Books

The admin will add new books or different materials to the system with the essential details. Thus, the professional will maintain the system effectively.

Search Option

All users of the system, as well as admin will rummage around for library materials. Admin and students will rummage around for books by coming into the name of the book.

View Order Standing

The admin will read rented books and their day of the month. Also, the opposite details like students details UN agency has rented a book are going to be accessible during this module.

Check-in and checkout

The distinct element of a library management system wherever a student can register, and cross-check the library souvenirs electronically. This facility helps to avoid wasting the time of both; students, and also the professional.

Fine Calculator

The scholars and admin will read the issued materials with their day of the month. And, if any book is owed, the system can permit scheming fine for identical.

Conclusion

Well established Library management system provides access to library material which is available in physical or digital form, which can be used to achieve the aim of higher education. Library management system leads to proper functioning of all library operations. The primary duty of library to organize its resources in the manner, which is helpful to those who use. It means that the arrangement of library resources should be in easy and convenient for information retrieval and these operations comes under the library management system. Through LMS We can easily handle all the data of the library. It maintains all the statistics and records of library in a proper way and we can retrieve it easily with high speed. Cataloguing of library material is very easy as compared to manually cataloguing and we can easily search the holdings of the library with the help OPAC in a short period of time.

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25. Challenges of Using Koha as a Library Management System among Libraries in Higher Education Institutions in Zambia, Tuesday Bwalya* and Akakandelwa Akakandelwa, *Department of Library and Information Science, The University of Zambia, Zambia*E-mail: bwalya.tuesday@unza.zm*, *DESIDOC Journal of Library & Information Technology*, Vol. 41, No. 2, March 2021, pp. 82-87, DOI : 10.14429/djlit.41.2.15877 2021, DESIDOC

2. Connection between Library Management System and Radio Frequency Identification

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Librarian, S.C. Shivaji College, Omerga-413606, Osmanabad (MS), India.

Abstract

The present state of radio frequency identification (RFID) technology is discussed in this study. Aside from a brief overview of the technology's fundamentals, the primary current and future sectors of application, as well as benefits and restrictions of use, are explored. Radio frequency identification (RFID) is a generic word that refers to a system that uses radio waves to wirelessly broadcast an object's or person's identify (in the form of a unique serial number).

It's included under the category of automatic identification technologies as a whole. For security, RFID is increasingly being used with biometric technologies. The basic principles of RFID technology, as well as its various variants, are covered in this paper.

Keywords: RFID, LMS, Advantages and disadvantages of RFID in Library, etc.

1. Introduction

Radio Frequency Identification is the abbreviation for RFID. It is an electronic device that uses a reader to extract digital data contained in an RFID Tag (or transponder). Unlike bar code technology, RFID systems do not require line-of-sight access to the tag to obtain its data, and thus are well adapted to hostile settings. RFID readers are usually microcontroller-based radio transceivers that use a time-varying electromagnetic radio frequency (RF) field to power the tag. A Radio Frequency field passes through the antenna of a tag; AC voltage is generated in the antenna, which is rectified to deliver power to the tag once it is powered. Radio Frequency Identification (RFID) is a next-generation Auto Identification and Data Collection (AIDC) technology that aids in the automation of business activities in a secure open environment. Without the need for human intervention, this automation can give accurate and timely information. [1] Radio frequency identification (RFID) is a novel method for data collecting and auto identification that allows businesses to automate their processes. It also aids in the identification of a huge number of things that have been tagged with radio waves. This solution,

which is built on a library management system, allows for efficient transaction flow while also providing long-term and immediate security and traceability benefits to the library. [2]

2. Allied Operations of LMS & RFID

In recent years, there has been a surge in the adoption of RFID technology in the sector. Supply chain management, attendance management, library management, automated toll collecting, and other applications have benefited from research and development in this sector. In the industry, there are several RFID standards in use. [3]

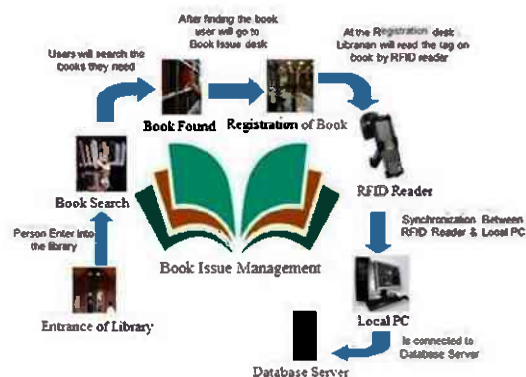


Figure: A gross diagram of RFID system in Library (Source: <https://www.indiamart.com/>)

The existence of numerous standards allows users of this technology to choose from a variety of approaches and use the one that best suits them for communication between an interrogator (RFID reader) and an RFID tag. In terms of RFID in libraries, the technology was initially developed and proposed to the globe in the late 1990s. The goal of RFID technology was to improve the whole workflow in the library as much as possible by automating everything from book issuance to book return.

Singapore was the first country to employ RFID in libraries, with the Rockefeller University Library in New York becoming the first academic library in the United States to do so. The RFID technology was originally used by the Farmington Community Library, which was the first public institution to do so. In 1999, both Rockefeller University and Farmington College began using RFID. The Hoogezand - Sappemeer Public Library in the Netherlands was the first in Europe to employ RFID in 2001, when borrowers were offered options. In a poll, it was discovered that 70% of respondents quickly adapted to RFID technology. Overall, RFID technology is most widely employed in the United States, followed by the United Kingdom and

Japan. However, in today's market, this technology is still prohibitively expensive for tiny businesses compared to larger businesses. [4]

3. Connections to Library

Librarians have a reputation for being early adopters of technology, as seen by their use of computers and, later, bar codes. Standards such as MARC and OCLC have now become popular among libraries for sharing bibliographic data with other libraries.

Several of library automation software has emerged as the next generation of library automation in the last decade. Patrons can now access the library's catalogue at any time via the library's website. [5] Library communities have always been keen to try out new technologies, and as a result of their efforts, patron services have improved.

The next wave of automation in the library business will involve RFID technology. RFID is playing an increasingly important part in rethinking the library process in order to make everyone's job easier, from patrons to librarians. RFID provides a platform for automating many of the library staff's tasks, such as check-in and check-out, sorting, stock management, and inventory.

The library staff, whose role it is to assist patrons in making the most of library resources, is always busy handling books. RFID aids in the automation of this procedure, allowing them to devote more time to helping customers. [6]

4. Advantages of RFID in Library

An Outline

- The quickest, easiest, and most efficient method of tracking, locating, and managing library materials.
- Managing the circulation of books efficiently.
- Check-in and check-out are done automatically.
- Inventory tracking in the library in minutes rather than hours.
- Multiple books can be read at the same time.
- Counterfeiting is prevented by the RFID tag's unique ID.
- Conveyor and sorting systems for automated material handling.
- Taking inventory in an RFID-based system does not need physical de-shelving and shelving of library materials, allowing for inter-library and intra-library borrowing. [7]

Advantages

- Operations such as monitoring shelf material, identifying missing and miss helved items, and routinely taking stock will be possible.
- Spending less time on circulation operations allows library employees to assist patrons.
- Ability to add newer items and features when finances and customer demands dictate
- Library item identification and security are merged in a single tag, removing the need for a separate security strip
- Implementing RFID will significantly reduce the time it takes to issue, receive, transport, sort, and shelve library materials.
- Inventory management can be done using a handheld reader without closing the library and is at least 20 times faster than the current barcode-based system.
- RFID-based system reduces repetitive scanning of individual items at the circulation desk
- During check in and check out, avoiding RSI such as carpal tunnel syndrome.
- Patrons find what they're looking for quickly and easily;
- reminders for due dates allow patrons to return borrowed materials on time;
- use of book drops and return chutes for returning library materials allows for flexible timings;
- RFID-enabled patron cards allow for easy patron identification and reduce errors;
- Even when libraries are experiencing staff shortages,
- Self-service enhances user privacy and improves customer services. [8]

5. Disadvantages of RFID in Library

- Before moving on to the next step, you must first source RFID hardware, such as readers, tags, and antenna. Specific read zones can be determined and implantation can be done once the hardware specification and associated goods are finished.
- Each and every book should be labeled. The technique requires 2-3 persons to place tags to a specified area of the book as determined by the results of the pilot test.
- integrating middleware with existing library software systems and assessing the output for flaws and improvements
- A predetermined collection of test cases will be run in a scenario-based style to evaluate unit and system performance for accuracy and throughput.

- Staff will be trained on various aspects of RFID technology and the new system in place as part of this phase of the implementation.
- There will be a demonstration of the entire system's processes.
- The test cases' mistakes and improvements will be revisited in order to improve the system's performance. [9]

6. Conclusion

RFID is proving to be a versatile technology in a variety of real-time applications, particularly in library management systems. This enables smarter library management, resulting in higher service quality and immediate and effective benefits for both library staff and students. This technology can be used in a volume system. It doesn't matter if it's a tiny departmental library or a large university library; the results are the same. This RFID system also efficiently allows self-checking for library personnel and non-returned books. As a result, it is projected that RFID technology will soon supplant the current technology method. Our library successfully implemented the recommended system, and it is functioning satisfactorily. The current project aims to take things a step further by incorporating online technology. This web technology can provide users with the ability to search the library's books using their desktops or mobile devices. Our institution is developing a suitable web-based infrastructure for these online services. The new features accessible in RFID and internet technologies will be implemented efficiently and developed in this application for this goal.

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3. Formation of Call Number in Library Science: An Overview

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Abstract

Call number is very important in all libraries. Call number the name call that means tells you where the exact address of books are found in libraries. All university and college libraries arrange book and other reading material on their shelves using Library of Congress call numbers. Call number is unique identify the book or reading material.

For example, every college student has unique enrollment number, with the help of that enrollment number we can easily identify that student. Similar way in libraries with the help of call number we can easy to find where that book or reading material arrange on library shelves. *In this paper my research describes how to create call number, class number, book number and collection number. With the help of the call number, libraries can provide faster access library service to readers.*

Keyword: Call number, book number, class number, colon classification(CC), Dewey Decimal Classification(DDC), Library of Congress (LC).

Introduction

Call numbers are addresses which contribution us with finding book or reading materials in the library. The call number give to an entity reveals its topic, author and title. College and university libraries arrange books and other items on their shelves using Library of Congress call numbers - public and school libraries use Dewey Decimal call numbers.

Dr. S. R. Rangnathan is of the view that a document comprises of Gross body (physical carrier) subtle body (language, style, viewpoint, presentation etc.) and the soul (knowledge and subject). In a library one cannot arrange book distinctively without accounting for these physical peculiarities. Therefore it is generally seen that the class number alone fails into individualize a book in a library or in bibliography. Many books in library may get the same class number by virtue of having the same specific subject. In such cases, to assign a unique individual place to a

given document- as it is the requirement of every library these documents are given further notation, also it is called External Notation which, is based on some non-subject consideration, used to arrange documents within given specific subject is known as a book number.

Call number can be generated into two types using The Library of Congress (LC) classification system and Dewey Decimal classification (DDC) system.

1. Library of Congress (LC) Classification System

The Library of Congress (LC) classification system groups together books on similar subjects by their call numbers. There are 21 main LC call number classifications or classes. Within these, there are also sub-classifications.

A – General Work	M - Music, Books on Music
B - Philosophy, Psychology, Religion	N - Fine Arts
C - Auxiliary Sciences of History	P - Language and Literature
D - World History and History of Europe, Asia, Africa, Australia, New Zealand, etc.	Z- Bibliography, Library Science, Information Resources (general)
E - History of the Americas	Q - Science
F - History of the Americas	R - Medicine
G - Geography, Anthropology, Recreation	S - Agriculture
H - Social Sciences	T - Technology
J - Political Science	U - Military Science
K - Law	V - Naval Science
L - Education	

Reading the Library of Congress (LC) call number

Example: **HN59 .T39 2014**

HN: First Letters: In Library of Congress (LC) call number the first letter specifies general class the call number falls within. In our example, the book is located under H, which is where books on social sciences are classed. If there is a second or third letter, these indicate a specific subclass. HN indicates social history and conditions, social problems and social reform.

59: Numbers that Follow the Letters: The numbers define the subject of the book. The number 59 is referring to a book about a specific region or country in this case, America.

T39: Cutter Number (the Next Set of Numbers): The Cutter Number indicates the author or title of the book. It is taken from a table matching names or titles to a set of numbers. In our example, .T39 reflects the first word of the author, Taylor.

2014: Year Number: The edition of a volume is the next part of the call number. The year of publication follows the Cutter number to indicate the edition. In our example, 2014 indicates that this edition was published in 2014.

2. Dewey Decimal Classification (DDC) System.

The Dewey Decimal classification system groups together books on similar subjects by means of their call numbers. There are 10 main classes

000	Computer Science, Information, & General Works
100	Philosophy & Psychology
200	Religion
300	Social Sciences
400	Language
500	Science
600	Technology
700	Arts & Recreation
800	Literature
900	History & Geography

Reading the Dewey Decimal classification call number

Example: 305.20973 T39

305: First three Numbers: Books are arranged sequentially. The first number of a Dewey Decimal call number indicates the general class the call number falls within. In our example, the book is located under the 300s, which is where books on social sciences are classed. If there is a second or third numbers, these indicates a specific divisions and sections. 305 indicates groups of people.

20973: Numbers Following the first 3 Numbers: The numbers define the subject of the book. The number .2 is referring to a book about a specific age group and 0973 means the history and description about America.

T39: Cutter Number (the Next Set of Numbers): The Cutter Number indicates the author or title of the book. It is taken from a table matching names or titles to a set of numbers. In our example, T39 reflects the first word of the author, Taylor.

Call number is made up of three numbers: Class number, Book number, and Collection number.

i.e. **Call Number = Class number + Book number + Collection number (Optimal)**

Class Number: Class number of a book denotes its subject. According to classification system organizes all the subjects in a systematic order and uses an artificial scheme of numbers,

alphabets and symbols called notation, for each subject. The notation used for a particular subject in a classification scheme is called its class number. In the example at Table-1, the class number of Library Science is 2 and the class number of Mathematics is B. All the classification schemes use notation to represent different subjects; but, they use different class numbers for different subjects.

Which classification we have used according to that class number will be created. For example, suppose we are using Colon Classification scheme according to that class number will be generated. Class numbers are created in two different ways CC and DDC. Thus, the class number of Library Science in CC is 2 whereas in DDC it is 020. Similarly, the class number of Mathematics in CC and DDC is B and 510 respectively.

Book Number: Books of different subjects will have different class numbers. But in a library there may be many books on one subject and all these books will have the same class number.

Like in a school or college library if two textbooks of a subject are acquired in large numbers say 20 each; then all these 40 books will have the same class number. We need some method to distinguish all the books having the same class number so that these books can be arranged in some order and find their unique place on the shelf.

We need some method to distinguish all the books having the same class number so that these books can be arranged in some order. Books of the same class can be arranged according to book number. According to Dr. S R Ranganathan “the book number of a book is a symbol used to fix its position relatively to the other books having the same ultimate class”. So, different books of the same subject will have the same class number but different book numbers.

There are very different methods available to assign the book number.

1. Author surname three letter system Example: Dr. S. R. Ranganathan- RAN
2. Cutter-Sanborn three figure author table The cutter table consists of three or more initial letters from the surname or a surname and three digit numbers. Letters E, I, J, O, U, Y, and Z are followed by two-digit numbers. The cutter number includes the initial letter of the author's name and then the corresponding number. 1564- J64
3. Biscoe system of year of publication 1933- N33
4. Colon book number system
 - According to Dr. S. R. Ranganathan book number classification formula is given

- [L] [F] [Y] [A]. [V]-[S]; [C]: g[EVN]
- Where,
- L- Language of the document
- F- Form of the document
- Y- Year of the publication of the document
- Accession part of the year numbe
- V- Volume number of the document
- S- Supplement number of the document
- C- Copy number of the document
- G- Evaluation number
- EVN- Accession part of the evaluation number

Collection Number

The indication of the collection is made by some symbols called collection number. Although, a library may devise its own collection number scheme which may help in indicating the collection, Dr. Ranganathan's scheme as given below may be adopted.

Collection	Collection number
Undersized	Underline Book Number
Wornout	Encircle Book Number
Reading Room	RR
Periodicals	PC
Physics Department	CD

Conclusion

In classifying, each book is provided with distinguished number specified to which can be used for calling the book from the stats and replacing it on its return to its right place.

It is known as call number. This call number fixes the position of the book or any document in sequence and help to locate it through its entry in the catalogue.

Each documents has its own individual call number which comprises of the class number which represents the thought content of the book and book number which represent one or more of the following: Author No., Year of publication, Accession number or any other such appropriate feature.

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4. Application of Open Source Software for Library Management System in Colleges of India

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Abstract

This paper highlights application of open source software for library management system in colleges of India. It also discusses advantages and disadvantages of open source software. This paper describes awareness and role of librarians about application of open source software in the library.

Keywords: Open Source Software, Library Management System, Closed Source Software, Koha, etc.

Introduction

From the last few year application of open source software has been spread rapidly in the world. In India also use of open source software is increasing day by day. At the present time college libraries are also using these open source software technology for the library management. The term open source refers to something people can modify and share because its design is publicly accessible. Open source software is software with source code that anyone can inspect, modify, and enhance. The examples of open source software are Android, Linux, Apache Server, Ionic, MySQL, etc.

According to Barve and Dahibhate (2012) "several OSS are available today for libraries to provide new value added services to end-users while handling large volumes of library data. Many of the professionals are either unaware of these software or due to insufficient technical expertise they do not intend to implement these software in their organisations". "Library management systems (LMSs) are established as an essential tool in the support of effective customer services, stock management and management of services offered by libraries" (Madhusudhan and Singh, 2016). The open source software for library management system is Koha, Evergreen, BiblioTEQ, OPALS, Invenio, SLiMS, Greenstone, FOLIO, NewGenLib, etc. Open source software can be used for the Integrated Library Management Systems, Content

Management System, Digital Library, Learning Management System, and E-publishing and so on in the libraries.



Fig. 1 Open Source Software for Library Management System

The above fig.1 shows different open source software for library management system. College librarians can be installed open source software in their libraries. Among these Koha has large user base from all over the world. Brief information of most popular and leading open source ILMs are presented below.

1. Koha: Koha is the first open source software for integrated library management system and developed by Katipo Communications Ltd in 1999. It was first installed at Horowhenua Library Trust of New Zealand in 2000. The use of Koha is increasing in India. Koha supports all modules of library applications as well as has support for Z39.50 server, multilingual support, supports library standards such as MARC-21/UNIMARC, OAI-PMH, etc.

2. Evergreen: Evergreen is an also open-source software for library management system. It was developed by the Georgia Public Library system in 2006.

3. BiblioTEQ: BiblioTEQ is open-source library management software that develops a QT interface to deliver excellent connectivity to SQLite and PostgreSQL. This software can help users to manage periodicals, DVDs, CDs, books, and so on.

4. OPALS: OPALS is open-source library management software that helps users to manage and handle huge libraries easily. According to the official website of OPALS, they manage two thousand plus libraries around the world. An OPAL is a fully featured library automation system that enables libraries to function quickly and maintain library resources daily.

College Libraries and Open Source Software

At present digital libraries are also playing an important role for developing institutional repositories. For the digitization many software are available in the market. DSpace and EPrints are the most popular open source software for building institutional repositories. The use of content management system is also increasing day by day in the libraries. There is several open source content management software available for managing library website or institutional website. The most popular among this software are Drupal, Plone, Joomla, WordPress, etc.

Advantages of Open Source Software

The advantages of Open Source Software are as follows:

1. **Free:** Open source software is free.
2. **Flexible:** Open source is flexible. The developers can study how the code works and freely make changes to problematic aspects of the application to better fit their unique needs.
3. **Stable:** Open source is stable. The source code is publicly distributed.
4. **Ingenuity:** Open source fosters ingenuity. The programmers can use pre-existing code to improve the software and even come up with their own innovations.
5. **Community:** Open source comes with a built-in community that continuously modifies and improves the source code.
6. **Opportunities:** Open source provides great learning opportunities for new programmers.
7. **License Management:** OSS can be downloaded and installed as many times and many locations respectively. It never track, count or monitor for license compliance.

Disadvantages of Open Source Software

The disadvantages of Open Source Software are as follows

1. **Lack of Friendly user Interfaces:** Open source can be tougher to use and accept due to difficulty setting it up and the lack of friendly user interfaces.
2. **Compatibility Issues:** Open source can pose compatibility issues. When attempting to program proprietary hardware with OSS, there is often a need for specialized drivers that are typically only available from the hardware manufacturer.

3. **Liability Issues:** Open source software can pose liability issues. Unlike commercial software, which is fully controlled by the vendor, open source rarely contains any warranty, liability, or infringement indemnity protection.
4. **Unexpected Costs:** Open source can experience unexpected costs in training users, importing data, and setting up required hardware.
5. **Software Version:** We cannot find any final version of OSS. Every version of OSS has some modifications, which sometimes creates problem in data migration from one version to other.
6. **Online Support:** Online support may take more time than commercial software.
7. **Formal Training:** Formal support and training of OSS are poor in comparison to the commercial software.

Conclusion

The use of open source software saves time, money, and resources. Due to technical knowledge of open source software, many college librarians are not installing OSS in their respective libraries. Therefore, every librarian should participate in the workshops, seminars, conferences of open source software. They can improve technical skills after participation in such types of workshops, seminars, conferences, faculty development programme, refresher course, etc. Technically skilled librarians should organise training programmes or workshops in their colleges. If the libraries have budget issue they can use open source software for the library automation, institutional repositories and content management.

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5. User Tracking System (UTS): Modernization of Libraries in the Age of Technology to Manage Library User's Footfalls

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Abstract

All of the academic institutions in the world have certain criteria and regulations regarding attendance for students. It is very helpful for effective functioning, management and planning of the institutions. The attendance of student-user is measured in for attending lecture, in various department activities, in libraries for reference, consultation etc. and in reading hall for reading book.

There is a huge need for monitoring and recording students' presence whether it offline or online to find out progress of institution. In this paper we are discussing brief information about user tracking system in library and focusing only on attendance, data management and statistical and graphical presentation, advantages of UTS, a case study of using UTS in the library, and also how in the environment of covid 19 UTS is need of hours.

Keywords: Library Technology, UTS, Library Attendance System, LMS.

I. Introduction

As libraries have become information centers in modern times, computerization of libraries has become a necessity. The speed of communication has also increased due to the speed of information. So, computer is the need of the hour. Because computers make it possible to adapt to the increasing speed of information.

Computer technology makes available information available in machine readable form. Tools can be shared with other libraries. Processing information and saving time for retrieval of information of users and library staff. The same can be avoided in the work of library staff etc.

Modern devices like mobiles, cameras, smart cards, scanners, e-book readers, etc. are being used in the library.

II. User Tracking System (UTS) In-Out System in the Library

In the modern library technology helps to exchange of data, information to fulfill the need of the user. Also with the help of UTS- In-out system in the library one can save the time of users and systematically and graphically manage the statistical data of users in the library. This data is reusable and it can be arranged and save systematically daily, weekly, monthly and yearly for the purposes of any audit or reporting to the higher committees.

III. Manual Attendance Monitoring: to Automated UTS

Mostly in all academic libraries at the entrance will see one registrar for entry name and other details to in the library. It using paper sheets and an old file system which is not efficient and it is also time consuming.

IV. Need of a System in Library

This brings about the need to have a computerized system to control users presence or attendance. The existing model of manual attendance using paper sheets is very time consuming. UTS save time of library staff can be used for more helps, consultation and other day to day activities of the library.

Also UTS save the user time. The reader comes to ask for different types of information with no times and make him more comfortable, confidence to search and browse documents or information in the library. Due to the inefficiency of traditional methods of attendance record keeping, a more secure and accurate barcode technology model is needed to be formulated and implemented.

V. A case Study –UTS

1. About Dr. D. Y. Patil School of Engineering and the Central Library

Dr. D. Y. Patil School of Engineering is one of the engineering institute of Dr. Ajeenkya D. Y. Patil Group of institutions. Dr. Ajeenkya D. Y. Patil Group of institutions is one of the most prestigious academic groups in the Pune City and state of Maharashtra which is Approved by AICTE and Affiliated to SP Pune University.

Dr. D.Y. Patil School of Engineering (DYPSOE) of was established in 2010 by the Chairman of Dr. Ajeenkya D .Y. Patil. The institute offers five UG Programs (B.E), three PG Programs (M.E) and three Diploma programs. Total 2000+ students are studying in the institute.

About Central Library of DYPSOE

The Central library of DYPSOE is the nucleus of the teaching-learning resources. Though the collection is larger by number as well as rich in quality. The library offers its services and access the information sources to all students, the faculty members and the alumni of DYPSOE.

The Central Library is located on the first floor of the DYPSOE building. The library aims to offer services, resources and physical spaces should provide a strong foundation to support the institute in achieving the highest standards in teaching, learning and research. The library preserves the knowledge of the past while ensuring we are a library for the 21st century and beyond. Library employees take pride in the services they provide.

2. System and Application Requirement

1. Computer- Processor-i3, RAM-8GB, HDD-100GB min
2. Barcode Reader: Barcode Remote Reader
3. ICard with Barcode

3. Methodology

The barcodes would be attached at the back of each student's ID card and the information that would be embedded in the barcodes will contain unique data of the student such as Roll No, Name, department, faculty, year and all other important information about the student. Students are able to participate in the class attendance only by showing their identity card through the barcode reader.

They can view their attendance percentage which will motivate them to control their class attendance reputation. With real time clock capability of the system, attendance taken will be more accurate since the time for the attendance taken will be recorded.

4. UTS in Library

These aforementioned shortcomings among others serve as justification for migrating from manual based to the proposed system. The system is based on barcode reader technology and the following screenshot shows the actual system.

The system can be easily accessed by library staff and most importantly, the reports can be generated in real-time processing, thus, providing valuable information about the students.



Fig.Screenshot1: Barcode scanner and a UTS at Entrance

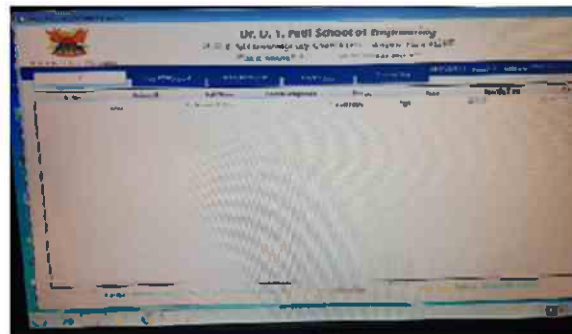


Fig.2 Screenshot 2-Statistics and Report

5. Advantages of the Proposed System

1. This UTS system is a fully automated system, reliable, fast, and accurate, eliminate paper work,
2. It saves times-because it has to show only barcoded id in front of scanner it saves time.
3. It eliminate to keep physical attendance register
4. It serve as a tool to monitor tracking of library user. For eg. we can easily find out the most visited user of library in a month.

In the Environment of covid 19 UTS is a need of hours because with the help of this UTS In-out system in the library: one can maintained safe distance in users and also avoid contact to pen, register etc., and any staff members of the library.

Conclusion

The flow of information has increased tremendously and the scope of library science in the modernization is not limited to arranging books in the library. It should be used by the new generation and for this Librarian must develop a love of reading and attraction of the libraries to users with the help of new technologies and strategies. UTS is the new system which play very importance role to user. UTS is fitted in the entrances. It gives first impression to the user and reflect the actual image of library to its user at doorstep. User need instant information from

various sources and here comes the use of technology. Library portals-websites, Digital Libraries-Institutional Repositories, different best practices by using ICT, apps developed by libraries are most welcome and appreciable by users.

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6. Enhancing Library Service using Library Management System (LMS): An Overview

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Abstract

Library Management System is called Library Management Software (LMS) or Integrated Library Management Software (ILMS). It acts as a tool to transform traditional libraries into digital libraries. In the scenario of Information Communication Technology; LMS has changed libraries' operations and functions and it supports library professionals to work easily. The present paper focuses on the meaning and concept of Library Management System (LMS), functions and advantages of LMS, the concept of library automation and its benefits, an overview of LMS and open source software in the changing scenario of Information Communication Technologies (ICT).

Keywords: Library Management System, library automation, open-source software, LMS, ICT, etc.

1. Introduction

Libraries have changed their services in the current era of information explosion by utilizing Information Communication Technology (ICT). Both the library automation and library management systems or software are self-contained. Library automation is a broad phrase that refers to the use of information and communication technologies (ICT) to automate manual tasks in libraries of all types and sizes. LMS has also shown to be a godsend in providing automated library services in all types of libraries. There are already over a hundred software programmes available, and proper library management software selection necessitates a thorough examination to determine its utility and affordability. Koha, DSpace, Newgenelib, E-granthalaya, and other open source software for library automation are also available.

2. Library Management System

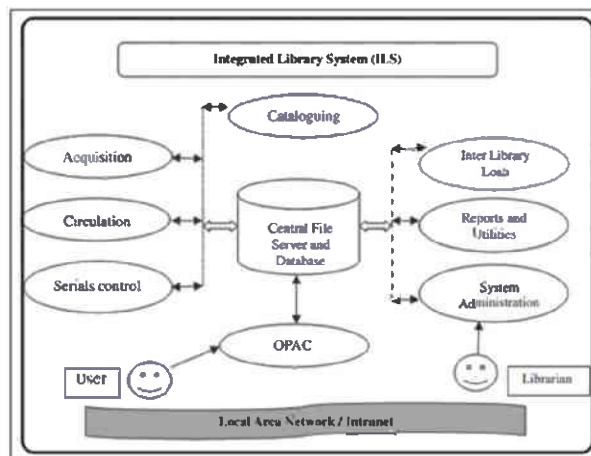


Image Source: Egyankosh

The Library Management System (LMS) is a programme that helps traditional libraries become digital libraries. Students/users must look for materials in library collections, which is a time-consuming process, and there is no proper database management of issues/fines. The purpose of a library management system is to run a library more efficiently and for less money. The library's functions are reduced because of system is truly computerized. A library management system is a type of tech which manages every aspect of a library's operations. It helps librarians keep track of new books as well as books that members have wanted to borrow and their due dates. This technology automates every element of your library's operations. A library management system is software that manages the library's records. It includes, among many other elements, data upon that amount of literature library services, the quantity the books issued, the amount of publications recovered or reissued, and the overdue fine penalty record. Library Management Systems (LMS) is software that helps maintain a database used to enter new books and track books borrowed by members, as well as their due dates. It also relieves the librarian of the task of maintaining manual records. A library management system helps the librarian keep track of library materials more efficiently, saving time. The librarian can indeed easily supervise the procedure of allocating books. A library could be used by learners and professionals to maintain track of the availability of all books in a store at all times. An LMS is just a term used to describe any automatic digital library. A library's enterprise resource planning system, often known as a library management system (LMS), keeps track of commodities possessed, orders placed, bills paid, and patrons who have borrowed. A standard ILS consists of

2 graphic users, a relational database, and data system communication software. The following functions can be performed by the Library Management or Software:

- Categorizing and organizing library materials, and also keeping a record of what is digital inside the collection, are all part of catalog management.
- Licensing and returning items to library patrons, as well as tracking the flow of books, are all part of circulation management.
- The process of maintaining track of a stock of periodicals, magazines, and newspapers is known as serial management.
- Each book may be uniquely identifiable using bar-coding.
- Barcode scanning is a process that involves scanning a barcode with a scanner.
- Online access: The Online Public Access Catalog's public user interface.

2.1 Advantages of LMS

The library management system is intended to aid in the efficient administration of library services. It makes it simple to do routine library procedures electronically. There are numerous advantages to this approach, including:

- Simple and straightforward to use
- Increase the efficiency of librarians.
- Mobile access is available at any time and from any location.
- Helps to control functionality effectively by enabling users can search, add, update, and browse research resources online.
- Saves time and money by lowering overheads.
- Reduce the operational costs of the library
- Reports that are tailored to your needs for better management
- Eliminate manual processes for issuing books and keeping records.

3. Library Automation: Meaning and Concept

The word "automation" is derived from the Greek word "automose," which refers to something with the ability to move spontaneously or independently. D.S. Harder, who worked for General Motors in the United States at the time, coined the term "automation" in 1936. He defined automation as the automatic management of items between successive manufacturing processes. "Automation is the technology involved with the design and development of process and system that minimize the need for human intervention in operation," according to the

Encyclopedia of Library and Information Science (Kent, 1977). Automation is "an invented phrase with no specific generally accepted technical meaning but often used to describe the notion, development, or usage of highly automated machinery or control systems," according to the McGraw Hill Encyclopedia of Science and Technology (McGraw, 1982). "Automatically controlled operation of an apparatus, process, or system by a mechanical or electronic technology that replaces human organs of observation, effort, and judgment," according to Webster's Third New International Dictionary of English Language. Automation is defined as "the application of automatic control to any sector of industry or science by extension, the use of electronic or mechanical technologies to substitute human labor by the Oxford English Dictionary. Simpson and Weiner (Simpson & Weiner, 1989) The application of computers and the use of computer-based products and services in the performance of various library operations and functions in the provision of various services and the development of output products is referred to as library automation. The use of automatic and semiautomatic data processing equipment (computers) to undertake typical library housekeeping duties like acquisition, circulation, cataloguing, and reference and serials control is known as library automation. Today, "Library Automation" is by far the most often used phrase to characterize the computer-assisted mechanization of library functions. Uddin (2009) is a writer who has written several books on the subject. "Library Automation is the use of automatic and semiautomatic data processing equipment to conduct such classic library functions as acquisitions, cataloguing, and circulation," according to the Encyclopedia of Library and Information Sciences. The tasks themselves are those traditionally connected with libraries; library automation can thus be separated from related topics such as information retrieval, automatic indexing and abstracting, and automatic textual analysis" (Kent, 1977).

3.1 Needs of Library Automation

Library Automation is Essential Due to the Following Reasons

- Information Deluge
- New approaches and technologies are now available
- Insufficient space
- To increase the effectiveness in a variety of activities and services
- To save the reader's time
- To gain a better handle on the collection

- To avoid duplication of effort
- To accuracy and timeliness
- To share materials with other libraries over regional and global communications systems.

3.2 Benefits of Library Automation

- It increases effective management and system access
- Systematized data collections are cataloged.
- Service Improvements in Libraries
- Increase productivity by reducing the workload of your employees.
- An effective approach to information storage and retrieval as a result of technological advancements
- Users will save time.
- Resource Sharing Activities should be used properly.
- Library activities and services are more cost-effective.
- New library services are being introduced.
- Visitors will benefit from improved services with a shorter wait time.
- Materials inside the library were cataloged more quickly.
- Improved variety, quantity, and quality of library materials
- Prepares libraries to meet the difficulties provided by emerging technology and advancements.

4. Library Management System (LMS): An Overview

Haravu (2004) discussed the growth and evolution of Library Management Software in libraries, which aids in the execution of various library tasks. Since the 1970s, library management software has indeed been available in all parts of the world, according to Shailendra and Rai (2011). Chandraker (2004) underlined the importance of Unicode Incorporation, which offers a solution to the location of world language difficulties. Unicode is a multilingual standard and technology that allows Indian language texts to be localized. Shailendra and Rai (2011) highlighted an important factor in all library automation and networking that has taken precedence: the implementation of international standards. Mukhopadhyay separates the growth and development of LMS into four different eras (2002). Sherbini and Klim (2004) discussed the importance of metadata standards, which are mostly dependent on the resources for which they

were developed. Ebenezer (2002) provided an overview of the evolution of Integrated Library Systems (ILSs). Significant trends in LMSs in connection to library resources and services were identified and reviewed by the author. The incorporation of Web-based technology into library automation software led to significant changes in previous modules – which were based on Integrated Library Systems (ILS). The scenario has completely changed in the Web context, with the Online driving and managing all ILS. Haravu (2004) examined the evolution of library management software (LMS) systems, as well as changes in technology, the information environment, user expectations, and search patterns. Mukhopadhyay (2000) also outlined many viewpoints on the evolution of LMSs. Over time, an open-source library management system is a credible external entity for LMS programmes.

4.1 Open Source LMS for Library Automation

Acquisition, cataloguing, circulation, administration, reporting, and user data are all handled by the library management system, which provides centralized management and processes for so many types of libraries and information activities. It combines self-service kiosks with online web portal access for catalogue searches, content distribution, and reservation requests, among other functions. The following are some examples of open-source library automation software:

4.1.1 Koha

Koha is an open-source, full-featured ILS (integrated library system) that is currently in use by libraries all around the world. For those of you who don't know what an ILS is, it's a system for keeping track of a library's operations, including payroll, expenses, acquisitions, and, most crucially, trying to keep track of a different media checked out by the librarian's patrons. Many smaller libraries can't afford to buy, install, and operate an ILS, therefore Koha is an excellent substitute. Koha is a library information system that employs the OPAC (open public access catalog) interface. Furthermore, because Koha has no vendor lock-in, libraries can get tech support from anybody they want. Koha is the first open-source Integrated Library System (ILS) in the world, and it is available for free (open-source and so no license fee, ever). It was created in New Zealand by Katipo Communications Ltd and first used by Horowhenua Library Trust in January 2000. It is currently maintained by a global team of software vendors and library technology professionals, and it is used in libraries of all sizes throughout the world. The name "Koha" is derived from a Maori term that means "gift" or "donation." It's compatible with

Linux, Unix, Windows, and MacOS. For professional cataloguers, Koha complies with copy cataloging as well as z39.50, MARC21, and UNIMARC. Website: <http://koha.org/>

4.1.2 NewGenLib

Verus Solutions Pvt Ltd and India's Kesavan Institute of Information and Knowledge Management developed NewGenLib (New Generation Library), unified library automation and networking solution. Verus Solutions Pvt Ltd, Hyderabad, India, announced NewGenLib Open Source under the GNU GPL License on January 9, 2008. NewGenLib is anticipated to be used by 2,500 libraries in 58 countries as their primary integrated library management system.

Website: <http://www.verussolutions.biz>

4.1.3 Evergreen

When looking into open source ILS solutions, one possibility is Evergreen ILS. Evergreen, a powerful, enterprise-level ILS solution developed by Equinox Software, is designed to support the workload of big libraries in a fault-tolerant system. It, too, is standards-compliant and uses the OPAC interface, and it includes numerous capabilities such as flexible administration, workflow modification, and adaptable programming interfaces, and it can benefit from any community contributions because it is open-source. It's a free, open-source library management program licensed under the GNU General Public License. It was originally used at Georgia's PINES consortium in September of 2006. It is library software that helps users find library materials while also assisting institutions in managing, cataloguing, and circulating those materials, regardless of how huge or sophisticated the libraries are. Website: <http://www.open-ils.org/>

4.1.4 Greenstone

The Greenstone digital library software is a free and open-source platform for creating and presenting information collections. It creates collections with appealing and simple-to-use full-text searching and metadata-based browsing features. Furthermore, they are simple to maintain and can be completely constructed and augmented automatically. The system is expandable: different document and metadata types can be accommodated by software "plugins." The Greenstone program promises to allow people to create their digital libraries, particularly at universities, libraries, and other public service institutions. Website: <https://www.greenstone.org/>

4.1.5 DSpace

DSpace is a ground-breaking digital institutional repository that digitally collects, saves, indexes, preserves, and redistributes a university's research faculty's collective knowledge. It organizes and distributes digital objects, which are made up of digital files, and allows for the generation, indexing, and searching of associated metadata to find and retrieve the items. The Massachusetts Institute of Technology (MIT) Libraries and Hewlett-Packard collaborated on DSpace's development and design (HP). DSpace was created as an open-source tool that can be used by institutions and organizations with few resources. Its purpose is to aid in the long-term conservation of the repository's digital content. Digital content can be submitted, managed, and accessed via DSpace. Website: <https://www.dspace.com/>

4.1.6 EPrints

Eprints is an open-source software package for creating Open Archives Initiative Protocol for Metadata Harvesting-compliant open access repositories. It has a lot of the same capabilities as Document Management systems, but it's designed for institutional archives and scholarly periodicals. EPrints was created at the University of Southampton's School of Electronics and Computer Science and is licensed under the GNU General Public License. Website: <https://www.eprints.org/uk/>

4.1.7 Automatización de Bibliotecas y Centros de Documentación (ABCD)

"Automatización de Bibliotecas y Centros de Documentación" (Spanish) stands for "Bibliotecas y Centros de Documentación Automation." ABCD is an integrated library management system that encompasses all of a library's key functions. It can handle acquisitions, bibliographic database administration, user management, loan management, periodicals control, and so on. It uses MARC-21 cataloging formats as well as other contemporary standards or protocols (Dublin Core, METS, Z39.50) and is available as Free and Open Source Software (FOSS) with developer tools. Website: <http://reddes.bvsaude.org/projects/abcd>

4.1.7 E-Granthalaya

The National Informatics Centre, Department of Information Technology, Ministry of Communications and Information Technology, Government of India, developed E-Granthalaya, a library automation program. The libraries can utilize this software to automate in-house processes as well as user services. The software can be used in a client-server or stand-alone

mode, with the database and WebOPAC installed on the server PC and the data entry tool installed on the client PCs.

The program runs on the Windows operating system.

Ministries/Departments/Public/Academic/Universities/Colleges and school libraries receive the software at no cost. Additionally, libraries in the public and private sectors can contact the NIC for free copies of the software.

Website: <http://egranthalaya.nic.in/>

Conclusion

The usage of library software is important for obtaining optimal library efficacy at a low cost. This LMS system assists library personnel in performing library functions to deliver quality services to library users at a low cost. It aids in the reduction of library staff workload as well as effective or smart work. Some open-source software for library automation is available, as mentioned in the article. To create automated library services at a low cost, open-source software is advantageous. To fulfill the library's demands, free software is regularly updated, altered, and adapted. This article will be helpful for every library professional to understand the concept of LMS and library automation.

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7. Introduction to Library Management System

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Abstract

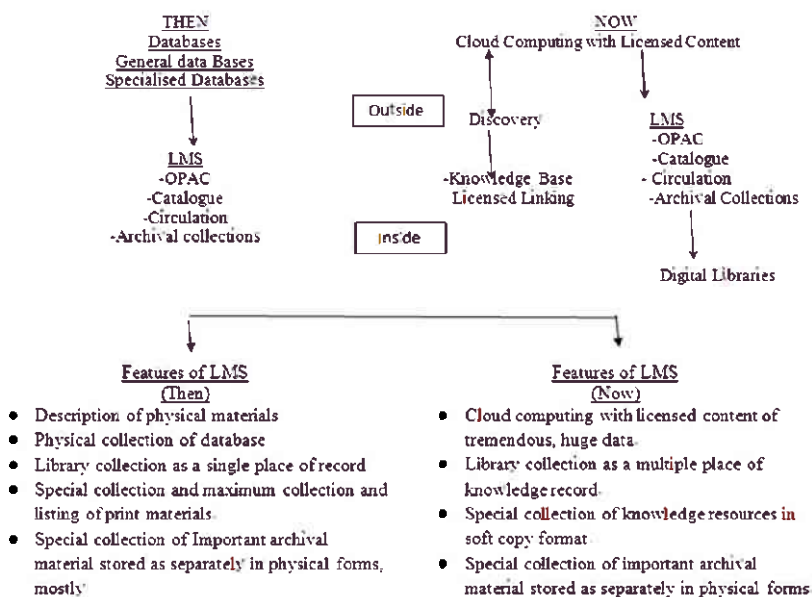
This Review depicts discussion about the manual library Management System and digital/computerised library management system. The traditional-manual LMS is bulky, spacious, slow, costful as compared to recent digital- computerised advance library Management System. Special collection and maximum collection of knowledge resources in soft copy format.

Library is brain for the educational institutes. Advanced Library Management System is based on software. It changes role, technology and services of Libraries. Information and communication technology (ICT) identifies and recognises the needs of readers. TICT-LMS, itself procure the e-books, e-periodicals, e-references, e-journals, etc. It can be accessed online, quick and in huge form. Advanced LMS is need of time, showing better utilisation of technology for best library services. Digitalized LMS helps the Librarian to maintain library books, references, journals, encyclopaedia like knowledge resource in more operative manner.

LMS design carries online access, cataloguing of products, membership Management, cataloguing of services, fee management, budgeting, self-management, barcode scanning, search function, digital accession, digital storage of data. Digital payment-transactions for all types of purchasing which is fast, quick, cost-effective and user friendly.

Key Words – Library Management System, ICT, Digitalisation of Library, Libraries, Traditional Library, Digital Library System software for LMS, Manual Library Management, Computerised Library Management, Accession, Procurement, Library operations, Cost-Efficiency of Library

Introduction



The above table shows library Management System position in Initial days and in present situation. The advance library Management System is advanced in terms of cost, data, storage data processing, data analysis, etc. The cloud Computing helps to become robust form of library Management System which would be fast processing Knowledge System.

A. Library

Library is brain for the educational institutes. NAAC said that library of HEIs is knowledge resource. A Library is not mere place of collection of books and resources also place to sit to gain knowledge, place to fetch knowledge, library guides the students to promote their views on their own perception, different ability knowledge provided by library optimises the students-learners to achieve a better understanding of academics and better development of personal skill development.

B. The Changing nature of Libraries

- The changing System of Libraries.
- The changing work of Libraries.
- The Changing role of Libraries.
- The changing Services of Libraries.

a. The Changing System of Libraries

Initially, Libraries were just repositories of information. Libraries working as full service community centres. The aim of such community centre was to meet a wide variety of civic and

social needs. In the changing system of libraries, the working of libraries changing to online. The collections and services of libraries shifting to digital. The changing system of libraries means the transforming buildings of libraries into collaborative learning spaces.

b. The Changing Technology of libraries

The, annual nature of libraries changes to techno-savy libraries. The internet technology, the computer base technology adopted in present days from manual processing. This changing technology of libraries help the libraries to more effectively preserve the knowledge-Information-data. The digitalization of libraries helps the libraries to mine-explore-deposit-store and use the collection (knowledge-Information-data) online, and quick, fast.

c. The Changing Role of Libraries

Traditional manual Libraries changing to digitalization by Library Management System The digitalisation of library, changing the role of librarians radically .The Stakeholders (student, teachers, readers, Community people , in college management etc), get fast, quick , easy ,online access to library , no waiting, no Physical handling ,no limitation in LMS driven Libraries.

d. The changing services of Libraries

Library Management driven Libraries changed the definition of Services LMS Based Library become fast Efficient for information. The LMS -Library Become a place to be creative through projects.it is free to make mistakes and then to learn Through the creative process.

D. Traditional Library Setup and Digital Library Setup

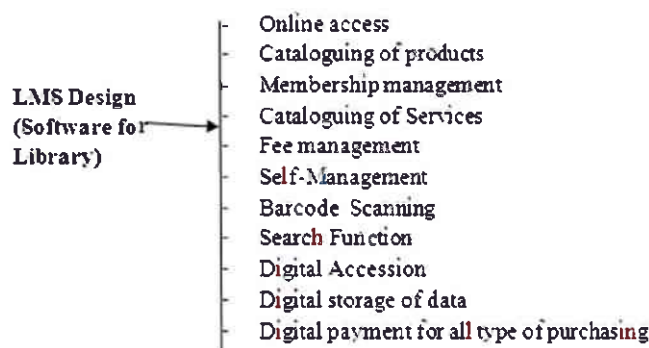
	Traditional Library Setup	Digital Library Setup
1) Operation	Library Staff operates manually library staff operates in the issuing session ,acquisition Section ,Cataloguing Section ,Classification Section, Periodical Department ,General reading Division ,In House study Section by readers.	Information Technology , Digital Technology ,computer programmes provides operations through machines in library the electronic formats available in digital form.
2) Procurement	Library Staff identities and recognise the needs of readers .the staff ,itself procure the books ,periodicals etc .the procurement is done	Information and communication Technology (ICT) identities and recognise the needs of readers the ICT

	Manually .	,itself procure the e books , e- periodicals , etc .the procurement is done digital
3) Communication	Library staff communication Physically , Orally ,displaying hardcopies of different books, textbooks , references question bank ,journals etc to the staff ,teachers students and various stoke holders.	ICT digital computer itself communication to teachers , staff , Students and various stake holders about soft copies of different e- books ,textbooks, references , question banks , etc.
4) Accession	To get references, abstract, books , journals, reading material , reference materials , encyclopaedia etc. can be accessed only by physical way in person.	To get e references, e- abstracts, e-books, e – journals, e-reading material ,e-references materials e encyclopaedia , etc can be accessed by online mode ,no need be physical in person presence.
5) Cost efficient	The Traditional Libraries are not cost efficient.	The Digital Library set up is cost efficient
6) Space	It acquires lot of space .it is spacious ,so requires lot of space ,energy (electricity etc.) it adds the cost of traditional Library	It requires a limited space It is compact ,so requires. It limits the cost of digital Library setup. the limited. Space makes it cost efficient.

LMS-Set-up & Design

- a. **Definition-** LMS is a software. LMS is a software .LMS is digitalization of Library Services. LMS is a software that uses to maintain the functions, activities, of the Library.
- b. **Purpose-** Library Management System is for keeping the data of books issued to learners, readers on digital-quick Base system. MS helps the Librarian to maintain library books, reference, journals, encyclopaedia like knowledge resources in a more operative manner. It will help to save the time of Library Staff as well as readers.

- c. **Fourth step-** Digital system / computerised software system for further break down the functions into specific activities that are carried out in knowledge resources centre.
- d. **Fifth step-** Digital system / computerised software system with coding for each activity in the case, class and Activity. Diagrams. It is the most important function in the design of the library management system Software. The LMS software develop on the different digital platforms, such as python, GitHub, it stores the Library information data for a long time.



Conclusion

This Review depicts discussion about the manual library Management System and digital/computerised library management system. The traditional-manual LMS is bulky, spacious, slow, costful as compared to recent digital- computerised advance library Management System. Special collection and maximum collection of knowledge resources in soft copy format.

Library is brain for the educational institutes. Advanced Library Management System is based on software. It changes role, technology and services of Libraries. Information and communication technology (ICT) identifies and recognises the needs of readers. TICT-LMS, itself procure the e-books, e-periodicals, e-references, e-journals, etc. It can be accessed online, quick and in huge form. Advanced LMS is need of time, showing better utilisation of technology for best library services. Digitalized LMS helps the Librarian to maintain library books, references, journals, encyclopaedia like knowledge resource in more operative manner.

LMS design carries online access, cataloguing of products, membership Management, cataloguing of services, fee management, budgeting, self-management, barcode scanning, search function, digital accession, digital storage of data. Digital payment-transactions for all types of purchasing which is fast, quick, cost-effective and user friendly.

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8. Data Flow Diagram (DFD) For Library Management System

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Abstract

Data Flow Diagram is the overall system in Library Management System dealing the flow of information, transformation of data of books in library. Book request and library card are two major inputs of DFD in Library Management System. Levels of DFD in LMS depends upon the information at demanded book. It should be displayed by the LMS for readers while selecting the book. Depending upon the Information demanded book, there are three main levels of DFD as level 0, level 1 and level 2.

The Interconversion of input data and output data in graphical form is representation of DFD in LMS. Errors to avoid while developing DFD in LMS. Errors to avoid While Developing DFD in LMS dataflow, control flow, representation of entities, functionality of LMS, Connection of data store, DFD in LMS should be balanced at all levels, Interconnection of DFD are important along with no bubbles in Level "0" and avoid the cluttering in DFDs.

Users, data flow to system and data flow from the system are three main references in DFD at LMS. For context Diagram in DFDs External Entities SRS analysis, Data Flow representation are helpful to develop the best Library Management System.

Key Words –LMS, DFD, DFDs, Level 0, Level 1, SRS, Bubbles, Context Diagram, Data Flow.

Introduction

Meaning - Data Flow Diagram (DFD) means the flow of information, the flow of transformation used for

A. Moving a data in the system and from the System

DFD is the overall system represented and dissembled by using input, processing of input data and output.

B. Inputs of DFD- The Inputs for DFD are described as a) Book request and b) Library Card.

Discussion

a. Book Request-It involves the request by the students , teachers, management or even if parents or by researchers, scientists, etc. This book requirement request varies with purpose of studies, the type-content of books, the availability of copies of books, the ratio of the books to the stakeholders(students/teachers/management/parents/researchers- scientist etc) the text books are frequent with the book request the reference book are less frequent as compare to the text books request.

Certain books are appreciated by readers by content wise or by simple-lucid language or by information wise. Demand or book request of such book is maximum. Certain books are ancient copies, old copies, rare books, valuable books, out of print books, etc.

In such cases the book number is less than the book request. The more demanding book request may considered differently in library Management System.

The data flow Diagram or Data flow arrangement is differ with respect to the value of book in terms of knowledge, information, content for readers.

b. Library Card – Library card is a card issued by a library. It is issued to individuals. Certain times it may be issued to an organisations. The library card is entitled with individual or their representatives to borrow the reading materials from library. It elaborative concept of library card form Collins English Dictionary.

Library card is referred as a card for the management of books and patterns in a library. A library card serves similar functions as membership card , library card provides privilege to the reader(Student/teachers/management/parents /etc). Such as authority to borrow the books and other reading materials for borrowed period with may be for hour, for a day, for a week or for definite period as per decided terms by LMS authorities and the receiver.

Library card play important role in lms, because the library card also serves as a method of identification. The reader's Identification information are there on library card. Mostly in LMS(Library Management System), The library card take responsibility for the borrowed item.

On behalf of the borrower. It means if the library card holder violates the responsibilities which were signed by the card holder. The library card plays a vital role in LMS because, if the cardholder violates these responsibilities, their borrowing privilege could be restricted or suspended or fined (as per terms and conditions of law, mutually agreed by library card issuing authority and the borrower/receiver etc of the library.

Library card may also refer as borrow cards. It is because, Library cards used to record book borrowing before the advent of computer system of library management System.

The position of library card is in book or with authority of LMS, The position of library card indicates the position of book in LMS. If the Library card is with the book it means book is not issued in LMS, the book is in stack. The Library card in possession of librarian staff in LMS means book has been issued. The library card gives the details of date of issue, issuer, date of return of the book with every details of book such as title of book, edition, author, publication, price etc, many often the library card in LMS shows the history of the borrowers in particular time period.

c. DFD-Data Flow Diagram 0 Levels of DFD-Levels of DFD in LMS is depends upon the information of demanded book. It should be displayed by the library management system. The levels of DFD can be used by the readers(Students)/Teachers/Management/Parents/Scientists/Researchers/General readers) while selecting the book, it makes it easier for the end users.

Depending upon the information of demanded book there are three main L-DFD in LMS. Depending upon the information of demanded book there are three main L-DFD in LMS

1. **Level 0 DFD**
2. **Level 1 DFD-**At this level, the system has to show or exposed with more details of processing. The processes that are important to be carried out are:
 - Book delivery
 - Search by topic

List of authors, List of Titles, List of Topics, the bookshelves from which books can be located are some information that is required for these processes. Data store is used to represent this type of information.

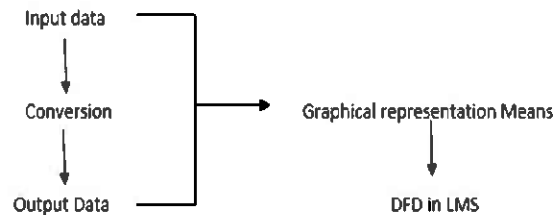
3. **Level 2 DFD**

D. Allied activities of DFD

- a. Purchasing of new books
- b. Replacement of old books
- c. Charging a fine

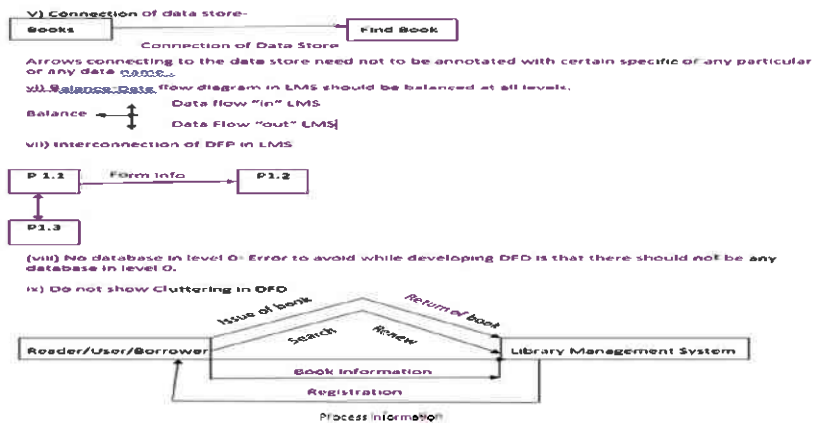
E. Developing DFD for Library Management System

a. Representation of DFD in LMS



b. Errors to avoid while developing DFD-

- i. **Data flow**-DFDs should always represent data flow.
- ii. **Control Flow**-DFDs should be no control flow.
- iii. **Representation of external entities**-all external entities should be represented at DFD, Context level.
- iv. **Functionality of LMS**- All functionality of library management system must be collected in DFDs None of functionality should be overlooked.



Process Information

At the time of too many data flowing occurs in and out of DFDs, one should has to combine these data item into high level item. Do not show cluttering in DFD.

X. Connected/Un-Connected

There should be connection in between all bubbles having unique process in DFDs, with another process or to a data store.

Bubbles having unique process in DFDs, can not exist by itself, un-connected.

F. Context Diagram in DFDS

- i. **Three main references-** users data flow to system and data flow from the system are the three main references in DFDs.
- ii. **External Entities-** Context diagram in DFDs captures different external entities. These external entities interacting with system, data to and from system as incoming and out going arrows.
- iii. **Analysis of SRS document-** Context diagram in DFDs, requires analysis of SRS document.
- iv. **Representation of data flow-** In the context diagram in DFDs, data flow is represented with data names. It is represented on top of arrow.

Conclusion

Data Flow Diagram is the overall system in Library Management System dealing the flow of information , transformation of data of books in library. Book request and library card are two major inputs of DFD in Library Management System. Levels of DFD in LMS depends upon the information at demanded book. It should be displayed by the LMS for readers while selecting the book. Depending upon the Information demanded book, there are three main levels of DFD as level 0, level 1 and level 2.

The Interconversion of input data and output data in graphical form is representation of DFD in LMS. Errors to avoid while developing DFD in LMS. Errors to avoid While Developing DFD in LMS dataflow, control flow, representation of entities, functionality of LMS, Connection of data store, DFD in LMS should be balanced at all levels, Interconnection of DFD are important along with no bubbles in Level"0" and avoid the cluttering in DFDs. Users, data flow to system and data flow from the system are three main references in DFD at LMS. For context Diagram in DFDs External Entities SRS analysis, Data Flow representation are helpful to develop the best Library Management System.

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9. Library Management System-Comparative Account of NAAC Accredited Engineering Colleges

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Abstract

Comparative account of Library Management System in NAAC accredited Engineering colleges with A+ grade, A grade and B grade is carried out, The comparative study depicts that Amrut Vahini College of Engineering with A+ has better Library Management System in terms of automation using I LMS Deogiri Institute of Engineering and Management Studies College with A grade is also fully automated Library Management System. However, the B grade Engineering college Jalpaiguri Government Engineering College has partially automated system. The LMS facilities are better in Deogiri Institute of Engineering and Management Studies College with A grade and Jalpaiguri Government Engineering college with B grade. The discussion leads to conclusion that the LMS and I LMS counts a lot in assessment and accreditation by NAAC.

Amongst accreditation Engineering colleges by NAAC A+ grade college, A grade college as well as B grade college having LMS with 3-4 subscription for e-sources. It means almost some number of subscription for e-sources in Library Management Subject.

The comparative account clears that the Deogiri Institute of Engineering and Management Studies College having A grade has maximum enrichment regarding the rare books, manuscripts, etc. This college is having e-access for RBSI- rare book society of India. The Library Management System of this college has e-access with the division of rare Manuscripts which provide access with division of rare collection to stake holders with no cost. While the college Jalpaiguri Government Engineering college having B grade has collection of e-books, e-resources, but not mentioned about rare books and rare manuscripts.

Average annual expenditure by colleges towards the Library Management System is directly proportional to the acquired grade by NAAC. It indicates that the grade of services rendered by Institute Library's towards stakeholders. It means higher the grade, best the services render by Institute Library and Library Management System.

The college received highest grade (A+) is having highest foot falls and log in data for online access.

Key-Words- LMS, I LMS, NAAC, Criterion four, Engineering College, Accreditation, Grade, Learning resources, Affiliated Colleges, Digital Library, LMS software, e-books, e-journals, e-resources, RBSI, Rare manuscripts, Foot falls, access, Online access

Introduction

About NAAC

NAAC is National Assessment and Accreditation Council. It is an autonomous Institution of the University Grants Commission it was established in 1994. It is for the process of assessment and accreditation of educational Universities and higher educational institutes NAAC focuses on assessment and accreditation.

NAAC does the assessment of the quality of higher education institutions in India. It consists of self-assessment by the Institution along with the external peer assessment organized by NAAC itself. The accreditation by NAAC is carried out by considering five core values such as Contribution to National Development, Fostering Global Competencies among students, inculcation a value system among students promotion of the use of technology and quest for excellence.

NAAC has focus of assessment on quality Initiatives, Quality sustenance and Quality enhancement. NAAC carry out the assessment on the basis of the seven Criteria as

1. Curricular aspects
2. Teaching Learning and Evaluation
3. Research, Innovations and extension
4. Infrastructure and Learning Resources
5. Student support and Progression
6. Governance, Leadership and Management
7. Institutional Values and best practices.

Fourth criterion for assessment by NAAC is Infrastructure and learning resources has four key indicators as-

4.1 – Physical Facilities in HEI, 4.2- Library as a learning resource, 4.3- IT Infrastructure and 4.4 Maintenance of Campus Infrastructure.

About Library Management System

The Quality assessment by NAAC has focus on Library as a learning Resource. Higher Educational Institution Library has books, journals, e-resources and all types of learning materials. HEI Library includes technology-aided learning mechanisms. It guides the students to get knowledge information and skills required for their study programmes. NAAC looks for quality assessment of library with recent development due to availability of digital technologies.

In the fourth quality assessment criterion- Infrastructure and learning resources, as mentioned earlier 4.2 key indicator is library and learning resources in this key indicator NAAC focuses on automation of library using the ILMS, use of e-journals, e-books. It also focuses on providing remote access to e-resources in the library. NAAC treats it as a matter of necessity. Provision of ILMS, e-journals, e-books and its remote access as well as utilization of these provisions are important of the quality of an Higher Educational Institute.

Key Indicators for 4.2- Library as Learning Resource

MetricNo		Weightage
4.2.1	Library is automated using Integrated Library Management System (ILMS) and has digitization Facility.	4
4.2.2	Subscription of HEI for e-library resource	6
4.2.3	Average annual expenditure for purchase of books/e-books and subscription to journals/e-journals during the last five years	5
4.2.4	Usage of Library by Stakeholders as students and teachers of physical and virtual visit of latest year	5

About LMS in NAAC

Discussion

A. Types of Institution accredited by NAAC

1. Universities
2. Autonomous Colleges
3. Affiliated / Constituent (UG /PG)Colleges
4. Health Science Universities
5. Health Science Colleges

6. Sanskrit University
7. Open Universities
8. Dual mode Universities
9. Teacher Education Institution

B. Amongst different types of Institutes ,the affiliated / Constituent college are the HEI affiliated to University or constituent Colleges are the HEI affiliated to University or Constituent part of University .there are different affiliated college such as arts ,science ,commerce (Mono/ Multi) faculty) colleges or engineering College ,Health Science Colleges, Teacher Education Institution.

C. LMS of Engineering Colleges with Name Accreditation

For Present study on LMS, the Engineering colleges with NAAC accreditation were chosen The purpose is to study and compare the Library Management System in engineering colleges. For present study on LMS Three Engineering Colleges. Were chosen on random Sampling basis from NAAC website showing the list of accredited institutions. the comparative account of LMS in three graded Engineering college is chosen ,as A+ grade college and 'B' grade college the institute for cooperative study were chosen on basis of engineering Subject and grade it honoured by NAAC as random from list. The HEI were studied by getting the access of SSR data of concern engineering College under the study.

Introductory Details of Engineering College

Sr. no	Name of Engineering College	Address	NAAC Grade	Accreditation Valid Up to
1	Amrut Vahini College of Engineering	Deogiri Campus, Railway Station Road,AURANGABAD,Maharashtra,431001	A+	2026
2	Deogiri Institute of Engineering and Management Studies College	Amrutnagar, Ghulewadi Tal - Sangamner, Dist - Ahmednagar Pincode - 422608,SANGAMNER,Maharashtra,	A	2026
3	Engineering college Jalpaiguri Government Engineering College	Jalpaiguri, West Bengal, INDIA, 735102,Jalpaiguri,West Bengal,735102	B	2026

D. Comparative account about D4.2.1-Library is automated using Integrated Library Management Systems (ILMS)

Sr. No	Name of Engineering College	Grade	Response
1	Amrut Vahini College of Engineering	A+	<p>Library is automated by using LMS is Library Management Software * Ananosoft (Bold) ERP(V.17.1) Feature of Ananosoft ERP software-</p> <p>IT has modules like Acquisition, Cataloguing Circulation, Serial Control, Article Indexing Administration AND statistical Data Presentation.</p> <p>The Acquisition and cataloguing circulation modules is utilised for generating and placing order master record keeping, graphical analysis of Inventory, Catalogue Search through OPAC and fully bar code enabled.</p> <p>The circulation module carries the maintenance of status of knowledge resources circulation transactions, stock verification, and stock record.</p> <p>The serial control module is utilised for checking subscriptions and checks on arrival of issue.</p> <p>The Administrative module is utilised for creation of work at allotment for users.</p> <p>The software has three tire security system.</p> <p>The graphical reports are generated by this software.</p> <p>Face recognition system is integrated in the ER system of this software.</p> <p>LMS has e-journals and scientific database such as IEEE, ASME ASCE at Digital Library section and through Institute network.</p> <p>Institutional repository contains hand written notes, lab manual ,mcqs, Question Bank, videos of practical Manuals.</p> <p>Institutional repository is made available online.</p>
2	Deogiri Institute of Engineering and Management Studies College	A	<p>Library has a software developed by parents having version 2.5.</p> <p>The feature of this software are as multi user used to manage different function of the library such as access meaning cataloguing of books and Book bank.</p> <p>the software generate various reports member reports and circulation reports</p> <p>The software does book circulation by barcoded identity card and barcode on books.</p> <p>The software generate barcode of books spine label of books and members' Borrow card.</p> <p>LMS has 35000 books</p>

			<p>LMS has state of the reading room with capacity of 250 students.</p> <p>LMS has 102 National and international hard copy journals subscription</p> <p>LMS subscribed more than 11000 e-journal.</p> <p>LMS has facilities such as science direct JGATE ,DELMET ,EBSCO and national digital library.</p> <p>LMS has separate digital library through which web resources can be accessed.</p>
3	Engineering college Jalpaiguri Government Engineering College	B	<p>ILMS has LIBSYS LS EASE version 4</p> <p>It is partially automated system.</p> <p>LMS holds various textbooks references books, e-books, journals, e-journals, magazines, subject PPTs.</p> <p>LMS has reprographic facility, 25 multimedia, barcode facilities, etc.</p> <p>LMS in this college established in 736 sq.m area with Library networking, reading room with 160 seating capacity.</p> <p>LMS has 17,916 titles, 61,508 volumes and 46 journals</p> <p>LMS subscribes the online National and International Journals as ASCE, ASME, IEL, ASTM.</p> <p>LMS has 113 e-books volumes 476 e-books titles along with one LMS software as mentioned above.</p>

The Comparative study depicts that Amrut Vahini College of Engineering with A+ has better LMS system in terms of automation using ILMS. The college Deogiri Institute of Engineering and Management Studies College with A grade is also fully automated LMS. However, the B Grade Engineering College has partially automation system. The LMS facilities are better in Amrut Vahini College of Engineering with A+ grade as compare to Deogiri Institute of Engineering and Management Studies College with A grade and Engineering college Jalpaiguri Government Engineering College with B grade.

The discussion leads to conclusion that the LMS & ILMS counts in assessment and accreditation by NAAC.

Subscription for e-sources by Institution.

Sr. No	Name of the Institution	Grade by NAAC	Response
1	Amrut Vahini College of Engineering	A+	The Institute is having any three Subscription of e-resources as e-journals, e-shabdhsindu, shodhuganga Membership, e-books, Databases and remote access to e-resources.
2	Deogiri Institute of Engineering and	A	The Institute is having any Four Subscription of e-resources as e-journals, e-shabdhsindu,

	Management Studies College		shodhuganga Membership, e-books, Databases and remote access to e-resources.
3	Engineering college Jalpaiguri Government Engineering College	B	The Institute is having any three Subscription of e-resources as e-journals, e-shabdhsindu, shodhuganga Membership, e-books, Databases and remote access to e-resources.

Amongst Accredited Engineering Colleges by NAAC A+ grade college as well as B grade college having LMS with 3-4 subscription for e-sources, it means almost same number of Subscription for e-sources in library Management System.

E. Comparative account about 4.2.2- collection of rare books, manuscripts, special reports or any other knowledge resource for library Management System enrichment.

Sr. No	Name of the College	NAAC Grade	Responses
1	Amrut Vahini College of Engineering	A+	Not found the Responses.
2	Deogiri Institute of Engineering and Management Studies College	A	The college library Management System is enriched with various rare books. The rare book society of India (RBSI) is providing a virtual space for rare book collectors in college LMS. Antique Indian Books and Manuscripts online resource at Indian rare Manuscripts (200 to 350 years old) made available. The division of rare Manuscripts provide access of rare collection to students scholars and researchers to read with out any charges.
3	Engineering college Jalpaiguri Government Engineering College	B	Library Management System of Institute has a collection of around one lakh books, e-journal, e-books and e-shabdhsindhu,

F. The Comparative account clears that the Deogiri Institute of Engineering and Management Studies College having A grade has maximum enrichment regarding the rare books, manuscripts, etc. This college is having e-access for RBSI-rare book society of India. The Library Management system of this college has e-access with division of rare manuscripts which provide access of rare collection to stake holders with no cost. While the Engineering college

Jalpaiguri Government Engineering College having B grade has collection of e-books , e-resource, but not mentioned about rare books and rare manuscripts.

G. Comparative account about 4.2.4- average annual expenditure for purchase of books and journals during the last five years(INR in Lakhs)

Sr. No	Name of the college	Grade	Average Five Years Expenditure(INR in Lakhs)
1	Amrut Vahini College of Engineering	A+	19.13 Lakhs
2	Deogiri Institute of Engineering and Management Studies College	A	17.38 Lakhs
3	Engineering college Jalpaiguri Government Engineering College	B	11.99 Lakhs

The average annual expenditure by A+ Grade College is highest while the B grade college is having lowest expenditure amongst the three colleges. Average annual expenditure by colleges towards the Library Management system is directly proportional to the acquired grade. Which indicate the grade of services rendered by Institute Library towards students and teachers as a knowledge resource center.

4.2.4 B) Foot falls and Login data for online access

Number of teachers and students using library per day is 156 per day in Amrut Vahini College of Engineering (A+ grade) while it is 12.43 per day in Deogiri Institute of Engineering and Management Studies College (A grade) and it is 34.01 per day in Engineering college Jalpaiguri Government Engineering College(B grade) for library Management system, The college received highest grade (A+) is having highest foot falls and login data for online access.

Conclusion

Comparative account of Library Management System in NAAC accredited Engineering colleges with A+ grade, A grade and B grade is carried out, The comparative study depicts that Amrut Vahini College of Engineering with A+ has better Library Management System in terms of automation using I LMS Deogiri Institute of Engineering and Management Studies College with A grade is also fully automated Library Management System. However, the B grade Engineering college Jalpaiguri Government Engineering College has partially automated system. The LMS facilities are better in Deogiri Institute of Engineering and Management Studies College with A grade and Jalpaiguri Government Engineering college with B grade. The discussion leads to conclusion that the LMS and I LMS counts a lot in assessment and accreditation by NAAC.

Amongst accreditation Engineering colleges by NAAC A+ grade college, A grade college as well as B grade college having LMS with 3-4 subscription for e-sources. It means almost some number of subscription for e-sources in Library Management Subject.

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Average annual expenditure by colleges towards the Library Management System is directly proportional to the acquired grade by NAAC. It indicates that the grade of services rendered by Institute Library's towards stakeholders. It means higher the grade, best the services render by Institute Library and Library Management System.

The college received highest grade (A+) is having highest foot falls and log in data for online access.

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10. Library Management System-III- Corporative Account of NAAC Accredited Medical Education Institutes

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Introduction

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NAAC does the assessment of the quality of higher education institutions in India. It consists of self-assessment by the Institution along with the external peer assessment organized by NAAC itself. The accreditation by NAAC is carried out by considering five core values such as Contribution to National Development, Fostering Global Competencies among students, inculcation of a value system among students, promotion of the use of technology and quest for excellence.

NAAC has focus of assessment on quality Initiatives, Quality sustenance and Quality enhancement. NAAC carry out the assessment on the basis of the seven Criteria as

1. Curricular aspects
2. Teaching Learning and Evaluation
3. Research, Innovations and extension
4. Infrastructure and Learning Resources
5. Student support and Progression
6. Governance, Leadership and Management
7. Institutional Values and best practices.

Fourth criterion for assessment by NAAC is Infrastructure and learning resources has four key indicators as-

4.1 – Physical Facilities in HEI, 4.2- Library as a learning resource, 4.3- IT Infrastructure and 4.4 Maintenance of Campus Infrastructure.

2. About Library Management System

The Quality assessment by NAAC has focus on Library as a learning Resource. Higher Educational Institution Library has books, journals, e-resources and all types of learning materials. HEI Library includes technology-aided learning mechanisms. It guides the students to get knowledge information and skills required for their study programmes. NAAC looks for quality assessment of library with recent development due to availability of digital technologies.

In the fourth quality assessment criterion- Infrastructure and learning resources, as mentioned earlier 4.2 key indicator is library and learning resources in this key indicator NAAC focuses on automation of library using the ILMS, use of e-journals, e-books. It also focuses on providing remote access to e-resources in the library. NAAC treats it as a matter of necessity. Provision of ILMS, e-journals, e-books and its remote access as well as utilization of these provisions are important of the quality of an Higher Educational Institute.

3. Types of Institution Accredited by NAAC

1. Universities
2. Autonomous Colleges
3. Affiliated / Constituent (UG /PG)Colleges
4. Health Science Universities
5. Health Science Colleges
6. Sanskrit University
7. Open Universities
8. Dual mode Universities
9. Teacher Education Institution

4. Key Indicators for accreditation and assessment of Library- Library Management System as learning resource/in Medical Education Institutes.

Metric No.	Description
4.3.1	Library is automated using Integrated Library Management System (ILMS)
4.3.2	Total number of text books, reference volumes, etc for Library Enrichment.
4.3.3	e-library with membership/registration

4.3.4	Average annual expenditure for the purchase of books & journals.
4.3.5	Usage of library
4.3.6	E-content resources used by teachers.

Discussion

A. LMS of Medical Education Institutes with NAAC Accreditation

For present study on LMS, the Medical education Institutes with NAAC accreditation were chosen. The reason for this exercise of study and compare the Library Management System of Medical Education colleges. For present study on LMS, Three Medical Education Institutes were chosen on random sampling basis from NAAC website showing the list of accredited institutions. The comparative account of LMS in three graded Medical Education college are chosen as 'A' grade college, 'B' grade college and 'C' grade college for comparative study were chosen on basis of Medical Education and the grade it honored by NAAC as random form list. The H.E.I were studied by getting the access of SSR data of concern Medical College under the study.

B. Introductory details of Medical Education College understudy

Sr. No	Name of Medical Education College.	Address	NAAC Grade	Accreditation Valid Up to
1	Father Muller Medical College		A	2026
2	N.K.P Salve Institute of Medical Science		B	2026
3	Ashwini Rural Medical College, Hospital and Research Center		C	2026

C. Comparative Studies about Criterion 4.3.1- Library as Automated wing Integrated of Library Management System (ILMS) amongst A,B, C NAAC graded Medical Education Colleges.

'A' grade college has fully automated library. Its library is automated using integrated Library Management System software-Easylib. It stands for entire automation for Libraries. It helps for Catalogue/ Accession, Library Membership, Circulation, Periodicals, Digital library, stock verification and report generation.

'B' grade medical college has 'Softlib' Library Management software developed by 'Synchronic' the local software developer. This software has various features like accessioning,

cataloging, membership, circulation, OPAC, Administration, maintenance, backup and recovery, reports, library at a glance, phot ID system, email system etc. It is partially automated.

‘C’ grade medical college understudy under the process of automation. The central library has with the manual as well as an automated Integrated Library Management System (ILMS). The main features of the library Management System includes-Add/remove/edit book, search catalogues, register new account, cancel the membership, check in/ check out book, reserve book/ renewal book, return a book activities are carried out by hybrid mode i.e by manual as well as automated operations.

The comparative studies about criterion 4.3.1, Library as automated using Integrated Library Management System (ILMS) amongst ‘A’ grade college has fully automation ILMS, while ‘B’; grade college Library has partial automation ILMS. The ‘C’ grade college ILMS is manual as well as automated to contain extent. It means the fully automation of the Library Management System is directly related to excellence in grade while accreditation and assessment.

D. 4.3.2- Comparative Studies amongst Various Graded Medical Colleges for Total Number of Textbooks, Reference Volumes, Etc For Library Enrichment.

Amongst three differential graded colleges it is observed that ‘A’ graded college has books (23015) Text books (12141), reference books(10874), titles (12267) volumes(23015), current journals (171), foreign Journals (print 56), e journals(2019), WHO publications(655) and social issues like environment, travel , yoga, etc. the library has oldest book being published in 1942.

‘B’ graded medical educational college has books (24505), text books (9614), reference books (14891). There are total number of 2330 bound volumes/back volumes of all the subscribed print, journals which are bound together, clinical key package by “Elsevier health sciences” of more than 600 full text journals, 1000 e-books, drug database, CMEs, patient handouts, etc are subscribed by this college to enrich the library management system.

Medical educational Institute with ‘C’ graded by NAAC has total number of books-8843, total number of journals-348(International 110 and National journals about 238). This college has digital library with e-library. The digital/e-library provides access to open education resource together with access to open education resource together with web based teaching learning facilities. It helped the students to gain knowledge in a holistic manner.

Comparative study amongst differently graded medical colleges, shows that 'A' graded college has maximum knowledge resource in form of books, reference books, etc. as learning resource material. The 'B' graded medical education college has moderate number of learning, resource material in LMS as compared to 'A' graded college. In 'C' graded medical college the learning resource material is least as compared to 'A' & 'B' graded colleges. It concludes that the number of learning resources has positive impact on grade of the college.

4.3.3 - Comparative account of e-library with membership/Registration amongst the NAAC graded Medical Education Colleges.

While carrying out the comparative account of e-library; it has been noted that A graded medical college under study has e-library with membership/registration for the e-journals, e-books, e-Shodh Sindhu, SWAYAM and Discipline specific Databases. The 'B' graded Medical Education Institution has only two types of E-Library membership amongst the e-journals, e-books, E-Shodh Sindhu, Shodhganga, SWAYAM and Discipline specific databases. The Medical Education Institute with 'C' grade honoured by NAAC has also only two types of e-library membership.

The conclusive remark about the comparative account of e-library with membership/registration amongst the NAAC graded medical education colleges is that 'A' graded institute has e-library with maximum membership as compared to 'B' and 'C' graded Medical Educational Institutes. It means Library Management system with maximum membership fetch the better grade of NAAC.

4.3.4- Comparative account of Average annual Expenditure for the purchase of books and journals by the 'A' graded, 'B' graded and 'C' graded Medical Educational Institute.

'A' graded Medical Educational Institute understudy shows Rs. 52.89 Lacs as annual expenditure for the purchase of books and journals including e-journals as on average of five years. The 'B' graded college has an average expenditure of Rs. 72.41 Lacs as an average annual expenditure for the purchase of books and journals for the last five years as on average. The 'C' graded Medical college has hardly Rs 18.43 Lac as an average annual expenditure for the purchase of books and journals including e-journals during the last five years.

It is concluded that the comparative study about average annual expenditure in library is directly related to the grade of the college. It means more the annual expenditure in Library

directly relates to the better grade. The least average annual expenditure means the least grade conferred to the medical educational colleges by NAAC.

4.3.5- Comparative Studies for the usage of Library in Various Graded Medical Education Colleges by NAAC.

In these studies, the three graded colleges [A, B & C] are considered for the comparative account. The 'A' graded college has in person and remote access usage of library usage programmes organised for the teachers and students. This college library has given username and password to login to the website in-person to access the e-resources and library holdings.

The 'B' graded medical education college understudy provide online package of e-journals by 'Elsevier Health Sciences' called 'Clinical Key'. This college maintained the visitors register in the library where entries of users are taken. The college with 'B' grade has the issue and return record maintained by an automated system. It also generated automated reports. This college provides students and teachers with library cards for library material transactions. The 'C' graded medical education institute has carried out Library Orientation Programme for the stakeholders and especially for students and teachers. In this orientation programme orientation classes are conducted in the library for students. Such Library Orientation Programme helps students to accept online learning material, e-learning resources like e-journals, e-books, reference service, stack room, journals section, back volume and research materials.

The Comparative studies for usage of library in variously graded medical education colleges by NAAC concludes that the higher- better graded colleges has better-higher usage of library. The higher better colleges are having better and higher alternatives for stakeholder to use the library services.

4.3.6, Comparative Study of E-Content Resources used by Teachers in Library Management System of Various Graded (A,B & C) Medical education Colleges.

The 'A' graded medical education college states that e-content resources used by the teachers as NMEICT/ NPTEL, other MOOC's platforms: swayam: Institutional LMS and e-PG-pathshala, The 'B' graded medical education Institute has also the same type of e-content resources. The lowest graded medical education Institute has almost only one e-content resources used by teachers out of such as NMEICT/NPTEL, other MOOC's platforms, Swayam, Institution LMS and e-PG pathshala.

The overall discussion draws a conclusion that variously graded medical colleges about comparative study of e-content resources used by teachers in library Management system is not major difference as such irrespective of grade honored by NAAC to the Medical Education College has almost similar type of E- content resources used by teacher in LMS.

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11. Library Management System and Social Media

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Abstract

Social networking system is platform as an open platform. it is a platform for the people and of the people. Social networking sites are Facebook, WhatsApp, Instagram, google+, Flickr, Myspace, Blog, YouTube, Twitter, linkdln are same of important and distinct forms. Significance of social networking in Libraries is easy, cost effective, fast, wide form of information, accessible, wide reachability, upgrade the services, promotion, encouraging, advanced technology. Social networking system (SNS) helps in creation of collaborative network with users, through which knowledge sharing and distant education systems. Social networking system help create community over social media, social media websites provides great opportunity to grow library online presence. The social media has multiple online channels. It helps to users to connect and communicate by providing ways to interact, share and collaborate with each other. The application of social networking in library management system is easy, fast, cost free and advance technique. The librarian, library work force should make serious attempt to go use social networking system application in library management system.

Key words – Social media, Social Networking system, SNS, Google +, Instagram, WhatsApp, Facebook, Linkedin, BLOG, Social websites, Library Management System, Librarian, Library work force,

Introduction

Library Management System

Library Management System is digital software system LMS is software for management of Library. The software to manage the knowledge resources in library such as books, e-books, text books, reference books, journals, e-journals, references, data base, CDs, rare manuscripts, documentaries, dissertations, novels, fiction and nonfiction. The software in library Management System deals with biographs and autobiography too. The software i.e. LMS makes the every

library activity automated. The traditional library maintenance changes to digitalization. The automation of library by software is library Management System.

Traditional Library Management requires space and time to great extent. The LMS- Library Management system changes the traditional, manual system to fast, quick and latest upgradation due to use of software as Library Management System. It may be issuing of the books, returning books, collecting fine on late returning of books, working out the fine on late returning of books, preparing of reports, issuing orders, purchasing of books, issuing of subscription etc. are the quick, fast track in Library Management System due to software based library.

Social Media Social Networking

Social media is the social networking it is platform as an open platform. Social networking is a platform for the people by the people and of the people social media is a platform for the people connect each other it provides information such as event activities share news photos videos and any activities among the people.

Definition of social networking social media as per the Cambridge Dictionary the social media is defined as the activity of sharing information and communicating with groups of people using the internet is basically through websites that are specially designed for this purpose.

Social Networking Sites

Facebook

It is an American social networking site it is started on February 2004 Facebook social media is not is the most popular social networking site.

Whats App

It is the most common and popular social networking site it is most popular among the new generation it is one of the group social networking app.

Instagram

It is based on sharing images and videos it is a unique social media application.

Google+

It is launch in November 2011 like the Facebook social media Google Plus shares information shares photo slide and videos.

Flicker

It is social networking site it is side basically bound for image distribution.

Myspace

It was launched in 2003 it was launch in California it is most frequently used social networking site all over in the world.

Blog

Blog is one of the form of social networking through this side one can make daily post on any topic.

YouTube

It is the form of social media established 2005 it is widely use social media that is used for storing and sharing the videos.

Twitter

It is the form of social media it is a very dynamic social networking site it allows user to write message or tweet.

LinkedIn

It is form of social networking it is effective way to communicate with research scholars in social media distributes the information to the users it is also known as professional social networking services.

Purpose of the study LMS & SM

Library management system and social media Library is knowledge resource Centre for the academic institutes library content books journals database thesis manuscripts CD'S Video Encyclopaedia extra these are the form of knowledge resources The library resource or to distribute to the society social element.

Using the form of social networking the library known knowledge resources can be distributed to the society quickly the marketing of library resources can be carried out through social media .

The resources like manuscripts which are older than 300-400 years also can be shared to the society by using the social networking the rare manuscripts in one of the library can be shared and used for study through social networking.

Significance of Social Networking in Libraries

- **Easy to Use** - social networking in libraries is easy.
- **Cost effective** - Use of social networking in libraries is cost-effective it is almost free.
- **Fast** - social media express the knowledge information very fast.

- **Wide form of information** -Social networking is spreads the wide form of information.
- **Accessible** - social media provides academic information, library information through easy accessible .The social media is accessible to a wide range of accessors.
- **Wide reachability** – The academic knowledge of library is having wide reachability. it reaches to new receivers immediately. Upgrade the services the academic knowledge of library can be upgraded through the social media.
- **Promotion** - Now a days social networking sites are the mirror of our society. The social networking promotes and offers enhance to improve customer service issues and complain.
- **Encouraging**- use of social networking in libraries in encouraging.
- **Advanced technology** - social networking is advanced technology. The use of advanced technology in spread of academic information.

Impact of Social media application in LMS

Positive Impact of Social Media Application in LMS

Social networking system (SNS) helps in promoting the library resources. it also helps in creation of collaborative network with users, through which knowledge is sharing and distant education systems. social networking system help create community over

Social media website provides great opportunity to grow library online presence. the social media has multiple online channels. It helps to users to connect and communicate by providing ways to interact, and collaborate with each other. New generation spends so many working hours on internet it's a great opportunity to grow Library. Online presence by using social media networking. Social book marking and social news help to promote the library information.

The internet user are the SNS users. Majority of the youngsters are very fond of the social media networking. Thus use of SNS attracts the user is especially youngster therefore, use of SNS for library information is also attract the users.

The use of social media for library management system has changed the image of library is improve due to the social media networking. The library and its facilities remain accessible for longer duration. the library may provide knowledge like competitive examination, various type

of career option and placement . Such distribution of information through social media networking enhance the image of library as true Sense knowledge centre.

The social media like Telegram can be used to form group of thousands of the users thus distribution of library information is effective for reaching the different social group of students.

Upgradation of library knowledge is always a continuous process. The new arrival of books, journal, and question Bank notes etc.is always upgraded as new arrivals. By use of social media the knowledge information could be provided and made available for all sorts of students group. Thus, a lot of library knowledge can be upgraded for the students at Grass root level.

The physical accession of library knowledge resources has limitation of time, space and cost. However the advanced library management system and its use in social media networking provides updated library information. The recent and updated Library information appreciated when SNS is also applied in library the physical accession of library knowledge is useful to get feedback information .it may also provide with feedback collection from stakeholders.

The frequent, maximum use of library resources by users in possible due to which virtual mode. The recent application of the social media networking in library science bring the students very close to the library, indirectly and directly. The use of library by stakeholders becomes effectiveness due to SNS. the social networking help in promoting to share the knowledge information.

Negative Impact of SNS in Libraries Activity

Social Networking System in library Knowledge system is affected by the certain factors. It causes negative impact of SNS .The use of SNS in same process depends upon speed of internet is a major challenge for the college library.

SNS application in libraries is painstaking work. The library should be provided the adequate technosavy man power to the students.

Conclusion

Social networking system is platform as an open platform. it is a platform for the people and of the people. Social networking sites are Facebook, WhatsApp, Instagram, google+, Flickr, Myspace, Blog, YouTube, Twitter, linkdln are same of important and distinct forms. Significance of social networking in Libraries is easy, cost effective, fast, wide form of information, accessible, wide reachability, upgrade the services, promotion, encouraging, advanced technology. Social networking system (SNS) helps in creation of collaborative network

with users, through which knowledge sharing and distant education systems. Social networking system help create community over social media, social media websites provides great opportunity to grow library online presence. The social media has multiple online channels. It helps to users to connect and communicate by providing ways to interact, share and collaborate with each other. The application of social networking in library management system is easy, fast, cost free and advance technique. The librarian, library work force should make serious attempt to go use social networking system application in library management system.

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12. Library Management System with open Source Software

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Abstract

Library Management System is Digital Software System

Open source software is computer software which is mostly free of cost, user friendly, easily available for the public domain. Open source software enables libraries to have a greater control over library management system, greater control over libraries working environment. Library professionals, librarians, Library work force should be aware of its merits-advantages and benefits. Some of the best open source soft wares for Library Management system such as Koha, Evergreen, Biblio, DSpace, E-Prints, Greenstone Digital Library Software, Opals, OpenBiblio, Invenio, Fedora, Wordpress, Librarian, PMB, NewGenLib and CodeAchi. Each OSS is easy to implement, easy to use, cost-effective, easy to install. It has self-check in and self-check out software system. OSS is a powerful digital object model. It supports multiple views of each digital object. Open source software is used for data acquisition, indexing, classification, storage, release and distribution of library knowledge resources. Unfortunately the library professional do not thinks seriously about the merits. The limitation in the use of the open source software in Library Management system is not to have the expertise support for maintenance and operation of open source software.

Keywords: OSS, LMS, e-books, Knowledge Resource material, Library, Librarian, Cost effective, subscription, transactions, Integrated Library Management System, Free Software Foundation, General Public Licenses, FSF, e-resources, CSV Files, OPAC, MAP C-21, UNIMARC, EQUINOX, OpenBSD, DMS, Opals, URL, Unicode 4.0

Introduction

Library Management System

Library Management System is digital software system LMS is software for management of Library. The software to manage the knowledge resources in library such as books, e-books, text books, reference books, journals, e-journals, references, data base, CDs, rare manuscripts, documentaries, dissertations, novels, fiction and nonfiction. The software in library Management System deals with biographs and autobiography too. The software i.e. LMS makes the every library activity automated. The traditional library maintenance changes to digitalization. The automation of library by software is library Management System.

Traditional Library Management requires space and time to great extent. The LMS- Library Management system changes the traditional, manual system to fast, quick and latest upgradation due to use of software as Library Management System. It may be issuing of the books, returning books, collecting fine on late returning of books, working out the fine on late returning of books, preparing of reports, issuing orders, purchasing of books, issuing of subscription etc. are the quick, fast track in Library Management System due to software based library.

Characteristics of Library Management System Software-

- It may have singulated or multiple applications.
- It may have one library application or manage the many libraries.
- LMS is modern tool to track the transactions of library knowledge resources.
- LMS should be simple, easy and user friendly.
- LMS should be quick, space saving and cost saving.

Open Source Software- Library Management System Solution.

Open source software is computer software is mostly free of cost, user friendly, easily available for public domain.

Characters of Open Source Software in LMS

Open source software whose source code is available to public domain. It allows the users to study, change and improve the software. It can be redistribute in modified or unmodified form

Many Libraries do not have enough funds to burn on the purchase of paid software in library Management system. Shortfall of money available to spend made to focus and use the

open source software in LMS. Open source software resolves the cost matter in library Management System. The open source software is free for anyone to have. It is also for anyone to copy, hack, modify, etc.

Certain advantages of open source software are as simplified licence Management, lower software costs, lower hardware costs, scaling/consolidation potential, support, escape vendor lock in, unified management and quality software.

Functional features of open source software in LMS is as it must has sign in / sign up feature, register new user feature, register new users, register new books, search nook, issue book features, return book feature and generate report feature.

Discussion

Scope of Open Source Software in LMS

Open source software in LMS has tremendous scope in educational institutes it remain as such as it is the principal tool in educational institute's libraries. It has essential features like adding and updating members, adding and updating books, and managing check in specifications for the system based on the need of clients.

Open source software enables libraries to have greater control over library management system, greater control over libraries working environment. Library professionals, librarians, library work force should be aware of the merits, advantages, benefits of the open source software. The library professional should involve in the development of open source of library software. to develop the scope of free-easy application in open source software in libraries, library professionals should have basic knowledge about the selection, installation and maintenance of open source software. It requires greater degree of computing responsibility than commercial software. Unfortunately the library professionals do not think seriously about the merits-advantages of open source software for automation. Unfortunately the library professionals are reluctant to use the open source software in libraries. The limitation in the use of open source software in library management system is not to have the expertise support for maintenance and operation of open source software.

The open source software in libraries (OSS) is started in 1985, as FSF means the free software foundation. Amongst OSS, GNG-General public License (GPL) is most prominent example.

Best Open Source Software's for LMS

- Koha- Integrated Library System.
- Evergreen
- Biblioteo
- Dspace
- E-prints
- Greenstone Digital Library Software
- Opals
- Openbiblio
- Inverio
- Fedora
- Wordpress
- Librarian
- PMB
- New Genlib
- Code Achi

Koha- Integrated Library System

It is one of the best integrated library management systems. It is used in worldwide libraries in Africa, Australia, India, France, The USA, Canada, New Zealand, etc.

The main Features of KOHA

- User need not to pay initial commercial cost.
- Koha has full MARC21 and UNIMARC. It support for professional cataloguing.
- Koha works on a relation database management system.
- Koha uses SQL or MYSQL for the database.
- Koha records can be imported and can be exported.

Evergreen

- It is developed by Equinox software.
- Evergreen is a robust, enterprise level Integrated Library System Solution

The Main Features of Evergreen

- Evergreen developed to be capable of supporting the work load of large libraries in a faulty-tolerant system.
- Evergreen is to be capable of supporting the workload of large libraries in a fault tolerant system.
- Evergreen uses the OPAC interface.
- It offers many features including flexible administration work flow customization.

Bibliote Q

- It is open source software for LMS.
- It is used for professional cataloguing.
- It has useful in archiving information in libraries.
- It look after to managing all the book related information.

The main Features of Bibliote Q

- Biblote software has alpha architecture support.
- It allows exporting views to CSV files.
- It has QT.5.X support System,
- It has threaded data retrieval via the standard 239.50 protocol for books, journals and magazines.
- Bibliote Q is free open source which can work on free BSD, Linux, Mac, OS/2,Open BSD, Windows, etc.

Dspace

- It is a ground breaking digital institutional repository.
- It stores, indexes, presences and redistributes the intellectual outputs of a university's research faculty in digital formats.
- It manages and distributes digital items, made up of digital files.

The Main Features if Dspace

- Dspace allows for the creation, indexing and searching of associated metadata to locate and retrieve the items.
- Dspace was designed as an open source application that institutions.
- Dspace supports submission, management and access of digital content.

- It is to support the long-term preservation of the digital material stored in the repository.

Eprints

- It is an OSS for building open access repositories.
- It shares many of the features commonly seen in DMS i.e. Document Management Systems.
- Eprints is primarily used for institutional repositories and scientific journals.
- Eprints has been developed at the University Of Southampton School of electronics and computer science.

Green Stone Digital Library Software

- It is an open source software used in Library management System.
- It is an open sources system for the construction and presentation of information collections.
- Greenstone Digital Library software builds collections with effective full-text searching.
- It builds meta data-based browsing facilities that are attractive and easy to use.
- It aim of the greenstone software is to empower users particularly in universities, libraries to build their own digital libraries.

Opals

- It is open source software
- It is an open automated library system
- It is easy to implement, easy to use.
- Opals are very cost effective.
- An opal is useful for textbook management, subscription DB Management, Digital Archive Management, Serials Management, Inventory Management.
- It has self-check-in and self-check-out software system.
- An opal is more preferable OSS because it offers free trails. It also carries efficiently the reports and utilities.
- Opals have online public Access Catalog and Inventory, Streaming video.

OpenBiblio

- OpenBiblio is an easy to use LM's
- It is widely used automated library management system.
- OpenBiblio is integrated with Open Public Access Catalogue.
- It is written in PHP
- It has LMS with cataloguing, circulation and staff administration functionality
- The OpenBiblio has OPAC that helps in locating books easily.
- It has configuring and management of the system. It includes the library, staff material, website settings and fines. It can be done very easily with OpenBiblio software.

Invenio

- Invenio is the most useful OSS. It is free and open-source software. It manages digital libraries. It provides document repository on the web.
- Invenio is used for data acquisition, indexing, classification, storage and release distribution.
- Invenio software is developed for creating open access for middle to large scale (millions of records) of repositories for scholarly documents, It also relates to published digital content.
- Invenio comes with navigation from hierarchical collections, virtual collection trees and customizable portal boxes for each collection.
- It comes with navigation for hierarchical collections, virtual collection and customizable portal boxes for each collection.

Fedora

- Fedora is open source software.
- It gives organizations flexible service- oriented architecture. It is for managing and delivering its digital content.
- Fedora is a powerful digital object model. It supports multiple views of each digital object.
- Fedora functions are both at the object and repository level. It is exposed as web services.
- It has applications as library collections management, multimedia authoring systems and archival repositories.

Librarian

- Librarian is based on NET 2.0 Framework. It is User configurable WebOPAC.
- It is a complete library management system. It provides an automated solution. It helps for information and provides information to the information managers. It resource managers who are the resource in charge of managing. It is disseminating available information in the form of print and non-print material.
- Librarian OSS carries e-books, e-journals, article, dissertation, thesis, newspaper, maps, charts, project reports etc.
- It schedules routine tasks like emails, maintenance of database.
- Librarian provides digital references. It provides for books and other knowledge resource materials such as PDF's URL's, PPT's, XLS's, DOC's etc.

PMB

- PMB is user friendly open source software for medium libraries. It is also useful for large sized libraries. It can also manage a network of libraries.
- PMB makes use of UNIMARC cataloguing format. PMB controls serial publications. It makes use of Z39.50 protocol.
- PMB manages a dictionary of various subjects. It also controls the serial publications.

NewGenLib

- It is one of the best OSS used in LMS at present.
- NewGenLib is with both enterprises and open source edition.
- It is mostly having the software named as Unicode 4.0
- It makes used of latest technologies. It supports many standards related to library and Information Science.

CodeAchi

- It is one of the best OSS. It is used in LMS on wide basis.
- CodeAchi is the simple and easy OSS. This OSS makes the Library Management System very easy and simple.
- It can be downloaded in any windows system. It has free trails for 30 days. It provides 24x7 customer support.
- It provides lifetime serial key. It has no hidden charges.
- It trusted globally and widely applicable by renowned universities.

Conclusion

Library Management System is Digital Software System

Open source software is computer software which is mostly free of cost, user friendly, easily available for the public domain. Open source software enables libraries to have a greater control over library management system, greater control over libraries working environment. Library professionals, librarians, Library work force should be aware of its merits-advantages and benefits. Some of the best open source soft wares for Library Management system such as Koha, Evergreen, Biblio, DSpace, E-Prints, Greenstone Digital Library Software, Opals, OpenBiblio, Invenio, Fedora, Wordpress, Librarian, PMB, NewGenLib and CodeAchi. Each OSS is easy to implement, easy to use, cost-effective, easy to install. It has self-check in and self-check out software system. OSS is a powerful digital object model. It supports multiple views of each digital object. Open source software is used for data acquisition, indexing, classification, storage, release and distribution of library knowledge resources. Unfortunately the library professional do not thinks seriously about the merits. The limitation in the use of the open source software in Library Management system is not to have the expertise support for maintenance and operation of open source software.

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13. Designing of Basics of LMS in Perspective of Users

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Abstract

The Library Management System is quick, fast, cost effective, space saving computerized library. It can be operative by designing a computerized management system. It would help evaluate the problem faced in manual library. The system can be employed by the dataflow diagram for admin login, user login, context diagram, dataflow diagram for designing LMS, book borrow, book search, account creation. It is to develop a computerized system to manage the activities in the library. These efforts provide easy access of library usage for librarian and the users of the library. The computerization will also help librarian to keep track of library information etc.

Computerization library that is library Management System provide electronic means of storage. It also extend & helps to librarians to keep track of library Information for user friendly LMS types of libraries in perspective of users is to focus such as Academic libraries, public libraries, Historical society libraries, special Libraries, National libraries, Architectural libraries, medical libraries, fine art libraries, Tool libraries, etc.

Computerized LMS development also base on the services rendered by library such as acquisition section, technical section, circulation section, periodical section, database section, reprographic section and binding section of libraries.

Key Words – LMS, sections of Library, CLMS, Management by Librarians, Library Work Force, Types of Libraries, H.E.Is, Book accession, Projects, Designing of LMS, Database, Module, SSFC (Separate Software Functions).

Introduction

Library

library is -an organized collection of information sources, library is place where the information sources made accessible to the stakeholder like a student, teachers, researchers,

Analyzers scientists, Philosophizes, thinkers, Etc. The information sources in library are in two forms, as- physical format and or digital format. in traditional libraries the library information sources are in form of physical format. library is a fast changing part of HEI. the traditional libraries are changing to library management system i.e digitalization of library. the computerization digitalization of library is broadly called as library management system.

Type of Libraries in Prospective of Users

- Academic libraries-dealing with educational knowledge
- Public libraries dealing mostly with newspapers, general topics, wide variation in basic knowledge.
- Historical society Libraries- dealing with archieval data, Historical information and historical event information
- Private Libraries dealing with Particular- individual interested knowledge resources for ex -private library of doctor will be with mostly medical related information and books.
- School Libraries- Dealing with library information focusing on knowledge of high school level or upto Junior College, upto most.
- Special Libraries - dealing with a special requirement of certain special (disabled) students. for ex. Brail transcription book, e-resources for Blind Students.
- National Libraries - Such Libraries are government libraries.
- The content of National Laboratories are Upto the importance of National level.
- Architecture Libraries- dealing with structural architectural design and its related informative sources.
- Medical Libraries - dealing with medical education related knowledge resources.
 - **Fine Arts Libraries** - Dealing with models, painting, arts, posters and presentation.
 - **Theological Libraries** -dealing with Theological related knowledge resources.
 - **Tool Libraries** - dealing with different form of tools for the different arts, sculptors and various section.

Library Based on the Services Rendered by Library

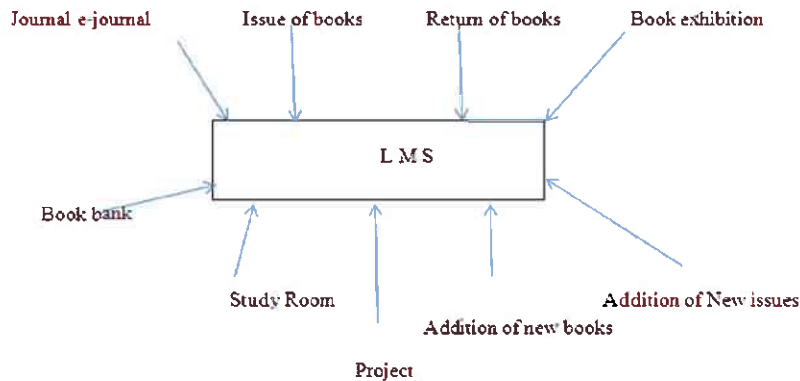
- Acquisition section of Library
- Technical section of Library
- Circulation section of Library

- Database section of Library
- Reprographic section of Library
- Binding section of Library

Discussion

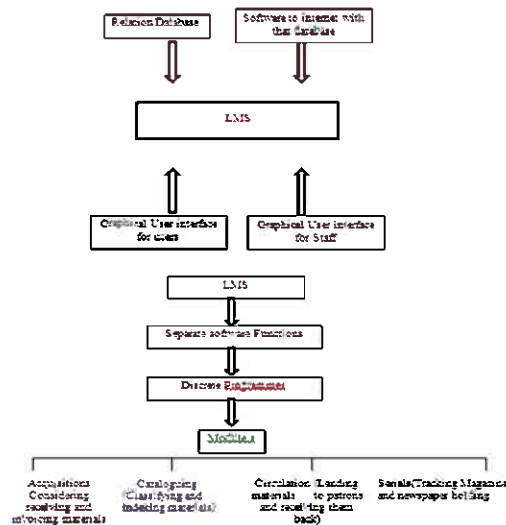
Library Management System

LMS is an application that carries library system. It could be generally small or medium in size.



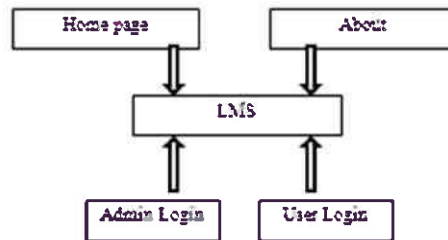
Librarian manages the Library With respect to same or many or all the activities as shown in earlier diagram The Librarian was manages it by manually . The application of Library function by computer, software, Digitalization is called as library Management System. It is based on software application. Library Management System is an application applied by Librarian by using a computerized system

Designing a LMS

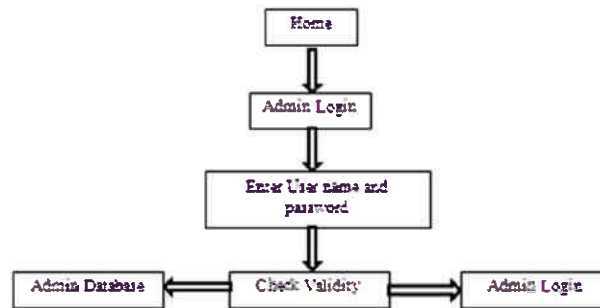


Data flow Diagrams for designing LMS

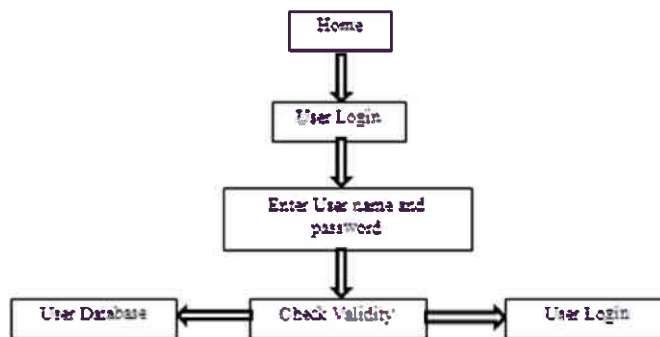
1. Context Diagram



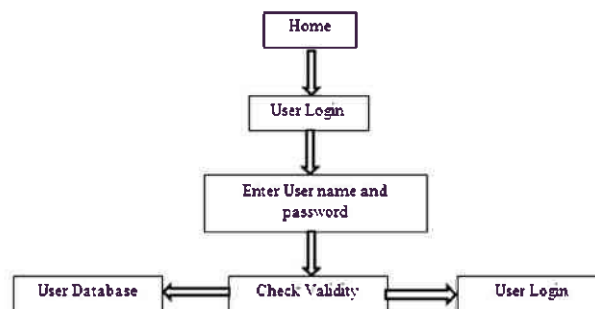
2. Dataflow Diagram for Admin Login



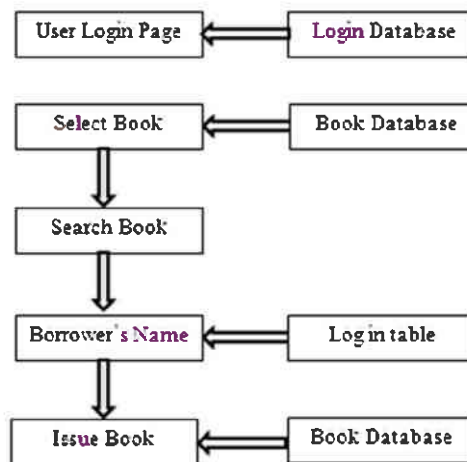
2. Dataflow Diagram for user Login



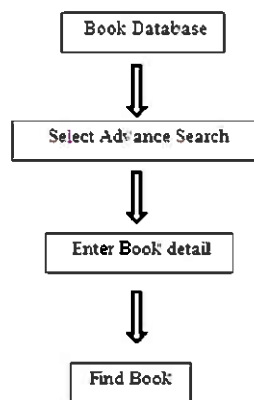
3. Dataflow Diagram for Book borrow



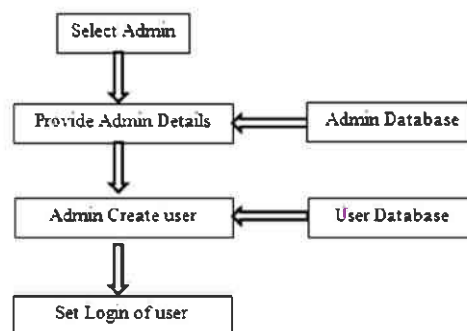
4. Dataflow Diagram for Account Creation



5. Dataflow Diagram for Book Search



6. Dataflow Diagram for Account Creation



Conclusion

The Library Management System is quick, fast, cost effective, space saving computerized library. It can be operative by designing a computerized management system. It would help

evaluate the problem faced in manual library. The system can be employed by the dataflow diagram for admin login, user login, context diagram, dataflow diagram for designing LMS, book borrow, book search, account creation. It is to develop a computerized system to manage the activities in the library. These efforts provide easy access of library usage for librarian and the users of the library. The computerization will also help librarian to keep track of library information etc.

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14. Library Management System-Comparative Account of NAAC Accredited Education Institutes- Arts, Science and Commerce Colleges

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Abstract

The comparative account about 4.2.1 i.e. Library automation using the Integrated Library Management System show that 'A' grade college as fully automation through digital software. However, in 'B' Grade College and 'C' Grade College the ILMS is partially automated. It indicates that the upgradation of LMS.ILMS reflects in the services rendered by colleges for stake holders. Fully automation of LMS/ILMS reduces the manual work, timely-quickly services. Comparative ILMS matter in NAAC accredited college directly reflects in grade awarded by NNAC. It indicates the importance of library automation using Integrated of Library Management (ILMS).

The overall discussion regarding to comparative account about the criterion 4.2.2. - The Institution has subscription for e-resources shows that the Institutes with 'A' and 'B' grade has many e-resources like e-journals, e-shodhsindhu, shabdanga Membership, e-books, databases, however the institute with 'C' grade has only one e-subscription. It means more the e-subscription in LMS more is the probability of superior NAAC Grade.

The Comparative account of average annual expenditure is more in 'A' grade college, less in 'B' Grade College while least in 'C' grade college. It means the average annual expenditure in LMS of Library in HEIs for purpose of purchase books/e-books and journals and e-journals is directly proportional to grade honored by the NAAC while accreditation and assessment.

Comparative account shows that 'A' grade college is having maximum percentage per day of library by teachers and students (foot falls and login data for online access during last

completed academic year) as compare to the 'B' grade and 'C' grade. The lowest grade accredited college under study shows lowest number of teachers and students using library per day over last one year. The highest grade college (A grade) is having highest number of teachers and students using library per day over last one year.

Introduction

About NAAC

NAAC is National Assessment and Accreditation Council. It is an autonomous Institution of the University Grants Commission it was established in 1994. It is for the process of assessment and accreditation of educational Universities and higher educational institutes NAAC focuses on assessment and accreditation.

NAAC does the assessment of the quality of higher education institutions in India. It consists of self-assessment by the Institution along with the external peer assessment organized by NAAC itself. The accreditation by NAAC is carried out by considering five core values such as Contribution to National Development, Fostering Global Competencies among students, inculcation a value system among students promotion of the use of technology and quest for excellence.

NAAC has focus of assessment on quality Initiatives, Quality sustenance and Quality enhancement. NAAC carry out the assessment on the basis of the seven Criteria as 1) Curricular aspects 2) Teaching Learning and Evaluation 3) Research, Innovations and extension 4) Infrastructure and Learning Resources 5) Student support and Progression 6) Governance, Leadership and Management 7) Institutional Values and best practices.

Fourth criterion for assessment by NAAC is Infrastructure and learning resources has four key indicators as-

4.1 – Physical Facilities in HEI, 4.2- Library as a learning resource, 4.3- IT Infrastructure and 4.4 Maintenance of Campus Infrastructure.

About Library Management System

The Quality assessment by NAAC has focus on Library as a learning Resource. Higher Educational Institution Library has books, journals, e-resources and all types of learning materials. HEI Library includes technology-aided learning mechanisms. It guides the students to get knowledge information and skills required for their study programmes. NAAC looks for quality assessment of library with recent development due to availability of digital technologies.

In the fourth quality assessment criterion- Infrastructure and learning resources, as mentioned earlier 4.2 key indicator is library and learning resources in this key indicator NAAC focuses on automation of library using the ILMS, use of e-journals, e-books. It also focuses on providing remote access to e-resources in the library. NAAC treats it as a matter of necessity. Provision of ILMS, e-journals, e-books and its remote access as well as utilization of these provisions are important of the quality of an Higher Educational Institute.

Key Indicators for 4.2- Library as Learning Resource

Metric No		Weightage
4.2.1	Library is automated using Integrated Library Management System (ILMS) and has digitization Facility.	4
4.2.2	Subscription of HEI for e-library resource	6
4.2.3	Average annual expenditure for purchase of books/e-books and subscription to journals/e-journals during the last five years	5
4.2.4	Usage of Library by Stakeholders as students and teachers of physical and virtual visit of latest year	5

About LMS in NAAC

Types of Institution accredited by NAAC

1. Universities
2. Autonomous Colleges
3. Affiliated / Constituent (UG /PG)Colleges
4. Health Science Universities
5. Health Science Colleges
6. Sanskrit University
7. Open Universities
8. Dual mode Universities
9. Teacher Education Institution

A. Amongst different types of Institutes ,the affiliated / Constituent college are the HEI affiliated to University or constituent Colleges are the HEI affiliated to University or Constituent part of University .there are different affiliated college such as arts ,science ,commerce (Mono/ Multi) faculty) colleges or engineering College ,Health Science Colleges, Teacher Education Institution.

Discussion

- LMS of Arts, Science and Commerce colleges with NAAC accreditation- For Present study on LMS, the Arts, Science and Commerce colleges with NAAC accreditation were chosen. The purpose is to study and compare the Library Management System in Arts, Science and Commerce colleges. For present study on LMS Three Arts, Science and Commerce colleges were chosen on random Sampling basis from NAAC website showing the list of accredited institutions. The comparative account of LMS in three graded Arts, Science and Commerce colleges is chosen, as 'A' grade college, 'B' grade and 'C' grade college. The institute for cooperative study were chosen on basis of Arts, Science and Commerce colleges Subject and grade it honored by NAAC as random from list. The HEI were studied by getting the access of SSR data of concern engineering College under the study.
- Introductory details of Arts, Science and Commerce colleges under study of LMS.

Sr. No	Name of the Colleges	Address	NAAC Grade	Accreditation Valid up to
1	M.S. Ramaiah College of Arts, Science and Commerce	7th Main Rd, MSRIT, M S R Nagar, Mathikere, Bengaluru, Karnataka 560054	A	2026
2	S.B.V.P Samaj's Sahakar Maharshi Bhausahab Santuji Thorat College of Arts, Science and Commerce	Nashik-Pune Road Near Nagarpalika Water Tank Sangamner, Tal- Sangamner, Dist Ahmednagar, Maharashtra, India, 422605.	B	2026
3	Rashtrapita Mahatma Gandhi College	9RMC+2QF, Khed, Maharashtra 414403	C	2026

A. Comparative Account about criterion 4.2.1- Library is automated using Integrated Library Management Systems (ILMS)

a. Name of the College - M.S. Ramaiah College of Arts, Science and Commerce

Grade- 'A'

- This College installed Lib soft 9.8.0 Library automation (Library Management System).
- At present, ILMS is fully automated includes books, non-books and periodicals.

- The Library Management System is equipped with e-resources and INFLIBNET NLIST. It is for the teacher and students. LMS has 8 e-resources.
- Library Management System of Institute (HEI) provides services as – e- resources facilities, library electronic services (LES), SC/ST book bank facility, Inter Library Loan (ILL), Reference service, reprographic services, WI-FI, Digital Library and computerized services – books circulation through Library Management System.
- College Library Management System is having 4 other Institutional memberships as membership with DELNET(Developing Library Network), British Council Library, Banglore, INFLIBNET N-LIST, Banglore University Library.

b. Name of the College - S.B.V.P Samaj's Sahakar Maharashi Bhausahab Santuji Thorat College of Arts, Science and Commerce.

Grade- 'B'

- Library Management System is partially automated.
- Library Management System has active institutional membership to N-list-INFLIBNET, The N-List provides access to 6000+ e-journals and 31,35,000 e-books.
- LMS offers services like Automated circulation System, online public Access catalogue, open Access System, reprography, Internet, Browsing, Library Orientation, Inter Library Loan facility, Book Bank facility, Newspaper clippings facility.
- Library Management System has Integrated College Management Software. It reduces the manual intervention and library automation made the transactions fast and secure. It generates the barcode for users as well as for knowledge resources. It reduce the manual work to maintain members record.

c. Name of the College - Rashtrapita Mahatma Gandhi College

Grade- 'C'

- Library Management System is partially automated through Integrated Library Management System knows a Mastersoft ERP solutions Private Limited(Cloud based Library Management System).
- The comparative account about 4.2.1 i.e. Library automation using the Integrated Library Management System show that 'A' grade college as fully automation through digital software. However, in 'B' Grade College and 'C' Grade College the ILMS is partially automated. It indicates that the upgradation of LMS.ILMS reflects in the

services rendered by colleges for stake holders. Fully automation of LMS/ILMS reduces the manual work, timely-quickly services. Comparative ILMS matter in NAAC accredited college directly reflects in grade awarded by NNAC. It indicates the importance of library automation using Integrated of Library Management (ILMS).

A. Comparative account about criterion 4.2.2- the institution has subscription for e-resource.

a. Name of the College - M.S. Ramaiah College of Arts, Science and Commerce

Grade- 'A'

The Institute has subscription for the e-journals, e-shodhsindhu, shodganga membership, e-books databases and remark access to e-resources.

b. Name of the College - S.B.V.P Samaj's Sahakar Maharashi Bhausahab Santuji Thorat College of Arts, Science and Commerce.

Grade- 'B'

The Institute has subscription for the e-journals, e-shodhsindhu, shabdganga membership, e-books, databases, Inter Library Loan facility, book bank facility, newspaper clipping facility, Brail books for blind students and ramp facility for physical challenged students.

c. Name of the College - Rashtrapita Mahatma Gandhi College

Grade- 'C'

This Institute has one e-subscription out of the e-journals, e-shabdsindhu, shabdganga membership, books, databases etc. the Institute not mentioned about the inter Library Loan facilities, book bank facilities, brail books for blind students like additional facilities for the stakeholders.

The overall discussion regarding to comparative account about the criterion 4.2.2. - The Institution has subscription for e-resources shows that the Institutes with 'A' and 'B' grade has many e-resources like e-journals, e-shodhsindhu, shabdganga Membership, e-books, databases, however the institute with 'C' grade has only one e-subscription. It means more the e-subscription in LMS more is the probability of superior NAAC Grade.

Comparative account of average annual expenditure for purchase of books/e-books and subscription to journals/e-journals during the last five years (INR In Lakhs).

A. Name of the College - M.S. Ramaiah College of Arts, Science and Commerce

Grade- 'A'

Rs. 9.46 Lakhs in the average annual expenditure for purpose of books/e-books and subscription to journals/e-journals during the last five years.

b. Name of the College - S.B.V.P Samaj's Sahakar Maharashi Bhausahab Santuji Thorat College of Arts, Science and Commerce.

Grade- 'B'

Rs. 3.36 Lakhs is the average annual expenditure for the purpose of books/e-books and subscription for purpose of journals and e-journals during the last five years.

c. Name of the College - Rashtrapita Mahatma Gandhi College

Grade- 'C'

Rs. 1.28 Lakhs is the average annual expenditure for the purpose of books/e-books and subscription for purpose of journals and e-journals during the last five years.

The Comparative account of average annual expenditure is more in 'A' grade college, less in 'B' Grade College while least in 'C' grade college. It means the average annual expenditure in LMS of Library in HEIs for purpose of purchase books/e-books and journals and e-journals is directly proportional to grade honored by the NAAC while accreditation and assessment.

C. Comparative account of percentage per day wage of library teachers and students (Foot falls and login data for online access) during the last completed academic year.

a. Name of the College - M.S. Ramaiah College of Arts, Science and Commerce

Grade- 'A'

8.64 percentage per day usage of library by teachers and students(foot falls and login data for online access) during last completed academic year.

231 is the number of teachers and students using library per day over last one year in this college.

b. Name of the College - S.B.V.P Samaj's Sahakar Maharashi Bhausahab Santuji Thorat College of Arts, Science and Commerce.

Grade- 'B'

5.72 percentage per day usage of library by teachers and students(foot falls and login data for online access) during last completed academic year.

127 is the number of teachers and students using library per day over last one year in this college.

c. Name of the College - Rashtrapita Mahatma Gandhi College**Grade- 'C'**

5.72 percentage per day usage of library by teachers and students(foot falls and login data for online access) during last completed academic year.

127 is the number of teachers and students using library per day over last one year in this college.

Comparative account shows that 'A' grade college is having maximum percentage per day of library by teachers and students (foot falls and login data for online access during last completed academic year) as compare to the 'B' grade and 'C' grade. The lowest grade accredited college under study shows lowest number of teachers and students using library per day over last one year. The highest grade college(A grade) is having highest number of teachers and students using library per day over last one year.

Conclusion

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3. <https://www.smbstcollege.com/>
4. <https://www.rmgcollegenagbhid.in/>

15. Library Profession in the MOOC Environment

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Abstract

The transformation of educational mode from traditional one to online brings various opportunities to LIS profession. There is need to know the strengths and application of LIS professionals in online learning mode. Since last two years during pandemic period several examples have been set by LIS professional through online services and activities and also contributed a lot to keep the teacher-student alive in education environment. MOOCs are definitely having the bright future and unavoidable educational mode in coming days, hence this chapter talks about what are the strengths and opportunities to LIS profession in framing MOOC platform and implementing successful courses through it. The role of Library professionals and scope in MOOC environment is studied here to know the status and challenges as well.

Keywords: LIS and MOOCs, Massive Open Online Courses, Library Professionals, Online Learning

Overview

Revolution in the field of education has taken place in last two decades rapidly. It moves from traditional Learning methods to online distance learning mode gradually. The reading habits and culture are equally changing in this scenario. Technology advancements have advantages over traditional learning culture, hence to know that let us see few terminologies:

Online learning is the origin of MOOC but is a broad terminology includes MOOCs as one of the Online learning methods. Online learning is completing a course conducted online which may use many methods for teaching and disseminating the knowledge using ICT with limited or prefixed number of participation.

Distance/Correspondence learning is the learning without face to face interaction and teaching environment that may be offered online or correspondence or with mix use of technology.

Blended Learning/ Hybrid Learning- is combinations of traditional and online learning environment where mixture of these methods help students to enjoy both learn ages.

The term MOOC has become popular in almost every Profession, Institutions including Libraries in last five years. Librarian is called as mediator between resources and reader. Though the task is getting more challenged with enhancement of technology, it also brought various opportunities. When the whole world is talking about developing towards digital contents as a part of educational spectrum we have to grab those opportunities for upgrading our profession and of course LIS is not an exception. Developing countries like India also have introduced MOOC platforms like 'Swayam' and it is becoming a necessity of generations. This study is undertaken due to following reasons;

1. Growth in ratio of enrollment of students in higher education since last few decades.
3. Due to unprecedented demand for distance education it is vital that we in a library profession respond to the existing challenge for a new learning environment. Librarian has to collaborate with instructors as well as technical staff while reaching to the virtually connected users and identify their needs. Now a day's Library Profession is talking about MOOC and Challenges for them. The present study aims to study how MOOC can be best source of LIS professional development.
4. MOOC: MOOC is considered as the best mid of Open Course ware and University/ College based distance learning. MOOC is a composite of: audio- video material, Reading material (E-books, instructional tutorials etc.), Course forums, integrated activities, Project and examination, hence MOOC must be considered as a tool for LIS professional development.

MOOCs

Massive Open Online Course (MOOC) is considered as most recent form of online distance learning, which offers flexible learning for almost all. MOOC is defined in various ways since its inception. The basic of MOOC is divided into four letters, which includes:

- Massive: Thousands can take part at a time
- Open: Anyone can participate
- Online: Collaborate, Interact with each other
- Courses: Structured learning rather than pure listening

Ignebuike, Agbo (2017) have listed few definitions of MOOC since 2013; moreover they fall in same manner as explaining MOOC in the letters expansion form. Some of the definitions focused on features and crises of MOOC for instance, Bayne & Rose (2014) proposed in their report commissioned by higher education academy to rethink MOOC pedagogy at Micro level of individual course. MOOC is a composite of: audio- video material, Reading material (E-books, instructional tutorials etc.), Course forums, integrated activities, Project and examination.

MOOC Platform can be simply defined as a programmed tool on which MOOC courses run. Developing online LMS is basic need of Platform creation. It is a teaching and learning medium through which instructors and student meet in online educational mode. MOOC courses are broadly framed in few parts as given below (Grainger, 2013): Video lectures, Assessment, Forums, Readings/ Study material provided by course, teachers/instructors, Live video sessions, Activities to keep students continuous engaged and aware. MOOCs environment has brought different sources of information and use of multimedia in delivery of information. Though the MOOC term is very broad to elaborate, author here tried to cover the reading culture in MOOCs especially Indian initiatives.

Library Profession and MOOCs

Library and Information science is interdisciplinary science, which deals with all subjects. Librarian must be able to provide services to its all users. Libraries are the service providers, who provide information in both the Medias - print and digital. As discussed above MOOC's are no longer far to be popular in education in coming days. Ecclestone, Meghan (2013), studied the MOOC from library professional's view. He has mentioned the various areas in MOOC where LIS profession can contribute by using their expertise and it can be seen as an opportunity tool for LIS professional development. Gupta and Dixit (2017) have explained how the traditional teaching and learning process is slowly shifting to the age of MOOC and libraries are the classrooms of that age. They have also studied the Indian scenario in this aspect and challenges thereto. Likewise many researchers have concentrated on what kind of role librarian can play in the MOOC environment as a best supportive hand and the discussions along with practical experiences. As LIS Professional development tool-Ecclestone (2013), stated that MOOC is a tool of LIS professional development by sharing his experience. He further says that librarians have the opportunity to leverage this technology to improve their professional skills for

example by participating or developing in relevant courses such as computer science, Business or management etc.

LIS Profession: MOOC as a Boon

As discussed in the introduction librarian's role must be studied in this regard rather they are the best sources of assistance in the age of MOOC. In following areas where LIS professionals have to play major roles:

1. **Course Development-** It includes interacting with faculties, assisting in Organizing and developing course. A course creator keeps his knowledge update through reading and referring library collection.
2. **Inter library Collaborations, Network Sharing-** references needed for the course contents or development can be made available through various links shared through networks.
3. **Examination –**During examination preparing tutorials, Question papers, and supportive material can be provided by LIS professionals.
5. **Preservation and Copyright Policy, Free from Licensing:** It's a very expertise of LIS professional for which he has to be a keen observer of copyright policy which is used in MOOC course material. They should be aware of the status of policy of licensing and copyright.
6. **Promotion-** Libraries can play a better role in promoting MOOC by using LLIS skills and technology so as to reach to the masses. They can also opt for Organizing Conferences, Workshops on MOOCs for developing and promoting successful completion of MOOC.
7. They can start the movement by developing Own Library MOOC.
8. **Developing Information Literacy Models of MOOC** which will contribute in knowing the structure, process and enhance maximum participation.

Indian MOOC Platforms

1. **SWAYAM (Separate own Platform)** SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality.

2. NPTEL (tie up with Google coursebuilder): The National Programme on Technology Enhanced Learning (NPTEL) was initiated by seven Indian Institutes of Technology (Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati and Roorkee)
3. mooKIT (Drupal): MookIT is a lightweight MOOC management system built entirely using open-source technologies by Indian Institute of Kanpur (IITK), in 2014. It is a powerful system that can be used to offer online courses at any micro to macro scale.
4. IITBX: IITBombayX has been created for academic stakeholders seeking transformation in themselves through technologies, innovative learning pedagogy and courses.
5. IIMBx ag: runs with a vision to be a global, renowned academic institution fostering excellence in management, innovation and entrepreneurship for business, government and society.
6. agMOOCs : agMOOCs is an online platform that provides free access to numerous high-quality basic as well as advanced courses in the agriculture domain.

Conclusion

More number of institutions is driving towards Massive Open Online Courses (MOOCs) for distance education delivery. Variety of platforms is launched to provide open and free joining w through it. Wide ranges of courses are available through MOOCs and literature review says that students are very positive and getting friendly to this transformation of education system as it offers space and time flexibility. Table shown above in the paper clearly indicates popularity and number of courses run in the MOOC platforms available worldwide freely. Each and every country of the world, to cope up the challenges and survive, has started developing their own platforms or courses to introduce MOOCs. MOOC concept will be a very common mode not only in higher education but at school level too. Libraries are such places where knowledge is stored, processed and disseminated to the right user at the right time. MOOC has brought various opportunities for LIS profession. Skills needed for that are already possessed by library personnel's which has to be applied for playing the major role in MOOC from content creation, collection, preservation, organization to dissemination of study material. Therefore librarians as an Information Managers have greater scope and role to play in the MOOC environment.

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16. Types of Library Management System

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Introduction

The library management system may be a software program to regulate guide capabilities of a library. The software program allows to regulate the entire library operations from keeping book record to issuing a book additionally, it permits streamlined control of best information of books consisting of writer name, edition, and much of various essential information. So, it is easier to seem for books and find out the right substances for students and therefore the librarian. The digital control through the software program is significant to tune records like difficulty date, due date, who has borrowed any material, etc. The software is advanced and designed with a purpose to facilitate green control to the universities to regulate a contemporary-day library with correct information control.

Library control structures facilitate the administrators to take care of an eye fixed at the library branch's all capabilities. Also, it permits librarians and customers to stay time on daunting duties and complements efficiency. By the utilization of this type of library control gadget, the institute control could be capable of suits the paintings define and fineness of varied librarians' capabilities. Additionally, they get an opportunity to acknowledge how well-maintained the document of issued books and series is. The librarian and therefore the management branch can get right of entry to numerous reviews to enforce new improvements.

Types of Library Management System in Education Institutes

1. Coteach Library Management System

- Manages acquisition of books, add titles, and controls the inventory
- Enables search using ISBNs
- Assigns an accession number automatically making cataloguing easy.
- Accommodates all media- print and digital content including DVDs, CDs, Blu-ray, comic books
- Adds members to the database and prints library cards.

- Records issue and return of books, payments and tracks lost books

2. Library – Library Management Software

- Circulation feature provides information on issue/renewal/ return of books.
- The acquisition and bulk uploading of books are often done quickly and simply.
- Bar codes are often generated and scanned for faster transactions.
- The cataloguing system supports OPAC for quick and straightforward search of books from anywhere.
- The fine collection feature allows automatic charging for overdue books.
- The software is often accessed with a mobile app and may be employed by multi-users.

3. Library Management System

- Cataloguing and classification are often done supported author, title and subject.
- Membership management keeps track of the user member's name, ID, passwords
- Circulation management records the movement of books within the library.
- Acquisition function selects and purchases resources for the library.
- Web based Online Public Access Catalo provides access for search of books.
- Automatic reporting system generates transaction, book status, fee reports etc.

4. Slims – SENAYAN Library Management System

- Catalo/bibliographic management with book search and canopy image support.
- Circulation support for issue, renew, return and loss of books.
- Membership management for record of member data.
- Online Public Access Catalo with simple and advance search modes.
- System supports digital contents –PDF, PPT, Audio, Video etc.
- Database management supports Universal Product Code generation and reading.
- Reporting feature generates the up to date statistics and standing of the operations.

5. LIBERO Library Management System

- Libero provides library management solutions for schools, public libraries and special libraries for law, medical, theology, engineering institutions.
- The cloud and web-based library management software is accessible on any device.
- Acquisition management is assisted with bar coding and RFID support.

- Circulation management tracks the movement of books.
- Open Public Access Catalogue permits search and reserving of books from anywhere and anytime.
- Inventory checks are done by the system.

6. Sauron Library Management System

- The software is cloud based and accessible from desktop and hand-held devices.
- Cataloguing and hosting of multiple libraries makes the look for books easy.
- The software is flexible and customizable to user needs.
- Supports multiple languages and multi-users.
- An extensive range of reports are generated on the status and operations of the library.
- Barcode and RFID are supported by the software.
- The software provides continuous support and conducts on-site and online training for users.

7. Opals

- Opal is an open-source library system wherein they will host all the info on their servers eliminating the necessity to shop for expensive software and computers.
- This software is employed by schools, public, research, museum, health service libraries.
- Circulation management controls movement of books.
- Inventory management monitors stock and buy.
- The web and cloud-based system supports online public access catalogue.
- The system supports barcoding and RFID.
- Fee collection feature sends reminders, issues receipt and keeps individual member accounts.
- Self-check-in/out and book reservation functions make this software user-friendly.

8. Koha

- Koha may be a free open-source automated library management system software.
- Acquisition module adds new purchases on to the database.

- Circulation module records the difficulty, renewal, return of books and traces misplaced books.
- Use of software on 24/7 basis from anywhere is facilitated by the web public access catalogue.
- Provides advanced search in multiple languages and may be translated.
- Patron module monitors the database of members- name, ID, passwords.
- Fee module controls the gathering of fees, overdue fines etc.
- Serials module manages serial subscriptions of newspapers, journals, magazines.
- Reports on books, patrons, catalogues are automatically generated making operation easier.

9. Atrium

- Atrium may be a cloud based integrated system requiring less technical and financial resources.
- The software is employed in schools, private, public and specialized libraries.
- Online Public Access Catalog, bar coding and RFID makes search of books easy.
- Acquisition module accelerates the method of acquiring and organizing new books.
- Inventory module manages the stock of the library.
- Periodicals and serials circulation are managed by the software.
- Self-management module makes the system user-friendly.
- Fee module controls the financials of the library.

10. Etna Infotech Pvt Ltd

- Etna Infotech Pvt Ltd. is one among the foremost Preferred Library Management Software providers for 18 years.
- Customize login for the scholars, teachers, and managements
- Flawless issuance & returning of books.
- Digital records for the check-in & checkout of candidates.
- Very simple to manage accounts within the Library management software for the tutorial compliances.
- Fetching sort of the issued or unissued books during a library.
- Manage & classify books as per the topic of academics.

- We can add any new books and other materials into the Etna library management system.
- Give remote access to a licensed person to manage the library's centralized database at any time.

11. All My Books

- This library management software may be a book organizer which creates and manages a database of books in paper, e-book or audio formats.
- Each book within the database will feature author, genre, year of publishing, ISBN.
- Books during a small library- office, personal or church- are often tracked, archived and arranged.
- Books are often exported into various formats as needed.
- The system doesn't have a web version and doesn't facilitate e-reading.

12. Simple Little Library System

- This easy to use software is for little libraries -primary school, legal, business, church, community, prison, health
- The web-based library management system software supports Universal Product Code and RFID.
- The basic software comes with the catalogue function. Additional function of circulation, finance and electronic resource management are often added on when required.
- New books are often added into the prevailing database and circulation are often monitored.
- Self-check-in/out facility makes the system user-friendly.

Conclusion

Library management systems facilitate the administrators to stay an eye fixed on the library department's all functions. Also, it enables librarians and users to save lots of time on daunting tasks and enhances efficiency. By using this type of library management system, the varsity management would be ready to follow the work outline and fineness of various librarians' capabilities. Additionally, they get a chance to understand how well-maintained the

record of issued books and collection is. The librarian and therefore the administration department can access various reports to implement new improvements.

Library control systems allow machine directors to take care of a watch at the library department's functioning and additionally allow librarians and customers to maximise time and performance. By the utilization of this sort of machine, the control could be capable of apprehend the paintings define and fineness of varied librarians also. They additionally get to know how well-maintained the file of issued books and high-quality series is, apart from this control is likewise being capable of music the profits from fines due to overdue submissions of books. The librarian and therefore the control can even get reviews with diverse effective data. There could also be reviews on borrowing and lending, which can be engendered in distinct formats. Such reviews can assist simply withinside the choice making procedure. It additionally continues the file of all providers and bookbinders. A well-prepared automated library control machine will beautify the performance of the library. this sort of first-rate machine must allow the librarian to oversee library sources in an additional powerful manner to buy time and energy. Quick to place into effect and smooth to line up, such software program involves best minimum preservation after installation. Academia ERP is one in every of the campus ERP software program to be had nowadays that involves minimum time to place into effect and smooth to line up, or maybe this software program involves best minimum preservation after installation.

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17. Purpose of Library Management System

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Introduction

The library the board framework is a product to oversee manual elements of a library. The product assists with dealing with the whole library tasks from keeping up with book records to give a book. Moreover, it permits smoothed out administration of fine subtleties of books, for example, writer name, version, and numerous other significant subtleties. Along these lines, it is simpler to look for books and track down the right materials for understudies and the curator.

The electronic administration through the product is crucial for track data like issue date, due date, who has acquired any material, and so forth The framework is created and planned with an expect to work with productive administration to the institutes to deal with a cutting edge library with precise information the board. Hence, institute, the executives or library head can get every one of the vital subtleties electronically without problem.

This framework helps instructive organizations like institutes ,universities, and training focuses to oversee library works naturally. The superb advantages of the robotized library the executives framework are to decrease overheads and increment efficiency. The bookkeepers can keep up with all library capacities without any problem. To put it plainly, this framework upholds keeping the records of all exchanges of the books accessible in the library.

Relies upon the functionalities, there are various kinds of library the board programming. The product is planned to diminish the manual work to oversee library capacities which have different highlights. In view of your prerequisites, you can likewise tweak the product. The ordinarily utilized library the executives programming is modified programming-based usefulness, opensource, cloud-based framework, data set creation programming, and some more.

By and large, the product is busy with pre-carried out highlights like registration (to return a book), look at (to lease a book), or key detail data about the library materials (distribution, writer name, and so forth) Nonetheless, assuming you have some other explicit prerequisites, the specialist organization might change the usefulness in the framework for you.

Traditional desktop apps are less convenient than a web-based approach. Users can access the cloud or web-based application at any time and from any location. It's also a cost-effective way to manage time-consuming library activities. Furthermore, you may quickly configure the software to meet the demands of your institute. You don't have to be concerned about data breaches because a web-based library system has adequate security safeguards.

Purpose of Library Management System

The library the executive's framework is intended to contribute well-administration of library capacities. It offers simplicity to perform everyday library tasks electronically. This work on being many benefits like;

- Straightforward and simple to work
- Increment bookkeeper's efficiencies
- Portable access, whenever, anyplace
- Search, add, update, and view library materials on the web
- Assists with overseeing library works valuably
- Saves time and lessens overheads
- Lessen library's working expense
- Redone reports for better administration
- Eliminate manual cycles to give books and keep up with records

The upside of library the board programming offset the inconveniences. Be that as it may, there are not many weaknesses factors are related with the framework.

- Online put away information is inclined toward digital hacks. Picking a dependable internet based framework diminishes the danger
 - once in a while it is muddled to work for first-time clients
 - Requires fast web availability for an online framework
 - Hazard of PC infection
 - Dissimilar to online frameworks that utilization distributed computing, Open source framework stocks information on the PC's hard drive. This raises the danger of information misfortune.

A library management system (LMS) provides access to and management of a library resources. A well-chosen system will increase the efficiency of a library, save valuable

administrative time, provide a better educational experience for the students, and help develop independent learning.

- A typical computerized LMS has the following features/modules as standard:
- Cataloging
- Circulation - this is not only about borrowing and returning documents, but also about renewals, backlog management and user profiles
- Generate reports and statistics on various library activities
- Administration - so you can configure the system according to your institute's needs, e.g. create logins and passwords, set up user classes and define loan terms, and more. for teaching and learning purposes. OPAC also lists the number of materials available, whether in the library or on loan, and their calling number.
- It reduces the manual paperwork through it and gives proper information of books has been recorded automatically.
- Librarian can update the information of books and manage availability and arrive record of the books.
- It saves human efforts and time.
- With the help of library management software, the customer can easily search and find the books.
- Build a system that can receive inputs easily and quickly and automatically generate outputs.
- Establish a surveillance system that can efficiently monitor and manage the operation of all libraries.
- Provide librarians with the opportunity to reduce errors that occur manually.
- Store library media properly to ensure safety.
- Enter and retain details of various expenses and track their revenue.
- The system has four main types of modules that handle the daily work of the library.
- Account management module
- Record search module
- Book lending system module
- Report generator module

By Library management system, lending and inventory management is paperless. This system has a drop down button. It provides user-friendly data entry with menus, list boxes, and check boxes to make the entry easy to understand and user-friendly, and is designed to keep library items safe.

All institutes, universities, and public libraries need to invest in library management system software to run effectively and efficiently.

Library management software can manage the entire book catalog, member database, and book movement details. The system operates correctly and minimizes errors and data loss caused by manual input. Managing the resources of

Books

Librarians find it difficult to physically find a book when requested by many members. Library management software allows librarians to search records, track history, and publish books in minutes.

Save Hours: Entering

Data and manually writing records takes time. With library management system software, you can save time by completing all activities in the library with the click of a button. Members can check the availability of books themselves, and librarians can quickly find and publish books.

Cost-Effectiveness

Education institutions have set a fixed budget for technology upgrades and are considering the cost of installing new software. The one-time cost of installing the software can be high, but the minimal maintenance costs prove to be very cost-effective in the long run. This system eliminates the need for a large workforce and reduces operating costs.

Productivity

Effective library management system software streamlines all library operations. Database management, real-time reporting, and communication with members are all done through the system. This saves librarians a lot of time and can be used productively for other important tasks.

Efficiency

Manually managing daily reports of published, updated, returned, misplaced, or lost books is a tedious process. The automated system eliminates the need for manual entries, minimizes errors, increases accuracy and efficiency of operations.

Fee Collection

The library management system sends alerts and notifications to students about library fees, books issued, due dates. The librarian can access this automated data to collect the fees and fines.

Choosing a new LMS is a complex process requiring careful planning and specialist knowledge so it is a good idea to involve the institutes IT manager right from the very beginning so you are aware of what technology constraints there might be. Involving IT, however, is also a balancing act: sometimes IT managers want to steer the whole project and over-complicate things. The procurement process is at best a collaboration: but when it comes to assessing the actual functionality, librarians are best qualified to make the final decision.

Conclusion

Library management systems facilitate the administrators to keep an eye on the library department's all functions. Also, it enables librarians and users to save time on daunting tasks and enhances efficiency. By using this sort of library management system, the school management would be able to follow the work outline and fineness of different librarian's capabilities. Additionally, they get an opportunity to know how well-maintained the record of issued books and collection is. The librarian and the administration department can access various reports to implement new improvements.

Library management systems are essential today for schools, universities, private libraries and other organizations. You can use this software to publish and return books for updates. In addition, this software helps librarians maintain information about the release of books and the return of books prior to the final date. Library management systems facilitate the administrators to keep an eye on the library department's all functions.

Also, it enables librarians and users to save time on daunting tasks and enhances efficiency. By using this sort of library management system, the institute management would be able to follow the work outline and fineness of different librarian's capabilities. Additionally, they get an opportunity to know how well-maintained the record of issued books and collection

is. The librarian and the administration department can access various reports to implement new improvements.

Thus, the efficient library management software is essential to run smart library functions, and maintain accurate data of a library.

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18. Mobile Technology in Libraries

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Abstract

Cell phones are turning out to be more famous these days and they are practically basic in individuals' everyday life. Individuals are adjusting versatile innovation more effectively than some other advances. Individuals are additionally open in getting to data from their cell phones. Use of cell phones to give library and data administrations are a huge advance toward this path. The improvement of versatile innovation has brought about moving the scholarly climate from conventional to portable learning settings. Versatile scene had expanded altogether and presently libraries are additionally investigating and exploring different avenues regarding this innovation. This paper portrays versatile innovation applications in library and Data administrations. At last, it considers the eventual fate of versatile library innovation.

Keywords: Mobile Technology, Mobile Applications. Mobile Library Services, Mobile Document Supply, E-Resources

Introduction

Portable innovation has made correspondence and data access exceptionally advantageous and convenient to clients from the solace of their own homes and workplaces, and from any place they are while progressing with their wireless units or PDAs (individual advanced assistants). People utilize a phone as their essential interface for riding the Internet, paying attention to music, sitting in front of the TV, understanding books, and communicating with companions. So in the course of recent years, the cell phone has become one of the significant interfaces individuals use to access and share information. Librarians should be comparable with this pattern and incorporate themselves into the versatile domain on the off chance that they wish to convey upgraded client administrations. Cell phones and administrations offer colossal adaptability for the people who need to exploit library

administrations. With a straightforward 3G association, a client lying on a sea shore can get to digital books and interactive media content from a nearby library.

As we as a whole realize that libraries are developing living being. The Data and Correspondence Innovation has changed our way of life in all regard. It additionally gives a ton of effect in library and data administrations. With the commencement of Data Correspondence Innovation (ICT) in library, creation, putting away and dispersal of data have changed in fundamentally. The ICT has constrained the libraries to reconsider and redesign their sources and administrations with the new patterns of advances alongside the changing necessities of their clients. Presently a day's Libraries digitalized their assortment to give numerous and wide scope of access through web. As of now libraries are consistently prepared to embrace new innovations, for example, Wi-Fi, Standardized identification framework RFID frameworks, versatile correspondence innovation, and so forth to adapt client needs. The versatile innovation has made correspondence and data sharing easily and convenient. Presently days, Cell Phones have further developed elements and capacities than any time in recent memory like music players, message, sound, video and picture informing, web based recordings, mail synchronize, third era network availability (3G), Video Calling, Wi-Fi, Bluetooth, etc.

Mobile Technology in Libraries

Versatile innovation overall is any innovation of portability such innovation as in vehicles industry, journals, individual computerized partner, sand, mobile phones. Versatile innovation gadgets are a blend of equipment, working frameworks, systems administration and programming. Versatile innovation utilized in a particular as the interchanges innovation utilizing unguided media transmission like radio wave, infra-red and Bluetooth access inventories: by providing in a hurry portable reference administrations: and by giving versatile admittance to digital books, diaries, video, book recordings, and sight and sound substance.

Cell phones are universal in the present society, and there's no proof that that will change. The present a large portion of the library clients have cell phones for their own uses just as they additionally utilize the cell phones for some different applications. In library, the Versatile Innovation has now concocted "Libraries Close by" pattern. Bookkeepers are in move to decide what these gadgets are meaning for data get to and guarantee that they are speaking with clients and giving Web content in the most suitable and compelling ways. Curators are using the portable innovation and put their endeavors to expand the market and interest for versatile

admittance to customized realities and data whenever, anyplace on "s own handheld gadget. Since portable handheld gadgets really are close to home gadgets, search narratives and actual areas can be bridled to create more exact, individualized data and administrations. Libraries today are covering the majority of the advances given by versatile industry like PDA"s, Blackberry, iPod, Cells, and assembling library substance in a compact structure suit capable for little screen and conveying short administrations as substance and data with gadget's different looking through highlights. Administrators should become capable in utilizing these gadgets to empower clients to get to the numerous where from wherever.

Mobile Devices Used in Libraries

- PDAs (Personal Digital Assistant)
- Smart Phones
- Cell Phones
- iPods and MP3 players
- Tablets

Advantage of Mobile Applications in Libraries

- **User Friendly** - The vast majority of the library clients utilize cell phones and they effectively access online data given by their library.
- **Time Saving** - It saves clients time, clients need not needed to come library, from their cell phones they can undoubtedly get to library OPAC to know the situation with accessible assets, hold their assets, and so forth.
- **Ability to Access Information** - Data access from anyplace at whenever will be of extraordinary assistance for clients who can't visit library face to face and gives a steady connect to required data assets.
- **Location Awareness** - Versatile correspondence empowers libraries to offer area based administrations/content through worldwide situating framework (GPS) capacities. Libraries can direct the clients to the area of explicit record or administration through maps and navigational instruments.
- **Personalized Service** - Customized administration assists clients with cooperating with library staff to look for explicit data or reference away from library.
- **Quick Feedback** - Through versatile innovation clients can give fast criticism identified with library support and get speedy reaction identified with their inquiries.

Service of Mobile Technology in Libraries

Library is an assistance place where bookkeepers offer types of assistance to fulfilled library client's data needs. To satisfy the fourth law of library science, custodians presented numerous ICT based library administrations in the library with the goal that they can save the hour of clients.

Following Library Services Providing through Mobile Technology

SMS/Texting – Library Instant Access

Google SMS empowers you to send inquiries as message knead over your cell phone or gadget an effectively find exact solutions to our inquiries without Connections, without pages just message and data in a moment or two. Merriam Webster (on the web) has versatile membership office, and just by putting our portable number we get the word data just by informing. Library OPAC framework is currently mobiled office of instant message to check the accessibility and the subtleties of books. Distributers are sending extricate from books through SMS. Sites are currently scoffing the alternative of sending content to IM addresses and by means of SMS.

- SMS whenever mentioned book is free (gather messages)
- Requesting the opening times of the library by means of SMS
- SMS update if a book is expected
- Requesting a rundown of advances through SMS
- Renewing books through SMS
- Requesting an outline of exceptional fines through SMS
- To check accessible books through SMS

Library Catalogue, Loans & Reservations Service

This assistance is a heart of the library since this help gives to library clients to their required data. The number of titles are accessible and the number of duplicates are accessible in the library for a specific material and furthermore search through portable by the clients. Through this assistance, library clients ready to know their entrance their library record, ask for and recharge their things on their own cell phone.

Current Awareness Service

Current Mindfulness Administration is a type of administration can be from various new most recent e-diaries articles. It tends to be made accessible to the clients through wide scope of cell phones. They can access and look through something similar over their mobiles.

Reference Service

Reference administrations in libraries today are turning out to be progressively a virtual, as an ever increasing number of specialists are working distantly. Advances like texting, email and SMS text informing are making it simple or libraries to keep up with their importance as data centers by offering helpful administrations to occupied clients. Ask-a-Bookkeeper administrations can be presented to versatile supporters, empowering them to present their examination questions distantly by message.

Formal Education, Distance Learning and E-learning

Understudies are exceptionally flexible in utilizing their cell phones and different versatile applications. Scholastic libraries can bridle the benefit to lead execution of library administrations through cell phones to help distance learning, formal instruction, and examination exercises in eLearning climate by making the data assets omnipresent. Library administrations ought to likewise mix with instructing and examination practice of schools/colleges, academic local area or different supporters whom they serve.

E-Resources with Mobile Interfaces

A few distributors are as of now conveying digital books (both message and sound) that are available through cell phones. It offers admittance to an assortment of information bases and advanced assets, for example, digital books, e-Diaries, Web data sets, papers, book recordings, streaming music, movies, pictures and article information bases which can be utilized on portable. These assortments can either be downloaded from the library sites on client's own cell phones or libraries loan cell phones with that assortments currently on them. A huge assortment of book recordings both free-and membership based administrations are accessible for download and furthermore adaptable to cell phones. Libraries can utilize media informing administration (MMS) on cell phones to share photographs, recordings, and sound. The majority of the digital book distributors give 24x7 admittance to the library memberships from any web terminal inside the grounds, also on cell phones, like iPads, Android gadgets, and Encourage.

Mobile document Supply

The portable climate and innovation present new freedoms for sending archive demands and examined pictures and observing the utilization of assortments just as the computerization of regulatory activities. It can uphold electronic assets move, production network the executives, e advertising, internet promoting, online exchange preparing, electronic information trade, and robotized stock administration frameworks.

Library Virtual/ Audio Tours

Library Virtual/Sound visits, guidance/acceptance/direction programs have been very critical in carrying the nonusers to libraries and furthermore help the distantly found or clients situated in various geological areas. Library clients, who don't have time or tendency to go to an on location studio, can gain admittance to library visits on their cell phones. Sound/virtual library visits can be delivered decently fast, economically, and could lessen the measure of staff time spent assisting new clients with arranging themselves in the library and clarifying the offices accessible. It can undoubtedly be given both as downloads from the library site and on cell phones.

QR codes

QR code means 'speedy reaction', and fundamentally two-dimensional standardized tags that can contain any alphanumeric text and regularly used to store urls, text, and so forth, known as 'versatile labeling'. Information can be converted into a QR code by any QR generator, large numbers of which are accessible as free download. Clients basically enter the information to be deciphered, and the generator delivers the code, which would then be able to be shown electronically or in printed design. Deciphering the data should be possible with any portable camera telephone that has a QR peruser, which is uninhibitedly accessible online for most gadgets.

Creating Mobile Web Sites, OPACs and Applications

- **Android Engineers.** Assets for making Android applications. Incorporates engineer's aide, instructional exercises, and recordings. Access: <http://developer.android.com>.
- **Mobile Tuts+.** Instructional exercises for every single versatile engineer, paying little heed to stage. Points incorporate methods for building versatile applications and portable Sites. Access: <http://mobile.tutsplus.com/>.

- **Mobile Web Best Practices 1.0: Fundamental Rules.** Made by the Internet Consortium (W3C), this archive indicates rules for creating Electronic substance for cell phones. Access: <http://www.w3.org/TR/versatile bp/>.
- **W3C MobileOK Checker.** Approve versatile streamlined Sites for similarity with current Web principles. Results incorporate seriousness, classification, and depiction of the mistake alongside best practices for fixing issues. Access: <http://validator.w3.org>. (Sudesh Kumar Sood and Ipshita Mukherjee, 2013)
- **AirPac (Inventive Interfaces).** Offers a versatile variant of the Inventive Interfaces (III) library inventory. Incorporates provisions, for example, cover pictures, coordinated library areas with Google Guides programming, ask for and restore things, and the sky is the limit from there. Contact Creative Interfaces for evaluating. Access: <http://www.iii.com/items/airpac.shtml>.

Mobile Web Sites

Notwithstanding or instead of versatile applications, a few organizations and associations likewise foster versatile adaptations of their Site that are better advanced for survey on cell phones.

- **Encyclopedia Britannica Mobile.** Offers a pursuit box and a rundown of proposed look. Results incorporate full-text passages with enlargeable pictures. Access: <http://i.eb.com/>.
- **MedlinePlus Mobile.** Created by the U.S. Public Library of Medication, MedlinePlus Portable gives data about explicit infections, conditions, what's more, wellbeing issues. The site additionally contains doctor prescribed medication data, clinical word reference, and current wellbeing news. Access: <http://m.medlineplus.gov>.
- **WorldCat Mobile.** Search the WorldCat list for books, motion pictures, music, games, and then some. Results incorporate things accessible at nearby libraries. Access: <http://www.worldcat.org> (Sudesh Kumar Sood and Ipshita Mukherjee, 2013)

Conclusion

In the cutting edge period, a few associations like libraries, documentations focuses are exceptionally engaged with the course of data correspondence and dispersal. Cell phones are fundamental device for everybody for data correspondence reason. Individual, in data society, depends to utilize cell phone to convey musings, realities, discussions, in short, data. Libraries

particularly utilize a few devices and strategies to circle the data to the client local area. Simultaneously, libraries ought to be promoted. For this reason, the utilization of innovation is extremely fundamental. Versatile innovation has become help to the libraries. In present day period, libraries can take on versatile innovation to offer its types of assistance in a superior manner and successfully for the distant clients.

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19. Whatsapp: An Effective Mode of Information Communication in Library and Information Centres

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Abstract

This paper has made an attempt to know the Use and Impact of WhatsApp among LIS Professionals of academic college libraries in Nashik City. The study has explored the use of WhatsApp and also explored the impact among Library professionals working in College Libraries. There are total 85 colleges in Nashik City those have taken for the study. The Online Survey was conducted with the help of Google Forms. Data Collection and analysis revealed that WhatsApp is a most popular mode of communication and used by all the Library Professionals in Nashik City. The impact of WhatsApp shows the extent use for providing library services by LIS Community.

Keywords: WhatsApp, Role of Library, Library Services

Introduction

Library in this digital age has changed its nature. Traditional library is now converting into smart library. Use of advancement of technology impacted on each and every aspect on working system of Library and Information Centers. Technology has become a backbone for providing library services at a remote place to its end user. Information is available at fingertip. Libraries are now reachable at doorstep through various means digital communication. Mobile based library services such as SMS, WhatsApp, Telegram, Email, Facebook, Instagram, Twitter and Google based all services (Google meet, Google Forms, Google Classroom, Google Sites and many more) are value added services available and useful to its users. Now a Days, all these services are there in extent use for various means of communication in libraries, WhatsApp is the most commonly used among all the community. WhatsApp has become a boon for library professionals to provide multidimensional services to its users at doorstep. This study has made an attempt to find out the effective use of WhatsApp among LIS Professionals.

Literature Review

Many people across the world might be carrying out the research work on similar or same type of topic, it is imperative that as each day passes the literature gets enriched. Some of the studies are reviewed here as bellow:

Adomi and Uwakwe (2019) in their study adopted the descriptive survey design, the five universities was selected purposively. A total of 58 librarians who received and filled questionnaire constituted the sample of study. To identified types of work related WhatsApp groups. The librarians currently belong to and work related areas knowledge is shared via the WhatsApp groups by the librarians. The study found that WhatsApp should increases the group contents, limited from the current 256 to over 1000 members, this will enable institutions, association etc. This study concluded that universities and their libraries are knowledge creation management and utilization institution and knowledge driven.

Ansari and Tripathi (2017) examined the benefits and challenges of using WhatsApp. In this study descriptive research method used and structured online questionnaire prepared over Google forms platform and distributed to respondents. The sampling technique was applied to select person across the India. Sample size comprises 150 person select and questionnaire was send by e-mail. Among 150 there are received 134 filled questionnaires by respondents and the response rate was 89.33%. The main objectives in this study was to examine factors that might influence libraries decision on using WhatsApp, to describe librarians and user's perceptions of the usefulness of WhatsApp for information/knowledge sharing and enhancement or library services. Findings indicated that respondents showed a positive attitude towards getting services over WhatsApp, most of respondents believe that use of WhatsApp can improve alert services (CAS, virtual reference, notification) and libraries can utilise their potential for providing better user services.

Bajpai (2016) confined to only library and information science professionals, particularly of Indian region. The LIS professionals who are using WhatsApp messenger tool on their mobile phones are only include in this study. Online survey method was adopted, a well-designed pre-tested questionnaire comprising of 11 questions have been developed. This study reveals that the LIS professionals are spending quality time in various LIS group on WhatsApp messenger to discuss LIS-related issues. LIS professionals are using social media such as WhatsApp messenger since last 2-3 years which reflects LIS professional's awareness and enthusiasm to

use new tools. The major findings of this study, LIS professionals are sensible using WhatsApp messenger. They read every post and share such information after checking its authenticity. There are very positive notes shown by LIS professional's WhatsApp messenger is proving its worth among LIS professionals for their professional's growth and speedy way of communication tool.

Chauhan (2016) conducted a survey on comparative study of Facebook and WhatsApp using by professionals: a case study of Maharana Pratap Government P.G. College. The study investigates that how they use the social networking application to recognize communication need of information sharing. All faculty members able to use such type of social networking tools and it is shows a platform was 65.4% Facebook and 73.1% WhatsApp used faculty members. The Facebook and WhatsApp both are develop innovation teaching, communication need, information sharing and hence students and faculty member are more benefited.

Deepthi, Tadasad and Patil, (2017) entitled "Use of online social networking services in university libraries of Karnataka, India. Reveal many facts about use of social networking services among the university libraries are showing inclination towards the adoption and use of such services. There are differences across the libraries in using social networking services for different purposes, from marketing and promotion, to opening up the resources of the library to providing customer service to many possibilities. It is observed that the university libraries in the state are catching up with these technologies but used for elementary purposes. The study concluded that it is time for the university libraries to exploit the services and use the optimum potentialities of these social networking services.

Modu, Aboyade and Ajayi (n. d.) evaluated the study of LIS students on using WhatsApp with usage pattern, impacts and challenges in federal polytechnic Ede. The main objective of the study was to determine the WhatsApp usage pattern among LIS students and to determine the impact of WhatsApp usage in LIS student's academic life. The study employed a descriptive survey design, population of the study consisted of all the library information science students in the academic session 2016-2017. Out 244, there were 145 students have signed up for WhatsApp and they are a sample size of the study. Structured questionnaire was used as instrument for data collection. There were found fosters academic interactivity and social connectivity among the students, promote blended learning and permitted media mix in their education. The app like every other product of the new technology has dual implications of both

positive and negative effects on the negative side. WhatsApp has been found to impede effective academic achievement expected of the objectives of the application where it has been wrongly use.

Purkayastha and Chanda (2018) explored WhatsApp as means of sharing information among LIS professionals of north-east India. This study identifies awareness about WhatsApp among LIS professional, to examine LIS professional attitude and perception towards getting services of the library over WhatsApp and to know the purpose of using WhatsApp by LIS professionals. The study found that majority of LIS professionals are spending average time 4-9 hours to access in WhatsApp, most of LIS professional are using WhatsApp for sharing of knowledge content. The study concluded that the WhatsApp is a major part of online communication with considerable growth rate of users and which almost satisfy the users need in every way like providing instant delivery, multimedia sharing, real time audio-visuals conversation and group massaging etc.

Shridevi and Govindaraju (2018) evaluated WhatsApp access and usage pattern among a nomadic community called Narikuravar. The main aim of this study is to access and usage pattern among the community and to analyse the gratifications acquired from the application among the community. The study incorporated qualitative method was adopted, the sample was selected through snowball technique. It was observed that the gypsies have the online social participation which may be different from the main stream society. There are economic and cultural platform. It concludes that the motivated them towards education which is the prerequisite for the development of this community.

Objectives

The present study aims to find out the use and impact of WhatsApp messenger among library and information science professionals in Nashik city. The objectives of the study are as follow:

1. To study the purpose of using WhatsApp.
2. To examine the period of using WhatsApp.
3. To find out the use of WhatsApp messenger among LIS professionals
4. To find out the impact of WhatsApp messenger on the professional development.

Scope of the Study

The scope of the study is the statement of framework within the research is carried out. The scope of present study is primarily restricted to the use of WhatsApp by library professionals for professional communication. This study is also limited to the library professional working from 85 colleges in Nashik city, the all 85 colleges affiliated to Savitribai Phule Pune University and offering PG and UG courses in the various faculties. Semi-Professionals, non-professionals and Technical staff from this academic library are out of the scope of the study.

Methodology

The methodology adopted here is descriptive research. A survey technique was used and questionnaires as a tool to collect primary data from the respondents. Structured online questionnaire was used over Google forms platform. Online survey by using google forms was the useful technique for data collection. The collected data was analysed and presented in the form of charts and tables.

Data Collection and Analysis

Data collection, analysis and interpretation is presented as below

There are various parameters taken for the analysis. As per the analysis of data collected through these parameters are detailed below.

1. Gender Wise Distribution.

Sr. No.	Gender wise Analysis	Respondents	Percentage (%)
1	Male	30	45 %
2	Female	36	55 %
	Total	66	100 %

Table No. 1 Gender Wise Analysis.

i. Gender Wise Analysis

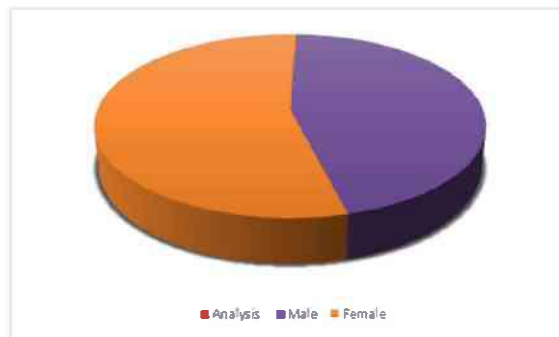
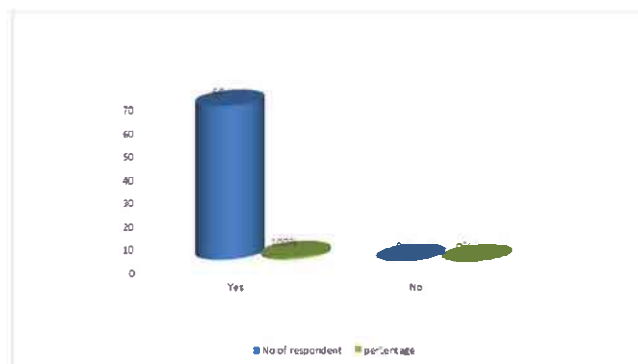


Chart No. i. Gender Wise Analysis**Analysis**

From the above chart, it is revealed that 36 (55 %) are female LIS professionals, while 30 (45 %) are male respondents.

2. Use of Whats App among LIS Professionals

Sr. No.	WhatsApp Use	No. Of Respondent	Percentage
1.	Yes	66	100%
2.	No	00	00%
	Total	66	100%

Table No. 2. WhatsApp Use**i. WhatsApp Use****3. Chart No. ii. WhatsApp Use.****Analysis**

Above Chart no. ii. Shows that all LIS Professionals (100%) are using WhatsApp.

3. Purpose of using Whats App

Sr. No	Purpose of using WhatsApp	Respondents rate				Total
		Yes	%	No	%	
1	Knowledge Update	55	83.3%	11	16.6%	66/100
2	Entertainment	37	56%	29	43.9%	66/100
3	Social Purpose	37	56%	29	43.9%	66/100
4	Status Updating	28	42.4%	38	57.5%	66/100
5	Professional Communication	53	80.3%	13	19.6%	66/100
6	General Work	42	63.6%	24	36.3%	66/100
7	Research Work	24	36.3%	42	63.6%	66/100
8	Administrative Work	42	63.6%	24	36.3%	66/100

Table no. 3. Purpose of Using WhatsApp

i. Purpose of Using Whats App

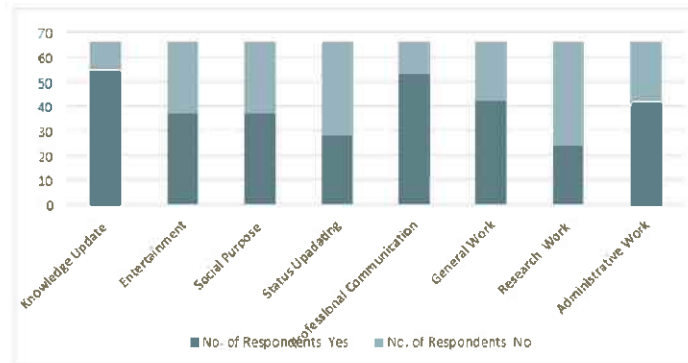


Chart No. iii . Purpose of Using WhatsApp

Analysis

The above chart shows the purpose of using WhatsApp among LIS Professionals. The analysis revealed that use of knowledge updating 55(83.3%), use for entertainment 37 (56.0%), use for social purpose 37(56.0%), The majority of the library professionals has responded for professional communication 53 (80.3%), while 28 (42.4%) responded for status updating , 42 (63.6%) responded for administrative work, 42 (63.6%) respondents use for general work and 24 (36.3%) respondent use for research work.

4. Period of Using Whats App

Table No. 4. Period of Using Whats App

Sr. No	Period Of Using WhatsApp	No. Of Respondent	Percentage
1.	1-6 Months	2	3.03%
2	6-12 Months	13	19.70%
3	1-4 Year	34	51.52%
4	Above 5 Year	17	25.76%
	Total	66	100.00%

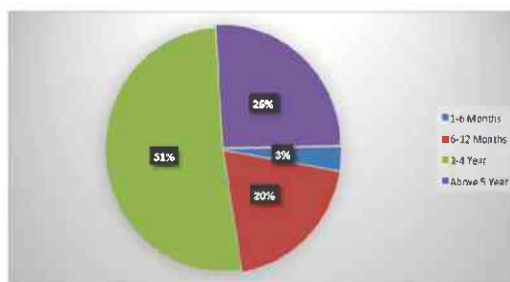


Chart No. iv. Period of Using WhatsApp

Analysis

From table no. 4 and chart no. iv shows that more than 34 (51.52%) LIS professionals are using WhatsApp from 1-4 year, whereas 17 (25.76%) LIS professionals are using since above 5 years, 13 (19.70%) were using WhatsApp from 6-12 months, followed by 2 (03%) respondents were using from 1-6 Months.

5. Frequency of Using Whats App in a day

Table No. 5. Frequency of using Whats App.

Sr. No.	Frequency WhatsApp Use	Of	No. Respondent	Percentage
1.	1-2 times		10	15.15%
2.	2-3 Times		9	13.64%
3.	3-4 Times		30	45.45%
4.	More than 5 times		17	25.76%
	Total		66	100.00%

v. Frequency of Using Whats App.

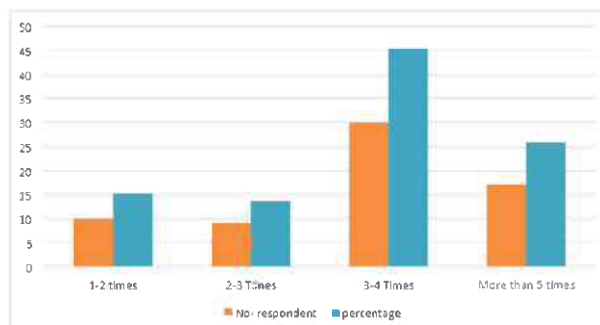


Chart No. V. Frequency of Using Whats App.

Analysis

The above chart no. v. showed the frequency of daily usage, the data revealed that 30 (45.45%) LIS professionals were using 3-4 times in day. Whereas 17 (25.76%) LIS professionals were using more than 5 times in a day. 10 (15.15%) professionals were using 1-2 times in a day. Only 9 (13.64%) respondents were using 2-3 times.

6. Use of Various Features of Whats App among LIS Professionals

Sr. No.	Features Of WhatsApp	Respondent	Percentage
1.	Group video and voice calls	20	10%
2.	Share your live location	20	10%
3.	Set a WhatsApp status	28	14%
4.	Two factor authentication	21	10.5%
5.	Change numbers & keep your WhatsApp data	14	7%
6.	Control privacy on what Sapp	25	12.5%
7.	Share photos from cloud drive	26	13%
8.	Auto sorted inks, docs ,& media	17	8.5%
9.	Mark chats as read or unread	18	9%
10.	Use custom notification for people & group	11	5.5%
	Total	200	100%

Table No. 6. Features of WhatsApp

6. Features of Whats App

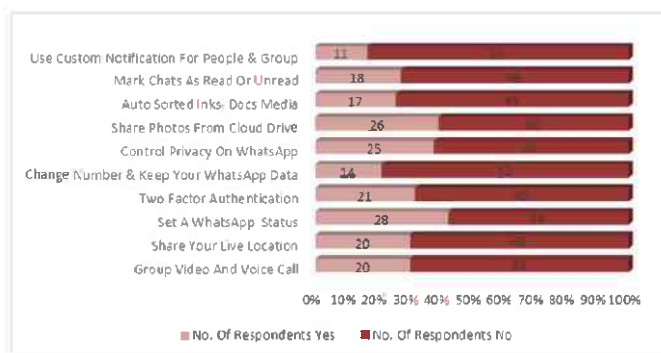


Chart No. vi. Features of Whats App

Analysis

From the above chart no. vi. showed that 20 (10%) LIS professionals were generally use for group video, voice calls and share their live location, 28 (14%) librarians were using WhatsApp feature for status updating, 21 (10.5%) respondents were using WhatsApp feature for set two factor authentication, 14 (7%) LIS professionals were using what Sapp change numbers & keep their WhatsApp data. 25(12.5%) LIS professionals use to control privacy on WhatsApp, 26 (13%) LIS professionals were using for sharing photos from cloud drive and 17 (8.5%)

respondents were using auto sorted inks, docs & media, 18 (9%) librarians use WhatsApp for mark chats as read or unread. Only 11 (5.5%) respondents use custom notification for people & group.

7. Whats app Based Library Services

Sr. No.	Library Services	Respondent	Percentage
1.	CAS	26	10.97%
2.	SDI	30	12.66%
3.	Circulation of new adding list	29	12.24%
4.	Electronic document delivery service	28	11.81%
5.	Database	24	10.13%
6.	Notification of books due	26	10.97%
7.	Journal articles	25	10.55%
8.	Library news letter	17	7.17%
9.	Library website	23	9.70%
10.	Any other	9	3.80%
	Total	237	100.00%

Table No. 7. WhatsApp based Library service.

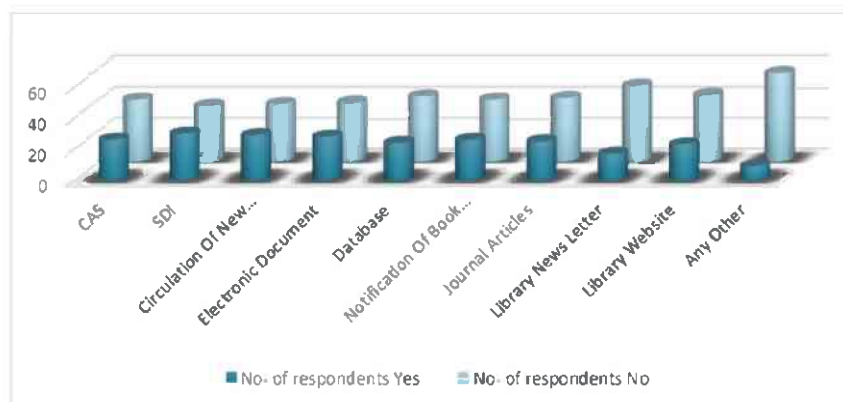


Chart No. vii. Whatsapp Based Library Service.

Analysis

The above chart no. vii. result showed the library service to serve via WhatsApp platform, such as CAS and notification of book due were 26 (10.97%), response from the LIS professionals, followed by SDI service 30 (12.66%), circulation of new adding list 29 (12.24%), electronic document delivery service 28 (11.81%), Database 24 (10.13%), journal articles 25 (10.55%), Library newsletter 17(7.17%), library web site 23 (9.70%), and any other 9 (3.80%).

8. Benefits of Whats App

Sr. No.	Benefits Of WhatsApp	Respondent	Percentage
1.	Keep update in subjects	30	15.71%%
2.	Keep update professional development	40	20.94%
3.	Quality professional discussion	33	17.28%
4.	To prepare for NAAC/AICTE/UGC/or any governing body instructions and discussions	21	10.99%
5.	Professional relationship	42	21.99%
6.	Career development	25	13.09%
7.	Total	191	100.00%

Table No. 8. Benefits of WhatsApp.

Viii. Benefits of Whats App.

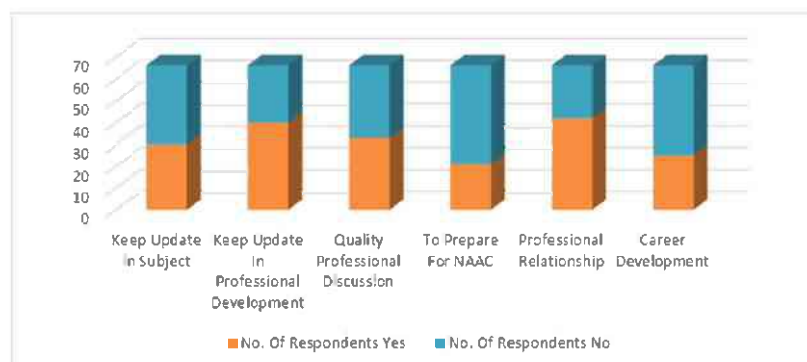


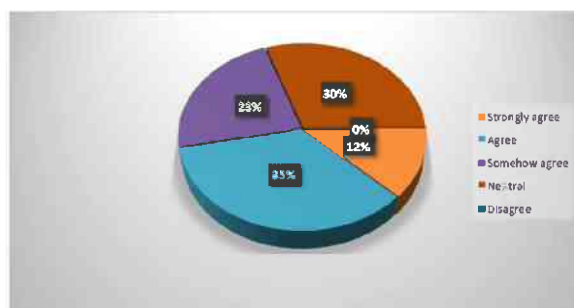
Chart No. viii. Benefits of WhatsApp.

Analysis

From the above chart no. viii. showed that the WhatsApp as a beneficial app for LIS professionals, majority of 42 (21.99%) respondent response professional relationship develops. Followed by 30 (15.71%) LIS professionals' response keep updates in subject, 40 (20.94%) LIS professionals were response keep updates in professional development, 33 (17.28%) librarian's response quality professional discussion, 25 (13.09%) librarian's response career development and 21 (10.99%) LIS professionals' response prepare for NA

9. Impact of Whats App on LIS Professionals for their Professional Development.

Sr. No	WhatsApp Useful For Professional Development	Respondent	Percentage
1	Strongly agree	8	12.12%
2	Agree	23	34.85%
3	Somehow agree	15	22.73%
4	Neutral	20	30.30%
5	Disagree	00	0.00%
	Total	66	100.00%

Table No. 9. Use of Whatsapp for Professional Development.**Chart No. ix. Use of WhatsApp for professional development.****Analysis**

The above chart no. ix. resulted that evaluation criteria use by the WhatsApp as useful for professional development. Out of 66 respondents, majority of LIS professionals agree 23 (34.85%), and 20 (30.30%) respondent response neutral that there is WhatsApp is useful for professional development. 15 (22.73%) are somehow agree and 8 (12.12%) LIS professional are strongly agreeing in their professional development.

Observations and Findings

As per the data analysis, findings and observations are as below

- Majority of LIS Professionals are Female than Male working in Nashik City.
- Almost everyone is using WhatsApp for professional communication
- Frequency of using WhatsApp among LIS Professionals is three to four times in a day
- Majority of LIS Professionals responded that WhatsApp is an effective means of communication
- Library Services such as CAS, SDI, Notifications, alerts and updates through this online instant messaging app has become convenient to reach users in this virtual mode.

- From Overall analysis, it is revealed that there is a positive impact of WhatsApp among LIS Professionals.

Conclusion

Use of WhatsApp in LIS Community will definitely increase the utility of libraries in this information age. The five laws of library science in this digital age are effectively proved by using **WhatsApp**. Being an effective and popular means of communication, resources will be used, each and every resource will reach to the user community, every reader/user will get the requisite information and resource, it will save the time of the reader and even though library is a growing organism, it can serve in an effective way. Hence Libraries can effectively work with a Whats App as a tool to serve better in user community.

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20. Checklist and Advantages of Library Management System

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Introduction

Libraries have passed through a series of historical developmental processes. The main aim was the preservation of records, which were made up of the written history, culture, knowledge of humanity at various times. The libraries were depositories and warehouses of knowledge. Wealthy rulers and renowned scholars in the societies owned them. Libraries are now agents of education, social, economic and political revolution and are accessible to all that require their services. This means that the library is now a place entrusted with the acquisition, organization, preservation, storage, retrieval and dissemination of information.

There are two ways of seeking for knowledge one is formal and other is informal. Formal education is the knowledge one acquires in classroom setting or in an environment close to the classroom situation. Informal education is said to be received through daily activities, practice and experience. However, the library is indispensable in both ways of seeking for knowledge. The library can also be of assistance to those who are not necessarily in school to answer some of their questions. In this situation, the library serves as an organ of the process of studying or acquiring knowledge.

The purpose of a library management system is to operate a library with efficiency and at reduced costs. The system being entirely automated streamlines all the tasks involved in operations of the library. The activities of book purchasing, cataloguing, indexing, circulation recording and stock checking are done by the software. Such software eliminates the need for repetitive manual work and minimizes the chances of errors. The library management system software helps in reducing operational costs. An automated system reduces the need for manpower and stationery.

The Library Management system (LMS) acts as a tool to transform traditional libraries into digital libraries. In traditional libraries, the user have to search for books which are hassle process and there is no proper maintenance of database about issues. Library management

system allows the librarian to maintain library resources in a more operative manner that will help to save their time.

Purpose of the Library

There are many types or categories of library users some users read to pursue a designed course. Others need the library to broaden or enlarge their knowledge and horizon, while other need information for trade and commerce. And yet others need the library for recreational purposes. From these various needs of the users, one can then say that the purpose of a library is to meet these varied needs of its users.

1. The library meets the recreational needs of its users by providing materials to occupy their leisure times or to while away the times.
2. The library is to serve the needs of the business men who may require information on trade or commerce to promote their business.
3. The library is to meet the research needs of its users such as in any academic library.
4. In general, therefore, the purpose of library is to satisfy the information needs of its users.

Types of Libraries

1. Academic Libraries

The Libraries in this category include libraries in institutions of higher learning such as the Universities, Polytechnics, Colleges of Education, and Colleges of Technology etc. These Libraries are mainly established for research, teaching and study purposes.

1. a. School Libraries

As the name implies, these are libraries in schools they include nursery, primary, secondary schools, teacher training colleges and technical schools. These are like academic libraries, but without any emphasis on research. This means, school libraries are established mainly for studies and learning. Also their book collections are mostly on the subjects taught in their respective schools.

2. b. Special Libraries

These referred to libraries established mainly to serve the staff of particular organizations that specialize in certain research and other endeavours. Libraries in this category are mostly established in the field of science, technology, social science e.t.c. Therefore, provide mainly

current materials, especially journals in their respective specialized fields to meet the information needs of their organization.

3. c. Private Libraries

4. These refer to libraries that are established, by individuals for their private use. Some of these libraries are in particular area of interest of their owners, while others are on several or general discipline.

5. 2. National Libraries

This is a statutory government establishment, responsible for collection and preserving the printed output of a country. National Libraries are maintained by Federal Government bodies, academic institutions and the entire citizens of the nations. National Library builds its collection from books and other materials submitted by publishers in the process of registering their copyright.

3. Public Libraries

6. These are libraries that are established with the main aim of serving the general public. The public libraries; collections cover all areas of knowledge. In other words, their collections try as much as possible to satisfy information needs of every profession and infact all activities in the society where the library is established.

Cataloguing and Classification

Cataloguing and classification organizes library and information materials for easy retrieval and accessibility by preparing the record of all materials in the library. The record describes and indexes the contents of the library and provides the key to the library collection.

Physical Forms of Library Catalogue

7. There are four main physical forms of library catalogue they are as follow;

8. 1. Book Catalogue

9. Book catalogue can also be referred to as printed catalogue. This form of catalogue, entries are printed in page form and bound into a volume or volumes. This is the oldest form of catalogue and still in use, e.g. the library of congress National Union Catalogues, The British Museum Catalogue. Entries in this catalogue are arranged like a dictionary in which all the entries are arrange in alphabetical sequence.

10. 2. Card Catalogue

This form of catalogue is still the most common catalogue in use. In card catalogue, entries are prepared on a standard 5"x3" catalogue card and held in a catalogue cabinet. In the standard size cabinet in the market, each drawer holds about 1000 cards. Internal guiding is achieved by inserting guide cards which with tabs protrude above the catalogue entries. External guiding is by labelling the outside of each drawer consecutively so that the catalogue user can quickly find the required entries.

3. Sheaf Catalogue

The sheaf catalogue contains entries that are prepared on long standardized slips of paper measuring 6"x4". The slips are light and are inserted in loose leaf binders. Each binder has a locking/releasing mechanism to allow the insertion of new entries when required, yet ensures that the slips remain securely in place when the catalogue is consulted. Sheaf catalogue is still in use in libraries

4. Computer Catalogue

Computer can act as a store of catalogue information from which magnetic tapes disk drives can be produced and these in turn can be processed into microfilm or microfiches. A computer catalogue can also give direct access to the stored catalogue information. If access is limited to certain specific times; the term "off-line" is used. "An online" system allows direct and immediate access through terminal (computer) to secure catalogue information, e.g. Online Public Access Catalogue (OPAC).

Library Automation

The word automation has many connotations but central to them is mechanical forces. In the first place, it can be described as a technique by which mechanical processes are subjected to some degree of automatic control without human intervention. Automation should be seen as something mechanical without human intervention. Our major concern here however is to understand the concept of Library Automation.

There are several definitions of Library Automation. Library Automation as the application of computers and telecommunication devices in the library to carry out library activities for the purpose of improving and enhancing services to library users. Telecommunication devices include telephones, telegraph, radio, microwave, fibre optics, satellites, and Internet e.tc.

Virtual Library

Virtual library has been variously defined by different scholars in librarianship, some sees virtual library as a collection of resources available on one or more computer systems, where a single interface or entry point being that the user need not know where particular resources are located, that is the location is “virtual”. Virtual library is the worldwide collection of online books, journals and articles available on the Internet

Library Management

Library Management is the adaptation of the principles and techniques of management to the library situation. It includes decision making and getting the work done by others. The five fundamental management functions are: Planning, Organizing, Staffing, Leading and Controlling.

Library Management System

Library management systems are designed to manage the movement of books and maintain records of the members in a library. The software solution is designed based on the system requirements, the people involved, the content of the operation and the activity to be performed. The system requirement in library management focuses on the possibility of search for books by title, author or subject by the member. They should be able to locate a book physically by the unique identification code and the rack number for each book. The system should provide details on the books held by the members. The system should limit the number of books that can be taken and the number of days that a book can be kept for. The system should generate fines when due from the member.

The next step focuses on the functions of the librarian, the member and the system. Managing books by the librarian, searching for books by the members and notifications sent by the system are detailed in a case diagram. The third step in the design of the library management system software is based on the different aspects of a library. The name of the library, the book details, member details, membership cards, book reservations, book lending, cataloguing, fines, book racks and notifications are consolidated as a class diagram. The next step further breaks down the functions into specific activities that are performed in a library. The final stage is coding for each activity in the case, class and activity diagrams. This is the most important function in the design of the library management system software.

Check List for Selecting A Library Management System

The selection of the library management system software depends on the type of library that needs to be automated. Libraries can belong to a school or college, public libraries for the community or specialized libraries for specific industries. Each type of library has different requirements to cater to their patrons. The size of the collection of books, the type of library, the budget, the staff size and the compatibility of the system with working partners have to be considered when selecting a software system.

1. Patron Facing Interface

The objective of a library is to help the patrons to find the right book. These interfaces with other tools allow patrons to search for what they want. The system should have filtering options for older users and easy to use icons for the younger users. Patron facing tools include the useful features of reservation of books, displays and notifications.

2. Product Conformation

The software should be flexible to suit the needs of the library. Primarily the work of the librarian and that of the other staff have to be addressed by the system. The system has to be user friendly and customizable to each user – the librarian, the borrower or user, accountant and other staff.

3. Vendor Track Record

The library has to do a check of the vendor and his capabilities prior to buying. The provider has to demonstrate the product to the users. The vendor has to install the library management system software on the computers in the library.

4. Technical Support and Training

The provider should be able to train the end users to competently operate the system. They have to ensure prompt service for technical hitches that might occur. Training for the staff has to be provided when the software is updated.

5. Web Support

The installed system should be supported by the web. A web based library management system is the most ideal as it provides extensive coverage of books, journals, reference resources.

6. Accessibility

The system should allow the school libraries to manage their student base from a central system accessible from anywhere, anytime. It should be possible for management to view the

library operations from anywhere. The program should be accessible from libraries, classrooms, computer labs, homes and any place with an internet connection or web access.

7. Budget

The cost of the library management system software depends on the features it offers. It is best to list out exactly what functions have to be managed to reduce the cost of purchase.

Advantages of Library Management System Software

1. User friendly system

The library management systems are simple and easy to use for the librarian as well as the students. The system provides online and offline storage of data. The system automatically updates and backups data. The system is flexible and can be adapted to the needs of the institution.

2. Simplification of Librarian Duties

The system allows the librarian to maintain a wide collection of books, periodicals, journals, audio and video books and pictorials. The librarian operations of addition and deletion of books, tracking books, tracing missing books, reserving books can be performed very easily.

3. Increased Member Engagement

The web based library management system software can be easily accessed from anywhere and at any time. The members can search for books from classrooms, computer labs, home and places where the internet is available. The system provides access from smartphones and tablets to search books and resources.

4. Efficient Data Management

The library management system software hosted from a cloud platform is very efficient. The functions of cataloguing, indexing, referencing and circulation of books are managed automatically and saved on the cloud for reliable and secure operations.

5. Time and Effort Saver

The automated library system software eliminates the need for manual entries. This saves the effort and time consumed in data entry. Automation makes the database error free and accurate.

6. Automated Reports

The system reports the performance of the library automatically. Charts and graphs are provided for review and tracking of the library functions.

7. Cost Effective

Digital libraries eliminate the need for extensive paperwork and too many staff. Maintenance overheads and operation costs are reduced.

Conclusion

The demand for Library Automation Software in India is increasing day by day with the advancement of the system. As we all are living in the digital age, everyone prefers quick and accurate service. Almost all schools and colleges prefer the Library Management System due to the organized and systematic management of the database. College Library Software helps the students to prepare their projects easily and in less time. It also helps in preparing notes and assignments. Library Management System helps the students in better learning by providing quick access to the library system. With Advance Library Software they can easily find books, catalogues, magazines of their interest. The library is a great place to study and make notes which ultimately help in scoring a good score.

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21. Efficient Library Management System which can be Implemented by Institutions

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Abstract

It guides the students to promote their views differently. This knowledge optimizes the student to achieve a better result in academic as well as personal skill development. Improvisation in technology causes the demand for developing a way to enhance the traditional library set up to digital one. Numerous tedious processes reduce the efficiency of the library. For example, it always needs manual support to do any activities in the traditional library. The count and details of books are scribbled in the paper for reference. Each data is fetched in the notebook for future citations. 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. 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 is 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.

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.

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

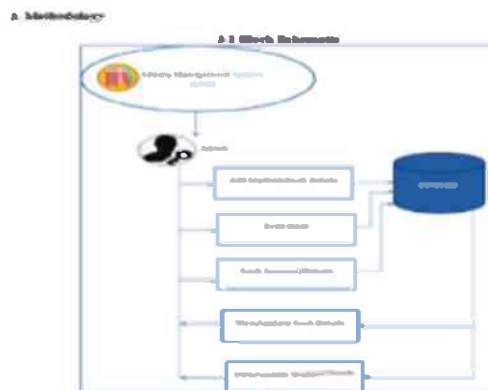


Fig 1: Use Case Diagram of Proposed system

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.

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22. Today's Need and Purpose of LMS to Develop Academic College Library and Higher Education

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Introduction

Education is Culture and Self-improvement and process will go on the end of one's life. A thinker observed that the true tracer is a student to the end of his life. Knowledge is the third eye of man which gives him insight in to all affairs and teaching him how to act education promotes our material as well as spiritual welfare both in this as well as after life.

The meaning of higher education is laid down as follows. As per the international dictionary of education. Education of an academies level higher than that attainable on completion of a full secondary education. The generally acceptable definition of higher education is, "that which requires as a minimum condition of admission, on the successful completion of admission secondary – education or evidence of the attainments of an equivalent level of knowledge".

Education

The term Education has been define by ancient and Education such as "Education is some think which are man self-reliant and self-less. Education is for liberation nothing more purifying on earth than knowledge. Education is the realize of self. Education means training of the country and love of the nation the training one gets from nature the manifestation of the diving perfection, already existing in man"

India's Higher Education System

Advanced Education has encountered a fast spray being developed in the course of recent many years, which can be extra polated to be fundamentally determined because of measures started by the private area. These actions are suspect nonetheless and there exist authentic and genuine worries that these activities are half cooked, unacceptable and shifty and have just served tom send the guideline of exploration in a descending twisting and lower the general scholastic legitimacy. A portion of the issue of the India advanced education , for example the inconvenient affiliating framework, unyielding scholastic contribution lopsided limit across

different subject, disintegrated self-governance of scholarly foundation, and the law degree of public subsidizing are notable.

Role of Libraries in Higher Education

It has been described that the education, particularly at higher levels, is a process of learning rather than teaching, signifying the efforts to be put in by the students. They have to be provided with the facilities necessary for mastering the subject matter, techniques, skills, and habits of thinking and methods of work in their chosen field. It is more so in the present day of information explosion, technological revolution and the days of a dramatic shift in socio-economic and political spheres. The enormous growth of information and its proliferation, on the one hand, access to information through various communication media with the advancement of technology on the other; and awareness among the public of egalitarian opportunities and social justice on yet another hand have exerted greater stress on the total educational system.

Role of ICT in Higher Education in India

Higher Education provides people with an opportunity to reflect on the critical social, cultural, moral and spiritual issues facing humanity with technological ideas, knowledge with explosion in higher education to become dynamic.

Objectives of Library Automation

- Avoid duplication of work
- To improve control over collection
- To improve the existing services
- To have effective control
- To maintain bibliographical records of all the materials
- To share the resources through library networking
- To provide access to information at a faster rate.

LMS

The library management system is a software to manage manual functions of a library. The software helps to manage the entire library operations from maintaining book records to issue a book. In addition, it allows streamlined management of fine details of books such as author name, edition, and many other important details. So, it is easier to search for books and find the right materials for students and the librarian

L M S Advantages and Disadvantages

Advantage of library management software

- Simple and easy to operate
- Increase librarian's efficiencies
- Mobile access, anytime, anywhere
- Search, add, update, and view library materials online
- Helps to manage library functions constructively
- Saves time and reduces overheads
- Reduce library's operating cost
- Customized reports for better management
- Remove manual processes to issue books and maintain records

Disadvantage of library management software

- Online stored data is predisposed to cyber hacks. Opting for a reliable online system reduces the risk
- Sometimes it is complicated to operate for first-time users
- Requires high-speed internet connectivity for a web-based system
- Risk of computer virus
- Unlike online systems that use cloud computing, Open source system stocks data on the computer's hard drive. This raises the risk of data loss.

Purpose of LMS

The purpose of a library management system is to operate a library with efficiency and at reduced costs. The system being entirely automated streamlines all the tasks involved in operations of the library. The activities of book purchasing, cataloging, indexing, circulation recording and stock checking are done by the software. Such software eliminates the need for repetitive manual work and minimizes the chances of errors.

The library management system software helps in reducing operational costs. Managing a library manually is labor intensive and an immense amount of paperwork is involved. An automated system reduces the need for manpower and stationery. This leads to lower operational costs.

The system saves time for both the user and the librarian. With just a click the user can search for the books available in the library. The librarian can answer queries with ease regarding

the availability of books. Adding, removing or editing the database is a simple process. Adding new members or cancelling existing memberships can be done with ease. Stock checking and verification of books in the library can be done within a few hours. The automated system saves a considerable amount of time as opposed to the manual system.

The library management system software makes the library a smart one by organizing the books systematically by author, title and subject. This enables users to search for books quickly and effortlessly.

Students need access to authentic information. An advanced organized library is an integral part of any educational institution. In this digital age a web based library management system would be ideal for students who can access the library's database on their smartphones.

Features of LMS software



The best library management system software will have the following features

Catalog management: To digitally keep track of what is available in the library. The books will be catalogued by title, subject, author and date of publishing.

Membership management: To maintain a detailed database of the members. The system records the name, ID and password of each user. The system helps in ascertaining the track record of the member.

Circulation management: To track the movement of books. The location of any book at any point of time can be tracked. Misplaced or missing books can be traced with ease. The details on books to be returned and that which are overdue for return are provided on a daily basis.

Acquisition management: To acquire new books and add them digitally. Irrelevant and outdated books are deleted.

Bar-coding: To give specific identification to each book. All books, old and new, are bar-coded on the basis of title, author, topic and date of publishing.

Barcode scanning: To read the barcode easily using RFID sensors. The database is automatically updated when books are scanned while issuing or returning.

Search function: To enable both the librarian and the members to search the catalog of books in the library. The search functions can be filtered to the need of each user.

Online access: To catalogues of other public libraries. The web based library management system software provides access to different associate libraries. This broadens the spectrum of search benefitting the user considerably.

Self management: To check in and check out books by oneself. The library management system software of digital libraries allows the members to login, search, select, issue and return books by themselves.

Fee management: To collect membership fees and manage individual member accounts. The software calculates the fine due for non-return or lost and damaged books. The members are intimated of the fines by the system.

Library Management System Software

Acquisition & Cataloguing

Serial Control

Circulation

Mis reports

Opac

M-opac

Conclusion

For libraries that want to do more with their automation systems, however, we see a great deal of functionality possible today through open interfaces with momentum toward creating much more. The Library Management System allows the user to store the book details and the person's details. This software allows storing the details of all the data related to library. The implementation of the system will reduce data entry time and provide readily calculated reports.

While we've seen a great deal of functionality library services and other ways that benefit to the library. The evidence gathered in this report reflects on going progress

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१. ग्रंथालय व्यवस्थापन प्रणाली: कार्य व महत्व

डॉ. मधुकर रामचंद्र वेदपाठक

सहयोगी प्राध्यापक, वसंतराव नाईक कला व वाणिज्य महाविद्यालय, मुरुड - जंजिरा, जिल्हा - रायगड.

गोष्टवारा

अलिकडच्या काळात चांगल्या ग्रंथालय व्यवस्थापन प्रणालीला मोठी मागणी आहे. ग्रंथालय व्यवस्थापनाच्या मूलभूत कार्यांमध्ये सर्व ग्रंथालय कार्यांची देखरेख करणे, ग्रंथालय अंदाजपत्रक तयार करणे, साहित्य संपादनाचे नियोजन करणे, पुस्तके, ग्रंथ, नियतकालिके तसेच शुल्क संकलनाची देखरेख करणे, कार्यक्रम नियोजन, निधी उभारणी आणि मानवी संसाधने यांचा समावेश होतो. 1937 मध्ये, सामाजिक शास्त्रज्ञ ल्युथर गुलिक आणि एल. उर्विक यांनी 'व्यवस्थापन घटक' म्हणून व्यवस्थापकाच्या 7 कार्यांचे वर्णन केले.

महत्वाचे शब्द : ग्रंथालय, व्यवस्थापन, पुस्तके, महत्व

प्रस्तावना

ग्रंथालय ही एक प्रणाली आहे तिच्यामध्ये विविध विभाग कार्यरत असतात. ते एकमेकावर अवलंबून असतात. शिक्षण, संशोधन, सामाजिक सेवा अशा अनेक विविध क्षेत्रातील संस्थेमध्ये ग्रंथालय प्रणाली कार्यरत असते. ग्रंथालय प्रणालीचा प्रमुख उद्देश वापरकर्त्यांना माहिती स्रोत गोळा करून देणे, माहितीचे संकलन करणे, तिचे व्यवस्थापन करणे, माहिती पुनर्प्राप्त करणे आणि ती उपलब्ध करून देणे हा असतो.

उद्दिष्टे

१. ग्रंथालय व्यवस्थापन प्रणालीची संकल्पना समजून घेणे
२. ग्रंथालय व्यवस्थापनाची मूलभूत कार्ये जाणून घेणे.
३. ग्रंथालय व्यवस्थापनाच्या घटकांचा अभ्यास करणे
४. ग्रंथालय व्यवस्थापनचे महत्व जाणून घेणे.

अभ्यासपद्धती

संशोधन पेपर दुर्यम माहितीस्रोतावर आधारित आहे. संशोधन उद्दिष्टाच्या आवश्यकता लक्षात घेऊन, अभ्यासासाठी वापरलेली अभ्यास रचना वर्णनात्मक प्रकारची आहे

ग्रंथालय व्यवस्थापन

व्यवसाय, व्यवस्थापक, कामकाज आणि कर्मचारी इत्यादींचे नियोजन योग्य पद्धतीने केल्यास कोणत्याही संस्थेचे दैनंदिन कामकाज हे व्यवस्थित पद्धतीने व संस्थेच्या उद्देशाप्रत जाण्यासाठी

व्यवस्थापन एक महत्वाचे अंग आहे. ग्रंथालय व्यवस्थापन ही सेवाभावी संस्थेद्वारे चालवलेली एक क्लिष्ट प्रक्रिया आहे. ज्यामध्ये संस्थेची ध्येय धोरणे, साहित्य, वाचक, वाचनालय सेवांचा समावेश आहे. व्यवस्थापनाचा प्रभावी वापर हा संस्थांची उद्दिष्टे आणि निर्णय क्षमता यांच्यातील अचूकता साधण्यासाठी उपयुक्त ठरतो. व्यवस्थापन शास्त्र ही एक कला होय. या सेवेच्या देवाणघेवाणीमुळे समाजातील लोकांची बौद्धिक क्षमता वाढवते. त्यातून समाज समृद्ध होतो.

व्याख्या

शिकण्यासाठी, शिक्षणासाठी आणि प्रशिक्षणासाठी माहिती प्रदान करण्यात ग्रंथालयांची भूमिका महत्वाची असते. ग्रंथालय व्यवस्थापन म्हणजे ग्रंथालयाची उद्दिष्टे पूर्ण करण्यासाठी साहित्य, यंत्रसामग्री, मानव, तंत्रज्ञान आणि पैशाचे कार्यक्षम आणि प्रभावी व्यवस्थापन होय. अशा प्रकारे, व्यवस्थापक म्हणून ग्रंथपाल हा व्यवस्थापक/प्रशासकाची सर्व कार्ये पार पाडतो. ग्रंथालय व्यवस्थापनामध्ये सामान्य व्यवस्थापकीय कार्ये, तसेच बौद्धिक स्वातंत्र्य आणि निधी उभारणीच्या जबाबदारींचा समावेश होतो.

ग्रंथालय व्यवस्थापन प्रणालीची वैशिष्ट्ये

अलिकडच्या काळात चांगल्या ग्रंथालय व्यवस्थापन प्रणालीला मोठी मागणी आहे. LMS (Library Management Systems) द्वारे कमी प्रयत्नाने ग्रंथालयचे सुरळीत कामकाजामध्ये मदत होते. पुस्तके आणि सदस्यांचे तपशील योग्यरित्या रेकॉर्ड केले पाहिजेत. आशी प्रणाली, सॉफ्टवेअर वापरणे सोपे व अनुकूल असणे आवश्यक आहे. यामुळे वेळेवर आवश्यक माहिती प्रदान करणे शक्य होते. प्रणाली मागणीनुसार अहवाल तयार करण्यास सक्षम असावी. प्रणालीने अल्पावधीत संपूर्ण ग्रंथालयाचे अंकेक्षण केले पाहिजे. लेखकाचे नाव, प्रकाशन, शैली इत्यादीनुसार विभागणी करावी. लॉगिन सुविधा ग्रंथपाल आणि वापरकर्ता दोघांनाही प्रदान केली जावी.

ग्रंथालय व्यवस्थापनाची मूलभूत कार्ये

ग्रंथालय व्यवस्थापनाच्या मूलभूत कार्यांमध्ये सर्व ग्रंथालय कार्याची देखरेख करणे, ग्रंथालय अंदाजपत्रक तयार करणे, साहित्य संपादनाचे नियोजन करणे, पुस्तके, ग्रंथ, नियतकालिके तसेच शुल्क संकलनाची देखरेख करणे, कार्यक्रम नियोजन, निधी उभारणी आणि मानवी संसाधने यांचा समावेश होतो.

नियोजन

नियोजनामध्ये उद्दिष्टे, भविष्यातील निर्णय घेणे, धोरणे ठरवणे आणि प्रभावी नियोजन यांचा समावेश होतो. वाचनालयाची उद्दिष्टे निश्चित करणे, उद्दिष्टे साध्य करण्यासाठी आवश्यक असलेल्या साधनांचे पुनरावलोकन व मूल्यमापन करणे, उद्दिष्टे साध्य करण्यासाठी या साधनांचा वापर कसा होईल हे पाहणे, प्रत्यक्ष कामाचा आराखडा, धोरणे, कार्यपद्धती आणि ते पूर्ण होण्यासाठी लागणारा वेळ समाविष्ट आहे.

संघटन

यामध्ये विभागीय व कर्मचारी कार्ये, विकेंद्रीकरण, समित्या निर्णय आणि प्रभावी आयोजन यांचा समावेश होतो. अनेक व्यक्तींनी एकत्र येऊन सहकार्याने एखादे कार्य पार पाडण्यासाठी केलेली अंतर्गत रचना म्हणजे संघटन होय. कार्यालयाचे कार्य व्यवस्थित चालविण्याकरिता ग्रंथालयात विविध कार्यानुसार वेगवेगळे विभाग निर्माण करणे गरजेचे असते.

मनुष्यबळ व्यवस्थापन

यामध्ये निवड, नोकरीचे वर्णन, कर्मचारी, मूल्यमापन, ग्रंथालय व्यवस्थापकांचा विकास आणि संस्थात्मक विकास यांचा समावेश होतो. ग्रंथालयातील आवश्यक कर्मचार्यांची संख्या निश्चित करणे, ग्रंथालयाच्या प्रत्येक विभागात संभाव्य कार्याची निश्चित करणे आणि त्या विभागातील कार्याचे वाटप करणे, ग्रंथालय शास्त्रातील सुविधा उपलब्ध करून देणे यांचा समावेश होतो.

मार्गदर्शक तत्त्वे

ग्रंथालय कर्मचार्यांना करावयाच्या कामाबद्दल मार्गदर्शन व सूचना दिल्या जातात. यात कर्मचार्यांना प्रवृत्त करणे देखील समाविष्ट आहे.

समन्वय

हे मानवी घटक, प्रेरणा, नेतृत्व आणि संवादाशी संबंधित आहे. संस्थेच्या कामात एकसूत्रता सुसंगतपणा राखणे म्हणजे समन्वय होय. ग्रंथालयातील विविध विभागांमध्ये तेथील कर्मचार्यांमध्ये ऐक्य निर्माण करून उपलब्ध साधनांचा प्रभावी वापर करून उद्दिष्टे साध्य करण्यास मदत या व्यवस्थापकीय कार्यात मिळते.

अहवाल सादर करणे

स्वयम् मूल्यांकन करून संस्थेच्या वार्षिक वाटचालीचा आढावा या अहवालात सादर केला जातो. ग्रंथालयातील कार्याची कामगिरी यश आणि कमतरता याचा आढावा घेतला जातो. हा आढावा शक्यतो सांख्यिकीय स्वरूपात मांडलेला असतो .

अंदाज पत्रक

वर्षभरातील अपेक्षित जमा आणि खर्चाचे लिखित विवरण अंदाजपत्रकात असते याला अर्थसंकल्प म्हणतात. ग्रंथालय उपक्रमास लागणारे नियोजित निधी व त्याचा वापर हा निश्चित केलेला असतो.

नेतृत्व

संस्थेतील कर्मचार्यांच्या वृत्तीमध्ये सकारात्मक बदल घडवून आणण्याची क्षमता म्हणजे नेतृत्व होय. ग्रंथालय कर्मचार्यांमध्ये नेतृत्वगुण असणे आवश्यक आहे. नेतृत्व कार्यामध्ये कर्मचार्यांना काम करण्यास प्रोत्साहित करणे, उत्तम संप्रेषण प्रणाली तयार करणे आणि आत्मविश्वास वाढवणारे निर्णय प्रस्थापित करणे समाविष्ट आहे.

प्रेरणा

प्रेरणा ही संस्थेतील कर्मचार्यांना ध्येयाकडे नेणारी प्रक्रिया आहे. प्रेरणेमध्ये कर्मचार्यांच्या कामाची वैयक्तिक नोंद घेणे आणि त्यांच्या चांगल्या कामगिरीबद्दल त्यांना प्रशंसा आणि बक्षिसे देणे समाविष्ट आहे. ज्यामुळे कर्मचार्यांची कार्यक्षमता वाढते.

नियंत्रण

कामाच्या गुणवत्तेची पातळी निश्चित करणे म्हणजे नियंत्रण. प्रत्यक्ष कामाचे मूल्यमापन करून आवश्यकतेनुसार सुधारणा करणे, कामामध्ये सुसूत्रता राखणे यांचा समावेश होतो.

ग्रंथालय व्यवस्थापन प्रणाली ग्रंथालयाच्या मुख्य कार्यावर नियंत्रण ठेवण्यासाठी वापरली जाते. पुस्तके, ग्रंथ, नियतकालिके मिळवणे, त्यांची देखभाल करणे, सभासदांचे तपशील व्यवस्थापित करणे, सभासद शुल्क गोळा करणे, विलंबासाठी दंड आकारणे इत्यादी गोष्टी ग्रंथालय व्यवस्थापन प्रणालीचे मूलभूत कार्य आहेत. बऱ्याच ग्रंथालयांना सॉफ्टवेअरची आवश्यकता असते. यामुळे ग्रंथपालांवर कामाचा ताण खूपच कमी होती. ग्रंथालय व्यवस्थापनाची मुख्य कार्ये खाली सूचीबद्ध आहेत. नवीन पुस्तके, परिपत्रके, मासिके इत्यादीबद्दल तपशील प्रविष्ट करणे आवश्यक आहे. नियतकालिके देखील योग्य पद्धतीने हाताळून पुस्तके, ग्रंथ, नियतकालिके यांचा साठा तपशील अद्ययावत करणे, प्रत्येक पुस्तकांना विशिष्ट ओळख क्रमांक असतो अगदी सदस्यांना स्वतंत्र ओळख क्रमांक प्रदान केला पाहिजे. विशिष्ट पुस्तके, ग्रंथ, नियतकालिके यांचा शोधण्याचा चांगला मार्ग प्रदान करणे हे लायब्ररी व्यवस्थापनाचे सर्वात महत्वाचे कार्य आहे. स्पर्धात्मक बाजारपेठेत व्यवस्थापन प्रणाली तांत्रिकदृष्ट्या प्रगत असावी. सदस्यांना कोटूनही त्यांना पाहिजे असलेले विशिष्ट पुस्तक आरक्षित करण्यास मदत होते. मासिकांचे, वर्तमानपत्र, जर्नल्स यांचे व्यवस्थापन केले जाते. ग्रंथालय व्यवस्थापन प्रणालीने मागणीनुसार त्वरित अहवाल तयार केला पाहिजे. LMS असा असावा की संपूर्ण ग्रंथालय मालमतेचे काही सेकंदात ऑडिट केले जाईल. लायब्ररीचे सदस्य आणि कर्मचारी या नात्याने त्याची देखभाल करणे आवश्यक आहे आणि लायब्ररी सुरळीतपणे चालवण्यासाठी संबंधित प्रत्येक तपशील ठेवणे आवश्यक आहे.

ग्रंथालय व्यवस्थापनाचे घटक

1937 मध्ये, सामाजिक शास्त्रज्ञ ल्यूथर गुलिक आणि एल. उर्विक यांनी 'व्यवस्थापन घटक' म्हणून व्यवस्थापकाच्या 7 कार्यांचे वर्णन केले.

नियोजन - नियोजन म्हणजे संस्थेसाठी निश्चित केलेली उद्दिष्टे साध्य करण्यासाठी आवश्यक असलेल्या क्रियाची विस्तृत रूपरेषा आणि ते करण्याच्या पद्धती अवलंबणे.

आयोजन - या द्वारे संस्थेचे विविध विभाग उद्देशानुसार व्यवस्थापित आणि समन्वयित केले जातात.

कर्मचारी - कर्मचार्यांना आणणे, त्यांना प्रशिक्षित देणे आणि कामाची अनुकूल परिस्थिती राखणे हे संपूर्ण कर्मचार्यांसाठीचे कार्य आहे.

मार्गदर्शन - निर्णय घेणे आणि त्यांना विशिष्ट आणि सामान्य क्रमाने मूर्त स्वरूप देणे हे निरंतर कार्य आहे. त्यात कर्मचार्यांना सूचना देणे आणि ग्रंथालयचे प्रमुख म्हणून काम करणे समाविष्ट आहे.

समन्वय - संस्थेचे सर्वात महत्वाचे कार्य म्हणजे तिच्या कामाच्या विविध पैलूंचे एकत्रीकरण करणे, परस्पर संबंध जोडणे होय.

अहवाल देणे - काय चालले आहे याबद्दल ग्रंथपालांनी माहिती देणे, रेकॉर्ड, अहवाल इत्यादी ठेवणे समाविष्ट आहे.

अर्थसंकल्प - हे वित्तीय नियोजन, लेखा आणि नियंत्रण या स्वरूपात अर्थसंकल्पाशी संबंधित कार्ये केली जातात. व्यवस्थापनातील वरील सात घटक हे व्यवस्थापन प्रक्रियेचा गाभा मानले जातात.

ग्रंथालय व्यवस्थापनचे महत्त्व

पुस्तके गोळा करणे, त्यांची पद्धतशीर मांडणी करणे, पुस्तकांचे जतन करणे अशी विविध कामे ग्रंथालये करतात. वाचकांना पुस्तके उपलब्ध करून देणे हा ग्रंथालय व्यवस्थापनाचा एक महत्वाचा भाग आहे. ग्रंथालय म्हणजे केवळ पुस्तकांचा संग्रह नाही. संकलित मजकुराचे व्यवस्थापन महत्वाचे आहे. ग्रंथालय व्यवस्थापन प्रणाली हि ग्रंथपाल आणि ग्रंथालय वापरकर्त्यांची कार्यक्षमता वाढवते. हे ग्रंथपालांना पुस्तकांचे रेकॉर्ड ठेवण्यास आणि दिलेल्या आणि परत न केलेल्या पुस्तकांचे योग्य रेकॉर्ड ठेवण्यास मदत करते. मजकुराची पद्धतशीर मांडणी केल्यामुळे वाचकांना हवी असलेली पुस्तके लगेच मिळू शकतात. पुस्तक नेमके कुठे ठेवले आहे हे सांगता येते. त्यामुळे ग्रंथालय व्यवस्थापन आणि वाचक दोघेही पुस्तकांच्या शोधात वेळ वाया जात नाही. उत्तम व्यवस्थापनामुळे ग्रंथाचे जतन चांगले होते व पुस्तक नष्ट होत नाही. जर व्यवस्थापन जाणकार असेल तर वाचनालय उत्तम दर्जाची पुस्तके जमा करते जेणेकरून विवेकी वाचकांना उत्तम दर्जाची पुस्तके मिळतील. ग्रंथालयात एकाच विषयावरील पुस्तकांचा संग्रह नसून केवळ विविध पुस्तकांचा संग्रह आहे. चांगल्या व्यवस्थापनाने संगणक प्रणाली अधुनिक वाचकांसाठी उपलब्ध करून दिली जाऊ शकते. सर्जनशील व्यवस्थापकांना ग्रंथालयाचा वाचकसंख्या वाढविण्यासाठी पुस्तकांचे प्रदर्शन भरवणे, जाहिराती करणे अशा विविध मार्गांचा अवलंब करून ग्रंथालयाचा विस्तार करता येईल. ग्रंथालयच्या कामात कर्मचार्यांची कार्यक्षमता आणि कौशल्ये वाढवण्यास मदत होते. ग्रंथालय सेवांची उत्पादकता वाढवण्यास मदत होते.

ग्रंथालय व्यवस्थापन प्रणालीचे फायदे

1. हे मानवी पेपरवर्क कमी करते आणि आपोआप अचूक पुस्तक माहिती रेकॉर्ड करते.
2. ग्रंथपाल हे पुस्तक माहिती अद्ययावत करू शकतात आणि पुस्तकाची उपलब्धता आणि आगमन नोंदी व्यवस्थापित करू शकतात.

3. हे मानवी प्रयत्न आणि वेळ वाचवते.
4. ग्रंथालय व्यवस्थापन सॉफ्टवेअरच्या मदतीने वाचक सहजपणे पुस्तके शोधू शकतो.

निष्कर्ष

ग्रंथालय प्रणालीचा प्रमुख उद्देश वापरकर्त्यांना माहिती स्रोत गोळा करून देणे, माहितीचे संकलन करणे, तिचे व्यवस्थापन करणे, माहिती पुनर्प्राप्त करणे आणि ती उपलब्ध करून देणे हा असतो. यामुळे वेळेवर आवश्यक माहिती प्रदान करणे शक्य होते. ग्रंथालय व्यवस्थापनाच्या मूलभूत कार्यामध्ये सर्व ग्रंथालय कार्याची देखरेख करणे, ग्रंथालय अंदाजपत्रक तयार करणे, साहित्य संपादनाचे नियोजन करणे, पुस्तके, ग्रंथ, नियतकालिके तसेच शुल्क संकलनाची देखरेख करणे, कार्यक्रम नियोजन, निधी उभारणी आणि मानवी संसाधने यांचा समावेश होतो. वाचनालयाची उद्दिष्टे निश्चित करणे, उद्दिष्टे साध्य करण्यासाठी आवश्यक असलेल्या साधनांचे पुनरावलोकन व मूल्यमापन करणे, उद्दिष्टे साध्य करण्यासाठी या साधनांचा वापर कसा होईल हे पाहणे, प्रत्यक्ष कामाचा आराखडा, धोरणे, कार्यपद्धती आणि ते पूर्ण होण्यासाठी लागणारा वेळ समाविष्ट आहे.

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३. ग्रंथालय आणि आधुनिक तंत्रज्ञानाची गरज

डॉ. म्हात्रे सुभाष ल.

वसंतराव नाईक कला व वाणिज्य, महाविद्यालय मुरूड, जंजिरा जि.-रायगड.

प्रस्तावना

लोकशिक्षण लोकजागृती आणि वाचकांच्या सुप्त गुणांना वाव देण्याचे प्रत्यक्ष अप्रत्यक्ष काम ग्रंथालय करीत असते. वाचनालय हि सेवामावी कार्य करणाऱ्या संस्था आहेत. मानवाच्या अत्यावश्यक गरजा प्रमाणेच शिक्षण व वाचन यांनाही जीवनात महत्त्वाचे स्थान आहे. मानवाची बौद्धिक मनोरंजनात्मक गरज ग्रंथालयाच्या माध्यमातून भागविली जाते. ग्रंथाचा केवळ संग्रह म्हणजे ग्रंथालय नव्हे मात्र ग्रंथाशिवाय ग्रंथालय असूच शकत नाही. ग्रंथ हा ग्रंथालयाचा सर्वात प्रमुख घटक आहे ग्रंथ हा ग्रंथालयाचा प्राण आहे. ग्रंथ अबोल असतात. वाचक बोलके असतात. एक बोलका आणि एक अबोल एकत्र येवून काहीच होणार नाही. तर या दोघांना एकत्र आणू शकणारा ग्रंथपाल हा एक महत्त्वाचा घटक आहे. ग्रंथ वाचक आणि ग्रंथपाल या त्रिमुर्तीचे केंद्रस्थान म्हणजे ग्रंथालय होय.

महाराष्ट्राला ग्रंथालयाचा समृद्ध वारसा आहे. इस्ट इंडिया कंपनीचे सर न्यायाधिश जेम्स मॅकिनटॉश यांच्या प्रयत्नाने मुंबईत स्मिटररी सोसायटीची स्थापना सन 1804 मध्ये झाली. या संस्थेने सन 1805 मध्ये ग्रंथालयाची स्थापना केली. हे महाराष्ट्रातील मुद्रीत ग्रंथाचे पहिले ग्रंथालय होय. पुढे जॉन मालकम यांच्या प्रयत्नाने सन 1827 मध्ये लिटररी सोसायटीचे ग्रेट ब्रिटन आयर्कडच्या रॉएल एशियाटिक सोसायटीत विलिनिकरण केले हे ग्रंथालय मुंबईतील मध्यवर्ती ग्रंथालय म्हणून ओळखले जाते.

ग्रंथालयाच्या प्राचीन काळाकडे आपण दृष्टी टाकली असता आपणास असे दिसून येते की, त्याकाळी ग्रंथालय व ग्रंथपालनाच्या महत्त्वाच्या कार्याची समाजात पुरेशी कल्पना नव्हती मात्र आजच्या आधुनिक प्रवाहात या परिस्थितीत बदल झालेला आहे. आजचे युग हे संगणक युग म्हणून ओळखले जाते. आजच्या आधुनिक युगात प्रत्येक व्यक्ती हा यंत्राप्रमाणे काम करत आहे. म्हणूनच वाचकांची आवश्यकता व ग्रंथालय सेवकांची कार्यक्षमता वाढावी नवीन तंत्र प्रणालीची ग्रंथालयांना गरज भासू लागली आहे. मानवी जीवन व व्यवहाराच्या विविध क्षेत्रात ज्याप्रमाणे यंत्र व तंत्रज्ञानाचा प्रभाव पडलेला दिसून येतो त्याचप्रमाणे ग्रंथालय व ग्रंथालय क्षेत्रात यांत्रिकीकरणाने क्रांती घडवून आणली. उदा. ग्रंथांची नोंद, ग्रंथाना नंबर देणे, देवघेवाण संदर्भ विभाग यामध्ये संगणकांच्या मार्फत कामे केली जातात.

ग्रंथालयाचे प्रकार

प्रामुख्याने ग्रंथालयाचे तीन प्रकार लक्षात ठेवण्यासारखे आहेत.

1. शैक्षणिक ग्रंथालय
2. सार्वजनिक ग्रंथालय
3. संशोधनात्मक ग्रंथालय

1. **शैक्षणिक ग्रंथालय** – यामध्ये प्रामुख्याने प्राथमिक शाळेतील बाल वाचनालये, माध्यमिक व उच्च माध्यमिक शाळेतील ग्रंथालये महाविद्यालयीन विद्यार्थ्यांसाठी महाविद्यालयीन ग्रंथालये अ विद्यापीठीय ग्रंथालय यांचा समावेश होतो. शालेय ग्रंथालयाचे स्वरूप शाळेत अभ्यासक्रमांना पूरक असते. महाविद्यालयीन ग्रंथालयाचे ज्ञानाच्या विविध शाखांची रूपरेषा जाणून घेणाऱ्या विद्यार्थ्यांना सहाय्य करतात. पदवीधारांना व संशोधकांना विद्यापीठ ग्रंथालये उपयुक्त ठरतात.
2. **सार्वजनिक ग्रंथालय** – शालेय, महाविद्यालयीन व विद्यापीठ ग्रंथालय प्रामुख्याने विद्यार्थ्यांना ज्ञान देण्यास मदत करतात. सार्वजनिक ग्रंथालयाचे प्रामुख्याने त्यापेक्षा विस्तृत आहे. नावाप्रमाणेच हि सर्वजनांसाठी ग्रंथालये असतात. स्त्री, पुरुष, बालक, प्रौढ, सुशिक्षित, अशिक्षित अशा अनेक वाचकांसाठी सार्वजनिक ग्रंथालयाचे प्रयोजन असते. गरीब, श्रीमंत असा इथे भेद असत नाही. सर्वांना ग्रंथालयात मुक्त प्रवेश असतो. केंद्रीत, प्रादेशिक, शहर, तालुका, पेठा, ग्राम व फिरती संग्रहालये सार्वजनिक ग्रंथालयाच्या कक्षेत येतात.
3. **संशोधनात्मक ग्रंथालय** – विविध शाखातील ज्ञान प्राप्त व्हावे म्हणून संशोधन ग्रंथालये अस्तित्वात आली आहेत. सरकार तर्फे तसेच खाजगी संस्थांतर्फे चालविली जातात. संशोधनात्मक ग्रंथालये ज्ञानात दिवसेंदिवस भर टाकत आहेत.

सध्याचे युग हे संगणक युग म्हणून ओळखले जात आहे. आजच्या आधुनिक प्रवाहात प्रत्येक व्यक्ती हा यंत्रप्रमाणे काम करत आहे म्हणून वाचकांची गरज व ग्रंथालय कर्मचाऱ्यांची कार्यक्षमता वाढवून नवीन तंत्रप्रणालीची गरज ग्रंथालयांना भासू लागली आहे. जीवनाच्या प्रत्येक क्षेत्रात ज्याप्रमाणे तंत्रज्ञानाचा प्रभाव पडलेला दिसून येतो त्याप्रमाणे ग्रंथालयात यांत्रिकीकरणाने कांती घडवून आणली आहे. उदा. ग्रंथोपार्जन, ग्रंथोपस्कार, देवाण-घेवाण संदर्भ विभाग यामध्ये संगणकाच्या मार्फत कामे केली जावू लागली आहेत. आद्यवत माहिती देणारे संगणक इ. चे ग्रंथालयात आगमण झाल्याने ग्रंथालय तंत्रज्ञानाच्या हातात जातात की काय अशी भिती निर्माण झाली आहे.

पूर्वी ग्रंथप्रकाशकांनी प्रकाशित केलेल्या पुस्तकांची यादी महाविद्यालय ग्रंथालयात दाखवित असत. परंतु आता माहिती तंत्रज्ञानामुळे प्रकाशकांच्या यादी तसेच ई-जनरल, ई-बुक त्वरीत संगणकावर उपलब्ध असतात. आपल्याला हवी ती माहिती सर्च डाटावर उपलब्ध होत असल्यामुळे वाचकांचा ग्रंथालयात जावून पुस्तके वाचनाचा कल कमी होत चालला आहे. इलेक्ट्रॉनिक मिडीयाद्वारे ज्ञान संपादन करणे शक्य झाले असले तरी ग्रंथाचे महत्त्व कमी झाले नाही. कारण हे स्पर्धेचे युग आहे. विद्यार्थ्यांची अभ्यास करण्याची वृत्ती वाढत चालली आहे. आज प्रत्येक क्षेत्रात संशोधन सुरू झाले आहे. आपले संशोधन कसे चांगले दर्जेदार होईल यासाठी प्रयत्न होत आहेत. प्रत्येक ठिकाणी तज्ञ मंडळीची नेमणूक करत आहेत. आपल्या ग्रंथालयात उपलब्ध नसणारी माहिती मिळवण्यासाठी कोणते प्रयत्न करता येतील आणि ती माहिती कोठे मिळेल या बद्दलचे ज्ञान ग्रंथालयाला असणे आवश्यक आहे. वाचकांचा वेळ कसा वाचेल व त्यांना लवकरात लवकर माहिती कशी मिळेल यासाठी ग्रंथपालांना प्रयत्न करायला पाहिजे वाचकांचा विश्वास संपादन करणारा ग्रंथपालाच ग्रंथालयाचा विकास व प्रगती करू शकतो महाविद्यालयाचा विचार केला तर प्राचार्य हे हृदय आहेत तर ग्रंथपाल हा मेंदू आहे.

सारांश

ज्ञान प्रसाराच्या प्रक्रियेत ग्रंथालय हेच प्रभावी माध्यम आहे. या माध्यमाचे महत्व समाजाला ज्ञात होणे म्हणजेच ग्रंथालयाविषयी सामाजिक जाणीव होय, ग्रंथालयामुळे प्रत्येक मानवाला वैयक्तिक रित्या आणि समाजाला सामुहिकरित्या फायदा मिळत आहे. कारण भुतकाळातील विचारवंतांचे विचार ग्रंथाच्या रूपात जतन केले जातात. आणि अगदी पुढील पिढीला सोपविले जातात.

आजच्या आधुनिक युगात ग्रंथालयाचे आवश्यक घटक ग्रंथालय सेवा, वाचनसाहित्य, सेवक वर्ग, वाचक इत्यादी घटकांत अमुलाग्रह बदल झाला आहे. ग्रंथालयामध्ये संगणकीकरणामुळे ग्रंथालय व ग्रंथपालनाच्या संकल्पना बदलल्या पाहिजे. पारंपारिक संकल्पनेत बदल करणे. आजही गरज आहे. भारतासारख्या विकसनशील देशात साधनसामग्रीची कमतरता आहे. पण उत्तम माहिती साधनांचा साठाही उपलब्ध आहे. या माहितीसाठ्याचा योग्य पद्धतीने परिणामकारक वापर होण्यासाठी ग्रंथपालांनी नवीन तंत्रज्ञान आत्मसात करणे आवश्यक आहे.

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४. ग्रंथालय व्यवस्थापन प्रणाली : महत्त्व व सेवा

डॉ. देविदास रामभाऊ रौंदळ

वसंतराव नाईक कला आणि वाणिज्य महाविद्यालय, मुरूड - जंजिरा जिल्हा - रायगड, महाराष्ट्र राज्य.

सारांश

ग्रंथालय व्यवस्थापन प्रणाली ही ग्रंथालयाच्या मानवी कार्यास मदत करणारे आधुनिक व्यवस्थापन करण्यासाठी एक संगणकाची आज्ञावली आहे. ते पुस्तकांच्या बारीकसारीक तपशिल जसे की लेखकाचे नाव, पुस्तकांची आवृत्ती आणि इतर अनेक महत्त्वपूर्ण तपशिलांचे सुव्यवस्थित व्यवस्थापन करण्यास संमती देते, तसेच अचूक माहितीसह आधुनिक ग्रंथालय व्यवस्थापित करण्यासाठी शाळांना व महाविद्यालयांना कार्यक्षम व्यवस्थापन सोपे करण्याच्या उद्देशाने ही प्रणाली विकसित केलेली आहे. विविध वैशिष्ट्ये असलेल्या ग्रंथालयाची कार्ये व्यवस्थापित व अचूक करण्यासाठी मानवी कार्य कमी करण्यासाठी सॉफ्टवेअरचा हेतू आहे. उत्कृष्ट व त्वरित कामासाठी तसेच महाविद्यालय कार्ये त्वरीत करण्यासाठी आणि ग्रंथालयाच्या अचूक माहितीचे रक्षण करण्यासाठी कार्यक्षम ग्रंथालय व्यवस्थापन प्रणाली सॉफ्टवेअरची आवश्यकता आहे.

मुख्य शब्द: ग्रंथालय व्यवस्थापन प्रणाली, महत्त्व, प्रकार, सेवा, आधुनिकता व वापर

प्रस्तावना

अचूक माहितीसह आधुनिक ग्रंथालय व्यवस्थापित करण्यासाठी शाळांना, महाविद्यालयांना कार्यक्षम व्यवस्थापन सुलभ करण्याच्या उद्देशाने ग्रंथालय व्यवस्थापन प्रणाली विकसित आणि रचना केलेली आहे. माहिती व कार्यक्षमतेवर आधारावर ग्रंथालय व्यवस्थापन प्रणाली सॉफ्टवेअरचे विविध प्रकार आहेत. विविध वैशिष्ट्ये असलेल्या ग्रंथालयाची कार्ये व्यवस्थापित करण्यासाठी मानवी कार्य कमी करण्यासाठी सॉफ्टवेअरचा हेतू आहे. ग्रंथालय व्यवस्थापनेसाठी ग्रंथालय व्यवस्थापन प्रणाली सॉफ्टवेअर पुस्तके शोधण्यासाठी आणि जर्नल्समध्ये सहज प्रवेश करण्यासाठी वापरली जातो.

ग्रंथालय ऑटोमेशन प्रणाली ग्रंथालयाच्या ठराविक प्रक्रिया स्वयंचलित करते आणि ग्रंथालय कर्मचाऱ्यांसाठी कामाचा भार कमी करण्यास मदत करते. डिजिटल जगात जिथे शिक्षण क्षेत्र आपली जागा स्वयंचलित बनवण्याच्या दिशेने काम करत आहे तिथे काही ग्रंथालये अजूनही जुन्या शालेय पध्दतीने चालतात. दररोज शेकडो पुस्तके नोंद करणे आणि त्यांचे ट्रॅक रेकॉर्ड ठेवणे सोपे काम नाही. ग्रंथालय व्यवस्थापन प्रणाली स्वहस्ते कार्यरत ग्रंथालयांचे रूपांतर करू शकते. स्वयंचलित मध्ये अखंडपणे ते एकाच वेळी कार्यक्षम आणि प्रभावी बनवते. ग्रंथालय व्यवस्थापन प्रणालीसह ग्रंथपाल त्वरीत पुस्तके जारी करू शकतात सर्व पुस्तकांचा ट्रॅक रेकॉर्ड ठेवू शकतात. आजच्या संगणक युगामध्ये शाळा, महाविद्यालये व सार्वजनिक वाचनालयासाठी ग्रंथालय व्यवस्थापन प्रणालीची आवश्यकता महत्त्वाची आहे.

अन्यासाची उद्दिष्टे

1. ग्रंथालयाचे महत्त्व
2. ग्रंथालय व्यवस्थापन प्रणालीचे महत्त्व
3. ग्रंथालय व्यवस्थापन प्रणालीकडून ग्रंथालयास मिळणाऱ्या सेवा

ग्रंथालय व्यवस्थापन प्रणाली : महत्त्व व सेवा

ग्रंथालय व्यवस्थापन प्रणाली हे ग्रंथालयाच्या मानवी कार्याचे व्यवस्थापन करण्यासाठी एक संगणकाची आज्ञावली आहे. हे सॉफ्टवेअर पुस्तकाच्या नोंदी ठेवण्यासाठी ते पुस्तके देणे-घेणे करण्यासाठीचे संपूर्ण ग्रंथालय कार्याचे व्यवस्थापन करण्यात मदत करते. याशिवाय ते पुस्तकांच्या बारीकसारीक तपशिल जसे की लेखकाचे नाव, पुस्तकांची आवृत्ती आणि इतर अनेक महत्त्वपूर्ण तपशिलांचे सुव्यवस्थित व्यवस्थापन करण्यास परवनागी करते. त्यामुळे पुस्तके शोधणे आणि विद्यार्थी आणि ग्रंथपाल यांच्यासाठी योग्य साहित्य शोधणे सोपे होते. पुस्तक व इतर साहित्य देय तारीख, कोणी कोणते साहित्य घेतले आहे इत्यादी माहितीचा मागोवा घेण्यासाठी सॉफ्टवेअरद्वारे इलेक्ट्रॉनिक व्यवस्थापन आवश्यक आहे अचूक माहितीसह आधुनिक ग्रंथालय व्यवस्थापित करण्यासाठी शाळांना, महाविद्यालयांना कार्यक्षम व्यवस्थापन सुलभ करण्याच्या उद्देशाने ही प्रणाली विकसित आणि रचना केलेली आहे. व्यवस्थापन हे अशा प्रकारे शाळा, महाविद्यालय व्यवस्थापन किंवा ग्रंथालय प्रमुख यांना सर्व आवश्यक तपशिल इलेक्ट्रॉनिक पध्दतीने मिळवू शकते.

संगणकाची आज्ञावली प्रकार

माहिती व कार्यक्षमतेवर आधारावर ग्रंथालय व्यवस्थापन प्रणाली सॉफ्टवेअरचे विविध प्रकार आहेत. विविध वैशिष्ट्ये असलेल्या ग्रंथालयाची कार्ये व्यवस्थापित करण्यासाठी मानवी कार्य कमी करण्यासाठी सॉफ्टवेअरचा हेतू आहे. योग्य गरजांवर आधारित तुम्ही सॉफ्टवेअर रचनेत योग्य बदल देखील करू शकता. सॉफ्टवेअर – आधारित, कार्यक्षमतामुक्त स्ट्रोतक्लाउड – आधारित, प्रणाली डेटाबेस निर्मिती सॉफ्टवेअर आणि बरेच काही हे सामान्यतः वापरले जाणारे ग्रंथालय व्यवस्थापन सॉफ्टवेअर आहे.

ग्रंथालय व्यवस्थापन प्रणाली महत्त्व: ग्रंथालय म्हणजे माहितीचा मार्ग. या तत्सम संसाधनांमुळे वाचक, विद्यार्थी, शिक्षक, संशोधक इत्यादींसह एक सुप्रसिध्द समुदाय तयार झाला आहे. ज्यात पुस्तकाचा संदर्भ घेण्यासाठी किंवा अधिक सोयीस्करपणे उपयोग व वापर व्हावा. ग्रंथालय व्यवस्थापनासाठी ग्रंथालय व्यवस्थापन प्रणाली सॉफ्टवेअर पुस्तके शोधण्यासाठी आणि जर्नल्समध्ये सहज प्रवेश करण्यासाठी वापला जातो. ग्रंथालय ऑटोमेशन प्रणाली ग्रंथालयाच्या ठराविक प्रक्रिया स्वयंचलित करते आणि ग्रंथालय कर्मचाऱ्यांसाठी कामाचा भार कमी करते हे नोंदणीची सातत्य आणि मानक गुणवत्ता बनवते. जेव्हा लोक माहितीला अधिकाधिक महत्त्व देतात तेव्हा माहिती उद्योग विकसित झाला आणि तंत्रज्ञानाने ग्रंथालय संरक्षकांच्या अपेक्षा बदलल्या हे ग्रंथालयांना संधी आणि आव्हानेही दोन्ही देते. ग्रंथालय व्यवस्थापन प्रणाली प्रशासकांना ग्रंथालय विभागाच्या सर्व कार्यांवर लक्ष ठेवण्यास सोपे करते. तसेच जारी केलेल्या पुस्तकांचा आणि संग्रहाच्या नोंदी किती व्यवस्थित ठवल्या आहेत हे जाणून घेण्याची संधी त्यांना मिळते.

ग्रंथपाल आणि आधुनिकता

नवीन सुधारणा अंमलात आणण्यासाठी प्रशासन विभाग विविध अहवालांमध्ये प्रवेश करू शकतो. अशा प्रकारे उत्कृष्ट महाविद्यालय कार्य करण्यासाठी आणि ग्रंथालयाची अचूक माहिती राखण्यासाठी कार्यक्षम ग्रंथालय व्यवस्थापन सॉफ्टवेअर आवश्यक आहे. शाळा, महाविद्यालये आणि कौचिंग केंद्रासाठी ग्रंथालय कार्य ही पध्दतशीरपणे व्यवस्थापित करण्यासाठी उत्कृष्ट महाविद्यालय ॲप्लिकेशन मदत करते.

ग्रंथालय व्यवस्थापन संगणकाची आज्ञावली प्रणालीचा वापर

खाजगी ग्रंथालय, राष्ट्रीय ग्रंथालये आधुनिक सार्वजनिक ग्रंथालय, शैक्षणिक ग्रंथालये विल्ड्रन्स ग्रंथालय सार्वजनिक पुस्तके व ग्रंथालय साहित्य देणारी ग्रंथालये, संदर्भ ग्रंथालये व संशोधन ग्रंथालयांना ग्रंथालय व्यवस्थापन प्रणालीची आवश्यकता आहे. डिजिटल जगात जिथे शिक्षण क्षेत्र आपली जागा स्वयंचलित बनवण्याच्या दिशेने काम करत आहे तिथे काही ग्रंथालये अजूनही जुन्या शालेय पध्दतीने चालतात. दररोज शेकडो पुस्तके व्यवस्थापित करणे आणि त्यांचे ट्रॅक रेकॉर्ड ठेवणे सोपे काम नाही. ग्रंथालय व्यवस्थापन प्रणाली स्वहस्ते कार्यरत ग्रंथालयांचे रूपांतर करू शकते स्वयंचलित मध्ये अखंडपणे ते एकाच वेळी कार्यक्षम आणि प्रभावी बनवते. ग्रंथालय व्यवस्थापन प्रणालीसह ग्रंथपाल त्वरित पुस्तके जारी करू शकतात. सर्व पुस्तकांचा ट्रॅक रेकॉर्ड ठेवू शकतात. आजच्या संगणक युगामध्ये शाळा, महाविद्यालये व सार्वजनिक वाचनालयासाठी ग्रंथालय व्यवस्थापन प्रणालीची आवश्यकता महत्त्वाची आहे हे समजून घेणे महत्त्वाचे ठरेल.

ग्रंथालय व्यवस्थापन प्रणालीची संगणकाची आज्ञावलीचे महत्त्व

1. **कार्यक्षमतेत वाढ** – जारी केलेल्या पुन्हा जारी केलेल्या परत न केलेल्या आणि मानवी उपलब्ध असलेल्या एकूण पुस्तकांचे दैनंदिन अहवाल राखणे ही ग्रंथपालासाठी एक त्रासदायक प्रक्रिया असू शकते. विद्यार्थी देखील त्यांच्या खात्यात लॉग इन करून कॅटलॉग त्यांची पुस्तक स्थिती इत्यादी पाहू शकतात. इतकेच नाही तर त्यांना एस.एम.एस. द्वारे पुस्तके परत करण्याच्या देय तारखाविलंब शुल्क भरण्याचे अलर्ट इत्यादी बदल वेळेवर सूचित केले जाऊ शकते. कामाच्या वाढत्या सुलभतेमुळे कर्मचारी ग्रंथालयामध्ये कोणतेही अतिरिक्त खर्च न करता त्यांच्या कार्यात व्यस्त राहू शकतात. स्वयंचलित व्यवस्थापन प्रणालीसह स्वतः अद्यावत नोंदी आणि नियंत्रण कार्यात वाढ करता येते.

2. **माहितीची सुरक्षितता** – कोणत्याही शैक्षणिक संस्थेसाठी माहितीही अत्यंत महत्त्वाचा भाग आहे आणि ग्रंथालयातील पुस्तके ही महत्त्वाची संपत्ती असते. मानवी माहिती व्यवस्थापित करण्यामध्ये माहिती चुकीने जाणे माहिती नोंदी व त्रुटी इत्यादी सारख्या जोखमींचा समावेश असतो. सुलभ प्रवेशासाठी सर्व ग्रंथालयातील माहितीचे योग्य दस्तऐवजीकरण करणे आवश्यक आहे. ग्रंथालय व्यवस्थापन प्रणाली वापरून ते संपूर्ण कॅटलॉगजारी केलेल्या पुन्हा जारी केलेल्या परत न केलेल्या आणि एकाच सिस्टिममध्ये उपलब्ध असलेल्या पुस्तकांचे तपशील राखू शकतात आणि काही सोप्या क्लिकमध्ये आवश्यक असल्यास ते मिळवू शकतात. ते डेटा गमावण्याचा धोका कमी करतात आणि खात्री देखील देतात.

3. **सुरक्षतेत वाढ** – ग्रंथालयामध्ये अशा व्यवस्थापन प्रणाली आवश्यकता आहे. या प्रणालीमुळे संपूर्ण कार्य अतिशय प्रभावी पध्दतीने सुव्यवस्थित करा. योग्य वेळी वेश्लेषण करण्यासाठी आणि विद्यार्थ्यांशी थेट संवाद

साधण्यासाठी क्लिक डॅश बोर्डवर पुस्तक नोंदीसह बहुतेक कार्य हे प्रणालीद्वारे केले जाऊ शकते ज्यामुळे ग्रंथालयाचा बराच वेळ वाचतो. त्यामुळे ते त्यांचा वेळ इतर ठिकाणी प्राधान्याने वापरू शकतात.

4. कामात मोठ्या प्रमाणात बचत – ग्रंथालय उपकरणांचे व्यवस्थापन करण्याचा पारंपारिक मार्ग वेळ असू शकतो. सेवन परीक्षेच्या कालावधीत ग्रंथालय पुस्तकांमध्ये प्रवेश करणाऱ्या विद्यार्थ्यांची संख्या वाढते ज्यामुळे विद्यार्थी नेहमीपेक्षा जास्त वेळ पुस्तक जारी करण्यासाठी प्रतीक्षा करू शकतात. ग्रंथालय व्यवस्थापन प्रणाली वापरल्याने या काळात खरोखरच फायदा होऊ शकतो. विद्यार्थी देखील त्यांना आवश्यक असलेले पुस्तक सध्या उपलब्ध आहे की नाही हे या प्रणालीच्या मदतीने कॅटलॉग तपासू शकतात.

5. व्यवस्थापकिय कार्यास मदत – काही वेळा ग्रंथपालांसाठी पुस्तकांची मागणी आणि पुरवठा प्रभावीपणे व्यवस्थापित करणे आव्हानात्मक असते. ग्रंथालय व्यवस्थापन प्रणालीच्या मदतीने ते नोंदी तपासू शकतात व पूर्वीच्या नोंदी पाहू शकतात आणि त्यानुसार काही वेळात पुस्तके जारी करू शकतात. हे पुस्तक संसाधन व्यवस्थापन आपले कार्य त्वरित करू शकते.

6. विलंब शुल्क संकलन – ग्रंथपालांना उशिरा शुल्क वसूल करणे कठीण होते. पुस्तके परत करण्यासाठी देय तारखा विसरलेल्या विद्यार्थ्यांकडून फी. या ग्रंथालय व्यवस्थापन प्रणाली द्वारे विद्यार्थ्यांना जारी केलेली पुस्तके विलंबित ग्रंथालय फी देय तारखा इत्यादीं बद्दल स्वयंचलित एस.एम.एस. अलर्ट आणि सूचना पाठवल्या जाऊ शकतात. यासाठी शिक्षण क्षेत्रात ग्रंथालय व्यवस्थापन प्रणालीची आवश्यकता आहे. मानवी कार्य केलेल्या ग्रंथालयांना स्वयंचलित ग्रंथालयात सहजतेने संक्रमण करू शकते ज्यामुळे ते कार्यक्षम आणि प्रभावी बनते. ग्रंथपाल ग्रंथालय सॉफ्टवेअरचा वापर करून पुस्तके पटकन देऊ शकतात. तसेच सर्व पुस्तकांचा मागोवा घेऊ शकतात.

ग्रंथालय व्यवस्थापन प्रणालीची गरज

1. त्वरित कामकाजाची कार्यवाही : जारी केलेल्या पुन्हा जारी केलेल्या परत न केलेल्या आणि उपलब्ध असलेल्या एकूण खंडांची दैनिक आकडेवारी राखणे हे ग्रंथपालासाठी वेळखाऊ काम असू शकते. शालेय ग्रंथालय व्यवस्थापन प्रणाली ग्रंथालयाच्या संपूर्ण जीवनचक्राची कार्यक्षमता सुधारते आणि सर्व कार्ये एका क्लिकवर पूर्ण करण्याची परवानगी देऊन ग्रंथपालाचे काम सोपे करते. विद्यार्थी त्यांच्या खात्यांमध्ये साइन करून पुस्तकांची सूची त्यांच्या पुस्तकाची स्थिती आणि इतर माहिती ब्राउझ करू शकतात. इतकंच नाही तर त्यांना एस.एम.एस. द्वारे पुस्तके परत करण्याच्या तारखा उशिरा दंड भरण्याची सूचना इत्यादींची आठवण करून दिली जाऊ शकते.

2. नोंदीची कामकाजास मदत : माहिती ही कोणत्याही शैक्षणिक संस्थेचा एक आवश्यक घटक आहे आणि ग्रंथालयातील पुस्तके ही एक मौल्यवान संपत्ती आहे. मानवी माहिती व्यवस्थापनात माहिती चुकीचे स्थान माहिती प्रवेश नोंद ही त्रुटी व धोके समाविष्ट असतात. आम्ही सर्व ग्रंथालय माहिती सहज उपलब्ध होण्यासाठी योग्यरित्या दस्तऐवजाकरण करणे आवश्यक आहे. ते संपूर्ण कॅटलॉग जारी केलेल्या पुन्हा जारी केलेल्या परत न केलेल्या आणि एकाच प्रणालीमध्ये उपलब्ध असलेल्या पुस्तकांचे तपशिल जतन करू शकतात आणि ग्रंथालय व्यवस्थापन प्रणाली वापरून काही सोप्या क्लिक्ससह ते कधीही पुनर्प्राप्त करू शकतात. ते एकाच वेळी सुरक्षितता सुनिश्चित करताना माहिती गमावण्याची शक्यता कमी करतात.

3. ग्रंथालयातील कार्यात वाढ : ग्रंथालयामध्ये अशी व्यवस्थापन प्रणाली असल्याने एकूण व्यवसाय मोठ्या प्रमाणात सुव्यवस्थित होऊ शकतो. एका क्लिकवर उपलब्ध पुस्तकांच्या नोंदी योग्य वेळी विश्लेषणासाठी डॅश बोर्ड आणि विद्यार्थ्यांशी थेट संवाद प्रणाली बहुतेक कार्य सहजतेने हाताळू शकतात ज्यामुळे ग्रंथालयातील कर्मचारी वर्गाचा बराच वेळ वाचतो. परिणामी ते त्यांचे लक्ष अधिक महत्त्वाच्या कामांकडे देऊ शकतात.

4. वेळेची बचत : ग्रंथालय कार्यात व्यवस्थापित करण्याची पारंपारिक पध्दत वेळ ख्राऊ असू शकते. परीक्षेच्या काळात ग्रंथालयाची पुस्तके मिळवणाऱ्या विद्यार्थ्यांची संख्या वाढते ज्यामुळे विद्यार्थ्यांना नेहमी पेक्षा जास्त वेळ प्रतीक्षा करावी लागू शकते. अशा वेळी ग्रंथालय व्यवस्थापन सॉफ्टवेअर वापरणे अत्यंत फायदेशीर ठरू शकते. ग्रंथालयाचे कार्य विद्यार्थ्यांना पुस्तकांचे वितरण करण्यासाठी त्यांच्या ट्रॅक नोंदीचा वापर करून विद्यार्थ्यांना त्वरित पुस्तके देऊ शकतो. त्यांना आवश्यक असलेले पुस्तक सध्या उपलब्ध आहे की नाही हे निर्धारित करण्यासाठी विद्यार्थी कॅटलॉग देखील तपासू शकतात. या सर्वामुळे विद्यार्थी आणि संस्थेच्या ग्रंथालयातील कर्मचाऱ्यांचा बराच वेळ वाचू शकतो.

5. किफायतशीर किंमतीत तंत्रज्ञान उपलब्ध : तंत्रज्ञानाच्या गुंतवणुकीसाठी शैक्षणिक संस्थांचे एक निश्चित बजेट असते. परिणामी काही संस्था अशा प्रणालींना मोठी आर्थिक गुंतवणूक मानू शकतात. तथापि सराव मध्ये हा एक अतिशय किफायतशीर पर्याय आहे. व्यवस्थापन प्रणालीद्वारे व्यवस्थापित करण्यासाठी एक कू आवश्यक आहे जो अखंड कार्याची हमी देऊ शकत नाही तर हे उपाय एक वेळेची गुंतवणूक आहेत. ते कामावर पैसे वाचवतात मी देखभाल खर्च करतात आणि अधिक कार्यक्षम आणि प्रभावी आहेत. बाजारात अनेक शक्तयुतांसहेत त्यांच्यासाठी सर्वातम उपाय निवडू शकतात.

6. संसाधन व्यवस्थापकिय कामकाजात वाढ : ग्रंथपालांना काही वेळा पुस्तकांची मागणी आणि पुरवठा कार्यक्षमतेने नियंत्रित करणे कठीण होऊ शकते. ग्रंथालय व्यवस्थापन प्रणालीच्या मदतीने ते नोंदीची पडताळणी करू शकतात इतिहास पाहू शकतात आणि पुस्तके लवकर जारी करू शकतात. हे पुस्तक संसाधन व्यवस्थापनाची कार्यक्षमता सुधारते. एस.एम.एस. अलर्ट आणि नोटिफिकेशन्सच्या पर्यायाने ते पुस्तक देवाण-घेवाण चक बनवू शकतात.

7. प्रभावी विलंब शुल्क संकलन : जे विद्यार्थी पुस्तक परत करण्याची अंतिम मुदत विसरतात त्यांच्या कडून उशिरा दंड वसूल करणे ग्रंथपालांना कठीण होते. ही प्रणाली विद्यार्थ्यांना जारी केलेली पुस्तके उशिरा ग्रंथालय फी देय तारखा इत्यादींबाबत स्वयंचलित एसएमएस अलर्ट आणि संदेश वितरीत करण्यास अनुमती देते. परिणामी पुढच्या वेळी जेव्हा एखादा विद्यार्थी फी भरण्यासाठी येतो तेव्हा ग्रंथपाल त्यांच्या पुस्तकातील नोंदीची पडताळणी करू शकतो आणि देयके जारी करू शकतो. विद्यार्थी त्यांच्या पुस्तकांच्या स्थितीचे आणि कॅटलॉगचे निरीक्षण करण्यासाठी त्यांच्या खात्यांमध्ये देखील प्रवेश करू शकतात.

8. सुरक्षिततेची शाश्वती : सर्वोत्कृष्ट ग्रंथालय व्यवस्थापन प्रणाली निवडणे महत्त्वाचे आहे कारण आपण ती नियमितपणे राखली पाहिजे. वापरकर्ता डोटाबेस नेहमी गोपनीय आणि सुरक्षित आहेत याची खात्री करण्यासाठी अशा प्रणाली वारंवार अद्यावत केल्या जातात आणि राखल्या जातात.

9. अहवाल आणि देखरेख वाढवते : स्वयंचलित ग्रंथालय व्यवस्थापन प्रणालीसह स्व-अद्यावत नोंदी गतिशील अहवाल आणि निरीक्षण सक्षम करतात. हे अधिक प्रभावी प्रभावी बुकिंगसाहित्य वितरण आणि वापरकर्ता

ट्रेकिंगसाठी अनुमती देईल. ग्रंथालय व्यवस्थापन प्रणाली सॉफ्टवेअर प्रणालीमधील वस्तूचे व्यवस्थापन सक्षम करते ज्यामुळे तुम्हाला काय उपलब्ध आहे आणि काय सहजतेने घेतले गेले आहे हे जाणून घेता येते.

10. विद्यार्थ्यांना कनेक्टीव्हिटीची अपेक्षा : सध्याचे युग हे डिजिटल युग आहे आणि ऑनलाइन अर्जापासून विद्यार्थ्यांच्या निकाला पर्यंत शाळा व्यवस्थापनातील व्यावहारिक सर्व प्रक्रिया ऑनलाइन झाल्या आहेत. डिजिटल युगात आपण महाविद्यालयीन ग्रंथालयांना विद्यार्थ्यांच्या शैक्षणिक जीवनाशी तांत्रिकदृष्ट्या जोडले गेले पाहिजे. संदर्भ साहित्याची उपलब्धता तपासण्यासाठी विद्यार्थ्यांना यापुढे महाविद्यालयाच्या ग्रंथालयात प्रत्यक्ष भेट देण्याची गरज नाही.

ग्रंथालय व्यवस्थापन प्रणालीची सेवा

1. सोपे व सुलभ : सोपे आणि वापरण्यास सोपे ग्रंथालय व्यवस्थापन सॉफ्टवेअर हे सोपे वापरकर्ता अनुकूल आहे आणि सध्याच्या प्रणालीमध्ये सहजपणे समाकलित केले जाऊ शकते. ग्रंथालय व्यवस्थापन प्रणालीचे फायदे ऑनलाइन आणि ऑफलाइन स्टोरेज स्वयंचलित बॅकअप आणि शिकण्याची प्रक्रिया सुलभ आणि वर्धित करण्यासाठी सुलभ अपग्रेड प्रदान करतात.

2. वाढीव संख्येच्या नोंदीस वाव : ग्रंथालयातील वाढीव व्यस्तता विद्यार्थ्यांना कोटून ही कधीही ग्रंथालय संसाधनांमध्ये सतत प्रवेश करून निराशा आणि कंटाळवाणेपणा टाळता येऊ शकेल. ग्रंथालय व्यवस्थापन सॉफ्टवेअर ग्रंथपालास सर्व प्रकारची पुस्तके, ई. पुस्तके, जर्नल्स, फोटो, व्हिडीओ आणि इव्हेंट तयार करण्याची परवानगी देते.

3. कार्यक्षम व्यवस्थापनास संधी : कार्यक्षम क्लाउड डेटा व्यवस्थापन आपल्या संस्थेला सुरक्षित क्लाउड सेवांचा लाभ घेणे सोपे करण्यासाठी लायब्ररी डेटाबेस अखंडपणे स्वयंचलित, सुलभ आणि तैनात करा. संपादन, कॅटलॉगिंग, मालिका व्यवस्थापन, परिसंचरण आणि संदर्भ यासह विविध लायब्ररी कार्यांच्या ऑटोमेशनसह कार्यक्षमतेत सुधारणा करते.

4. विश्वासार्हतेची सेवा : उच्च सुरक्षित, स्केलेबल आणि विश्वसनीय महाविद्यालयीन ग्रंथालयांना स्केलेबल इन्फ्रास्ट्रक्चर भूमिका-आधारित सुरक्षित प्रवेश उच्च कार्य प्रदर्शन आणि अखंड प्रवेश सुनिश्चित करण्यासाठी विश्वासार्हतेची सेवा देत असते.

5. नवीन साधनांचा वापर : मोबाईल ऍक्सेस ग्रंथालय व्यवस्थापन प्रणाली लायब्ररी कॅटलॉग वेळापत्रक पुस्तके आणि ग्रंथालय साधने कोटूनही स्मार्टफोन आणि टॅब्लेट्स कोणत्याही वेळी शोधण्यासाठी मोबाइल ऍक्सेस प्रदान करते.

6. गतिशीलता : गतिशील अहवाल डायनॅमिक अहवाल तक्ते आणि आलेखांसह लायब्ररीचे कार्यप्रदर्शन वाढवा आणि चांगल्या निर्णयासाठी प्रगतीचे पुनरावलोकन आणि मागोवा घेता येतो.

7. सदोष प्रणाली : सदोष स्वयंचलित लायब्ररी सॉफ्टवेअर वापरकर्त्यासाठी अनुकूल शक्तिशाली आणि डेटाच्या सुलभ प्रवेशासाठी विकसित केलेले आहे.

8. नवनवीन माहितीचा शोध : नवीन विद्यार्थी नवनवीन माहिती शोधू शकतात व त्या माहितीच्या आधारेलेख लिहू शकतात. तसेच फोटो आणि व्हिडिओ अपलोड करू शकतात. ई-मेल व्यवस्थापित करू शकतात, संदेश पाठवू शकतात, परंतु चॅटचर्चा मंच आणि सोशल मीडियाद्वारे त्यांना ग्रंथपाल आणि इतर विद्यार्थ्यांशी संपर्क ठेवण्यास मदत करू शकतात.

9. संपूर्ण अनुकूलता : पूर्णपणे अनुकूल करण्यायोग्य लायब्ररी ऑटोमेशन प्रणाली जलदविश्वासार्ह डेटा प्रदान करण्यासाठी शैक्षणिक संस्थांच्या गरजेनुसार पूर्णपणे योग्य आणि अनुकूल आहे.

10. संपूर्ण व्यवस्थापन सुलभ : सॉफ्टवेअरच्या सोप्या इंटरफेसद्वारे तुमच्या लायब्ररीचे संपूर्ण व्यवस्थापन सहजपणे व्यवस्थापित करते.

11. देवाण-घेवाण करण्यास सोपे : पुस्तके जारी करण्याची मानवी प्रक्रिया काढून टाकते आणि वेळ आणि श्रम वाचवण्यासाठी पुस्तक जारी करण्याचा मार्ग सुलभ करते.

12. हिशोबात अचूकता : पुस्तक उशिरा परत केल्यास देय तारखेपासून दिवस आपोआप मोजून आकारला जाणारा दंड शोधण्यात ही प्रणाली मदत करते.

निष्कर्ष

आजच्या युगात ग्रंथालय व्यवस्थापन प्रणाली ग्रंथालयाच्या संपूर्ण जीवनचक्राची कार्यक्षमता सुधारते आणि सर्व कार्ये एका क्लिकवर पूर्ण करण्याची परवानगी देऊन ग्रंथपालाचे ग्रंथालयातील काम सोपे करते. सोपे आणि वापरण्यास सोपे ग्रंथालय व्यवस्थापन सॉफ्टवेअर हे सोपे वापरकर्ता-अनुकूल आहे आणि सध्याच्या प्रणालीमध्ये सहजपणे समाकलित केले जाऊ शकते. सध्याचे युग हे डिजिटल युग आहे आणि ऑनलाइन अर्जापासून विद्यार्थ्यांच्या निकालापर्यंत शाळा व्यवस्थापनातील व्यावहारिक सर्व प्रक्रिया ऑनलाइन झाल्या आहेत. डिजिटल युगात आपण महाविद्यालयीन ग्रंथालयांना विद्यार्थ्यांच्या शैक्षणिक जीवनाशी तांत्रिकदृष्ट्या जोडले गेले पाहिजे. परीक्षेच्या काळात ग्रंथालयाची पुस्तके मिळवणाऱ्या विद्यार्थ्यांची संख्या वाढते ज्यामुळे विद्यार्थ्यांना नेहमीपेक्षा जास्त वेळ प्रतिक्षा करावी लागू शकते. अशा वेळी ग्रंथालय व्यवस्थापन सॉफ्टवेअर वापरणे अत्यंत फायदेशीर ठरू शकेल.

संदर्भ

1. Can be integrated with the school management system
2. Highly secure and efficient library database management
3. linking of local library management systems into bibliographic networks, with a view to resource sharing.
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१. शिक्षा प्रक्रिया में पुस्तकालय का योगदान

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अध्यक्ष, हिंदी विभाग, वसंतराव नाईक कला व वाणिज्य महाविद्यालय, मुरुड - जंजिरा, जि. रायगड.

स्वतंत्रता प्राप्ति के समय से भारत में पुस्तकालयों के विकास की दिशा में नियोजन के अनेक प्रयास किये गये। यद्यपि उन प्रयासों का परिणाम विभिन्न स्वरूपों में मर्यादित ढंग से हुआ। लेकिन यह कहा जा सकता है कि आधुनिक समाज में पुस्तकालय सेवाओं के आयोजन हेतु अनेक योजनायें और कार्यक्रमों पर बल दिया गया। आधुनिक समाज में पुस्तकालय नितियों, नियोजन की प्रक्रियाओं तथा कार्यक्रमों के प्रयासों की पूर्ण जानकारी आवश्यक है, जिससे पुस्तकालयों के योगदान के महत्व को सर्वत्र स्वीकार किया गया है और जिसे हम सब अनुभव कर रहे हैं। पुस्तकालय आधुनिक समाज की आवश्यकता हैं। समाज द्वारा स्थापित अनेक संस्थायें, जैसे विद्यालय, महाविद्यालय, विश्व विद्यालय, ललितकला एवं मनोरंजन के लिए संस्थाएँ आदि। परंतु इनके आतिरिक्त पुस्तकालय में अनेक विषयों एवं प्रकरणों से संबंधित ऐसी पुस्तकों का अवलोकन करने को अवसर प्राप्त होता है जिनसे ज्ञान प्राप्त होता है, जो हमारे आन्तरिक सौंदर्यबोध को जाग्रत करती हैं, जिनसे बुद्धि तीव्र होती है, जो मूल्यों को विकसित करती हैं, तथा ज्ञानार्जन के कौशल को बढ़ाती है। अतः समाज में निहित सभी संस्थाओं में से पुस्तकालय एक मात्र ऐसी संस्था है जो समाज की विविध प्रकार की आवश्यकताओं की पूर्ति करने में पूर्णतया संक्षम है।

पुस्तकालय एवं शिक्षा

हमारे राष्ट्रीय निर्माण के प्रयासों में पुस्तकालय के योगदान के महत्व को सर्वत्र स्वीकार किया गया है और जिसे हम सभी ने अनुभव भी किया है। आज समग्र समाज में शिक्षा का प्रचार प्रसार भरसक मात्रा में हो चुका है, जिसके लिए पुस्तकालय सेवा की भूमिका महत्वपूर्ण रही है। गांव से लेकर शहरों तक विद्यालय, महाविद्यालय, विश्वविद्यालय स्तर तक शिक्षा के समान अवसर प्रदान करने हेतु अथक एवं विशद प्रयास किये जा रहे हैं। सामाजिक मांग हेतु उच्च शिक्षा एवं तकनीकी शिक्षा में भी पर्याप्त विस्तार हो रहा है। इससे शैक्षिक संस्थाओं में पुस्तकालय सुविधाओं एवं सेवाओं की व्यवस्था में वृद्धि हो रही है। विज्ञान और प्राद्योगिकी, औद्योगिक उत्पादन और आर्थिक एवं सांस्कृतिक विकास में तीव्र विस्तार के परिणाम स्वरूप न केवल विशिष्ट पुस्तकालयों की संख्या में अधिक वृद्धि हुई है बल्कि अनेक प्रकार की गहन सेवाओं का भी आयोजन करने के लिए उन्हें बाध्य होना पड़ा है। विद्यालय, महाविद्यालय तथा विश्वविद्यालय पुस्तकालय विद्यार्थी तथा अध्यापकोंको अध्ययन तथा संदर्भ के लिए पुस्तकें उपलब्ध कराते हैं तथा शिक्षा प्रक्रिया को विस्तृत बनाते हैं।

शिक्षा औपचारिक एवं अनौपचारिक दोनों पद्धति से प्राप्त की जाती है। औपचारिक शिक्षा प्रणाली के आधुनिकीकरण की दिशा में पुस्तकालयों को संपूर्ण शिक्षा प्रक्रिया का एक महत्वपूर्ण तथा अनिवार्य हिस्सा माना गया है। इस मान्यता के अनुरूप शैक्षिक पुस्तकालयों का नियोजन तथा विकास की ओर अधिक ध्यान दिया गया है। फिर भी पुस्तकालय, जो आधुनिक शिक्षा प्रणाली के प्रमुख हाथियार हैं— को और अधिक प्रभावी बनाने के लिए बहुत

कुछ नियोजन और भी किया जा सकता है। शिक्षा के क्षेत्र में महाविद्यालयों तथा विश्वविद्यालयों का बहुत ही महत्वपूर्ण स्थान है। उच्च शिक्षा प्राप्त करनेवाले विद्यार्थियों को महाविद्यालय तथा विश्वविद्यालय में एक पूर्णतः अलग वातावरण मिलता है। अध्ययन के दौरान विद्यार्थियों को कई सामूहिक गतिविधियों में भाग लेने के लिए अनेक अवसर मिलते हैं जिनसे उनमें नेतृत्व गुण विकसित होते हैं। साथ ही पाठ्यक्रम के अतिरिक्त अन्य गतिविधियों में व्यक्तिमत्त्व विकास के अवसर मिलते हैं। विद्यार्थियों के समाधान पुस्तकालय निश्चित रूप से सहायक भूमिका निभा रहे हैं। औपचारिक शिक्षा प्रक्रिया में पुस्तकालय के कार्य निम्नलिखित हैं –

- शिक्षण, ज्ञान प्राप्ति, शोध तथा प्रकाशन आदि के लिए संग्रह निर्माण करना
- संकलित सामग्री को संदर्भ के लिए सुव्यवस्थित रखना तथा उसकी सुरक्षा करना
- विद्यार्थी तथा अध्यापकों की मांग की अनुसार पुस्तकालय, प्रलेखों तथा सूचना सेवाएं चलाना
- नये प्रलेखों का प्रदर्शन करना तथा इनकी सूची बनाना
- विशिष्ट विषयों पर ग्रंथसूचियां बनाना
- पुस्तकालय के सार्थक उपयोग में पाठकों की सहायता करना

इस प्रकार औपचारिक शिक्षा प्रणाली में पुस्तकालय की भूमिका अत्यंत महत्वपूर्ण है।

अनौपचारिक शिक्षा प्रणाली और पुस्तकालय

अनौपचारिक शिक्षा प्रक्रिया में शिक्षा किसी संस्था पर आधारित नहीं होती है बल्कि दूरस्थ शिक्षा पद्धति के द्वारा चलाये जा रहे पाठ्यक्रमों के माध्यम से ज्ञानार्जन अथवा स्वयं अध्ययन की सहायता से शिक्षा प्राप्त की जाती है। इसमें अध्यापक की सहायता अल्प होती है, इसमें पुस्तकालय की भूमिका प्रमुख होती है। इस दिशा में औपचारिक शिक्षा संस्थाओं और सार्वजनिक पुस्तकालयों को अपना महत्वपूर्ण योगदान देना पड़ता है। ऐसी स्थिति में औपचारिक शिक्षा संस्थायें विद्यार्थियों को पुस्तकालय सुविधाएं उपलब्ध करा देती हैं जिससे उनके अध्ययन में व्यवधान न आये। इस संबंध में शिक्षा संस्थायें, जो एक निकाय के रूप में शैक्षणिक मानक एवं स्तरों को निर्धारित करती हैं और अपना एक विशेष दायित्व निभाते हुए अपनी पुस्तकालय सेवाओं को अधिकाधिक विस्तृत बनाने का प्रयास करती हैं। फिर भी अनौपचारिक शिक्षा के लिए अपेक्षित सहायता एवं सुविधा उपलब्ध कराने का मुख्य दायित्व सार्वजनिक पुस्तकालयों का ही होता है। सार्वजनिक पुस्तकालयों की सुविधा का लाभ उठाने का प्रत्येक नागरिक का अधिकार है। अनौपचारिक शिक्षा प्रणाली की सफलता के लिए अत्याधुनिक सार्वजनिक पुस्तकालय व्यवस्था अति आवश्यक होती है।

निरक्षरों, विकलांगों एवं कामकाजी समूहों की शिक्षा और पुस्तकालय –

पुस्तकालय न केवल साक्षर बल्कि निरक्षरों के लिए भी प्रभावशाली माध्यम है, जो आधुनिक प्रौद्योगिकी की देन है जिसके द्वारा पुस्तकालय श्रव्य- दृश्य के साधनों, विशेषकर वीडियो के माध्यम से शिक्षा को प्रत्येक घर तक पहुंचाना संभव हो गया है। इन साधनों के माध्यम से निरक्षर लोगों की शिक्षा के लिए कार्य करना सार्वजनिक पुस्तकालय का दायित्व है, इतना ही नहीं निरक्षर व्यक्तियों को शिक्षित बनाने के लिए सार्वजनिक पुस्तकालय द्वारा मौखिक संप्रषण कार्यक्रमों का आयोजन किया जाता है। इस संबंध में सार्वजनिक पुस्तकालय की भूमिका

उल्लेखनीय हैं। अपने आसपास के कामकाजी समूह को अधिकाधिक शिक्षित करके पुस्तकालय उनकी कार्यकुशलता को बढ़ा सकते हैं। एक अन्य दृष्टिकोन से भी पुस्तकालय की शैक्षणिक भूमिका होती है, जैसे विकलांग तथा नेत्रविहीनों की पुस्तकें तथा अन्य शिक्षण सामग्री को भी उपलब्ध किया जाता है।

अनुसंधान व सूचना संचार में पुस्तकालय का योगदान

आधुनिक समाज की अनेक आवश्यकताएं हैं, जैसे अनुसंधान, सूचना संचार, वैचारिक क्रियाकलाप आदि। अनुसंधान की सफलता तथा पूर्णता के लिए उपलब्ध ज्ञान एवं सूचना की प्राप्ति अति आवश्यक होती है। नवीनतम ज्ञान को मुख्यतः पत्र पत्रिकाओं, अनुसंधान ऐसे प्रकाशनों के माध्यम से प्रसारित किया जाता है। अनुसंधान की गतिविधियों को प्रोत्साहित करने के लिए पुस्तकालयों का योगदान अत्यंत महत्वपूर्ण है। अतः अनुसंधान की दृष्टि से कोई भी पुस्तकालय उपयोगी सिद्ध हो सकता है। आज के सूचना प्रौद्योगिकी के युग में सूचना और ज्ञान विकास के सशक्त साधन तथा समस्त गतिविधियों के केंद्र बन गये हैं। आज सूचना तथा ज्ञान को मूल संसाधन माना गया है और आधुनिक समाज को 'सूचना समाज' की संज्ञा दी गयी है। आधुनिक विश्व और समाज अपनी विकास के लिए शोधों पर आश्रित हैं और शोध कार्यों में सूचना और प्रलेखों की महत्ता जाहीर-सी है। शोध कार्यों में सफलता के लिए उपलब्ध ज्ञान तथा सूचना की जानकारी अति आवश्यक है। पुस्तकालय और सूचना केंद्रों द्वारा सूचनाओं और प्रलेखों का संग्रहण, व्यवस्थापन और प्रसारण किया जाता है जिसका उपयोग शोध कार्यों हेतु अति महत्वपूर्ण है तथा ये शोध कार्यों के आधारस्तंभ हैं। प्रत्येक तरह की शोधकार्यों जैसे ऐतिहासिक, सामाजिक या वैज्ञानिक शोधों के क्षेत्रों में पुस्तकालयों की भूमिका महत्वपूर्ण हो गयी है।

निष्कर्ष

कहा जा सकता है कि आज का लोकतांत्रिक युग समतामूलक समाज की वकालत करता है, जिसमें प्रत्येक मानव को अपने विकास एवं शिक्षा के लिए बिना किसी भेदभाव के समान अवसर प्रदान होने चाहिए। पुस्तकालयों द्वारा पुस्तकों एवं सूचनाओं का संग्रहण, व्यवस्थापन और प्रसारण निष्पक्ष भाव से करके अपने सामाजिक और शैक्षणिक दायित्वों का निर्वाह किया जाता है। इस दृष्टि से शिक्षा प्रणाली में पुस्तकालय का योगदान अनन्य साधारण है।

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