## CONSTRUCTING A WEBSITE MODEL AND A DIGITAL LIBRARY USING GOOGLE SITE AND D SPACE – AN EXPERIMENTAL STUDY

Project submitted to the Alagappa University in partial fulfilment of the requirement for the award of the Degree of

## Master

Of

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TAMIL NADU, INDIA

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## DECLARATION

I hereby declare that the project entitled "CONSTRUCTING A WEBSITE MODEL AND A DIGITAL LIBRARY USING GOOGLE SITE AND D SPACE – AN EXPERIMENTAL STUDY" submitted for the M.Lib.I.Sc (Master Of Library And Information Science) degree is my original work and the project has not formed the basis for the award of any degree, associate ship, fellowship or any other similar title.

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## CERTIFICATE

This is to certify that the Project entitled "CONSTRUCTING A WEBSITE MODEL AND A DIGITAL LIBRARY USING GOOGLE SITE AND D SPACE – AN EXPERIMENTAL STUDY" entitled is the bonafied project work carried out by Ms. B V JANAVIKA - Reg. No. 2021932006 student of M.Lib.I.Sc (*Master of library and information science*), Alagappa University, Karaikudi, during the year 2021-2023, fulfilment of the requirement for the award of degree of Master of library and information science and that the Project has not formed the degree, diploma, associate ship, fellowship of any other similar title.

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## **CHAPTER I**

## **INTRODUCTION**

#### CHAPTER – I

#### **INTRODUCTION**

#### PREAMBLE

Library Management system "Book Map -Site" is a Google site web-based solution to mark the term "Digital Era". As we are moving everything to digital form and automations, its high time to introduce our web-based library system to provide the best facilities even in on-line digital formats. The project enables its user to perform all the operations regarding a library This kind of library site helps in many areas of its maintenance activities. It reduces the workload of management in fact most of its notice information and so on. The project aims and objectives that will be achieved after completion of this project are discussed in this subchapter. The goal of this "Book Meet" is to provide seamless access to university information's and well-defined library management systems. With this we will be able to check the day-to-day information's, events, and even make use of tools in our site. A system termed an online library management system is used to maintain control of information on the books which are currently in the library, their authors, the library patrons who are issued books, the library staff, and various details.

An integrated library management solution, Library Management System is appropriate for both large and small libraries. Owing of its customizable design, Library Management System could be implemented in a multitude of library organizations, covering academic, jointuse, special, and public libraries. Books can be managed by this library management system software as promptly and effectively. This Windows-based library management system makes use of the most advanced information technology developments to deliver and enhance library services.

The role of global libraries in providing information services to their patrons has changed dramatically as a result of quick improvements in information processing, storage, and communication technology. As a result, libraries now have to contend with fresh obstacles including rivals, customer demands, and expectations for a wide range of information services. The transformation of data into a digital format has been made easier by new technology. Information has been produced digitally during the past few years, and libraries have emerged as key sources of information in digital format.

#### **Characteristics of Digital Library**

A digitized library combines traditional and media collections with digital technologies. They therefore include both printed and digital content. The majority of the documents in the digital library were of the reference kind.

- ✓ A digital entity called a "library" can include text, audio, video, images, and numeric multimedia elements.
- $\checkmark$  Users can access a digital library from their place of employment.
- $\checkmark$  Both formal and informal learning processes are supported by digital libraries.
- $\checkmark$  Remote access to price and rare materials is offered through digital libraries.
- The multimedia kit and well-proven information technologies are needed for the digital library.

The law of existence is change. A professional or institution that does not evolve throughout time inevitably falls behind and eventually dissolves from existence. The information society we live in today. The degree to which a society adapts to its changing environment directly affects its progress and development. There is no part of the modern world that information technology hasn't affected. This also applies to the field of library and information science. A traditional manner of functioning for libraries was forced to change due to recent advancements in information technology. Before, people in the library profession were considered of as the defenders of books. Professionals in librarians are now called to as information personnel and the recent and ongoing rapid development of communication technologies.

#### **E-Information Literacy**

Future librarians face challenging standards now that they work in electronic contexts in the contemporary E-world, be expected to possess the necessary level and depth of information technology knowledge and skills. Several levels of literacy are demanded depending on the information technology-related skills they are required to have in the einformation industry. In order to handle IT products such computer operating systems, software, telecommunications equipment, data file management, DTP, word processing, etc., they need have the appropriate skills. The ability to use information technologies for service management and information processing search and retrieval is a requirement for the next level of e-information literacy. This involves the electronic data collecting and organization, indexing, searching, and CD-ROM databases. Hence, today's librarians need a variety of abilities, resources, and methods.

### **Objectives of Digital Library**

- ✓ To provide easy information access.
- ✓ To remain a single access point library as it develops.
- ✓ To collect the Current data and pass it as a digital information via our site.
- ✓ Online Notice Boards options will introduce the user to get awareness of Upcoming events, workshops in our colleges, nearby colleges.
- ✓ Availability of Library services.
- ✓ To develop and implement a single point library site for our university.
- ✓ To support digital India systems, implementing digital site called "Book Meet"
- ✓ Facilitate the Student, Faculties to utilize the site for betterments of future manual usage.

#### **Importance of Digitalization**

For every contemporary library user, time is a key consideration, and digitization is the only way to address this issue. To distribute high-quality services right to users' doorsteps, digital libraries are required. The following is a general justification for the requirement for digital libraries.

- ✓ Simple: The graphical or visual information system of digital libraries is more widely used than the text-based information system.
- Change in the environment: The ability to read from a computer screen makes the new generation of users delighted.
- ✓ Information explosion: It is anticipated that digital libraries will be able to address the issue of information explosion in some way. Without actually purchasing the document, it will be able to handle and maintain a significant volume of digital material by simply providing a link.
- ✓ Different uses for the same information: In the case of digital libraries, it is feasible to arrange and organize the same digital content in a variety of ways using hypertext, each of which serves a different purpose.
- ✓ Information locating: Making use of digital particular image, photo, description, or other piece of information can be precisely retrieved by library one.

- ✓ Distance learning: Studying from one's home, workplace, or other convenient location.
- ✓ To procure online publications: As more and more information is published online, digital libraries are required to do so and to provide links to crucial information sources.

#### LIBRARY AUTOMATION: AN OVERVIEW

The word "automation" is derived from the Greek word "automate," which describes something with the ability to move on its own or spontaneously. D.S. Harder, a General Motors employee in the United States in 1936, coined the term "automation" for the first time. The automatic handling of parts between successive production processes is what he meant when he used the term automation.

According to Encyclopedia of Library and Information Science, "automation is the technology concerned with the design and development of process and system that minimize the necessity of human intervention in operation" (Kent, 1977). According to the Oxford English Dictionary automation as "application of automatic control to any branch of industry or science by extension, the use of electronic or mechanical devices to replace human labor". (Simpson & Weiner, 1989).

Through library automation, all routine tasks and services provided by the library can be automated. Moreover, there are options for article indexing, abstracting, etc. in various automation software packages. In essence, the following library works are automated.

- ✓ Online public access catalogue
- ✓ Circulation
- ✓ Acquisition
- ✓ Serial control
- ✓ Intranet
- ✓ Internet
- ✓ Digital Libraries

#### **Selection of Software's**

We must choose a capable and suitable software that can meet all of our requirements or can be developed by any software company on a contract basis or can be developed by professionals of the institution keeping in mind the requirements of the library in order to fully satisfy users and carry out the aforementioned library activities and functions. A growing number of library software providers and their alluring propaganda and ads made it difficult for libraries to determine which software best met their requirements.

Before choosing library software, libraries and information centers need to keep in mind a few essential factors. Experts in libraries and computer software/hardware will be included on the committee for library automation. Make a list of the areas, activities, services, and functions of your library that will be automated.

According to experts, choosing software is a very difficult task. A selection committee should discuss the options and choose the software that best meets their needs in terms of adaptability, capacity, expandability, security, cost, user friendliness, module-based design, and technological advancement. There are a number of popular software packages on the market that might be able to meet your needs.

#### **Benefits of Library Automation**

- ✓ Rationale for implementing an automated system.
- $\checkmark$  Picking and acquiring hardware that complies with regional standards.
- $\checkmark$  Finding the software that is currently available.
- $\checkmark$  Choosing or creating software that satisfies regional needs.
- ✓ Professional library training.
- ✓ Regular software review and change; required software evaluation.
- $\checkmark$  Evaluation of documentation and support.

#### **Advantages of Library Automation**

The following benefits come from computer applications or library automation in library and information functions and services:

**Speed:** Because information is processed considerably more quickly, the library's work flow is improved.

**Accuracy:** The level of accuracy and precision in the information processing is very high. However, it depends on how accurate the data entered into the system is.

**Cost effectiveness:** By carefully planning and managing the system, operating expenses can be decreased.

**Less work is required of libraries.:** Because computers are capable of doing a great quantity of work and processing, library responsibilities can be decreased.

**Better services for customers:** Computer use makes it possible to execute tasks quickly and with higher quality.

- $\checkmark$  Prevents or gets rid of doing the same thing twice.
- $\checkmark$  Access to external databases made simpler.
- $\checkmark$  Making it feasible to access and search for information online.
- $\checkmark$  Eliminates human error in normal library operations.
- $\checkmark$  Excellent regulation of the book flow.

#### **Disadvantages of Library Automation**

- ✓ Costly Purchases
- ✓ Security Issues
- ✓ Automation software maintenance is entirely dependent on the computer administrator,
- ✓ Requires ongoing staff training,
- $\checkmark$  It's expensive to maintain due to untrained users.

#### **DIGITAL LIBRARY: AN OVERVIEW**

Users can access a variety of resources online according to digital libraries. Students and professionals who want to stay up to date on the most recent advancements in their industry frequently utilize them for research. Users who would find it challenging or impossible to find rare and out-of-print works in physical libraries can have access to them through digital libraries. Together with many search and sorting options, digital libraries also provide social media-like capabilities that let users interact with one another and discuss subjects. As software for digital libraries develops, new features are being added to make them even more interesting and practical. These features include multimedia material, data visualization tools, and interactive experiences.

While digital libraries are related to physical libraries and may carry out some of the same tasks, their modeling and assessment may initially resemble those of physical libraries more closely when it comes to a digital and distributed collection. Yet (and this is a very crucial "but"), digital libraries are also extremely different from physical libraries, and they do some tasks entirely differently, such as distribution and access. Digital libraries therefore also need new and extra modeling methodologies for their constructs, which also applies to evaluation. A digital library is also much more than just a repository for scanned books and other items.

The issue in developing and implementing these new modeling approaches lies at the beginning of digital library evaluation.

Millions of individuals experience significant changes in how they gather, organize, disseminate, access, and use information as a result of the availability of the Internet. Several definitions of digital libraries have been put forth, and perceptions of them change over time. For various people, the idea of a digital library has varied connotations. Even the major actors in the creation and application of digital libraries have varying perspectives on them. Researchers interested in digital libraries are more likely to accept the common components of a definition of a digital library established by the Association of Research Libraries (1995):

- $\checkmark$  There are various parts to the digital library.
- $\checkmark$  Technology is needed in the digital library to connect the resources of many.
- ✓ Users are able to see the connections between the various digital libraries and information services.
- $\checkmark$  The goal is to make digital libraries and information services available to everyone.
- ✓ Digital library collections include digital artifacts that cannot be represented or distributed in printed media, in addition to document substitutes.

#### **Traditional Library**

It is difficult to describe what a "conventional" library is. We may all agree that it does, however, take up one or more actual buildings; when we think of going to the library, we could initially picture a brick, steel, concrete, or glass structure. It is a structure whose main function is to house non-print materials like pictures, movies, videos, and music CDs as well as printed materials like books, journals, newspapers, etc. But a library is more than just a repository for books and documents. The books will have been carefully chosen in accordance with a collecting policy that is based on the users' identified needs. Also, this collection will be arranged such that people, whether they search by creator, title, or subject, easily may discover what they are looking for. Physically arranging the papers on shelves or other storage devices and placing them in different rooms constitutes organization. Nevertheless, the collection must also be cataloged, with entries for each document that can be arranged in a variety of ways. A typical library will provide a variety of services in addition to its carefully chosen and arranged collection. Interlibrary loans, which expand the physical collection by making books from other libraries available to users, reference services, which respond to a wide range of users' informational queries, and services for particular user groups, such as children's reading groups

or document delivery to the homebound, are a few examples. The physical space the library occupies also provides a warm (or chilly, depending on the outside temperature) and light place to sit and read, work on homework, have meetings, and other activities.

However, digital libraries, or at least their digital collections, have brought with them issues of their own in areas like:

- ✓ Access equity and the digital divide.
- Information organization, user authentication for access to collections, and system and software interoperability.
- ✓ Intellectual property protections for interface design.
- $\checkmark$  The long-term preservation of digital data.
- ✓ Staff education and retraining.

#### **Characteristics of Digital Libraries**

- ✓ Text, image, audio, and video are just a few of the digital information resources that can be found in digital libraries.
- ✓ The physical space needed to construct and maintain traditional libraries is greatly reduced by the use of digital libraries.
- ✓ Users of digital libraries may be dispersed throughout the globe, and in some situations, multiple levels of services must be developed to cater to both local and remote users' needs.
- In contrast to traditional libraries, users of digital libraries can create their own personal collection(s) using the resources offered by these libraries.
- ✓ Infrastructure, interoperability (covered in Chapter 4), and other related concerns are crucial to the establishment and operation of digital libraries because they give users access to a variety of information resources that may be located on different servers around the world.

#### **Impact of Digital Libraries**

A digital library provides the user with information: As previously stated, users can access and retrieve content from digital libraries from any location in the world as long as the proper access management procedures are in place. Hence, it is possible to claim that digital libraries provide users with information in real-time rather than requiring them to visit a physical library. **Improved infrastructure for distributing information:** Improved facilities for user information exchange are offered by digital libraries. The internet and digital libraries' resources are being used by a lot of businesses, organizations, and research groups to distribute information among their members through notification, file-sharing, and cooperative document creation and use. These efforts are considerably aided by digital libraries.

**Timely information availability:** Those who use digital libraries can get current information. In a traditional library context, there is typically a large latency between the generation of information and its access. With the use of the web and digital publishing, as well as the prompt incorporation of digital information in the collection and services of the digital library, this time lag is typically minimized. Users can search for and use material on a certain timescale, such as information published within a given period, thanks to the increased search and retrieval functions of digital libraries. Inquisitive users can move among sources to learn about the beginnings and development of a new thought inside a discipline thanks to the hypertext features. By utilizing numerous software programs and/or visualization approaches, digital libraries will enable users to see the same content in a variety of ways.

#### **Hybrid Libraries**

Although the word "digital library" is frequently used in literature, a new phrase, "hybrid library," emerged during UK study on digital libraries. A hybrid library is one where printed and digital information resources coexist and are combined into one integrated information service that is accessible both locally and remotely (HyLife, 2002a). According to Rusbridge (1998), a hybrid library combines a variety of technology from many sources and integrates systems and services in both the print and electronic contexts. The term "hybrid library" is meant to symbolize the library's current stage of transition, which prevents it from being wholly print or totally digital, the author continues. According to some researchers, hybrid libraries that combine physical libraries with newly emerging digital ones will be the norm for the foreseeable future.

#### The purpose and scope of Institutional Repositories

There are many different justifications for creating repositories, and the literature has proposed a variety of potential benefits. Benefits to the researcher, the institution, and certain specialties are among them. Participating in institutional repository projects has advantages for academic libraries as well as broader intellectual communication. The attitudes of academics in our tertiary institutions, the scholars and researchers whose work is required to populate archives and who are thought to be the primary beneficiaries, hold the key to the solutions to these concerns.

Additional factors to take into account include

- $\checkmark$  How the repository is promoted to the academic community within a given institution,
- $\checkmark$  The perceived benefits of participating in the project,
- $\checkmark$  Institutional decisions regarding the project's scope,
- $\checkmark$  The level of coercion the institution employs through mandatory deposit.

#### **Digital Preservation**

Swan and Carr (2009) assert that there should be a law requiring long-term digital preservation for IRs and talk about a law requiring the submission of research output for an IR. The student should be encouraged to turn in the document on their own. It is crucial to have a necessary policy for gathering materials to submit to an IR. In order to submit their research output to the national repository known as eShodhsindhu, (eSS) of the e-Theses given by the Indian universities, various libraries in India have signed MoUs with the INFLIBNET, an autonomous entity of the Ministry of Human Resource Development, Government of India. The Agreement requires that a platform be kept up that allows users to view an institution's e-Theses and links to the eSS for all member universities. The supervisory authority was required under the document collection policy to produce not only the study effort, but also a document that was free of any form of plagiarism. As a result, the policy also encourages a high standard for an institution's research output. This will mark a significant turning point in the digital preservation of public domain e-theses in India.

Palmer, Lauren, and Newton (2008) are likewise in favor of requiring IR policies that include a concise explanation of copyrights, intellectual property rights, and other legal problems as well as more widely applicable factors. The management of the repository, which offers perpetual access, should take the faculties' intellectual needs into consideration. According to Cohen's (2001) estimation, the document downloads and together with the intellectual and legal considerations, IR policy must be included due to these and other uses of IR.

#### INTEGRATED LIBRARY MANAGEMENT SYSTEM: AN OVERVIEW

An Integrated Library Management System is a computer-based system used to manage internal and external resources including tangible assets, financial resources, materials, and human resources. It performs library automation and collection development tasks broken down into different modules that are focused on simplifying tasks such as acquisition, cataloguing, and circulation commonly done in any library. It is built on a centralized database and normally utilizes a common computing platform and consolidates all library operations into a uniform and enterprise wide system. The purpose of this paper is to compare the merits and demerits of open source and commercial library management systems widely in use. Some of the compared LMS systems include Koha, Evergreen, NewGenLib, Libsys, Voyager and SOUL. The paper suggests, on the basis of the pros & cons the best suited system that could be implemented in the University environment.

Information has always been an important factor in human endeavors. Mankind continually has strived to produce, accumulate, and distribute Information. The Information requirements have led to the establishment of libraries or documentation and information units to perform the tasks of identifying, locating, analyzing, and mediating information. Library Management Systems (LMS) are computer based systems that automate one or all functional areas performed by a library. LMS have also been referred to as 'Integrated Library Management Systems' (ILMS) to reflect the fact that all functions are managed via a central database with processes that transparently exchange data between functional components such as catalogue records and circulation transactions. The term 'integrated' is used to refer to a system in which all the library functional modules, such as acquisitions, circulation, cataloging, serial control, budgeting and OPAC (Online Public Access Catalog) are processed against a single master bibliographic database. Genaway (1984) expanded the definition and described the integrated online library system (IOLS) as "a library system that uses a common machinereadable database and has two or more subsystems operational and accessible online". Today libraries are facing challenges posed by diverse and rapidly expanding information universe. Increased user expectations for faster and easier access to relevant information go hand in hand with institutional demands for increased operational efficiency. The integrated library system provides academic, research, and national libraries with the efficient, user-friendly tools and workflow support they need to meet the increasing requirements of the library users. As consequence of technology and organizational development the role of librarians' are no longer just those of preservation and circulation but more importantly of offering Information Services. The automation of library routines enables deliverance of excellent services as well as an enhanced user experience.

#### **Cloud Computing**

Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a searching information as well as in identifying users' needs should work hand in hand with software professionals in organizing the so-called 'anarchy' of the Internet network (typically the Internet). The name comes from the use of a cloud- shaped symbol as an abstraction for the complex infrastructure it contains in system diagrams. Cloud computing entrusts remote services with a user's data, software and computation (NIST, 2012). The origin of the term cloud computing is obscure, but it appears to derive from the practice of using drawings of stylized clouds to denote networks in diagrams of computing and communications systems (Lewis, 2010). The word cloud is used as a metaphor for the Internet, based on the standardized use of a cloudlike shape to denote a network on telephony schematics and later to depict the Internet in computer network diagrams as an abstraction of the underlying infrastructure it represents (Lewis, 2009).

The cloud symbol was used to represent the Internet as early as 1994. In the 1990s, telecommunications companies that previously offered primarily dedicated point-to-point data circuits began offering virtual private network (VPN) services with comparable quality of service but at a much lower cost. By switching traffic to balance utilization as they saw fit, they were able to utilize their overall network bandwidth more effectively. There are many types of public cloud computing (Monaco, 2012) like Infrastructure as a service (IaaS), Platform as a service (PaaS), Software as a service (SaaS), Storage as a service (StaaS), Security as a service (SECaaS), Data as a service (DaaS), Test environment as a service (TeaaS), Desktop as a service (DaaS) and API as a service (APIaaS). Cloud computing is a technology that uses the internet and central remote servers to maintain data and applications. Cloud computing allows consumers and businesses to use applications without installation and access their personal files at any computer with internet access. This technology allows for much more efficient computing by centralizing data storage, processing and bandwidth. A simple example of cloud computing is Yahoo email, Gmail, or Hotmail etc. All you need is just an internet connection and you can start sending emails. The server and email management software is all on the cloud (internet) and is totally managed by the cloud service provider Yahoo, Google etc.

#### **Cloud Computing Services**

Cloud computing providers offer their services according to three fundamental models: Infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) where IaaS is the most basic and each higher model abstracts from the details of the lower models (Voorsluys et al., 2011).

#### Infrastructure as a service (IaaS)

In this most basic cloud service model, cloud providers offer computers, as physical or more often as virtual machines, and other resources. The virtual machines are run as guests by a hypervisor, such as Xen or KVM. Management of pools of hypervisors by the cloud operational support system leads to the ability to scale to support a large number of virtual machines (Amies et al., 2012). Other resources in IaaS clouds include images in a virtual machine image library, raw (block) and file-based storage, firewalls, load balancers, IP addresses, virtual local area networks (VLANs), and software bundles.

#### **Platform as a service (PaaS)**

In the PaaS model, cloud providers deliver a computing platform typically including operating system, programming language execution environment, database, and web server. Application developers can develop and run their software solutions on a cloud platform without the cost and complexity of buying and managing the underlying hardware and software layers. With some PaaS offers, the underlying computer and storage resources scale automatically to match application demand such that cloud user does not have to allocate resources manually. **Software as a service (SaaS)** 

In this model, cloud providers install and operate application software in the cloud and cloud users access the software from cloud clients. The cloud users do not manage the cloud infrastructure and platform on which the application is running. This eliminates the need to install and run the application on the cloud user's own computers simplifying maintenance and support (Hamdaqa, 2012). What makes a cloud application different from other applications is its elasticity. This can be achieved by cloning tasks onto multiple virtual machines at run-time to meet the changing work demand. These services are used in integrated library management and retrieval system for cloud computing. The open source software and open standards are also used for Internet based services towards next automated library system. The most important cloud computing based services are provided for accessing journals, e-books in library OPAC as well as librarian interface and these can be achieved in different way such as information mashup, import bibliographic and authority data, reference management and web 2.0 by using twelve check list.

#### KOHA

Koha is entirely written in Perl, an established and powerful scripting language with a long history of successful use in web applications. JavaScript is also used within pages. It is not clear if this includes the use of Ajax. Koha also uses style sheets to control how data is displayed. It is developed in the year 1999 by Kaptio Communications for the Horowhenua Library/ Trust of New Zealand. Koha is web based open source integrated library system used world-wide by public libraries, special libraries and educational institutions. The catalogue data is stored in MARC format and accessible through Z39.50 servers. It has using Web 2.0 technology for tagging and to feed RSS. It also the Union cataloguing to unity the group of catalogues and also no vendor lock-in.

Koha is a web-based solutions. By this is meant that they are distributed applications; programs that run on more than one computer and communicate through a network or server. Specifically, web applications are accessed with a web browser and are popular because of the ease of using the browser as a user client. For the enterprise, the ability to update and maintain web applications without deploying and installing software on potentially thousands of client computers is a key reason for their popularity. Koha use programming languages which are designed for web applications and therefore are platformneutral. Both are possible to be used on a single computer (localhost), an institutional LAN or WAN, as well as in consortium mode across several networked libraries via the worldwide web (Web).

#### **System Administration**

An important criterion that will determine how well software can be used in different application environments is how parameterized the software is. Various parameters (preferences) that are configurable are also important in ensuring that these are used automatically within the functional modules, e.g., budgets required to be charged for acquiring materials.

**System preferences:** Provides links to set-up global parameters as well as those specific to functional modules.

**Global system parameters:** Defines these under several tabs which includes both the functional modules as well as specific headings such as Patrons, OAI-PMH, I18/L1ON (internationali zation), z39.50 targets etc.

Cataloguing: Authority values, types, MARC templates.

**Patrons and Circulation:** Patron categories and types, circulation privileges and fine rules with respect to item types.

Acquisitions (books and serials): Funds, budgets, vendors, currencies and exchange rates.

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## **CHAPTER II**

## **REVIEW OF LITERATURE**

## CHAPTER – II

#### **REVIEW OF LITERATURE**

**Tefko Saracevic (2000)** While there were many efforts in the research and practices of digital libraries, evaluation was not a conspicuous activity. It is well recognized that digital library evaluation is a complex and difficult undertaking. Challenges facing digital library evaluation are enumerated. A conceptual framework for evaluation is suggested. A review of evaluation efforts in research and practice concentrates on derivation of criteria used in evaluation. Essential requirements for evaluation are stated.

**Christine L. Borgman (1999)** Research and practice in digital libraries (DL) has exploded worldwide in the 1990s. Substantial research funding has become available, libraries are actively involved in DL projects and conferences, journals and online news lists proliferate. This article explores reasons for these developments and the influence of key players, while speculating on future directions. We find that the term 'digital library' is used in two distinct senses. In general, researchers view digital libraries as content collected on behalf of user communities, while practicing librarians view digital libraries as institutions or services. Tensions exist between these communities over the scope and concept of the term `library'. Research-oriented definitions serve to build a community of researchers and to focus attention on problems to be addressed; these definitions have expanded considerably in scope throughout the 1990s.

**Norbert Fuhr et.al.**, (2007) Digital libraries (DLs) are new and innovative information systems, under constant development and change, and therefore evaluation is of critical importance to ensure not only their correct evolution but also their acceptance by the user and application communities. The Evaluation activity of the DELOS Network of Excellence has performed a large-scale survey of current DL evaluation activities. This study has resulted in a description of the state of the art in the field, which is presented in this paper. The paper also proposes a new framework for the evaluation of DLs, as well as for recording, describing and analyzing the related research field. The framework includes a methodology for the classification of current evaluation procedures. The objective is to provide a set of flexible and adaptable guidelines for DL evaluation.

**Catherine C. Marshall (1997)** Readers annotate paper books as a routine part of their engagement with the materials; it is a useful practice. manifested through a wide variety of markings made in service of very different purposes. This paper examines the practice of annotation in a particular situation: the markings students make in university-level textbooks. The study focuses on the form and function of these annotations, and their status within a community of fellow textbook readers. Using this study as a basis, I discuss issues and implications for the design of annotation tools for a digital library setting.

**Xiaoming liu** (2005) The field of digital libraries (DLs) coalesced in 1994: the first digital library conferences were held that year, awareness of the World Wide Web was accelerating,

and the National Science Foundation awarded \$24 Million (US) for the Digital Library Initiative (DLI). In this paper we examine the state of the DL domain after a decade of activity by applying <u>social network analysis</u> to the co-authorship network of the past ACM, IEEE, and joint ACM/IEEE digital library conferences. We base our analysis on a common binary undirectional network model to represent the co-authorship network, and from it we extract several established network measures. We also introduce a weighted directional network model to represent the co-authorship network as an indicator of the impact of an individual author in the network. The results are validated against conference program committee members in the same period. The results show clear advantages of PageRank and AuthorRank over degree, closeness and betweenness centrality metrics. We also investigate the amount and nature of international participation in Joint Conference on Digital Libraries (JCDL).

**David M Levy** (1995) What are digital libraries, how should they be designed, how will they be used, and what relationship will they bear to what we now call "libraries"? Although we cannot hope to answer all these crucial questions in this short article, we do hope to encourage, and in some small measure to shape, the dialog among computer scientists, librarians, and other interested parties out of which answers may arise. Our contribution here is to make explicit, and to question, certain assumptions that underlie current digital library efforts. We will argue that current efforts are limited by a largely unexamined and unintended allegiance to an idealized view of what libraries have been, rather than what they actually are or could be. Since these limits come from current ways of thinking about the problem, rather than being inherent in the technology or in social practice, expanding our conception of digital libraries should serve to expand the scope and the utility of development efforts.

**Ramana Rao (1995)** Effective information access involves rich interactions between users and information residing in diverse locations. Users seek and retrieve information from the sources—for example, file serves, databases, and digital libraries—and use various tools to browse, manipulate, reuse, and generally process the information. We have developed a number of techniques that support various aspects of the process of user/information interaction. These techniques can be considered attempts to increase the bandwidth and quality of the interactions between users and information in an *information workspace*—an environment designed to support information work.

**Gary Marchionini** (1995) Libraries have long served crucial roles in learning. The first great library, in Alexandria 2,000 years ago, was really the first university. It consisted of a zoo and various cultural artifacts in addition to much of the ancient world's written knowledge and attracted scholars from around the Mediterranean, who lived and worked in a scholarly community for years at a time. Today, the rhetoric associated with the National/Global Information Infrastructure (N/GII) always includes examples of how the vast quantities of information that global networks provide (i.e., digital libraries) will be used in educational settings.

**Richard E. Luce (2001)** The e-print arXiv at the Los Alamos National Laboratory acts as a repository for electronic versions of papers in physics and mathematics, providing a rapid and convenient way for scientists to rapidly share their results with colleagues. Recently the arXiv

was transferred to the Research Library, as part of its Library Without Walls. This article traces the development of the arXiv and examines some of the implications for libraries. Opportunities and challenges exist to integrate new forms of scholarly communication with newly developed digital library services offered by leading-edge libraries.

**Zan Huang (2002)** Research shows that recommendations comprise a valuable service for users of a digital library. While most existing recommender systems rely either on a contentbased approach or a collaborative approach to make recommendations, there is potential to improve recommendation quality by using a combination of both approaches (a hybrid approach). In this paper, we report how we tested the idea of using a graph-based recommender system that naturally combines the content-based and collaborative approaches. Due to the similarity between our problem and a concept retrieval task, a Hopfield net algorithm was used to exploit high-degree book-book, user-user and book-user associations. Sample hold-out testing and preliminary subject testing were conducted to evaluate the system, by which it was found that the system gained improvement with respect to both precision and recall by combining content-based and collaborative approaches. However, no significant improvement was observed by exploiting high-degree associations.

**Simon Buckingham Shum (2000)** The internet is rapidly becoming the first place for researchers to publish documents, but at present they receive little support in searching, tracking, analysing or debating concepts in a literature from scholarly perspectives. This paper describes the design rationale and implementation of *ScholOnto*, an ontology-based digital library server to support scholarly interpretation and discourse. It enables researchers to describe and debate via a semantic network the contributions a document makes, and its relationship to the literature. The paper discusses the computational services that an ontology-based server supports, alternative user interfaces to support interaction with a large semantic network, usability issues associated with knowledge formalisation, new work practices that could emerge, and related work.

**Debasis Das, Parnab Chatterjee (2015)** This article focused on the overview of library automation and the changing scenario of library management. The impact of ICT has changed the library operation and its functionality in to a fast to faster mode. Clients need not to visit shelf to shelf to find out a document. They just get their documents sitting in front of a desktop. Automation has reduced the man power. This article will discuss about the concept of automation, its requirement and various components helps to automate library. Some software package has given which are available for automation purposes.

**Rajesh Kr. Bhardwaj R.K. Shukla (2000)** Describes the explosion of information and shortage of space, growth of clientele, enhancement of library funds, cost hike of printed as well as electronic materials and benefits of resources sharing. Discusses the aims, objectives and need for the change of library tools and technique under the changing environment. Mentions the concepts of automation of library activities, areas and services such as acquisition, database management, classification and cataloguing" circulation, serial control, information retrieval, communication networks, and documentation services etc. Simplify the steps of software selection with the comparison in between some leading software's. Helps in

training and assistance for library professional. Provides the options for choosing the configuration of computer hardware based on the size of the library.

**Shabana Tabusum. SZ et.al.**, (2013) There are several reasons for automating the library activities especially computerizing library activities. On account of Information & knowledge explosion it has become essential for librarians to provide a master key to this repository of knowledge in the service, the librarian started mechanizing activities of libraries and research institution through various gadget. The main of Library is to provide access to proper information explosion, due to growing demands of the user and shrinking of financial resources, library cannot able to maintain all the reading materials on demand the only way to overcome from these problem is sharing resources through consortia, and Internet. This paper gives the importance of library automation, which requires planning, designing, and implementation. Library automation collection, storage, administration, processing, preservation and communication etc. It increases productivity in terms of both works as well as in service.

**Christine L. Borgman (1997)** Over a period of thirty years, goals for library automation have shifted from an emphasis on local concerns to an emphasis on global concerns. These goals evolved through three incremental phases--efficiency of internal operations, access to local resources, and access to resources outside the library--before reaching the present stage of addressing interoperability among systems and services. The challenge facing libraries today is how to act locally--to implement systems that ensure internal efficiencies and high levels of service to the community--while thinking globally, assuring that local systems are able to exchange data with other systems located around the world. Each of these phases in the history of American and British library automation is discussed. American and British experiences are contrasted with recent developments in central and eastern Europe, raising issues of how to support expansion into regions with different traditions of library service and practices, different technical standards, different political, economic, and cultural circumstances, and a lower installed base of information technology. Technology and policy issues involved in library automation and its role in the Global Information Infrastructure are summarized.

**Yogendra Singh (2003)** Traces briefly the history of library automation in India. Tries to analyse the various factors that directly or indirectly affect the progress of library automation such as management issues, resources available with the libraries, level of skill of staff, availability of suitable software, geographic location area. Also discusses the areas in which automation has taken place and why. Role of Inflibnet has also been discussed. Concludes that thing are changing for the better as library automation in academic libraries is now being regarded as an urgent need.

**Fatoki, O. C (2004)** The university of Ibadan library system embarked on the automation of its operations in 1991. This paper reviews the automation project plan and processes of the library over the period and highlights the problems stunting the project. The importance of periodical evaluation of performance is discussed. The paper recommends that libraries should have strategic plan for thier automation project constantly review long, intermediate and short-term goals to align with developements in the ICT industry, develop programs with active

participaion of the library professionals and support staff, and also ensure cooperation with other libraries either at local, regional or national levels. THe paper concludes that library automation in Nigerian libraries is a challenging but achievable task.

**Dr. Ajaykumar M. Raval (2013)** This paper discussed the library automation problems in some different point of views as like technological, economical and attitudinal problems. Technological problems include both the hardware and the software problems of library automation. Economical problem faced each and every library in all over the world. The initial cost of establishing a computer system is beyond the reach of most organizations and institutions. The last problem here discussed is attitudinal problem, in this approach the common thing is that among librarians there are two groups often give insufficient thought to the real value of the computer to the organization/institution and make uneconomical, haphazard use of the facility. Here in this article mentioned some recommended improvements for betterment of the automation in library and information field.

*Marshall Breeding* (2008) For at least the last two decades, libraries have overwhelmingly obtained their core automation systems from specialized vendors who offer the software through licenses that allow the company to retain exclusive access to the underlying source code. In recent years, open source software has become an increasingly popular alternative. The underlying program code is made available for anyone to inspect, repair, or improve. The open source software movement has entered the library automation industry, introducing a new set of integrated library systems and a clique of companies offering a business model based on service and support rather than software license fees. This issue of Library Technology Reports provides an overview of this new aspect of the library automation industry and provides detailed information about the major open source integrated library systems and the companies that support them.

Edwin S. Thompson, Joana Pwadura (2014) The automation of a library that basically aims at improving the management of the library's resources and increasing access to these same resources by users has caught on so well in the western world that virtually all academic libraries in that part of the world have automated most of their services. In Africa, however, several challenges are making it difficult for academic libraries to do the same, thus depriving them of the numerous touted benefits a library stands to gain from automating its services. The University for Development Studies (UDS) Library in Northern Ghana embarked on an automation project on one of its campuses that has thus far resulted in the full automation of the cataloguing and circulation operations. This article recounts the experiences of the Library in its bid to automate some of its services. The procedures that were followed, as well as the highlights of the automation, are recounted here. Lessons learned and challenges encountered are presented as an example for other academic libraries in Ghana, Africa, and other developing countries that have plans to automate.

**John\_Akeroyd, Andrew\_Cox (1999)** In this article we review the development of Integrated Library Management Systems, and look at some broad trends in their development. More and more core functions and special features have been integrated into library systems, and there has been a move towards industry standard databases, operating systems and architecture. The second part of the article looks at more aspirational library system designs, that reflect libraries'

new needs in the light of the electronic publishing revolution and the open source software movement.

**DAS Amit Kumar, Sukumar Mandal (2013)** Cloud computing comes in several different forms and this research paper discusses how service, platform and infrastructure forms of cloud computing have been used to serve library needs. Following an overview of these uses the experience of one library in migrating IT infrastructure to a cloud environment and concludes with a model for assessing cloud computing. Development of cloud computing for integrated library management and retrieval system on the basis of global recommendation include Service Oriented Architecture (SOA), Open Library Environment Project (OLE) and the recommendation of Integrated Library System for Discovery Interface (ILS-DI); and in this regard, the most comprehensive open source software for designing and developing the Internet based services is selected.

**Salma M S, Dr.B Mini Devi (2020)** Most of the libraries and library professionals have a positive perception towards adoption of Koha. Koha also has Web 2.0facilities like tagging, comment, social sharing and RSS feeds.Koha software is gaining popularity because of its web based architecture, Unicode compatibility, user friendliness and extensive customization possibilities. This situation demands the need for workshops, seminars and technical supports to library professionals for successful implementation of Koha. This article provided a strong theoretical base for the present study.

**Christine Stilwell, Ruth Hoskins (2013)** There are numerous obstacles to sustainable development and poverty alleviation. Arising from the Millennium Development Goals is the need to sustain reliable information and communications technology infrastructure. Good information management practices and such infrastructure underpin libraries and information services. Many libraries and library consortia have converted to integrated library systems to better manage and make their collections available for national development. Despite small scale studies of particular types of libraries no comprehensive coverage was traced on such systems in South Africa. This article looks at which systems are being used, which criteria influenced the choice of systems and what challenges and successes were experienced. An analysis of the literature was undertaken to form the basis for a survey that investigated common problems and solutions. Key personnel in the institutions were interviewed by telephone. Certain factors emerged as important in the choice and sustainability of the systems. These are used to formulate guidelines for discussion.

**Gatete Marcel, Uwizeyimana Faustin (2020)** Automated Information System is a software application which often provides a major impact on the universities' social and economic satisfaction as it consists of various aspects of the educational process, automates administrative and business activities and financial management, assists in decision-making by supporting information flow within the university. UG-LMIS (University of Gitwe Library Management Information System) is a library automation web application, a sub-module of the University of Gitwe's Integrated Management Information System (UGIMIS), a web-based and an online application automating the whole university's management. UG-LMIS was designed for the University of Gitwe to replace its existing manual record-keeping system. The new system controls the following information; student information, the catalog of books, track

of issues and return of books, book searching and tracking, e-mail services, notice about book issue status, reporting capabilities, etc. These services are provided in an efficient and cost-effective manner with the goal of reducing the time and resources currently required for such tasks. UGLMIS is a UMIS with great user interface designs, more performance enhancements, and many of enriched modules. It works for a big deal to bring value to the words 'care' and 'comfort' in this higher learning scenario. Besides, UG-LIMS is endowed with an advanced feature as it is a part of the university website, it can be accessed online anywhere at any time.

**Y Wang, TA Dawes (2012)** The adoption of Integrated Library Systems (ILS) became prevalent in the 1980s and 1990s as libraries began or continued to automate their processes. These systems enabled library staff to work, in many cases, more efficiently than they had been in the past. However, these systems were also restrictive – especially as the nature of the work began to change, largely in response to the growth of electronic and digital resources – for which these systems were not intended to manage. New library systems – the second (or next) generation library systems are needed in order to effectively manage the processes of acquiring, describing and making available all library resources. This article examines the state of library systems today and describes the features needed in a next generation library system. The authors also examine some of the next generation library systems currently in development that purport to fill the changing needs of libraries.

**Archana S.N. et.al.**, (2014) The Central Library of Cochin University of Science and Technology (CUSAT) has been automated by proprietary software (Adlib Library) since 2000. After 11 years, in 2011, the university authorities decided to shift to an open source software (OSS), for integrated library management system (ILMS), Koha for automating the library housekeeping operations. In this context, this study attempts to share the experiences in cataloging with both type of software. The features of the cataloging modules of both the software are analysed on the badis of certain check points. It is found that the cataloging module of Koha is almost in par with that of proven proprietary software that has been in market for the past 25 years. Some suggestions made by this study may be incorporated for the further development and perfection of Koha.

**Mani Bhusan Roy, Naresh Kumar (2017)**This paper aims to study the open source integrated library management systems, i.e. Koha and NewGenLib, to inform librarians about what considerations to make when choosing an open source integrated library management system (ILMS) for their library. The paper provides a detailed comparative analysis of both types of software, i.e. Koha and NewGenLib which are undertaken in the study. Both types of software are web-enabled and support library automation. Koha has more specific characteristics of open source ILMS. Koha needs to upgrade, modify and improve its features. Koha requires very little hardware and is easy to install. Koha has advanced database features. NewGenLib has better functionality of modules than Koha. More formats and standards are supported by Koha. Digital library functionality of NewGenLib is more specific in terms of technology, data structure and programming. Also NewGenLib provides more user help and support whereas Koha provides more user-friendly downloads and a documentation facility. NewGenLib has more enhanced features which are significant for ILMS while selecting software for automation. The comparative analysis of the open source ILMS done in the study will help

librarians in making necessary considerations while choosing open source software for the library.

Adebayo Muritala Adegbore (2018) Adoption of Integrated Library Management System (ILMS) in Nigerian university libraries is becoming popular. However, the literature review revealed that many libraries have been moving from one system to another and in the process losing a large chunk of library records. This situation poses a serious threat not only to ILMS adoption but also to its use. This study, therefore, sought to determine adoption factors of ILMS in Nigerian university libraries. The study design was descriptive of the qualitative survey. Twenty-five Systems Librarians from the selected university libraries formed the population. Data collection instrument was an interview checklist. Results showed that technological, library and librarians' factors and libraries. The study concluded that the ILMS adoption factors would ensure long use of the selected ILMS if the factors are considered before adoption. It, therefore, recommended that libraries willing to adopt ILMS should formulate policy based on the adoption factors.

**C S Venkatarama Reddy (2013)** The paper aims to study the Free/Open source integrated library management systems like Koha, Newgenlib and e-Granthalaya. A thorough analysis of all the three software's has been done and listed the features available in all the three ILMS. Koha and Newgenlib has more advanced and varied features than e-Granthalaya. e-Granthalaya has simple interface with less options and easy to use and install. Overall Newgenlib has more enhanced features that are significant for library automation and it can be selected as ILMS.

Isaac Echezonam Anyira (2020) The main objective of this paper is to justify the need for Nigerian libraries which have not automated their functions to adopt of Koha ILMS as their automation software. The paper therefore examined the need for automation, the reasons for the choice of Koha ILMS and potential benefits accruable to the libraries, and functions that Koha can facilitate their perform in their libraries. The paper identified the need for automation to include need to handle information explosion, for effective management of library operations, to improve operation speed, resource sharing etc; the choice of Koha was informed by its features and benefits which include Koha in Nigeria libraries could be linked to its powerful features which include MARC 21 compatibility, Z39.50 search, Customizability to suit individual library needs and taste, sustainability etc; the paper identified the library operations facilitated by Koha to include acquisition, cataloguing, circulation, patron management, OPAC etc. the paper however highlighted data migration and lack of skilled manpower as limitations to Koha adoption. The paper therefore recommends that a committee should be constituted to oversee the automation project. As part of feasibility study, the committee should visit libraries where Koha is in use for on the spot assessment. Management should make the requirements for installation available, while staff training should be conducted in-house. in addition, libraries in Nigeria utilizing Koha should come together to form a network of libraries to facilitate resource sharing.

**Emeka Christian Uzomba (2015)** This study examined the use of open source integrated library system in academic libraries in Nigeria, with the aim of highlighting the capabilities

and potentials of open source software(Koha) and its practical importance to academic libraries across the globe. The study was guided by five objectives and five research questions. A descriptive survey design was adopted in this research, with population of twenty-five (25) staff selected randomly from 25 different higher institutions that uses open source software in Nigeria: 19 universities (federal, state and private), 4 polytechnics (federal and state) and 2 colleges of education. The instrument used to generate data is questionnaire and the data generated was analyzed using frequency tables and percentages. It was found that many libraries in Nigeria and across the globe have turned more and more to free and open source software. The major challenges confronting the libraries include: inadequate funding, inadequate managerial support, inadequate power supply, etc. The findings of this study will serve a very useful purpose for academic libraries in Nigeria in particular, and their counterparts across the globe in general. The flexibility and friendly nature of the software will also enable users maximize their gains in the search for information.

**W Hardyanto et.al.**, (2018) The library which is the gate of the University should be supported by the existence of an adequate information system, to provide excellent service and optimal to every user. Library management system that has been in existence since 2009 needs to be re-evaluated so that the system can meet the needs of both operator and Unnes user in particular, and users from outside Unnes in general. This study aims to evaluate and improve the existing library management system to produce a system that is accountable and able to meet the needs of end users, as well as produce a library management system that is integrated Unnes. Research is directed to produce evaluation report with Technology Acceptance Model (TAM) approach and library management system integrated with the national standard.

**Okpe. I. J., Unegbu. V. E. (2013)** The study examined integrated library management software in selected Nigerian University libraries. Survey method through the use of questionnaire was used to gather data from the respondents who were made up of professional librarians of the selected University libraries studied. The study found out that: there was poor communication between the library management and software programmers/marketers. Most of the library management software in use were acquired through vendors and very few ones were acquired in-house. The result also indicated that those University libraries which acquired software through vendors maintained the software through maintenance agreement. There was high percentage of computer illiteracy among librarians as well as lack of commitment by parent institutions. The issue of lack of planning, retraining of manpower, inadequate feasibility study by individual University libraries on cost implication and maintenance before embarking on Automation projects were also identified. Based on the findings, it was concluded that majority of the University libraries do not properly plan for library automation and effective staff training on maintenance strategy among others.

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## **CHAPTER III**

## **RESEARCH DESIGN**

#### **CHAPTER – III**

#### **RESEARCH DESIGN**

#### **APA STYLE FORMAT:**

For social science research papers, the APA (American Psychological Association) style format is the one that should be used. These formats and guidelines are outlined in the American Psychological Association's Publication Manual (APA, 2006) [1]. The Publishing Manual was first published in 1929 as a brief journal article (Bentley et al., 1929) [2] that set out the fundamental guidelines for putting together papers for submission to publications. The association later expanded it and released a book, which is currently in its sixth edition (view the APA Style website online). The main goal of APA style is to standardize the structure and content of research articles and book chapters in order to enhance scientific communication by encouraging clarity of language. Knowing what facts to give while writing about research makes the task easier.

The best way to think of APA style is as a "genre" of writing that is suitable for presenting psychological research findings, especially in academic and professional settings. That may not necessarily equate to "excellent writing." Even if your literary analysis was founded on psychoanalytic principles, you wouldn't use APA style when writing it for an English class. Instead, you would format it using the Modern Language Association (MLA) style. And even if the piece was on a recent development in behavioral neuroscience, you wouldn't use APA formatting. Instead, you would format it in Associated Press (AP) style. But you wouldn't create an empirical research report using AP, MLA writing styles.

#### **APA Citations:**

There is a precise format for citing sources in APA style. In general, you should cite references in the text and then include the complete reference in the "References" section at the conclusion of your paper. Please take note that this part must be titled "References" per APA style. In APA style manuscript layout, "Works Cited" or "Bibliography" are not acceptable substitutes.

#### DSPACE

DSpace is a piece of open-source repository software that is often used to build open access archives for published or scholarly digital content. The DSpace repository software fills a special requirement as a digital archives system that is focused on the long-term storage, access, and preservation of digital content, even though it shares some features with content management systems and document management systems. Around 3,000 repositories are listed in the DSpace registry, which is optional. Dspace application that provides enduring access to digital resources is utilized by more than 1000 organizations and institutions worldwide. DSpace is being used by more than 140 institutions in India to create digital repositories.

A software platform called DSpace gives companies the following capabilities:

1. Using a submission workflow module or a range of programmatic ingest tools to acquire and characterize digital content.

2. Using a search and retrieval system to spread the digital assets of an organization over the internet.

3. Safeguard digital assets throughout time.

### **Features of Dspace:**

### 1. Full-text search

For full-text searching, DSpace can process uploaded text-based content. Users can conduct searches using specific keywords that do not exist in the offered description but only in the content itself.

- 2. Navigation: In DSpace, users can access pertinent content by using:
  - $\checkmark$  Looking up a few keywords in the extracted full-text or metadata
  - $\checkmark$  Faceted searching in any field that is available in an item's description.
  - ✓ By using an outside reference, such a handle
  - ✓ Browse, where a user reads a specific index, such as the title index, and explores it in search of interesting items, is another significant discovery method in DSpace.

## 3. File Type Support:

While Dspace is mainly recognized for providing text-based materials including scholarly communication and electronic theses and dissertations (ETDs), it accepts all file types that are submitted. Files uploaded on Dspace are referred to as "Bitstreams" as after ingestion, files in Dspace are stored on the file system as a stream of bits without the file extension.

## 4. Optimization feature for google indexing:

DSpace has added particular metadata to the page head tags that makes it easier for Google Scholar to index the content. Prominent DSpace repositories often generate over 60% of their views from Google pages.

## 5. Open URL Support.

DSpace supports the OpenURL protocol using SFX server, a linking server programme. If an SFX server is installed, DSpace will automatically use the Dublin Core information to display an OpenURL link on each item page.

## 6. Metadata

By default, DSpace uses a Qualified Dublin Core (QDC) based metadata schema. Institutions can extend that base schema or add custom QDC like schemas. DSpace can import or export metadata from other major metadata schemas such as MARC or MODS.

## 7. Security

DSpace includes its own built-in authentication / authorization system, but may also interact with current authentication systems like as LDAP

### 8. Disaster Recovery

You can export all of your system content from DSpace as backup AIP (Archival Information Packages) files. These AIPs can be used to restore \syour entire site, or restore individual communities, collections or items.

## 9. SWORD and Data Integrity

- A mechanism called SWORD (Simple Web-service Offering Repository Deposit) enables remote depositing of objects into repositories.
- DSpace generates and saves a checksum for each file on upload.
- You can choose to request DSpace to confirm those checksums to confirm the integrity of the files.

### **10.** Permissions

You may manage read/write permissions for the entire site, each community, each collection, each item, and each file in DSpace. Also, you can assign administrative rights to a community or a collection.

### 11. Languages:

Dspace supports more than 20 different languages.

### **12. Tools and Plugins:**

For converting content into DSpace objects, DSpace provides with a number of tools (batch ingest, batch export, batch metadata modification, etc.). Aside from that, service providers trade commercial plugins.

#### **Advantages of Dspace:**

- ✓ DSpace is frequently used to create institutional repositories and offers tools for managing digital assets.
- ✓ DSpace is specifically created to facilitate digital preservation for all documents that are easily placed into the repository.
- $\checkmark$  Concentrate on the use case for institutional repositories.
- ✓ Consist of a core set of features that can be expanded to or combined with other tools and services in the greater academic ecosystem.
- ✓ DSpace assists in the creation, indexing, and retrieval of various types of digital content, such as research articles, grey literature, theses, cultural materials, 3D digital scans of objects, photographs, films, audio/videos, scientific datasets, institutional records, and other types of content.
- Communities, collections, and items are used to organize the collection in DSpace. A high-level organizational structure that serves only to group relevant collections together is present in the DSpace community.

### **GOOGLE SCHOLAR**

A search engine called Google Scholar indexes academic literature from a variety of fields and file types. In 2004, Google Scholar was introduced. It comprises preprints, abstracts, technical reports, books, monographs, conference papers, theses, and dissertations that have

undergone peer review. It also contains preprints and other formats. As of 2014, it is said to have the complete text or metadata of more than 166,000,000 documents.

### **Used for Research – Google Scholar:**

- 1. A key for importing citations to assist bibliography managers
- 2. The capability of saving search results
- 3. Having access to select journals' impact factors.

4. Author profiles that are editable by the author themselves and connect to their indexed work were produced by Google Scholar.

5. Google Scholar also has a separate legal database of US cases that appends page numbers in the Westlaw and Lexis Nexis formats to the case's text.

6. Google Scholar is not without its critics. It brings up a number of additional problems that might be important.

### **Features of Google Scholar:**

- ✓ It enables users to search for digital or analogue copies of articles, whether they are available online or in libraries.
- ✓ It includes a selection of Web pages that are considered to be "scholarly," as well as "full-text journal articles, specialist reports, preprints, propositions, books, and other records." Many users will have the opportunity to access just the theoretical and reference details of an article and will need to pay a fee to access the entire piece because a substantial portion of Google Scholar's list items relate to business journal articles.
- ✓ The catchphrases' most relevant results will be listed first, followed by information about who came up with them, how many times they appear in other writing, and how important they are.

### **GOOGLE SITE:**

Google offers a framework for creating websites called Google Sites. You may think of Google Sites as being somewhat comparable to other website systems like WordPress or Wix, but perhaps better tailored to corporations and online teams. Builds and construct a website with a range of information. Employ several page templates in accordance with your demands. Join forces with others to build your website. You can decide how public or private you want to make your website. Google Sites provides site-builder capabilities that make it simple and intuitive to design your site anyway you want, just like other platforms like WordPress.com and Tumblr. To make your website more practical, you can also add "gadgets" like calendars, maps, spreadsheets, presentations, and more. To create a website that looks fantastic on desktop, tablet, and mobile displays, select a theme, and modify it however you like.

### **Features of Google Site:**

## 1. Mobile friendly:

To begin with, every web page on Google Sites is automatically optimized for mobile viewing on iPhones, Android phones, iPads, and Android tablets. Your pages don't need to be adjusted for mobile screens. It will look fantastic on any device, to put it simply.

### 2. Taking advantages of using google services:

Google created Google Sites. As a result, it only takes a few clicks to embed a variety of Google services, including YouTube, Google Documents, Google Slides, Google Sheets, Google Drive, Google Forms, Google Maps, and Google Groups.

### 3. Embed Java script, widgets and even webpage as a full page:

In addition, you may include widgets from other websites like Jotform, Elvesight, Twitter, and Facebook using the HTML embed tool. Moreover, Google Sites allows you to incorporate any website and content as a full page.

## 4. Built-in Contents Management System:

The Google Sites' integrated content management system (CMS) is one of its best features. If you or your coworkers unintentionally changed the material, you can view revision history and go back to earlier versions. This is extremely useful if you need to go back on your website or see how it changed.

## 5. Site Access Permission Control to internal folks:

Google Sites is a well-known intranet platform—did you know that? For your business, division, or team, you can create an intranet website that you can subsequently distribute to your stakeholders. For greater collaboration, you can provide editors access to modify and maintain the page while readers are allowed to browse it.

## 6. Custom Theme

It's just as easy to design a Google Slides presentation as it is to create a custom Google Sites style. You can alter the Google Sites theme to reflect the logo, colour palette, and background images of your company. With Google Sites, creating a theme or complete Google sites is easy. In only a few clicks, you may duplicate a theme or even the complete Google site. You can add to one of the free Google Sites themes already available or pay professionals to create a bespoke Google Sites design for you.

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## **CHAPTER IV**

## DATA ANALYSIS AND INTERPRETATION

## CHAPTER – IV

## DATA ANALYSIS AND INTERPRETATION



Visit sites.google.com and select either the "start from scratch/Blank" or "use a template" option to create a new website. This will show you how to use the new editor, but you may switch to Google Sites' traditional editor at the bottom-left corner of the page.

#### **HEADER CREATIONS:**

There is a preset header at the top of each new Google Sites page. There is a field labelled Enter site name at the top-left of that header. The name you provide here will appear on your website, but on the main Google Sites page, which is where you go to modify your sites, you can give your site a private name.

The opportunity to add a logo will display to the left of the site name when you move your mouse over it. Choose a straightforward and simple image because it will appear small.



To edit your header, navigate to the lower-left corner of the header area. Choose a background image, then from the four header options—cover, huge banner, banner, or title only—select one. Your background image is shown in various sizes in the first three selections, while header text is used exclusively in the fourth.



Work on the header text after selecting the banner's size and backdrop image. To change its style, size, font, and alignment, simply click on it. To move the text box left or right, drag the dots at its top (but not up or down). If you don't want any text, you can remove it.

## THEME SELECTIONS:

- To change the layout of your website, click the "**Themes**" tab at the top of the right menu. There are a few pre-set color schemes and typefaces for each theme.
- To create your own theme that Google Sites will store for later, click the '+' icon under the Custom category. Fonts and colors can be changed to your heart's delight.



### **ADDING TEXT, MEDIA:**

Click the Insert tab in the right bar to add the following elements to your site:

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**Basic components:** You can add a text box, photos, HTML code, or Google Drive files using the top portion of the Insert menu. Alternatively, you may get to these choices by double-clicking anywhere on your working site and selecting the circular menu.

**Content blocks:** By using these ready-made sections of text and graphics, you may add content quickly and arrange it however you choose.

**Collapsible Group**: A group that collapses consists of a header and text lines that collapse beneath it. By selecting the Collapsible toggle that displays when you click on their text boxes, you may turn any combination of a header and body text into a collapsible group.

**Table of contents**: Using text from each section, Google Sites' tables of contents automatically create links that take users to other parts of your website. Items can be added but not removed.

**Image carousels**: You can add two or more images to an image carousel that you can cycle through manually or that you can navigate using the dots below.

Buttons: Make a link button whose typeface and colors are inspired by your theme.

**Dividers:** Google Sites generates basic dividers with a theme-based design.

Any text box you add using these elements has choices to adjust its format and size, just like the header text does. To change the line spacing, add an indent, or format text in a code-like manner, click the three dots at the right end of the editing bar.

#### ADDING AND MANAGING PAGES

To add a new page, select the '+' icon at the bottom of the menu. You can also add a menu category or an external link to your header menu using this button.



#### **Adding Subpages and Duplicate Pages:**

We can add sub-page using drop-down when you click on three dots displayed next to main page in page sections.

Change the order of the page names in your website's menu by moving them around on the Pages menu. To make a page a subpage, simply drag it beneath another page or a menu category. Here's the example reference image added for subpage created in our site:



### Linking pages to other pages and contents:

- When we try to link the next page content to the text, we can just select the content and use the link button listed in the option.
- Copy the link of next page, paste the URL in link box listed and apply it.
- Once changes are applied, publish, and check the changes will be available as per linking.

## Events and Workshops



#### Linking outer sources page to the content:

- When we try to link the other portal links to the text, we can just select the content and use the link button listed in the option.
- Copy the link of webpages which we wanted as part of output page, paste the URL in link box listed and apply it.
- Once changes are applied, publish, and check the changes will be available as per linking.



Output for the above scenario is listed below. (Applied epathshala official link in the content, After publishing, when we clicked on "Library and information science" in our ePathshala page, its resulted on moving to official site of e-Pathshala site)

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### **EMBEDDED GOOGLE SEARCH:**

Here, we can be able to add the google search engine to our google site by adding embedded code available in google.

• Click on the selected area, where we wanted to have google search engine.

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<html></html>	
	<title>Custom Search-Bar</title>
	<style></style>

• Apply the code and click on 'Next' to create google search engine.

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• We can able to surf the web content and get the expected data from search engine

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- Right click on the links, Open in next tab to see the results.
- TABLE OF CONTENTS (AUTOMATIC MAPPING):
- Once the subtopics are written on the page completely, we can click on "Table of content" settings available on "Insert" Option.
- Google site will automatically maps the table of content and additional we can also hide the content which is not required (special feature).

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## LOGOS AND SOCIAL LINKS:

In Footer, we created logo's and linked to the social pages of Alagappa university respectively.

• Edit the footer, insert the "Social Links" from insert menu options.



#### STEPS INVOLVED TO CONSTRUCT A DIGITAL LIBRARY USING D SPACE

Here are the general steps for developing a digital library using DSpace:

**Define the purpose and scope of your digital library:** Identify the types of materials you want to include, the target audience, and the purpose of the library.

**Install DSpace:** Install DSpace on a server or virtual machine, and make sure it meets the system requirements.

**Configure DSpace**: Configure DSpace to match your requirements, such as setting up metadata fields, collections, and workflows.

**Create collections:** Create collections to organize your digital items, such as articles, images, videos, and datasets.

**Set up submission workflows:** Set up submission workflows to manage the submission and approval process for digital items.

**Customize the user interface:** Customize the user interface of DSpace to match your branding and design preferences.

**Populate the digital library:** Add digital items to your library using the submission workflows.

**Configure access controls:** Configure access controls to determine who can access the items in your digital library.

**Integrate with other systems:** Integrate DSpace with other systems, such as authentication systems, discovery systems, and preservation systems.

Test and launch: Test the digital library thoroughly and launch it to the public.

**Maintain and update:** Maintain and update the digital library regularly to ensure its functionality and security.

These are the basic steps for developing a digital library using DSpace. However, the exact steps may vary depending on the specific requirements and goals of your project.

#### SCREENSHOTS OF OUR AUGLIS SITE:







Institutional repository of INFLIBNET Centre, here you can find articles published in all conventional proceedings, training materials, and news letters of INFLIBNET Centre.



#### Library services of Alagappa University



## Anti-Plagiarism check (When you click on the link), redirects to antiplagiarism page.



Get started with Ouriginal:

E-book Access (When you click on the link), redirects to Alagappa University Library page.



#### **Our Vision**

Alagappa universities research and learning community with deep expertise, innovative services, and outstanding collections strengthened by strategic partnerships.

#### **Our Mission**

(

Alagappa University Library promotes a culture of broad inquiry and supports the University's mission to discover, preserve, and disseminate knowledge and creative expression. It engages with the ongoing transformations of society to deliver world-

#### ABOUT

- FOR STAFF
- FOR ALUMNI
- <u>USING THE LIBRARY OFF-CAMPUS</u>
- NEWS
- EVENTS
- <u>COMMITMENTS TO PRIVACY</u>
- DIVERSITY AND INCLUSION

## SCREENSHOTS OF D SPACE (e-BOOK MEET)

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## **CHAPTER V**

# **MAJOR FINDINGS AND CONCLUSION**

## MAJOR FINDINGS AND CONCLUSION

#### SUGGESTIONS

Online information and knowledge access through digital libraries is growing in popularity. Here are some ideas for creating and utilizing a digital library:

- ✓ Choose a user-friendly platform: It should be simple to browse and search your digital collection. Choose a platform that has an intuitive UI that offers people ease of use.
- ✓ Incorporate a wide variety of materials: To accommodate various learning preferences and styles, a digital library should provide a variety of resources including ebooks, audiobooks, films, articles, and research papers.
- ✓ Subject-based resource organization will make it easier for users to find what they're looking for. The digital library should be set up in this way.
- ✓ Allow for user comments: User feedback can benefit the digital library by revealing which resources are the most worthwhile and which require development.
- ✓ Make sure the online library is reachable: Make sure people with impairments, as well as everyone else, can access the online library. Make sure it complies with the online accessibility standards.
- ✓ Update and maintain the library on a regular basis: The digital library is kept current and useful by routine upgrading and maintenance.
- ✓ Access to licensed content is necessary to increase the value of the digital library. Examples of licensed content include textbooks and scholarly publications.
- ✓ Make sure user data is kept private and secure by putting in place effective security measures.
- ✓ Obtain funds, carry out user evaluations of digitized collections, and make the results of these evaluations accessible to the library community.
- ✓ To help their customers find relevant books and prevent information overload, several digital libraries use recommender systems. The digital libraries IEEE Xplore, Europeana, and GESIS Sowiport are a few examples of those that provide recommender systems. Although collaborative filtering and citation-based suggestions are also employed, content-based filtering is the primary method utilised by recommender systems.
- ✓ On the basis of pre-existing search and recommendation frameworks like Apache Lucene or Apache Mahout, digital libraries typically create and manage their own recommender systems. Some recommendation-as-a-service providers, on the other hand, focus on providing a recommender system for digital libraries as a service.

In general, a digital library can be a great tool for students, teachers, and anybody else who needs quick access to information. You can make a digital library that is user-friendly, educational, and beneficial to users by adhering to these recommendations.

#### **MAJOR FINDINGS**

A growing number of people are discovering the many benefits of digital libraries over traditional ones. Key discoveries for digital libraries include the following:

- ✓ One of the main benefits of digital libraries is that they are easily accessible. With an internet connection, users can browse digital libraries from anywhere in the globe. People can now quickly and easily access the information they require as a result.
- ✓ Without having to go to a physical library, users can search for and access materials using digital libraries at any time of day. Because of this, it offers a practical alternative for those with hectic schedules who might not have the time to visit a real library.
- ✓ Maintaining digital libraries is typically less expensive than maintaining physical ones. Companies have reduced overhead costs since they need less actual space and personnel.
- ✓ Compared to traditional libraries, digital libraries provide a broader selection of resources. Students frequently have access to a wide range of multimedia materials, such as audio files, films, and interactive learning tools.
- ✓ Important materials can be saved in digital libraries for future generations. Rare and delicate papers can be stored and archived, guaranteeing their protection and availability for years to come.
- ✓ To better serve their customers, digital libraries can be altered. Visitors can tailor their search parameters and find content that is pertinent to their interests or academic requirements.
- ✓ Digital libraries encourage user cooperation. People can collaborate and share resources online, regardless of where they are physically located.
- ✓ Unites those with a commitment to academic, informal, and professional learning.
- ✓ Information retrieval that is improved.
- ✓ Better accessibility: Online and Compact Disc-Read Only Memory access to digital libraries is the norm. (CD-ROM). They are practically always and virtually wherever accessible. They are not constrained by traditional libraries' physical locations and opening times.
- ✓ Improved information sharing: The digital libraries can readily share information with other digital libraries that are comparable to them and give users better access through the use of the right metadata and information exchange protocols.
- ✓ The digital libraries promote preservation of unique and rare papers and artefacts by granting access to digital versions of the materials, which are not subject to physical wear and tear and allow for easy creation of exact copies.
- ✓ Provides faster access to information resources; Multiple access; Nearly unlimited storage space at a lower cost; No physical boundary; Preservation of some print materials.
- ✓ A friendly user interface; Round-the-clock accessibility; Supports advanced search and retrieval; Supports the traditional library mission of collection, development, organization, and access to presentation accessibility to all

In general, digital libraries are changing how we use and access information. They have several advantages and are probably going to become more and more popular in the years to come.

#### CONCLUSION

In conclusion, the effort to create a digital library has been quite successful in giving consumers a simple and open platform for information access. Large volumes of information have been digitally preserved as a result of the initiative, making it easily accessible to users anywhere. The initiative has been essential in safeguarding priceless resources and ensuring their accessibility for coming generations. The introduction of cutting-edge technologies has improved the user experience even more and made it possible to produce more effective and customized search results. The digital library is anticipated to continue growing and improving over time, becoming a priceless tool for academics, researchers, and the general public. The accomplishment of this project serves as an example for future digital library projects and emphasizes the significance and potential of digital technology in knowledge preservation and dissemination.

Although digital libraries won't totally replace the physical existence of documents, they must be introduced to satisfy the current demand and the needs of users who are not local in order for libraries to at least take on a hybrid nature. The initial cost of digitization is considerable, but an experiment has shown that once digitalization is implemented, managing this collection will be less expensive than managing any traditional library's collection. It goes without saying that after one or two years my library or your library will go through digitization as the cost of digitization is decreasing daily, online publications are increasing, and user needs are shifting towards a different environment, so now is the best time for all informational and educational purposes.

Librarians and other educators have the chance to evaluate the research that supports the use of technology through this website. However, every librarian has the capacity to establish a truly effective learning environment via careful dedication and a reconsideration of present teaching techniques.

#### **OFFICIAL WEBSITE LINK**

The link of our website that has been built for this project using google site is given

https://sites.google.com/view/university-page-library/home

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