

COMPARISON OF JSPUI AND XMLUI DSPACE INTERFACES: USERS' OPINION

A Thesis

Submitted to The

Central Department of Library and Information Science

**For the fulfillment of the Requirements for the
Masters of Arts in Library and Information Science**

Submitted By

RUSHMA KARKI

T.U. Redg. No: 9-2-29-772-2012

Roll No: 03(073/074)

Central Department of Library and Information Science

Faculty of Humanities and Social Sciences

Tribhuvan University, Kirtipur,

Kathmandu, Nepal,

2022



Tribhuvan University
Faculty of Humanities and Social Sciences

Central Department of Library and Information Science

Kirtipur,
Kathmandu
Tel. No. 4331316

Date:

Reference No.:

E-mail: lisd@healthnet.org.np
Website: <http://www.tulisd.edu.np>

LETTER OF RECOMMENDATION

This is to certify that **RUSHMA KARKI** has prepared this thesis entitled "**COMPARISON OF JSPUI AND XMLUI DSPACE INTERFACES: USER'S OPINION**" under my supervision and guidance. I recommend this thesis for final approval and acceptance.

June, 2022

.....
Asst. Prof. Lila Nyaichyai, PhD.
Thesis Supervisor



Tribhuvan University
Faculty of Humanities and Social Sciences

Central Department of Library and Information Science

Kirtipur,
Kathmandu
Tel. No. 4331316

Date:

Reference No.:

E-mail: lisd@healthnet.org.np
Website: <http://www.tulisd.edu.np>

LETTER OF ACCEPTANCE

The thesis prepared and submitted by **RUSHMA KARKI** entitled "**COMPARISON OF JSPUI AND XMLUI DSPACE INTERFACES: USER'S OPINION**" has been evaluated and accepted as a partial fulfillment of the requirements for the degree of Master of Arts in Library and Information Science.

Approval Committee

.....

Asst. Prof. Lila Nyaichyai, Ph.D.

Thesis Supervisor

.....

Nawaraj Paudel

External Examiner

.....

Asst. Prof. NiraManandhar

Head of Department

Acknowledgement

First of all, I would really like to express my gratitude to Assistant Prof. Lila Nyaichyai, my respected supervisor, for her patience, encouragement, in-depth knowledge, and unconditional support for my research. Without her help and guidance, I would not have been able to complete this research. Throughout the research, her guidance was invaluable.

Additionally, I would like to express my sincere gratefulness to Assistant Professor Nira Manandhar, Head of Department. All of my teachers, Associate Prof. Bhim Dhoj Shrestha, Assistant Prof. Sarita Gautam, Assistant Prof. Parbati Pandey, and the staff of the Central Department of Library and Information Science, deserve special thanks.

Likewise, the University Grants Commission (UGC) deserves special recognition for providing research funding. Thank you to all of the other participants for agreeing to my request and for spending their important time and submitting the information requested in the questionnaire.

Finally, I want to express my sincere thanks to all of my friends and family members specially my mother Mrs. Kamala Devi Karki and my sister Rasmita Karki who have consistently supported and pushed me to complete my research.

RUSHMA KARKI

ABSTRACT

DSpace user interface establishes first hand communication with the users of digital library built in DSpace library software. There are two kinds of user interface in DSpace. One is built upon JSPUI and another is on XMLUI. Though both user interfaces are supported equally by the DSpace developers and Users as well. It is worth to examine the mostly used user interface in DSpace repositories used by various libraries in Nepal and other countries. In the context of Nepal, fewer studies have done about the library software. So this study try to explore and evaluate each feature available in the DSpace so that librarians and users could have formulate a standard to decide which user interface particularly be used and could state the reasonable causes behind. The comparative study of JSPUI and XMLUI has concluded that both user interface be better fits as per the requirement of the library. The purpose of this research had exploring the better DSpace interface used in libraries and user friendly DSpace user interfaces. This study has employed both quantitative research methods, and comparative research design.

According to the findings, end users had nearly similar opinions about both UIs. The study concluded that both UIs are equally user-friendly, with some users preferring JSPUI and others preferring XMLUI. Both UIs are superior and user-friendly in their own way.

CATALOGUE OF THESIS


Shelf entry card

D 005.3072 K1433 2022 Acc. No.	Karki, Rushma Comparison of jspui and xmlui DSpaces interfaces: user's opinion / RushmaKarki. – Kathmandu: Central Department of Library and Information Science, T.U., 2022. Xii, 37p.: ill.; 30 cm. Includes bibliography Thesis (MLISc.)-University Campus, Tribhuvan University, Kathamandu, 2022. 1. Digital Libraries Software I. Title ○
--	--


Main entry card

D 005.3072 K1433 2022	Karki, Rushma Comparison of jspui and xmlui DSpaces interfaces: user's opinion/ RushmaKarki. – Kathmandu: Central Department of Library and Information Science, T.U., 2022. Xii, 37p.: ill.; 30cm. Includes bibliography Thesis (MLISc.)-University Campus, Tribhuvan University, Kathamandu, 2022. 1. Digital Libraries Software I. Title ○
--------------------------------	--

Subject entry card

D 005.3072 K1433 2022	DIGITAL LIBRARIES SOFTWARE Karki, Rushma Comparison of jspui and xmlui DSpaces interfaces: user's opinion/ RushmaKarki. – Kathmandu: Central Department of Library and Information Science, T.U., 2022. Xii, 37p.:ill. ; 30cm. Includes bibliography Thesis (MLISc.)-University Campus, Tribhuvan University, Kathamandu, 2022. 
--------------------------------	---

Title entry card

D 005.3072 K1433 2022	Comparison of jspui and xmlui DSpaces interfaces: user's opinion Karki, Rushma Comparison of jspui and xmlui DSpaces interfaces: user's opinion/ RushmaKarki. – Kathmandu: Central Department of Library and Information Science, T.U., 2022. Xii, 37p. : ill. ; 30cm. Includes bibliography Thesis (MLISc.)-University Campus, Tribhuvan University, Kathamandu, 2022. 
--------------------------------	---

Corporate entry card

<p>D 005.3072 K1433 2022</p>	<p>DSPACE SOFTWARE</p> <p>Karki, Rushma Comparison of jspui and xmlui DSpaces interfaces: user's opinion/ RushmaKarki. – Kathmandu: Central Department of Library and Information Science, T.U., 2022. Xii, 37p. : ill. ; 30cm. Includes bibliography Thesis (MLISc.)-University Campus, Tribhuvan University, Kathamandu, 2022.</p> <p style="text-align: center;">○</p>
--	---

Table of Content

Contents

CHAPTER I	13
INTRODUCTION	13
1.1 Background of the Study	13
1.2 Statement of the Problem:	16
1.3 Objectives of the Study:	16
1.4 Research Questions:	16
1.5 Significance of the Study:	17
1.6 Limitation of the Study:	17
1.7 Organization of the Study:	18
CHAPTER II	19
REVIEW OF RELATED LITERATURE	19
2.1 Library Website:	19
2.2 DSpace User Interface:	20
CHAPTER III.....	22
RESEARCH METHODS	22
3.1 Purpose of Site Selection:	22
3.2 Research Design:	22
3.3 Population and Sample:	25
3.4 Data Collection procedures:	25
3.5 Source of Data	25
CHAPTER IV	27
DATA ANALYSIS AND INTERPRETATION	27
4.1 Comparison between JSPUI and XMLUI user interface of DSpace	27
CHAPTER IV	31
SUMMARY AND CONCLUSION.....	31
5.1 Summary:	31
5.2 Findings and Conclusion:	31
Bibliography	33

Appendix I.....35
 Questionnaire35
Appendix II37
 Curriculum Vitae37

List of Tables

Table 1: Visited DSpace Websites links	26
Table 2: Easiness.....	27
Table 3: Organization Information organization about various instructions in DSpace.....	28
Table 4: Attractiveness of user interface in DSpace	28
Table 5: Performance capacity of DSpace	29

LIST OF ABBREVIATION

JSPUI	-	Java Server Page User Interface
XMLUI	-	Extensible Markup Language User Interface
UI	-	User Interface
HCOE	-	Himalaya college of Engineering
OSS	-	Open Source Software
DL	-	Digital Library
CAS	-	Current awareness service
SDI	-	Selective Dissemination of Information

CHAPTER I

INTRODUCTION

1.1 Background of the Study

DSpace is digital Library software that provides a full-text document digitally. It is open source repository software that allows capturing, store, index, preserve and distributes digital material including text, video, audio, and data. It provides a way to manage materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time. Basically, DSpace is being used to create a digital library with three major roles; first, it facilitates the capture and ingestion of material with associated metadata; Second, DSpace provides easy access to the material with user friendly searching and listing mechanisms; third, it facilitates long term preservation of digital material. When initiated (in year 2000), DSpace was a joint project of the Massachusetts Institute of Technology and Hewllet-Packard, DSpace project is now being handled by DuraSpace, a non-for-profit organization.

DSpace is the major digital library (DL) software in the open source software (OSS) domain used by academic, nonprofit, and commercial organizations in the world. The registries that list DLs in the world show that more DLs are created by DSpace. The preference for a particular OSS for DL has been subjected to study and research. The factors behind the adoption of DSpace over other DL software have been pointed out by various authors. The process of installation and customization of DSpace is easy and the software has a vibrant community of users and developers all over the world. The vendor support for DSpace adds more opportunities for organizations to deploy the software. The tradition of regular release, integration of additional

features, support for standards, lengthy documentation, live email forums etc. make DSpace acceptable for more institutions.(Cherukodan, 2014)

An interface is a visual part of computer application or operating system through which a user interacts with a computer or software. It determines how commands are given to the computer or the program and how information is displayed on the screen.

The user interface (UI) of a computer program is the part that handles the output to the display and the input from the person using the program. Designing user interfaces for interactive systems is a task that depends, among other things, on the designer's creativity. The user interface has been recognized as one of the most important elements of a software project. The abstract characteristics of user interfaces: learn ability, ease of use, error tolerance, efficiency, user satisfaction and others which make interactive systems usable and these can be achieved through a careful design and construction process.(Fatima, 2013)

A user interface (UI) is a conduit between human and computer interaction – the space where a user will interact with a computer or machine to complete tasks. The purpose of a UI is to enable a user to effectively control a computer or machine they are interacting with, and for feedback to be received in order to communicate effective completion of tasks.

DSpace holds two types of interfaces called Java Server Page User Interface (JSPUI) and Extensible Markup Language User Interface (XMLUI). DSpace's user interfaces allow end-users to access their needed documents. The user interfaces consist of brief information about the institutions, communities and collection home pages, configurable by individual communities, recent arrivals in the collections are displayed, convenient subscribing and depositing controls as well as searching and browsing facilities.

Some of the libraries have own institutional logo on their top of the pages. Some of have default DSpaces logo on their pages. Some DSpace include home, browse, help, search bar and sign-in on the title bar. On the other hand, another DSpace includes these features in the right corner of the pages. Some DSpace includes communities and recent arrivals listed in the bold letter on the left side of the web pages (<http://103.69.125.248:8080/jspui/>, <http://dspace.crp-bangladesh.org:8080/xmlui/>). But some DSpace have the same feature at the bottom of the DSpaces has included discovering document by author, subject and date issued is in the right corner in a tiny letter. But some DSpace has displayed these features in a bold letter at the bottom of the pages. It means some DSpace user has given priority to discovering document by the author, issue dates and subject. In other hands some repositories have arranged communities by faculty, subject and department. The major thing is two kind of design application; Java Server Page User Interface (JSPUI) and Extensible Markup Language User Interface (XMLUI) are used for DSpace.

This research is based on digital library software DSpaces's user interfaces, focusing on its various web pages and interfaces compared to each other's. This study has to analyze different features available in the websites. Not only analyze different features it has also explored the user-friendly interface and easily accessible website where the user felt uncomfortable to get information.

Therefore, this study has made an effort to evaluate each feature available in DSpace user interfaces. And also attempted to compare the both web design applications JSPUI and XMLUI.

1.2 Statement of the Problem:

DSpace has become quite popular among digital library software because it's open-source and freely available software. Librarians always need to know how users feel about the service provided to them. It is a continuous task for librarians. So it's time to evaluate each facility available in the DSpace so the Librarians and users easily can get familiar with its resources and services for its frequent use and utilization.

The interest in selecting this research topic is to know which DSpace interfaces are more user-friendly. How are the DSpace UIs guiding properly to retrieve the required information to users?

The main objective was to compare the basic functionality of the two interfaces of the DSpace and find out the differences between two UIs of this software. Therefore, this study has tried to resolve, why different UIs have been used to create DSpace interfaces by libraries and which are more effective and user-friendly and which design of DSpace interfaces is more used in real-life.

1.3 Objectives of the Study:

The main objective of this study is to analyze the user interfaces of DSpace software. However, this study has accomplished the following specific objectives.

- To compare between JSPUI and XMLUI interfaces of DSpace.
- To evaluate the more user-friendly interface between two.

1.4 Research Questions:

- Which of the DSpace UIs is user-friendly?
- What are the similarities and differences between JSPUI and XMLUI UIs?

1.5 Significance of the Study:

DSpace user interface establishes first hand communication with the users of digital library built in DSpace library software. There are two kinds of user interface in DSpace. One is built upon JSPUI and another is on XMLUI. Both user interfaces are supported equally by the DSpace developers. But after DSpace 7 version, the main features of both interfaces were implemented in the new interface that is based on Angular, and in the version 7 afterwards, there is no use of JSPUI and XMLUI.(Lyrasis, 2021) However, before DSpace 7 versions, there was two types of interfaces were in use. Hence, the purpose of selecting this study is to describe the similarities and differences between two UIs and which is the more effective, informative, and user friendly. The major significance of the study is listed below:

- a. This study has focused on the existing features available in the DSpace user interfaces, so that it could assist librarians to choose one between two.
- b. This study will be helpful to the libraries and librarians to make a better DSpace user interface which is more user-friendly.

1.6 Limitation of the Study:

This study is limited to compare the user interfaces of DSpace software. I have selected this software for the study because it is the popular among various open source repository software being used for digital libraries all over the world. On the methodological part, the study is designed as a comparative study.

1.7 Organization of the Study:

The first chapter introduces the study along with the problem statement, objectives, research questions, significance of the study, and study limitations. It gave the initial understanding of the study issue.

The review of related documents is highlighted in the second chapter. The goal of this research was to determine which DSpace interfaces is more user-friendly. The majority of relevant literature about user interface design was reviewed for this study. Except this, what is the definition of a library website? What should it be? Were also studied.

In the third chapter presents research methodology that included sample and population of the study and research design. The information was gathered from primary and secondary sources. The questionnaire method was used to collect data for comparative study of user interfaces.

The fourth chapter involved analysis and interpretation of data, after completed the collection of data through questionnaire, analysis and interpretation has done using the figure of table and explain about their outcomes comparatively.

The fifth chapter of this study included summary and conclusion. DSpace is a free institutional repository program that employs both XMLUI and JSPUI user interfaces. According to the findings, both user interfaces have similar value in the perspective of end users. Users were satisfied with their individual differences. The primary goal of this research was to determine which interfaces were more user-friendly, but in the end, the researcher discovered that both have their own distinct characteristics. As a result, the researcher came to the conclusion that both user interfaces have unique features that attract users.

CHAPTER II

REVIEW OF RELATED LITERATURE

In This chapter, an attempt has been made to present a brief amount of work carried out to compare the available features of DSpace software user interfaces. It is a critical analysis of the related literature to identify and record existing knowledge on the topic of research. For this purpose some related articles are reviewed.

2.1 Library Website:

Library website is a main focus page for the user, which provides general information about particular organization or site. It leads to the further detail information. It is always presented in a vibrant and appealing manner. As a result, everyone has easy access to the information they required. A websites have the distinct advantage of disseminating information in such way that it can reach a user sitting in different geographical locations quickly. Information can be made available in different formats with interactive features and information can also be exchanged synchronously-(Vasantha, 2011).

The concept of designing library website is to communicate with the user community and serve them with their information needs which will enhance their knowledge. The library website plays a vital role for library and the university. Through the website user can access the lists of resources, online catalogs, and also online reference services which will enhance the library and university's reputation in user community-(Shafi, 2021).

According to the (Kumar S. , 2018), Library webpage can be defined as gateways for searching information about the library. It provides integrate access to the metadata of a library's multiple databases, e-journals and library catalogues and deliver detailed information about a library and

also provide access to all computer based services like library collection, library timing, library working hours, list of subscribed online journals, Current awareness service(CAS)/ selective dissemination of information (SDI)/ Reference services, popular documents based on circulations, reservations, user feedback, etc. offered by a library. With the help of library webpage, library can easily propagate its services and facilities to the academic community worldwide. That is why design of a website requires a careful planning, considering several key design elements, visual and aesthetic appearance. The utility of the website, for e.g. how well it functions and its usability for e.g. how effectively users can navigate it are also key factors- (K.Sami, 2016).

Library website should be providing a guide to the availability of learning resources the library holds, and services and it must be comprehensive enough to give space for showcasing all resources it has, and services it provides. A library website must be effective with proper space for graphic and text. It must not too flashy or too insipid for a user-(Kumar & Bansal, 2014).

2.2 DSpace User Interface:

Similar to library website, the interface of digital repository has similar importance. DSpace is organized into communities, a high level organizational structure to divide collections into related groups. Each community contains one or more collections, which are containers for related items. An item is a deposited object of any type: a published article, an image, audio, or video file, notes, a presentation, etc.

The user interface (UI) is the point at which human users interact with a computer, website or application. It is the means by which a human and the user computer system interact. The goal is to enable the user to operate and control the machine in order to effectively complete a task and

receive feedback that makes the decision-making processing easier. It is the integral part of the user experience design, the way through which a user interacts with a device.

According to (Blair-Early, 2008)“The User Interface is the aggregate of means by which people interact with a particular machine, device, computer program, or other complex tool (The thing). The User interface provides the means of; input, allowing the user to control the system, and output; allowing to the system to inform the user (feedback)”.Nowadays, computers play a very important role, that is to say, as a communication tool between people. This introduces the interface between human and machines as a key player, therefore the importance of these interfaces. The user interface (UI) of a computer program is the part that handles the output to the display and the input from the person using the program.(Fatima, 2013)

CHAPTER III

RESEARCH METHODS

The research work had been designed to undertake a comparative study on DSpace User Interfaces. The main objectives of this study have to compare the DSpace interfaces used in the different libraries whether it is user-friendly or not. This research is based on descriptive methods. The research method included research design, population and sample, source of data, data collection procedure, data processing procedure, and data analysis tools and techniques, which are presented below.

3.1 Purpose of Site Selection:

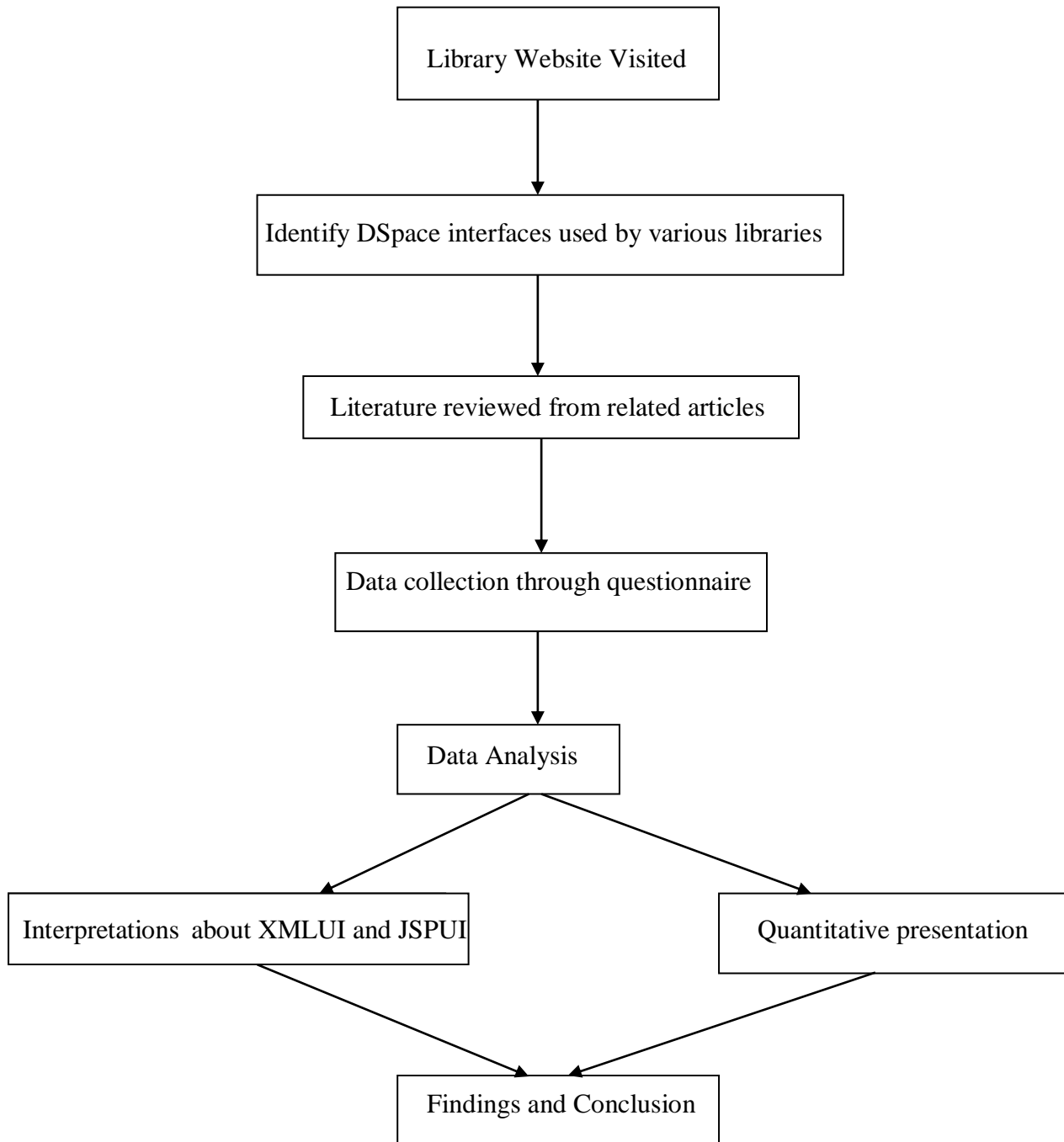
DSpace is well-known library software for an institutional repository. Fewer studies have been conducted on digital library software. However, due to the lack of exhaustive knowledge and research about this software, this study on “Comparison of JSPUI and XMLUI DSpaces interfaces: user’s opinion” has been chosen as a research topic. The study analysis is this topic in various angles such as similarities and differences among various DSpace interfaces according to their features and facilities. Compare the two main User interfaces used in DSpace and make recommendations for future improvements.

3.2 Research Design:

The research design is a collection of methods and procedures for gathering and interpreting data on the variables relating to the research problems. The user experience was the basis for this study. How each user feels comfortable retrieving the required document? User experience is the totality of the effect or effects felt by a user as a result of interaction with, and the usage context of, a system device, or product, including the influence of usability, usefulness, and emotional

impact during interaction, and savoring the memory after interaction. User experience design (UX) is a set of technologies which increase user satisfaction by improving usability and concepts related to interaction between human users and computers. User experience is a significant aspect in creating different kinds of products and services (Orlova, 2016). The purpose of this study was to describe the DSpace Software's user-friendly interface design. For the purpose of collecting data, the researcher had created a set of multiple-choice questions and provided them along with UIs Link for a comparison of two JSPUI/XMLUI user interfaces. The researcher then reviewed and interpreted the data that had been collected in perspective of the respondents' experiences and opinions. After that the researcher had made a summary and conclusion.

Research Design Framework



3.3 Population and Sample:

The study's overall population consisted of a group of civil engineering students from Himalaya College of Engineering (HCOE) and a few selected DSpace software users. The sample of the study comprised only that user of DSpace and the student of HCOE during the time of data collection. Using convenient sample procedures, the questionnaire was delivered online with reference links.

3.4 Data Collection procedures:

A sample of Himalaya College of Engineering students and DSpace users was chosen to collect data for the questionnaire. A group of civil engineering students and DSpace users were selected for an online questionnaire that included links to both (XMLUI/JSPUI) interface designs. A total of 27% of people responded to the survey.

3.5 Source of Data

The majority of the information came from original sources. A set of questionnaires were employed as primary sources.

Table 1: Visited DSpace Websites links

Institution	JSPUI	XMLUI
TUCL digital repositories		http://107.170.122.150:8080/xmlui/
CRP Bangladesh		http://dspace.crp-bangladesh.org:8080/xmlui/
Nepal National Library	http://103.69.125.248:8080/jspui/	
O.P Jindal global university	http://dspace.jgu.edu.in:8080/jspui/	
University of Jos Nigeria	https://irepos.unijos.edu.ng/jspui/	
CSIM digital library		https://www.cs.ait.ac.th/xmlui/

These DSpace repositories were made to search for the users for this study purpose.

CHAPTER IV DATA ANALYSIS AND INTERPRETATION

This chapter explained the procedure of the data collection and analysis and interpretation of data. To achieve objective of this study. To evaluate the easiest user interface and to find out the best user interface design of DSpace. A set of questionnaire was prepared for collecting the data.

4.1 Comparison between JSPUI and XMLUI user interface of DSpace

The Participants were asked to give their opinion about different features available in the UI of the DSpace. Acquired responses are sorted according to the features.

Table 2: Easiness

Easiness	JSPUI	XMLUI	Both
Information Retrieval	40%	44%	
Color Features	54.2%	41.7%	

The score for the DSpace UI's ease feature is presented in Table No. 1 as a percentage. This is divided into sub-features, such as 'information retrieval' and 'color features.'

From the perspective of the user's convenience of information retrieval, in accordance with the UI's ease feature. JSPUI had the lowest score (40%), whereas XMLUI received the highest (44%). So, if the end user compares the two user interfaces, XMLUI has a more user-friendly interface. Another element that has been noticed in terms of ease in the color features is a comparison of the two interfaces. JSPUI's (54.2%) results are higher than XMLUI's (41.7%), indicating that JSPUI is more user-friendly.

The results reveal that each UI has its own set of features and ease of use in different areas.

Table 3: Organization Information about various instructions in DSpace

Information Organization pattern	JSPUI	XMLUI	Both
Understandable instructing terms	28%	32%	40%
Clarity in Sign in	42.3%	23.1%	
Indication of Collection & communities	40%	28%	

Table 2 shows the score obtained in terms of the percentage of the DSpace User Interface's organizing feature. In the eyes of the end user, a better organization has more sub features, such as an 'instructing button,' 'sign in,' and a 'collection & communities,' each of which has a different opinion. XMLUI (32%), on the other hand, has the best score in the Understandable instructing option, indicating that the instructing option is better organized in XMLUI. Similarly, JSPUI (42.3%) has the highest score in terms of clarity in sign in, and collection and communities, indicating that JSPUI has more organized pattern.

Table 4: Attractiveness of user interface in DSpace

Attractiveness	JSPUI	XMLUI	Both
Information Organization pattern	40%	72%	
Browsing Facilities	45.8%	37.5%	
Default color	26.9%	53.8%	30.8%

The DSpace UI's attractive features are shown in Table No. 3. 'Information Organization Pattern', 'Browsing Facilities', and 'Default Color' are some of the sub characteristics. Information can be organized in a variety of ways depending on how appealing it is. JSPUI (40%) has the lowest score, whereas XMLUI (72%) has the highest, implying that XMLUI has a more appealing user interface. XMLUI (37.5%) had the lowest score in the Browsing facilities when compared to JSPUI (45.8%). It demonstrates that the JSPUI has appealing browsing features. Similarly, the end user's view on default color differs, with XMLUI scoring higher than JSPUI. It indicated that the XMLUI has a more appealing color scheme.

The findings show that the DSpace UIs' attraction aspects are seen differently by their respective end users. Some users have been drawn to the JSPUI. And some users have been drawn to the XMLUI.

Table 5: Performance capacity of DSpace

Performance	JSPUI	XMLUI	Both
Availability of Searching option	40%	72%	
Browsing Facilities	45.8%	37.5%	
Search Results	40%	44%	20%

The performance characteristics offered in the DSpace UI are mentioned in Table 4. According to the user's comfort and experience, the performance capability was calculated here. It was also subdivided into different sub-features. 'Availability of searching option,' 'Browsing Facilities,' and 'Search results' are the sub features. JSPUI (40%) has the lowest user-friendly interface performance score and XMLUI (72%) has the greatest user-friendly interface performance score based on the availability of searching options. It showed that XMLUI's search options are more

extensive than JSPUI's. Similarly, JSPUI (45.8%) performs better in terms of browsing capabilities because it has the best score. However, when it comes to search results, XMLUI leads JSPUI because it obtained the lowest score.

All of the results and scores reveal that the two alternative user interfaces have different points of view.

CHAPTER IV SUMMARY AND CONCLUSION

5.1 Summary:

DSpace is an open-repository, digital asset management system that allows to capture store, index, preserve and distribute many kind of digital object including text, image, videos, audios and data. It provides a way to manage materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time.

DSpace has used two type of web application on the end user interface i.e. JSPUI and XMLUI. So this research presents a comparative study on two UIs. The research attempted to explore user-friendly UIs and explain about their common features as experienced by the end users through the quantitative research methods.

The study was conducted among DSpace users and students at the Himalaya College of Engineering using a set of multiple-choice questionnaires.

5.2 Findings and Conclusion:

Both UIs are equally used by different libraries around the world, the list of DSpace repositories were listed in methods section. The lot of libraries, according to the study, has built their own customized UIs on either JSPUI or XMLUI.

The entire methods and techniques were chosen based on the comparative study of the two user interfaces, which included performance efficiency, retrieval effectiveness, easiness, attractive, and organized features of the DSpace user interfaces. When it comes to analyzing data based on these features, both UIs have nearly similar opinions. Both user interfaces have their own distinct

characteristics. But every user has their own criteria for selecting a single interface. In terms of score acquired data, there is not that much of difference between these two UIs. Because the end user feels easy to use the both interface.

The study's major goals were to determine the most user-friendly DSpace interface and compare it to the others, but the results show that both user interfaces are equally user-friendly. Some users have been attracted to JSPUI, while others have been attracted to XMLUI. It's difficult to determine the exact one. So, in their own aspects, both UIs are superior and more user-friendly.

Bibliography

(n.d.). Retrieved from <https://www.everyinteraction.com/definition/user-interface/>

(n.d.). Retrieved from <http://www.businessdictionary.com/definition/user-interface.html>

(n.d.).

Blair-Early, A. . (2008). User Interface Design Principles for Interaction Design. . JSTOR , 85-107.

Burke, S. S. (2015). Retrieved from Adult Readers' Advisory Services through Public Library Websites. Reference & User Services Quarterly, 55(2), 132-143. Retrieved from www.jstor.org/stable/refuserserq.55.2.132

Cherukodan, S. (2014, 10). Measuring the Maturity of Open Source Software for Digital Libraries a Case Study of DSpace. 230p.

Fatima, S. (2013, Dec 12). A study of human factors in interactive software & designing of an efficient user interface tool.

Fatima, S. (2013). A study of human factors in interactive software & designing of an efficient user interface tool. India: Integral University.

K.Sami, L. (2016). Library Websites Of RandD Institutions Of Government Of India An Evaluative Study. india: Gulbarga University.

Kumar, S. (2018). Library websites of tamilnadu universities in the present digital era an analysis. india: Manonmaniam Sundaranar University.

Kumar, V. &. (2014). Retrieved from Qualities of a library website: Evaluating library websites of new IITs. International Journal of Information Dissemination and Technology, 4(4), 283-288.

Lyrasis. (2021). DSpace 7 Press Release. Lyrasis.

Mahmud, A. M. (2010). Retrieved from Quality Rating of Islamic Websites features: A Single-User Evaluation. Department of Information Systems, Kulliyyah of Information and Communication Technology

Orlova, M. (2016). User Experience design(UX) in a websites development. MAMK University of applied science.

Shafi, M. (2021). Design and development of university library websites a study. india: Andhra University.

Shahnaz, F. (2013). A study of human factors in interactive software & designing of an efficient user interface tool. india: Integral University.

Vasantha, R. N. (2011). Content analysis of Indian library websites A study. India: University of Mysore.

Appendix I

Questionnaire

Dear participants,

This is my research study on “Comparison of JSPUI and XMLUI DSpaces interfaces: user’s opinion”. Its purpose to understand your view and knowledge about digital Library Software, DSpace. And it'll help to explore user friendly DSpace interfaces and better DSpace interface used libraries about digital library software, DSpace. It’s an open repository software system, provides full text documents. You are kindly requested to check and compare the following two library websites link and choose answers.

<http://dspace.crp-bangladesh.org:8080/xmlui/>

<http://103.69.125.248:8080/jspui/>

Choose more than one if needed.

1. Do you find the differences while enter the two different (XMLUI/JSPUI) web interfaces?
 - Instructing button names are different.
 - The color used is different.
 - It’s difficult to find differences.
2. Which user interface is easier for you between XMLUI and JSPUI?
 - The search button of JSPUI is easier.
 - The Visibility Collection and Communities of XMLUI is more attractive
 - The Instructing words are easier in JSPUI.
3. In Your opinion, which user interface is easier to access information?
 - Recently added document makes easy to retrieve information in XMLUI.
 - Instructing words are more visible in JSPUI.
 - Better Organized collection and communities in XMLUI.
4. Which user interface is more attractive in features?
 - Various varieties of information organization in XMLUI.
 - Limited but visible varieties of information organization in JSPUI.
 - Both have own different features to attract.

5. Which user interface of DSpace has satisfied in the performance while searching information?
 - XMLUI because Variation of searching option available.
 - JSPUI because clear and limited searching option.
 - XMLUI because latest documents are easily found.

6. Which User interface has better organized collections and Communities?
 - The more specified searching option in front in XMLUI
 - Broadly organized searching options are available in JSPUI
 - Both have their own uniqueness.

7. Which user interface has satisfied browsing facilities?
 - In XMLUI because browse button shows specified searching facility.
 - In JSPUI because browse button is visibly on the top of the page.
 - It takes time to get the browse option.

8. Which user interface is easier for you to sign in?
 - XMLUI has one click only and entered.
 - JSPUI has shown many option and have to select and entered
 - Both are seems similar.

9. In which user interface is more informative according to search result?
 - XMLUI presents recent document directly.
 - JSPUI presents all the documents step by step.
 - Both have the similar procedure and search results too.

10. How are you satisfied with existing features in both user interfaces?
 - Satisfied
 - Neutral
 - Disappointed

Appendix II

Curriculum Vitae

NAME: RUSHMA KARKI

E-mail: Karkirushu@gmail.com

PERSONAL PROFILE

Date of Birth: 31Aug, 1995

Permanent Address: Raina Devi Chhahara7, Palpa

Temporary Address: Kirtipur, Kathmandu

Mother's Name: Kamala Devi Karki

Father's Name: Dinesh Kumar Karki

Academic Qualification

Level	Institution/University	Passed Year	Division
SLC (10 th)	Nepal Board	2010	2nd
+2	HSEB	2012	2nd
B.Ed.	T.U	2016	2nd
M.LI.SC.	T.U	2022	1st