APPLICATION OF INFORMATION TECHNOLOGY IN CATALOGUE AND INDEX: ITS RETRIEVAL ASPECTS

A thesis submitted to the
Central Department of Library and Information Science in Partial fulfillment of the requirement for the Master Degree in Library and Information Science

Submitted by

RAM PRASAD SHARMA

Central Department of Library and Information Science
Faculty of Humanities and Social Sciences
Tribhuvan University
Kirtipur, Kathmandu

November 2008

LETTER OF RECOMMENDATION

This is to certify that Mr. Ram Prasad Sharma has prepared this dissertation entitled "**APPLICATION OF INFORMATION TECHNOLOGY IN CATALOGUE AND INDEX: ITS RETRIEVAL ASPECTS**", under my supervision and guidance. I recommend this dissertation for final approval and acceptance.

Date: November 2008

.....

Mr. Rudra Prasad Dulal

Thesis Supervisor

LETTER OF ACCEPTANCE

The thesis here to attached, entitled "**APPLICATION OF INFORMATION TECHNOLOGY IN CATALOGUE AND INDEX: ITS RETRIEVAL ASPECTS**", Prepared by Mr. Ram Prasad Sharma in partial fulfillment of the requirements foe the MASTER'S DEGREE OF LIBRARY AND INFORMATION SCIENCE is hereby accepted and approved.

……..

Mr. Rudra Prasad Dulal

Thesis Supervisor

……..

Mr. Bhim Dhoj Shrestha

External Examiner

……

Dr. Madhusudan Karki

Head of Department

ACKNOWLEDGEMENT

I would like to express my gratitude and gratefulness to all those who have helped me directly and indirectly to accomplish my research work. First of all, I am very indebted to my supervision Mr**. Rudra Prasad Dulal**. He has always stood by me through the thick and thin. I was always overwhelmed by his encouragement, guidance, support and corrections. I am also indebted to my head of Department Dr**. Madhusudan Karki** and My mentors **Dr. Mohan Raj Pradhan, Mrs. Nirmala Shrestha, Mr. Bhim Dhoj Shrestha** and **Mr. Bishnu Pd. Aryal** for their directions and feedbacks. I would also like to express my gratefulness to the Chief librarian of TUCL, **Mr. Krishna Mani Bhandari** and Deputy Librarians, **Mr. Chiranjibi Neupane and Mrs. Bina Vaidya** for providing the information despite of their busyness. I, in fact, am grateful to all the respondents who has provided information with great interest and careful. For the collection of Data & Information from the respective libraries, I am thankful to the following librarians: **Mr. Jagadish Chandra Aryal**, librarian of Social Science Baha Library. **Mr. Ram Saran Thapa,** Librarian of ICIMODL. **Mr.Prem Raj Adhikari**, Librarian of the KUSOML.I am very much grateful to my dear and dearest friends of my colleague or batch, and especially **Mr. Shubodh Neupane and Mr. Amod Rijal** for their unselfish co-operation. I am also grateful to my department friends, **seniors** and **juniors** to their support and co-operation. I also wish to thanks to the Central Department of Library and Information Science and the Staffs of the Department for their assistance in the preparation of this research work. Last but not the least I am very much thankful and grateful to all those users who co-operated in filling up the questionnaires. Without them this dissertations would be impossible.

Once again I am gratefully indebted to all concerns in making this Dissertation a success.

Date: November 2008 Ram Prasad Sharma

ABSTRACT

The thesis entitled "**Application of Information Technology in Catalogue and Index: its retrieval aspects**" or research study is based upon the Application of IT in cataloguing and indexing for information retrieval aspects. In the field of library computers, telecommunication technologies are playing an important role. They facilitate collection development, storage, organization, processing, analysis, presentation and dissemination of exact information or data provided for the information users. Libraries are in the business of information with their various functions such as storage, retrieval and dissemination of information. So information retrieval is considered as an important issue. The problem towards, which this study is focused to find out the IT applications in cataloguing and indexing in information centers. The objective of this study is to find out the existing conditions of IT application in cataloguing and indexing in information centers or libraries. It aims to find out the user-friendliness in cataloguing while retrieving the information after the use of IT in catalogue and index on the basis of using Thesaurus, Subject heading list and Authority list; to examine the information retrieval facility on the basis of application of IT in cataloguing and indexing.

Application of IT in information centers has great importance for fast, easy and accurate information retrievals for scholars, students, researchers and academics. There are various software which can be used in information centers or libraries. Most of the libraries or information centers are using software such as SOUL, CDS/ISIS, WINISIS, MINISI, KOHA, ALICE, MIDAS, LIB-INFO, etc. In Nepal, information centers or libraries are using CDS/ISIS, LIB-INFO, SOUL, and MIDAS as main software. SOUL is being used in KUSOML where as CDS/ISIS is being used in TUCL, ICIMOD and SSBL for its bibliographic database for information retrieval. The information centers are providing online services as online database: EBSCO Host, JSTOR, DELNET, AGORA, etc for information retrieval in the libraries. Online journal database is mostly used in libraries or information centers. The Application of IT in Nepalese libraries: TUCL, KUSOML, ICIMODL and SSBL have also been described.

Application of IT in Cataloguing and indexing are the gateway for information retrieval. Computerized catalogue and index in information centers make fast and easy access for

information retrieval. Most of the information centers or libraries in Nepal have been using IT application as automated cataloguing and indexing since 15 years ago. Both the AACR-I and AACR-II cataloguing codes are being used in the libraries and information centers. In computerized cataloguing and indexing most information users prefer to use subject heading than author and the title headings for information retrieval. They feel using more than two key words in better way for information retrieval. Information users are more satisfied with the automated indexing than automated cataloguing though they are friendly with the both applications.

Chi-sqaure test have been applied to prove the hypothesis that the libraries are providing effective services with the new technology that can help improve in the librarian's image; that large number of users and library professional are satisfied by using advance IT tools for information retrieval.

The research study focuses both the information users and library professionals who use IT in cataloguing & indexing for information retrieval. It has also try to find user friendly tools of information retrieval. Data and information presented in this study was collected through personal interview with the users and library professional of the libraries in Kathmandu and responses to questionnaires given to the users and library professional of the TUCL, KUSOML, ICIMODL and SSBL Libraries. Two set of questionnaire was prepared, one for the library professional and other for the information users. About 110 questionnaires were distributed, however only 100 questionnaires were returned. Combining the two set of questionnaire it compresses of 35 questions. Among the respondents 84% respondents have been found satisfied with using advance IT tools for information retrieval. That information found from the sample taken from the above population area has tried to know the knowledge friendliness about the application of IT in catalogue & index on the library collection for information retrieval. Online bibliographic database or computerized database is more demanding and useful form of catalogue & index. Finally the research study recommends to qualified or well trained library staff and professional for the better image of library. One should be careful and conscious in applying the new advance IT, so that all the related information retrieves easily with accuracy.

Mr. Ram Prasad Sharma
CDLIS, T.U., Kirtipur

DEDICATION

To

My benevolent

Parents

You mean the world to

Me, always you have stand by

Me. You are my Inspirations and I will endeavors

to……

……

……..

PREFACE

It focuses the using of IT in catalogue & index in the library and information center and how much effective the IT in information retrieval tool is its specificity among the different tools and systems through which we access and retrieve the exact information from the collection of information. New Information Technology has become the most important Information retrieval tools even for every piece of important information rather than other manuals tools from the database in the myriad of information collection. It also saves the time, money and efforts of the Library Professionals and Information users for information retrieval with accuracy and fast.

The research study consists of six chapters the first chapter has described the background of the study, objective, hypothesis, scope and limitation of the study and Application of IT in Catalogue and Index. The second chapter has dealt with the related literature review on IT in Catalogue and index. The third chapter has focused on the field of Application of IT in catalogue and index used in the studied libraries. Research Methodology, research design, Population, sampling procedure, data collection procedure, etc have been included under the chapter fourth. Similarly chapter fifth has represented the data analysis, presentation and interpretation of collected data putting under the heading analysis and presentation of findings. Tables as well as figures have also been included to describe data collected from the users and library professionals in the chapter. The summaries of findings, conclusion and recommendations have been included in the last chapter six.

CATALOGUE OF THESIS

Main card

D
025.3
Sh23a
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
01 xxii, 133 p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.
1. Automate cataloguing 2. Online cataloguing 3.Indexing 4. Information retrieval i. Title
O

Shelf list card

D
025.3
Sh23a
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
01 xxii, 133 p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.
1. Automate cataloguing 2. Online cataloguing 3.Indexing 4. Information retrieval i. Title
O

Subject added card

D
025.3 AUTOMATED CATALOGUING
Sh23a
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
xxii,133p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.

O

Subject added card

D
025.3 ONLINE CATALOGUING
Sh23a
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
xxii,133p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.

O

Subject added card

D
025.3 INDEXING
Sh23a
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
xxii,133p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.

O

Subject added card

D
025.3 INFORMATION RETRIEVAL
Sh23a
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
xxii,133p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.

O

Title added card

D
25.3 Application of IT in catalogue & index: Its retrieval
Sh23a aspects
Sharma, Ram Prasad
Application of IT in catalogue & index: Its retrieval aspects/ Ram Prasad Sharma. – Kirtipur: Central Department of Library and Information Science, 2008.
xxii,133p.:ill.;30cm.
Dissertation: Master degree of Library and Information Science from CDLISc.

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LIST OF ACRONYMS

AACR-II : Anglo American Catalogue Rules II.

CAS: Current awareness services.

CCC: Classified catalogue code.

CCF: Common communication Format.

CDLIS: Central Department of Library and Information science.

CD-ROM: Compact Disk- Read Only Memory.

CD/ISIS: Computerized Documentation System/ Integrated Set of Information System.

FDT: Field Definition Table

FST: Field Select Table.

ICIMODL: International Centre for Integrated Mountain of development Library

IDRC: International Development Research Center.

ISIBC: Indian Statistical institute, Bangalore Centre.

IT: Information Technology.

IR: Information Retrieval

KUSOML: Kathmandu University school of Managements Library.

MARC: Machine Readable Cataloguing

MLISc: Master of Library and Information Science.

OCLC: Online Computer Library center.

OPAC: Online Public Access Catalogue.

SDI: Selective Dissemination of Information.

SSBL: Social Science Baha Library.

TUCL: Tribhuvan University Central library.

TULSSAA: Tribhuvan University of Library and Information Science Student Alumni Association

UNESCO: United Nation Educational, Scientific and Cultural Organization

UNIMARC: Universal Machine Readable Cataloguing

UKMARC: United Kingdom Machine Readable Cataloguing

Chapter I

INTRODUCTION

1.1 Background of the study:

1.1.1 Library and Information society:

Libraries are collections of materials and other sources of recorded information. Libraries and information centers have changed significantly over the course of history; they always remain responsible for acquiring or dissemination access to information and other media that meet educational, recreational and informational needs of their users. They have continued to keep the business information, legal, historical and religious information as records of a civilization

Civilization is to quest for knowledge. The process of evolution in human civilization from the stage of 'Chimpanzee' to modern human of 21st century, their intelligence on information sharing has significantly contributed in communication. For efficient communication the primitive human before and while in Stone Age, did their best to read different types of information in their weapons, location, prey etc.

The primitive human also recorded information by various styles, forms of drawings and shapes of materials. The following generations learnt consequently the practice, style and culture of recording information got importance. The importance of information which the human being experienced as a powerful means of getting things done has continued the drawings, sketches and shapes of material for future generation use. The history of civilization from east to west and from pre-ancient to post-modern era, has given the proof.

Man had been developing method of recording his experiences through the clay -tablets, wax tablets, papyrus sheets, parchment rolls and through modern books, and other audio-visual equipments. There is a popular statement that 'Man with his tremendous capabilities of intellect, wisdom and mind has been mastering his situation since his very inception' (Khanna, 1994, p.viii.)

Various civilizations flourished in the land of Sumerian, Babylonian, Akkad and Assyria at different times covering a time span of about 2000 years. To preserve thoughts and experience for the coming generations Man begun with stone was used for recoding purpose. Samples of Egyptian pictographic writing, known as hieroglyphics, were found in building stones dating back to 3000 or 4000 BC. Stone was replaced by clay. During the Sumerian, Babylonian, Assyrian civilization, clay was used extensively for recording information. Writing on the wet clay was done by a stylus and then it was backed for permanence. This writing has been called cuneiform consequently; these were replaced In Greece, the country of scholars got libraries with perishable materials such as papyrus and parchment. Rome and rulers on the other were fascinated to collect books and other recorded information in shelves.

In 1440 A.D, the innovation of printing press, a form of movable type recording and the renaissance led to the increased demand for paper and consequently there was a steady growth of its. 'The combination of paper and the printing press has probably done more to preserve man's accomplishments than any other single human achievement. Without doubt it is largely responsible for the mountain of recorded information extant today. (Prasher, ©1991, p.43) Monasteries of Western world found documents as an essential thing for the spiritual life. After 11th century when universities were established, the collection of information carriers grew steadily.

Most of the collections were belong to great scholars or great kings, emperor or rulers. Because of the hardship to acquire documents they were considered as most valuable properly to be preserved well. Librarians or information officers of at that time believed to store books and other material was their sole duty. It was not uncommon in 15th and 16th century to have books actually chained to the shelves. The French revolution made great impact on changing libraries or information centers of private ownership into public. It incepted giving chance to live scholarly life even for a layman or a common person that was almost impossible before.

Many historical steps took place for the result of changing of library services. The difficulties of library management grew in the 19th century. At the time libraries had increased in size, but their growth of information had been haphazard, administration had

become weak, standards of service almost non-existent funds for acquisition tended to be inadequate; the post of librarian was often worked on as a part time position; and cataloging and indexing was frequently arrears and lacked proper method.

The word 'library' which in English refers to a collection of books gathered for study, research, reference and recreation is derived from the Latin liber "a book". But the word library in French does not have the same meaning, being used to denoted a bookshop or, by extension, a publisher; the word used in many other countries to signify a collection of Books, is derived from a Latinized Greek word, bibliotheca. (Khanna, 1994). The use of the word library to denote a building, room, set of rooms in which a collection of books and materials in housed and organized is also common.

Ranganathan's definition ascribes two major functions of libraries. First ' the care of a collection of book' and the second function assigned ' the duty of making them accessible to those who require the use of them. (Khanna, 1994)

1.1.2 *Information:*

Today we are living in the age of information .Information is the product of the human brain in action. It may be abstract or concrete when an individual begins to think, a variety of images and sensations flash across his mind. This makes some information to accumulate in his mind and his memory retains some piece of knowledge. A large amount of information is being generated every moment. The ability to collect, store and disseminate this large amount of information needs application of new Technologies Information, which is a dynamic and unending resource that effects all disciplines and all walks of life. Information supports education, research and development. It also improves the quality of life.

“Since World War II, great quantity of information in the form documents has been so immensely produced that librarians found it very difficult to arrange and process it sufficiently to satisfy the need of the users (Students, Academicians, researchers) for their in-depth studies into various fields of knowledge. When well communicated has a great value, it has become necessary to have organized information. In other words,

communication is the soul of information. But the processes of communication of information become very difficult due to following barriers like:

i. Information explosion or information load which could not be handled manually.
ii. Complicated nature of information.
iii. Information scattered in numerous sources like non-book materials.
iv. Geographical or language barriers."(ILM, 2001, p.41**)**

1.1.2.1 *Information Technology:*

Information technology embraces computers, tele-communications and software systems that aid the organization, transmission, storage and utilization of what might better be called the knowledge resources dealt with above.

1.1.2.2 *Information Technology and role of libraries:*

Information technology allows us to access and store more information quickly and in a great extant. It is an energy amplifier e.g., computer aided designs, flexible or word processing. In the Information business, the availability of electronic databases linked with telecommunication networks and gateways marginalize traditional print based repositories of information. Libraries are in the business of information with their various functions as acquisition, processing, storage, retrieval and dissemination of information. Traditionally these are low labor intensive and repetitive manual routines. Nowadays, availability of computers with new developments in telecommunication techniques and equipments is considered as 'New Information Technology'. The New information technology provides a wide range of services of which libraries could avail themselves and offer to supplement existing ones; e.g. storing materials as an information provider for equipment etc.

In Nepal CDS/ISIS is mainly used to create bibliographic database in recent years, with the trend of open source software and web based system, librarians are moving toward web based system. (Pradhan, 2008, p.71) At present time the libraries in Nepal maintain their MARC in the form of database; UNESCO developed CDS/ISIS database to use. The

CDS/ISIS database supports fields and subfields. The bibliographic data elements are in the form of fields and subfields is known as MARC. The standard used in creating data entry from in CDS/ISIS is CCF. In KOHA, data entry from used is MARC21. (Pradhan , 2008, p.71)

So many softwares are used in the libraries and information centers for the automation of the library via cataloguing process, catalogue card generation, authority file maintenance, serial control, online public access catalogue (OPAC), automatic indexing, thesaurus construction, union catalogue, etc depending upon the features of the software.

Large number of the library software has been introduced by the librarians and information scientists all over the world. These softwares are MINISIS, MAITRAYEE, LIBSYS, SOUL, KOHA, ALICE, ATHENA, MIDAS, LIBRA, LIMS, and LIB-INFO etc. MINISIS is the most important library automation software. It is developed by international development research center (IDRC). It can handle major activities of all functions of the library like acquisition, cataloguing, OPAC (Online Public Access Catalogue) etc.

SOUL is the other most preferable library software. It is developed by the INFLIBNET center of UGC India for library automation having retrospective conversion facility. Now SOUL is used in Kathmandu university libraries. These softwares are more effective for the information retrieve for users and to save the time and money for users and professionals. These softwares provide the exact information for the users and get the improved library professional image.

'TUCL is the largest and old university library among other university libraries in Nepal. The library has installed CDS/ISIS software in 1993 for its bibliographic database creation and retrieval with the financial and technical support from IDRC, Canada, under Nepal Automation Project. These databases are available in OPAC system in the library and also available in the website (Vaidya, 2008, p.17).

1.1.3 *Information Technology and Cataloguing and Indexing:*

For information retrieval the new information technology is very useful. The cataloguing and indexing are one of the gateways for information retrieval. From the ancient period different types of catalogues have been in use. King Ashurbanipal of Assyria had a library with catalogue in rolls form kept in the jars. After that there were different forms of catalogue like tables, sheaf and the more recent and popular form is the card system. Now information technology can be of considerable help in aiding and improving recent cataloguing technique.

The basic concepts of cataloguing and indexing are as follow:

i. To enable a person to find a material of which either the author or the title or the subject is known.
ii. To show what the library has by a given author on a given subject or in a given kinds of literature.
iii. To assist in the choice of a material as to its character.

These objectives are still valid and were incorporated into a set of cataloguing principles agreed by an International conference a cataloguing in Paris in 1961.

But information explosion created interest in large variety of inter-disciplinary subjects. The demand of users is now more subject oriented than author and title oriented. For fast information retrieval from the various access points by the computers with the capacity of speed, accuracy, and flexibility constitute the major factors for their use in cataloguing and indexing. The computer is capable of performing the various clerical functions involved in manipulation of records. Thus there is a change in the objectives when cataloguing and indexing are computerized. The main objectives are as follows.

i. To save money or at least to reduce the rate of increase in cost.

ii. To provide better control and improve efficiency.

iii. To achieve higher productivity.

iv. To extend the services offered.

v. To permit increased co-operation with other libraries or information services.

An ideal computer-based cataloguing and indexing system would include the following characteristics.

i. Online access to a database of potentially needed bibliographic records.

ii. A higher percentage of the required records already available in the database so that original cataloguing and indexing is minimized.

iii. A consistently high quality of bibliographic records in the database in conformity with the latest cataloguing, indexing and classification codes.

iv. Online authority control.

v. Ability to do original cataloguing and indexing online when necessary and to assist the process with appropriate prompts.

vi. Ability for the records in the catalogue to be accessed in variety of ways and in an appropriate physical form.

Thus computerized catalogues and indexes are usually much more up to date than the manual catalogues. They offer facilities such as better subject approach with fuller bibliographic descriptions and a greater number of access points to permit sophisticated access and search capabilities. A standardized format for machine readable data has provided an opportunity for vastly increased co-operation possibilities. The effective use of new information technology in cataloguing and indexing can help to improve the library professionals images.

MARC: A structured format which enables standard bibliographic records in book and other catalogue formats to be manipulated by computer in a standard way to facilitate the exchange of records between libraries.

MARC format originated in the deliberations of the library of congress on the possibility of using automation techniques for its catalogue provision in early 1960's. The

UNIMARC format is an attempt together national variations into one universal exchange format. In recent years, with the development of appropriate software, it has become relatively easy to convert from one MARC format to another.

A UK MARC record is made up to two sections. The first consists of the record label, which includes processing instructions and information such as the total length of the record, the format. The second section comprises content designations, which hold the bibliographic data of the item concerned. The content designators structure the data into particular fields and subfields. The fields are identified by a three digit tag representing the elements of the bibliographic record and the access points:

001 – 009 control fields

010 – 099 coded and numeric data

100 – 244 main entry access points

245 – 299 titles and title paragraph

300 – 399 physical description

400 – 499 series statements

500 – 599 notes

600 – 699 subject access points

700 – 799 added entry access points

800 – 899 series access points

900 – 948 references

949 – 999 reserved for local implementation

Use of MARC format is most large centralized database use MARC format, which means that it is the predominant, widespread standard for catalogue and indexes records. It was,

however, developed solely for catalogues that, although computerized, were not accessible online. (Feather & Sturges, 2000, p.284)

OCLC is a major source of catalogue data for libraries throughout the world. It began as Ohio college library centre founded in 1967, but in recognition of its much expended membership outside Ohio, has since 1981 been known as online computer library centre.(Feather & Sturges, 2000, p.323)

OPAC: A database of bibliographic records describing the holding usually of one particular library. It allows searching by Name, Title, and Subject and offers online access through public terminals.

Online catalogues were developed in the late 1970s and since then have become widely accepted as the contemporary form of catalogue in the developed world. Since their advent vast number of bibliographic records has been converted into computer format, using the MARC, although public use of catalogues was often still in printed form by cards or in microform. (Feather & Sturges, 2000, p.330) The tremendous increase in the amount of information that is available through electronic media has resulted in a growing interest in the development of ways to automate the process of extracting the information that is relevant to a particular task. Much of that information is in the form of electronic documents, such as articles and reports. Because it is impossible for any person to read and understand the huge amount of electronic text data that are available, a number of efforts have addressed various aspects of the problem, particularly information extraction, information filtering and information on retrieval. In developed in the work done on knowledge discovery in database have also been applied to the problem of extracting information from textual data.

A component of the information retrieval and extraction on problem is the determination of appropriate indexes or keywords for the texts to make the automation of the task easier. An automated cataloguing and indexing process is useful not only as a component of an information retrieval system, but also as a tool for classifying information for easier reference by human readers. It is the automated determination of the index for

documents or information in machine readable, natural language form that is the focus of the article. (Kent, 2000)

Automatic indexing is the process of analyzing is the process of analyzing an item to extract the information to be permanently kept in an index this process is associated with an item. (Kowalski & Maybury, 2000, p.105)

Concept indexing uses words within an item to correlate to concepts discussed in the item. This is a generalization of the specific words to values used to index the item. When generating the concept classes automatically, there may not be a name applicable to the concept but just a statistical signification. Finally, a special class of indexing can be defined by creation of hypertext linkages. These linkages provide virtual threads of concepts between items versus directly defining the concept within an item.

The CDS/ISIS package comes with a common communication format (CCF) in the form of CDS/ISIS databases. CCF is a set of rules intended to improve the exchange among different system of bibliographic data, and of data on project and persons. It is high time to form a national coordination committee to view the requirement for standards for CDS/ISIS. The first foremost task of the committee should be

i. To define a CCF suitable for Nepalese context.

ii. To prepare inventory of all CDS/ISIS users in Nepal and get their consensus on using CCF.

iii. To train, assist in implementation of the CCF amongst the current users and prospective users.

The databases of a centre could be shared by other centers users easily through disks exchange or communication lines using modem.

1.1.4 *Implementation of computerized cataloguing and indexing with special reference to Nepal:*

In the Nepali context, the awareness of information technology including the use of IT as a hardware and software tool is not yet considered seriously. Because of misunderstanding about the computer as well as negative approach towards this technology users and professional were unwilling to use. There were not enough trained professionals and users to use computerized library systems in the past. But time has changed now with the development of information technology so the new generation is willing to use new IT but there is various difficulties such as paucity of funds, trained manpower. Moreover, the staff concerned has a negative approach with a view to avoid responsibilities of additional work. Many institutions: schools, colleges and universities have purchased the computers but they are not using same for office or library purpose. Therefore, to get acquainted with this new technology the IT should get a proper place in basic education including library education also. In Nepal AACR-2 rules for cataloguing are adopted by different libraries. On international level there is UNIMARC followed by various countries. Accordingly definite efforts are made in developing Nepali MARC. This presumes uniformity in rules adopted for cataloguing to ensure compatibility, which is turn will facilitate union catalogue, online catalogue and networking of libraries and information centers. At the present, on one hand numbers of packages have been developed as per the needs of single institution and on the other hand many institutions are using CDS/ISIS package, which is very useful and developed by UNESCO. Some efforts are made by users of this package to create uniformity which is a step in right direction.

New Technology is adopted, staff working in the library is to be trained and well acquainted with the change. This could be done by conducting relevant courses. The users will also require orientation regarding use of latest IT. They will also have to be informed of the information available and the ease with which they can get it.

In the Nepali context, due to paucity of funds, resource sharing and inter-library loan facility becomes an absolute necessity. The foregoing points stressing on common format, uniformity, compatibility should make possible the working of Union Catalogue

and online access to it. This will open new doors to inter-library loans and availability of materials. The new IT now available will remove the barriers of distance and drudgery, time etc., of repeated manual effort in making different catalogue& index entries. There will be no limit to the variety of ways in which the same information can be retrieved with speed and accuracy. Due to the power and capacity of the new technology any and every reader will get the information she/he seeks. To make this possible, we should have to change and keep up with new the technology and use it to give an access to latest information.

1.2 *Statement of the problem*

Information is available in huge quantity and it go on increasing. Information is vital and it can never be termed to be obsolete. Library and information centers are the storehouse of information. Where every effort is being considered in order to provide easy and fast information to the information users with the passage of time information technology is playing a significant role in disseminating and retrieval of information. In order to upgrade the library and information center use of IT has become necessary. However it is essential to be aware whether the IT being used is user friendly or not. The research study aimed to deal with following problems of Application of IT in catalogue and index: its retrieval aspect in Nepalese libraries or information centers.

i. Examination of information retrieval facility on the basis of application of Information technology in catalogue and index.

ii. The application of IT user friendly while retrieving the information.

iii. Finding out the various types of library software used in the information centers.

iv. Finding out the barriers of computerization of cataloguing and indexing and suggesting remedy for speedy and accurate search of information.

1.3 *Objectives of the Study*

i. To find out the existing condition of users of cataloging and indexing in Information centre.

ii. To find out the user-friendliness in cataloguing while retrieving the information after the use of IT in catalogue and index on the basis of using Thesaurus, Subject heading list and Authority list.
iii. To examine the information retrieval facility on the basis of application of Information Technology in cataloguing and indexing.
iv. To suggest the concerned authority and person regarding the best use of IT in the Libraries for speedy and accurate search of information.

1.4 *Hypothesis of the study*

i. Libraries are providing effective services with the new technology that can help to improve the librarians' images.
ii. Large number of users and library professional are satisfied by using advance IT tools for information retrieval.

1.5 *Scope and Limitation of the Study*

Due to time, space and other economical factors this study is limited to explore the use of New Information Technology in cataloguing and indexing of Kathmandu Valley Libraries only and they are as following:

i. Tribhuvan University Central Library(TUCL)
ii. Kathmandu University School of Management Library(KUSOML)
iii. Social Science Baha Library(SSBL)
iv. ICIMOD Library

This study focuses on the information retrieval through the New Technology in cataloguing and indexing. It also focuses the users searching the exact information retrieve through IT in cataloguing and indexing.

New Technology now available will remove the barriers of distance and drudgery time etc., of repeated manual effort in making different catalogue entries. There will be no limit to the variety of way in which the same information can be retrieved with speed. Due to the power and capacity of the new technology any and every reader will get the

information he seeks. To make this possible, we will have to change and keep up with this technology and use it to give access to latest information.

1.6 *Significance of the study:*

There have been a few studies on the topic Application of IT in cataloguing and indexing as a whole in the context of Nepal. This research helps to provide answer to the question how we can retrieve the information fast, exact and easily by providing the New Information Technology in cataloguing & indexing of library documents and also the methods of technique of IT.

1.7 *Definition of the Terms / Glossary:*

AACR 2: AACR 2 stands for the Anglo –American Cataloguing Rules, Second Edition. It is published jointly by the American Library Association, the Canadian Library Association, etc. AACR 2 is designed for use in the construction of catalogues and other lists in general libraries of all sizes. The rules cover the description of, and the provision of access points for, all library materials commonly collected at the present time.

ALICE: It is a name of the library software used for whole library automation. In Nepal, British council applies it and the software works under world wide networks environment.

ATHENA: It is another of library software used for the library automation. It is developed by the Saga brush, USA. It can handle bibliographic data storing and retrieval, circulation, enquiry and networking. (Pradhan, 2004, p.105)

Bibliographic database: It refers to data entered systematically in a defined structure. In a given framework of software, bibliographic elements of bibliographic items, defined by ISBD like title and statement of responsibility, edition, material designation, place and publisher, pagination, series, note etc. ISBN/ISSN are fed in computer. The programming of such software make possible to retrieve and disseminate the information systematically when required.

Boolean search: A local search system that facilitates to coordinate terms at the time of searching is known to be Boolean logic. Boolean search is widely used in online system.

According to Boolean search 'or' is use to broaden the search and 'not' and 'and' is use to sharpen the search. Boolean search come after prominent mathematician George Boole. It is called as a Boolean logic.

Catalogue: A library catalogue is a register of all bibliographic items found in a particular library or group of libraries, such as those belonging to a University system spread out over the several geographic locations.

Common Communication Format (CCF): CCF is a set of rules intended to improve the exchange among different systems of bibliographic data, and of data on project and person. It is the CDS/ISIS database package.

Computer Catalogue: A catalogue prepared in computer is called computer catalogue. It has no definite size as a card catalogue but computer hardware and software is must. Bibliographic data are fed in computer then the terminal display all the fed information as and when users search for it.

Computerized Documentation System/Integrated Set of Information System (CDS/ISIS): CDS/ISIS is for generalized information storage and retrieval system developed, maintained and disseminated by UNESCO. It is mainly being used for cataloguing job of library.

Dissemination: To provide information

Documents: It includes variety of forms where information is found.

Information: Information is a piece of items. It is the product of the human brain in action. It may be abstract or concrete when an individual begin to think, a variety of image and sensation flash across his mind.

Library: Library is a center of information and knowledge that works for acquiring or providing access to books, periodicals, and other multimedia that meet educational recreational and informational needs of their users.

Library automation: By using computer hardware and software the library jobs can be done automatically. Such advanced technological application in library services is known as library automation.

Library software: Software is a program that is prepared by computer engineers using some programming language. The programming makes repetitive jobs done automatically. Library software is prepared mainly targeting on the house keeping jobs of library like acquisition, circulation, cataloguing etc.

Machine Readable Cataloguing (MARC): A record capable of being read by a machine normally is a catalogue prepared in machine like computer and has its standardized rules to like AACR-2. Rules governing the creation of catalogue MARC records includes not only formal cataloguing rules like AACR-2 but also specific to MARC, available from the Library of Congress and OCLC.

Offline computer bibliography data: It relates batch mode operating without direct and continuous communications with the main computer system.

Online Computer Library Center (OCLC): OCLC Online Computer Library Center was founded in 1967 and originally named the Ohio College Library Center. Researchers, students, faculty, scholars, professional librarians and other information seekers use OCLC services to obtain bibliographic, abstract and full-text information when and where they need it.

Online Public Access Catalogue: An Online Public Access Catalogue is a computerized online catalogue of the materials held in a library. The library staff and the public can usually access it at several computer terminals within the library, or from home via the Internet. Since the mid- 1980s, it has replaced the card catalogue in most libraries.

Technology: Technology to cater to the increasingly sophisticated needs of information seekers.

WINISIS: It is the window version of CDS/ISIS, propounded by UNESCO.

1.8 *Organization of the study:*

Sequence of the topic and sub topics of the study have been organized in suitable manner so that the study will be easy to understand.

This study consists of six chapters.

The first chapter contains Introductory chapter containing general Background of the study, Statement of the problems, Objectives of the study, Hypothesis of the study, Scope and limitation of the study, Significance of the study, Definition of the terms/glossary, Organization of the study. The second chapter is related to review some of the literature related to this study. The third chapter denotes focus of the study. Methodology used in this study that is research design, data gathering procedure, the variables and measures, the statistical procedures, data analysis procedure is in the chapter four. The fifth chapter presents analysis and presentation of data. The sixth chapter represents the summary, findings and recommendation of this study. And last supplementary section appendix / annexure and references / bibliography are provided.

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Chapter II

REVIEW OF LITERATURE

Information retrieval is considered as an important issue for librarians, students, scholars. However, only few numbers of studies have been found carried out on the specific topic of information retrieval through the cataloguing and indexing in relation to the ones carried out on other topics in the field of library and information centers. More specifically, in context of Nepal, no studies have been carried out on information retrieval through the cataloguing and indexing use of IT. However, it doesn't mean that no study has been carried out on the topic because there are several scholars, author or researchers at the international level who have said one thing or the other in relation to the information retrieval of library collection on or materials. The researcher has not encountered with any research carried out exclusively on the Application of IT in cataloguing and indexing. The reviewed literature indeed display the gradual changes in the form of catalogue and index as the principle of cataloguing and indexing guide for and as per the growing needs of users and information technology as well. In one way or the other review of related literature can be specified as follows:

Kent, (1979) has stated "the present and future hold great role for the development of catalogue and indexes into a more useful, more functional, and more comprehensive tool for the information retrieval aspect through the formulation of attainable goals, continued experimentation, research and cooperative effort. So far there is no indication that the need for catalogue & index will ever diminish or be replaced."

Kowalski & Maybury, (2000) has mentioned "the growth of information is inevitable. From this it means that a information retrieval system will keep growing. Information retrieval system originated with the need to organize information in central repositories. Cataloguing and Indexing were created to facilitate the identification and retrieval of items of information. Original definitions focused on documents for information retrieval rather than the multi-media integrated information that is now available."

'To provide right information to the right person at the right time with the right way in the form on a right language is its motto'

Malavya, (1999) has carried out "the online information retrieval the searcher uses a computer terminal usually linked by telephone to a remote computer. The computer stores the database of bibliographic records on rotating magnetic disks always available for immediate access. The database can be searched and researched using special computer programs which allow the searcher to carry out a two-way conversation or dialogue with the computer. The database of online public access catalogue consists of a numbers of file."

Dhungana, (2008) has discussed how modern information technology, i.e. digital library can help in managing conventional knowledge management. He urged to use our knowledge, technology, mechanism to move further in conventional content digitization and sharing through digital library system throughout the world.

Krishna Gopal, (2000) has explained "the most important file from the perspective of subject access is the bibliographic file, the authority file, and the inverted file. The retrieval of subject or other information is the result of the interaction among these file. The computer-manipulability bibliographic database is made up of bibliographic records which, in turn, are made up of fields, subfields and characters. The author data for a book, for instance is an author fields. The computer itself can also be used as a catalogue and index."

Hence, it is already declared in 1970 that the most advanced form of catalogues and indexes of for the future will be the computerized catalogues and indexes so aptly depicted by Swanson. This catalogue and index will consider eleven performance goals: user dialogue, aids to browsing, user indexed library, access to in depth information, wheat and chaff identification, national network of libraries, national networks of bibliographic tools, instant information, remote interrogation and dealing active dissemination and quality control over library services IT in information retrieval technique here differs vastly from the manual information retrieval technique. It is because the need of time itself changed with the advances of information technology. Today remote links has been taken easily. In truth it is an essential need for today's global society.

Stoker, (1997) has tribute in his editorial "for the advances in the ability to access computerized catalogue and index from the desktop via the internet. He described further, from my desk at work or from my study at home I am able to consult the catalogue and index of the National Library and my own university, together with a host of other on-line or CD ROM catalogues and indexes throughout UK and indeed the whole world. These computerized catalogue and index are also becoming increasingly sophisticated and provide the traditional limited access points of author, title, and subject, but usually enable me to identify related materials from incomplete titles or inaccurate reference or else to locate associated or contemporary items in ways that have never been possible before. Advance IT at one hand being comfortable in doing job and at other it is threat that can sweep libraries from mainstream."

Dulal, (2008) has given a different fact in his paper that most academics/researchers use digital library environment; specifically, www, e-journal, e-books, full text etc. as an extra resource. He quotes Carol Casey's and Shalini Urs's findings that creation of small focused indexes and metadata respectively can be the best solution for accessing specific type of digital information for maximum use by the end-users, as well as by cataloguers, scientists etc.

Airy,(1999) has advised "the latest trend of library professional is not a huge collection of materials but of 'paperless library' and up to date library instead of being 'document-rich' thrives to be 'access-rich'. For such rich retrieve to information or access to information, computer is an essential tool to be used. Computerized catalogue and index can be fed in libraries. It will be better to automate all libraries activities and services in fact because library automation will get good result in greater accuracy, speedy, processing, networking controls, quality service, and reputation of library."

Maharana et.al,(2004) has stated that information technology has made access to information easier, in the sense that all digital information such as data bases, full text journals etc. can be accessed through computers on the networks both at work and from

home…. Libraries should develop local Area Network content creation through digitization, software/hardware procurement, etc.

Chowdhury, (1999) has defined "an information retrieval system is designed to retrieve the information required by the users' community. Thus an information retrieval system aims at collecting and organizing all the documents or material available in one or more subject areas in order to provide them to the user as soon as required."

Belkin, (1980) has presented "the following situation which clearly reflects the purpose of information retrieval system.

i. A writer presents a set of ideas in documents using a set of concept.
ii. Some where there will be some user who require the ideas but may not be able to identify those.
iii. Information retrieval systems serve to match the writer's ideas expressed in the documents with the users' requirements or demand for those. Thus information retrieval system as a bridge between the world of creators or generators of information and the users of that information."

Thakur, (1999) has mentioned "the information retrieval systems play an important role in any information system. Information retrieval cannot be realized unless the information is grouped or classified. Classification per se is not only helpful in an assigning class numbers for shelf arrangement, but it is also of great importance in subject indexing. A way classification results in the analysis of the thought content of documents."

Yadagiri, (1999) has focused "the topic of application of IT in library services in library. He has also described the first and foremost important task is to create database by selecting suitable software package, keeping in mind the day to day activities of libraries Acquisition, cataloguing, OPAC, administration, indexing and abstracting services, current awareness services and selective dissemination of information. The computer based bibliographic database information system is developed to replace the traditional card catalogues for identification and location of the information available in the library."

Panigrahi, (2000) has mentioned "Information Technology became a major factor on the library science. Automation is an evolutionary process; there have been several developments in IT which may be characterized as revolutionary in terms of their actual or potential efficiency. The library already heavily affected by computerization networking and shrinking budgets, now faces critical choices as the future becomes today".

Ellers, (1999) expressed that "information retrieval system is used to described the predominantly, documentary retrieval systems which have been the subject of most work in information retrieval research Information retrieval is the finding and recall of information from a store, earlier methods included comprehensive classification and cataloguing, and searching database by various mechanical means electronic methods have how generally replaced these system ,and modern retrieval depends on searching full text database and document supply via networks."

Wilson, (1998) has focused that "the situation changes when the information retrieval tools (catalogue and index) goes online, now the two separate files could be merged and the single catalogue could tell you ,if not precisely where in space the book was at least what its current status is . Then only the catalogue and index would come closer to being able to do what it was supposed to do. The use of IT devices in the libraries have seen a dramatic rise, information retrieval and information findings systems are increasingly dependent on electronic devices. IT devices like computer definitely speed up various library routines."

Neavil, (1998) has stated that "information scientists or librarian must rethink over traditional preparation of information retrieval technique. Traditional preparation of catalogue and indexes now is replaced by IT. To exists in this competitive world the library. Information scientists or cataloguer and its information seeker should do to enter in the world of computer technologies, not only in cataloging but even the full text is made possible now. For the first time in human history, it is possible to dissemination written messages to a scattered audience with out reproducing the message in multiple copies and distributing the copies across geographical space."

Nyaichyai, (2006) has found that "the study would pressure over library authorities to launch such program time and again. Computer bibliographic database, today, seems more demanding and useful form of cataloguing. The reputation and need of card catalogue was once as same as computer catalogue today. The scene and argument may be another tomorrow. It means changes are inevitable. So thing must be a adopted according to their relevancy and effectiveness"

There are numerous softwares that can be used in a library. Before adopting any software specialist and information scientists must evaluate on its actual usefulness. One of the software distributions soft-link Asia declared 'our mission is to make information retrieval or accessible to specialists, as well as common people or layman of society, through effective employment of information technology in libraries or information centers the epicenter of knowledge and information storage and dissemination center. Most of the libraries or information centers in Nepal are using the different library software such as MINISIS, MAITRAYEE, LIBSYS, SOUL, KOHA, ALICE, ATHEND, MIDAS, LIBRA, LIMS and INFO_LIB etc. MINISIS is the most important library automation software. It is developed by international development research center/ it can handle all the major activities of the libraries and information centers like acquisition, cataloguing, OPAC etc.

Vaidya, (2008) 'SOUL is most preferable library software. It is developed by the INFLIBNET center of UGC India for library automation having retrospective conversions facility. Now soul is used in Kathmandu university libraries.'

Those software more effective for the information retrieve for information seeker those software fulfill the fourth law of library and information science, as stated by 'Ranganathan, it save the time of the professional or the information seekers and money also. Those software through provide the exact information for the information seekers and adds laurels to get the library professional image.

Many libraries in Nepal are using the UNESCO's software CDS/ISIS and WINISIS more popularly for the information retrieval and dissemination. It is because they are distributed in free of cost and are easier to apply for both information seekers and

professionals. Another strong reason behind is that it is taught by many library training institutions and ever prescribed by Tribhuvan University Central Department of library information and science in the course of study of MLISc (*Nyaichyai, 2006).* TUCL is the largest old University library among the other university libraries in Nepal. TUCL has installed CDS/ISIS software in 1993 for its bibliographic database creation and retrieval with the financial and technical support from IDRC, Canada under Nepal automation project. This software reduces manual information retrieval system and save the time, money and efforts of the information users and library professionals. The total difference between the two information retrieval methods conventional card or micro films on the one side and online cataloguing and indexing on the other side is in access and display of information and fast retrieve the exact information through the use of IT in cataloguing and indexing. *(Wilson, 1999)* In the manual catalogue and index decision about access take the form of decision about entries, main entry, added entry etc. But in the use IT environment the notation of the entry is transformed(*Wilson,1999)* Searching keywords or statements or age we might say that will retrieve a record are the use of IT in catalogue and index analogs and equivalents of entries in manual form of catalogue and index. The record for an item of information may be physically stored in just one place, but that one place is not the items one entry, it is not an entry at all but the source of entries. The question is arising of main and added entries become transformed into the question of permissible search request, of the kind of instructions to technological equipment that will make a particular appears.

Technologies, especially computers telecommunication technology have revolution the field of library and information services. They facilitate collection development, storage, organization, processing, analysis, presentation, communication and dissemination of exact information or data are provided for the information user. With the introduction of new technology, libraries are expected to use various types of technology to provide information, more quickly and in greater volume the before IT impact in library services. There are several means of modern technology which brought in many services to libraries so as to speed up their activities, they include:

i. Tele communication Technology

ii. Email

iii. CD ROM technology library to library

- Cataloguing and indexing
- Public access catalogue etc

iv. Online retrieval services.

Online library catalogue provide the ability to search for in bibliographic records including simple, author or title inquiries using a Boolean search. Online library catalogue refers to online access point begin the same as those in a card catalogue. OPAC was based on the source file used to create the bibliography. The source file was compiled from existing bibliography card catalogues. Online library catalogue accessed from over 50 terminals and PCs around the institute. The software has facilities are mounting an alphabetic index on selected fields of each record. We identified a number of approaches to the conversion which can be summarized thus, use an earlier compiled accession list of materials available the manual system, scan all the documents and serials and create entries from source. Maintenance of the access point files comprise.

i. Duplicating catalogue cards
ii. Preparation of authority files subject heading
iii. Sorting, checking and filing of catalogue cards
iv. Automatic generation of added entries
v. Generating the monthly accession list
vi. Developing centralized catalogue system

The format used for entering bibliographical detail is of AACR-II but the main entry is rendered according to CCC format since the software provides any sort of searching the title coming as main entry is omitted, instead of the collaborator has got a prominent role. Correcting and standardizing in under way. Online public access catalogue has more points than card catalogue, namely, author, title, subject classification and call number. And those access point through information retrieve.(*Mouthy ,2001)* Boolean search logic

is used in most access system to specify combinations of terms to be linked to synonymous and related terms in controlled vocabulary and with spelling variants and in natural language searches. Those documents can be combined using a Boolean operator 'AND' 'OR' 'NOT' to retrieve the exact information of the collection. (*Mouthy , 2001)*

Cooper, (1996) explained Application of IT in cataloguing and indexing in retrieval aspects on the online cataloguing and indexing offer users multiple methods of locating records and displaying the result of search. Such system usually has comprehensive help or assistance features, with offer user's guidance in system operation.

An online search means a search of a remotely located database through interactive communication with the help of computer and communication channel. CD ROMs is one of the online search systems. CD ROMs are the high density optical discs, physically similar to the compact audio discs. Database in such need not be update quite frequently. The search of the CD ROMs is carried out locally using search software supplied by the supplier. Each CD ROM can store a huge amount of record. These optical discs store information using a large to burn minute pits in the disc. The library association UK is an example of an early information provider on CD ROM, with the library and information science abstract on CD ROM

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Chapter III

FOCUS OF THE STUDY

3.1 *Application of IT in Cataloguing and Indexing through information retrieval:*

For information retrieval the new information technology is very useful. The cataloguing and indexing are the gateway for information retrieval. From the ancient time different types of catalogues have been in use. King Ashurbanipal of Assyria had a library with catalogue in rolls form kept in the jars. After that there were different forms of catalogue lick tablets, sheaf and the more recent and popular form is the card system *(ILM, 2001)*

The fifth law, of information science 'Universe of information is ever growing' is seen applicable in many issues of library and its information retrieve. Similarly the collection of the information of the library should also be increased time by time to be a good library & information center. Due to the increasing nature of collection of the documents in the library, it is difficult to retrieve and dissemination the library materials and needed different ways, ideas and technique of retrieval and dissemination of library materials with increase in collection of information first of all the problem of information retrieval is most of the libraries. And due to lack of the time, money and space of the documents retrieve and dissemination for the users and library professional face different problems such as time, money and efforts and others which are the direct case of the manual information retrieval technique.

Therefore, now information technology can be of considerable help in aiding and improving recent cataloguing and indexing technique.

Information retrieval environment has changed significantly over the past few years due to the convergence of IT in catalogue and index. The emergence of low cost electronic networks has helped the users to retrieve or to communicate daily with other around the world fast and inexpensively. Online catalogues has a potential in interactive information retrieval tool for the library users. It is considered the library catalogue and index is first and foremost as a searching aid for information users in the wider context of the total library service. Networking has opened every library's online catalogue and index to

users anywhere and anytime, it is also important to pay careful attention in cataloguing and indexing so that the local database reflects generally, accepted rules and procedures with its consistency with other catalogues or index found through networking. The emergence of IT and the need to contain costs with accuracy have changed library's technical processing, leading to new information technologies that have made users important for quick access to library materials.

'There is a rapid change in computer technology, of information retrieval and dissemination on the libraries. The fourth generation computers will make use of big integrated circuited for the information science. The developments will have immense impact on the information storage and information retrieval and dissemination of information in libraries.' (*Malavya , 1999)*

Application of IT has been steadily increasing in science and technology since the Second World War. Most of the advanced countries of the world have made much advance in this respect but Nepal has just made a little start in major libraries, but especially in industry and business. The library Authorities and librarians have becoming more aware of IT potential and usage It is hoped that their use in libraries will be increased in the years to come in Nepal, through not at a rapid speed, especially because of our socio-economic condition and the prohibitive of their installation and maintenance.

At the present time computerized cataloguing and indexing information is produced almost exclusively by the few central online databases and bought by local libraries, which enter any local records not already in the database as well as deriving records form it.In implementing today's online catalogues librarians have to make complex decisions about catalogue and indexes users behavior and needs. Even apparently simple choices, such as placing a subject search option before an author search option in an menu, can have important implications for the users and librarians accustomed to the traditional methods of information retrieval technique may find it very different to change from that perspective to recognized new needs and opportunities facing information seekers of online catalogues. (*Krishna Gopal , 2000)*

Application of IT in catalogue and indexes through information retrieval and dissemination system developed the online catalogues and indexes potential as an

interactive retrieval tool for the library and information center users. It sis call to consider the library catalogue and indexes first and foremost as a searching aid for information seekers in the wider context of the total library system. Computer technology makes it possible for the details of any information of the documents to be entered into a file at any point and then to be transmitted to a central data file from which other libraries and information on centers can obtain details by means of telecommunication links or networking of the all libraries. The revised Machine-Readable cataloguing project, known since its revision in 1968 as MARC –II, demonstrates the process. Information seekers find no difficulty in consulting such online catalogues and many prefer them to the cumbersome form of cards in drawers.

3.1.1 *On-line Public Access Catalogue (OPAC):*

On-line Public Access Catalogue (OPAC) is a computerized online catalogue of the materials held in a library. OPAC has created enormous changes in our library practices. Furthermore, it has made the library files easily accessible to everyone by breaking the physical boundaries of the library itself. A Database of bibliographic records describes the holdings usually of one particular library. It allows searching by name, title, and subject and offers online access through public terminals. OPAC was based on the source file used to create to bibliography. The source file was compiled from existing bibliography card catalogue. OPAC accessed from over 50 terminals and PCs around the institute.

Online catalogues were developed in the late 1970s and since then have become widely accepted as the contemporary form of catalogue in the developed world. Since the mid 1980s OPAC has replaced the card catalogue and index in the most libraries. Since the mid 1990s, character based OPAC interfaces are being replaced by web based interfaces. OPAC are often part of an integrated library system. OPAC have enhanced usability over traditional card formats because:

i. The online catalogue does not need to be sorted statically; the user can choose author, title, keywords or systematic order dynamically.

ii. Most online catalogue offer a search facility for any word of the title, the goal of the grammatical word order is reached even better.

iii. Many online catalogues allows links between several variants of an author name, so, authors can be found both under the original and the standardized name.

OPAC database have facilitated continuous updating with mended entries, being available to the user as soon as they input and ret retrieval of information. The JANET, joint Academic Network, for example provides access to a number of the online public access catalogues of academic libraries in the UK started from 1984. DELNET is another example of OPAC in Delhi

3.1.2 *Machine-Readable Catalogue (MARC):*

MARC is acronym, used in the fields of library & information science that stands for Machine-Readable Catalogue. The MARC standards consist of the MARC formats, which are standard for the representation and communication of bibliographic and related information in Machine Readable form and related documentation. It define a bibliographic data format that was developed by Henrietta Avram at the united states library of congress led initiative that begin in the 1960s it provides the protocols which computer exchange, use and interpreters bibliographic information. Its data elements make up the foundation of most library catalogues used today.

Hence one of the formats of cataloguing permits inputs and storage for manipulation in a computer. Access may be online or offline. Online system is linked directly with the computer. Which can be used immediately for processing and searching information? Result are displayed on a screen or visual display and may also be output to disc or printed in hardcopy. Offline relates to operation without direct and continuous communication with the remote computer. The content of data elements in MARC records is defined by standards outside the formats such as AACR-II, L.C. Subject headings and MeSH.

The future of the MARC formats is a matter of some debate in the world wide library and information science community. On the one hand the storage formats are quite complex and are based on outdated technology on the other, there is no alternative bibliographic

format with the equivalent degree of granularity. MARC bibliographic records describe the intellectual and physical characteristics of bibliographic resources. MARC records describing a service providing Agency or it means information retrieval and dissemination agency. MARC holdings records providing copy-specific information on library and information resource.

MARC 21 is a result of the combination of the United States and Canadian MARC formats. MARC21 is based on the ANSI standard z39.2, which allows users of different software products to communicate with each other and to exchange data. MARC21 was designed to redefine the original MARC records format for the 21st century and top make it more accessible to the international community. It is the best technique of information retrieval and dissemination of the collection use of the modern information technology in the world.

Evolution of MARC: As mentioned above the technique of information retrieval and dissemination through the use of IT MARC. It was emergence of information exchange nationwide or worldwide and over seas as well. MARC I and MARC II had been tested and widely used then in 1960s. Changes the process followed MARC from MARC I to MARC 21. Various versions have been using in the world like USMARC, UNIMARC, UKMARC, CMARC, INTERMARC, KORMARC, MARCBN and so on.This system is no longer confined to UK and USA where it was initially. Many countries, including Australia, Canada, France, India and Nepal etc., have agreed to work to the same MARC format standard.

Here a MARC Format of Liverpool polytechnic is given for example:

Liverpool Polytechnic

School of Information Science and Technology

MARC FORMAT CATALOGUE SHEET

ISBN 021	021 00 $a 0340058099#
Accession number 029	029 00 $a 17643#
Personal author or responsible body 1000	100 10 $a Sommerfelt $h Alf#
Uniform title 240	
Title 245	245 10 $a Norwegian $b a took of self-instruction in the Norwegian Rksmal $d Alf Sommerfelt #
Edition 250	250 00 $a New ed. $Complany rev.and enlarged by Ingvald Narm#
Publication details 260	260 00 $a London $c Hodder ani Stoughton $c 1967#
Physical description 260	300 00 $a xiv, 281p.$c 18 cm #
Series 400	440 00 $a Teach yourself books#
Library holdings 998	998 00 $a 01: H01 #

MARC is more popular and important of the information retrieve of collection of the library. Now MARC speeds its influence across the whole spectrum of library activity; including selection, ordering, cataloging, information retrieval, production of bibliographic etc. Marc can now be accessed online services.

3.1.3 *CDS/ISIS –CCF:*

UNESCO through the information and information division and its predecessors including the general information programmer has as part of its remit the promotion of library and information services and systems. The UNISIST Reference manual was devised as an international standard format for the exchange of data between abstracting and indexing services on the lines of the MARC formats, which had been developed by national libraries. This was followed by the CCF (Common Communication Format) which is now available for factual data and bibliographic data. At the same time IFLA has developed UNIMARC, an international format which enables exchange between users of different national formats.

CDS/ISIS is designed for information retrieval of textual data. It can be used for library catalogue databases, databases of other kinds of bibliographic reference or for any kind of reference database such as directories. In this software is mostly used in the fields of libraries and information centers. This software is very user friendliness of the information retrieval of the total collection and use of modern technology and techniques.

3.1.4 *Standardization of the library software:*

Evolution of MARC is noticed, the Standardization of bibliographic record is formidable issue. The MARC standards consist of the MARC formats, which are standards for the representation and communication of bibliographic and related information. Hence it is said that standardization is a key element in the British Library cataloguing strategy. Standardization of database format and even equipment is must for achieving universally available online catalogue.

A standardized format for machine readable data has provided an opportunity for the sharing of cataloguing and indexing activities, for the exchange of bibliographic records and for vastly increased co-operation possibilities. The effective use of new technology can help to improve the qualities of libraries professional.

AACR 2 is a major international standard for the catalogue of all types of material collection by general libraries. AACR 2 is designed for use in the construction of catalogues and other list in general libraries of all sizes. AACR 2 has been adopted in full or in part by many other countries around the world.

The rules cover the description of the provision of access points for all library collection of information commonly collected at the present time. A number of continuing issues affecting implementation of AACR have been compounded in recent years by the fast moving pace of Information Technology development and it impacts on publication patterns. In future the known card catalogue will not be the major focal point in gaining access to information. These may not be an AACR III. The next general cataloguing code will be a manual on how to create MARC records for the national On-line network. The time will come, and then the composition, publishing and retrieval of information will be done electronically through on-line system.

3.2 *Application of IT in Catalogue & Indexing in Nepal and its Implementation*:

In the Nepalese context at the level of normal area the awareness of information technology including the use of computers is not considered seriously. There is misunderstanding about the computerized technology and negative approach towards this technology. The new generation is willing to use new information technology but there are various difficulties like paucity of funds. Moreover the staff concerned has a negative approach with a view to avoid responsibilities of additional work. Most of the libraries have purchased the computers but they are not using the same for office or library purpose. Therefore, we get acquainted with this new technology the information technology should get a proper place education including library activities also. In Nepal AACR II rules for cataloguing are adopted by different libraries. On international level

there is UNIMARC followed by various countries. According to definite efforts be made in developing Nepalese MARC. This presumes uniformity in rules adopted for cataloguing to ensure compatibility, which in turn will facilities Union catalogue, online catalogues and network of information centers. At present time, on one hand numbers of packages have been developed as per the needs of single institution and on the other hand many libraries are using CDS/ISIS package, which is very useful and packed by UNESCO. Some efforts are made by users of this package to create uniformity which is a step in right direction.

The provision of cataloguing and indexing in computerized represent the devotion of library to be systematic and responsible towards users and information itself. These kinds of haphazard condition are not every where in but remains in most of the libraries of Nepal. In this circumstance the study is made so that it could a rouse interest on IT in cataloguing indicate need of computerized cataloguing and indexing and assists deciding what cataloguing system is more preferable. Hence the study has made well mechanized and use of IT in catalogue and indexes of some selected libraries of Kathmandu valley.

Four different libraries are taken for case studies; they use different techniques of information retrieval and dissemination in their libraries' collections. Those libraries have used different types of software for the information manage, processing, retrieval and dissemination for the information users and professional. TUCL is the leading library of Nepal; and has used the library software CDS/ISIS. Kathmandu University School of Managements Library is one of the most popular private libraries in the Kathmandu valley. This library provides well known and advance library services for the information users. Social Science Baha library is one of the special libraries for the social science. This library provides the good services for the special information users for the special subject. ICIMOD library is another special library in the fields of mountains and its research within Nepal.

3.3 *Development in form of computerized catalogues & indexes in Nepal*:

Today, change with the extremely rapid developments that have taken place in the last decades of 20th century, a vast number of libraries all over the world are applying the computer to cataloguing or other libraries process. Centralized computerized services are available and the network has become the norm but not exactly in the context of Nepal.

Except of foreign libraries, 90 % of the Nepalese libraries have been using UNESCO's free library software WINISIS or CDS/ISIS. It is useful mostly for bibliographic details and not for all other house keeping services. TUCL and KUSOML have been using CDS/ISIS and SOUL and they have kept bibliographical database in their website for online public access.

Most of the libraries manages software are being used in Nepal such as SOUL in Kathmandu University. Web based cataloguing and indexing in TUCL, KUSOML and Social Science Baha library used for information retrieval aspect.LIBRA is used some college libraries and also used parliamentary library and Supreme Court library. *(Pangeni, 2008)*

Despite widespread use of IT and the fact that a number of libraries provide online access, a great change many catalogues and indexes in traditional format such as card catalogue is being replaced by computerized cataloguing and indexing. At the present time, therefore the best of computerized cataloguing and indexing form would need to process as many as possible of the following attributes:

i. It prompt dissemination of information
ii. Filtering of information
iii. It must be easy to use
iv. It must be easy to keep up to date
v. The right amount of information at the right time
vi. Its retrieve information is the desired form
vii. Its access to other information system
viii. Personal help *(Chaudhury,1999)*

For promptly and effective retrieval of information, computer and automation is essential. The libraries given above have their databases for bibliographical records of the documents they have and for effective services to users.

3.3.1 *Application of IT in Cataloguing and indexing of TUCL*

Tribhuvan University Central Library (TUCL) established along with the University in 1959. It is the largest library in Nepal, has total collection of more then 3, 25,000 volumes of documents. It serves various types of users. Most of the documents are catalogued and indexed in AACR format. In the library electronic databases is put in online for local users as a computerized bibliographic database which is can be retrieved with 5 different terminals while searching the bibliographic information. 'TUCL has started its electronic database from 1993. CDS/ISIS and WINISIS software are used for electronic database, under Nepal Automation Project Through initiation of IDRC, Canada. The library has also providing Internet and email services to the users.

Information Technology use cataloguing &andindexing which are the most important information retrieval tools to browse the exact information from the collection of the documents

3.3.1.1 *Objectives of TUCL*:

i. To fulfill the teaching and research needs of the University.

ii. To provide materials both in conventional and e-formats and furnish an environment conductive to study & research.

iii. To encourage membership and promote information literacy, readership and life long learning.

iv. To promote resource sharing, networking and exchange of databases.

v. To help develop libraries and promote standards, guidelines and best practices.

vi. To promote professional expertise in information management and conduct trainings in librarianship

3.3.1.2 *Functions of TUCL*

i. Development and Organization of Collection

ii. Creation and maintenance of computerized bibliographic databases

iii. Provision of modern library and information services

iv. Development of linkages / networking for resource sharing

v. Participation in various, seminars, workshops

vi. Library Orientation

vii. Books Display

viii. Group Discussion, etc.

3.3.2.3 *Resources of TUCL:*

The TUCL has been able to develop a good collection covering all disciplines of the University faculties through purchase, gift, denotation, exchange and permanent loan. It has both: Conventional and Electronic resources. The conventional resource consists 3, 25,000 of volumes of books, documents, journals, etc. TUCL receive books and periodicals through purchase and gift. Beside printed materials, the library has also acquired non-books materials like audio books and videocassettes, CD database, etc. and all these have been arrange in the A/V section. The collection of general section is kept for issue. Special collections are provided for internal use only. The readers are not allowed to borrow the documents from the special collection section. The special collections are as follows:

i. Nepal Collection.

ii. Nepali Research Journal Collection

iii. Manuscript Collection

iv. Textbook Collection

v. Dissertation & Thesis Collection

vi. American studies collection

vii. Japanese Studies collection

viii. References collection

ix. ISBN collection, etc.

Regarding electronic resources, it has online access to a vast treasure of scholarly journal, literature, etc in various disciplines through international online database: like JSTOR & AGORA, Blackwell Synergy, EBSCO, EMERALD and Oxford University Press through PERI.. Further, the library is connected to DELNET, Delhi that provides access to

bibliographic records and inter-library loan service to its users. NEPJOL is also available in the library

3.3.1.4 *Services and Products of TUCL:*

The TUCL attempts to satisfy its users mostly by providing pinpointed information search service in any discipline at least at a time. It renders a wide range of services such as user's education / guides; information search; downloading; printing and CD burning of required articles; references, CAS, CCS, SDI, inter-library loan, Computerized Retrieval Service, Internet Service, E-Mail Service, User Education service and Press Clipping services.

3.3.1.5 *Standards and Tools of TUCL:*

The TUCL has been using following standards and tools:

i. DDC 16th -DDC 22nd for classification
ii. AACR I - II for cataloguing
iii. Macro thesaurus for information processing.
iv. Library of Congress Subject Heading 23rd ed. For subject indexing.
v. Local Authority List of Subject Descriptors compiled by selecting necessary Keywords from the very books / documents included in the database for in-depth subject indexing.
vi. Reference Manual for Data Entry specially prepared for creating computerized bibliographic database
vii. TUCL bibliographic Data input sheets for data entry
viii. CDS/ISIS Software for database designing, organization and management.

3.3.1.6 *Database of TUCL:*

Since 1995 the library has maintained TUCL Master Database of the document processed by the library to allow searching for their material at computer terminals in different location. A database of 43,000 documents can be accessed from the library' home pager www.tucl.org.np as well as internal networks.

i. ISBN database.
ii. Article database
iii. Tribhuvan University Archive database
iv. Audio Visual Materials database

Information Technology Unit: Since July 2002 this unit has been providing the following services:

i. Search service from the TUCL database
ii. E-mail and Internet services @100/- for 10 hrs
iii. Full text database
iv. Website database
v. Services from the CD-ROM
vi. Services for blind user audio-cassettes
vii. Online access to some databases etc.
viii. Other PERI and NEPJOL

3.3.2 *Application of IT in Cataloguing and indexing of Social Science Baha Library* (SSBL):

Social Science Baha library established 2002 & formally opened to the public in Oct 31st 2003 is one of the milestones in the history of the library and information services in Nepal. It is a reference library with a closed access system. The library having so melodious and a unique name, which was situated at historical city Patan Dhoka has recently shifted at the Ramchandra Marg Battisputali, Kathmandu. This is the special library of social science. These types of library are rarely found in Nepal. Hence it is really important for all social science students, professor and researchers too. The Social Science Baha's major priority for now is the development of a well stocked and efficiently managed social science library.

3.3.2.1 *Objectives of SSBL:*

i. To ensure efficient library and information services vital for the quality research & development activities that contribute to the development of the Nepalese society as a whole by capturing and organizing relevant information / knowledge resource in conventional and electronic formats not easily available elsewhere in Nepal.

ii. To cater information needs of students, teachers, and researchers, scholars and other professionals engaged in study, teaching and research activities in the fields of Social Science

3.3.2.2 *Functions of SSBL:*

SSBL carries out various functions:

i. Development and Organization of Collection
ii. Creation and maintenance of computerized bibliographic databases
iii. Provision of modern library and information services
iv. Development of linkages / networking for resource sharing
v. Participation in various, seminars, workshops, etc.

3.3.2.3 *Resources of SSBL:*

The SSBL has been able to develop a good collection covering almost all disciplines of Social Sciences through purchase, gift and permanent loan. It has both: Conventional and Electronic resources. The conventional resource consists of 23099 volumes of books, documents, journals, etc. Among them some are very rare and classic not easily available in other Nepalese libraries. Most of them are in English but some are in Nepali, Newari, Hindi, Sanskrit, etc. There are three bibliographic databases for accessing the available resources: i. Books, documents, reports, etc, ii. Journals iii. Journal articles. Regarding electronic resources, it has online access to a vast treasure of scholarly journal literature in various disciplines through international online database: like JSTOR & AGORA, Blackwell Synergy, EBSCO, EMERALD and Oxford University Press through PERI. Further, the library is connected to DELNET, Delhi that provides access to bibliographic records and inter-library loan service to its users.

3.3.2.4 *Services and Products of SSBL:*

The SSBL attempts to satisfy its users most by providing pinpointed information search service in any discipline at least time. It renders a wide range of services such as user's education / guides; information search; downloading; printing and CD burning of required articles; reference, CAS, CCS, SDI, inter-library loan from DELNET, etc. services.

3.3.2.5 *Standards and Tools of SSBL:*

The SSBL has been using following standards and tools:

i. DDC 21st for classification

ii. AACR II for cataloguing

iii. Macro thesaurus for information processing in the field of economic and Social Development, 5th ed. 1998 and other popular thesauri / subject heading list such as: UNBIS Thesaurus, POPIN Thesaurus, etc.

iv. Library of Congress Subject Heading 23rd ed. 2000 for subject indexing.

v. Local Authority List of Subject Descriptors compiled by selecting necessary Keywords from the very books / documents included in the database for in-depth subject indexing.

vi. Reference Manual for Data Entry specially prepared for creating computerized bibliographic database

vii. SSBL bibliographic Data input sheets for data entry

viii. CDS/ISIS Software 3.08 Version 1997 for database designing, organization and management.

3.3.2.6 *Database of SBBL*

Database with sufficient subject headings and keywords have made easier to retrieve the exact documents through the IT. All together about 17091 records documents put in a database. Those types of documents are following:

i. Book, documents etc. 14757

ii. Journal 513

iii. Journal Article 1354

iv. And George Varughese 467

Email address of SSBL: baha@himalassociation.org

: library_soscbaha@himalassociation.org

3.3.3 *Application of IT in Cataloguing and indexing of KUSOML*:

Kathmandu University School of Management library is one of private university library. The library has huge collection of information which are arranged systematically and are disseminated through the computerized cataloguing and indexing with using the

software, SOUL. Users can find required information at the location given in the computer bibliographic records database. In computerized bibliographic records additional subjects or key words are provided for the information users.

3.3.3.1 *Objectives of KUSOML*:

i. To promote resource sharing, networking and exchange of databases.
ii. To fulfill the teaching and research needs of the University
iii. To help develop libraries and promote standards, guidelines and best practices

3.3.3.2 *Functions of KUSOML:*

i. Development and Organization of Collection
ii. Creation and maintenance of computerized bibliographic databases
iii. Provision of modern library and information services
iv. Development of linkages / networking for resource sharing

3.3.3.3 *Resources of KUSOML:*

The KUSOML has been able to develop a good collection covering almost all disciplines of Kathmandu University through purchase, gift & exchange and permanent loan. The total collections of the documents are records put in the bibliographic database or online databases, 10,000 volumes of books, documents, journals, etc. Regarding electronic resources, it has online access to a vast treasure of scholarly journal literature in various disciplines through international online database: like JSTOR & AGORA, Blackwell Synergy, EBSCO, EMERALD and Oxford University Press through PERI

3.3.3.4 *Services and Products of KUSOML*:

The KUSOML attempts to satisfy its users most by providing pinpointed information search service in any discipline at least time.

i. User's education / guides.
ii. Information search
iii. Downloading
iv. Printing and CD burning of required articles.
v. Reference

vi. Current Content services (CCS); Current Awareness Services (CAS); Selective dissemination of information (SDI);

vii. Local database search services & Inter-library loan, etc.

3.3.3.5 *Standards and Tools of KUSOML:*

The KUSOML has been using following standards and tools:

i. DDC 21st for classification

ii. AACR II for cataloguing

iii. Macro thesaurus.

iv. Subject heading list.

v. Library of Congress Subject Heading 23rd ed. for subject indexing.

vi. Local Authority List

vii. Bibliographic Data input sheets for data entry

viii. SOUL library software is using for database designing, organization and management.

3.3.*4 Application of IT in Cataloguing and indexing of ICIMOD Library:*

ICIMOD established in 1983, is located at Khumaltar, Lalitpur, an independent regional knowledge, learning and enabling centre which is serving the eight regional member countries of Himalayan region. From the very beginning of the establishment it had its own library to assist the researcher, students, professional of same fields' staff and others.

3.3.4.1 *Objective of ICIMODL:*

i. To enable and facilitate the equitable and sustainable well -being of the people of the Hindu Kush- Himalayas by supporting sustainable mountain development through active regional cooperation.

3.3.4.2 *Functions of ICIMODL:*

i. Development and Organization of Collection of ICIMOD.

ii. Creation and maintenance of computerized bibliographic databases

iii. Provision of modern library and information services

iv. Development of linkages / networking for resource sharing

3.3.4.3 *Resources of ICIMODL*

The ICIMODL has been able to develop a good collection covering related material of Mountains development, through purchase, and permanent loan. The conventional resource consists of 20,000 volumes of books, documents, journals, etc. Now ICIMODL Started documents put into digital format. Regarding electronic resources, it has online access to a vast treasure of scholarly journal literature in special field of Mountain development through international online database: like JSTOR, AGORA, Blackwell Synergy, EBSCO, EMERALD and Oxford University Press through PERI

3.3.3.4 *Services and Products of ICIMODL*:

The ICIMODL attempts to satisfy its users most by providing pinpointed information search service in special related documents at least time.

i. Full-text search service
ii. Information search
iii. Downloading
iv. Printing and CD burning of required articles.
v. Current Content services (CCS); Current Awareness Services (CAS); Selective dissemination of information (SDI);
vi. Local database search services & Inter-library loan, etc.

3.3.3.5 *Standards and Tools of ICIMODL:*

The ICIMODL has been using following standards and tools:

i. DDC 21st for classification
ii. AACR II for cataloguing
iii. Macro thesaurus for information processing in the field of Mountain Development
iv. AGROVOC for using Subject heading.

v. Local Authority List
vi. Bibliographic Data input sheets for data entry
vii. CDS/ISIS library software is using for database designing, organization and management.

ICIMOD books -online provides direct access to all ICIMOD technical and scientific publications. It holds Full- text and chapter- wise download options for publications published from 2000 onwards and some selected earlier publications, and table of contents download and pdf request options for earlier publications. There is a link for ordering hard copies. ICIMOD books online can be searched using full-text contents, title, year of publication, keywords, language, author and broad subjects. If you are looking for a specific book, use advanced search options. Combine multiple entries to make the result more precise. The search format is 'AND', only results showing all the selected entries will be shown. Enter as many words as you need to define the topic, only entries including all words anywhere in the book will be displayed. ICIMODL has well organized for the information retrieve and systematically to retrieve of information for the users easily, through the IT in cataloguing & indexing. And used the library software CDS/ISIS, users can find required information at the location given in the computer bibliographic records. In computerized bibliographic records additional subject or keywords or terms are provides for the information users. And it's email address and website is www.icimod.org./library

3.4 *Database with the different library software*:

A general term for numerically encoded information particularly used for information stored in a database. An organization of data files having information or reference materials on a particular subject or subject is in general called database. It is typically structure so that heading or keywords can be referenced easily, which permits efficient and simple accesses to and retrieval of every field of records. A database might contain bibliographic data, or numerical or statistical material etc. It might be assembled for personal or corporate use, but can also be assembled to be marketed commercially. Data is generally structured so that it can be sought and retrieved information automatically.

The use of computer for information retrieval has taken place at two levels, within the library itself in the creation of local databases for in-house use and through publicly available databases. The former, often based on text retrieval software or database management system, has predominated in special libraries, where details records of stocks and their content are required.

Computer users create a database by entering information one into more file. Each file consists of so many records. Each record, piece of information concerning item in a library is online cataloguing and indexing the items are the documents. (*World book encyclopedia ,1997*) Those softwares are SOUL, ALICE, LIB-INFO, LIBRA, MIDAS, LMS and UNESCO software CDS/ISIS are used for database entry. For retrieval purpose, computer terminals are located in the general collection section. When we have completed to prepare a database in those softwares, there will compulsorily and automatically be prepared so many files coherently: Field definition table, Field select table and print format etc.

3.5 *Characteristics of the library software*:

i. Data base
ii. Authority control
iii. Access points
iv. Boolean operator
v. Backup system and card removal etc.

Form the user point of view, the facility to search the various aspects of library determines the quality of software. LIBSYS supports wide range of searches including author, title, subject, keywords etc. The online catalogue will provide readers with access to records for most of the stock held in the ISIBC (Indian Statistical institute, Bangalore Centre) library. Online catalogue is constructed in three levels: a) Data Server; b) User Server; c) PC Client.

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Chapter IV

RESEARCH METHODOLOGY

Research is essentially a systematic inquiry and organized effort to investigate a specific problem that needs a solution. Research has become an important aspect of human activity**.** It is through research that knowledge grows and develops. It also enables man to find solution to his problems and resolve conflicts. It generates new idea, knowledge which can be used for different purpose. It builds a theory, develop policies behaviors, support decision making and solve problems. The term research is also used to describe a collection of information on a specific topic. So, the use of technique for research is known as research methodology. For the study 'Application of IT in cataloguing and indexing' the researcher visited the four libraries in Kathmandu valley. On the basis of collected data from libraries the research is carried out.

4.1 *Research Design:*

A research Design is strategy for the collection of information or data. It comprehends to make a planned sequence of the entire process involved of a fruitful problem. The design may be a specific presentation of the various steps in the research process. So research design is conceptual structure within which the research is conducted. In case of this study, the researcher visited and observed that the libraries used various types of software. These softwares are CDS/ISIS, LIB_INFO, MIDAS, ALICE, SOUL etc., the above mentioned software are user friendly and information of the libraries collections could be easily retrieve using these software.

4.2 *Population:*

The population of study is different libraries that are using application of IT in cataloguing and indexing and its retrieval aspects inside the Kathmandu valley. The libraries are TUCL Kirtipur, ICIMODL, KUSOML and SSBL. TUCL (Tribhuvan University Central Library) and KUSOML (Kathmandu University School of Management Library) are University libraries. TUCL is being the oldest and largest academic libraries of Nepal. KUSOML is also an academic library. These two libraries

are reputed for their advanced collection and up to date information services which is avail to the users.

Similarly SSBL (Social Science Baha Library) and ICIMODL (International Center for Integrated Mountain Development Library) are special as well as research oriented libraries. SSBL mostly cater to the needs of Social Scientists and researchers. ICIMODL focus for the development of Mountain ecosystem in Hindu- Kush and the Himalayan. The librarian or library professionals and users of the four mentioned libraries comprise the population of the study.

4.3 *Sampling Procedures:*

For the study, the researcher prepared two set of questionnaire one for the librarians (Library Professionals) and other for the information users. The questionnaire was prepared keeping in mind the information retrieval aspect using information technology in terms of cataloguing and indexing. So it was planned to distribute the questionnaire to the library professional and the information users to finds out more reliable result. So it was decided to take sample more then 25% of the total population.

In order to collect the needed information the researcher resort to simple random technique. Four established libraries in Kathmandu Valley were being approached to collect the information. These libraries are

i. Tribhuvan University Central Library (TUCL)
ii. Kathmandu University School of Management Library(KUSOML)
iii. ICIMOD Library
iv. Social Science Baha library(SSBL)

The researcher personally paid a visit to the respected libraries personally and distributed the questionnaire to the information users and library professional. The sample technique was random.

4.4 *Data collection procedure*

The researcher prepared the questionnaire to collect data relating to the subject topic. Two sets of questionnaires were prepared; one was for the librarians (library

professionals) and other for the users. The questionnaire for the library professionals and users comprise of 19 & 16 questions respectively. Both the questionnaires were structured as closed and open ended questions. The researcher paid a visit to the respective libraries and personally distributed the Questionnaire to the library professionals and users.

Altogether 110 questionnaires were distributed to the respondents. After a stipulated period only 100 questionnaires were submitted to the researcher. Out of the 100 respondents, 75 were from users and 25 were library professionals.

Library wise, in TUCL 60 questionnaire were distributed out of which 55 questionnaires were returned by the respondents within 5 days. In KUSOML 15 questionnaires were distributed within 2 days, 14 questionnaires were returned by the respondents. In ICIMODL 10 questionnaires were distributed 9 were returned within 5 days. In SSBL 25 questionnaires were distributed, 22 were returned within 2 days. The sample of the questionnaire distributed to the information users and library professionals (respondents) are attached in annex no. 22-23.

4.5 *Data Analysis Procedure**:***

The data from the questionnaire was collected, edited, coded, tabulated and classified for analysis. The data from both respondents was analysis manually. The results of the analyzed data were presented in the different form of tabulation and graphical, diagrammatical representation. Finally relating to the findings, conclusions were drawn.

Testing of Hypothesis:

Hypothesis means the assumption or quantities statement of the population parameter which may be true or false. In order to make proper decision about the quantitative statement of the population, testing of hypotheses technique is used. The technique of hypothesis is carried out by using sample information.

Testing of hypothesis is one of the most important aspects of the theory of decision making. It consists of decision rules required for drawing probabilities inference about the population parameters. It often involves deciding at any given point of time whether a

given population parameters is the same as before, as claimed or has changed. A quantitative statement about the population parameter is called hypothesis.

Hypothesis testing means to test some hypothesis about total population from which the sample is drawn. Chi square test is applied in the research works.

*Chi square test***:**

The X^2 is origins of Greek letter $X^{2\ are}$ one of the simplest and most widely used non-parametric tests in statistical works. The test was given by Karl Pearson in 1990. The quantities of Chi square describe the magnitude of the discrepancy between theory and observation. It is defined as,

$X^{2\ obs} = (O_{r\,c} - E_{r\,c})\ 2 \div E\ r_c$

O value indicated to the Observed frequencies and E value indicated to the Expected frequencies. (*Sthapit, 2003)*

The hypothesis was tested on the basis of the principal of test of independence of attributes. The Chi square test is used to see that the principles of classification of attributes are independent. In this test the attributes are classified into a table. Observed frequencies in each cell are known as cell frequency. The total frequency is each row or column of the two way contingency table is known as marginal frequency. This test shows whether there is any associated or relationship between two or more attributes. *(Joshi, 2003)* Null hypothesis were statically tested by applying chi-square test. This test is included in the annex. 1-2

REFERENCE

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Chapter V

ANALYSIS AND PRESENTATION

Data are collected from four different libraries namely: Tribhuvan University Central Library (TUCL), Kathmandu University School of Management Library (KUSOML), ICIMOD Library and Social Science Baha Library (SSBL). Though they were four different libraries situated in Kathmandu valley, both information users and library professionals responded within a time frame. Different types of responses were found on the way of data collection in the form of the questionnaires distributed in different types of libraries' premises. All together 100 respondents out of 110 respondents returned questionnaires with answers. The responses found for the questionnaires are presented in the form of table and than the tabulated data are presented diagrammatically in the form of bar diagram, pie chart. It is hoped that those figure sufficiently and correctly represented those all responses and they are classified into two groups, namely library professional responses (25) and information user responses (75).

The libraries taken for the data collection in the research study and total number of responses collected from the researcher is given the form of the table as well as bar diagram and pie chart given below.

5.1 *Number of Collected responses from different libraries*

Table no. 2

Number of collected responses from different libraries

Name of the library	No. of the collected responses	Percentage
TUCL	55	55%
KUSOML	14	14%
SSBL	22	22%
ICIMOD	9	9%
Total	100	!00%

Source: - Data collection from Questionnaire

The above table no.2 clearly represents the no. of collected responses from different libraries and percentage of the total. Out of the total libraries and information centers, total no. of collected responses is hundred.

Figure 1 Percentage responses collected from different libraries

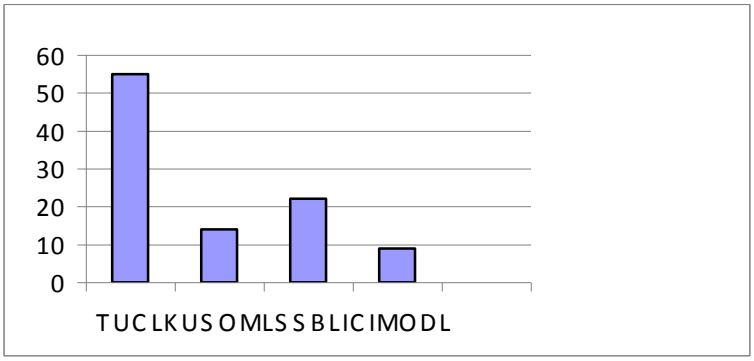
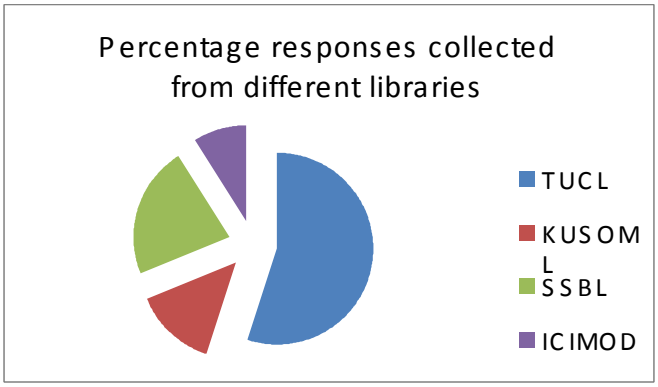


Figure 2



Similarly, the bar diagram and pie chart represents the percentage of the responses collected from each individual library and information centers from total responses collected i.e. 100. Among the total 100 numbers of responses, 55% are taken from TUCL, 14% from KUSOML, 22% taken from SSBL and 9% from ICIMODL.

5.2 *Library Professional (Staff) 25 responses*

Table no. 3 Total numbers of responses of library professionals

No of Libraries	Number of the collected response	Percentage
TUCL	12	48%
KUSOML	5	20%
SSBL	4	16%
ICIMODL	4	16%
Total	25	100%

Source: - Data collection from Questionnaire

The above table no. 3 shows total number of responses from library professionals, 48% responses from TUCL, 20% response from KUSOML, 16% response from SSBL, and 16% response from ICIMODL are collected.

Figure 3

Total responses are 25 collected from library professional of each library.

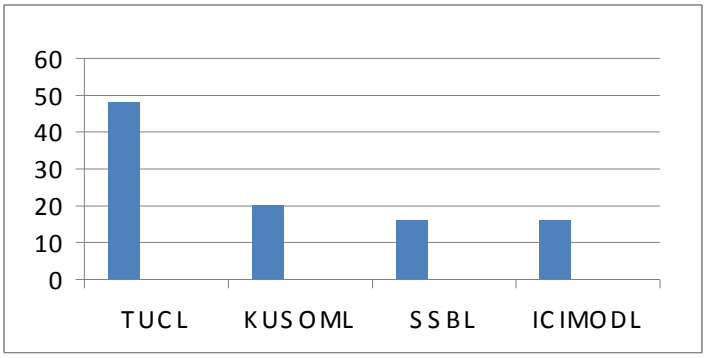
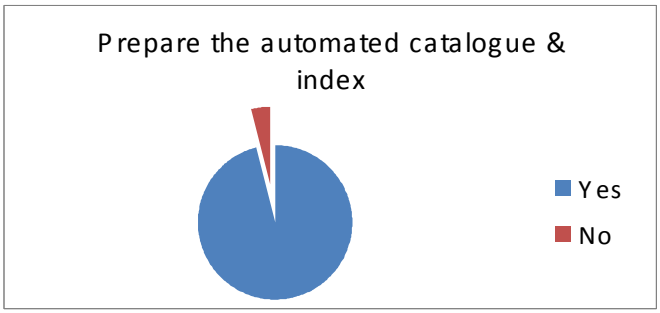


Table no. 4: Prepare the automate catalogue and index

Prepare the automate catalogue & index	No of Response	Percentage
Yes	24	96%
No	1	4%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no.4



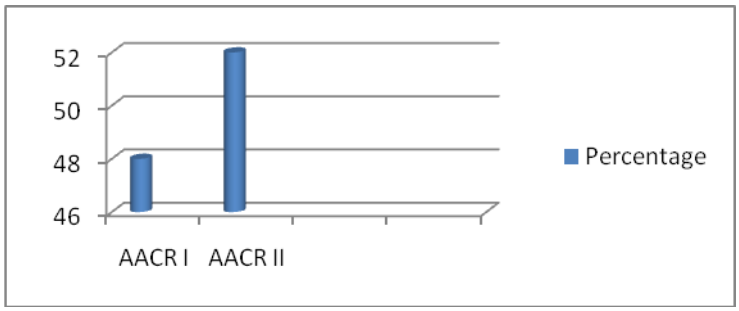
The response found for the question no. 1 is represented above in the form of table and pie chart which shows all the libraries have prepared the automated catalogue and index, because 96% response given is 'Yes' and 4% response given is 'No'.

Table no. 5: catalogue code using in the different library

catalogue code using in the different library	No of response	Percentage
AACR I	12	48%
AACR II	13	52%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 5: catalogue code using in the different library



The above table no. 5 as well as the figure no. 5 represents catalogue code using in the different libraries, 52% response given is for AACR II catalogue code and 48% response given for AACR I catalogue code. Therefore, most of the libraries are using the AACR II catalogue code.

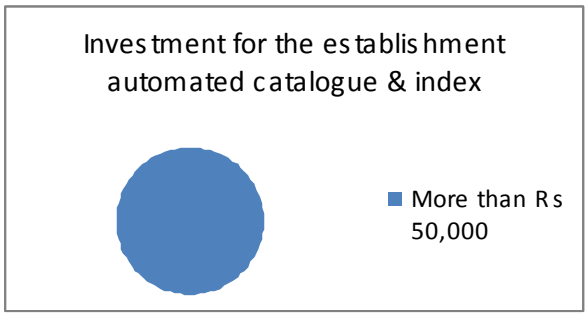
Table no. 6: Investment for the establishment automated catalogue and index

Investment for the establishment automated catalogue & index	No. of response	Percentage
Up to Rs. 10,000	0	0
More than Rs 20,000	0	0
More than Rs 30,000	0	0
More than Rs 50,000	25	100%
Total	25	100%

Source: - data collection from questionnaire

Similarly the above table no. 6 represents the response found for the question no. 2: The Investment for the establishment automated catalogue and index. 100% response for the investment for the establishment automated catalogue and index has cost of more than Rs 5,000.00

Figure no. 6



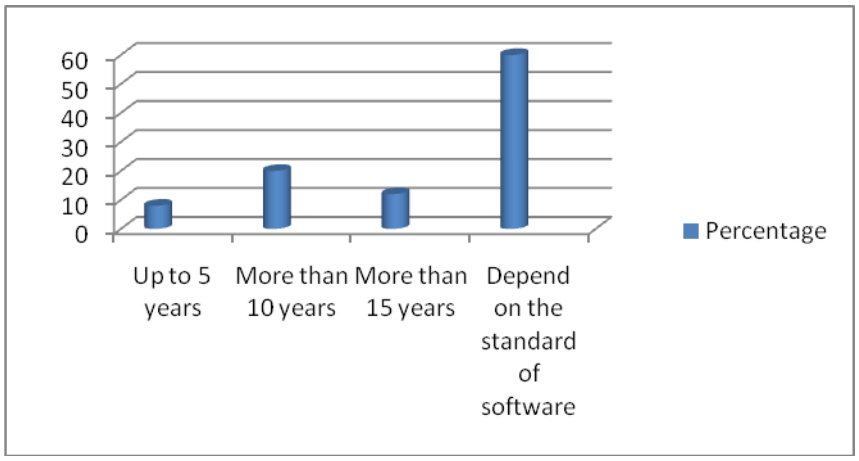
Similarly, this pie chart shows above table no. 6 presentation.

Table no. 7: Automated catalogue and index exists

Automated catalogue and index exists	No. of response	Percentage
Up to 5 years	2	8%
More than 10 years	5	20%
More than 15 years	3	12%
Depend on the standard of software	15	60%
Total	25	100%

Source:- Data collection from Questionnaire

Figure no 7: Automated catalogue and index exists



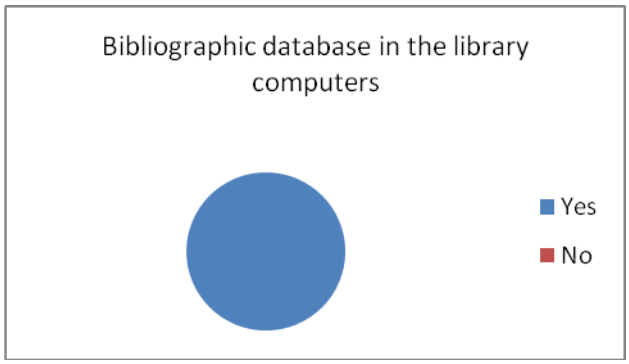
The above table no. 7 as well as figure no. 7 clearly shows the existence of the automated catalogue and index in different libraries. Out of total, 60% response given is for depend on the standard of software in the library, 20% response given is more than 10 years , 12% response for more than 15 years, and 8% responses is for up to 5 years.

Table no. 8: Bibliographic database in the library computers

Bibliographic database in the library computers	No. of response	Percentage
Yes	25	100%
No	0	0
Total	25	100%

Source: - Data collection from questionnaire

Figure no 8



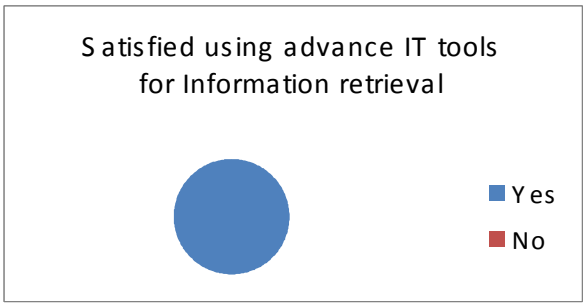
The above table no. 8 as well as figure no. 8 shows that the number of different libraries have bibliographic database in the library computers. The response found for question no. 4 is presented above in the form of table and figure which represent all the libraries have bibliographic database in the library computer, because 100% response given is 'Yes'.

Table no. 9: Satisfied users using advance IT tools for Information retrieval

Satisfied using advance IT tools for Information retrieval	No. of response	Percentage
Yes	25	100%
No	0	0
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 9



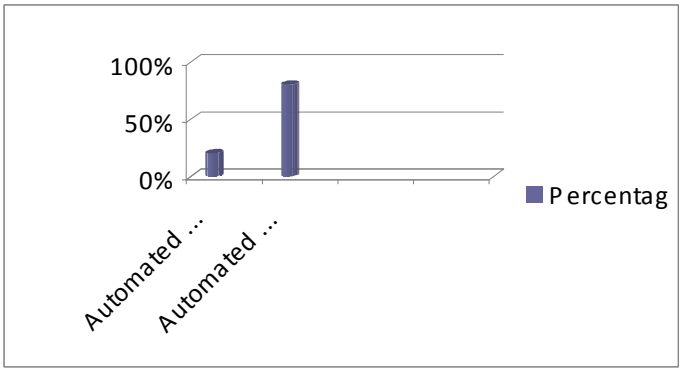
The response found for question no. 5 is represented in the above table no. 9 as well as in the above figure no. 9 which shows all the library users are satisfied using advance IT tools for information retrieval, because 100% response given is 'Yes'.

Table no. 10: Tools, satisfied using advance IT for Information retrieval

Tools, satisfied using advance IT for Information retrieval	No. of response	Percentage
Automated Catalogue	5	20%
Automated Index	20	80%
Both	0	0
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 10: Tools, satisfied using advance IT for Information retrieval



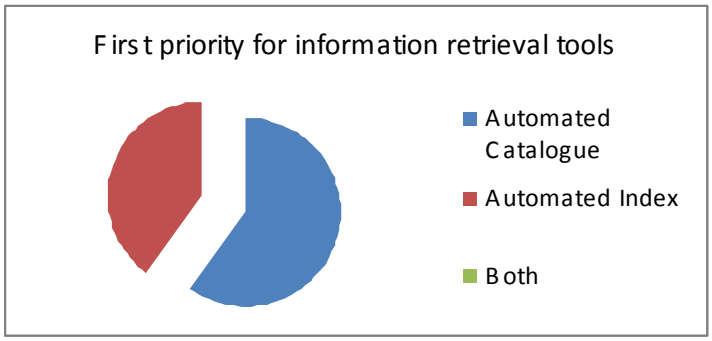
The above table no. 10 as well as the figure no. 10 clearly represents the number of collected response from different libraries and information centers. The library professional are satisfied using advance IT tools for information dissemination. 20% response given prefer to use the Automated catalogue tools and 80% response prefer in use the Automated index tools satisfied using advance IT for information retrieval and dissemination.

Table no. 11: First priority for information retrieval tools

First priority for information retrieval tools	No. of response	Percentage
Automated Catalogue	15	60%
Automated Index	10	40%
Both	0	0%
Total	25	100%

Source: - Data collection from questionnaire

Figure no 11



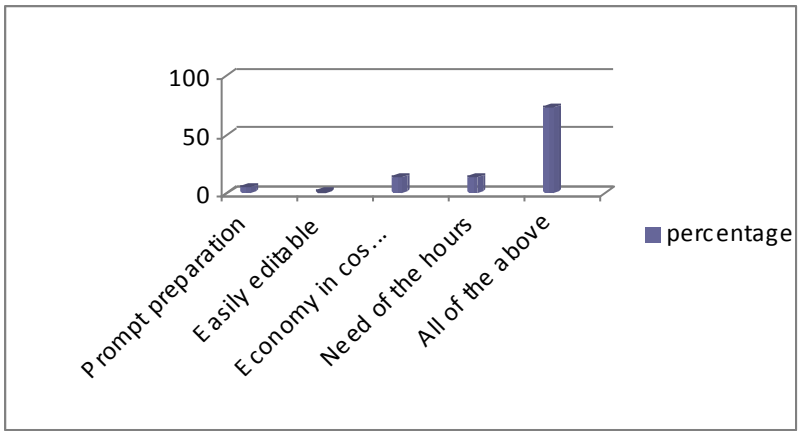
The above table no. 11 as well as figure no. 11 clearly shows the attitude of the respondents, 60% is for the first priority for information retrieval tools using the automated catalogue and 40% is for the automated index in those four libraries.

Table no. 12: Prefer automated catalogue and index

Prefer automated catalogue and index	No. of response	Percentage
Prompt preparation	1	4%
Easily editable	0	0%
Economy in cost and space	3	12%
Need of the hours	3	12%
All of the above	18	72%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 12: Prefer automated catalogue and index



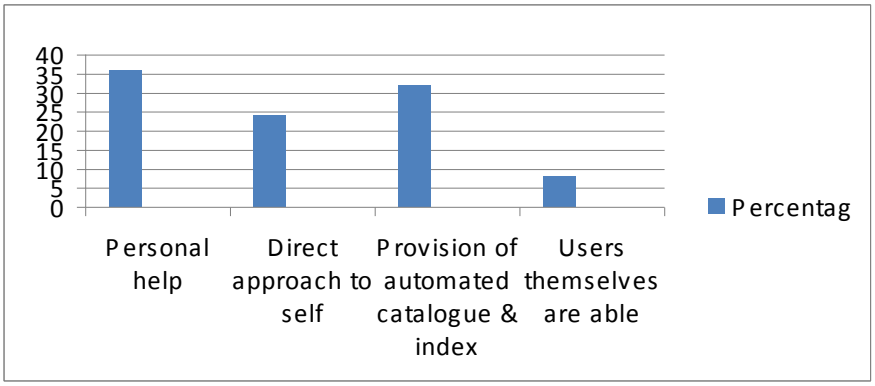
The above table no. 12 and figure no. 12 show that the preference of library professionals for automated catalogue and index. Prompt preparation preference has 4% response while t all of the above mentioned preference has 72% for the preference automated catalogue and index in those libraries. 12/12% responses prefer to automated catalogue and index as economy in cost and space and need of the hours of those libraries.

Table no. 13: System devised for information retrieval and dissemination

System devised for information retrieval and dissemination	No. of response	Percentage
Personal help	9	36%
Direct approach to self	6	24%
Provision of automated catalogue & index	8	32%
Users themselves are able	2	8%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 13: System devised for information retrieval and dissemination



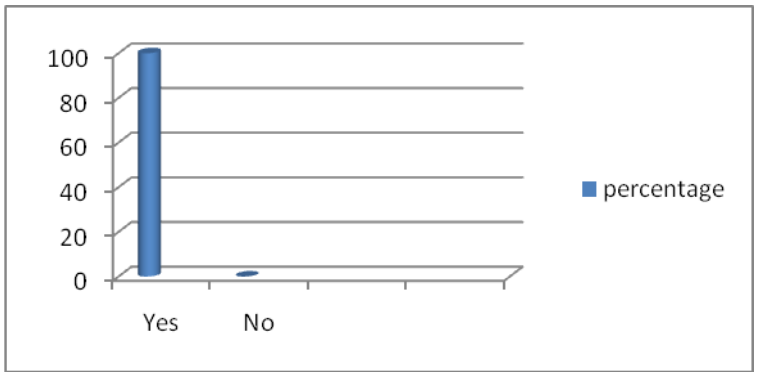
The above table no. 13 as well as figure no. 13 represents the system devised for information retrieval and dissemination of the library collection. Among the systems is 36% response is for personal help, 32% response is provision of automated catalogue and index, 24% response for direct approach to self system and 8% response for users themselves are able to use the systems devised for information retrieval and dissemination by the professionals in different libraries.

Table no. 14: Assign subject heading using the Subject heading list and Thesaurus

Assign subject heading using the Subject heading list and Thesaurus	No. of response	Percentage
Yes	25	100%
No	0	0
Total	25	100%

Source: - Data collection from Questionnaire

Figure no 14: Assign subject heading using the Subject heading list and Thesaurus



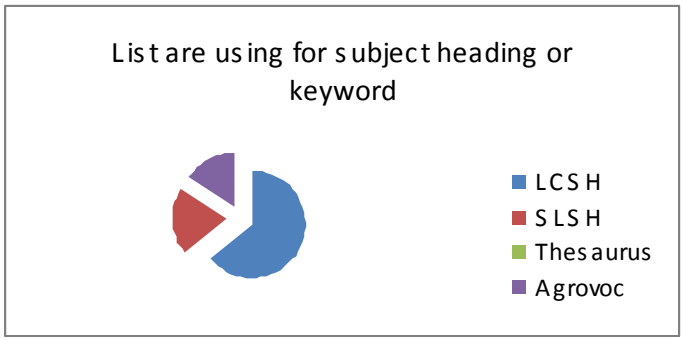
The above table no. 14 and figure no. 14 represent the assign subject heading using the subject heading list & thesaurus. It shows 100% response given is 'Yes' so all the libraries has assigned the subject heading using the Subject heading list and Thesaurus.

Table no. 15: List are using for subject heading or keyword

List are using for subject heading or keyword	No. of response	Percentage
LCSH	16	64%
SLSH	5	20%
Thesaurus	0	0%
Agrovoc	4	16%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 15



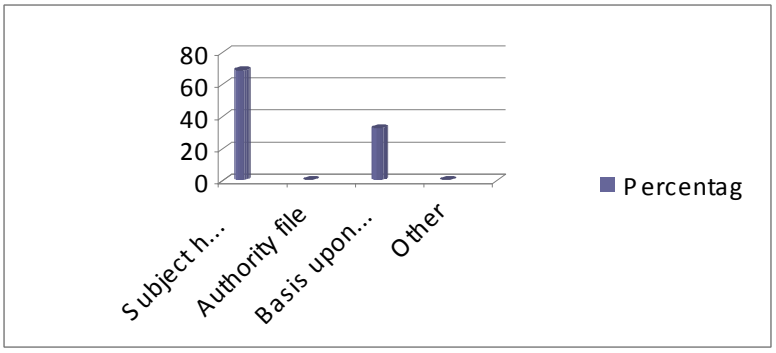
The above table no. 15 as well as figure no. 15 clearly represents the list using for subject heading or keyword assign. Out of total four subjects heading or key words, 64% uses LCSH, 24% uses SLSH and 16% uses the Agrovoc for assign subject heading and keyword in those four libraries.

Table no. 16: Assign the keyword on the basis

Assign the keyword on the basis	No. of response	Percentage
Subject heading list	17	68%
Authority file	0	0%
Basis upon the content of documents	8	32%
Other	0	0%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 16: Assign the keyword on the basis



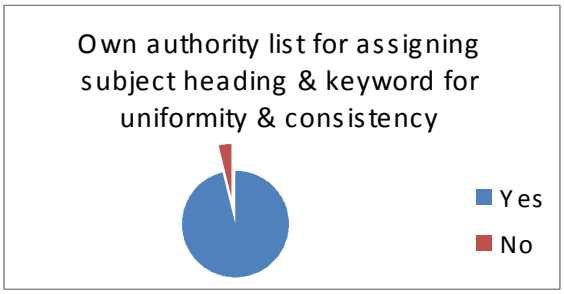
The above table no. 16 and figure no. 16 represent the assign of the keyword on the basis of subject heading list is 68%, while 32% assign the keyword on the basis upon the content of document in those four libraries. There is no response for use of authority file and other in assigning the key words.

Table no. 17: Own authority list for assigning subject heading and keyword for uniformity and consistency

Own authority list for assigning subject heading and keyword for uniformity and consistency	No. of response	Percentage
Yes	24	96%
No	1	4%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 17



The above table no 17 as well as figure no 17 clearly defines that the almost all of the libraries have been own authority list for assigning subject heading or keywords for uniformity and consistency of the library collection. It shows 96% response given is 'Yes' and 4% response given is 'No'.

Table no. 18: Providing effective services through the New IT can help improve the librarians' image.

Providing effective services through the New IT can help improve the librarians' image.	No. of response	Percentage
Yes	25	100%
No	0	0%
Total	25	100%

Source: - Data collection from Questionnaire

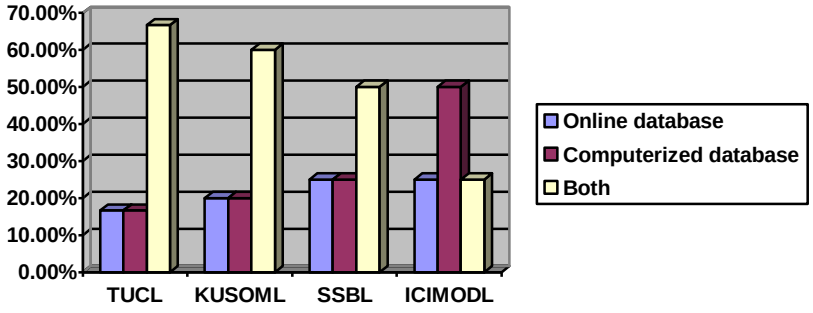
The above table no. 18 clearly presents that the all of the libraries are providing effective services through the New IT which can help to improve the librarian's image, because 100% response given is ‘Yes’.

Table no. 19: Effective services are providing in the library

Name of libraries	Effective services are providing in the library							Total response per lib.	Percentage
	Online database	%	Computer database	%	Both	%	Total %		
TUCL	2	16.66%	2	16.66%	8	66.68%	100%	12	48%
KUSOML	1	20%	1	20%	3	60%	100%	5	20%
SSBL	1	25%	1	25%	2	50%	100%	4	16%
ICIMODL	1	25%	2	50%	1	25%	100%	4	16%
TOTAL	5		6		14			25	100%

Source: - Data collection from Questionnaire

Figure no. 18: Effective services are providing in the library



From the above table no. 19 as well as figure no. 18, it is clearly presented that the all of the libraries are providing effective services. TUCL has of 40% response; KUSMOL has 20% response, SSBL as well as ICIMOD has 16% response.

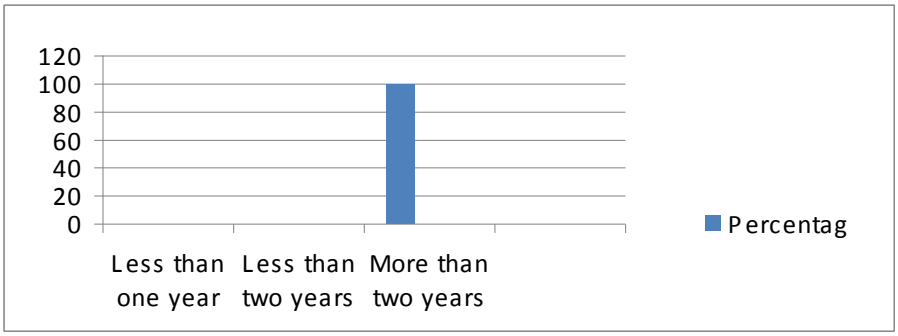
It is represented TUCL have been providing services: online database is 16.66%, computerized database service 16.66% and the both service is 66.68%. KUSOML have been providing services: online database is 20%, computerized database service 20% and the both service is 60%. While, SSBL have been providing services: online database is 25%, computerized database service 25%, and the both service is 50%. ICIMODL have been providing services: online database is 25%, computerized database services 50% and both service is 25%.

Table no. 20: Library have been using the IT in catalogue and index

Library have been using the IT in catalogue and index	No. of response	Percentage
Less than one year	0	0%
Less than two years	0	0%
More than two years	25	100%
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 19: Library have been using the IT in catalogue & index



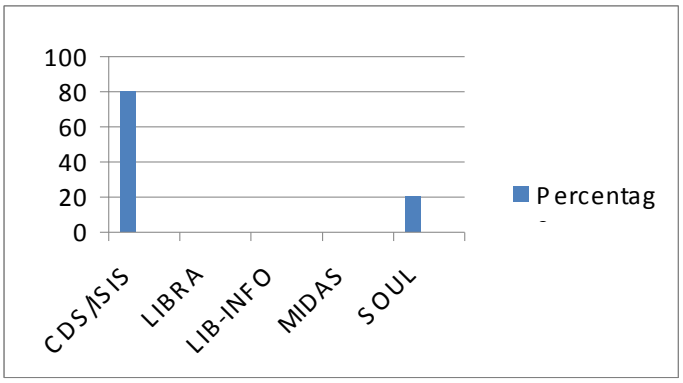
The above table no. 20 and figure no. 19 represent that all of the libraries have been using the IT in catalogue and index for more than two years.

Table no. 21: Software are using in the libraries

Software are using in the libraries	No. of responses	Percentage
CDS/ISIS	20	80%
LIBRA	0	0%
LIB-INFO	0	0%
MIDAS	0	0%
SOUL	5	20%
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 20: Software are using in the libraries



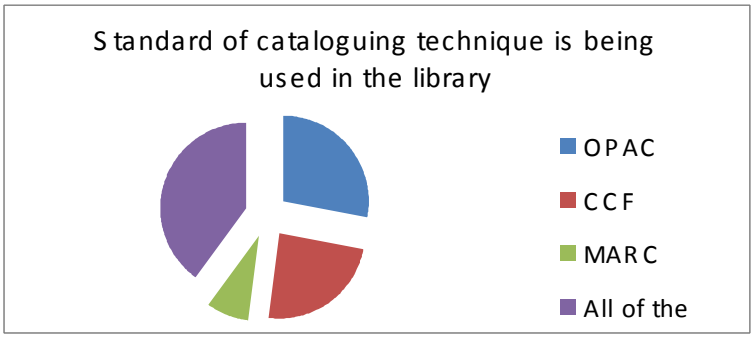
The above table no. 21 as well as figure no. 20 shows that the most of the libraries are using the software CDS/ISIS because 80% response given is for CDS/ISIS software, 20% responses given for software SOUL.

Table no. 22: Standard of cataloguing technique is being used in the library

Standard of cataloguing technique is being used in the library	No. of response	Percentage
OPAC	7	28%
CCF	6	24%
MARC 21	2	8%
All of the above	10	40%
Total	25	100%

Source: - Data collection from Questionnaire

Figure no. 21



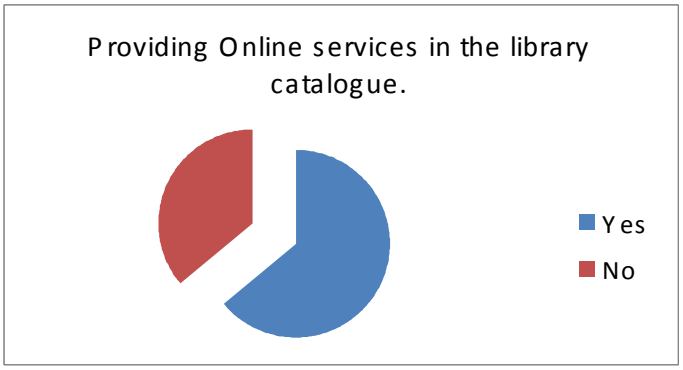
The responses found for the question no. 15 is shown above in the form of table no. 22 and figure no. 21. All the libraries have used the OPAC standard (28%) and CCF (24%), MARC21 (8%), and the above all (40%) as a cataloguing technique.

Table no. 23: Providing Online services in the library catalogue.

Providing Online services in the library catalogue.	No. of responses	Percentage
Yes	16	64%
No	9	36%
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 22



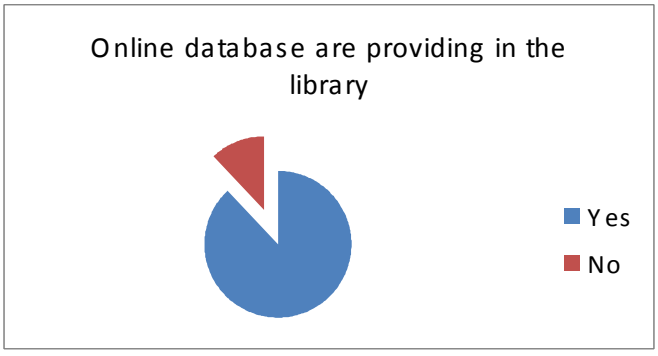
The above table no. 23 as well as figure no. 22 presents almost of the libraries are providing the online services in cataloging, because 64% responses given is 'Yes' and 36% given is 'No'.

Table no. 24: Online database are providing in the library

Online database are providing in the library	No. of responses	Percentage
Yes	22	88%
No	3	12%
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 23



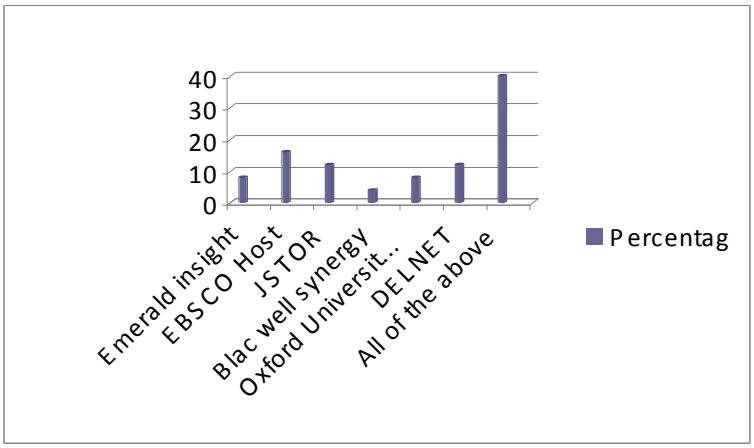
The above table no. 24 as well as figure no. 23 shows the online database services provided in the library. Most of the library professionals have accepted it, because 88% response given is 'Yes' and 12% response given is 'No'.

Table no. 25: Online journals (database) is mostly used in the library

Online journals(database) is mostly used in the library	No. of responses	Percentage
Emerald Insight	2	8%
EBSCO Host	4	16%
JSTOR	3	12%
Black well Synergy	1	4%
Oxford university press	2	8%
DELNET	3	12%
All of the above	10	40%
Total	25	100%

Source: - Data collection from questionnaire

Figure no. 24: Online journals (database) is mostly used in the library



The above table no. 25 as well as figure no. 24 shows that the attitude of respondents towards the online journals (database) being used in the library. Almost all the libraries mostly used online journals and documents (database), 40% response given is for the all kind of online database services, 16% response given is EBSCO Host, 12% response

given is JSTOR and DELNET each, 8% response given is Emerald Insight and Oxford University press each, 4% response given is Blackwell Synergy.

According to the respondents to the question no. 18, Application of IT in library and information center services is very necessary in the modern approach. The cataloguing and indexing is need of time and essential for better service to the user, but it should be modified according to need and present time function of the library. Digitalization of the reading materials is very important. It gives many access points of the materials.

And response to question no.19 represents every library should start digitalization of their materials for implemented and betterment of their services. There must be the integrated library software for the modern library.

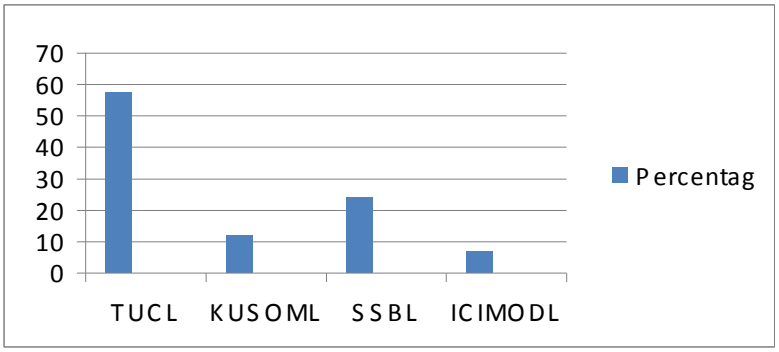
5.3 Users' responses of four different libraries

Table no. 26: Total number of collected responses from four different libraries

Name of libraries	No. of collected responses	Percentage
TUCL	43	57.33%
KUSOML	9	12%
SSBL	18	24%
ICIMODL	5	6.67%
Total	75	100%

Source: - Data collection from questionnaire

Figure no. 25: Total number of collected responses from four different libraries



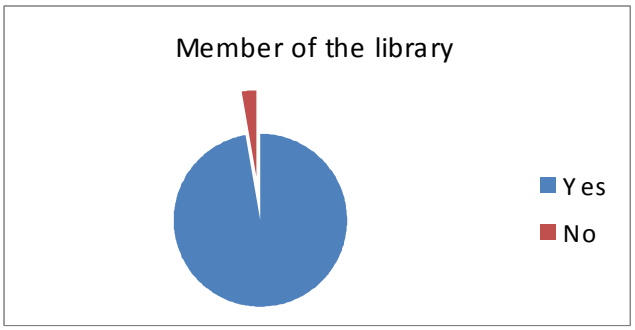
The above table no. 26 as well as figure no. 25 clearly represents total responses taken from four different libraries and its users. It shows 57.33% user responses are taken from TUCL, 12% user responses are taken from KUSOML, 24% user responses are taken from SSBL, and 6.67% user responses are taken from ICIMODL.

Table no. 27: Member of the library

Member of the library	No. of responses	Percentage
Yes	73	97.33%
No	2	2.67%
Total	75	100%

Source: - Data collection from questionnaire

Figure no. 26



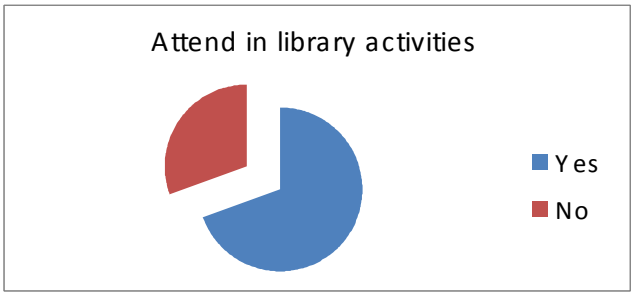
The responses found for the question no. 1 is showed above in the form of table no. 27 and figure no. 26 which represent 97.33% response given is 'Yes', 2.67% response given is 'No' to be the member of the different libraries.

Table no.28: Attend in library activities

Attend in library activities	No. of responses	Percentage
Yes	52	69.33%
No	23	30.67%
Total	75	100%

Source: - Data collection from questionnaire

Figure no.27



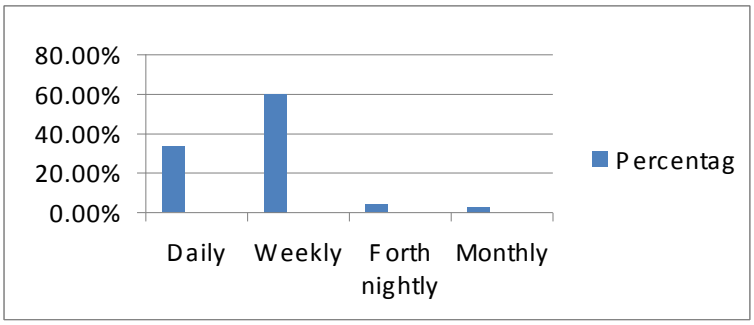
The above table no. 28 as well as figure no.27 represents that most of the users are attending in library activities because 69.33% responses given is 'Yes', and a few(30.67%) of the user are not attending in library activities. s

Table no.29: Use of the library

Use of the library	No. of responses	percentage
Daily	25	33.33%
Weekly	45	60%
Forth nightly	3	4%
Monthly	2	2.67%
Total	75	100%

Source: - Data collection from questionnaire

Figure no.28: Use of the library



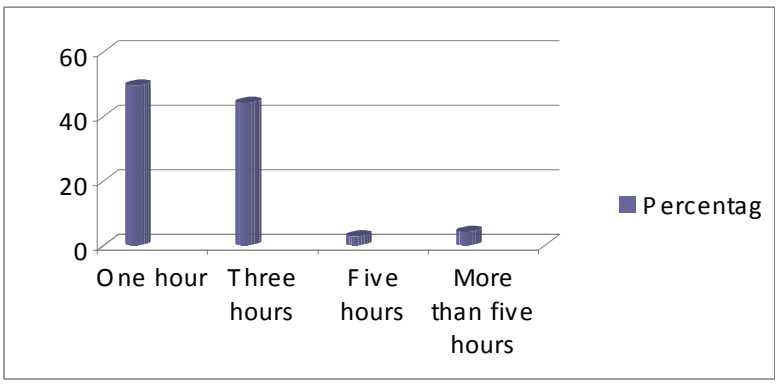
The above table no. 29 and figure no.28 present the use of library by users. It shows most of the users (60%) are using the library weekly. Daily users are 33.33%, forth nightly users are 4% and monthly users are 2.67%.

Table no.30: Library use in a day

Library use in a day	No. of responses	Percentage
One hour	37	49.33%
Three hours	33	44%
Five hours	2	2.67%
More than five hours	3	4%
Total	75	100%

Source:- Data collection from questionnaire

Figure No.29: Library use in a day



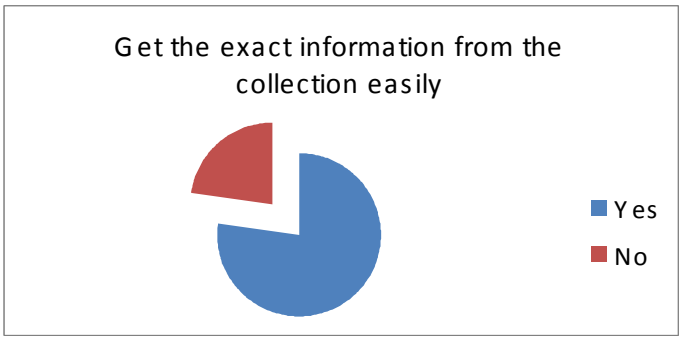
The above table no.30 as well as figure no.29 is a representation of use of library in a day , it show most of the respondents(49.33%) are use the library daily one hour, some of respondents (44%) are using three hours in a day. Few respondents (4%) use the library more than five hours in a day and a few (2.67%) are using five hours in a the day.

Table no. 31: Get the exact information from the collection easily

Get the exact information from the collection easily	No. of responses	Percentage
Yes	58	77.33%
No	17	22.67%
Total	75	100%

Source: - Data collection from questionnaire

Figure no. 30



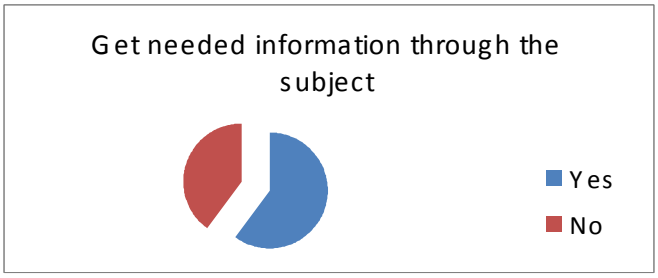
The above table no. 31 and figure no. 30 show most of the library users (77.33%) get the exact information from the collection easily and a few (22.67%) library users do not get the exact information from the collection easily.

Table No.32: Get needed information through the subject

Get needed information through the subject	No. of responses	Percentage
Yes	45	60%
No	30	40%
Total	75	100%

Source: - Data collection from questionnaire

Figure No.31



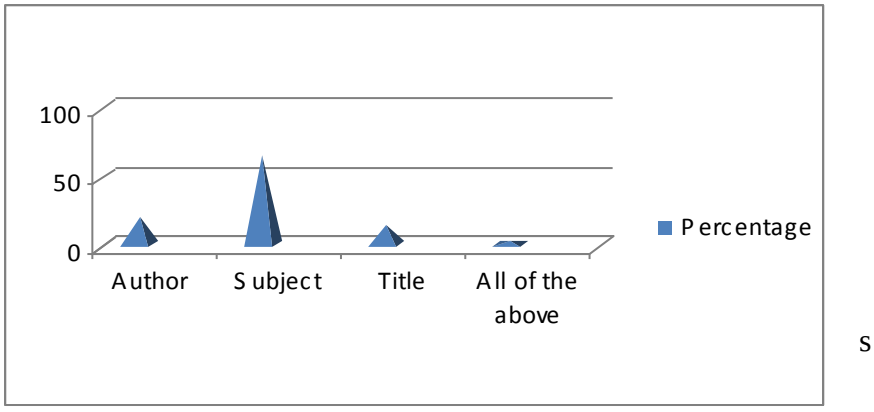
The responses found for question no.5 is showed above in the form of table no.32 and figure no.31, which represent most of the library users get needed information through the subject, because 60% response given is 'Yes' and a few library users do not get exact information through subject, because 40% response given is 'No'.

Table No.33: Information retrieval through

Information retrieval through	No. of responses	Percentage
Author	15	20%
Subject	48	64%
Title	10	13.33%
All of the above	2	2.67%
total	75	100%

Source: - Data collection from questionnaire

Figure No.32: Information retrieval through



s

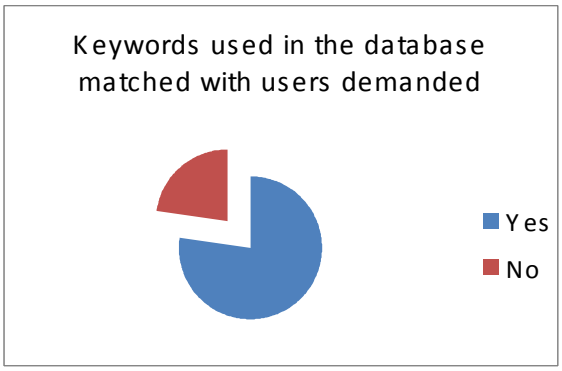
The table no.33 and figure no.32 show most of the users use information retrieval through the subject, because 64% respondent prefer to subject, some of the users use information retrieval through the author and title, because 20% and 13.33% respondent prefer to use author and title. And 2.67% respondent prefer to the All above techniques for the information retrieval.

Table no. 34: Keywords used in the database matched with users demanded

Keywords used in the database matched with users demanded	No.of responses	Percentage
Yes	58	77.33%
No	17	22.67%
Total	75	100%

Source: - Data collection from questionnaire

Figure no. 33



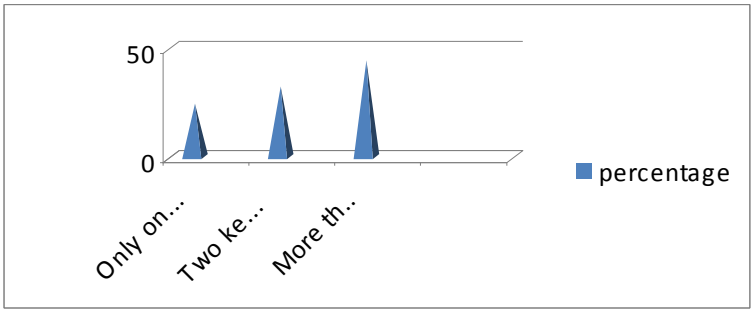
The table no. 34 and the figure no.33 show most of the users are using keywords in the database match with demand because 77.33% response given is 'Yes'. A few users do not match with demanded in the database, because 22.67% response given is 'No'.

Table No. 35: Better way for information retrieval

Better way for information retrieval	No. of responses	percentage
Only one keyword	18	24
Two keywords	24	32
More than two keywords	33	44
Total	75	100

Source: - Data collection from questionnaire

Figure No.34: Better way for information retrieval



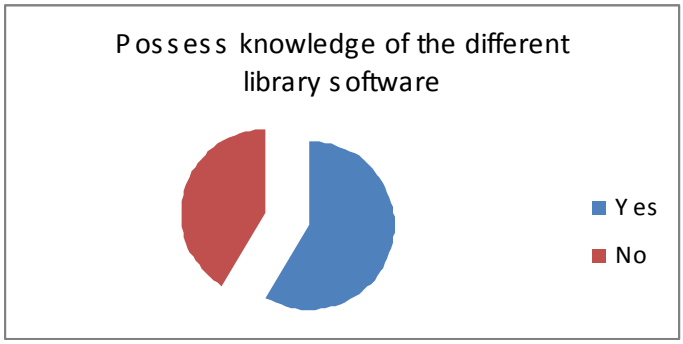
The above table no.35 as well as figure no.34 shows that the most of the library users (44%) are using more than two keywords as a better way for information retrieval. Some users (32%) are using only two keywords and few users (24%) are using one keyword as a better way for information retrieval. Therefore most of the users are chosen more than two keywords for information retrieval.

Table No.36: Possess knowledge of the different library software

Possess knowledge of the different library software	No.of responses	percentage
Yes	44	58.67
No	31	41.33
Total	75	100

Source: - Data collection from questionnaire

Figure No.35



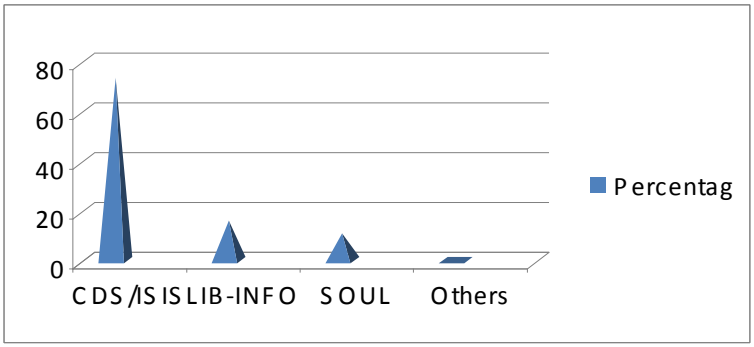
The above table no.36 and figure no.35 clearly presents most of the users has possessed knowledge of the different library software because 58.67% response given is 'Yes'. And about same users have not possessed the knowledge of different library software because 41.33% response given is 'No'.

Table No.37: Favorite software for information retrieval

Favorite software for information retrieval	No. of responses	percentage
CDS/ISIS	55	73.33
LIB-INFO	12	16
SOUL	8	10.67
Others	0	0
Total	75	100

Source: - Data collection from questionnaire

Figure No. 36: Favorite software for information retrieval



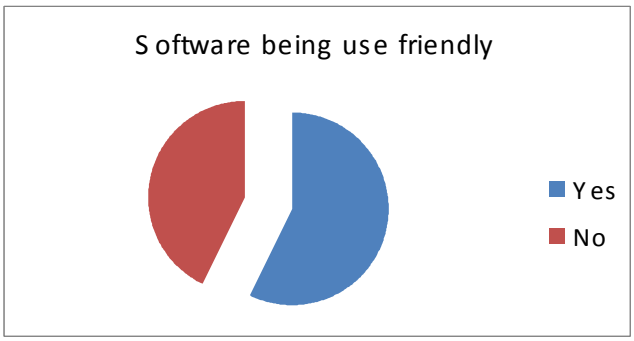
Above table no.37 as well as figure no.36 represents that the attitude towards the favorite software for information retrieval of users, 73.33% respondents are using CDS/ISIS, 16% and 10.67% respondents are using LIB-INFO and SOUL respectively. Most of the Nepalese libraries are using CDS/ISIS software for information retrieval.

Table No.38: Software being use friendly

Software being use friendly	No. of responses	percentage
Yes	43	57.33
No	32	42.67
Total	75	100

Source: - Data collection from questionnaire

Figure No.37



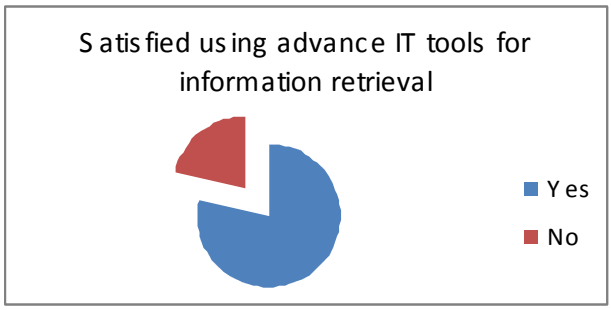
Both the table and figure represent most of the user are friendly with the use of the library software, because 57.33% response given is 'Yes' and 42.67% responses given is 'No'.

Table No. 39: Satisfied using advance IT tools for information retrieval

Satisfied using advance IT tools for information retrieval	No. of responses	percentage
Yes	59	78.67
No	16	21.33
total	75	100

Source:- Data collection from questionnaire

Figure No.38



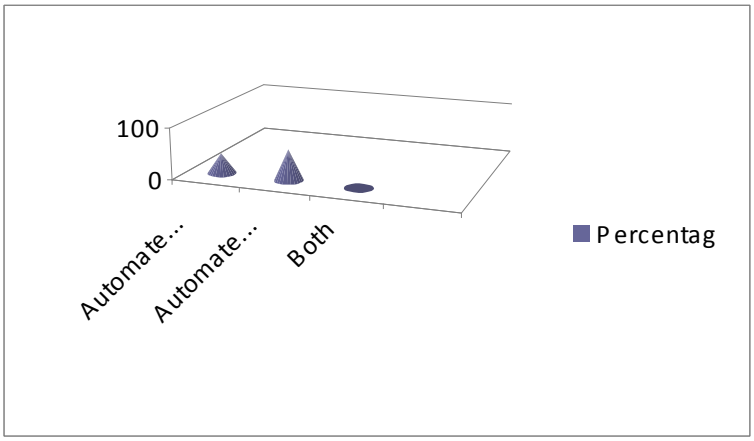
The table no. 39 and figure no.38 clearly show all of the different type of libraries users are satisfied using advance IT tools for information retrieval, because 78.67% response given is 'Yes' and 21.33% response given is 'No'.

Table No.40: Tools, satisfied using advance IT for IR

Tools, satisfied using advance IT for IR	No. of responses	percentage
Automated catalogue	30	40
Automated index	45	60
Both	0	0
total	75	100

Source: - Data collection from questionnaire

Figure No. 39: Tools, satisfied using advance IT for IR



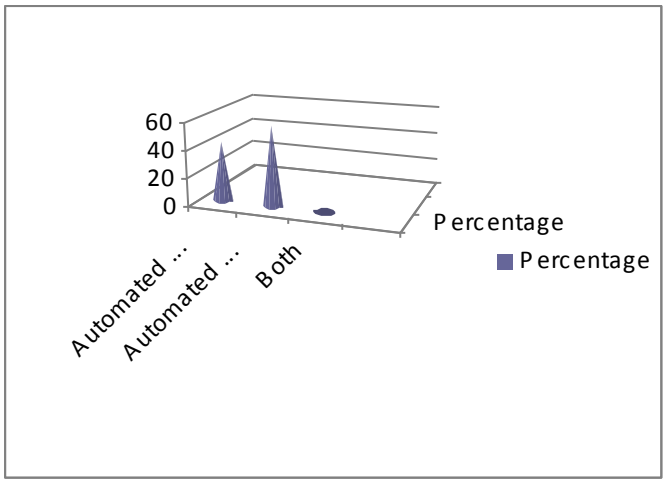
The above table and figure show the attitude of the library users towards the use of advance IT for IR tools, 60% respondent has preferred automated indexing tools to choose for IR and 40% respondents for automated cataloguing tools to use IR.

Table No.41: First priority for IR tools

First priority for IR tools	No. of responses	percentage
Automated catalogue	32	42.67
Automated index	43	57.33
Both	0	0
total	75	100

Source: - Data collection from questionnaire

Figure No.40: First priority for IR tools



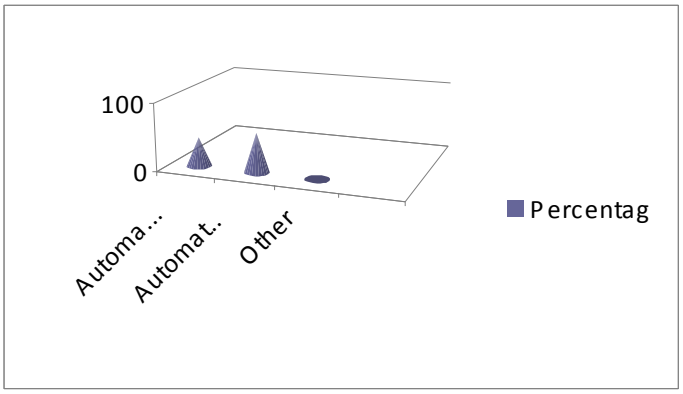
The above table no. 41 and figure no. 40 represent that the users' preferences for IR tools. As the first priority for IR tools, 57.33% respondent prefers to the automated indexing tools and 42.67% respondent prefers to the automated cataloguing tools.

Table no 42: Methods for users friendly

Methods for users friendly	No. of responses	Percentage
Automated Catalogue	32	42.67
Automated Index	43	57.33
Other	0	0
Total	75	100

Source: - Data collection from questionnaire

Figure no. 41: Methods for users friendly



The both table and figure present the attitude of the information users towards the friendly use of IR, 57.33% respondent is using automated indexing. And 42.67% responses are using automated cataloguing tools for IR.

According to response to the questions no. 15 and 16 most of the information users of the library suggest to improve the quality of the services through the IT and add more computers in the library services. Online services are very slow so it is necessary to improve the quality of internet.

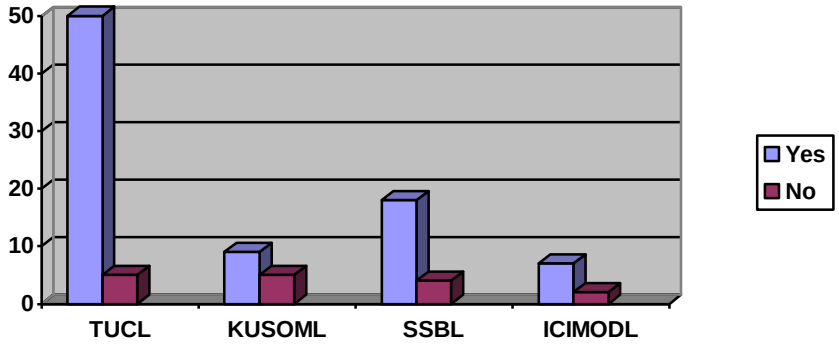
5.4 *Both response of Library professional and users*

Table no. 43: Satisfied using advance IT tools for IR

Name of the library	Satisfied using advance IT tools for IR		Total
	Yes	No	
TUCL	50	5	55
KUSOML	9	5	14
SSBL	18	4	22
ICIMODL	7	2	9
Total	84	16	100

Source: - Data collection from questionnaire

Figure no 42 satisfied using advances IT tools for Information Retrieval



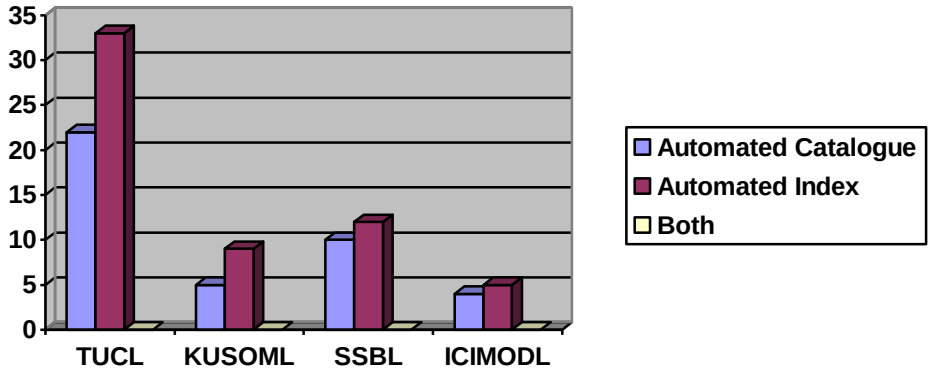
The above table and figure represent the users and librarians' satisfaction in using the advance IT tools for IR in each library. TUCL respondents (50) answered 'Yes' response and 5 'No'. KUSMOL respondents (9) answered 'Yes' and 5 respondents answered 'No' response. SSBL respondents (18) answered 'Yes' and 4 respondents answered 'No' response and ICIMODL respondents (7) answered' Yes' and 2 respondents answered 'No'. Therefore, the maximum respondent (84%) has accepted answering 'Yes'.

Table No.44: Tools, satisfied using advance IT for IR

Name of the library	Tools, satisfied using advance IT for IR			Total
	Automated catalogue	Automated index	Both	
TUCL	22	33	0	55
KUSOML	5	9	0	14
SSBL	10	12	0	22
ICIMODL	4	5	0	9
Total	41	59	0	100

Source: - Data collection from questionnaires

Figure no 43: Tools, satisfied using advance IT for IR



The above table no. 44 and figure no. 43 represent users and librarians' satisfaction by using advance IT tools for IR. 22 respondents from TUCL answered automated catalogue while 33 respondents answered automated index. 5 respondents from KUSOML answered automated catalogue while 9 respondents automated index. 10 respondents from SSBL responded automated catalogue while 12 respondents automated index and 4 respondents from ICIMODL answered automated catalogue while 5 respondents automated index. Therefore, the maximum respondents have accepted using advance IT tools Automated index for IR (59% responses). A few respondents have disagreed in using automated catalogue for IR (41% responses).

Chapter VI

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 *Summary and Conclusion*

Library and information centers have changed significantly over the course of history, they will always remain responsible for acquiring or dissemination, access to information that meet educational and informational needs of their users. Information retrieval is considered as an important issue for librarians, students, teachers, and scholars. Information retrieval systems have originated with the need to organize information in central repositories. Applications of IT in cataloguing and indexing have been created to facilitate the identification and retrieval of item of information.

For online information retrieval the searcher uses a computer terminal usually linked by telephone to a remote computer. The computer stores the database of bibliographic records on rotating magnetic disks always available for immediate access. The database of online public access catalogue consists of numbers of files.

Information retrieval technique have differs vastly from the manual information technique. It is because the need of time itself changed with the advance of IT. Today remote links has been taken easily .In truth it is an essential importance for today's global society.

The situation changes when the information retrieval tools goes online, now the two separate files could be merged and the single catalogue could tell users, if not precisely where in space the book is at least what its current status is. The uses of IT devices in the libraries have seen a dramatic rise; information retrieval and information findings systems are increasingly dependent on electronic devices. IT tools like computer, CD-ROM, networking definitely speed up various library services or routines.

Information scientists or librarians have started to rethink over traditional preparation of information retrieval technique and how to use modern technology for information retrieval. Traditional preparation of catalogue and index now is replaced by the new information technology for fast, exact, and easily information retrieval.

For fast information retrieval from the various access points by the new information technology with the capacity of speed, accuracy, and flexibility constitute the major factors for their use in cataloguing and indexing. Application of IT is capable of performing the various clerical functions involved in manipulation of records. Thus there is a change in the objectives when cataloguing and indexing is computerized or new information technologies are applied.

i. To save money or at least to reduce the rate of increase in cost.
ii. To provide better control and improve efficiency.
iii. To provide the exact needed information from the database.
iv. To achieve higher productivity.
v. To extend the service offered.
vi. To access from remote area promptly.

'To provide right information to the right person at the right time with the right way in the right form or right language is its motto'

So, new IT in cataloguing and indexing are the most important information retrieval tools by which each and every important piece of information can be retrieved. It is the index which covers the important information of the documents where the subject covers the broad areas only.

So that, the library professional should assign sufficient index and key terms to represent all the important piece of information of the documents to save the time of users as well as library staff and professional to retrieve the exact information from the myriad of information collection.

The researcher in course of study has noticed that more information users and library professional are familiar with new information technology in cataloguing and indexing. It is found to get the exact information through the use of new technology in cataloguing and indexing for information retrieval from the various access points by the new IT with the capacity of speed accuracy and so on constitute the major factors for their applications in cataloguing and indexing. Most of the library professional or information users are getting in ready positions to be full applied information technology in the

library but still some libraries are thinking over the application of the information technology.

Based upon the answers given by the both types of respondents: the information users and library professionals, the following major findings and conclusion have been found:

1. Most of the libraries (96%) have prepared the automated catalogue and index; maximum libraries (52%) are using the AACR II catalogue code.
2. Most of information users and library professionals are satisfied by using advance IT tools for information retrieval.
3. Every library is using LCSH (64%) for subject heading or keywords, a few libraries are using SLSH (20%) and AGROVOC (16%) for assign subject heading or keywords.
4. Most of library have own authority list for assigning subject heading and keywords for uniformity and consistency.
5. All of the libraries are providing effective services through the online database (8%), computerized database (16%), and both database (76%) for all type of information users.
6. All of the libraries are using the different type of library software: CDS/ISIS software (80%) and SOUL (20%).
7. All of the libraries have been using the IT in catalogue and index from more than two years.
8. All the libraries have been using standard of cataloguing technique or format as OPAC, CCF and MARC 21.
9. All the different types of libraries are providing online journals or online databases such as Emerald insight, EBSCO Host, JSTOR, Black well synergy, Oxford university press and DELNET.
10. More than two keywords have been proved to be better way for information retrieval than only one keyword and two keywords.
11. Maximum information users are friendly with the use of IT tools.

12. Application of IT in cataloguing and indexing are most familiar to library professional and information users, they prefer automated catalogue & index berceuse it save time, money and efforts.
13. Users of the libraries having new IT and enjoy the advance library services..

6.2 Recommendation

The aim of Application of IT in cataloguing and indexing is to provide information to different types of users like students, teachers, scholars etc. from every possible approach. In order to fulfill the needs, importance and objective of application of IT in cataloguing and indexing, following recommendations have been made based upon the present research.

1. Every library should make qualified manpower who could handle easily the new IT in catalogue and index and special training on IT knowledge and library system software is continuously required.
2. For the effective and efficient use of IT in catalogue and index and bibliographic database inevitably needs all types of different information users' orientation.
3. Proper application of IT in catalogue or bibliographic database should be centrally provided uploading it into internet.
4. Every library should provide the IT to users to search and retrieve the exact information from the bibliographical database.
5. Librarians must become perfect information professional in the place of reference librarians cataloguers or collection development librarians. This may call for a change in library education.
6. Librarians or library professionals in the new role, not only act, but act decisively, objectively and without prejudices in favor of traditional methods and practices.
7. Users' friendly library software should be used for the information retrieval.
8. Future planning must be done on the basis of sound analysis of problems and issues backed by thorough the research.

9. To get acquainted with this new technology the IT should get a proper place in basic education including library education.
10. Regular discussion, meeting, conferences should be organized for updating new IT knowledge of library professionals and for continuous highlight importance of computerization in library and information center.
11. The concerned library professionals should be more careful and more conscious to assign more and more technique, advance IT so that all the related information retrieval is easily possible.
12. It is needed to form a national coordination committee to review the requirement for standards for CDS/ISIS.

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Annex 1

Effective services are providing in the library

Name of library	Online databases	Computerized databases	Both	Row marginal total
TUCL	2	2	8	12
KUSOML	1	1	3	5
SSBL	1	1	2	4
ICIMODL	1	2	1	4
Column marginal Total	5	6	14	25

Statistics to be used: X^2

Research hypothesis:

H_0 = Effective services are being provided in the library or Large number of libraries are providing effective services.

H_1 = Effective services are not being provided in the library or Large number of libraries are not providing effective services.

Significance: $\alpha = 0.05$

Degree of freedom: df =(r-1) (c-1) = (4-1) (3-1) = 3*2=6

Critical value $X^{2\ crit}$ (6) = 12.59 from table

Rejection region: value of X^2 obs $\geq$ 12.59.

Accept ion region: value of X^2 obs $\leq$ 12.59

Calculate O= Observed Frequency

E= Expected frequency

Large no. of libraries are providing effective services

Name of Library	Online database	Computerized database	Both	Row marginal
TUCL	O= 2 E= 2	O= 2 E= 3	O= 8 E=7	12
KUSOML	O= 1 E= 1	O= 1 E= 1	O= 3 E= 3	5
SSBL	O= 1 E= 1	O= 1 E= 1	O= 2 E= 2	4
ICIMODL	O= 1 E= 1	O= 2 E= 1	O= 1 E= 2	4
Column marginal	5	6	14	25

Column marginal = Sum of observed frequency in each column

Row marginal = sum of observed frequency in each row

Expected frequency of cell = row marginal cell *column marginal cell ÷Total no. of responses

Online database TUCL cell: E11= 12*5÷ 25 = 2

Computer database TUCL Cell: E12 = 12 * 6 ÷25 = 3

Both database TUCL cell: E13= 12 * 14 ÷ 25 = 7

Online database KUSOML cell: E21= 5*5÷ 25 = 1

Computer database KUSOML cell: E22 = 5 * 6 ÷25 = 1

Both database KUSOML cell: E23= 5 * 14 ÷ 25 = 3

Online database SSBL cell: E31= 4*5÷ 25 = 1

Computer database SSBL Cell: E32 = 4 * 6 ÷25 = 1

Both database SSBL cell: E33= 4 * 14 ÷ 25 = 2

Online database ICIMODL cell: E41= 4*5÷ 25 = 1

Computer database ICIMODL Cell: E42 = 4 * 6 ÷25 = 1

Both database ICIMODL cell: E43= 4 * 14 ÷ 25 = 2

The value of $X^{2\ obs}$ in found by $X2^{obs} = E^{4}_{r=1}\ E^{3}_{c=1} (O r c - E r c)^{2} \div E_{r c}$

Substituting numerical value

$X^{2\ obs} = (2-2)^2 \div 2 + (2-3)^2 \div 3 + (8-7)^2 \div 7 + (1-1)^2 \div 1 + (1-1)^2 \div 1 + (3-3)^2 \div 3 + (1-1)^2 \div 1 + (1-1)^2 \div 1 + (2-1)^2 \div 1 + (1-1)^2 \div 1 + (2-1)^2 \div 1 + (1-2)^2 \div 2$

$= 0+0.33+0.14+0+0+0+0+0+1+0+1+1$

$=3.47$

Decision: This X^2 obs = 3.47 is less than x^2 crit = 12.59 this proves that hypothesis is accepted i.e., large no. library are providing effective services.

Annex 2

Library professional and information users are satisfied by using advance IT for IR

Name of library	Automated cataloguing	Automated indexing	Total
TUCL	22	33	55
KUSOML	5	9	14
SSBL	10	12	22
ICIMODL	4	5	9
Total	41	59	100

Statistics to be used: X^2

Research hypothesis:

H_0 = Large no. of Users and library professional are satisfied by using advance IT tools cataloguing & indexing for information retrieval.

H_1 = Large no. of Users and library professional are not satisfied by using advance IT tools cataloguing & indexing for information retrieval

Significance: $\alpha = 0.05$

Degree of freedom: df =(r-1) (c-1) = (4-1) (2-1) = 3*1=3

Critical value $X^{2\,crit}$ (3) = 7.81 from table

Rejection region: value of X^2 obs $\geq$ 7.81.

Accept ion region: value of X^2 obs $\leq$ 7.81.

Calculate O= Observed Frequency

E= Expected frequency

Library professional and information users are satisfied by using advance IT for IR

Name of Library	Automated cataloguing	Automated indexing	Row marginal
TUCL	O= 22 E= 23	O= 33 E= 32	55
KUSOML	O= 5 E= 6	O= 9 E= 8	14
SSBL	O= 10 E= 9	O= 12 E= 13	22
ICIMODL	O= 4 E= 4	O= 5 E= 5	9
Column marginal	41	59	100

Column marginal = Sum of observed frequency in each column

Row marginal = sum of observed frequency in each row

Expected frequency of cell = row marginal cell *column marginal cell ÷Total no. of responses

Automated cataloguing TUCL cell: E11= 55*41÷ 100 = 23

Automated indexing TUCL Cell: E12 = 55 * 59 ÷100 = 32

Automated cataloguing KUSOML cell: E21= 14*41÷ 100 = 6

Automated indexing KUSOML Cell: E22 = 14 * 59 ÷100 = 8

Automated cataloguing SSBL cell: E31= 22*41÷ 100 = 9

Automated indexing SSBL Cell: E32 = 22 * 59 ÷100 = 13

Automated cataloguing ICIMODL cell: E41= 9*41÷ 100 = 4

Automated indexing ICIMODL Cell: E42 = 9* 59 ÷100 = 5

The value of $X^{2\,obs}$ in found by $X2^{obs} = E^{4}_{r=1}\ E^{3}_{c=1} (O r c - E r c)^{2} \div E_{r c}$

Substituting numerical value

$X^{2\ obs} = (22-23)^2 \div 23 + (33-32)^2 \div 32 + (5-6)^2 \div 6 + (9-8)^2 \div 8 + (10-9)^2 \div 9 + (12-13)^2 \div 13 + (4-4)^2 \div 4 + (5-5)^2 \div 5$

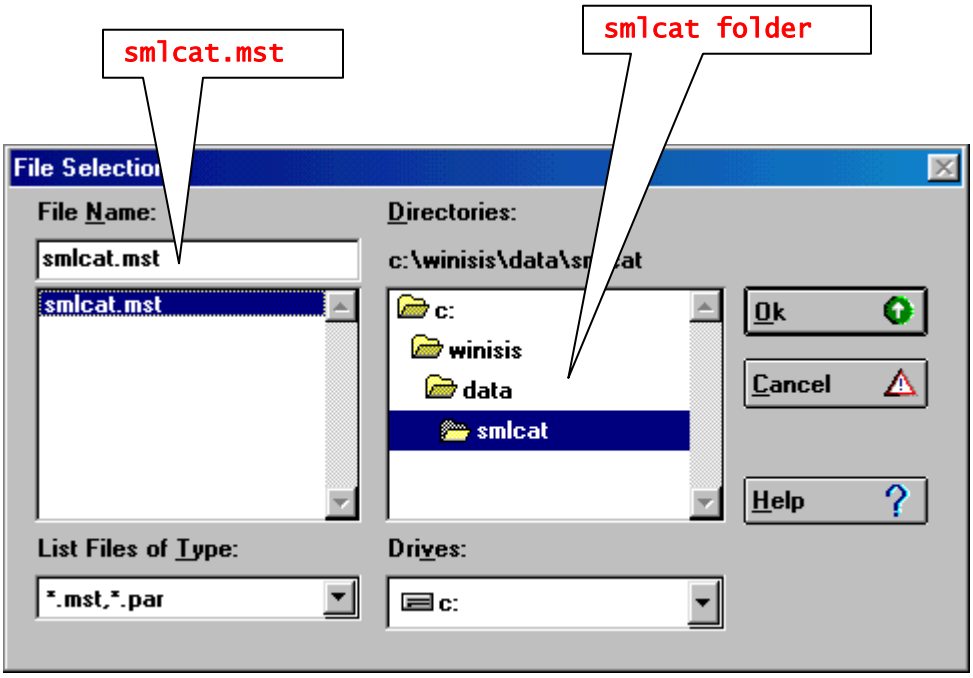
$=0.043+0.031+0.166+0.125+0.111+0.076+0+0$

$=0.552$

Decision: This X^2 obs = 0.552 is less than x^2 crit = 7.81 this null hypothesis is accepted i.e, large no. of users and library professional are satisfied by using advance IT tools (automated catalogue and automated index) for information retrieval.

Annex 3

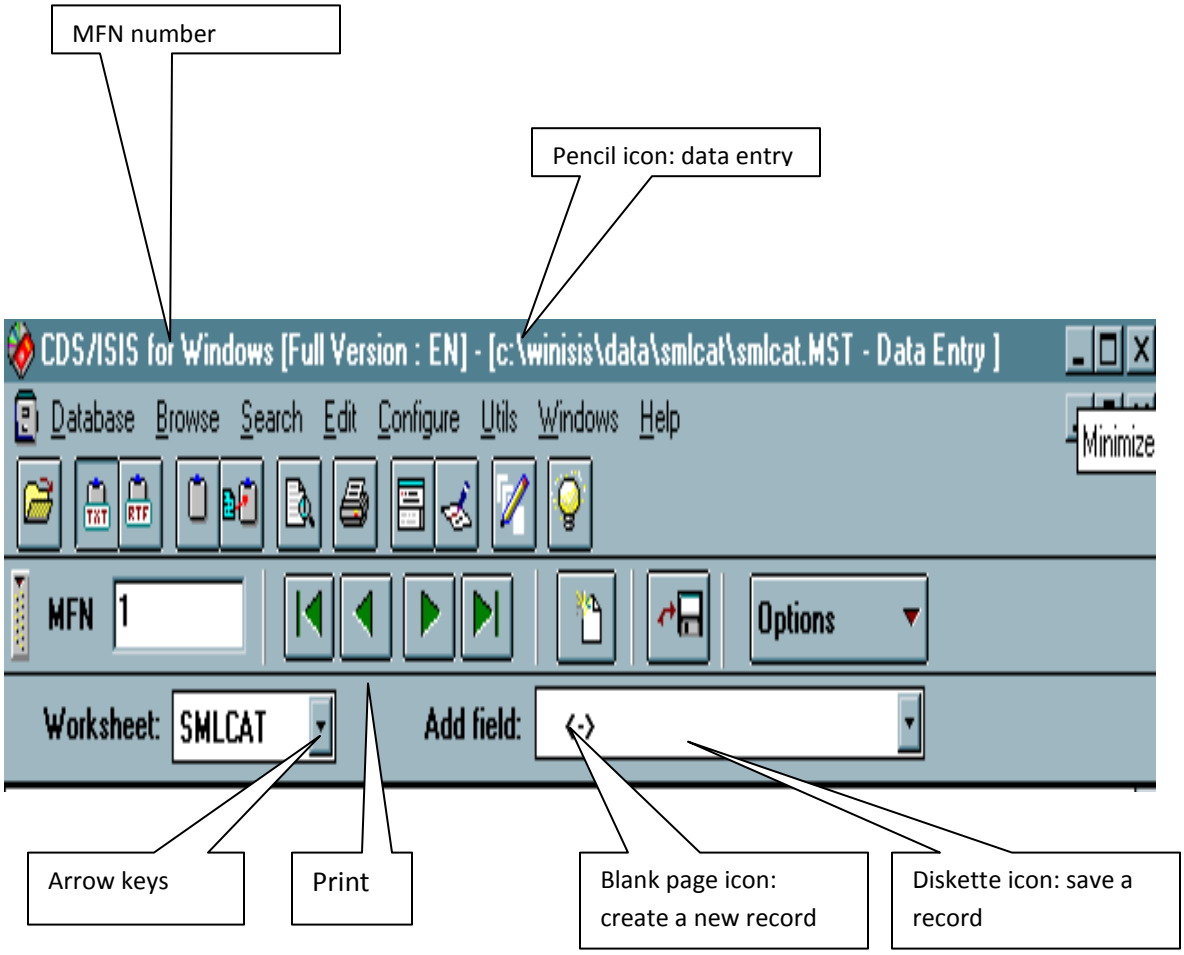
File selection



Article I.
Article II.
Article III. **THE WINISIS MENU BAR**

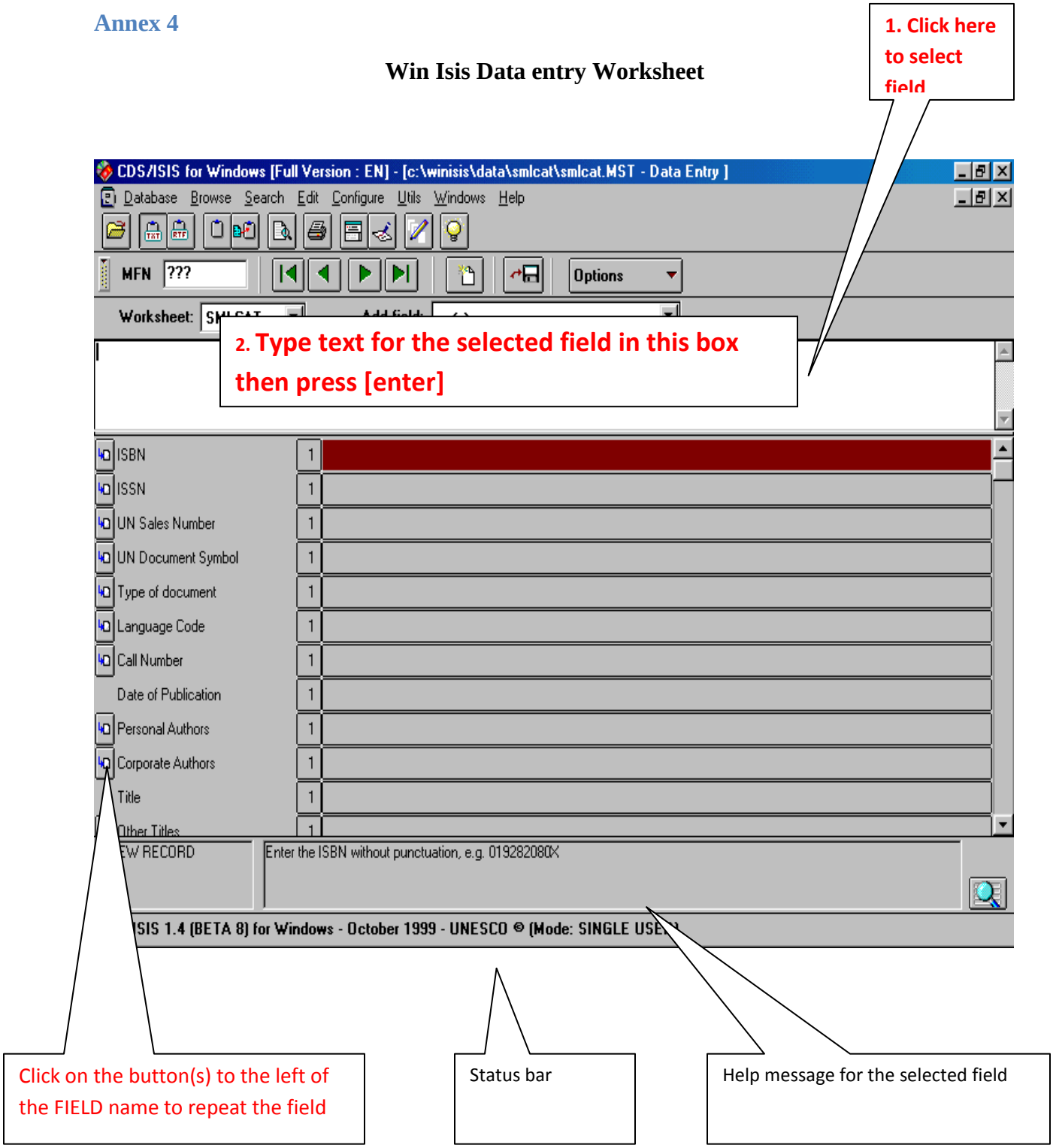
Shown below are the main functions available from the Menu Bar.

You can change the language of the Menu Bar (only!) by selecting Configure and then Change language.

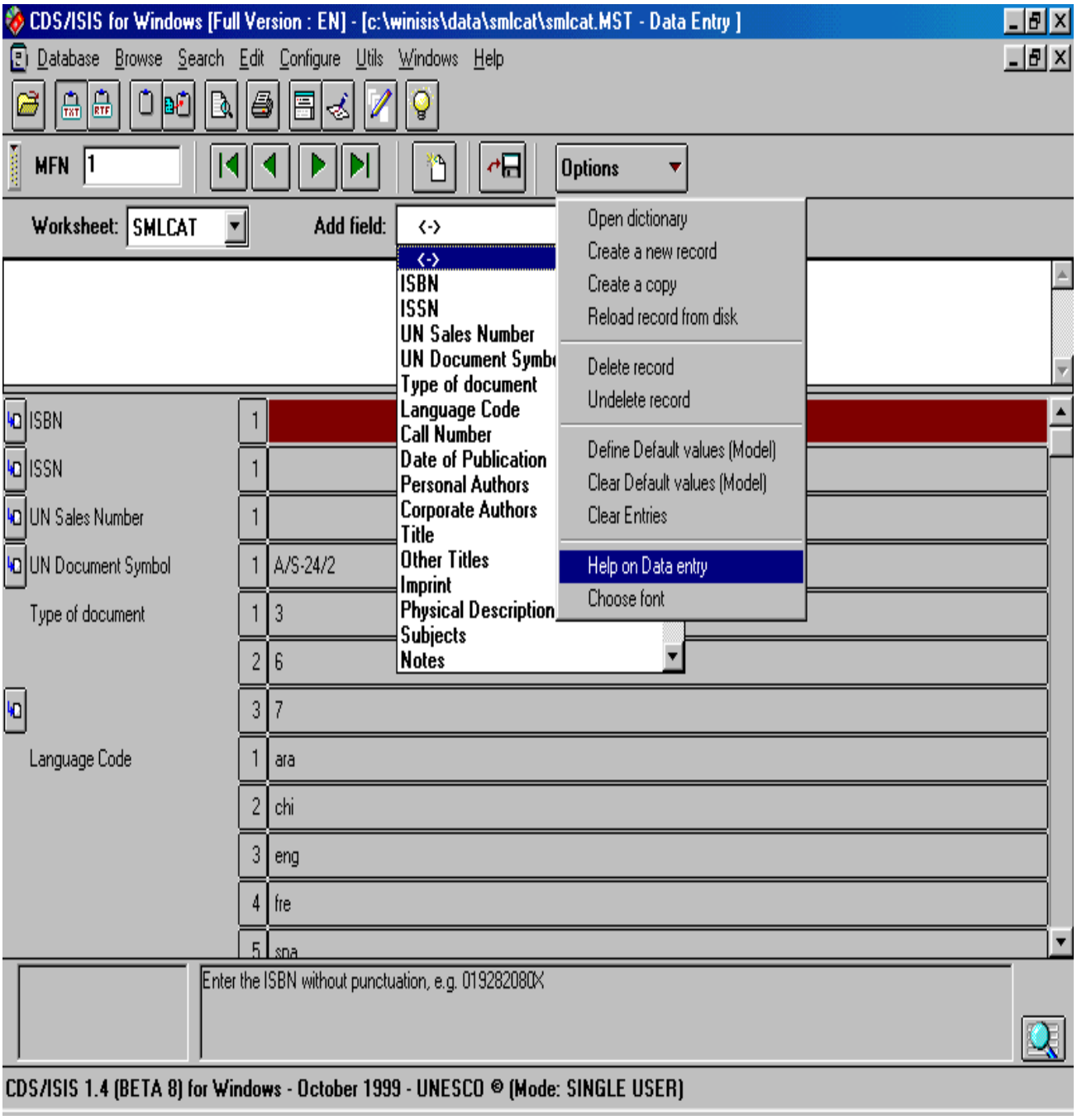

MFN number
Pencil icon: data entry
CDS/ISIS for Windows [Full Version : EN] - [c:\winisis\data\smlcat\smlcat.MST - Data Entry]
Database Browse Search Edit Configure Utils Windows Help
Minimize
MFN 1
Options
Worksheet: SMLCAT
Add field:
Arrow keys
Print
Blank page icon: create a new record
Diskette icon: save a record

Annex 4

Win Isis Data entry Worksheet

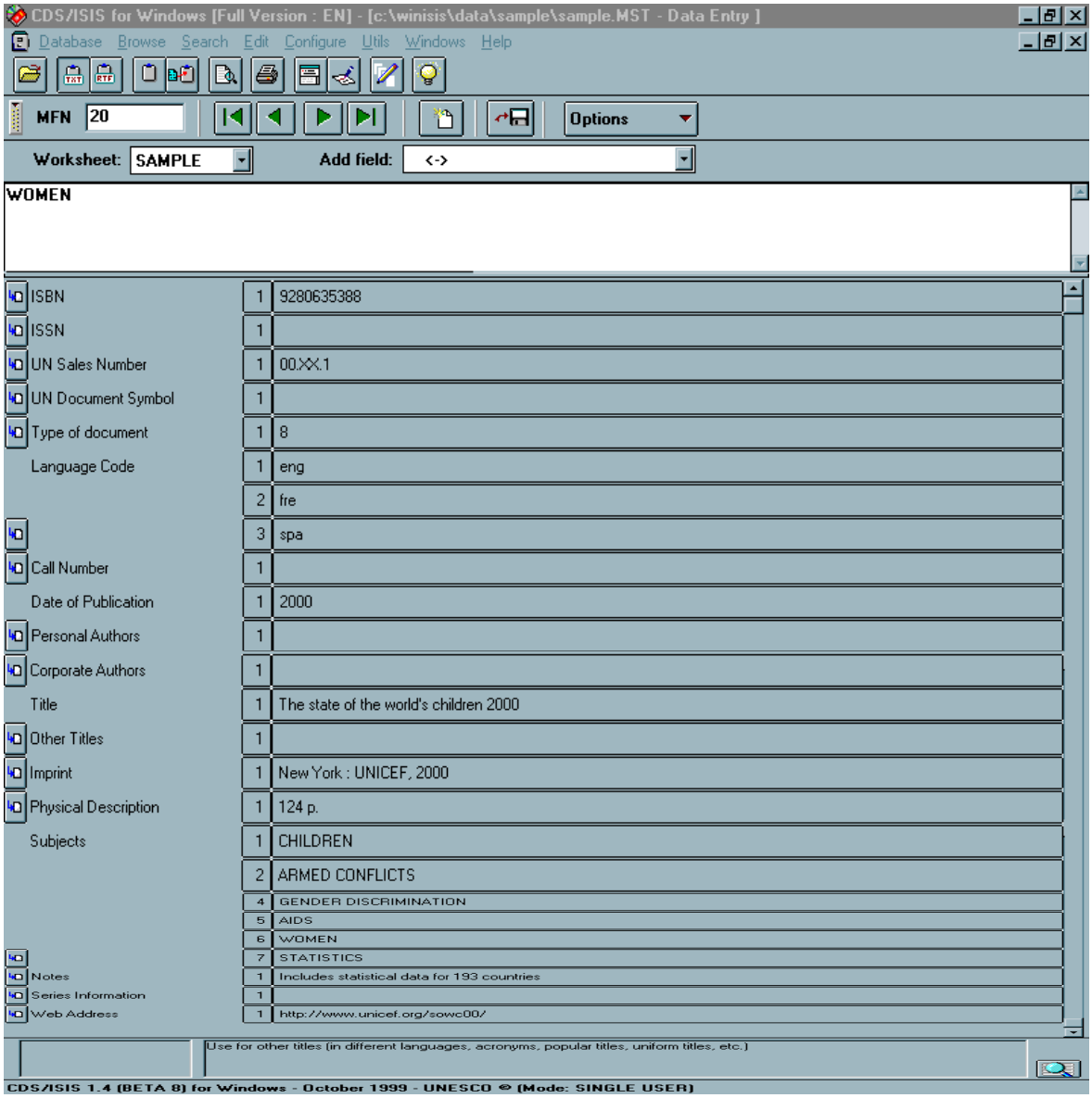


Annex 5


CDS/ISIS for Windows [Full Version : EN] - [c:\winisis\data\smlcat\smlcat.MST - Data Entry]
Database Browse Search Edit Configure Utils Windows Help
MFN 1
Options
Worksheet: SMLCAT
Add field: <->
Open dictionary
Create a new record
Create a copy
Reload record from disk
Delete record
Undelete record
Define Default values (Model)
Clear Default values (Model)
Clear Entries
Help on Data entry
Choose font
<->
ISBN
ISSN
UN Sales Number
UN Document Symb
Type of document
Language Code
Call Number
Date of Publication
Personal Authors
Corporate Authors
Title
Other Titles
Imprint
Physical Description
Subjects
Notes
ISBN 1
ISSN 1
UN Sales Number 1
UN Document Symbol 1 A/S-24/2
Type of document 1 3
2 6
3 7
Language Code 1 ara
2 chi
3 eng
4 fre
5 spa
Enter the ISBN without punctuation, e.g. 019282080X
CDS/ISIS 1.4 (BETA 8) for Windows - October 1999 - UNESCO © (Mode: SINGLE USER)

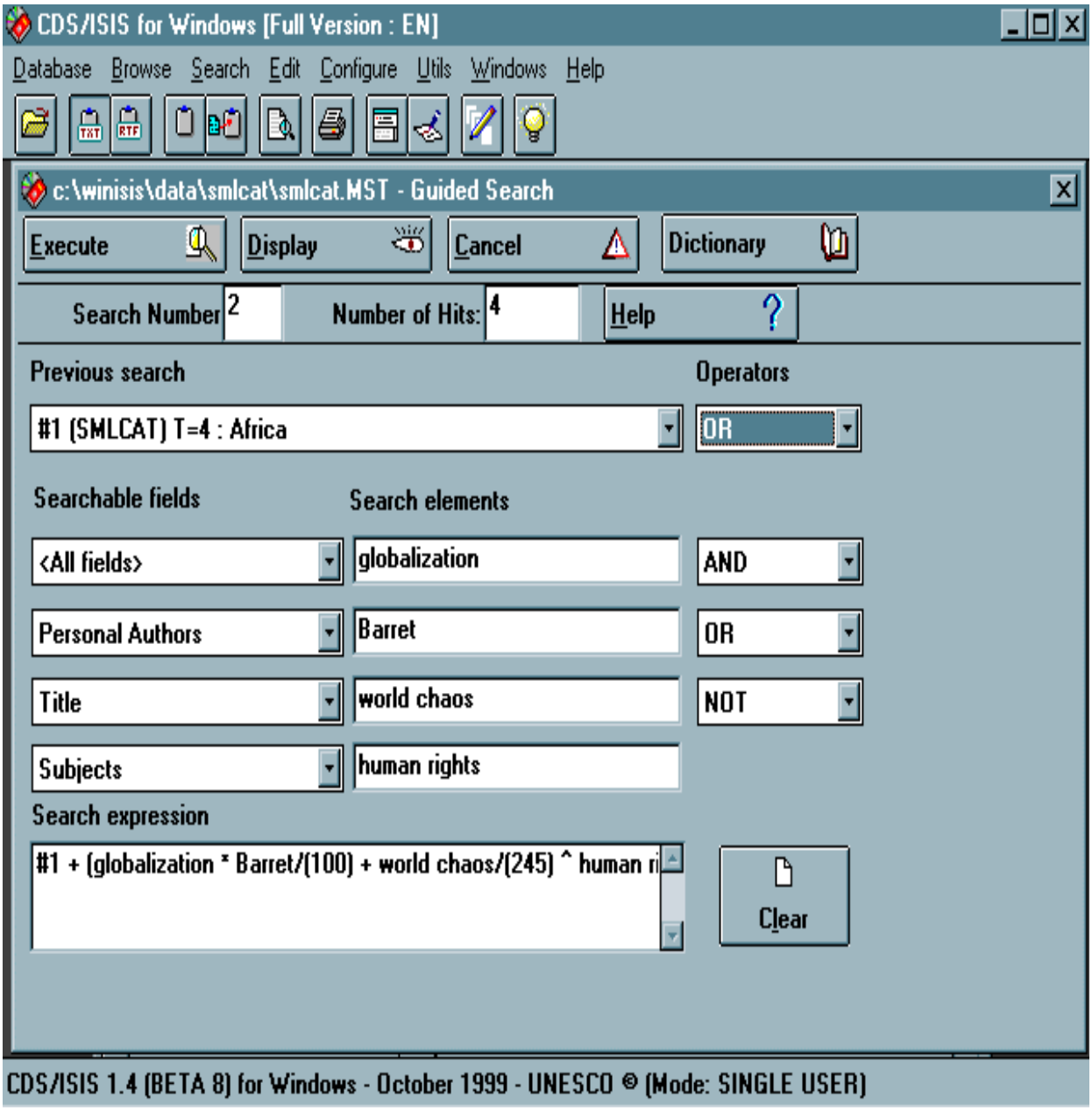
Annex 6

Completed input record



Annex 7

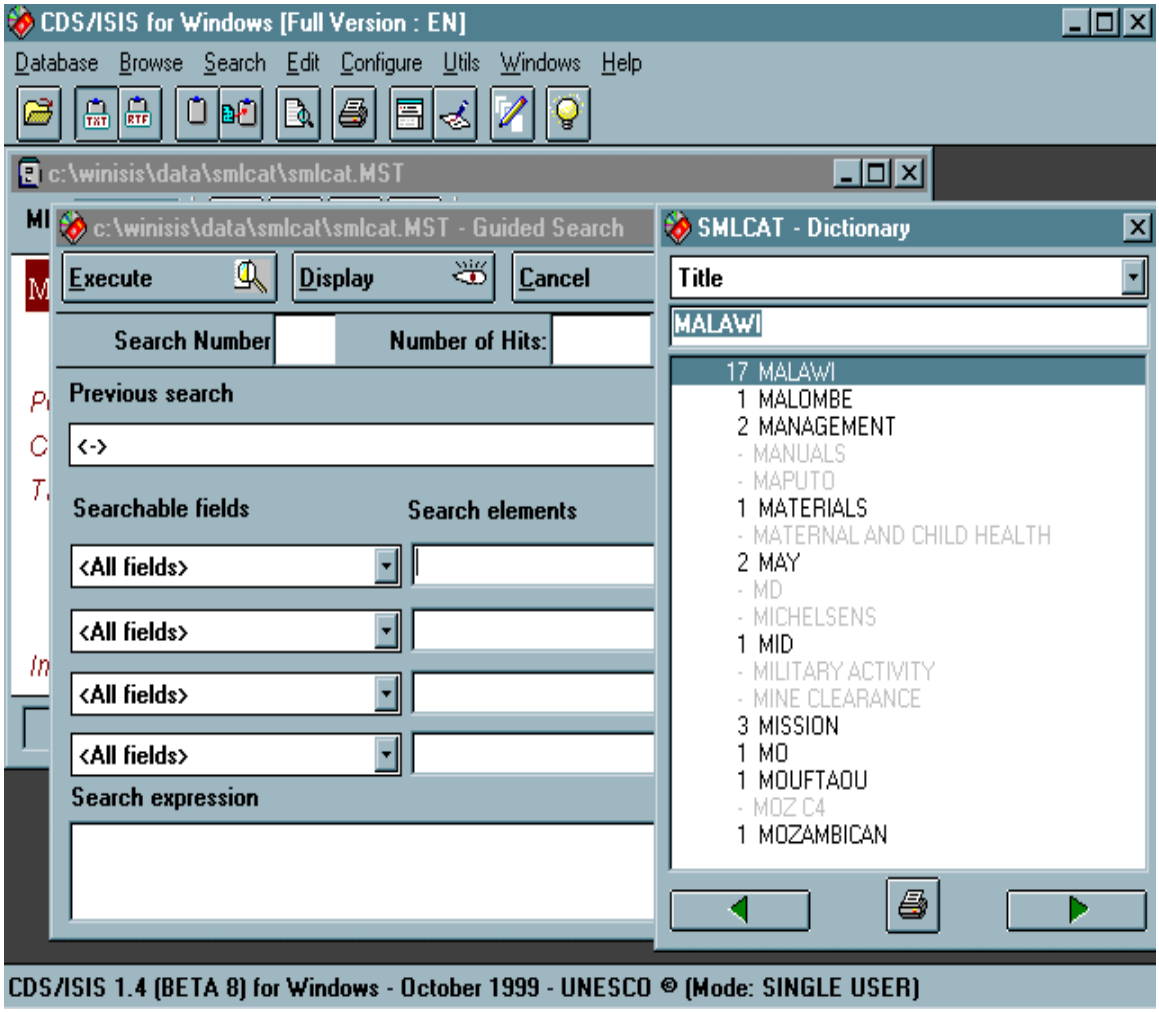
Guided search dialog box



The result of your search will be shown in the **Number of hits** box. To look at the retrieved records click on the **Display** button.

Annex 8

Guided search dialog box (with Dictionary display):



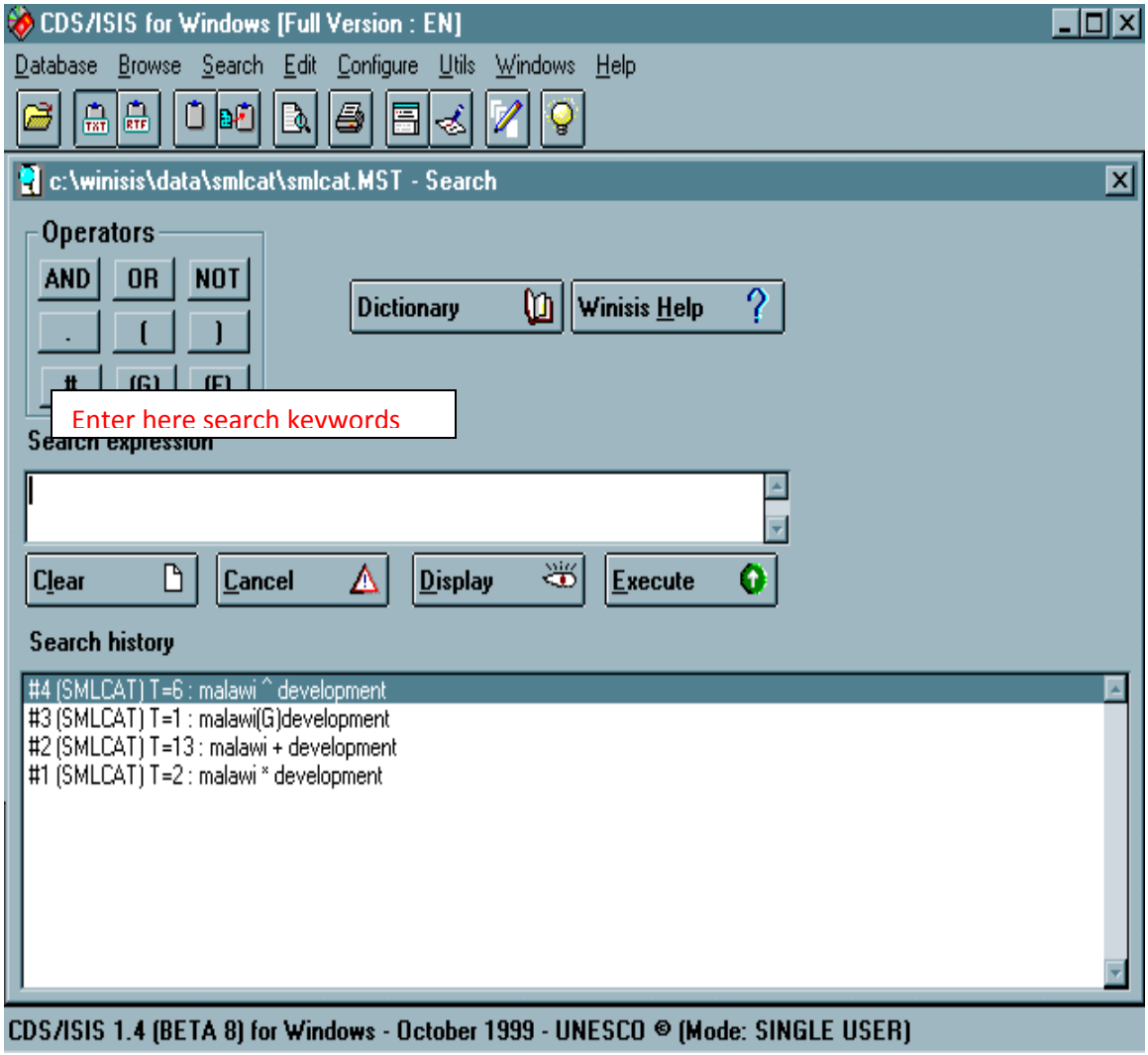
Section 3.01

Expert search: This type of search is suggested for experienced users.

1) On the Winisis menu, click on Search. Select **Expert Search** from the pull down menu.
2) Type your search expression in the **Search expression box**. When more than one term is used, an operator is needed. Select the appropriate Boolean **operator** and/or proximity operator (parenthesis) or (G) [records containing the selected keywords in the same field], or (F) [records containing the selected keywords in the same field or individual keyword of a repeatable field]. For further details, use the Winisis on-line help.
3) Click on the **Execute** button to run the search.

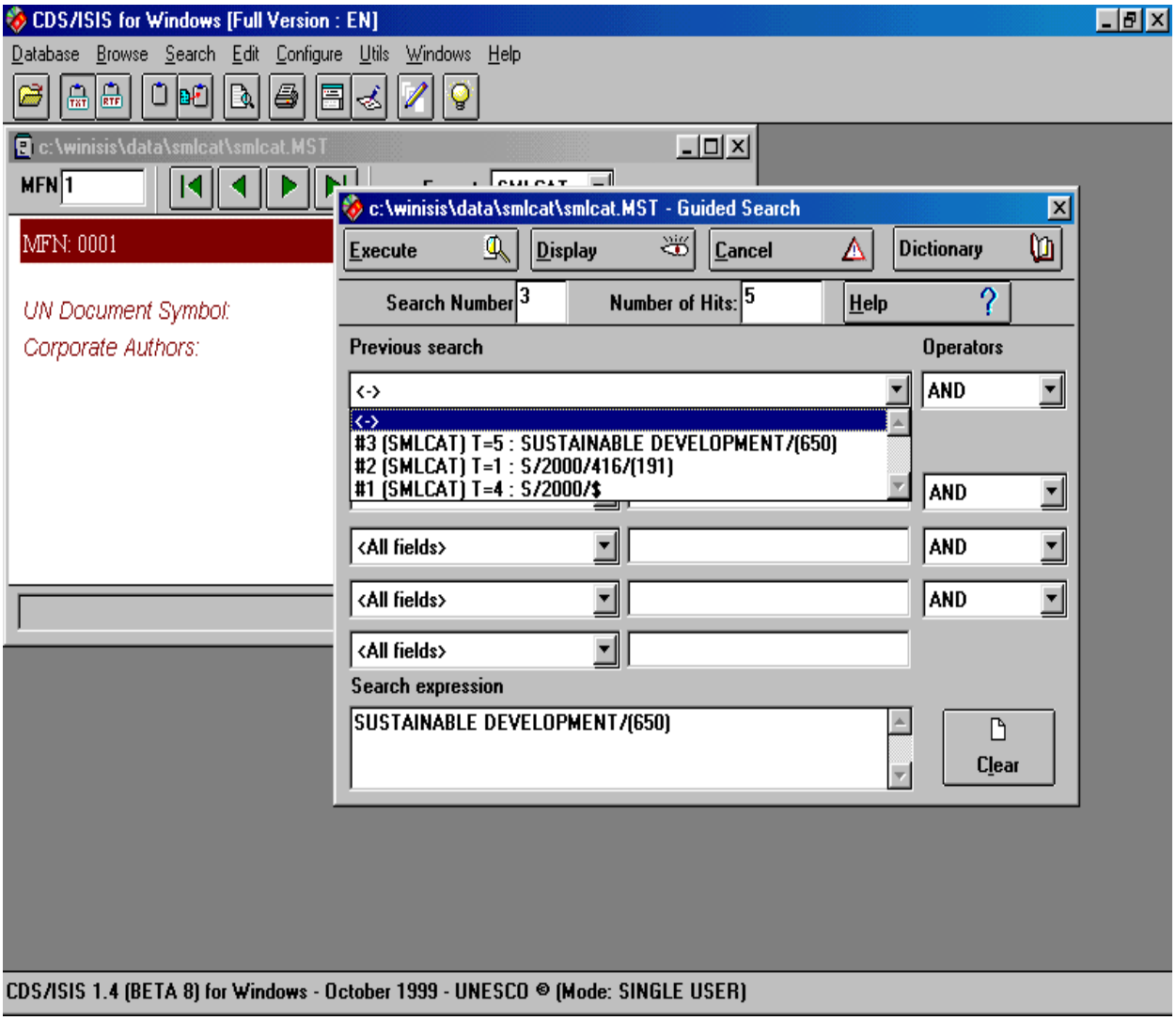
Annex 9

Expert search dialog box



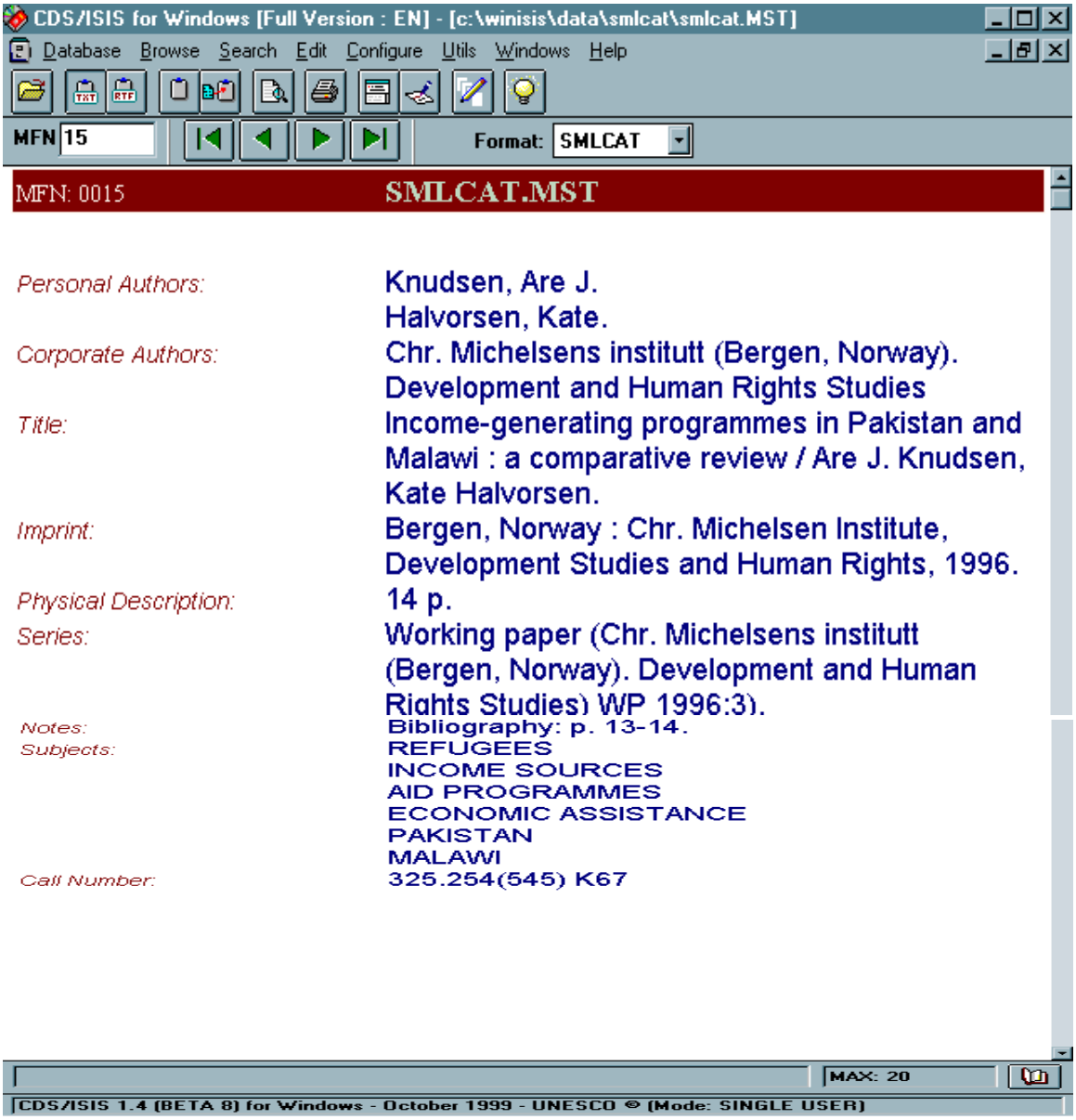
Annex 10

An example of the Search history pop up window is provided below:



Annex 11

An example of a record in Display format is provided below:

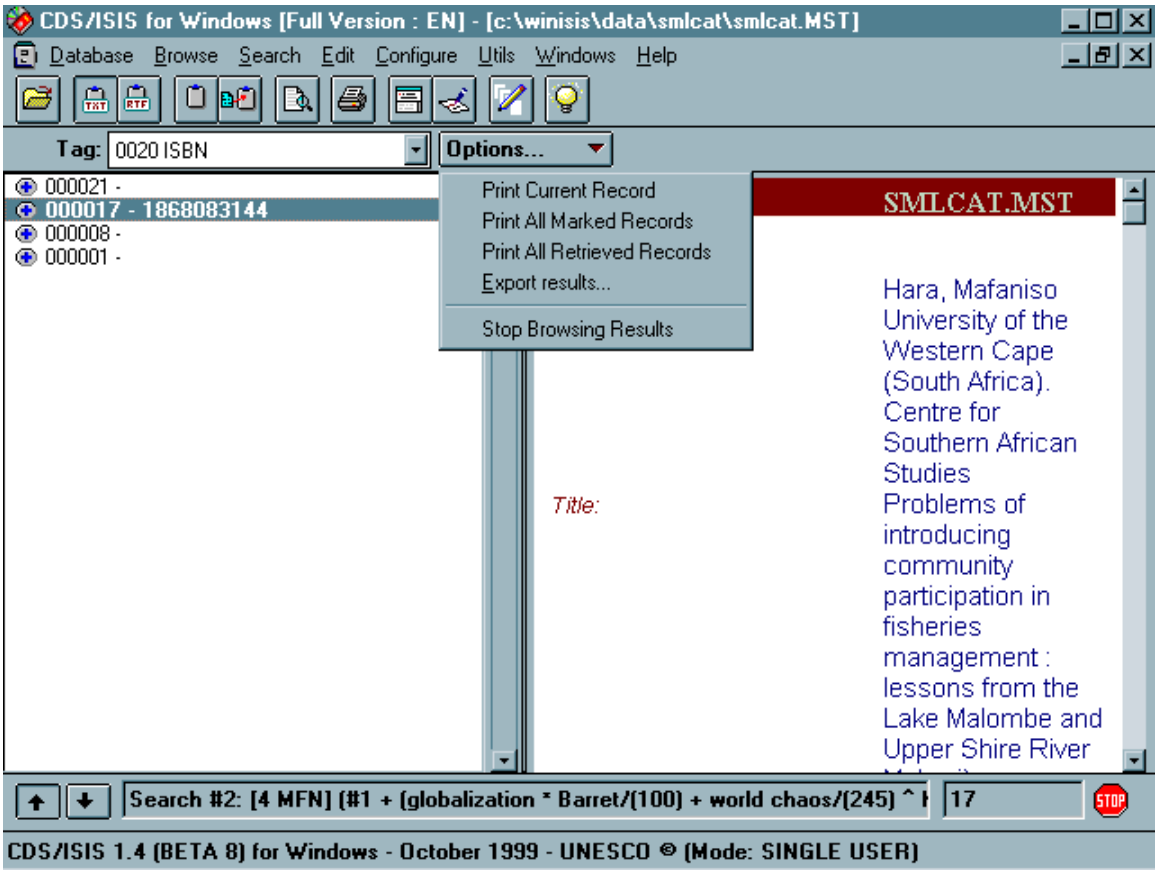


Annex 12

Article IV.
Article V. HOW TO PRINT RECORDS

1) **Search results**

To print records you have retrieved through a search, click on one of the MFN numbers on the left hand of the result display panel. This will bring up the record display panel. Then open up the pull-down Options menu and select one of the print options.



2) **Printing records from the Full database Browse mode**

On the Winisis menu bar, click on Database, and then select **Print** option, ***or*** click on the **Printer** icon on the toolbar. A dialog box opens:

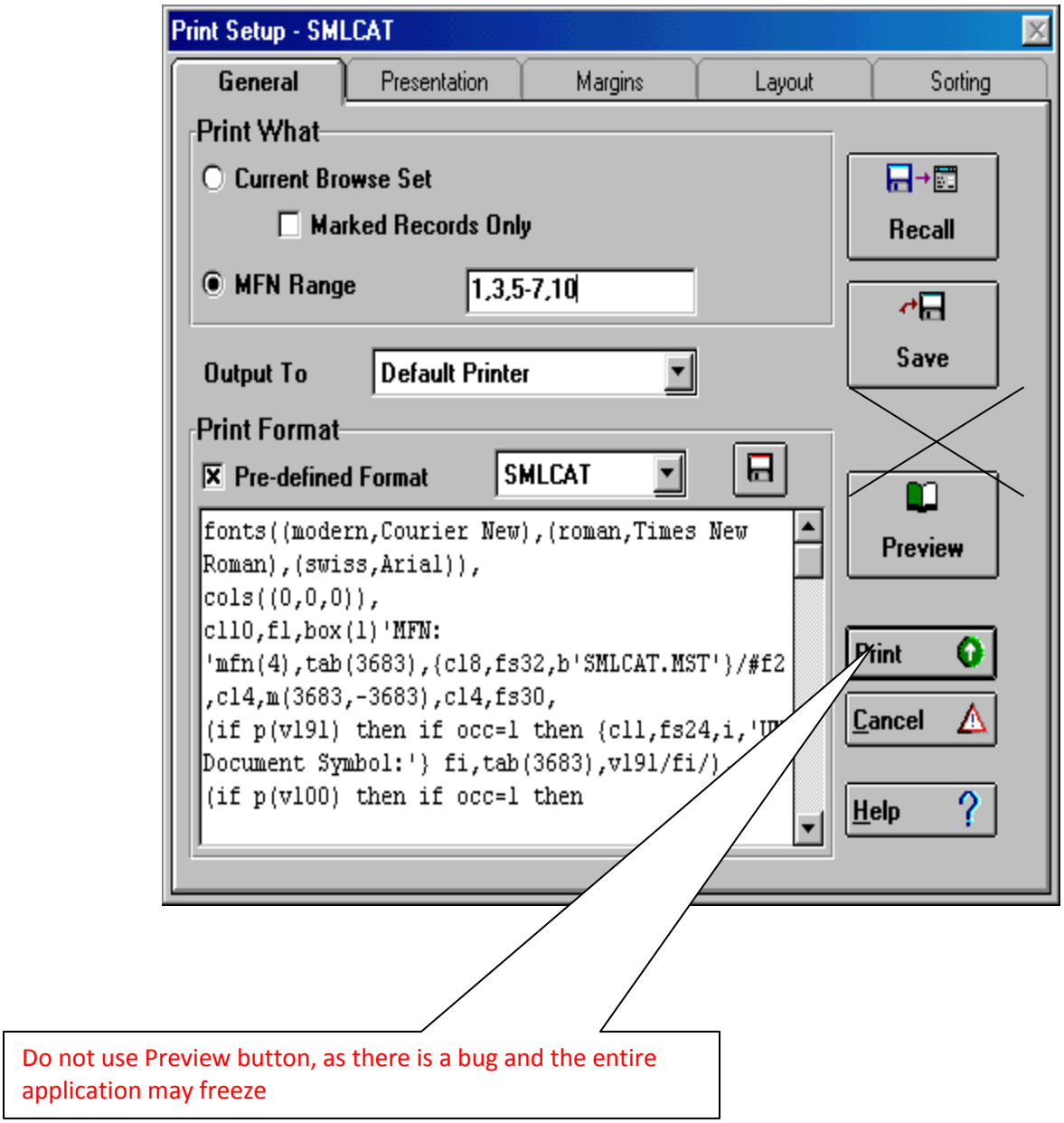
- **Print the Current Browse Set** prints the record set you were browsing before entering the print dialog.

- **MFN Range** prints the specified MFN range of record(s). Use commas to separate records which are not contiguous. Examples: 10 [prints record 10 only]; 10-15 [prints from record 10 to record 15]; 10,15,20-30,55 [prints record 10, record 15, from record 20 to 30, and record 55].

Click on the **Print** button to start printing.

Annex 13

An example of this option is provided below:

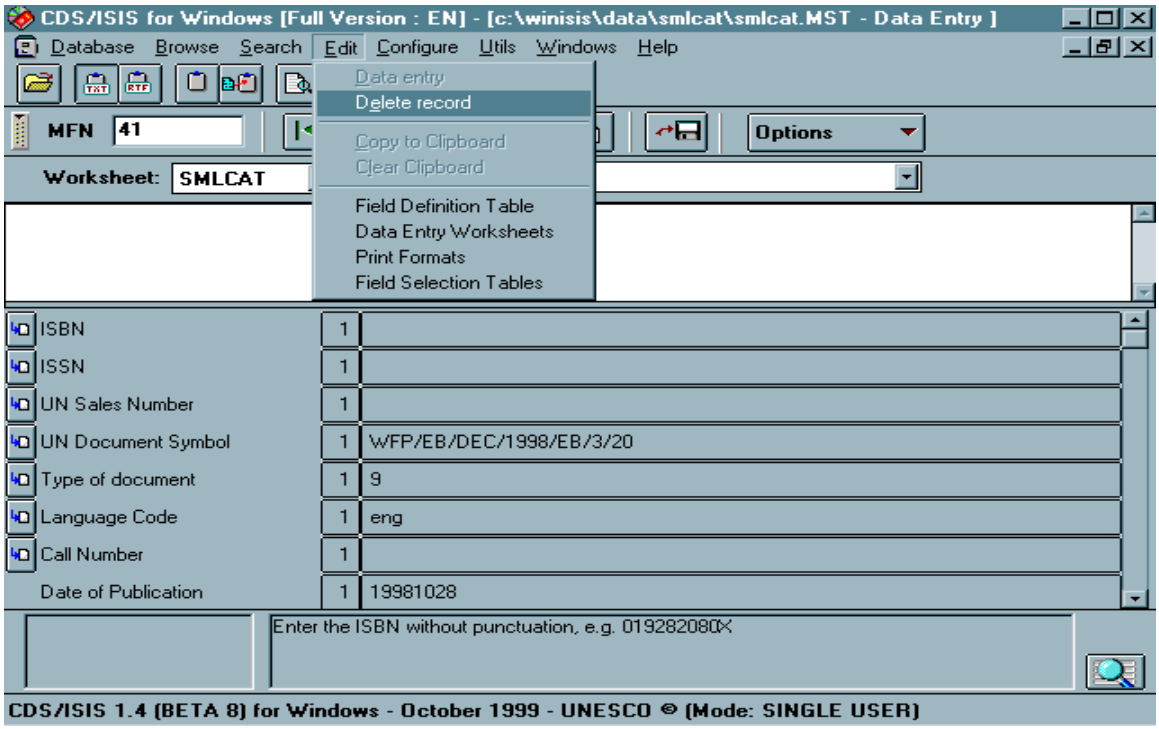


Do not use Preview button, as there is a bug and the entire application may freeze

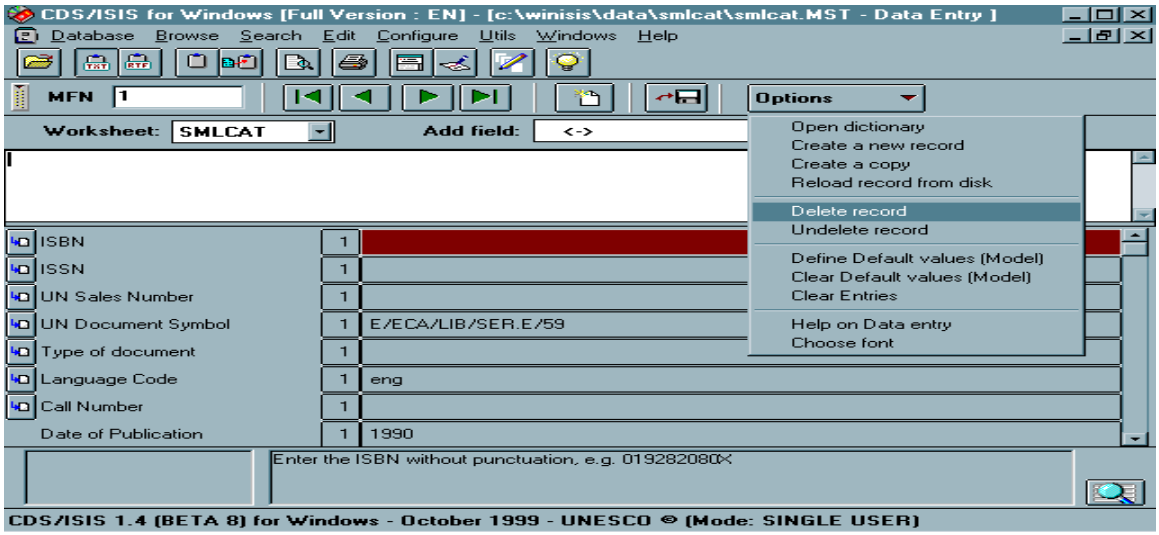
Note: you can change the print layout by going to the appropriate tab (Presentation, Margins, etc.) on the Print Setup panel.

Annex 14

Delete records



Equation 1 from the Options pull-down menu, select Delete record.



In both cases, the record will be deleted logically, but the MFN number will not be reassigned to a new record until you re-compact the database. The procedure for re-compacting the database is somewhat long and not risk-free -- we tested it ourselves several times in different ways,

encountering a different problem each time. To avoid similar problems, we suggest you simply re-use the MFN number of a deleted record.

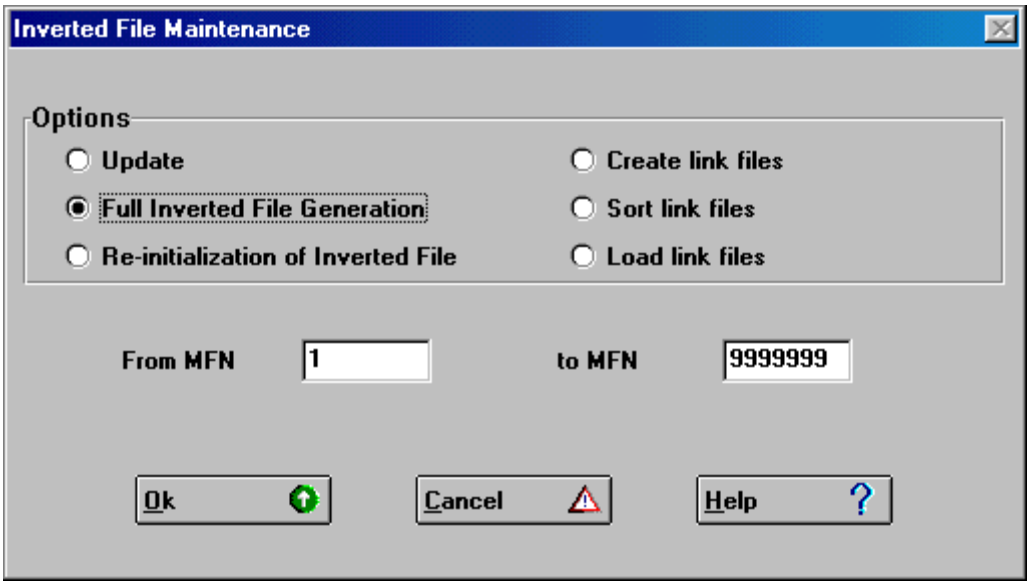
After retrieving the record in Data Entry mode, **Undelete** the record by choosing that option from the Options menu. Then re-edit the record with new bibliographic information from another publication and save it with the same MFN number.

Annex 15

Article VI. UPDATING THE INDEXES

Whenever new records are added, normally the indexes are automatically updated after you save the records, and you can retrieve them. However, the program is still in Beta version, so in the event that you are **not** able to retrieve the newly input records, you will need to update the Indexes.

1) From the Database menu select **I/F Update…**
2) A new dialog box pops up. Select the option **Update,** which updates the inverted files for which an update is pending: i.e., records added, deleted or modified since the last inverted file update.
3) **Full Inverted File Generation** regenerates the inverted file of the entire database. This takes longer, but eliminates any inconsistency in the database. When this option is selected, leave the default value of the MFN numbers at 1 to 999999, which indicates that the generation will work on the entire database.
4) Click on OK. The Update or full generation of the files will takes place and the entire database will be fully searchable.



Annex 16

Researcher: Ram pd. Sharma

Thesis year

Dear Sir/Madam,

This is my research study on the '**Application of Information Technology in Cataloguing and Indexing: Its retrieval aspect**'. The purpose of this questionnaire is to know your view about the Application of IT in cataloguing and Indexing for the services to users' in Information retrieval and to which extent the IT in Cataloguing and Indexing are applicable? It aims to know either the Cataloguing or Indexing are approachable tool to retrieve the exact information from the collection of Information or not.

Yours cooperation in filling up this questionnaire is solicited. The information given by you will be kept confidential and used only for this research work.

General information of informant

Full Name of Librarian:

Name of Library

Designation:

Number of library collection:

Number of users to be served:

Date:

Q1 Do you prepare the automated catalogue & indexes by self?

a) Yes □ b) No □

If yes, which cataloguing code is being used in your library?

a) AACR I
b) AACR II
c) CCC
d) Any Other (Specify)

Q.2.) What was the investment for the establishment automated catalogue and indexes?

a) Up to Rs 10,000
b) More than 20,000
c) More than 30,000
d) More than 50,000

Q3) For how long does an automated catalogue and indexes exist?

a) Up to 5 years
b) More than 10 years
c) More than 15 years
d) Depend on the standard of software

Q4) Do you have bibliographic database in your library computers?

a) Yes □ b) No □

Q5) Are you satisfied using advance IT tools for information retrieval?

a) Yes □ b) No □

If yes, which tools satisfied using advance IT for information retrieval?

a)Automated catalogue
b) Automated index
c) Both

Q6) Among them which one is your first priority for retrieval of information?

a)……
b)……
c)…….

Q7) Why do you prefer automated catalogue and indexes?

a) Prompt preparation
b) Easily editable
c) Economy in cost and space
d) Need of the hours

Q8) What system have you devised for Information retrieval and dissemination to your users?

a) Personal help
b) Direct approach to shelf
c) Provision of automated catalogue and indexes
d) Users themselves are able

Q9) Do you used subject headings list and thesaurus to assign subject heading and keywords?

a) Yes □ b) No □

If yes, which list are you using now?

a) LCSH
b) SLSH
c) Thesaurus / Mesh
d) Other (Specify)

Q10) On which basis do you assign the keywords?

a) Subject headings list
b) By self
c) Basis upon the content of the documents
d) Other (Specify)

Q11) Have you made your own authority list for assigning subject heading and keywords for uniformity and consistency?

a) Yes □ b) No □

Q12) Are you providing effective services through the new IT can help improve the librarians images?

a) Yes □ b) No □

If yes, which effective services are providing your library?

a) Automate catalogues
b) Automate index
c) Both

Q13) for how long have your library been using the IT in cataloguing and indexing?

a) Less than one years
b) Less than two years
c) More than two years

Q14) which software are you using in your library?

a) CDS/ISIS b) LIBRA
c) LIB-INFO d) MIDAS
e) SOUL f)Other (specify)

Q15) which standard of cataloguing technique is being used for your library?

a) OPAC
b) CCF
c) MARC 21
d) All of the above

Q16) Are you providing the online services in your library catalogues?

a) Yes □ b) No □

Q17) Are you providing the online database in your library?

a) Yes □ b) No □

If yes, which online journals database is mostly used in yours library?

a) Emerald insight d) Black Well Synergy
b) EBSCO Host e) Oxford University Press
c) JSTOR f) DELNET

Q18) Please give your argument about the application of IT with traditional and modern approach in cataloguing and indexing?

……..
……..

Q19) Would you suggest something more for quick and relevant searching of information having the provision of preserving data for longer period despite of those two system?

……

……

THANK YOU!

Annex 17

Researcher: Ram Pd. Sharma

Thesis Year

Dear all users,

This is my research study on the '**Application of Information Technology in Cataloguing and Indexing: Its retrieval aspect**'. The purpose of this questionnaire is to know your view about the Application of IT in cataloguing and Indexing for the services to users' in Information retrieval and to which extent the IT in Cataloguing and Indexing are applicable? It aims to know either the Cataloguing or Indexing are approachable tool to retrieve the exact information from the collection of Information or not.

Yours cooperation in filling up this questionnaire is solicited. The information given by you will be kept confidential and used only for this research work.

General Information of Users

Full Name:

Name of Library:

Designation:

Date:

Q1) Are you member of this library?

a) Yes □ b) No □

Q2) Do you attend any library activities?

a) Yes □ b) No □

Q3) How often do you use the library?

a) Daily
b) Weekly
c) Fourth nightly
d) Monthly

If yes, How many hour in a day do you used?

a) One hour
b) Three hour
c) Five hour
d) More than five

Q4) Do you get the exact information from the collection easily?

a) Yes □ b) No □

Q5) Do you get needed information through the subject only?

a) Yes □ b) No □

Q6) Which of the following heading you use for the information retrieval?

a) Author
b) Subject
c) Title

Q7) Are the keywords used in the databases matched with your demand?

a) Yes □ b) No □

Q8) what do you think the better way for information retrieval?

a) Only one keyword
b) Two keyword
c) More than two keyword

Q9) Do you possess knowledge of the different software?

a) Yes □ b) No □

Q10) which is your favorite software for information retrieval?

a) CDS/ISIS
b) LIB-INFO
c) SOUL
d) Other (Specify)

Q11) Do you find the software being used friendly?

a) Yes □ b) No □

Q12) Are you satisfied using advance IT tools for information retrieval?

a) Yes □ b) No □

If yes, which tools satisfied using advance IT for information retrieval?

a)Automated catalogue

b)Automated index

c) Both

Q13) Among them which one is your first priority for retrieval of information?

a)……

b)……

c)…….

Q14) Which Methods do you think is users' friendly?

a) Automated catalogue
b) Automated indexes
c) Other (specify)

Q15) What is your suggestion to the library Application of IT?

……

……..

Q16) What is your grievances' or complain?

……

THANK YOU!

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BIO-DATA

MR. Ram Prasad Sharma

Personal Detail:

- Date of Birth: 14th November 1979(2036/07/29)
- Father's Name: Khageswar Sharma
- Sex: Male
- Marital Status: Single
- Citizenship: Nepali

Permanent Address:

- Mukundapur-9, Nawalparasi, Lumbini, Nepal
- Home mob.0977-9804236388, 9803349188
- ramu.acharya@gmail.com

Present Address:

- Kirtipur, Kathmandu, Nepal
- Mobile no.0977-9841395621
- jack_acharya@yahoo.com

Academic Qualifications:

- Master Degree in Library and Information Science in 2008, Tribhuvan University
- Bachelor of Arts in English and Sociology in 2005, Tribhuvan University
- Intermediate of Artsin English, Economics and Political Science in 2000, Tribhuvan University
- S.L.C. graduation in 1997

Computer skill and Training:

- LAN, WAN, SQL, VB, OOAD and S/W Eng
- HTML, DHTML, Java2, Linux and Java Scripts
- Word Processing, Spreadsheet, PowerPoint, E-mail and Internet
- 2 Years Web Developer Course from Aptech Computer Education India & Nepal in 2003

Experience:

- Assistant Teacher for web Designing in Kirtipur Computer Institute, 2004-2005.