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Directorate of Distance Education

Bachelor of Library & Information Science

II - Semester

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INFORMATION PROCESSING-II CATALOGUING THEORY

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Units (1-13)

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SYLLABI-BOOK MAPPING TABLE

Information Processing-II Cataloguing Theory

Syllabi

Mapping in Book

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Unit 2: Types of Library Catalogue - Subject catalogue - Classified, dictionary, alphabetical - Functions of subject catalogues and comparative study of different types

Unit 3: Catalogue codes - Origin, growth and development since 1930 - Classified Catalogue Code (CCC) and AACR -2

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(Pages 26-39)

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Unit 5: Subject Indexing Languages - Sear's List of subject headings - Chain Procedure - PRECIS, POPSI and Uniterm Indexing.

Unit 6: Normative principles, canons and laws of cataloguing - their implications.

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Unit 8: Electronic form of catalogues - CIP, OPAC, MARC, and World Cat

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- Basic Features of Metadata - Types of Metadata - Elements of
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Unit 13: Information Retrieval - Boolean Operators - Types of
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INTRODUCTION

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In popular usage, the term information refers to facts and opinions provided and received during the course of daily life: one obtains information directly from other living beings, from mass media, from electronic data banks, and from all sorts of observable phenomena in the surrounding environment. A person using such facts and opinions generate more information, some of which is communicated to others during discourse, by instructions, in letters and documents, and through other media. In treating the basic elements of information processing, it distinguishes between information in analogue and digital form, and it describes its acquisition, recording, organization, retrieval, display, and techniques of dissemination.

Information processing is the change (processing) of information in any manner detectable by an observer. As such, it is a process that describes everything that happens (changes) in the universe, from a change in position (for example, the falling of a rock) to the printing of a text file from a digital computer system. In the latter case, an information processor is responsible for changing the form of presentation of that text file. Information processing may more specifically be defined in terms used by Claude E. Shannon (an American mathematician, electronic engineer, and cryptographer known as ‘the father of information theory’) as the conversion of latent information into manifest information. Latent and manifest information is defined through the terms of equivocation (remaining uncertainty, what value the sender has actually chosen), dissipation (uncertainty of the sender what the receiver has actually received) and transformation (saved effort of questioning - equivocation minus dissipation).

This book has been designed keeping in mind the self-instruction mode (SIM) format and follows a simple pattern, wherein each unit of the book begins with the Introduction followed by the Objectives for the topic. The content is then presented in a simple and easy-to-understand manner, and is interspersed with Check Your Progress questions to reinforce the student’s understanding of the topic. A list of Self-Assessment Questions and Exercises is also provided at the end of each unit. The Summary and Key Words further act as useful tools for students and are meant for effective recapitulation of the text.

BLOCK - I
LIBRARY CATELOGUE AND TYPES

*Introduction to Library
Catalogues*

**UNIT 1 INTRODUCTION TO
LIBRARY CATALOGUES**

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Structure

- 1.0 Introduction
- 1.1 Objectives
- 1.2 Library Catalogue: An Overview
 - 1.2.1 Definitions of Library Catalogue
- 1.3 Physical Form of Cataloguing and Classification
- 1.4 Digital vs. Traditional Libraries
- 1.5 Answers to Check Your Progress Questions
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1.0 INTRODUCTION

As the name suggests, a library catalogue is a compiled list of books and other graphic materials found in a library. The unit explains the basic ideas on library catalogue and the physical forms of catalogue. The purpose and definition regarding different functionality of library catalogue are all explained with reference to different approaches that is easier for the reader to comprehend. It is explained in this unit the meaning of cataloguing, a process that helps in organizing the library collection, the topic is followed by explaining some guidelines about it. A library catalogue serves the purpose of a tool. To begin with, it is essential to understand the importance of catalogue as a tool in library and cataloguing.

1.1 OBJECTIVES

After going through this unit, you will be able to:

- Define and describe the meaning of library catalogue
- Explain the function and purpose of library catalogue
- Understand the physical form of cataloguing and classification
- Discuss the difference between the setting and functions of traditional library and digital library

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1.2 LIBRARY CATALOGUE: AN OVERVIEW

Library catalogue is a tool that is developed for the purpose of facilitating the reading materials that are stocked up in the library. It is useful to the readers and the staff members who assist the reader in using the library in a proper manner. In simple terms, library catalogue is a list of books along with other reading material that are available and arranged in a particular manner in a library. The readers are exposed to the content of the library collection in an organized manner. The technique of cataloguing is such that it helps the reader in identifying the document or the book that they are interested in reading. It is all due to the fact that the process of cataloguing guides the users to identify, access and locate their preferred reading material and reference material that is organized in a certain manner in the library.

A modern library is well-equipped and aims to provide numerous facilities to the readers for the purpose of making use of the available collection. The facility of library catalogue facilitates the readers to view the documents within the library, location of the documents on the shelves and the means to access these documents.

1.2.1 Definitions of Library Catalogue

Catalogue is an English word which is derived from the Greek words '*kata logos*' that means a list or a register that is complete with enumeration of something. On simple terms, it means a list of things that are systematically arranged in any order whether alphabetically or chronologically or any other manner. For example, a catalogue of furniture items that are put on sale, a catalogue of different manufactured items of a particular company.

When one looks it in relation to a library, a catalogue is defined as a list of books and documents within a library. The list is arranged in a sequential manner, a specific order, containing bibliographic data to be identified and can be easily located within the documents catalogued.

Formally if one is to learn the definition of library catalogue it is a logical arrangement of inventory and the key of the documents and the contents. However, it is confined to a specific library. A catalogue in the general sense is related a collection comprising two or more than two libraries, this category of catalogue is called union catalogue.

Catalogue as defined in Harrod's librarians' glossary is a list of books, items and products that are arranged in a specific order. It keeps records, indexes and describes items, a complete collection of resources, it can be a library as a single or as a group of libraries. Each entry comprises of details of class numbers enabling the items to be found on the shelves complete with date of publication, and details about the author, title, place of publication, illustration and edition pages, these are described and identified as a book. It is to be distinguished from:

- (1) a list, that can be in a particular order and can be complete or incomplete
- (2) bibliography that can be confined to a collection of books or it can be related to a specific group of libraries

If one is to catalogue then it would mean to prepare or compile a list of documents as per the set of rules that are called codes in a catalogue, enabling the readers to identify their documents or items that are available in the library. It is the place where this kind of document is found to be stored on a shelf of the library containing a class number, a call number or in some other manner of identification that is given as per the entry in the catalogue.

Types of Library Catalogues

A library catalogue helps the reader in knowing whether the library is equipped with the document for which the author or the subject or the title as demanded by the reader. The reader is also made aware about the different or same titles in the existing library with the information that they obtain through cataloguing. There are different means and ways of organizing the books these are as follows:

- Books organized as per the subject or publisher's series
- Arranged as per different editions or translations
- As per titles

There are certain standard codes, rules and procedures that are undertaken during the process of cataloguing different documents that are able to guide the cataloguers in organizing the reading material in a proper manner.

Libraries are able to create numerous records of documents that are required by the cataloguers, these are as follows:

- Register
- Shelf register
- Current periodicals register
- Register for periodical holdings

What is essential to observe is that a lot of bibliographical data that are put into these registers are more likely to be similar to the library catalogue. For instance, when we talk about accession register, it is an inventory comprising documents that is acquired by a library with details on price, vendor who supplied the document and size in addition to common bibliographical data.

The shelf register comprises a list of documents that exactly reflect the arrangement of the documents on the shelves whether in rooms or in big halls. This comes handy, when stock verification is required. The records thus kept resemble library catalogue, nonetheless their function is different and distinct.

There is a vast difference between library catalogues and the catalogues made by booksellers, publishers and bibliographies. Each of these tools used for

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reference purpose have the utility for building up collections for a library book selection. However, they do not serve the purpose that the library catalogue serves.

Purposes of a Library Catalogue

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Libraries comprise of reading and referenced materials arranged in different physical forms, it can be utilized by the readers for reference, reading, study and other purposes. These materials are always under circulation and for that reason it is possible that these may not be available at a point of time on the shelves.

These materials for reference may be present in different forms such as printed documents, machine readable forms or even microfilms. These are placed on the shelves at different places like sections, different floors of library or even in different rooms as found appropriate to store.

For all these reasons, it is essential that the library is able to prepare and provide public records of every material regardless of the physical form it acquires. It can be an entire collection or even be as per a particular idea to be given to the readers.

The primary objective of a catalogue is to bring readers a relief in utilizing collection of the library by title, subject and author including all the other approaches pertaining to the collection. The main purpose of a catalogue is to be a guide of collection of materials. It gives the idea to the users about the difference between document and non-document materials that are available or not available within a specific library. A catalogue in the library is all about serving the purpose of the key to the collection within the library and providing location to retrieve a tool.

Functions of Library Catalogue

Charles Ammi Cutter, an American librarian, has mentioned the objectives of a bibliographic system in his *Rules for a Printed Dictionary Catalog* in 1876. The functions of a catalogue are described as follows:

- 1) to enable a person to find a book of which
 - the author, or
 - the title, or
 - the subject is known
- 2) to show what the library has
 - by a given author
 - on a given subject
 - in a given kind of literature
- 3) to assist in the choice of a book
 - as to its edition (bibliographically)
 - as to its character (literary or topical)

The functions as mentioned above are even applicable to the modern-day library. A library comprises of numerous types of reading and materials, it may even replace book by document, that is still a paper-material or in any other form.

A library basically informs the reader whether a reference or reading material is available or not. The readers approaching the catalogue with the name or title of an author can refer to it with this approach. The title or the author name should be able to provide complete and relevant information to the reader. The entry should be as per the word or name, it is essential to provide a cross-reference entry. The title entries should be able to cater to the title approach to those who approach it.

Another point is the name of the subject. In many cases the reader is not able to approach or search through the entire catalogue using the name or the title of the document. It may be that the reader is interested in a particular subject. In such cases the only means that helps them fetch information is through subject entry mentioned in catalogue. The subject as a concept may be described in different terms. However, standard terminology is used for preparing the subject entries.

The second purpose is to show what a library is where the work of a particular author is available within the collection as all the documents are available with regard to a subject or as per a specific literature.

The third purpose is to be as descriptive as possible. As per the rules, descriptive cataloguing the documents are described in details with their complete characteristics, it helps in identifying a given document and it is isolated from other similar documents available. It is provided as per the need in specific cases, another thing is it is done in cases where the rules of the descriptive cataloguing are indiscriminately applied. However, it leads to large expenditure when maintained.

Whatever the approach may be, the catalogue is prepared to provide complete information with regards to the items of specific interest of readers.

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1.3 PHYSICAL FORM OF CATALOGUING AND CLASSIFICATION

Cataloguing and classification are interlinked with each other as these are not different or distinct as it seems. These two are interrelated functions that serve the purpose of helping the readers in locating and selecting appropriate materials in the library required for study and research purpose that are present within the library as documents. To a large extent it is to be understood that these two are complementary to each other.

Classification

Classification of books in the library is done by deciding the subject of the book and with this the books are arranged as per the class numbers on the library shelves. The books are placed physically, the entries however, are only placed one location per shelf within a library. If the books are dealing with one subject for

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instance, introduction to human biology, then this scheme is useful to the users. If a book or document deals with more than one subject or subdivisions of the prime subject, the book cannot be kept at two different locations on the shelves. Ideally speaking, that a book cannot be kept in two different places, one at cataloguing and another would be at the classification that would define it as per the subject. But we all know that this is not possible in the literal sense. The book even with different subjects can be kept only in one place in the cataloguing.

Analytical entry is prepared within the class number for the purpose of classification. Such entries are prepared for all the books whether dealing in one or more than two subjects. Similarly, anthologies and readings are handled where the readings are contributed by more than one author. Under this situation analytical entries are prepared to help the readers notice different contributions by different authors. With this we are able to find that the classification and cataloguing that should be complementary as well as supplementary. These activities are jointly bring the readers' notice to the entire content of documents that are arranged within the library.

Another purpose of a library catalogue is to be a reference or a tool that answer all the questions of the users of a document. The library catalogue used in different occasions is often used as a beginning tool that answers all the enquiries with regard to information on documents. For instance, readers' query related to books of a particular author and other details about the author, their pseudonym or the full name, these should be answered by the library catalogue.

A catalogue is all about being able to provide valuable information with regard to documents apart from bibliographical data that would help in locating and accessing documents.

To understand more about the classification process it is essential to understand about the five laws of library science, these laws are as follows:

The five laws in the library science comprise basic set of guiding principles for the purpose of designing and operating the library system. Each of the activities that are undertaken within the library may be subtracted from these five laws. These are especially formulated for the purpose of helping with the preparation and production of the catalogue, the laws comprise of useful guidelines for this purpose.

The first law states 'Books are of use', the law states about the necessity of organizing the books in a specific manner in the library for maximum use, it is for providing numerous physical facilities and introducing the readers services. If one is to look at the facility it provides, it is to provide library catalogue, that enables the entire collection to be available to the users.

The means in which the physical form of catalogue arranged should be flexible, it should be kept up to date. New entries should be added every now and then to the library. Similarly, the information related to the document in the entry should be appropriate that would help in identification of the document. At the

same time, it is important that the annotation and different notes should be given along with it for helping the readers in making the right choice amongst the documents within the library. Without these essential tools the users would not be able to find it and it will be difficult for the users to go through the collection. For this reason, it is essential to have a library catalogue.

The Second and Third Laws ‘Every reader his book’; ‘Every book its reader’ is all about providing the requirements or catering to the needs of the readers by giving access to the collection. Even the requirement of children, physically handicapped persons and specialists. Special analytical entries with regard to the documents are prepared for revealing the basic contents.

The Fourth Law ‘Save the time of the reader’ talks about the importance of the time. The design of the catalogue should be simple and the construction should be such that it should be time saving for a reader. A catalogue should be able to provide every approach towards the document such as, title, author, subject and series. Cross-reference entries should be included in case of change in name, subjects, countries and institutions. There should be guidance related to the use of library catalogue, if possible orientation courses should be offered to the new members within the library.

The Fifth Law ‘A library is a growing organism’ explains that the library should be such that the catalogue should be able to provide widest perspective that should include the changes and growth with relation to the publications. Additionally, including the needs of the users and different forms of documents. However, with the change in technology there are a lot of changes that are being incorporated within the physical forms of catalogues and the internal structure.

Computer terminals are located at far places within the library, prime entry is enough to access the documents and additional entries are now replaced with access points. The network within libraries are able to provide with all the access to the resources with regard to other libraries.

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1.4 DIGITAL VS. TRADITIONAL LIBRARIES

In the modern time there is a drastic shift from traditional to digital, this is referred to as technological evolution, however there are changes that are paradigm shifts through which the masses are able to access and interact with it in a better manner.

If one is to sight differences between traditional and digital or modern day library then these can be as follows:

A traditional library is characterized by the following:

- There is stress on storing and preserving the physical items, especially the books and periodicals.
- Cataloguing is done at a high level rather than one of the details such as author or subject, index as opposed to complete text.

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- Browsing is based on the physical proximity of the materials that are interrelated. For instance, sociology books are placed near one another on the shelf or close by.
- Passivity; information is physically assembled in one place; users must travel to the library to learn what is there and make use of it.

If one is to look at the digital library, it is different in the following manner:

- Emphasis is laid more on providing access to digitized materials no matter where they are located. Digitization eliminates the need to keep the items in physical form.
- Cataloguing is done to the details of individual words including glyphs.
- Browsing is based on hyperlinks, keyword, or any defined measure of relatedness; materials on the same subject do not need to be near one another in any physical sense.
- Broadcast technology; the readers are not required to visit the digital library, they can do it remotely from anywhere without restrictions. The library exists in every place for them for instance home, school, office, or in a car.

Everything Can Be Stored

The complete number of different kinds of books that are produced ever since the printing began may be around one billion. If an average book occupies 500 pages at 2,000 characters per page, then even without compression it can be stored comfortably in one megabyte. Therefore, one billion megabytes are sufficient to store all books. This is 10¹⁵ bytes, or one petabyte. At commercial prices of \$20 per gigabyte, this amount of disk storage capacity could be purchased for \$20million. So it is certainly feasible to consider storing all books digitally.

Very Large Databases

A database of a billion objects, each of which occupies one megabyte, is large but not inconceivable. Once one is comfortable with sizes of this kind, it is feasible to imagine a thousand such databases, or to envision them all as portions of the same global collection. This amount of storage is sufficient to house not only all books, but all of the following:

- photographs
- legislative material, court decisions
- museum objects
- recorded music
- theatrical performances, including opera and ballet
- speeches
- movies and videotape

Distributed Holdings

With digitization of information and accessibility on a network, it is needless to talk about its location, although it is stored electronically in one specific location. The device is yet connected to some computer somewhere. When the information is provided within multiple mirror sites, it is imperative to speak about the information being located in one place.

When it comes to traditional libraries, it is always about the size with relation to the number of books involved, with periodicals and other items along with it. Relevant statistic in relation to digital library would include the size of the digital information the users would access. It would mean that the digital libraries would require to expand their hold through the inclusion of shared digital links with other libraries. However, even with the latest technology it is not still the available option within libraries present online.

Now the question is how should one understand the unwillingness with regard to libraries sharing content? The questions is all about sighting the old measure with relation to the libraries, or the traditional library $\frac{3}{4}$ the number of books it holds. When there is expansion of library funds, it needs to assemble all the digital works, however it is not possible due to the fact that it may be under the impression of losing a portion of its prestige by giving other libraries access to its data. Ultimately it is essential to understand that all the material should be accessible to all at every library.

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Check Your Progress

1. How does a library catalogue help readers and the staff members?
2. What is an union catalogue?
3. What type of records do libraries create for the cataloguers?
4. What is the primary objective of a library catalogue?
5. Compare the cataloguing technique of traditional and digital library.

1.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Library catalogue is very useful to readers and staff members by assisting them in using the library in a proper way because it helps readers to get the content of the library in an organized manner.
2. Library catalogue is a logical arrangement of inventory and the key of the documents and the contents. However, it is confined to a specific library. A catalogue in the general sense is related a collection comprising two or more than two libraries, this category of catalogue is called union catalogue.

NOTES

3. Libraries are able to create numerous records of documents that are required by the cataloguers, these are as follows:
 - Register
 - Shelf register
 - Current periodicals register
 - Register for periodical holdings
4. The primary objective of a catalogue is to bring readers a relief in utilizing collection of the library by title, subject and author including all the other approaches pertaining to the collection. The main purpose of a catalogue is to be a guide of collection of materials. It gives the idea to the users about the difference between document and non-document materials that are available or not available within a specific library.
5. Cataloguing in traditional library setting is done at a high level rather than one of the details such as author or subject, index as opposed to complete text. However, in digital library setting cataloguing is done to the details of individual words including glyphs.

1.6 SUMMARY

- Library catalogue is a tool that is developed for the purpose of facilitating the reading materials that are stocked up in the library.
- The technique of library cataloguing is such that it helps the reader in identifying the document or the book that they are interested in reading.
- Library catalogue is a list of books along with other reading material that are available and arranged in a particular manner in a library. The readers are exposed to the content of the library collection in an organized manner.
- There are certain standard codes and rules and procedures that are undertaken during the process of cataloguing different documents that are able to guide the cataloguers into organizing the reading material in a proper manner.
- The process of cataloguing guides the users into identify, access and locate their preferred reading material and reference material that is organized in a certain manner in the library.
- Catalogue is an English word which is derived from the Greek words '*kata logos*' that means a list or a register that is complete with enumeration of something. On simple terms it means a list of things that are systematically arranged in any order whether alphabetically or chronologically or any other manner.
- Catalogue as defined in Harrod's librarians' glossary as catalogue of list of books, items and paos that are arranged in a specific order. It keeps records,

indexes and describes items, a complete collection of resources, it can be a library as a singular or as a group of libraries.

- The shelf register comprises a list of documents that exactly reflect the arrangement of the documents on the shelves whether in rooms or in big halls.
- Cataloguing and classification are interlinked with each other these are not different or distinct as it seems. These two are interrelated functions that serve the purpose of helping the readers in locating and selecting appropriate materials in the library required for study and research purpose that are present within the library as documents.
- Analytical entry is prepared within the class number for the purpose of classification. Such entries are prepared for all the books whether dealing in one or more than two subjects.
- A catalogue should be able to provide every approach towards the document such as, title, author, subject and series.
- Special analytical entries with regard to the documents are prepared for revealing the basic contents.
- New entries should be added every now and then to the library. Similarly, the information related to the document in the entry should be appropriate that would help in identification of the document.
- A catalogue is all about being able to provide valuable information with regard to documents apart from bibliographical data that would help in locating and accessing documents.
- Computer terminals are located at far places within the library, prime entry is enough to access the documents and additional entries are now replaced with access points. The network within libraries are able to provide with all the access to the resources with regard to other libraries.

NOTES

1.7 KEY WORDS

- **Library Catalogue:** It refers to a register of all bibliographic items found in a library or group of libraries, such as a network of libraries at several locations.
- **Stock Verification:** It refers to a process of physically counting, measuring, checking and weighing of all items in stock, against its book balance at least once in a year.
- **Bibliography:** It refers to a list of books and articles that have been used by someone while writing a particular book or article.
- **Glyph:** It refers to a graphic symbol that provides the appearance or form for a character. A glyph can be an alphabetic or numeric font or some other symbol that pictures an encoded character.

1.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

NOTES

Short-Answer Questions

1. Define library catalogue.
2. What are the different means of organizing books?
3. Name the numerous records of documents that are required by cataloguers.
4. Define cataloguing function.
5. Write a note on purposes of a library catalogue.

Long-Answer Questions

1. Describe how books are classified in the library.
2. Elaborate on the various functions of a library catalogue.
3. Explain how cataloguing and classification are interlinked.
4. Discuss the five laws of library science.

1.9 FURTHER READINGS

Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books

Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.

Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.

Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.

Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 2 TYPES OF LIBRARY CATALOGUE

NOTES

Structure

- 2.0 Introduction
- 2.1 Objectives
- 2.2 Overview of different Types of Library Catalogue
- 2.3 Subject Catalogue
 - 2.3.1 Functions of Subject Cataloguing
- 2.4 Answers to Check Your Progress Questions
- 2.5 Summary
- 2.6 Key Words
- 2.7 Self Assessment Questions and Exercises
- 2.8 Further Readings

2.0 INTRODUCTION

Library catalogues are designed to serve the purpose of guiding the readers towards the title they are searching. The physical form of library catalogues are card catalogues, online catalogues, microform and book catalogue. However, with time there have been modifications in the catalogue as per the requirements and amendments made to the existing catalogue. In this unit we will learn about different types of catalogues that are still in use today, these are subject catalogue, classified catalogue, dictionary catalogue, alphabetical catalogue. Additionally, discussion about functions of subject catalogues. Description about it all will help you gain an insight about the types of catalogue. These would serve the purpose of understanding how each differ from another and you will be able to compare these as these stand in complete contrast to each other.

2.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the various types of library catalogues
- Discuss alphabetical, classified and alphabetic-classed catalogue in detail
- Outline the advantages and disadvantages of different types of catalogues
- Understand the concept and objectives of subject cataloguing
- Mention a comparative study of different types of catalogues

2.2 OVERVIEW OF DIFFERENT TYPES OF LIBRARY CATALOGUE

NOTES

Let us begin with discussing about different varieties of arrangement and construction of catalogues that are a part of the internal form or the inner form as it is popularly known worldwide. These are categorized into three parts:

- (I) Alphabetical catalogue
- (II) Classified catalogue
- (III) Alphabetic-classed catalogue

(I) Alphabetical Catalogue

As the name suggests the catalogue is made in an alphabetical manner. However, even with this there are different sub-categories to the catalogue, these are as follows:

Alphabetical catalogues are again of following types:

- (a) Author catalogue
- (b) Title catalogue
- (c) Name catalogue
- (d) Subject catalogue
- (e) Dictionary catalogue

(a) Author Catalogue

Author catalogue or alternatively called pure author catalogue is an entry that suggests about the author index entry or a dictionary catalogue present within a classified catalogue. It is of utmost importance due to the approach of the reader that is as per the subject or the title in numerous ways as per the exact expressions of the authors' name that is the only indisputable thing. However, it is often served with references. In the catalogue as per the author arrangement, the entries are prepared alphabetically. It gives the indication about the works of the author that is inherent in the library, it indicates if the work by that particular author is present in the library or not. Here it is essential to understand that the term author is a term that includes, reviser, compiler, editor and even translator.

Advantages

Following are the important advantages that this catalogue serves:

- The catalogue serves the purpose of bringing together all the works related to an author in one place, it avoids scattered entries giving an organized look as per the subject.
- It reveals whether the work related to a specific author is available in the library or not.

Disadvantages

Just like any other catalogue style this catalogue too have its own limitation, these are:

- If a library maintains pure author catalogue then it fails to serve the purpose to majority of readers. For this reason, it is essential to add sub entries under all the entries comprising illustrator, translator, reviser and editor, a distinctive title should be given under each of these entries.
- It is essential that the catalogue be prepared with subject index and auxiliary approach be included to make it proper.

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(b) Name Catalogue

The catalogue explains that the entries are restricted to author and subject that is arranged in alphabetical sequence. It is also restricted to sub-entries related to the names of the authors including subject headings comprising the names of the persons treated as the entry of the subject.

(c) Alphabetical Subject Catalogue

The catalogue is self-explanatory, it is to bring out the entries that have headings with specific subject as per the book arranged in an alphabetical order. It is to satisfy the approach of the readers with regard to specific view of subject only.

(d) Title Catalogue

Arranged alphabetically the books are kept as per the title on the shelf. These are useful at the time when there are oriental works that need to be displayed in a proper manner, such as, Pali and Sanskrit books that have distinctive titles and names. However, in modern times the title arrangement on pure form is rare.

(e) Dictionary Catalogue

As per the ALA or American Library Association, the dictionary catalogue is a catalogue that is designed on the cards wherein the entries such as title, author and subject series, related references are prepared under one general alphabet. The sub-arrangement differs from the alphabetical. As per the explanation given by S.R. Ranganathan, 'Catalogue in which all the entries are word entries, hence

- (i) It consists of one part only
- (ii) Entries are arranged alphabetically like dictionary
- (iii) Main entry begins with the name of author or substitute for it' is known as dictionary catalogue.

The kind of entry is referred to as dictionary catalogue due to the entries and references that are made to be arranged within single alphabet just as the arrangement done in a dictionary. It comprises of author, name, title and subject

catalogue along-with cross reference entries arranged in one alphabetical sequence. It derives its name from its arrangement, that is like a dictionary.

Advantages of Dictionary Catalogue

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The prime reason for the popularity of the catalogue design is its simplicity and with it there are advantages it offers, these are as follows:

- User friendly due to the simple representation that enables any average user to consult it.
- Whoever knows how to use a dictionary can refer to the dictionary.
- It is able to give information readers if they know about specific subject, author, series and title is known. For instance, if a reader is aware about a particular book, that belong to particular series and they are not able to recall the author, title even the subject, they can still find it in the catalogue as per the alphabetical arrangement and find the desired book.
- Numerous references are used and made that is lacking in Classified catalogue. These are the references that leads from one to another subject and moves from one heading to another.
- It also gives out the information upon the number of books and the types of books available in the library.
- The quality of this catalogue is that it has the feature of cross referencing that makes it easier to consult and seek what the reader is looking for.
- Subject headings are derived for use in it from a standard list or from mechanical devices such as chain procedure. The cataloguer has the autonomy to choose heading to suit his readers.
- Easy to prepare and construct, the process involves combination of all the entries for the books that are arranged in alphabetical manner.
- Subject entries lie under the subject headings it is specified to rather than being under broad subject heading.

Disadvantages of dictionary catalogue

- In it entries pertaining to related subjects are placed away from each other because of alphabetical arrangement. For example, entry for 'electricity' and 'magnet' will be field or arranged far away from one another although the terms are related. This weakness may be overcome by providing cross reference entries but in many cases it may not be possible.
- As stated above, cross reference entries are required to be prepared in it in big quantity for linking together related subjects. This make the catalogue over crowded, unwieldy and heavy day by day.
- Dependence on subject headings may create problem because meaning of word may change with the change of place, person or time.

- It is only useful in public libraries, however, in research library it is of no value.
- On the surface of the dictionary catalogue it may seem simpler and easy, but it is infact the opposite of it all. When the catalogue grows along with the expansion of library, the arrangement as per the author, name, title, and subject entries become complex and inconvenient.
- If there is any change related terminology of subject, then it becomes essential to change thousands of cards in relation to it.

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(II) Classified Catalogue

As per S.R. Ranganthan, it is where there is a mix of entries, it comprises of number entries as well as word entries. For this reason, it is segregated in two parts:

- (i) Classified
- (ii) Alphabetical

Classified Part of classified catalogue has all the number entries that comprise of Main Entry, Cross Reference Entries.

Alphabetical part includes all the word-related entries such as Book Index Entries, Class Index Entries and Cross Reference Index Entries.

Classified catalogue is to be understood as subject catalogue where the entries are arranged using a recognized system of classification or through methodical arrangement. The entries are arranged in a systematic manner as per subjects. The order followed is the classification scheme that is utilized for arranging the books on the shelves. In this way, catalogue entries for the books are to be arranged as per class symbols.

The subject approach towards the readers is where the classified catalogue comes handy. It is able to provide all the options to the readers full, connected, panorama of all material on his specific subject, all its subdivisions, all broader subjects of which it is itself a subdivision.

Advantages

Following are the advantages of CC:

- The prime advantage of the CC is that the main entry is under the specific subject close to the neighbourhood entries of the related subjects.

For example

MY3 Indoor games 800 Literature

MY31 Card 810 American Literature

MY32 Chance game 820 English Literature

MY321 Dice 821 English Poetry

NOTES

MY322 Chess 822 English Drama

MY33 Billiards 823 English Fiction

- The familiarity of reader is increased due to the larger number of books as the books that are related lie within close vicinity.
- Books on one subject are in one place.
- Catalogue in a specific subject is also printed.
- Is able to reproduce in a systematic order as per the classified scheme on the shelves.
- It is easier to refer class index entries.
- If there is any change in terms within a subject, then only the subject index cards need to be changed. The classified part remains the same.
- Economical to compile, it is easy to file and easy to search the books within it.
- If a library is using card catalogue, classified and alphabetical part are arranged separately, more readers can consult the catalogue at a time.

Disadvantages

- There is not two step approach as it is a one by one procedure that one needs to consult. The reader will first have to consult the alphabetical and then the classified part.
- Readers are not pleased with it is notation of classification scheme is not easily comprehensible to average user.
- With the changing technology and the new development, it is quite possible that the classification schedule may become archaic in some time. The part that is still relevant will need revision.

(III) Alphabetic classed Catalogue

It is an alphabetical catalogue where the subjects are grouped in broader classes with alphabetic sub-division. There are two methods of arrangement, these are as follows:

- (i) Major subject divisions are arranged in a classified order and subordinate subjects within major division in the alphabetical order.
- (ii) Major subject divisions are put in alphabetical order with subordinate subjects are arranged in classified sequence. For example major divisions are Mathematics, Physics, Engineering, Chemistry, Technology etc are arranged in classified sequence and within major subject like Physics its sub divisions like Dynamics, Electricity, Gases, Heat, Light, Magnetism etc will be arranged alphabetically. Like this other method will be vice-versa to the above arrangement. In this form of catalogue, the combined advantages of both alphabetical and classified form are achieved. Reader can get all the

related material in a collection in a logical manner. As this form of catalogue has not been experimented fully, much cannot be said authentically about this form.

Check Your Progress

1. What are the physical forms of library catalogue called?
2. List the different sub-categories of alphabetical catalogue.
3. What is alphabetical subject catalogue?
4. Mention the entries of classified and alphabetical part of classified catalogues.

NOTES

2.3 SUBJECT CATALOGUE

It is often referred to as systematic catalogue where the descriptions are as per the classification scheme that are arranged on the multilevel. All this is done on the basis divisions and sub-divisions of second, third and further levels, that are based on logic order of ranges from most wide to more narrow.

Within larger divisions (both first and further levels) are used common divisions that concentrate specific types of publications accordingly to their content or publishing form (e.g. encyclopaedias, dictionaries, bibliographies, souvenir books).

Systematic catalogue consists of 28 main divisions, beginning with general division that covers universal publications.

Scheme of basic divisions

- (0) General (General encyclopaedias, information publication, daily newspapers)
- (1) Sociology
- (2) Economy and social issues
- (3) Law
- (4) History, Ethnography
- (5) Arts
- (6) Music, Theater, Movies
- (7) Literature
- (8) Literature texts
- (9) Linguistics
- (10) Bibliological knowledge
- (11) Pedagogic, Education
- (12) Science and High schools

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- (13) Religion knowledge
- (14) Philosophy, Psychology
- (15) Marxism-Leninism
- (16) Mathematical-biological sciences
- (17) Mathematic
- (18) Physic
- (19) Astronomy
- (20) Chemistry
- (21) Environmental science
- (22) Biological sciences
- (23) Agriculture, Forestry, Veterinary
- (24) Med sciences
- (25) Physical education, Sports, Games
- (26) Military
- (27) Technical sciences

Each entry indicates some feature of the document that is like authorship or the subject content. In simpler words, multiple access points are given for a document in the catalogue. The entries that are indicative of documents included within it, it is defined as subject content or subject cataloguing. These are also referred to as subject entries. The entire process is of cataloguing in such a manner is called subject cataloguing.

Meaning and Purpose

Entry in a catalogue serves the purpose of document substitute, it becomes essential to provide information relevant to it for the process of individualizing it. It is so that the document can be retrieved or searched from the crowd of another same subject category. The process is accomplished as a result of call number that is assigned to the document. Additionally, the entries for each document also comprises directions for reference purpose. It is achieved as a result of headings that serve relevant information within the document entries. These types of entries are references that helps the reader in locating the information with regard to the subjects that the readers are interested in.

Subject cataloguing is an essential part of the entire cataloguing process. For this reason, there is little need to mention that library materials cannot be more useful without it, especially in relation to large libraries.

With numerous numbers of documents that keep adding in it, there is a need for a robust methodology and this calls for subject cataloguing. It is able to provide subject listing in a proper manner.

2.3.1 Functions of Subject Cataloguing

It is to be noted that all the subject catalogues have two objectives, these are:

- To enable enquirer in identification of documents pertaining to a particular subject.
- To make the presence of materials related to allied subjects or related subjects known to the reader.

In detail, following are the objectives:

- Providing access to all the subjects with relevant material.
- Giving access to the materials through the suitable principles of subject organization that would be similar to applications and matter.
- To bring references to materials that are treated substantially as the same subject regardless of any differences within the groups of subject specialists or from the changing nature of the concepts with the discipline itself.
- To represent affiliations within the subject fields that may be dependent upon the use or application of intelligence.
- Providing entry via any vocabulary that is common to a group of users they may be laymen or they can be specialists.
- To be able to provide formal description with regard to the subject content in relation to any bibliographic unit with the precise or specific terms that are possible. Even if the description is given in the format of symbol, class or number.
- Providing the users with the means to make a selection from within all the terms whether from a particular category or as per the chosen criteria such as most thorough or most recent.

NOTES

Classification Symbol

Classification symbol comprises of numbers, general divisions are singled out with circle brackets, and hierarchy of sub-divisions is marked with periods.

Classification symbols are written on signs of catalogue boxes and on leading cards within them. They are placed on bottom side of catalogue cards.

Classification symbols can also be seen on cards within alphabetical catalogues that allows particular publication to be connected with proper division in systematic catalogue and in the same way to widen search by other materials from the same field of interest.

Subject Index

Search in systematic catalogue can begin with subject index that is arranged in an alphabetical manner. Classification symbols which are written on cards within index direct to proper points of catalogue.

In case of any problem with usage of systematic catalogue written the reader can seek the help of the librarian.

NOTES

Comparative analysis between a catalogue, a bibliography, a reference list and an index

- Library catalogue is all about the lists with relation to the resources that the reader will find in the library collection.
- Online catalogue also referred to as online public access catalogue (OPAC) comes in handy to search information in numerous ways that includes searching through author, title, subject and keyword.
- The library catalogue is a generic catalogue that forms the beginning point of search for the user, it is the beginning point where the reader begins their search.
- A bibliography or reference list, is all about providing acknowledgement to the work of an author this may also include an essay or an assignment by a particular author. It lists all the works that one has used for generating their ideas regarding a particular topic they are researching upon. It helps the user in providing the list of works that they are sighting within the assignment. The users are able to list other resources that they are looking for with relation to their chosen topic. They can create a bibliography if they are using Oxford or Traditional Note referencing system.
- A reference list is all about the contained sources that the user has cited within the text of their assignment. It is used when the user requires the Harvard Referencing system or APA. MLA also adopts this approach, that is the works cited list contains the material referred to in your assignment.
- An index is an alphabetically arranged list that comprises topics and headings within a published work. Index is also able to provide page numbers that helps in directing to the area of the work where the user needs to go.

Check Your Progress

5. What is subject catalogue?
6. What do you mean by classification symbol?

2.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The physical form of library catalogues are card catalogues, online catalogues, microform and book catalogue.
2. The different sub-categories of alphabetical catalogue are:
 - (a) Author Catalogue
 - (b) Title Catalogue

- (c) Name Catalogue
 - (d) Subject Catalogue
 - (e) Dictionary Catalogue
3. The alphabetical subject catalogue refers to the entries that have headings with specific subject as per the book arranged in an alphabetical order. It is to satisfy the approach of the readers with regard to specific view of subject only.
 4. Classified part of classified catalogue has the number entries that comprise of Main Entry, Cross Reference Entries. While the alphabetical part includes the word-related entries such as Book Index Entries, Class Index Entries and Cross Reference Index Entries.
 5. In subject catalogue the descriptions are done as per the classification scheme that are arranged on the multilevel. It is also referred to as systematic catalogue. Subject cataloguing is an essential part of the entire cataloguing process. For this reason, there is little need to mention that library materials cannot be more useful without it, especially in relation to large libraries.
 6. Classification symbol comprises of numbers, general divisions are singled out with circle brackets, and hierarchy of sub-divisions is marked with periods. These symbols are written on signs of catalogue boxes and on leading cards within them. They are placed on bottom side of catalogue cards.

NOTES

2.5 SUMMARY

- Library catalogues are designed to serve the purpose of guiding the readers towards the title they are searching. The physical form of library catalogues are card catalogues, online catalogues, microform and book catalogue.
- There are three forms of library catalogues namely alphabetical catalogue, classified catalogue and alphabetic-classed catalogue.
- Alphabetical catalogue is made in an alphabetical manner. It has different sub-categories such as author catalogue, title catalogue, name catalogue, subject catalogue, and dictionary catalogue.
- Author catalogue or alternatively called pure author catalogue is an entry that suggests about the author index entry or a dictionary catalogue present within a classified catalogue.
- Author catalogue serves the purpose of bringing together all the works related to an author in one place, it avoids scattered entries giving an organized look as per the subject.
- Name catalogue explains that the entries are restricted to author and subject that is arranged in alphabetical sequence.

NOTES

- Alphabetical Subject catalogue is self-explanatory, it is to bring out the entries that have headings with specific subject as per the book arranged in an alphabetical order.
- In dictionary catalogue, the entries and references that are made to be arranged within single alphabet just as the arrangement done in a dictionary.
- Dictionary catalogue comprises of author, name, title and subject catalogue along-with cross reference entries arranged in one alphabetical sequence.
- Classified Catalogue is a mix of entries, it comprises of number entries as well as word entries. It is segregated in two parts: Classified and Alphabetical.
- Classified Part of classified catalogue has all the number entries that comprise of Main Entry, Cross Reference Entries.
- Alphabetical part of classified catalogue includes all the word-related entries such as Book Index Entries, Class Index Entries and Cross Reference Index Entries.
- Alphabetic classed catalogue is an alphabetical catalogue where the subjects are grouped in broader classes with alphabetic sub-division.
- Subject Catalogue is often referred to as systematic catalogue where the descriptions are as per the classification scheme that are arranged on the multilevel.
- Classification symbols are written on signs of catalogue boxes and on leading cards within them. They are placed on bottom side of catalogue cards. These symbols can also be seen on cards within alphabetical catalogues.
- Search in systematic catalogue can begin with subject index is arranged in an alphabetical manner. Classification symbols which are written on cards within index direct to proper points of catalogue.
- The entries that are indicative of documents included within it, it is defined as subject content or subject cataloguing. These are also referred to as subject entries. The entire process is of cataloguing in such a manner is called subject cataloguing.
- Subject cataloguing is an essential part of the entire cataloguing process. For this reason, there is little need to mention that library materials cannot be more useful without it, especially in relation to large libraries.
- Online catalogue also referred to as online public access catalogue (OPAC) comes in handy to search information in numerous ways that includes searching through author, title, subject and keyword.

2.6 KEY WORDS

- **Classified Catalogue:** It refers to a catalogue wherein some entries are number entries and some are word entries.

- **Cross Reference:** It refers to another text or part of a text, typically given in order to elaborate on a point.
- **Dictionary Catalogue:** It refers to a catalogue having its entries (such as author, title, or subject) arranged in a single alphabet.
- **Subject Index:** It refers to an information resource that contains references to other resources, categorised by subject, usually in a hierarchy.
- **Bibliography:** It refers to a list of books referred to in a scholarly work, typically printed as an appendix.

NOTES

2.7 SELF-ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Define library catalogue and its different types.
2. What are the objectives of subject cataloguing?
3. Write a note on subject index.
4. Briefly mention the meaning of subject cataloguing.

Long Answer Questions

1. Differentiate between alphabetical catalogue and author catalogue in detail.
2. Explain classified catalogues in detail.
3. Why is dictionary catalogue good? Discuss.
4. What are the limitations related to dictionary catalogue? Explain.

2.8 FURTHER READINGS

- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 3 CATALOGUE CODES

NOTES

Structure

- 3.0 Introduction
- 3.1 Objectives
- 3.2 Origin and Development of Catalogue Codes
- 3.3 Classified Catalogue Code (CCC) Ed 5 (1964)
- 3.4 Classified Catalogue
- 3.5 AACR-2 or Anglo-American Catalogue Rules II
- 3.6 Answers to Check Your Progress Questions
- 3.7 Summary
- 3.8 Key Words
- 3.9 Self Assessment Questions and Exercises
- 3.10 Further Readings

3.0 INTRODUCTION

It is essential that a catalogue should be able to function properly and it should expand with the collection in the library. Everything should be uniform like the style, entry, description and arrangement. Not till the middle of 19th century that the catalogues were designed as per the rules that were drafted by individual cataloguer that too without anything formal into it. The practice was more traditional and as per the prevalent practice in the library. For this reason, there was a lack of uniformity with relation to the catalogues that were prepared in different libraries.

If one is to look at the definition of a catalogue code it is essentially a set of rules that are defined by a terminology designed for purposes and rules for carrying out the work of cataloguing. The codes and rules serve the purpose of a guide that indicates as to how the entries within the books are supposed to be prepared. It is done to ensure that a uniform system is followed. It is essential to note that cataloguing is a process that should not be dependent on fad or flair of an individual. It is a tool that should follow rigorous kind of codes. In this unit, you will study about the concept, development of catalogue codes. Besides, you will also study about the AACR Code, classified catalogue codes in detail.

3.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the concept of catalogue codes
- Discuss the origin and development of catalogue codes

- Describe classified catalogue codes (CCC)
- Explain the renewed versions of AACR code
- Comprehend class index entry, book index entry and class number entries

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3.2 ORIGIN AND DEVELOPMENT OF CATALOGUE CODES

In the 17th century the catalogue codes were developed by Sir Thomas Bodley, an English diplomat and scholar, for the Oxford University Library. He was the one who is responsible to include all the regulations, classified arrangement that too in an alphabetical order in author index that is arranged by surname. He is the one who included noblemen under their family names. It is to be noted here that making entries as per the surname is credited to British Bookseller Andrew Maunsell in 1595.

It was in the year 1697, Frederic Rostgaard, the Danish bibliophile, was the one who published a paper related to the library catalogue that set the tone for setting up a new method for preparation of catalogue. The second edition of Discourse on a new method for setting up a library catalogue was published in 1698. This became the guideline for arranging subdivisions chronologically and included size of volume. Directions provided for preparing alphabetical index with regard to authors and subjects at the end of the catalogue. Authors are entered as per their surname. Works that are bound together are given a separate entry. When the work is unknown then the names of the authors are given a different category. Card was used in the year 1775 in France for the first time that was introduced by Abbe Rosier who introduced it for preparation of catalogue in Paris Academy of Science. In 1791 national code was generated in France that evolved into instructions and became a part of following the instructions for preparing the catalogue. Libraries then began using card catalogue. It was as per instructions that title page was transcribed on the card with the name of the author highlighted and underlined. If no author is found then the keyword title is used and it is underlined to highlight the document or the book.

Later on, the process included a collation that included numerous volumes, illustrations, materials, volumes with regard to the book, the type of book and missing pages along with description of the binding.

Vatican Code (1931)

Vatican Library: Rules for the Catalogue of Printed Books published in Italian language in 1931, 2nd edition in 1939. Translated from the 2nd Italian edition. Edited by Wyllis E. Wright. In the year 1948, the Papal collections in the Vatican were the first among the Europe to have a catalogue that represented inventory type. Then in the year 1927 the Vatican Library was supported by the Carnegie Endowment for International Peace, they compiled a new catalogue to the collection

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and it was then that American Librarians consisting J.C.M Hanson and W.W. Bishop compiled a catalogue. The Vatican rules evolved with the ALA rules for compiling the alphabetical catalogue in 1911 that were the alphabetical catalogue of the Italian rules. These are said to be the modern codes that enable in providing a guide on the large extent to the field of cataloguing author entry, filing, subject entry and description of the book. Numerous appendices included excellent sample cards, these were the rules of 15th and 16th century books the comprised glossary of library terms in different languages like Spanish, English, French and German, also including Italian. These are the codes that are still followed in the Vatican Library.

ALA Rules (1949)

Anglo-American Cataloguing Rules or *ALA Cataloguing Rules for Author and Title Entries* was published in Chicago, ALA in 1949. Both the associations of library LA and ALA formed a new joint code in preparing a new code in between 1936-39, as the existing code AA was not enough to fulfil the existing requirements. Later on, ALA proceeded ahead and became an independent entity and produced their second edition of code in the year 1941 that was in two parts: Part 1 Entry and Headings and Part 2 Descriptions of books, in which 174 rules of the AA Code had grown to 375.

In the year 1949 leaving out the descriptive part, the Library of Congress came out with another version, however, it was too elaborate and was only suitable for bigger libraries. Then the revision happened in the year 1908 with 40 pages that changed into 200 in the year 1949 that reached to the bulk of 500 per cent and 15 more pages were added to it that were elaborative, all this was done to the catalogue made in year 1908. Ever since the beginning of the code where it was 88 pages in the year 1908 and then it increased to 406 pages in 1949. At the same time, it is essential to know about the Cataloguing Rules and Principles published in 1953. The author criticized the codification of catalogue rules as according to him it was full of redundancy, complex, elaborate and unnecessary but were popular with the public. Later on, the same author established a new way of simple rules with codes that were workable, these codes furnished by Lubetzky came out with simple codes that were well defined principles for recognizing generalized conditions. The solutions offered by him is something that were unique and these were important due to the practical solutions it offered. Later on in the year 1956 a committee was formed where Lubetzky was made the Chairman and his first draft came out in the year 1960, it was called Code of Cataloguing Rules: Author and Title Entry.

3.3 CLASSIFIED CATALOGUE CODE (CCC) ED 5 (1964)

The Classified Catalogue Code or CCC came out in the year 1934 by Dr. S.R. Ranganathan from India is said to be a universal code. This code is first of its kind that is complete with all the details suitable for a classified catalogue. The subject approach is the one that is dominant in CCC. The cards arranged in the catalogue trays are not random these follow a definite order within the classification scheme. It provides in facilitating the alphabetical order. The order comprise of arrangement as per the name of authors, editor of series, titles and collaborators. It gives rules for Main Entry, Class Index Entries, Book Index Entries, Cross Reference Index Entries, for single volume, multi volume, composite books, periodicals, national bibliographies, union catalogue of books and periodicals, indexing and abstracting periodicals. The code is based on the normative principles that are the canons of cataloguing, all these have been evolved by Ranganathan as mentioned in his book published in 1938 called *Theory of Library Catalogue*. The classified code is a logical approach that is able to deeply define the classification research. The codes are evolved in a manner that helps remove the restriction of common usages of the concepts within the language of the library and the language scale within which the library language is given priority. Other things are mentioned in descending sequence. Amendments and additions are made in the year 1964 in the CCC that were published as Part N in Cataloguing Practice published in 1974 and will be incorporated in Ed. 6 of CCC. However, even this was not perfect due to the drawback that it did not included non-book material quality. The documents were still left out.

AACR-1 (1967)

Anglo-American Cataloguing Rules (North American Text), Chicago, ALA, 1967. (British Text). London, Library Association, 1967. The preparation took place in The Library of Congress that was prepared in ALA, Library Association of London with The Canadian Library Association. Semour Lubetzky edited it from 1956 to 1962, but due to difference in rules for institution he separated himself from it and then Mr. C. Sumner Spalding who is credited of completing the work between the years 1962-65. The AACR-1 is representative of the 35 years activity related to codification of the rules of cataloguing made for British and American libraries.

The British text comprises of 216 rules and 226 rules were included in American text, these were referred to as the multi-national codes. It is essential to note here that AACR is founded on Statement of Principles that were adopted by the ICCP in 1961 this was done with some amendments and exclusions. The codes used to specify certain rules for different publications and numerous classes of corporate bodies and persons, but this changed significantly. The rules that came out after that were made as per the set of principles that were consistently

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followed that helped in formation of a common agreement. These rules made for author/title with primary entry headings, included in entry headings along with references, titles made in uniformity for author and for author entry, these descriptions were related to any forms that included three dimensional ones. These were made for alphabetical catalogue, however these were applied without making any changes to title/author that were essential elements with regard to classified catalogue. Written for huge research libraries, these were easy to followed by other libraries too that served as an advantage to other types of libraries as well.

For the above stated reasons AACR-1 soon became a complete code in every sense due to coverage of choice and form of entry complete with word and description of each material contained in the text. The non-book materials like manuscripts, records, maps, prints and films were mostly found in large library. The choice of entry based on the rules were almost kept distinct from headings, these were different from the description. These are the examples that state the rules were considerably improved and these were reviewed by F. Bernice Field reviewed the AACR-1 (American Text). These were designed to be easier to understand, implement and explain, these were easy for all to be used. Cataloguing process became reasonable all due to the rules established that were made on the principles clearly defined by the precedents who made amendments to it from time to time.

AACR-2 (1978)

Prepared by The British Library ALA, the Canadian Committee on Cataloguing, The Library Association, and the Library of Congress and is edited by Michael Gorman and Paul W. Winkler. It provided a revised code that begin by the mechanization in cataloguing, cooperative bibliographic services and networks and the growth in it all with numerous media. To understand it in detail it is essential to note the objects of this process, these are as follows:

- (a) Reconciling the North American and British texts of 1967 within a single text.
- (b) Incorporating all the changes within single text as agreed upon and included in the previous mechanisms.
- (c) Considering including all the proposals of amendment in AACR that were discussed between the ALA, the Library Association. All the new proposals recommended by these bodies were included as well within the AACR.
- (d) Providing international interest in AACR by facilitating its use in countries other than the United States, Canada and the United Kingdom.

Features of AACR-2 are as follows:

- (a) Abandoning the entry that included the name related to the place of a certain institutional bodies.
- (b) Substituting the uniform titles for form headings.

- (c) Title headings for marks produced under editorial direction.
- (d) Providing a standard framework that would set foundation for the systematic description with regard to the library materials for machine processing, based on ISBD's. Hence AACR-2 is an attempt towards international catalogue code.
- (e) Covering new categories of library materials with improvements made by AACR-2 that were left by AACR-1.
- (f) Providing 3 level of description that makes it adequate for all types of libraries.

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AACR-2R (1988 revision and 2002 revision)

With different amendments and updated inclusions, the text was revised in 2002 after the 1988 revision. The new text was thus called the AACR-2R. The new version included significant changes within the sections that included the non-book materials. Thereafter annual updates began from the year 2003 and then it stopped in 2005.

RDA (2003)

The Resource Description and Access (RDA) became the latest updated version to the catalogues codes that was compiled by the Joint Steering Committee for Development of RDA. The representatives who were involved included esteemed persons from the American Library Association, Australian Committee on Cataloguing, British Library, Canadian Committee on Cataloguing, CILIP and Library of Congress. It replaced the earlier version and thus became the new standard in cataloguing by providing the guidelines even for the digital resources bringing strong emphasis on being approachable to users for identifying, finding, obtaining and selecting the information they require. It became one of the most flexible and suitable frameworks that were the foundation for digital environment.

Check Your Progress

1. Who developed catalogue codes in the 17th century?
2. When was the catalogue card used for the first time?
3. Who developed classified catalogue code (CCC) and when?
4. What is AACR-2 cataloguing?

3.4 CLASSIFIED CATALOGUE

It became the main subject catalogue arranging the basis of notation that also became the original form. The catalogues were defined by Margret Man in this manner, the arrangement done as per class number or notation was enough to satisfy the subject approach. It was not enough for author approaches, these

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remained outside of it that resulted in limited use of the classified catalogue. It is to be understood that a common reader would approach the library as per the title or the author. With this view classified catalogue was defined with new entries that were based on number along with word entries. For this reason, classified catalogue comprised two parts one classified and another alphabetical part.

It is essential to note here that within the classified catalogue, classified part is the primary part and the secondary part is the alphabetical part that is the index. Classified part comprises of number entries, subject entries and cross reference entries. These are prepared as per the call numbers that are assigned as per the scheme of classification used. The index part or the alphabetical part includes the index or the entries that are added as per the alphabetical arrangement.

There were significant reasons why classified catalogue was accepted widely. There were qualities that the catalogue included, these were:

- (i) In the classified part entries are prepared in classified order, this brings in entries of related subjects together in a logical order.
- (ii) The prime entry is the number entry; however these have their limitations. Entries by words have their limitations due to the meaning of the word that changes at different places. In contrast the number entries are free of these limitations.
- (iii) Classified catalogue is able to provide a better picture related to the library collection, it is all due to the entries that are arranged as per the order of books arranged on the shelves.
- (iv) It is more accurate in depicting the strength and weakness of the given collection related to the subject and is able to provide a fair view to the librarians when the collection is out of sync or it is unbalanced.
- (v) In bigger libraries with classical catalogue, the purpose of bibliographies is well served. For smaller entries book selection tools serve the purpose.

Nonetheless, all is not positive about the entry type, there are drawbacks too.

- A reader is not expected to be aware about the complexities that the classification system offers and the way it uses the system for preparing entries. For this reason, a common reader refers to the index and then move on to the classified or the prime catalogue. This is what makes the search longer to be completed and lot of time is consumed.
- Defects in the scheme- If there is any defect in the classification scheme the catalogue is defective.
- Due to odern changes in the particular subject field, reconstruction is required in the field of class number. For this reason, there is a need to reconstruct the catalogue.

Classified Catalogue and ISBD

Soon began formal education and training in schools related to compiling of CC and dictionary catalogue that used the CCC and incorporated AACR2. This gave rise to the conviction that without applying AACR2 no CCC can be created, the professionals too began believing in the same. In the modern times, CC is done away with and the rules of CCC have almost lost. However, to understand in depth as to what elements were present in the Classified Catalogue or CC it is essential to have a look at the entries that were inherent in the catalogue.

Entries in a Classified Catalogue

Classified Part includes the number entries. Alphabetical part includes the word entries and the Main Entry is the principal record of a document.

Cross Reference Entries became an essential part of the document and these were designed in a way that would cater to the readers' attention.

Class Index Entries would serve the purpose of alphabetical index with regard to specific subjects of the works that included a collection of documents.

Book Index Entries served the purpose of answering to the queries that came from bibliographical attributes like persons, corporate bodies, title, series etc. these would be relevant to the documents.

Cross Reference Index Entries, designed to help the users search within the catalogue using alternative heading forms or synonyms that were used in book index entries and class index entries.

Steps to prepare Class Index Entry and Book Index Entries

Class Index Entries or CIE were designed to serve the purpose of alphabetical index within the Class Numbers that represent the works. The CIE comprised three sections namely Leading Section, Second Section and Index Number. Alphabetical subject headings were made using Class Number prepared with the application of Chain Procedure that would include the Leading Section.

It is essential to note that Class Numbers denoted the heading that is to be written within the leading section that shall become a part of CRIE or Cross Reference Index Entries.

CRIEs included three sections: Leading Section, Second Section and Referred to Heading.

The heading referring to the alternative form with the entry was referred from the ISBD. The process included:

- Writing the call number in the leading line that would begin from first vertical.
- The book number would be written after the class number that would leave space between the two letters.

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- If there is any collection number then it would be written above book number.
- Additional entries were to be included in the back of the card that too after all preparation of the card number items are already done with.
- In other spaces other copies are to be written with proper heading that would be derived from the description on the Leading Line.
- The call number is to be written at the right hand at the end of the line that would be next to the description ends.
- Make ample copies of the same that would be included in the main entry and some would also be used for book index entries wherever required.

Book Index Entries

The heading is given in the leading section, the second section would contain the directing statement. The heading that would be referred to will be the one in the CIE that would be directing the one searching it.

Class Number Entries (CRE)

CREs are Class Number Entries are all about a part of a given item for which the catalogue maker anticipates special enquiries coming from users. Writing the class number of the topic that makes the basis of cross reference is how this is made. It is to be noted that there is a huge possibility that CREs can be more than one within an item catalogue.

Conventions on Style of Writing

The heading within the BIE or book index entry comprise more than one component that would be including entry element, individualizing elements, secondary element and descriptive elements. All these would need to be shown distinctly. There is a lot of possibility that more than one block like an organ of a corporate body within the heading. For this reason the typographical style that is often prescribed in the CCC would be the only option left to include. When all is being revised as per the rule, there has to be relevant changes within the call number of a document and revision be made in the classification scheme that would anticipate a better use of the item numbers by the readers. With all this it is essential to follow the conventions mentioned herewith:

- Call number and class number should be written wherever they occur.
- Entry element in a heading has to be in uppercase characters.
- Secondary element and individualizing elements have to follow the entry element, and they have to be written in lowercase letters, observing rules of grammar and enclosed in separate parentheses.

- Descriptive element can be used to indicate responsibilities other than authorship. It has to follow the secondary and individualizing elements preceded by a comma and be in *Italics* (or underlined if hand written) with initial letter of each in uppercase.
- More than one blocks if any in the heading, have to be separated by commas.
- While using the title of a document as heading, initial articles if any, have to be omitted (unless it is an inseparable part of it) and the first two of the remaining words have to be treated as entry element.
- When the title of a series appears as heading, the statement as written in the series area has to be written, in complete capitals, omitting initial articles if any.
- Elements such as instructions and directing statements, which do not represent entities or their attributes, have to be in italics.
- Heading of a Book Index Entry referring to joint personal or corporate responsibilities of the same degree, involving two persons or bodies, should include both the names connected with the conjunction ‘and’.
- The Heading for joint personal or corporate responsibilities involving more than three, should be that of the first mentioned person or body, followed by ‘et al’.

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3.5 AACR-2 OR ANGLO-AMERICAN CATALOGUE RULES II

These were established in the year 2008 followed by the use of Resource Description and Access that were being used to cataloguing libraries. It is to be understood that resource description and access in new descriptive standard and for accessing knowledge. It is to be noted that AACR is dependent on International Standard Bibliographic Description or ISBD standard and the RDA is dependent on functional requirements of bibliographic records or FRBR and the FRAD or Functional Requirements for Authority Data. As per whatever the description is given earlier, there are identifiable difference between the cataloguing rules that includes publication information, dates, capitalization treatment, resources and entries that are at time non-human entries all these still become a part of creators or contributors. At the same time, it is to be noted that there are fundamental differences between AACR II and RDA.

The prime difference being that AACR II is a printed source, the rules thus created for managing content and display that are designed for the purpose of card catalogue.

If one is to look at RDA it is an online resource and it is based on web, the rules thus created are designed to serve the purpose of content and these are only designed for digital world. The application is for the modern-day library. For this

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reason, librarians are focussing on RDA rules rather than referencing AACR II for the purpose of preparation of catalogue. This is sure forming the basis of future libraries with virtual library concept that is related to the web-based description and access given to the digital knowledge base and information in the digital format.

It is essential to note that a great emphasis is given when it comes to library classification and cataloguing even with regard to the modern retrieval techniques. It is essential to include the rules and these should not be under-estimated, these should come from the core of the cataloguing techniques. For this reason, it is to be understood that international cataloguing technique and database management system in particular have a profound impact on the cataloguing techniques. At the same time when one looks at the foundation of it all coming from Ranganathan and Lubetzkey who are credited for laying the foundation of cataloguing is still not obsolete. It is all due to the model proposed by them that enabled in resolving numerous complications related to cataloguing.

The use of call numbers that became the primary access point with relation to main entries helps in eliminating numerous complexities that were chosen to form the part of main entry headings. For instance, if one is to make decision about the headings for works that are mixed responsibilities or shared works it would be simpler. Similarly, if the conditions were to include corporate bodies these were no longer required to be considered. Inclusion of proper table that is able to connect post coordinated alphabetical headings including the number should be included. It should additionally include the class numbers that should be coordinated within the schema at the time of carrying out search would complete the catalogue, the same should be used in bibliographical database to make it more efficient.

Check Your Progress

5. What is included in the classified part and index part of classified catalogue?
6. What are Class Number Entries (CREs)?

3.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The catalogue codes were developed by Sir Thomas Bodley, an English diplomat and scholar, in the 17th century for the Oxford University Library. He included all the regulations, classified arrangement in an alphabetical order in author index that is arranged by surname.
2. Catalogue card was used in the year 1775 in France for the first time that was introduced by Abbe Rosier in the Paris Academy of Science.
3. The Classified Catalogue Code or CCC was introduced in the year 1934 by Dr S.R. Ranganathan, a mathematician and librarian from India. CCC is

also referred as a universal code and is first of its kind that is complete with all the details suitable for a classified catalogue.

4. The AACR-2 was the second edition of Anglo-American Cataloguing Rules. It was prepared by The British Library ALA, the Canadian Committee on Cataloguing, The Library Association, and the Library of Congress. It provided a revised code that begin by the mechanization in cataloguing, cooperative bibliographic services and networks and the growth in it all with numerous media.
5. Classified part comprises of number entries, subject entries and cross reference entries. These are prepared as per the call numbers that are assigned as per the scheme of classification used. The index part or the alphabetical part includes the index or the entries that are added as per the alphabetical arrangement.
6. CREs are Class Number Entries are all about a part of a given item for which the catalogue maker anticipates special enquiries coming from users. There is a possibility that CREs can be more than one within an item catalogue.

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3.7 SUMMARY

- A catalogue code is essentially a set of rules that are defined by a terminology designed for purposes and rules for carrying out the work of cataloguing.
- In the 17th century the catalogue codes were developed by Sir Thomas Bodley, an English diplomat and scholar, for the Oxford University Library.
- In the year 1697, Frederic Rostgaard, the Danish bibliophile, was the one who published a paper related to the library catalogue that set the tone for setting up a new method for preparation of catalogue.
- Catalogue Card was used in the year 1775 in France for the first time that was introduced by Abbe Rosier who introduced it for preparation of catalogue in Paris Academy of Science.
- *Vatican Library: Rules for the Catalogue of Printed Books* published in Italian language in 1931, 2nd edition in 1939. Translated from the 2nd Italian edition. Edited by Wyllis E. Wright.
- Anglo-American Cataloguing Rules or *ALA Cataloguing Rules for Author and Title Entries* was published in Chicago, ALA in 1949. Both the associations of library LA and ALA formed a new joint code in preparing a new code in between 1936-39, as the existing code AA was not enough to fulfil the existing requirements.
- The Classified Catalogue Code or CCC came out in the year 1934 by Dr. S.R. Ranganathan from India is said to be a universal code. This code is

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first of its kind that is complete with all the details suitable for a classified catalogue.

- CCC is based on the normative principles that are the canons of cataloguing, all these have been evolved by Ranganathan as mentioned in his book published in 1938 called Theory of Library Catalogue.
- The AACR-1 is representative of the 35 years activity related to codification of the rules of cataloguing made for British and American libraries.
- The AACR-2 was prepared by The British Library ALA, the Canadian Committee on Cataloguing, The Library Association, and the Library of Congress and is edited by Michael Gorman and Paul W. Winkler.
- AACR-2R is the new version which was introduced after different amendments and updated inclusions. It included significant changes within the sections that included the non-book materials.
- The Resource Description and Access (RDA) became the latest updated version to the catalogues codes that was compiled by the Joint Steering Committee for Development of RDA.
- Classified catalogue is able to provide a better picture related to the library collection, it is all due to the entries that are arranged as per the order of books arranged on the shelves.
- CREs are Class Number Entries are all about a part of a given item for which the catalogue maker anticipates special enquiries coming from users.
- The heading within the BIE or book index entry comprise more than one component that would be including entry element, individualizing elements, secondary element and descriptive elements.
- The heading within the BIE or book index entry comprise more than one component that would be including entry element, individualizing elements, secondary element and descriptive elements.
- Anglo-American Catalogue Rules II or AACR-2 were established in the year 2008 followed by the use of Resource Description and Access that were being used to cataloguing libraries.

3.8 KEY WORDS

- **Catalogue Card:** It refers to an organized collection of note cards that help locate books in a library.
- **Class Number:** It refers to a number or letter assigned to a book or other library material to show its location on the library shelf.
- **Classified Catalogue:** It refers to a catalogue in which things of the same type are kept together in groups.

3.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What were the qualities that the catalogue comprised of?
2. Define Vatican code.
3. How many sections are there in classified catalogue code?
4. List the features of AACR-2 cataloguing.
5. What is RDA and why was it developed?
6. Write a short note on CCC.

Long Answer Questions

1. Discuss the objectives of AACR-2 cataloguing.
2. Why classified catalogue is accepted widely? Explain.
3. Differentiate between RDA and AACR-2.
4. Explain AACR 1 and AACR 2.

3.10 FURTHER READINGS

- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

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BLOCK - II CATALOGUE ENTRIES

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UNIT 4 CATALOGUE ENTRY

Structure

- 4.0 Introduction
- 4.1 Objectives
- 4.2 Catalogue Entry: An Overview
- 4.3 Preparing Library Catalogue
- 4.4 Evolution of Non-Book Materials (NBM)
- 4.5 Answers to Check Your Progress Questions
- 4.6 Summary
- 4.7 Key Words
- 4.8 Self Assessment Questions and Exercises
- 4.9 Further Readings

4.0 INTRODUCTION

Throughout the preceding units you have been seeing the words entry in a catalogue. However, the art and the science of it is within the preparation of the entries of several different documents that one acquires for the library. A catalogue entry refers to the information that is recorded for a specific purpose. If you are making a note of a book that is added to the stock within the library that you are preparing and making an entry within the 'Accession Register'. The information may be brief as with the entry made in an attendance register within a factory or the school or it is fairly descriptive in every case. The information provided within the entry is dependent upon the nature of entry and its purpose.

In this unit, you will learn about the concept of a catalogue entry and the ways of preparing entries in catalogue, physical form of a catalogue. You will also study about the development, utilities and cataloguing of non-book materials (NBM).

4.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the concept of catalogue entry
- Discuss the need and preparation of library catalogue
- Describe the physical form of a catalogue

- Discuss the evolution and utilities of non-book materials (NBM)
- Analyse the constraints and cataloguing of non-book material

4.2 CATALOGUE ENTRY: AN OVERVIEW

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When it comes to library catalogue the user is given an information regarding the documents that are present in the library. It means that preparation of entry for the document. S.R. Ranganathan defined an entry ‘as ultimate unit record in a catalogue or documentation list’.

In a library catalogue entry, the information given may be detailed or brief, the amount of information that is given, how much of it is provided and how the information is given is decided according to the purpose and need of a particular catalogue entry.

Need For Catalogue Entries

For the following reasons catalogue entries are needed, these are as follows:

- Entries are required as per the records of information.
- Catalogue helps in describing an item.
- Entries helps in finding out the items that are inter-linked.
- Catalogues are useful when they are useful as search tools for the users.
- It should be able to serve the purpose of inventories for the stock of documents that the library acquires and adds within its collection.

User Approaches

It is essential that the library catalogue has to serve the purpose of helping the users find informative material, the following should be added as per the user approaches:

- Whether a book or document whose title is known to us is available in the library. This is called ‘title approach’ of the user.
- Whether a book or document written by a particular author is available or not. This is called ‘author approach’ of the user.
- The available literature on a particular subject of our interest in the library. This is called ‘subject approach’.

Another approach that is adopted in cataloguing is Series Approach.

Series Approach

In short, different items of documents that are related to one another and having a common collective title in addition to their prime titles are said to be belonging to common series. If there are two or more volumes of essays, articles and lectures

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or other writings that are similar to each other and issues in a particular sequence also refer to as series.

It is to be observed that reputed publishers bring out standard books, reports and monographs within a series. They are valuable for their continuity, authority, and usefulness. A user may be excited to read a new document published in a series the moment it is acquired by the library. This approach of the user is known as 'series approach'.

Examples of Series are:

McGraw-Hill Series of Science and Technology

Sarada Ranganathan Endowment Lectures

Apart from this it is to be understood that the library catalogue appeals to and is designed to cater to the need of different approaches towards the users while providing possible information regarding a document to the user. It also cares about the spelling variations and the personal names being used with regard to the authors.

4.3 PREPARING LIBRARY CATALOGUE

Let us now discuss how to prepare a library catalogue.

Physical Forms of a Catalogue

An outer or physical form is related to external shape, size and appearance of catalogue. The outer form of a catalogue are:

- Book-bound Form Catalogue
- Sheaf Form
- Card Form

(a) Book-bound Form Catalogue

The catalogue where the entries are written manually or printed and bound into a volume is referred to as Register or Printed or Book Catalogue. Before the adoption of open access, numerous big libraries were publishing their catalogues for keeping them up to date. Examples are Harvard catalogue which was published in 1723, Yale catalogue in 1745, Liverpool catalogue and National Library Calcutta Catalogue.

Advantages

Owing to the numerous advantages it provides, the book-bound form catalogue is in use for many years. Its advantages are as follows:

- Book-bound Form Catalogue is portable and can be put anywhere in any section of the library.

- Portability makes it easier in handling and consulting.
- Several entries can be seen at a time.
- Printed catalogue of big libraries can be used as a reference and book selection tool by other libraries.
- It occupies less space.
- The multiple copies of the catalogue allow several readers to refer it at the same time.

Disadvantages

Due to its following limitations, the catalogue form was replaced by card form of catalogue:

- Consumes a lot of money and the process is laborious for compilation.
- It is outdated majority of time, all due to the interpolation and extrapolation is available in this
- It is less durable.
- Cooperative cataloguing is not possible as cooperative cataloguing services are available in card form only.
- The form is devoid of any facility of guidance.
- Easy to lose as it is possible to carry the book beyond the boundary of library.
- Only one person can use / consult it at time

Sheaf Form

A sheaf form catalogue is formed by sheets, slips, or cards fastened in a binder that permits the insertion or new material. Slips are usually of 6” x 4” size notched at the left-hand side. It was first introduced in University Library, Leyden, Holland in 1876. It was improved by Madam Ricci in 1891.

Advantages

- Facilitates insertion and removal of entries as provided within this form.
- It is possible to prepare multiple entries within a slip.
- To prepare entries on slips or paper, it is easier and cheaper to produce.
- Less space consuming.
- It is easy to handle and can be easily removed from the stand.
- Good for large libraries.
- Reliable as it is always present in the library at all the times.

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Disadvantages

- Only one book per slip is entered that leads to the wastage of stationery.
- If multiple books are entered it is overcrowded and it needs retyping.
- Carbon copies are not so pleasant as that of original.
- Slips of paper are less durable as compared to cards.
- Insertion and withdrawal is facilitated, but not so easy as in card form.
- Cooperative cataloguing is not possible.
- Guiding is not satisfactory.
- Can only be consulted within the library building.

Card Form

In this form of catalogue, entries are made and arranged in any desired order on cards of uniform size 12.5 x 7.5 cm and kept in trays or drawers of catalogue cabinet. The cabinet containing cards is kept on stand. A rod passes through the hole of cards for locking purposes. In this form one entry is prepared on one card.

Advantages

- Due to regular insertion and withdrawal of cards the catalogue is up to date.
- It is easy to be guided.
- Entries prepared in cards, it makes easy to handle and consult by the users.
- Card catalogue is more durable from other physical forms.
- It is a single unit so it can be arranged in any manner.
- Cooperative cataloguing is possible.
- Economical to maintain due to the facility of cards that can be easily changed.
- Present a neat appearance.

Disadvantages

- Needs a lot of physical space to store
- One person at a time can consult one tray due to only one copy of catalogue is available.
- It is not portable, cannot be consulted within the premises of the library.
- Too expensive to maintain cards and cabinets.
- Easy to tamper with the cards and so there is no such protection.
- Too expensive to create.
- Complex system that it is difficult to consult by the users.

4.4 EVOLUTION OF NON-BOOK MATERIALS (NBM)

It all began from the pre-historic time when the only means of recording were stones, clay tablets, rocks, parchment paper, vellum, palm leaf and papyrus leaf. The book form of printing only began with the printing press of John Gutenberg.

Then came the time when microforms and NBM were invented that was in the year 1953 with the invention of microphotography. These too have been present for significant time, only that in past six decades that these were more of active use and were available within the library market.

In the 1950s AV or audio-visual materials were used for the purpose of educational means, then in the year 1960 libraries too began the use of such materials. During this same time period government and national organizations took interest in the possibility of these material and their value. Then began the NBM library. This is where the transition began from stone age to electronic era of recording documents.

Over the last two decades, there has been dramatic changes in the growth and development of new technology, computers, fibre-optics and telecommunication technology has helped in preparation of catalogues, storing it and retrieval of information.

Definition of Non-Book Material

NBMs are defined as materials that are not within the definition of a pamphlet, book or a periodical and it require special holding like microforms, electronic resources, audio-visual materials and other such forms. It is better resourceful material that is not printed and yet is able to contribute to the process of learning. The NBM require special treatment in terms of their bibliographic description in order to exploit.

Types of Non-Book Material

There are various types of NBM that are as follows:

Cartographic Materials Manuscripts

- Ariel Chart
- Leaf
- Ariel Remote Sensing image - Item (for collection of manuscripts.)
- Atlas - Box
- Celestial Globe

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Music

- Chart - Score
- Globes - Condensed
- Map - Minature Score
- Plan - Chorus Score
- Relief Model

Sound Recordings

- Remote Sensing Image - Sound Cartridge
- Space Sensing Image - Sound Cassette
- Topographic Drawings - Sound Disc
- Sound Track Film Reel (Cassette)

Motion Pictures and Video Recordings Computer Files

- Film Cartridge - Data Files
- Cassette - Program File
- Video Cassette - Object Program
- Video Disc

Three-Dimensional Artefacts and Realia

- Video Reel

Graphic Materials - Art Original

- Art Original - Realia
- Art Print - Game
- Art Reproduction - Diorama
- Chart - Model
- Film Strip

Microform

- Kit - Aperture Card
- Photograph - Microfiche
- Picture - Micro Film Cartridge Cassette Reel
- Post Card
- Slide.
- Technical Drawing
- Transparency

Utilities of Non-Book Material

NBM has its own advantages that are utility due to its qualities as follows:

- NBM is a good source of storage media that is able to provide alternative means of accessing information.
- It has a wide capacity of storing information that too at economical cost.
- It helps reducing data damage as the information is NBM and it is easy to retrieve it, transfer the same in a speedy way and that too with accuracy.
- Due to its durability it is beneficial to be used as repetitive information without any loss or deterioration of the material.
- It is possible to trend the information as it is compressing it that occupies less space, storage is easy and so is distribution. NBM saves space.
- It provides security, accessibility, portability, reliability, economy, ease of retrieving and easy to update too.
- It is easy to store rare books, within the microform type. The entire set of Encyclopaedia Britannica; Chemical Abstracts and Biological Abstracts are stored in a CD-ROM.
- Easy to use as a good teaching tool as viewing historic events makes it easy to grasp the essence of it all and the topics are covered in a better manner.
- It is a scientifically proven fact that a person can remember 10% of information on reading, 20% of what is heard, 30% of what is viewed, but 50% of information are remembered if it is heard, seen and discussed.

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Constraints of Using Non-Book Material

Even with the above-mentioned advantages, each medium has its own constrains, NBM too has its own constrains, these are as follows:

- The only trouble is with people who are yet not accessing information via electronic means as they are more accustomed to using print medium for doing so.
- These NBMs need to be handled in specific manner and operated specially. The program should be that of special awareness program that should be made available and essential.
- Reading electronic material is a strain to the eyes, especially when done for long hours.
- Equipment, storage, operation and maintenance of NBM is costly.
- NBMs are only to be consulted or used within its own environment, as these are not possible to be issued for home use or beyond the proper premises.
- It is not possible to justify the cost of microfilming if the record is to be retained for a short while.

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- Special types of equipment are required to retrieve the information from different types of materials, e.g., microfilm reader or reader/printer is required to retrieve information from microform.
- Not possible to change or update the information on microform manually as is easily done on paper.
- High obsolescence of equipment due to technology adds on to cost.

Cataloguing of Non-book Material

AACR-2 specifies the kind of source from where the information is to be used that is described in the publication. In monograph for instance such sources comprise of title page, the verso of the title page, etc. the first preference is given to the source of bibliographic data that is referred to as bibliographic description prepared and called the chief source of information. The rules identify a chief source of information for each type of material.

Chief Sources of Information

Type of Materials Sources

- Cartographic materials
- Container or case, the cradle and stand of globe, etc.
- Manuscripts Title page and Colophon
- Music Title Page
- Sound recordings
- Disc Label
- Tape (open reel-to-reel) Reel and label
- Tape Cassette label
- Tape Cartridge and label
- Sound recording on film Container and label
- Motion picture and video Film itself and its container

Author Catalogue

When it is about author catalogue, the entries with regard to the documents are given under the name of the author and these are arranged alphabetically. This means that the leading section of the author catalogue would be on the name of the author.

To define an author, it is a person or a corporate body that is having the responsibility for the created contents of documents that are under their name.

Listing of personal names differ due to the cultural traditions that has different names of the persons in different regions. For instance, names of persons in western countries, Indic names, Muslim names, Chinese and Japanese names all of these have different traditions of their own names. These names should be exactly the same way as it is lead within catalogue set by cataloguing codes and the established practices.

As per different corporate bodies under which the catalogues are published, it is essential to note that their filing position is determined by these names. If there is any difference or error in rendering these names it would adversely affect the alphabetical manner or arranging these entries within the catalogue.

It is possible that the library may arrange the author catalogue in three different ways, these are as follows:

- 1) It is possible that there is exclusive author catalogue that may not be mixed with other entries like series, titles and subjects.
- 2) Author entries may become a part of the dictionary catalogue.
- 3) Author entries may become a part of alphabetical index of a classified catalogue. It is regardless of the form in which an author catalogue exists, it provides an important approach to a library catalogue, as it fulfils an essential function of a catalogue.

If the user consults the catalogue with the rightful name of an author, the catalogue immediately fetches the name of the person and all the related documents with the name of that particular author. To facilitate a user, other variants of the same name are included it is provided as a part of cross-reference in a catalogue.

The advantage that it serves is that the author catalogue is able to bring together all the book titles of the same author at a single location in the catalogue. The user is able to obtain a glance of the available books that a library provides by a given author. The function is fulfilled by the author entries in different forms within the library catalogue. This function is performed in an alphabetical index or dictionary part in classified catalogue.

Name Catalogue

It is a variation and extension of author catalogue. It comprises of entries that work of a given author also the books written by a particular author. All the entries are arranged in an alphabetical manner as per the name of the author. It can also be defined as a mixed type of catalogue that bring together author and subject entries that represent the author as a subject in one alphabetical sequence. This catalogue comprises biographies and other critical studies of an author, are arranged along with his original works.

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The author entries include:

- Corporate authors, both as an author as well as a subject
- Name series
- Place name forming part of an author heading

Name catalogue is able to serve as author catalogue and also like a subject catalogue with relation to the subject. If a reader is interested in any work by a particular author, they will find the catalogue extremely useful as it helps in locating specific material of their interest. This catalogue is able to serve the user with better results and accuracy for instance if one is looking for works by Rabindranath Tagore as well as works on him arranged in a single alphabetical order under Tagore.

Name catalogue is however, used majorly in Great Britain and outside it, the schema or arrangement is rarely if ever seen. The Catalogue of the British Museum Library (now the British Library) is near name catalogue which includes references from all names that occur in titles.

Check Your Progress

1. What are the physical forms of a catalogue?
2. What is series approach?
3. What is book-bound form catalogue?
4. Define non-book material.

4.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. An outer or physical form is related to external shape, size and appearance of catalogue. The outer form of a catalogue are:
 - Book-bound Form Catalogue
 - Sheaf Form
 - Card Form
2. Different items of documents that are related to one another and having a common collective title in addition to their prime titles are said to be belonging to common series. If there are two or more volumes of essays, articles and lectures or other writings that are similar to each other and issues in a particular sequence also refer to as series.
3. The catalogue where the entries are written manually or printed and bound into a volume is referred to as Register or Printed or Book Catalogue.
4. NBMs are defined as materials that are not within the definition of a pamphlet, book or a periodical and it require special holding like microforms, electronic resources, audio-visual materials and other such forms.

4.6 SUMMARY

- Catalogue Entry is all about the information that is recorded for a specific purpose.
- The information may be brief as with the entry made in an attendance register within a factory or the school or it is fairly descriptive in every case.
- In a library catalogue entry, the information given may be detailed or brief, the amount of information that is given, how much of it is provided and how the information is given is decided according to the purpose and need of a particular catalogue entry.
- Catalogue entries are needed because these help in describing an item, helps in finding out the items that are inter-linked, catalogues act as a search tools for the users, and it serves the purpose of inventories for the stocks of documents that the library acquires.
- There are four types of user approach in creation of the library catalogue namely, title approach, author approach, subject approach and series approach.
- An outer or physical form is related to external shape, size and appearance of catalogue. There are three types of forms namely Book-bound Form Catalogue, Sheaf Form and Card Form.
- The catalogue where the entries are written manually or printed and bound into a volume is referred to as Register or Printed or Book Catalogue.
- A sheaf form catalogue is formed by sheets, slips, or cards fastened in a binder that permits the insertion or new material.
- In this form of catalogue, entries are made and arranged in any desired order on cards of uniform size 12.5 x 7.5 cm and kept in trays or drawers of catalogue cabinet.
- Non-Book Materials (NBMs) are defined as materials that are not within the definition of a pamphlet, book or a periodical and it require special holding like microforms, electronic resources, audio-visual materials and other such forms.
- NBM is a good source of storage media that is able to provide alternative means of accessing information.
- NBMs need to be handled in specific manner and operated specially. The program should be that of special awareness program that should be made available and essential.
- AACR-2 specifies the kind of source from where the information is to be used that is described in the publication.

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- When it is about author catalogue, the entries with regard to the documents are given under the name of the author and these are arranged alphabetically. This means that the leading section of the author catalogue would be on the name of the author.
- To define an author, it is a person or a corporate body that is having the responsibility for the created contents of documents that are under their name.
- Name catalogue comprises of entries that work of a given author also the books written by a particular author. All the entries are arranged in an alphabetical manner as per the name of the author.

4.7 KEY WORDS

- **Interpolation:** It refers to the insertion of something of a different nature into something else.
- **Extrapolation:** It refers to the action of estimating or concluding something by assuming that existing trends will continue or a current method will remain applicable.
- **Realia:** It refers to the objects from real life used in classroom instruction by educators to improve students' understanding of other cultures and real life situations.

4.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Define catalogue entry.
2. What is the need for catalogue entry?
3. Briefly discuss the various types of non-book material.
4. Give reasons behind the necessity of catalogue entries?
5. Write a note on constraints of non-book material.
6. List the three different ways of arranging the author catalogue in a library.

Long Answer Questions

1. Discuss the evolution of Non-Book Materials (NBM).
2. Examine the various advantages of NBM.
3. Describe how NBM is better than traditional material.

4. Explain cataloguing of non-book materials.
5. Is there any difference between name catalogue and author catalogue?
Discuss.

Catalogue Entry

4.9 FURTHER READINGS

Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books

Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.

Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.

Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.

Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

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UNIT 5 SUBJECT INDEXING LANGUAGES

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Structure

- 5.0 Introduction
- 5.1 Objectives
- 5.2 Indexing: Sears List of Subject Heading
- 5.3 Chain Procedure
- 5.4 POPSI (Postulate-Based Permuted Subject Indexing)
- 5.5 PRECIS (Preserved Context Indexing System)
- 5.6 Uniterm Indexing
- 5.7 Answers to Check Your Progress Questions
- 5.8 Summary
- 5.9 Key Words
- 5.10 Self Assessment Questions and Exercises
- 5.11 Further Readings

5.0 INTRODUCTION

Firstly, it is essential to note that the language is controlled. Secondly, the language effects the precise information retrieval to aid with the process of retrieval even for the irrelevant literature. Vocabulary control is important for the purpose to minimize the retrieval of irrelevant literature. For instance, including a query ‘bridge’ within a library catalogue or a search engine is able to fetch information that will include all the information of any kind of bridge including flyovers and even the game named bridge. If anyone is looking for information on the game bridge, they will need to add further words to their search query to fetch the right result that is specific to the query search. When vocabulary control is added to the query, the rule states that the usage will involve standardized names of subjects in databases/catalogues, etc.

In this unit, you will study about the structure and features of Sears List of subject heading. In addition to this, the unit also explains topics such as chain procedure, PRECIS, chain indexing, uniterm indexing, KWIC indexing and automatic indexing.

5.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the development and principles of Sears List of subject heading
- Understand the structure of the Sears List

- Describe the chain procedure
- Explain the Preserved Context Indexing System (PRECIS)
- Compare the features of PRECIS and Chain Indexing
- Assess uniterm indexing, automatic indexing, KWIC indexing

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5.2 INDEXING: SEARS LIST OF SUBJECT HEADING

When one looks at the *Sears List of Subject Headings* (popularly called Sears List) it comes out as a precise example that involves vocabulary control tool. The tool helps to define the assigning standardized subject headings to the documents. The Library of Congress Subject Headings (LCSH) is an example of a vocabulary control tool. It is essential here to sight difference between the two, Sears List of Subject Heading (SLSH) is majorly used in public libraries and even in small libraries (having a collection of approx. 20,000 books), LCSH is beneficial for large libraries.

Principles of the Sears List

Since its foundation, Sears List has been following the policy based on the Library and Congress Subject Headings (LCSH) principles, however there are modifications to it done for the purpose of simplifying the process. It is done so as to make it useful for small libraries.

Following are the principles of the Sears list:

- 1) Direct Entry
- 2) Specific entry
- 3) Common (popular) usage
- 4) Uniformity and consistency

Specific Entry

In specific entry, the subject entered should be kept within the most specific heading; it should be omitted from the class to which it belongs. For instance, when there is a mention of lilies, it should be under 'Lilies' for specification rather than being kept under flowers. Another example would be eagle that should be under eagles not under birds or even predators.

Direct Entry

In the direct entry, headings are entered directly without choosing any subdivision. For instance, if one is to enter ducks, then it should not be entered as water birds. However, it shows that the category is ducks instead of using ambivalent entry. It means, directly entering the heading without creating any confusion.

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Common Usage

It is to be noted here that if one is to choose a word that has more than one spelling, then it is advisable to use the most popular version. Here it is essential to note that Sears is all about American spellings, however, the most preferred spellings in Indian Libraries are British spellings. It uses common and popular terms instead of jargons or scientific terms. The usage of technical terms must be avoided, instead common usage and popular terms should be included.

Uniformity

Listing of subjects should all be about uniformity. Once a heading is chosen to be used for a specific purpose, it should be used just the way it is consistently and uniformly, until decided against it. Another thing to remember is that old terms are changeable and new terms can still be added. The system is not rigid, it is in fact flexible that changes as per time.

Structure of the Sears List

As per the ALA Filing Rules (1980), the Sears list is a compilation of alphabetical arrangement, with a list of standard names of subjects that appear in the English language that are equally useful for small and medium libraries. The list is capable of providing subject headings that cover the entire range of knowledge.

Parts of Sears List

It is primarily in one volume that is divided in two parts, these are as follows:

- 1) Prefatory and introductory part including the list of about 500 (common) subdivisions and the List of Key Headings.
- 2) Alphabetical list of subject headings in word-by-word order, in accordance with the ALA filing rules established in 1980. The headings are given in two columns, one where the introductory part is included like a brief history, and principles of Sears list. Another part is the operation manual that serves the purpose of the user manual for selecting and using SHs or subject headings.

List of Subject Headings

As it is already explained that the primary part of the list is the alphabetical order in the list, the heading is of two types:

- 1) Non-preferred headings
- 2) Preferred headings
 - Subdivisions used to subdivide a preferred heading

A) Non-preferred Headings

These are the headings that are not to be used; these are given the treatment of light typeface print. These are less popular synonyms of the actual heading. These

kinds of headings are given as per the instructions and these headings direct towards the preferred heading.

B) Preferred Headings

These are the headings that are primarily assigned to a document. These are written in bold typeface. If there are any instructions for its subdivision, then it goes as:

Narrower Terms (NT), Broader Terms (BT), Related Terms (RT)

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5.3 CHAIN PROCEDURE

The distinct concept of Chain procedure is that which was first offered by Ranganathan. He was a supporter of the subject approach which can be seen in his *Theory of Library Catalogue in 1938*. According to him the digit by 'It is the digit by digit translation of the class number, assigned to a document, into ordinary language'.

It explains that individual class number is analyzed as a series of links, for instance the division from the main class to the specific subject. This analysis is able to bring links that are used as headings for class index entries that begin from the last step. All this is defined as the procedure that helps in deriving subject word entry from a class number that can be more or less mechanical. Comprehending the chain procedure helps in drawing it smoothly and following the mechanical process. Another way to understand the procedure is to know that it is a method that helps deriving the alphabetical subject index entries in a semi-automatic fashion from the chain of successive subdivisions that leads from a general level to the most specific level needed to be indexed.

It may be used to provide indexes not only to classification schemes and classified catalogues, but also to all other systematically organized indexes, even when they are arranged alphabetically.

It is to be noted that the chain is majority of times obtained from classification scheme that is inherent at the time and the methodology used is intended to give a generic as well as specific access of information. Due to this quality it omits the arbitrary decisions by the index maker who is often in a dilemmas as to how the subject should be approached using a catalogue.

Using the semi-mechanical method in a classified catalogue for creating requisite subject index entries, all is based on analyzing the classification symbol of each subject.

Functions of the chain procedure

- (a) To derive the subject word headings to serve as an unfailing index to the arrangement of subjects in the classified part of the catalogue.

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- (b) To display many of those relations between the component parts of a specific subject which are not displayed by the classified sequences.
- (c) To provide the required alphabetic subject index key to find out the class number of a particular subject for consulting the classified part.

Pre-requisites

It is essential to understand that for any procedure or methodology there are certain set of rules that should be followed for its successful working, following are the conditions that should be met for chain procedure to work efficiently:

- (a) It is essential to classify the book first and then catalogue it. This implies that the classifier should first technically read the book instead of the cataloguer.
- (b) The class number should be co-extensive, this is the number that is assigned to the book. It should be able to clearly represent specific subject of the book, one should be able to understand the kind of book just by its class number. Here it is essential that the class number be befitting.
- (c) Classification scheme should be well designed as per the classification of the documents. In this case the use of faceted classification scheme is beneficial as it helps in deriving the chain. However it is not impossible in case of enumerative scheme of classifications.
- (d) The terms denoting the class number should be general and currently in use.

Advantages of Chain Procedure

Let us discuss the advantages of chain procedure.

Economical method

The method is economical and the economy mentioned in this context is of two types, these are:

- (a) Chain procedure are time saving as it saves time consumed in compiling and publication of enormous subject heading lists. Comparatively, other methods are not as easy to adopt, modifications need to be made to fit the needs of the library, cataloguers have to do away with the part that does not serve the purpose as per their needs.
- (b) It is one of the best means of arriving at subject headings, due to less time consumption, the cataloguer is having ample time to carry out research for a specific subject related to a book. The number of entries are limited, all due to elimination of permutation of components. For any particular compound subject, the saving is a question of the ratio between the sum of the components and their factorials. For terms of one or two components there is no saving; for terms of three components (six permutations) there is a 50 per cent saving in number of entries required; for terms of four components (twenty four possible permutations) there is a saving of 83.33 per cent, and for longer compounds the economy is even greater.

Mechanical nature

The second claim is that the procedure is able to provide a simpler mechanical way. The cataloguer would need to harness their knowledge and discernment while creating the list of subject headings, it is essential to create and finalize the numerous entries that are under specific title. However, the complex procedure is made easy with chain procedure, it is all about judging right whether a heading is sought or unsought.

Uniformity and accuracy

The method of chain procedure is accurate, whether applied or not, it gives accurate and uniform subject heading. The system is robust enough to work for anyone whosoever wants to work for it, no matter who ever is the cataloguer. When it comes to compiled lists of headings, things become complex and hard to manage.

Coordination between classification and cataloguing

The classifier assigns the class number; the cataloguer transforms it into subject headings. If there is any mistake done by classifier in assigning the class number, this too shall be corrected.

Alphabetic key

It is able to provide alphabetical entry with an idea that every digit in the class number is explained. The chain procedure helps in deriving alphabetical subject headings; it leads the reader towards precise spot that is near to the formulated heading and as per the need of the reader. The subject headings that are derived as per the chain procedure forms, are for this reason never failing key leading to the classified catalogue.

Limitations of Chain Procedure

Even with all the advantages, there are limitations to the procedure, these are:

1. Cataloguers are unable to read the books with the view that they need to study books keeping in mind specific subject.
2. If the classifier has made an error and assigned a wrong class number, and the cataloguer will not be able to detect it, this would lead to defective subject entries.
3. Chain Procedure is based on the classification scheme and for this reason; it is as good as the classifications scheme used. To make this process successful, it is essential that the class number given to the documents should be co-extensive with relation to the subjects and should be modified properly. This quality is devoid in classification schemes.
4. It is possible that there are no separate documents in the library that deal with the subject that are already represented in the links in the chain, this often creates confusion among the readers.

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5. The sequence of terms in a heading is not always desired one. The readers mostly consult the concrete idea among the group of words in a compound heading, but in Colon Classification only abstract idea is used.

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5.4 POPSI (POSTULATE-BASED PERMUTED SUBJECT INDEXING)

This is a chain procedure that is one of the landmark when it comes to subject indexing globally. However, the process is marred with major weakness; it is dependent on classification schema. The foundation of the chain procedure is class number. If the Class Number of a document is constructed on the basis of a structurally defective scheme, the Chain Procedure cannot index the document properly. The problem to the structure is that of disappearing chain that cannot be addressed or fixed. However, the system changed with the invention of POPSI that is free from all the defects inherent in the indexing system. The major advantage is that the system is not dependent on class number but it does include the principles of classification in a general sense. For this reason, it is considered the enhanced version of chain indexing.

Advantages of POPSI

POPSI is helpful in:

1. Formulating subject headings which may be used as feature headings or for other indexing purposes.
2. Deriving subject index entries for a classified index, or for an index to a book, etc.
3. Determining the subject of a reader's query in a consistent and helpful way.
4. Formulating a strategy for searching information about a subject in a catalogue or other surrogate files, and
5. Deriving a base for the presentation of ideas in the text of a document.

It is to be noted that POPSI is the system that is created for manual methods; it can still be amended for computers with the improved version made into software package as it is developed gradually.

Steps in POPSI

1. Verbal representation
2. Display of components
3. Short display
4. Approach terms
5. Deriving subject index entries
6. Display of subject index entries

7. Cross references
8. Alphabetical arrangement of entries

New Version of POPSI

This version of POPSI recommends a set of elementary categories, namely Discipline (D), Entity (E), Action (A) and Property (P).

Discipline (D) covers conventional field of study e.g. Physics, Medicine, Political Science etc.

Entity (E) includes manifestation having perceptual correlates-Energy, Plants, Place, Time etc are its examples.

Action (A) includes manifestations denoting the concepts of 'doing'.

Property (P) includes manifestations denoting the concepts of 'attribute', e.g. Effect, Efficiency, Power, Property etc.

Working of POPSI

The working of POPSI can be understood with the help of an example:
Document: Treatment of Tuberculosis of Lungs

It may be analyzed as:

First step: Verbal representation

D = Medicine

E = Lungs

P of E = Tuberculosis

A = Treatment

Second step: Formalization of the sequence of components:

Medicine (D), Lungs (E), Tuberculosis (P of E), Treatment (A on P).

Third step: Standardization and is concerned with semantics:

Medicine (D), Lungs (E), Tuberculosis (P of E), Treatment (A on P).

Fourth step: Modulation with augments:

Medicine (D), Man, Respiratory system, Lungs (E), Disease, Tuberculosis (P of E), Treatment (A on P).

Fifth step: Preparation of the Entry for organizing classification:

Medicine 6 Man, Respiratory system, Lungs 6.2 Disease, Tuberculosis 6.2.1 Treatment.

Sixth step: To decide the terms of approach

Treatment

See Therapeutic

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In the above chain, general terms like ‘Medicine’ and ‘Man’ are not selected as approach terms.

Seventh step: To prepare entries under each term of approach as given below:

Therapeutic

Medicine 6 Man, Respiratory system, Lungs 6.2 Disease, Tuberculosis 6.2.1, Therapeutic.

Tuberculosis

Medicine 6 Man, Respiratory system, Lungs 6.2 Disease, Tuberculosis 6.2.1, Therapeutic.

Similarly, there will be entries under Disease, Lungs, Respiratory system. Man and Medicine will be left out.

Eighth step: Alphabetization of all the index entries and references.

Potentialities of POPSI

There are many ways to use it, these are as follows:

1. For the purpose of constructing subject headings
2. For generating subject index entries in classified catalogue
3. Used in bibliographical and indexing publications

In conclusion to it all, POPSI method is an extension of chain indexing. The process is robust enough to solve the problems related to disappearing chain that is a major criticism against chain indexing. The indexing system is free due to this process from classification scheme. Additionally, it is also designed for computer and also for manual methods.

Check Your Progress

1. Name the four principles of the Sears List.
2. What are preferred and non-preferred subject headings?
3. What is POPSI?
4. Mention the ways to use the POPSI.

5.5 PRECIS (PRESERVED CONTEXT INDEXING SYSTEM)

The system first appeared in the year 1968 and it is said to be developed by Derek Austin. All with the long research and laborious efforts that was done by the Classification Research Group (CRG, London). After a thorough testing, it

was again introduced in the year 1971. Ever since the inception it has been using the chain procedure for the purpose of creating alphabetical index. It is said to be free from the limitations that were inherent in chain procedure. Even though it was not the best indexing system, it is still the better one and an improved version.

It is to be understood that the founder of PRECIS Derek Austin define it as a proper system. The system comprised of string of terms that were made as per the scheme of role operators, it is to be noted that the system is computer manipulated. It is done this way to enable the selected words function like approach term. The entries are restructures in every way, this is so that the reader is able to determine the set of terms from the layout of the entry, all this is as per the context. It is also to be understood that the terms are context dependent.

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Characteristics of PRECIS

1. It is independent of classification scheme.
2. The headings to be generated by PRECIS are to be coextensive with the contents of the document at all access points.
3. The entries generated by the system are to be meaningful so as to enable the users to interpret them correctly.
4. The system is quite flexible to accommodate the new terms put into the literature freely.
5. The system is amenable to the use of computer for generating additional index entries.

String Making

Two principles are followed in the preparation of a string, namely:

- (i) Context dependence
- (ii) One-to-one relationship

This may be understood by taking an example:

Recruitment of Staff in the Colleges of Rajasthan

Here the component terms are: Recruitment, Staff, Colleges, Rajasthan. Hence we can say that there is a state Rajasthan which has staff, whose Recruitment is the theme of the document. The arrangement of the components in the string will be as follows:

Rajasthan. Colleges. Staff. Recruitment.

Here each term is directly related to the next term in the string.

Role Operators

The principles of 'context dependency' and 'one-to-one relationship' are adopted for the order of terms in the string.

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Format

In the example given above the situation will be as follows:

Rajasthan. Colleges. Staff. Recruitment

Or

Recruitment. Staff. Colleges. Rajasthan.

The context in the above entries is intact. But this is not so in the following entries:

Colleges. Rajasthan. Staff. Recruitment

Or

Staff. Rajasthan. Colleges. Recruitment

Generation of Entries

Index entries are generated from the string by 'shunting'. Each component term in the string becomes an approach term for the users by turn. This portion is shown below:

Rajasthan. Colleges. Staff. Recruitment

Rajasthan

Colleges. Staff. Recruitment

Colleges. Rajasthan

Staff. Recruitment

Staff. Colleges. Rajasthan

Recruitment

Recruitment. Staff. Colleges. Rajasthan

PRECIS V/s Chain Indexing

It is essential to note that classification scheme has nothing to do with the formation in PRECIS. Due to this reason there is no influence of the structural defects that are inherent in classification scheme. The problem of disappearing chain is also overcome in the system that is a major criticism against chain indexing. The problem of empty links is also omitted that is inherent in chain indexing. Another thing to note is that the chain procedure is good for classified index, but it is not ineffective for the process of alphabetical index. For the purpose of making it better for alphabetical index, it is essential to make modifications. POPSI is the process that is the modified or enhanced version of the chain procedure. It also addresses the problem of disappearing chain.

In conclusion to it all, PRECIS is included in the national bibliographies. It is the system that is versatile that has proven benefit to the entire scheme of cataloguing and the contemporary competition. However, even with all the flexibility and all the enhancements, the system is often criticized for not having semantic and syntactic roles of terms in one single string.

5.6 UNITERM INDEXING

Mortimer Taube, an American librarian, devised the Uniterm indexing system in 1953 to organize a collection of documents at the Armed Services Technical Information Agency (ASTIA) of Atomic Energy Commission, Washington. The system is based on concept coordination.

Uniterm indexing system had a number of distinctive characteristics, such as:

1. Indexing by single words only;
2. Terms are extracted from the text of the document indexed;
3. No control over those terms;
4. Indexing, being reduced to word extraction, can be conducted by relatively
5. Low-level personnel.

Optical Coincidence Card / Peek-a-boo

- Peek-a-boo is the trade name of the optical coincidence card.
- It is also called 'Batten Cards'.

Edge-Notched Card

- Indexing on Edge-Notched card is based on punched card system. Their value is limited to very small collection.

AUTOMATIC INDEXING

Keyword Indexing

- The Central Intelligence Agency (CIA) of USA is said to be the first organization to use the machine-produced keywords index from Title since 1952
- Use of computers in generating indexes of documents started from KWIC indexing

KWIC indexing

- KWIC indexing developed by H.P. Luhn.
- The use of computers in generating indexes of documents started from KWIC indexing
- American Chemical Society established the value of KWIC after its adoption in 1961 for its publication 'Chemical Titles'.
- This index was based on the keywords in the title of a paper and was produced with the help of computers.
- Each entry in KWIC index consists of three parts:

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- a) **Keywords:** Significant or subject denoting words which serve as approach terms;
- b) **Context:** Keywords selected also specify the particular context of the document (i.e. usually the rest of the terms of the title).
- c) **Identification or Location Code**
 - Variations of KWIC i.e KWOC and KWAC

1. KWOC (key-word out-of-context)

The KWOC is a variant of KWIC index. Here, each keyword is taken out and printed separately in the left hand margin with the complete title in its normal order printed to the right.

2. KWAC (key-word Augmented-in-context) Index

** KWAC also stands for 'key-word-and-context'.

** KWAC is also called enriched KWIC or KWOC.

** CBAC (Chemical Biological Activities) of BIOSIS uses KWAC index

Check Your Progress

5. When was PRECIS system developed and by whom?
6. Name the two principles which are followed in the preparation of string making.
7. When was Uniterm indexing system introduced?
8. Name the first organization to use machine-produced keywords index.
9. What is KWOC and KWAC?

5.7 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The four principles of Sears list are as follows:
 - (a) Direct Entry
 - (b) Specific Entry
 - (c) Common (popular) usage
 - (d) Uniformity and consistency
2. Non-preferred headings are the headings that are not to be used; these are given the treatment of light typeface print. These are less popular synonyms of the actual heading. These kinds of headings are given as per the instructions and these headings direct towards the preferred heading. While preferred headings are the headings that are primarily assigned to a document. These are written in bold typeface.

3. Postulate-Based Permuted Subject Indexing or POPSI is considered the enhanced version of chain indexing. It is helpful in formulating subject headings which may be used as feature headings or for other indexing purposes. It also helps in deriving subject index entries for a classified index, or for an index to a book, etc.
4. There are many ways to use POPSI like for the purpose of constructing subject headings, for generating subject index entries in classified catalogues, and it is also used in bibliographical and indexing publications.
5. Preserved Context Indexing System or PRECIS first appeared in 1968 and is said to be developed by Derek Austin. It uses chain procedure for the purpose of creating alphabetical index.
6. The two principles which are followed in the preparation of a string are context dependence and one-to-one relationship.
7. In 1953, Mortimer Taube, an American librarian, devised the Uniterm indexing system to organize a collection of documents at the Armed Services Technical Information Agency (ASTIA) of Atomic Energy Commission, Washington. The system is based on concept coordination.
8. The Central Intelligence Agency (CIA) of USA is said to be the first organization to use the machine-produced keywords index from Title since 1952.
9. The KWOC stands for key-word out-of-context and it is a variant of KWIC index where each keyword is taken out and printed separately in the left hand margin with the complete title in its normal order printed to the right. However, KWAC stands for key-word-and-context and is also referred as enriched KWIC or KWOC.

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5.8 SUMMARY

- When one looks at the *Sears List of Subject Headings* (popularly called Sears List) it comes out as a precise example that involves vocabulary control tool. The tool helps define the assigning standardized subject headings with relation to the documents.
- From the start the policy that the Sears List has been following is that it is based on the Library and Congress Subject Headings (LCSH) principles, however there are modifications to it done for the purpose of simplifying the process.
- In specific entry, the subject entered should be kept within the most specific heading; it should be omitted from the class to which it belongs.
- In the direct entry, headings are entered directly without choosing any subdivision.

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- Sears list is a vital tool that helps in preparing the subject authorities and serves as a guide to the information retrieval system and databases. It is said to have been published in the year 1923 and the credit to its design goes to Miss Minnie Earl Sears.
- The concept of Chain procedure is that which was first proffered by Ranganathan, he was a supporter of the subject approach which can be seen in his Theory of Library Catalogue in 1938.
- It is a method that helps deriving the alphabetical subject index entries in a semi-automatic fashion from the chain of successive subdivisions that leads from a general level to the most specific level needed to be indexed.
- Using the semi-mechanical method in a classified catalogue for creating requisite subject index entries, all is based on analyzing the classification symbol of each subject.
- Chain procedure are time saving as it saves time consumed in compiling and publication of enormous subject heading lists.
- The method of chain procedure is accurate, whether applied or not, it gives accurate and uniform subject heading.
- Postulate-Based Permuted Subject Indexing or POPSI is considered the enhanced version of chain indexing. It is helpful in formulating subject headings which may be used as feature headings or for other indexing purposes.
- PRECIS (Preserved Context Indexing System) was first appeared in the year 1968 and it is said to be developed by Derek Austin. All with the long research and laborious efforts that was done by the Classification Research Group (CRG, London). After a thorough testing, it was again introduced in the year 1971.
- POPSI is the process that is the modified or enhanced version of the chain procedure. It also addresses the problem of disappearing chain.
- PRECIS is the system that is versatile that has proven benefit to the entire scheme of cataloguing and the contemporary competition. However, even with all the flexibility and all the enhancements, the system is often criticized for not having semantic and syntactic roles of terms in one single string.
- Mortimer Taube, an American librarian, devised the Uniterm indexing system in 1953 to organize a collection of documents at the Armed Services Technical Information Agency (ASTIA) of Atomic Energy Commission, Washington. The system is based on concept coordination.
- KWIC indexing was developed by H.P. Luhn. Use of computers in generating indexes of documents started from KWIC indexing.

5.9 KEY WORDS

- **Subject Headings:** It is a part of a systematic list of terms that describe a given subject matter, e.g., like in a library catalogue.
- **Chain Procedure:** It is a mechanical method which is used to derive subject index entries or subject headings from the class number of the document.
- **Indexing:** It refers to the organization of data according to a specific schema or plan.
- **Shunting:** It refers to the process of moving someone of something from one place to another.

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5.10 SELF-ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What are the essential parts of a Sears List?
2. Briefly discuss the principles of the Sears List.
3. Write a note on the functions of chain procedure.
4. What are the limitations of chain procedure?
5. List the steps involved in POPSI.
6. Write a note on new version of POPSI.
7. Why did Derek Austin named PRECIS as a proper system?
8. Why is PRECIS often criticized?

Long Answer Questions

1. Describe the Sears List of subject Heading.
2. Explain the structure of Sears List.
3. Discuss the advantages of chain procedure in detail.
4. Examine the coordination between classification and cataloguing.
5. Describe the characteristics of PRECIS.

5.11 FURTHER READINGS

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Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books

Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.

Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.

Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.

Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 6 NORMATIVE PRINCIPLES

Structure

- 6.0 Introduction
- 6.1 Objectives
- 6.2 Normative Principles: An Overview
- 6.3 Need and Importance of Canons of Cataloguing
- 6.4 Canons and Laws of Cataloguing and their Implications
- 6.5 Answers to Check Your Progress Questions
- 6.6 Summary
- 6.7 Key Words
- 6.8 Self Assessment Questions and Exercises
- 6.9 Further Readings

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6.0 INTRODUCTION

Normative principles, with regard cataloguing, are those laws, rules and principles that are designed to govern the preparation of catalogue codes with regard to different kind of entries, rendering of headings, choice of headings, and description along with other things that are related to the catalogue. The principles are devised by Dr. S.R. Ranganathan the first ever person to have been credited for propounding, analyzing, enunciating, discussing the normative principles of cataloguing.

As per Ranganathan, the first time implementation of scientific method to cataloguing and catalogue code was made in 1934. Between the years of 1934 - 1938, some of these rules were critically examined within the staff meetings and classroom discussion. This was done to consider problem books in cataloguing. The unit discusses about the normative principles, canons of cataloguing and also about the importance and requirement of canons of cataloguing.

6.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the concept of normative principles in regard with cataloguing
- Explain the historical development of normative principles
- Describe the different canons and laws of cataloguing
- Discuss the importance and need of canons of cataloguing

6.2 NORMATIVE PRINCIPLES: AN OVERVIEW

With critical discussions beginning, there are some specific normative principles of cataloguing that began shaping up at the same time. These however, differ from

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the Five Laws of Library Science. Indeed, they were all implications of these Laws'. These special normative principles were called as Canons of Cataloguing.

It is essential to note that S.R. Ranganathan has used three terms to denote his normative principles such as:

1. Law
2. Canon
3. Principle

Law- It is about the statement that is absolutely correct and it is used for major disciplines, like laws of library science, scientific law of Newton. It is more about what one has to do exactly.

Canon- It is about the general principle or standard that is highly opinionated. It is a compilation of writings that are already accepted. It is used with context to divisions in the first order of all the major disciplines like cataloguing, classification, book selection etc.

Principle- It is all about regulating the process or the method that is essential to be observed in the study of an art or science. These were the terms used in context to division of the second or later order of the major disciplines such as Principle of Facet Sequence in Classification and Principle of Alphabetization in Cataloguing.

Historical Development of Normative Principles

All the principles were not fully developed in one go, they were developed in different stages, these are as follows:

Formulation 1

It was in the year 1934 that Classified Catalogue Code came out. However, the normative principles were introduced in the Theory of Library Catalogue published in 1938 that included the following six canons:

- Canon of Consistency
- Canon of Relevance
- Canon of Ascertainability
- Canon of Permanence
- Canon of Currency; and
- Canon of Prepotence

Apart from these canons, there was the general Law of Parsimony was also mentioned as guiding principle.

Formulation 2

This was the second edition of the Canons of Cataloguing was made in Ranganathan's Heading and Canon published. This happened in the year 1955

that was prepared along with IFLA conference within the same year. Additional canons were added and then explained. This extended the number of canons to eight by adding the following two:

- Canon of Context
- Canon of Purity

The Canon of Relevance of the Theory formulated in the year 1938 was given a new name as Canon of Sought Heading in 'Heading and Canons' (1955). The Canon of Individualization was incorporated in Edition 4 of Classified Catalogue Code in 1958.

Formulation 3

The recent formulation of canons comprise the classified catalogue code in the 1964 Edition. However, it is free of the canon of purity and instead it is replaced with canon of individualization. Following are the general laws that are functional to the cataloguing:

- Laws of Interpretation
- Law of Impartiality
- Law of Symmetry
- Law of Parsimony
- Principle of Local Variation and
- Principle of Osmosis

Formulation 4

With the recent edition of the canon in December 1969, it is the issue of Library Science with a slant to documentation. Following are the principles added to it:

- Canon of Recall Value
- Principle of Unity of Idea
- Principle of Probability

If one is to look at the present scenario then there are total nine canons that includes five laws of library science, 4 basic laws and 4 principles.

6.3 NEED AND IMPORTANCE OF CANONS OF CATALOGUING

It is to be understood that the canons are the implications of the laws of library science, but are applicable to the field of cataloguing only. If a canon is not able to provide solution to a problem then the canons are in conflict, the next steps is appealing to the library science laws to provide a solution for it. Canons of

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cataloguing are special normative principles that are functional to the cataloguing as such:

- Drafting of a catalogue code including the formulation of each rule.
- Interpreting the rules that they should be able to meet new situations introduced by the new document or through changes made by book production practice.
- Providing suitable guidance for routine cataloguing work.
- Making critical study in catalogue code.

The canons are able to explain a lot about the way a catalogue code is written and interpreted while all is being applied. It is essential to note that these are in fact the scientific basis of creating catalogues.

6.4 CANONS AND LAWS OF CATALOGUING AND THEIR IMPLICATIONS

Out of the 9 canons of cataloguing, first 8 canons are explained as follows:

1. Canon of Ascertainability

It implies something that is traceable as per Ranganathan, the information should be devoid of being imaginary, the information in the entries should be ascertainable. The canon talks about the use of the overflow pages and title pages that should be the primary source of cataloguing information. However, there are still exceptions to it, these are as follows:

- (a) The extract note, extraction note and related book note of the main entry.
- (b) The leading section and directing section of Cross Reference Entry.
- (c) The heading derived from the extract note, extraction note and related book note of a Book Index Entry.
- (d) The heading and the directing section of Class Index Entry. It means the information of the above sections can be taken from outside sources.

Following can be considered as additional sources of information to the title page:

- (a) Half title page for series and editor of series.
- (b) Generic content page for ordinary composite book.
- (c) Title page of constituent work for artificial composite book.

Purpose

Majority of codes suggest that the information searched by the cataloguers should be given within the entries, that should be outside the title page, however, this creates inconsistency. Another thing is that it is time consuming. Here when the canon of ascertainability is applied, there is little or no need to search for getting

the biographical and bibliographical information that comes from external sources. It is the publishers who are responsible for providing the needed information with relation to the title page and even information for the back page that should comprise of entry element, real name if a pseudonym is given, year of birth and death year if the publication is posthumous. It is advisable that international standards are applied for title page and overflow pages.

Implications

Classified Catalogue Code (CCC) fully regards the Canon of Ascertainability. The rules mentioned herewith are providing to prepare the entry under the available heading within the title page. For instance, when one is to look at the case of a pseudonym author and the title gives out the same, the entry too would be under the pseudonym, even if the real name of the author is provided then it would be under the subordinated manner within brackets. All this would be under the heading section. However, the canon violated in CCC the absence of series number. In a case like this CCC allows including the year of publication or even use the absence of year of publication, the serial number used would be 1, 2, 3 or as per the case.

AACR-2R is able to accept the canon to a great extent. Prescribing the Rule No. 1.0A Sources of Information and Rule No. 2.0B1 Chief Source of Information etc follow it. However this canon is violated by some rules of AACR-2R i.e. 21.1A2 Probable author, 21.4A Use of outside sources named or not, 22.2A Predominate name, 22.2C Change of name choose the latest name etc are some of the example of violation of this canon.

2. Canon of Prepotence

The ability to decide the position of an entry within the various entries in a catalogue if possible should be concentrated totally within the leading section and at the same time it is concentrated to the highest form. It is the potency with which the position of an entry among other entries is decided if it should be concentrated within the leading section or should lie in the entry element. If it is not possible to maintain total concentration in the leading section, then the minimum possible potency should also be allowed to over flow beyond it and into the sections that follow. It should be given away to the decreasing order of intensity.

Purpose

It is essential to note that the core of the library catalogue comprises of arrangement of entries. The entries are sorted out digit by digit and letter by letter. The potency shifts from rightwards and downwards, beginning from the first letter in majority of the scripts. It is to be noted that if there is any mistake in the first letter or the digit, then it would be fatal. If this happens the entry would be lost in the catalogue. For this reason, it is essential that the canon be followed related to place of entry under the most potent part of the entire information given in bibliographical format. It should consider the purpose of the entire entry. Careful consideration is required for correcting the potent entry and the parts that follow it.

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Implications

Main entry

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When it comes to CCC it is fully covered and the prime entry in CCC is completely potent. Each author with their individual work is credited with an individual number, this saves time on seeing other sections within the main entry. If one is to compare it to the AACR-2R the main entry is author entry. However, the name of the author may be with individual document that is described within the entry. It is possible that the author may have written more than one document. With this, the potency is not as such concentrated in the leading section. A part necessarily overflows in the title section, but in CCC entry the same is treated with capital and forename mentioned within the brackets. While in AACR it is given within running hand, CCC gives the potency to it all and it is as per the principle of sweep of the eye.

Cross Reference Entry

In this type of entry the leading section, comprise of little potency. In the third section the good deal of potency flows, however, the flow this way violates the canon in the true sense.

It is also the case that the canon or prepotence is not respected. Comparatively, class index entry is able to satisfy it fully; there cannot be two class index entries that would occur in the same heading. The potency with respect to the arrangement of entries, with relation to the index entry is completely concentrated within the leading section. The same is respected in the dictionary catalogue.

Book Index Entry and Name & Title Entries

CCC and AACR-2R, both the codes satisfy this canon. But AACR-2R violates in the case of government publications.

3. Canon of Individualization

This canon explains that whether it is name of any person, corporate body, geographical entry or a person, a series, language used or a document as catalogue heading entry should be created to denote only one entity. It should be added to the necessary and sufficient number of individualizing elements.

Purpose

If the name of entity used as heading is not individualized, this would cause homonyms and catalogue will become a mess.

Implications

Both CCC and AACR-2R have provided rules for individualization. CCC prescribe Rules JB32, JB3, JB41 dealing with the individualization of geographical

entities. Rule JA5 prescribes year of birth and death as individualizing element after the secondary element of the personal author.

Rule JC71 prescribe year of formation is to be added as individuating element in the case of temporary organ of government. Rule JD2 prescribes individuating element to be used for resolving the homonym is to be the term denoting its:

Place, if it is a localized institution;

Country, if it has a national status;

Constituent state, country, district, taluk, etc if it is a State, Country, District, Taluk, etc. Institution; and

Headquarters, if it cannot be individualized conveniently by any of the terms mentioned in 1, 2 and 3 above.

Similarly Rule JF2 prescribes the name of the place of conference and its year be added as individualizing elements to the name of a conference which is not held periodically. Rule JE3, JE4 are for individualization of Diplomatic and Conference without specific name.

4. Canon of Sought Heading

The canon is about the decision about rendering of a heading or the choice for it related to the main entry and the additional entries should be as per the user-based approach for the catalogue. It is essential to keep note of the fact that only relevant element be included in the catalogue entry, nothing irrelevant should be included. If there is no chance of using such an approach then the heading rendering should not be carried forward as heading.

Purpose

The canon serves the purpose of creating entries that are in demand by the readers. For instance a reader may be looking for a document by the search of its author, or series, collaborator or title, all the information is already prepared as per the heading section. At the same time it serves the purpose of keeping in check the unnecessary entries that the readers are unlikely to ever ask for. In this category, canon of sought heading is of great help for creating various rules of choices that would render the heading. It is of great help when one is out to design a catalogue code.

Implication

It is the decision that is regarding the user-centric approach for making a particular choice of heading. The judgement should be instead based on experiences of the cataloguer. It should be as per serving the readers on reference counter and this knowledge should be carefully applied. However, even with this following are the implications:

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- (a) Change of title approach- It is required due to the canon explained above, it comes handy when the book has similar titles and same content. For instance, a book called 'Village India' was reprinted and the title changed as 'Village Uplift in India'. If the library has both the books then it becomes easier for the reader to get any of these titles as per their demand. The reader demand is still fulfilled even if one of the books is available.
- (b) Extract and its approach- If a book contains an extract and it is available in the library with the book from which it is taken, it will be able to fulfil the demand of the reader. However, it is only possible if the reader is made aware of its existence. For this it is essential that the catalogue should contain an entry.
- (c) Merger book and its demand- It was in the year 1953 that the idea of merging two or more books into one was brought into notice by Ranganathan. It was in the Canon of sought heading that inspired the framing of the rule that would deal with such a problem.
- (d) Pseudo series- It has originated from this canon, it implies that when a certain edition comprise of all the works by the same author these too are available in the library, this is what lead to the term and concept that is named pseudo series.
- (e) Sobering of Chain procedure- It was developed in the year 1938. Then came the canon of sought heading that came out in 1958 with its 4th Edition of CCC. Earlier all the links of the chain were treated as significant links for the class number L183.

L Medicine
L1 Regional organ, Medicine
L18 Head, Medicine
L183 Ear Medicine

Entry number 2 and 3 were unsought and not relevant to the purpose of readers. These were also objected by Law of Parsimony. But the way was discovered only after this canon was evolved.

- (f) Cross Reference Index Entries- These are created with unity between Law of Parsimony and Canon of Sought Heading. At times a reader is only able to recall one of the names of the author that is present in the heading section. However, to go by the reader centric approach alternative names are included. This is the approach that is seen in cross reference index entries.

5. Canon of Context

This canon proposes that the rules of catalogue code should be formulated in the context of:

The nature of cataloguing features of the book, prevalent in the mode of book production. The nature of organization of libraries prevalent in regard to the

mode and quality of library service. The coming into existence of published bibliography and particularly bibliographical periodicals, and that the rules should be amended from time to time to keep step with the changes in the context.

Implications

Ranganathan suggests that it is better to obliterate bibliographical details that are size, imprint, pages within the prime entry of the catalogue in the open access system, it is because the readers are able to see this information. It is easy to access for the readers. Annotation is not required. If a library is already having published bibliographies, analytical entries need not be prepared. The canon of recall value is also due to the Canon of Context, as it was felt that in a multiword name of Institutions, Conference etc the term of highest recall value should be used as the entry element in the heading.

The canon talks about the practices undertaken for creating catalogue, it should be changed, archaic practices should be done away with and new practices should be included with changing time. New rules and codes be formulated accordingly, revision with each edition is required that would support changeable views. For instance, AACR-1 has been revised to incorporate the provisions of ISBDs.

6. Canon of Permanence

It explains that no element in the entry, especially the heading should ever be changed by the rules of catalogue, except the rules that are changed as per the canon of context.

Purpose

The purpose of this canon is to achieve stability in the headings.

Implications

If the information given in the heading section is frequently changed, then it will be time consuming and expensive process. For instance, the author may have written a book using a pseudonym, as per the canon of ascertainability, it will be rendered in the pseudonym. After a while this pseudonym will become popular. If the heading is changed then it is like violation of Canon of Ascertainability, but Law of Parsimony is also violated as we have to change the card of main entry and added entries. It is why the alternative names desired by Canon of Sought Heading are left to the care of Cross Reference Index Entries.

7. Canon of Currency

It states that the term used for the purpose of denoting a subject within the Class Index Entry of a classified catalogue and in a Subject Entry of a dictionary catalogue should be the one in current usage.

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Purpose

The purpose is to serve each reader with the subject entry that should come under the heading rule. It would be using the present terms and not obsolete terms that are already recognized by large number of users.

Comments

It is to be understood that with this, there is one difficulty; it is the difficulty problem that one is not able to overcome. The subject names are ever changing, for instance Library Science was known as Library Economy, Political Science as Politics, Economics as Political Economy and Physics as Natural Philosophy etc. Here following the canon of currency would mean that the canon of permanence is violated. This is where the conflict arises and this was resolved using partition field.

Canon of Currency is better with the subject headings or Class Index Entries and Canon of Permanence over name heading i.e. name of person, geographical entity or corporate body. However, the difficult does not ends here, another one is the usage of current term. Take for instance the fact that two different terms may be in current use at the time among specialists and it may be used by the generic readers as well. The general rule says that it is better to adopt the multiworded general terms, as these kind of terms are followed by the two kinds of readers compared to one worded special terms, e.g. Child Medicine in preference to Pediatrics.

If only special terms are adopted, the general readers will be lost in the catalogue itself. They will not be able to locate the particular document. Then comes the Second Law of Library Science, it serves each reader with the common name that should be included instead of special terminology within subject headings.

8. Canon of Consistence

CCC defines this canon as the principle that:

The rules of a catalogue code should provide for all the added entries of a document to be consistent with its main entry; and the entries of all documents should be consistent with one another in certain essentials such as choice, rendering, and style of writing, the heading and the other sections.

Implications

It ensures that the canon should be able to maintain great uniformity throughout the catalogue process. The prime entry of all the documents in the dictionary catalogue is author entry in all cases. The additional entries should be in line with main entry. If there is any inconsistency then the entire catalogue structure will be spoiled.

It is time saving for the readers as they are able to get familiar with the consistent form in which the information is served in all the entries. It helps them to become aware with the catalogue entries easily.

Check Your Progress

1. Define normative principles.
2. When was the implementation of scientific method to cataloguing and catalogue code made?
3. State the nine canons mentioned in normative principles.
4. When was Classified Catalogue Code introduced?
5. What are the general laws related to the cataloguing?
6. What purpose does Canon of Sought Heading serves?
7. Write a brief note on Canon of Context.

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6.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. In cataloguing, normative principles are laws, rules and principles that are designed to govern the preparation of catalogue codes with regard to different kind of entries, rendering of headings, choice of headings, and description along with other things that are catalogue related.
2. According to Ranganathan, the first-time implementation of scientific method to cataloguing and catalogue code was made in 1934. Between the years of 1934-1938, some of these rules were critically examined within the staff meetings and classroom discussion.
3. The names of nine canons in normative principles are: Canon of Consistency, Canon of Relevance, Canon of Ascertainability, Canon of Permanence, Canon of Currency, Canon of Prepotence, Canon of Context, Canon of Purity, and Canon of Recall Value
4. Classified Catalogue Code was introduced in the year 1934.
5. The general laws related to cataloguing are laws of interpretation, law of impartiality, law of symmetry, law of parsimony, principle of local variation, and principle of osmosis.
6. Canon of Sought Heading serves the purpose of creating entries that are in demand by the readers. For instance a reader may be looking for a document by the search of its author, or series, collaborator or title, all the information is already prepared as per the heading section.
7. Canon of Context proposes that the rules of catalogue code should be formulated in the context of the nature of cataloguing features of the book, which is prevalent in the mode of book production.

6.6 SUMMARY

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- In cataloguing normative principles, there are laws, rules and principles that are designed to govern the preparation of catalogue codes with regard to different kind of entries, rendering of headings, choice of headings, and description along with other things that are catalogue related.
- As per Ranganathan, the first-time implementation of scientific method to cataloguing and catalogue code was made in 1934. Between the years of 1934 - 1938, some of these rules were critically examined within the staff meetings and classroom discussion.
- Canon is about the general principle or standard that is highly opinionated. It is a compilation of writings that are already accepted.
- Principle is all about regulating the process or the method that is essential to be observed in the study of an art or science. These were the terms used in context to division of the second or later order of the major disciplines such as Principle of Facet Sequence in Classification and Principle of Alphabetization in Cataloguing.
- Classified Catalogue Code came out in the year 1934. However, the normative principles were introduced in the Theory of Library Catalogue published in 1938 that included the following six canons: Canon of Consistency, Canon of Relevance, Canon of Ascertainability, Canon of Permanence, Canon of Currency, Canon of Prepotence.
- The Canon of Relevance of the Theory formulated in the year 1938 was given a new name as Canon of Sought Heading in 'Heading and Canons' (1955). The Canon of Individualization was incorporated in Edition 4 of Classified Catalogue Code in 1958.
- The general laws to the cataloguing are laws of interpretation, law of impartiality, law of symmetry, law of parsimony, principle of local variation, and principle of osmosis.
- The canons are the implications of the laws of library science, but are applicable to the field of cataloguing only. If a canon is not able to provide solution to a problem then the canons are in conflict, the next steps is appealing to the library science laws to provide a solution for it.
- The Canon of Ascertainability talks about the use of the overflow pages and title pages that should be the primary source of cataloguing information.
- Majority of codes suggest that the information searched by the cataloguers should be given within the entries, that should be outside the title page, however, this creates inconsistency. Also, it is time consuming.
- Classified Catalogue Code (CCC) fully regards the Canon of Ascertainability. The rules mentioned herewith are providing to prepare the entry under the available heading within the title page.

- When it comes to CCC it is fully covered and the prime entry in CCC is completely potent.
- In Cross Reference Entry, the leading section, comprise of little potency. In the third section the good deal of potency flows, however, the flow this way violates the canon in the true sense.
- The potency with respect to the arrangement of entries, with relation to the index entry is completely concentrated within the leading section. The same is respected in the dictionary catalogue.
- The Canon of Individualization explains that whether it is name of any person, corporate body, geographical entry or a person, a series, language used or a document as catalogue heading entry should be created to denote only one entity. It should be added to the necessary and sufficient number of individualizing elements.
- Both CCC and AACR-2R have provided rules for individualization. CCC prescribe Rules JB32, JB3, JB41 dealing with the individualization of geographical entities.
- The Canon of Sought Heading is about the decision about rendering of a heading or the choice for it related to the main entry and the additional entries should be as per the user-based approach for the catalogue.
- The canon serves the purpose of creating entries that are in demand by the readers. For instance a reader may be looking for a document by the search of its author, or series, collaborator or title, all the information is already prepared as per the heading section.
- Canon of Context proposes that the rules of catalogue code should be formulated in the context of the nature of cataloguing features of the book, which is prevalent in the mode of book production.
- Canon of Permanence explains that no element in the entry, especially the heading should ever be changed by the rules of catalogue, except the rules that are changed as per the canon of context.
- Canon of Currency is the term used for the purpose of denoting a subject within the Class Index Entry of a classified catalogue and in a subject entry of a dictionary catalogue should be the one in the current usage.
- The Canon of Consistence states the rules of a catalogue code and the entries of all documents should be consistent with one another in certain essentials such as choice, rendering, and style of writing, the heading and the other sections.

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6.7 KEY WORDS

- **Canon:** It refers to a body of rules, principles, or standards accepted as axiomatic and universally binding in a field of study or art.

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- **Parsimony:** It refers to the quality of not being willing to spend money or to give things.
- **Classified Catalogue:** It refers to a subject catalogue arranged on the basis of notation.
- **Annotation:** It refers to a note by way of explanation or comment added to a text or diagram.

6.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Write a short note on law, canon and principle.
2. What is the need and importance of canons of cataloguing?
3. Name the creator of scientific cataloguing and code and when did it all began?
4. Explain the canon of currency.
5. Write short notes on:
 - (a) Canon of Currency
 - (b) Canon of Prepotence

Long Answer Questions

1. Explain the canon of individualization.
2. What is cross reference entry? Explain.
3. Differentiate between cross reference entries and main entries.
4. What are the implications related to implications of sort heading? Explain.
5. What is the need and importance of canons of cataloguing?

6.9 FURTHER READINGS

- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

BLOCK - III
CO-OPERATIVE CATALOGUE AND
STANDARD NUMBERS

*Co-Operative and
Centralized Cataloguing*

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UNIT 7 CO-OPERATIVE AND
CENTRALIZED
CATALOGUING

Structure

- 7.0 Introduction
- 7.1 Objectives
- 7.2 Format of Catalogue Entries
- 7.3 Centralized Processing
- 7.4 Centralized Cataloguing
- 7.5 Library of Congress: Role and Functions
- 7.6 Cooperative Cataloguing
- 7.7 Union Catalogue
- 7.8 Answers to Check Your Progress Questions
- 7.9 Summary
- 7.10 Key Words
- 7.11 Self Assessment Questions and Exercises
- 7.12 Further Readings

7.0 INTRODUCTION

Different processes in a library like cataloguing and classification are done as per the central theme with relation to the specific library or agency that is time saving and saves cost to the libraries that are participating.

It is to be understood that co-operative cataloguing is all about collective participation by a group of libraries, the activities are performed cooperatively. The unit will explain centralized and co-operative cataloguing. Besides, you will also study about different library networks and operations related to co-operative and centralized cataloguing. The unit also throws light on the role of library of congress, union catalogue and problems and prospects of centralized cataloguing in India.

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7.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain the concepts related co-operative and centralized cataloguing with their pros and cons
- Understand different library networks, their varieties and the operations related to co-operative and centralized cataloguing.
- Explain the functions and role of the library of congress
- Differentiate between cooperative and centralized cataloguing
- Describe the concept of union catalogue

7.2 FORMAT OF CATALOGUE ENTRIES

If one is to look at a library where it is essential to classify and catalogue documents that are added within the stock of library. The same documents are also acquired by other libraries as well. The library will carry out the process of cataloguing and perform the steps involved in classification. If two libraries follow the same pattern in catalogue code and the same classification scheme, then the class numbers of the documents and the catalogue entries will match. It is imperative to say that the same job is being carried out in repetition in two different libraries. However, if the job is shared by two libraries then the cost of manpower and man hours would be shared by the libraries in the same vicinity, both will be reduced and the two libraries will be benefiting from it.

Similarly, if central library or an apex library is there with several branches, then instead of wasting resources, time, money on technical processing, the central library can take up the processing on behalf of all the branch libraries.

When the same book is available with hundreds of copies in different libraries, then to purchase the title, one would need to process it again and again.

The book gives the catalogue entry as per the acceptable catalogue code and also the class number as per the popular scheme of classification. It takes off the burden of processing the book and reduces the costing it is all about the process that would help bring down the time consumed in processing the book by libraries. This is what we call centralized processing that is a great cooperative and commercial proposition. However, the method may suffer from some problems like the process that is opted for, this is the foremost problem with individualizing a document that is already in the stock of the library. For carrying out this, it is essential that the library practice should be observed. The central organization is not capable of giving a solution in cases like these as the libraries are not always purchasing all the books. So, as per the local needs, a particular library will need to individualize a document. Similarly, the size of the library, one would need additional entries and another library would require less entries.

The different levels of description keep changing from library to library, often these vary on different documents within the same library. However, problem of this style is that it is not easy to handle it with appropriate measures.

Library Cooperation

It is possible for different libraries to have commonalities. The process and the kind of practice libraries undertake are similar. The problems of management and services are something that are always common. There should be specific understanding and willingness for cooperation within libraries, that should stand together and strive to offer good services.

When more than two libraries come together and begin sharing their resources or they are exchanging their services or willing to cooperate or collaborate together then this type of understanding is what is referred to library cooperation.

The following are some of the areas in which there can be cooperation among libraries:

1. Selection of documents.
2. Acquisition of documents.
3. Processing of documents.
4. Interlending of documents.
5. Preparation of bibliographies, acquisition lists, union lists and catalogues, etc.
6. Helping users through information services like translation service, online search, etc.

The cases mentioned above with cooperation, it is possible that there is existence of central cooperating library or often referred to as coordinating body where the libraries agree upon cooperating with each other. They are the following specific guidelines and principles.

Cooperation among libraries is only done with the group of libraries or within library systems. These are also within the prime library and its branches that fall under the same library system. These activities are done as per the library networks.

Library Networks

A library network is what is called a group of libraries and/or information service points, these are inter-connected for achieving specified requirements. When it comes to the term network, it is used for the purpose of defining multi-library organisations that are devised for facilitating interlibrary loan, processing, duplicate exchange, reference and these works.

When such cooperation is achieved, the libraries within the network are useful in every aspect. Through these networks' cooperation the process of centralization becomes easy.

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It creates a mesh network that has a centre known as a node that helps inspect incoming messages, it is the pivotal point for communication and receiving messages, it helps accept it as intended as it is then passed on to other nodes.

There are other kinds of networks that support libraries in their cooperative and centralized activities. For instance, if the activities undertaken by a library are limited to centralized services like processing, information services, acquisition and selection, within the same library having several branches, it would then be referred to as hierarchical network that is also called as tree network which is one of the solution.

Two or more networks connected together is called gateways. It is more like an interface between the two distinct networks, it comprises a kind of conversion or mapping between two or more formats and functions, of data valid for each of the two networks takes place. For instance, when it comes to VSNL or Videsh Sanchar Nigam Limited, it is the international doorway with various inter connection of networks.

It is to be understood that for serving in a better manner, providing better user experience and serving with exhaustive information, libraries and information centres are taking advantages of developments related to information technology. Libraries and networks are together working towards achieving the modern inter-connectivity.

Check Your Progress

1. What is library cooperation?
2. What do you mean by library networks?

7.3 CENTRALIZED PROCESSING

Through the process of mean technical operations that are essential in preparation of library materials for use and access, everything is achievable. For this reason, centralized processing would be utilized for undertaking operations by a central agency or body. The term Centralized Processing on broader terms means consolidated efforts for bringing together one control in technical operations that are important for preparing library materials. It is for accessing and using different types of service points.

Following are the different varieties of technical processing centres:

- Centres, which undertake acquisition and complete technical processing of getting the books ready for access and use by the libraries.
- Centres that acquire, catalogue and classify the documents.
- Centres that just catalogue and classify documents.

Advantages

There are many advantages to centralized processing, these are as follows:

- (1) Duplication of work is avoided: There is a possibility that the processing work is similar, for this reason, libraries are prone to repeating similar work in different locations of libraries. The solution is central organization that is able to undertake the job in a good manner. Thus, duplication is avoided.
- (2) Economy: Ever since the processing work carried on behalf of different libraries, there is a lot of monetary saving by individual libraries. Since processing work is done on behalf of several libraries, there will be saving in money to be spent by individual libraries.
- (3) Uniformity: Central agency undertaking the process of cataloguing and classification, the technical processing is based on standard and uniform practices. Libraries that choose services display, the same kind of practice is called as classification and cataloguing. These are the uniform practices.
- (4) Qualitative improvement: Achieving quality and improvement in the technical services through the process of central agency can pool the resources and manpower that improve the performance and quality.
- (5) Use of sophisticated equipment: It is due to the centralization of the central agency that can utilize sophisticated equipment that is not possible for individual libraries to afford, the costs incurred in purchasing it are too high.
- (6) Staff can be better utilised: Members who are engaged in cataloguing, ordering and classification process in different libraries are better utilized when it comes to opting for centralizing processing, the staff will have more time to focus on better task apart from these jobs. Their services are used for better purposes like information services.
- (7) Promptness: Due to limitations and often shortages, it is often the scenario that classification and cataloguing process are delayed. However, using centralized services, readers are able to experience promptness in service.
- (8) Scope for preparing union lists and catalogues: Through the process of centralization the scope of preparation of union catalogues and lists is easier. The data related to holdings of various libraries opting for the process of centralization is easily collected for the purpose of compilations.

Drawbacks

Even with its numerous advantages, there are still few drawbacks or disadvantages, in the process of centralization, these are as follows:

It is possible that few libraries may not be capacitated in affording the operational costs of centralization. The effectiveness of the cost may be marginalized, the process would not make much difference in individual and centralized for few libraries.

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Libraries that have already adopted centralized processing may have different practices that vary from central organization. For instance, the scheme related to catalogue code that is followed by the library may differ from the codes followed by the central organization. Even if it is similar, the library may still be following different editions. These are the variations that are coming in the way towards opting for the process of centralization.

Things like arranging the call number and deciding the number and entries, each library would still require to keep staff that would participate in this process. It is due to the process that the library participating would not dispense with the staff while in its processing sections.

7.4 CENTRALIZED CATALOGUING

Opting for centralized cataloguing would require providing cataloguing service from central point to several clients. The service begins from a simple document for cataloguing and complete and whole change in cataloguing that include preparing catalogue cards that are ready to be used for inserting into the catalogues for clients.

Simply to put it, this is how centralized cataloguing is done and the documents are looked after by central organization. The prime purpose of this kind of cataloguing is to avoid any duplication of effort in any of the given departments of any library.

To define it, it is all about the cataloguing of documents within the same central organization for serving the purpose of advantage of other libraries. This process of cataloguing is able to take place within one library system. It is one of the essential forms of cooperative cataloguing. It is the means of providing cataloguing services from the pivotal point to all the clients. The service is between the simple cataloguing preparing the catalogue cards that can be inserted into the catalogues of the clients. It is the type of cataloguing that is carried out by the central library or the organization for the purpose of all the libraries that can make use of the service of cataloguing that would help avoid any duplication.

Within this scheme of cataloguing duplication has no scope at all as it is carried out in similar form as that of cooperative cataloguing. Centralized cataloguing may be carried out at either national or local level.

Problems of centralized filing

Even with numerous advantages there are some problems that are not easy to overlook and these are inherent within the system, these are:

- Due to less manpower consumption, it gives rise to unemployment. The cataloguers are no longer required in the process, less staff means less people to manage things that is centralized process does not require more

people as all is done through cooperation. This is what gives rise to unemployment due to staff cut.

- It is not possible for each library to participate in the schema due to the different form and type of catalogue that each library has it own. Each library follows a different pattern and this is what becomes an impediment in centralized schema implementation.
- The cost of such a scheme coupled with the delay in security cards would render it impracticable.

Future prospects

Still if one is to adopt this schema in the Indian Library system, it is possible to look at the following future prospects that this will begin reaping positive results, these are as follows:

- **Economy:** The process is economical due to the shared resources. It helps save money and manpower and machinery too. When resources are saved, these can be directed for other services in the library.
- **Elimination of Duplication:** It helps in eliminating any mistakes such as duplication of catalogue work.
- **Quality:** It is maintained due to the less cost rendered in cataloguing all due to the involvement of expert cataloguers who are engaged in the entire process in selected placed to undertake the task.
- **Uniformity:** It is ensured due to the uniformity maintained between physical and internal catalogues that are used between the participating libraries.
- **Quantity:** There is a dramatic increase in the books catalogue as more books are included within the catalogue in less time.
- **Union Cataloguing:** It may be helpful in compilation of union catalogue.

Objectives

The objectives of centralised cataloguing are to:

- Avoiding duplication
- Achieving uniformity and standard cataloguing practices.
- Minimizing the costing for cataloguing.
- Helping all the libraries in providing better and more effective library services.

Advantages

The advantages of centralised cataloguing are as follows:

- Duplication of work can be avoided.
- Cost of cataloguing can be minimised.

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- Uniform and standard cataloguing practices can be adopted.
- Cataloguing can be qualitatively improved.
- Some of the professional staff who are relieved of cataloguing work can be Utilised for other useful professional service.
- Preparation of union catalogues will become easy.
- Format of Catalogue Entries.

Drawbacks

Pooling the really important funds that would help in opting for centralized cataloguing that is difficult for few libraries to opt for. It is quite possible that due to some local variations it is difficult to go for centralized cataloguing. The system may cause a bit of delay, the library having lower accessions is able to complete the job related to cataloguing easier and earlier than expected. Similarly, these libraries are not in need of all kinds of cataloguing cards that are prepared by the central organization. It is possible they may not be buying all the books due to limited requirements and funds. In a situation like this excess cards would be a total waste.

Forms of Centralisation

In centralised cataloguing there are numerous centralization forms, these are as follows:

- Card (or Sheaf) service
- MARC (Machine-Readable Catalogue) service
- Information service
- Cataloguing-in-Source
- Cataloguing-in-publication
- Pre-natal Cataloguing

Check Your Progress

3. What does the term centralized processing mean?
4. What is the prime purpose of centralized cataloguing?
5. Name the different centralization forms in centralized cataloguing.

7.5 LIBRARY OF CONGRESS: ROLE AND FUNCTIONS

The Library of Congress operates overseas offices in Brazil (Rio de Janeiro); Egypt (Cairo); India (New Delhi); Indonesia (Jakarta); Kenya (Nairobi); and Pakistan (Islamabad). These are the offices that acquire catalogue and helps in

preserving publications from different regions of the world where it is inadequate to have conventional acquisitions methods. The functions are directly performed for the Library of Congress and for research and academic libraries in the United States and other countries. It is done through the Library's Cooperative Acquisitions Programs. Together, LOC's overseas offices cover 58 Asian, African, Middle Eastern and South American countries.

Established in 1962, the New Delhi office is the oldest and largest of the six regional offices, acquiring publications from India, Bangladesh, Bhutan, the Maldives, Nepal and Sri Lanka, as well as Tibetan publications from India and Nepal. The office employs a staff of 69 Indian nationals who are acquisitions librarians, cataloguers, preservation specialists, information technology specialists, accountants and support staff dedicated to administrative and operational functions. Publications acquired are in 24 major vernacular languages and an additional 15 dialects and tribal languages. Bibliographic records created on line for the Library's international bibliographic data bases include full level, minimal level, subject and collection level cataloguing.

To cover the region well, New Delhi maintains sub-offices in U.S. Embassies in Colombo, Dhaka and Kathmandu. Each sub-office houses a country representative and comprise a library technician. Bhutan and the Maldives are covered by a Bibliographic Representative in each country. Library of congress New Delhi works on combination with book dealers, donations, traveling staff that acquires publications, exchange agreements for the Library of Congress and the National Library of Medicine. Additional activities are carried on by the National Agriculture Library and 45 other research libraries in the United States through its South Asia Cooperative Acquisitions Program.

Library of congress New Delhi division is where daily newspapers, at risk print materials and serials are preserved. It forms a part of the libraries microform division that is dedicated towards it. It is the new microform division in New Delhi that helps preserve it all including negatives, positives and even microfiches.

The New Delhi office and its sub-offices also give out reference services for the US government agencies that is in addition to the Library of Congress. The staff participate in all the activities that includes regional conferences, present papers, provide training and guidance in acquisitions, preservation and cataloguing to South Asian libraries.

Function

The primary function of the Library of Congress is serving the congress. The library is dedicated to providing service to the government agencies, other libraries, general public and scholars. The library is accessible to the publica for general reference facilities and other activities that offer the widest use possible of its collection with its preservation and it is obligated to serve the government and the agencies of government.

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It is advisable to the researchers to pursue preliminary exploration that is appropriate with public, academic, or special libraries, so that they can make efficient use of the Library of Congress. Readers should be ready to present photo identification that is mandatory showing their current address to allow them to obtain a Library-issued Reader Identification card. It gives them access to the reading rooms and request for reading materials from the stored collections. Eligibility criteria comprise of giving access to anyone over the high school age carrying photo ID they are eligible for applying for the library card without a written introduction.

The following are few of the reasons why a high school student may be permitted to use the library and issued a reader's identification card:

- Students are allowed to use resources beyond the limited resources of their own library or university. They are given a chance to access specific reading material that is only available at the Library of Congress.
- The student can seek the library of congress after getting a letter from the principle that describes the details of the project and the material that is required from the library which is required by the student.
- Reference librarian is available in the reading room who enable in making the right determination of the project requirement by the kid, as is offered in the library collections.
- The library is able to provide, such materials of potential use to the students even through its website.
- The library is equally equipped to provide material to the students and their projects, this means it is well equipped to be able to serve as the largest knowledge base to anyone who is looking for reading material serving specific requirement.

7.6 COOPERATIVE CATALOGUING

This kind of cataloguing is what we call groups of independent libraries that are sharing the work related to cataloguing. It refers to a situation where numerous independent libraries are sharing the work for producing a catalogue based on their mutual benefits.

The aims and objectives are similar to the centralized cataloguing, following is what it is capable of serving:

- (1) Better use of resources
- (2) Standardization of cataloguing practices
- (3) Economy in expenses
- (4) Improving the quality of library services
- (5) Easily preparing union catalogues

Cooperative cataloguing originated first in 18th century, it was in the year 1850 William Desborough Cooley thought about the idea of 'Universal Catalogue' at public expense. By then C.C. Jewett came out with a plan for cooperative cataloguing for American libraries.

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7.7 UNION CATALOGUE

A catalogue is all about the list of all the holdings of a library. If there are two or more than two holding of such list it is called union catalogue. To define it, catalogue listing is one sequence with the inclusion of holdings or part of holdings of two or more than two libraries. A union catalogue is a list of documents in two or more libraries that gives the name of all the libraries where the copies of each of the documents are present and found within it. Thus, it is all about numerous covers of all kinds of documents or any such restricted kind within them. This kind of catalogue is an example of cooperative cataloguing where two or more libraries are in cooperation with each other that list their holdings partially or fully.

Two things are to be understood about union catalogue these are:

1. These are prepared at national, local and regional level and international levels.
2. Once these are prepared these are done so with efficiency and are able to serve multiple purposes.

The purposes of union catalogue are as follows:

- Serving the purpose of a tool that reveals the document resources available within the libraries in a given geographical region.
- Revealing the strength and the weakness of the collections within a library.
- Indicating the probable areas related to collection specialization and cooperation.
- Helping in coordinating of collection of developing the activities within the libraries.
- Serving the purpose of a tool for providing bibliographical information.
- Providing useful information for selecting documents.

Pre-requisites for a Union Catalogue

Compiling a union catalogue is possible with the inclusion of library cooperation schema. Any such compilation can only be made clear in the beginning, but with the following conditions in place:

- Purpose of the Union catalogue to be compiled
- Region to be covered
- Materials to be covered; (decision as to the type of reading materials, language, period, subject, etc),

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- Physical form of the catalogue
- Catalogue code to be followed
- Type of entries
- Level of description
- Arrangement of entries
- The method of compilation and revision

Check Your Progress

6. Name the six regional offices of Library of Congress.
7. Write a note on cooperative cataloguing.
8. What do you understand by union catalogue?

7.8 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. When more than two libraries come together and begin sharing their resources or they are exchanging their services or willing to cooperate or collaborate together then this type of understanding is what is referred to library cooperation.
2. A library network is a group of libraries and/or information service points, these are inter-connected for achieving specified requirements. When it comes to the term network, it is used for the purpose of defining multi-library organisations that are devised for facilitating inter-library loan, processing, duplicate exchange, reference and these works.
3. The term centralized processing on broader terms means consolidated efforts for bringing together one control in technical operations that are important for preparing library materials. It is for accessing and using different types of service points.
4. In centralized cataloguing, the documents are looked after by the central organization and the prime objective of this type of cataloguing is to avoid any duplication of effort in any of the given departments of any library.
5. In centralised cataloguing there are numerous centralization forms, these are as follows:
 - Card (or Sheaf) service
 - MARC (Machine-Readable Catalogue) service
 - Information service
 - Cataloguing-in-Source

- Cataloguing-in-publication
 - Pre-natal Cataloguing
6. The Library of Congress operates with its six regional offices located in Brazil (Rio de Janeiro); Egypt (Cairo); India (New Delhi); Indonesia (Jakarta); Kenya (Nairobi); and Pakistan (Islamabad).
 7. Cooperative cataloguing is referred to groups of independent libraries that are sharing the work related to cataloguing. It refers to a situation where numerous independent libraries are sharing the work for producing a catalogue based on their mutual benefits.
 8. A union catalogue is a list of documents in two or more libraries that gives the name of all the libraries where the copies of each of the documents are present and found within it. Thus, it is all about numerous covers of all kinds of documents or any such restricted kind within them.

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7.9 SUMMARY

- The book gives the catalogue entry as per the acceptable catalogue code and also the class number as per the popular scheme of classification. This is what we call centralized processing that is a great cooperative and commercial proposition.
- When more than two libraries come together and begin sharing their resources or they are exchanging their services or willing to cooperate or collaborate together then this type of understanding is what is referred to library cooperation.
- Selection of documents; acquisition of documents; processing of documents; inter-lending of documents; preparation of bibliographies, acquisition lists, union lists and catalogues etc.; helping users through information services like translation service, on-line search etc.
- Cooperation among libraries is only done with the group of libraries or within library systems. These are also within the prime library and its branches that fall under the same library system. These activities are done as per the library networks.
- A Library network is what is called a group of libraries and/or information service points, these are inter-connected for achieving specified requirements.
- Term network is used for the purpose of defining multi-library organizations that are devised for facilitating inter-library loan, processing, duplicate exchange, reference and these works.
- There are other kinds of networks that support libraries in their cooperative and centralized activities. For instance, if the activities undertaken by a library are limited to centralized services like processing, information services,

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- acquisition and selection, within the same library having several branches, it would then be referred to as hierarchical network that is also called as tree network which is one of the solution.
- Two or more networks connected together is called gateways. It is more like an interface between the two distinct networks, it comprises a kind of conversion or mapping between two or more formats and functions, of data valid for each of the two networks takes place.
 - The term Centralized Processing on broader terms means consolidated efforts for bringing together one control in technical operations that are important for preparing library materials. It is for accessing and using different types of service points.
 - Libraries that have already adopted centralized processing may have different practices that vary from central organization.
 - The prime purpose of centralized cataloguing is to avoid any duplication of effort in any of the given departments of any library. It also aims to achieve uniformity and standard cataloguing practices.
 - In centralised cataloguing there are numerous centralization forms, such as card or sheaf service, MARC service, information service, cataloguing-in-source, and pre-natal cataloguing.
 - The Library of Congress operates overseas offices in Brazil (Rio de Janeiro); Egypt (Cairo); India (New Delhi); Indonesia (Jakarta); Kenya (Nairobi); and Pakistan (Islamabad).
 - Library of Congress New Delhi works on combination with book dealers, donations, traveling staff that acquires publications, exchange agreements for the Library of Congress and the National Library of Medicine.
 - The primary function of the Library of Congress is serving the congress. The library is dedicated to providing service to the government agencies, other libraries, general public and scholars.
 - Cooperative Cataloguing is what we call groups of independent libraries that are sharing the work related to cataloguing. It refers to a situation where numerous independent libraries are sharing the work for producing a catalogue based on their mutual benefits.
 - Cooperative cataloguing was first originated in 18th century, it was in the year 1850 William Desborough Cooley thought about the idea of 'Universal Catalogue' at public expense. By then, C.C. Jewett came out with a plan for cooperative cataloguing for American libraries.
 - A catalogue is all about the list of all the holdings of a library. If there are two or more than two holding of such list it is called union catalogue.
 - A union catalogue is a list of documents in two or more libraries that gives the name of all the libraries where the copies of each of the documents are

present and found within it. The union catalogue is an example of cooperative cataloguing where two or more libraries are in cooperation with each other that list their holdings partially or fully.

- Centralized cataloguing is the type of cataloguing that is carried out by the central library or the organization for the purpose of all the libraries that can make use of the service of cataloguing that would help avoid any duplication.
- Few prospects need to be looked upon in adopting centralized cataloguing schema like elimination of duplication, quality, quantity, uniformity, union cataloguing.

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7.10 KEY WORDS

- **Interlibrary Loan:** It refers to a service whereby a patron of one library can borrow books, DVDs, music, etc. and/or receive photocopies of documents that are owned by another library.
- **Centralized Cataloguing:** It refers to a cooperative arrangement for the preparation of bibliographic records by one agency to which all cooperating agencies may have access.
- **Pre-natal Cataloguing:** It refers to the books where catalogue is already printed in book.
- **Union Catalogue:** It refers to a list of combined holdings of several libraries

7.11 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What are library networks?
2. Define library cooperation.
3. List the different varieties of technical processing centers.
4. Briefly discuss the problems of centralized filing.
5. What does the Library of Congress do?
6. Write a short note on the purposes of union catalogue.

Long Answer Questions

1. Discuss the advantages and disadvantages of centralized processing.
2. Describe the objectives and advantages of centralized cataloguing.
3. Examine the functions of the Library of Congress.

4. Elucidate the aims and objectives of cooperative cataloguing.
5. Discuss the conditions required for compiling a union catalogue.

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7.12 FURTHER READINGS

- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 8 ELECTRONIC FORM OF CATALOGUES

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Structure

- 8.0 Introduction
- 8.1 Objectives
- 8.2 Cataloguing in Publication (CIP)
- 8.3 Online Public Access Catalogue (OPAC)
- 8.4 Machine Readable Cataloguing (MARC)
- 8.5 WorldCat
- 8.6 Answers to Check Your Progress Questions
- 8.7 Summary
- 8.8 Key Words
- 8.9 Self Assessment Questions and Exercises
- 8.10 Further Readings

8.0 INTRODUCTION

Undoubtedly, the world has witnessed a drastic advent of IT in the past few years, owing to the same most of the libraries across the world are opting the process of computerisation and are developing computerised catalogues. Whatever form a catalogue may be, it must be economical to produce, easy to use, should be flexible in nature as it eases the updation process, should provide multiple access points, must be compact in size, etc.

As you have already studied about the centralised and cooperative cataloguing in the previous unit. In this unit, you will study about few more arenas of electronic such as cataloguing in publication or CIP, Online Public Access Catalogue (OPAC), Machine Readable Cataloguing (MARC), and WorldCat.

8.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the concept of Cataloguing in Publication (CIP)
- Discuss the features, advantages and limitations of OPAC
- Describe the characteristics of MARC, MARC 21 and MARCXML in detail
- Explain the functions and usage of WorldCat

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8.2 CATALOGUING IN PUBLICATION (CIP)

It is to be understood that the CIP data or Cataloguing in Publication data is often referred to as bibliographic record that is made by the Library of Congress for a book before it is published. It is an abbreviated version of the MARC or the machine-readable cataloguing record that exists within the database of the library and it is distributed to the libraries and the book vendors. The full version of MARC comprises of additional information like codes that include the languages in which the book is written and the catalogue creation date. However, on 1st October 2015, a new version of the CIP data block was implemented.

Another thing that one is to note is that the Library of Congress along with the professionals from the school, public and academic library communities investigated the revisions to the CIP data block. The new data block is the result of an analysis of the survey that was carried in the year 2014 that also asked institutions for their opinion in what should be added or removed or kept from the data block in order to meet the growing requirements of 21st century bibliographic environment. There are many changes brought within the layout of the data block, which includes the uses of labels that are distinctly identifies different components of the block. Inclusion of the RDA or the Resource Description and Access and electronic resource data elements, and a URL that links directly to the LC catalogue for easy retrieval of bibliographic records.

The recommended version of CIP data block was presented at the midwinter meeting of the American Library Association in the year 2015. After the inclusion of the recommendations that were received at the conference, the Library of Congress made some amendments and requested further input through June 1, 2015.

However, the revisions to the data block, that appear in the books, will not impact MARC records created by the Library of Congress and the MARC record distribution is still the same.

8.3 ONLINE PUBLIC ACCESS CATALOGUE (OPAC)

Over the last decade, it has been seen that libraries are not relying on traditional card catalogue for accessing their collections rather were seen switching to the new age computer-based catalogue. The phenomenon described as transition from manual methods to mechanical method in the design and development of online catalogue is referred as OPAC.

Through this process the new functions it is to be able to remain at the centre of library operations that is to become as the pivotal point for the library users and those of the information resources that is owned by the library. It is a computer based and supported library catalogue that is designed to be approached

using terminals for the library users that are directly and effectively searching for and retrieving bibliographic records. These are done without any manual assistance. Every function that was done manually was not being done via computer monitor, this means it is replaced by traditional card catalogue.

It is to be noted that OPACs were introduced in the US in the late seventies and in UK these were launched in early 80s. However, libraries in India began coming up with the in-house software that was designed and developed using OPACs.

Development of OPAC

Ever since the emergence of the OPACs, it has gone through a lot of changes and improvements, but the basic contention still remains same with relation to the accessibility of the library clientele without any formal training. In relation to the functions, capabilities the OPACs were developed keeping in mind the following three generations:

- (a) First-generation OPACs
 - (b) Second-generations OPACs
 - (c) Third-generations OPACs
- (a) First generations OPACs- These are more like the phrase searching category, as they were referred to in the same light, these were in the format of machine-readable form with the inclusion of conventional catalogues. It was able to provide access points like title, author, class mark, left to right phrase matching and subject as phrase. These OPACs had some drawbacks too like there is a small probability of exact matching between search phrases with indexing terms. Also, as the system worked like a card catalogue, much of the computer capabilities were wasted.
- (b) Second-generation OPACs- Majority of the OPACs were still at the second stage. It was under the influence of the commercial bibliographic database, the second generation OPACs that were adopted with majority of their features such as online help messages, index displays in alphabetical format for the purpose of searching search terms and it is through the inclusion of the 'Boolean logic' for their combination and effective retrieval.

Even with numerous improvements, the second generation OPACs were able to make the second generation, these were the deficient tools especially in relation to the effective searching due to the following reasons:

- These were not able to provide as much help with translation of the query terms within the vocabulary as uses within the catalogue.
- Were not able to provide help to the readers for making alternate search statements and various other techniques especially after the fail of initial approach.
- Even if applied to majority of cases, they were still not able to fetch completely successful free text searches with relation to the corresponding

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subject headings or the class numbers that were assigned to the border range especially that of related material.

- The information was lacking in the retrieval records such as the table of contents, book reviews, abstracts that may help the user to be able to judge the utility of the documents.

(c) Third-generation OPACs- With change in time and technology, the deficiencies of the above stated methods were analysed and remedial measures were looked for and implemented that emerged to be the 3rd generation OPACs. These were the enhanced version of the searching capability. These were the systems that were enriched by including additional uncontrolled and controlled access points.

Queries that are referred to as natural language statement that are vastly omitting the need to know the query formulation and search techniques. Some systems are using partial techniques when they are not employing Boolean operators. The sets that are retrieved are ranked as per the query relevance. These are the same catalogues that are improved as per the search system interaction at each level of the process of search.

Subject Access in OPAC

Subject searching in online catalogues need translation as per the user information that is required in the terms that are used for the purpose of system vocabulary. These are inserted in specific statements within the command language of the online catalogue, matched system's vocabulary retrieve the records to be delivered to the users. When this process is in session it is to be noted that not all the subject searches are always successful. These often result in no retrieval or too many records. Due to this reason the users are discouraged to carry it on further. If the user suffers from two problems like 'search failure' and 'Information overloaded'.

Search Failure-It generally refers to as the search that is not able to retrieve anything. If the retrieved items are not able to serve the best needs of the users, the search will be a failure. However, when the search is successful it is dependent on perfect coordination between the system and the users. If there is any anomaly between these two the results will be a failure.

Users are unable to formulate their searches as per the system terminology. Difficulties arise in formulation of the search strategy that involves troubles such as syntax, semantics, choice of access points and how to narrow or broaden a search, etc. for this reason the users with lack of knowledge, often mistype or use misspelling for the search are not completely failure. The catalogue users should be educated regarding search strategy and for providing instructions that are in-built within the system.

Information Overloaded- It is the phenomenon that is about retrieving too many references as per the response of the search subject, so the users are able to get

irritated and choose not to carry on further. The reasons for doing so may be as follows:

- (a) The search term may be too broad.
- (b) The number of items indexed under a given term might be increasing, as an online catalogue database grows. This increase may be more rapid in a keyword approach than in a subject heading approach.
- (c) Truncation of items as compared to exact search terms results in higher recall.

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Searching through OPAC

The OPAC system is able to change the traditional concept related to the access. It is able to give out 3D searches that is able to provide numerous access points as data elements that are dependent on the software used. It is in every aspect better than the linear search provisions as per the earlier forms of catalogue. OPACs are able to provide searching through the use of author, title, subject, class, keyword, combination etc that serve the purpose of search points.

In modern software OPACs are able to give out more information on truncation of terms that are also available within the OPAC system and due to this option the system is flexible with the following two types of searches that are made possible within it, these are as follows:

- (i) Simple search
- (ii) Complex search

(i) Simple search

- **Author:** The search for a document through OPAC is very easy if the name of the author is known to the user. Generally, the last name of the author will be the entry element.
- **Title:** It is similar to the search carried on by the Author process. For title search, users will need to choose the title option in the menu and then enter the words in the title of the document. The initial articles are often omitted. In modern software used in OPAC system, users are not under any obligation to enter the complete words in the title as the computer will list a certain number of titles in the alphabetical order.
- **Class Number:** For this to be used, the user should be knowledgeable enough to know all about the class numbers with regard to particular subject. For an exhaustive search for document in a subject, class number search is useful.
- **Keyword:** This is done within the modern system that are using the OPAC systems. This is the means of providing more flexibility of access to the bibliographic records. In keyword search, the methodology involves searching for a document using single word that may appear as the name of the author, title Subject or abstract /content depending on the details given

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in the database. Keyword searching is able to provide the user with the ability for creating basic searches and at the same time an experienced user is able to create sophisticated searches through precision searching and filtering. Precision Searching gives better control through expanded keyword search capabilities using the following tools:

- o Keywords
- o Phrase searching
- o Full text searching

The disadvantage of the keyword search is that system will relieve some last relevant document as well.

(ii) Complex search

Boolean operators (AND, OR, NOT) these are the basis of all the information retrieval systems that also includes OPACs, although it is also considered a robust means of retrieval for only a part of information that is always available in the system.

Some main objectives given below:

AND Logic: If within the search there are two terms that are linked with ‘And’ operator then the result will be related to the items in both the terms that are used as abstract or as the title.

It helps provide precise and ensures greater precision, it means that only the relevant documents are going to be included within the list on the computer screen rendered as search result.

OR Logic: The Or logic helps the user to search for documents using alternate terms. If two terms are linked using ‘OR’ logic in a search strategy the output will be a list of documents which contain any one of these terms in title or abstract/content.

NOT Logic: The use of ‘NOT’ logic is to exclude particular terms. The output of such search will exclude documents which contain the term right to the operator NOT in the search strategy.

The Boolean AND operator are not effective in rendering search due to the fact that it results in failure. For instance, if one is searching for ‘A and B and C’ will retrieve records that have all these three terms and will reject those with one or two of these terms. The example shows, that the logic is rigid in nature as it is not possible for the user to include specific criteria that will help them define if A is more important than B or the other way around. Either the documents are retrieved or they are altogether rejected, there is no middle ground to it. Ranking of retrieval documents according to the degree of relevance to the inquiry is not possible.

As an alternative to a Boolean search operator one can opt for some partial matching techniques. These techniques are utilized for the purpose of drawing comparison with documents represented as index terms. The document representatives are derived from the text of the documents. Features can have

weights associated with term. The query terms expressed in natural language or with help of the indexing vocabulary. The retrieval techniques are based on formal models of document retrieval and indexing, viz. vector space, probabilistic and fuzzy sets. These techniques when tested experimentally provided better results than Boolean Systems.

Truncation

The truncation option is able to provide an opportunity to search on parts of words by putting an arbitrary symbol. This arbitrary symbol indicates the missing letters in a term. The computer will select all possible alternatives to that missing place. When the technique of truncation is used, the computer will select all the terms with a common roof or common fragments. There are four types of truncation-right truncation, left truncation, simultaneous left and right truncation and infix truncation (middle truncation).

Words truncated with an asterisk (*):

Designate one or more characters

Example Searches Retrieves

Farm* - farm, farms, farming, or other words starting With farm

wa*n - Walton, warden, Washington, etc.

This option opens wide possibilities to the users when the exact spelling of a term is not known.

Access Points and Level of Usage of OPAC

OPAC is a common tool for the users of library and librarians; it is the same tool that also comes handy in digital libraries. It is also user friendly owing to its well-designed structure, it is especially helpful for the novice who are unaware about hi-end technology. Different access points are given by OPAC enablers that helps the user to locate the document and even filter the query for achieving advance search results.

Advanced search is able to give out details related to the documents that helps in satisfying particular characteristics.

When question was raised to disclose the access points that are in general used by the respondents. The answer rendered choices that the users were given for the purpose of specifying the access points that they were using. The most used search key is the author and is followed by the title and the subject. Words in the title was also found to be made use by many users while the usages of other points were too limited.

Advantages of Online Public Access Catalogue (OPAC)

- Allowing a person to find a book of which the title or the subject is known.
- There is no need of writing and copying the bibliographic information, printers or software are convenient means and it ensures accuracy in the transfer of information.

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- The need to physically access the catalogue by visiting the location is eliminated. It is due to the technologically available online resources from where the user can access the information online from anywhere.
- The catalogue is always up to date due to the software and the technological advancement.
- The contents for the catalogue under no restrains of holdings of the particular library. In theory countless libraries can be present in an online catalogue.

Awareness of the user of the Online Public Access Catalogue (OPAC)

Library OPACs are the primary key to the resources of a computerized library. It has many advantages over the traditional card and other forms of catalogue and is extensively being made use in modern computerized libraries. Apart from providing several access points for search, OPAC has provisions to entertain several complex search queries. Online catalogue is one of the first areas of services provided by computerized libraries. All the libraries under study have their OPAC and it was observed that they are maintaining the traditional catalogue also as these traditional catalogues are also still found to be used by many. A question was asked to the users in order to check their awareness about the existence of OPAC in their respective university library as the traditional card catalogues are also in use.

Features of Online Public Access Catalogue (OPAC)

Online Public Catalogue or OPAC must provide search and location features for online public access catalogue. The following key features are provided by OPAC:

- It becomes possible to perform various levels of searching such as Browse, Heading, keyword, Control number, and Expert.
- Selecting which index they wish to search such as title, author, and subject.
- Empowering the users in providing the opportunity such as searching/viewing of own patron record.
- Filtering of searches.
- Browse searches are accumulated on tabs.
- Access to record views such as Full, MARC, Holdings,

Limitations of Online Public Access Catalogue (OPAC)

- Is not able to provide online thesaurus aids in relation to the subject with identifying terms or focus that are narrower than the search topic.
- Cannot automatically provide assistance to the reader through alternative formulation related to search statement when the prime approach fails.
- Is not able to provide any assistance within the translation of query terms in the vocabulary that is used in the catalogue.
- Cannot lead the searcher leading from the free-text search such as titles words towards the corresponding subject headings or the class numbers that are allocated to broader range of related material.

- It does not provide any open-ended, exploratory browsing through the pre-established links within the database records for retrieving materials that are related to the one already found.
- Is not able to rank the retrieval sets in descending order as per the search criteria of the user.

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Check Your Progress

1. What is CIP data?
2. What advantages does Library OPAC provide?
3. How does OPAC ease the searching process?
4. What is the use of truncation option in OPAC system?

8.4 MACHINE READABLE CATALOGUING (MARC)

MARC or the MACHine-Readable Cataloguing standards are the given digital format that are able to describe the items that are catalogued by the libraries. It was developed by Henriette Avram in the year 1960 while working with the Library of Congress. The format was accessible by computers and it was shared within libraries. In the year 1971 these formats were considered as US national standards with regard to bibliographic data. After two years these were considered as international standards. Then came out several versions that were implemented globally with the most predominant version MARC 21, created in 1999. This happened with the collaboration between U.S. and Canadian MARC formats, and UNIMARC, widely used in Europe. The MARC 21 comprises of formats for authority records, holdings records, classification schedules, and community information, in addition to the format for bibliographic records.

Record structure and field designations

The MARC standards are able to define three aspects a MARC record: the field designations within each record, the structure of the record, and the actual content of the record itself.

Field designations

Each field in a MARC record is designed to give out information regarding the item that the record is expressing about describing, such as the author, title, publisher, date, language, media type, etc. Ever since it was first developed, there was not much space, for this reason it was a code of three digit that would help identify the field of record. It defines the field 100 as the primary author of a work, field 245 as the title and field 260 as the publisher, for example.

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Fields above 008 are further divided into subfields using a single letter or number designation. The 260, for example, is further divided into subfield ‘a’ for the place of publication, ‘b’ for the name of the publisher, and ‘c’ for the date of publication.

Record structure

MARC records are transmitted and stored in the format of binary files, with numerous MARC records that are put together within a single file. MARC uses the ISO 2709 standard to define the structure of each record. It comprises of marker that is used to indicate the beginning of the records and its end as well including other set of characters at the beginning. It is able to provide a directory for locating the fields and subfields within the record.

In 2002, an alternative structure was developed by the Library of Congress, it developed the MARCXML schema. It allowed MARC records to be able to represent the XML, the fields remained intact, these were still expressed as XML markup within the records. Libraries typically expose their records as MARCXML via a web service, often following the SRU or OAI-PMH standards.

Content

MARC is able to encode the information related to bibliographic item, it differs from that of the item content. On simpler terms it is the metadata transmission standard rather than content standard. Another thing to note is that the content that the cataloguer is placing in each MARC field is governed and defined through the standards that are beyond MARC. Exceptions lie only in few fixed fields that are defined by MARC standards. Resource Description and Access, for example, defines how the physical characteristics of books and other items should be expressed. The Library of Congress Subject Headings (LCSH) are a list of authorized subject terms used to describe the main subject content of the work. Other cataloguing rules and classification schedules can also be used.

MARC 21

MARC 21 came out to redefine the MARC record format and make it suitable for 21st century that was made more accessible to the global community. The following are the five types of formats that MARC 21 defines:

Bibliographic Format, Authority Format, Holdings Format, Community Format, and Classification Data Format. Currently MARC 21 has been implemented successfully by The British Library, the European Institutions and the major library institutions in the United States, and Canada.

MARC 21 is a result of the combination of the United States and Canadian MARC formats (USMARC and CAN/MARC). MARC21 is based on the NISO/ANSI standard Z39.2, which allows users of different software products to communicate with each other and to exchange data.

MARC 21 allows the use of two character sets, either MARC-8 or Unicode encoded as UTF-8. MARC-8 is based on ISO 2022 and allows the use of Hebrew, Cyrillic, Arabic, Greek, and East Asian scripts. MARC 21 in UTF-8 format allows all the languages supported by Unicode.

MARCXML

MARCXML is an XML schema based on the common MARC21 standards. MARCXML was developed by the Library of Congress and adopted by it and others as a means of facilitating the sharing of, and networked access to, bibliographic information. Being easy to parse by various systems allows it to be used as an aggregation format, as it is in software packages such as MetaLib, though that package merges it into a wider DTD specification.

The MARCXML primary design goals included:

- Simplicity of the schema
- Flexibility and extensibility
- Lossless and reversible conversion from MARC
- Data presentation through XML stylesheets
- MARC records updates and data conversions through XML transformations
- Existence of validation tools

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8.5 WORLDCAT

WorldCat is an online library catalogue that allows users to look up books, journals, dissertations and multimedia items in libraries around the world. WorldCat, the world's most comprehensive database of information about library collections, is operated by OCLC Online Computer Library Center, Inc. The member libraries collectively maintain WorldCat's database which is also considered as the world's largest bibliographic database.

WorldCat records were constantly updated by the expert team members of OCLC with correct and updated information so as to maintain the highest quality records in WorldCat. Since, the catalogue allows libraries to share high-quality library metadata and bibliographic records with each other, it helped many libraries in reducing the time they spend on original cataloguing.

WorldCat operates on a batch processing model rather than a real-time model which means the records of WorldCat are synchronized at irregular intervals with the underlying library catalogues as opposed to real-time or on every day basis. Hence,

- Though it shows that a particular item is owned by a particular library but it does not provide the library's call number.
- Also, it does not specify whether an item is currently borrowed, undergoing restoration, lost or moved to storage thus compelling interested patrons to submit a retrieval request and wait.

- In addition to this, WorldCat does not show whether or not a library owns multiple copies of a particular title.

Features of WorldCat

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The numerous features of WorldCat help libraries to share the world's collected knowledge in order to enhance learning, research and innovation. Some of the features of WorldCat are as follows:

- Provides easy access to your catalogue, services and content
- Refines searches with easy-to-understand refinement options
- Provides basic evaluative information about the discovered items, such as author(s), format, publisher, language, ratings etc.
- Allows web users to search the combined catalogues of more than 10,000 libraries worldwide.
- Includes the ability to generate bibliographic citations for the displayed work
- Integrates with key web search sites
- Personalizes user's experience and integrate with social networks

Check Your Progress

5. What is a MARC record in a library and when was it developed?
6. What are the three aspects of a MARC record?
7. What are the five types of formats that MARC 21 defines?
8. What do you mean by WorldCat?

8.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The CIP or Cataloguing in Publication data is often referred to as bibliographic record that is made by the Library of Congress for a book before it is published.
2. Library OPACs has many advantages over the traditional card and other forms of catalogue and is extensively being made use in modern computerized libraries. Apart from providing several access points for search, OPAC has provisions to entertain several complex search queries. Online catalogue is one of the first areas of services provided by computerized libraries.
3. OPACs are able to provide searching through the use of author, title, subject, class, keyword, combination etc that serve the purpose of search points.
4. The truncation option is able to provide an opportunity to search on parts of words by putting an arbitrary symbol. This arbitrary symbol indicates the missing letters in a term. The computer will select all possible alternatives to

that missing place. When the technique of truncation is used, the computer will select all the terms with a common roof or common fragments. There are four types of truncation-right truncation, left truncation, simultaneous left and right truncation and infix truncation (middle truncation).

5. MARC stands for Machine-Readable Cataloguing which means that one particular type of machine can read and interpret the data in the cataloguing record. It was developed by Henriette Avram in the year 1960 while working with the Library of Congress.
6. The three aspects of a MARC record are: the field designations within each record, the structure of the record, and the actual content of the record itself.
7. Bibliographic Format, Authority Format, Holdings Format, Community Format, and Classification Data Format are the five types of formats that MARC 21 defines. Currently MARC 21 has been implemented successfully by The British Library, the European Institutions and the major library institutions in the United States, and Canada.
8. WorldCat is an online library catalogue that allows users to look up books, journals, dissertations and multimedia items in libraries around the world. It is operated by OCLC Online Computer Library Center, Inc.

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8.7 SUMMARY

- CIP data or Cataloguing in Publication data is often referred to as bibliographic record that is made by the Library of Congress for a book before it is published.
- The Library of Congress along with the professionals from the school, public and academic library communities investigated the revisions to the CIP data block.
- Inclusion of the RDA or the Resource Description and Access and electronic resource data elements, and a URL that links directly to the LC catalogue for easy retrieval of bibliographic records.
- The recommended version of CIP data block was presented at the midwinter meeting of the American Library Association in the year 2015.
- Over the last decade, it has been seen that libraries are not relying on traditional card catalogue for accessing their collections rather were seen switching to the new age computer-based catalogue. The phenomenon described as transition from manual methods to mechanical method in the design and development of online catalogue is referred as OPAC.
- OPACs were introduced in the US in the late seventies and in UK these were launched in early 80s. However, libraries in India began coming up with the in-house software that was designed and developed using OPACs.

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- First generations OPACs are more like the phrase searching category, as they were referred to in the same light, these were in the format of machine-readable form with the inclusion of conventional catalogues.
- The second generation OPACs that were adopted with majority of their features such as online help messages, index displays in alphabetical format for the purpose of searching search terms and it is through the inclusion of the 'Boolean logic' for their combination and effective retrieval.
- The third-generation OPACs were the enhanced version of the searching capability. These were the systems that were enriched by including additional uncontrolled and controlled access points.
- Subject searching in online catalogues need translation as per the user information that is required in the terms that are used for the purpose of system vocabulary.
- The OPAC system is able to change the traditional concept related to the access. It is able to give out 3D searches that is able to provide numerous access points as data elements that are dependent on the software used.
- Boolean operators (AND, OR, NOT) these are the basis of all the information retrieval systems that also includes OPACs, although it is also considered a robust means of retrieval for only a part of information that is always available in the system.
- The truncation option is able to provide an opportunity to be able to search on parts of words by putting an arbitrary symbol. This arbitrary symbol indicates the missing letters in a term.
- OPAC is a common tool for the users of library and librarians; it is the same tool that also comes handy in digital libraries. It is also user friendly owing to its well-designed structure, it is especially helpful for the novice who are unaware about hi-end technology.
- Library OPACs are the primary key to the resources of a computerized library. It has many advantages over the traditional card and other forms of catalogue and is extensively being made use in modern computerized libraries.
- Online Public Catalogue or OPAC must provide search and location features for online public access catalogue.
- MARC or the MACHine-Readable Cataloging standards are the given digital format that are able to describe the items that are catalogued by the libraries. It was developed by Henriette Avram in the year 1960 while working with the Library of Congress.
- The MARC 21 comprises of formats for authority records, holdings records, classification schedules, and community information, in addition to the format for bibliographic records.
- The MARC standards are able to define three aspects a MARC record: the field designations within each record, the structure of the record, and the actual content of the record itself.

- Each field in a MARC record is designed to give out information regarding the item that the record is expressing about describing, such as the author, title, publisher, date, language, media type, etc.
- MARC records are transmitted and stored in the format of binary files, with numerous MARC records that are put together within a single file. MARC uses the ISO 2709 standard to define the structure of each record.
- In 2002, an alternative structure was developed by the Library of Congress, it developed the MARCXML schema.
- Currently MARC 21 has been implemented successfully by The British Library, the European Institutions and the major library institutions in the United States, and Canada.
- MARC 21 allows the use of two character sets, either MARC-8 or Unicode encoded as UTF-8. MARC-8 is based on ISO 2022 and allows the use of Hebrew, Cyrillic, Arabic, Greek, and East Asian scripts. MARC 21 in UTF-8 format allows all the languages supported by Unicode.
- MARCXML is an XML schema based on the common MARC21 standards. MARCXML was developed by the Library of Congress and adopted by it and others as a means of facilitating the sharing of, and networked access to, bibliographic information.
- WorldCat is an online library catalogue that allows users to look up books, journals, dissertations and multimedia items in libraries around the world. WorldCat, the world's most comprehensive database of information about library collections, is operated by OCLC Online Computer Library Center, Inc.
- The WorldCat catalogue allows libraries to share high-quality library metadata and bibliographic records with each other, it helped many libraries in reducing the time they spend on original cataloguing.

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8.8 KEY WORDS

- **Bibliographic Record:** It refers to an entry in a bibliographic index which represents and describes a specific resource.
- **Boolean Logic:** It refers to a type of computer science originally developed by mathematician George Boole in the mid-1800s. It relies on some very basic operators, such as AND, OR and NOT.
- **Arbitrary Symbol:** It refers to a sign that seems to be logically unrelated to the objects it is supposed to represent.
- **Truncation:** It refers to making something shorter or quicker, primarily by removing the end of it.

8.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

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Short Answer Questions

1. What is the purpose of OPAC?
2. List the deficiencies in the earlier two generations of OPAC.
3. Write short notes on simple and complex search in modern software OPACs.
4. Briefly mention a note on MARC.
5. What are primary goals of MARCXML?

Long Answer Questions

1. Discuss the features and advantages of Online Public Access Catalogue (OPAC).
2. Are there any limitations of the OPAC system? Discuss.
3. Assess MARC 21 cataloguing.
4. Describe the features of WorldCat.

8.10 FURTHER READINGS

- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 9 FORMS OF CATALOGUING AND STANDARD NUMBERS

NOTES

Structure

- 9.0 Introduction
- 9.1 Objectives
- 9.2 Forms of Cataloguing
- 9.3 Cataloguing Standards
 - 9.3.1 ISBD
 - 9.3.2 ISBN
 - 9.3.3 ISSN
 - 9.3.4 RDA
 - 9.3.5 QR Code
- 9.4 Answers to Check Your Progress Questions
- 9.5 Summary
- 9.6 Key Words
- 9.7 Self Assessment Questions and Exercises
- 9.8 Further Readings

9.0 INTRODUCTION

Cataloguing is an integral process in library that helps in preparing entries for books and helps in guiding the readers to relevant documents, books and titles written by different or same author. However, it is essential to note that there are two major types of cataloguing, namely descriptive cataloguing and subject cataloguing.

In this unit, you will study about the two forms of cataloguing namely descriptive cataloguing and subject cataloguing. In addition to this, you will also study about different cataloguing standards like ISBD, ISBN, ISSN, RDA and QR Code.

9.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the different forms of cataloguing
- Understand descriptive cataloguing and subject cataloguing
- Examine the different cataloguing standards like ISBD, ISBN, ISSN, RDA, and QR Code
- Differentiate between ISBN and ISSN
- Discuss the features, formats, and usage of cataloguing standards

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9.2 FORMS OF CATALOGUING

Cataloguing is a process of generating and keeping information in an accessible database of library material including books, journals, CDs, DVDs etc. The primary objective of cataloguing is to keep track of products and materials based on the title, authors, subject, ISBN etc. The cataloguing is carried out in two forms. Let us study about both types of cataloguing:

(a) Descriptive Cataloguing

It is a concept that is well established when it comes to library cataloguing wherein distinction is created between descriptive and subjective. Each with applied set of standards, qualifications that differ and often involve different level of professionals to create it. When it comes to bibliographical databases the concept related to document representation is majorly used to cover both the representation. Descriptive cataloguing is defined as a cataloguing part that is concerned with giving description of the physical details related to a book like the title, author, publication data, physical style of the work etc. and then placing the given information in a bibliographic record.

(b) Subject Cataloguing

As the name suggests, in subject cataloguing the bibliographic records are organized by subject, or topic. It may be similar to classification or subject indexing. It involves assigning a document to a specific class as per the classification system for instance Dewey Decimal Classification or the Library of Congress Subject Headings. Indexing enables in assigning the characterizing labels to the documents that are represented within a record.

Classification is more like controlled vocabulary, indexing is more like controlled vocabulary with free terms, or both.

The Dewey Decimal Classification System was developed in 1876 by Melvil Dewey, an American librarian. It is the most popular methods for classifying books in the library. It is basically a system of numbers used to mark and arrange books.

Check Your Progress

1. What is the primary objective of cataloguing?
2. What is Dewey Decimal Classification System and when was it developed?

9.3 CATALOGUING STANDARDS

Cataloguing standards are the set of rules that provide guidelines on the formulation of data inside the data elements. Standards play an important role in cataloguing

as they allow cataloguers to generate improved and powerful catalogues. Some of the popular cataloguing standards are as follows:

9.3.1 ISBD

ISBD or International Standard Bibliographic Description came out as a result of the International Meeting of Cataloguing Experts, organized by the IFLA or International Federation of Library Associations and Institutions Committee on Cataloguing at Copenhagen in 1969. It was decided that there should be standardization of content and the form with relation to bibliographic description that should be established uniformly. The ISBD was first prepared for Monographic Publications in the year 1969. The first text of the ISBD (M) was published in the year 1971 which was more like set of recommendations. By the year 1973 the text was adopted by numerous national bibliographies with different translations of the original text that was made in English, it was translated to different languages that were included by cataloguing committees. New national rules for description were soon redrafted. It was the time when print was of utmost importance and the only means of documentary transmission is a means of communication to the individuals and institutions. A uniform standard descriptive structure prepared for documentary materials and books were addressed by the IFLA's programme for ISBD.

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Application of the concept

In consequence of the decision taken in the meeting, the application of the ISBD concept to the music and using it for descriptive cataloguing of printed music publications was considered. It was in the year 1975 when the Cataloguing Commission of the International Association of Music Libraries, Archives and Documentation Centres (IAML) suggested the formation of a Joint Working Group with the IFLA Committee on Cataloguing. In the year 1976, ISBD was drafted for printed music and in the month of August, the group was formed for carrying out this work. For two years the work was followed intensely and then they came out with successive drafts of the entire text.

The work done on ISBD(PM) was coordinated into development of ISBD ISBD(G), or general framework that would be suitable for all sorts of library materials. After a review, the analysis of numerous and substantial reviews received, the approval of IFLA Committee and IAML representatives, the first ever text edition of the ISBD(PM) was published in May 1980. This was the recommendation of the Joint Working Group.

In the year 1977 meetings organized between IFLA World Congress, Brussels, the Standing Committee of the IFLA Section on Cataloguing came out with a new decision that was related to IFLA's program of ISBDs. A conclusion was reached wherein all the ISBD would be fixed that would last up to five years, after that it would again be revised or done so for particular text. Upon this decision, ISBD review committee was established by IFLA at London in 1981. It was concluded

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that ISBDs were widely used and consulted as standard source of producing the catalogue codes. These are also applied widely even in countries where there were no national cataloguing codes. With this practical knowledge, the texts provided bear many valuable ideas that would help it to improve further and the following major actions were taken:

- (1) Clarify wording and achieve consistency of definitions and stipulations;
- (2) Make the ISBDs hospitable to non-roman scripts;
- (3) Review the use of the equals sign;
- (4) Include more and better examples;
- (5) Consider the comments on the different ISBDs.

Action related to consistency came into light with the fact that documents or texts produced separately should be harmonized as per the wording with stipulations, specifications should be made as per the identical texts. It should be as per the characteristics of different categories of the documents or material that should be allowed.

9.3.2 ISBN

ISBN stands for International Standard Book Number which is calculated using a specific mathematical formula and it also includes a check digit to validate the number. Up to the end of 2006, the ISBNs are of 10 digits in length, but since the year 2007 they are 13-digits long. Each ISBN consist of five elements namely prefix element, registration group element, registrant element, publication element, and check digit.

An ISBN, which is assigned to text-based monographic publications, is primarily used by publishers, booksellers, internet retailers, libraries for ordering, listing, sales records and stock control purposes. It is principally considered as a product identifier as it identifies the registrant along with the specific title, edition and format. It is basically an identifier and does not carry any form of legal or copyright protection.

ISBN is allotted to authors, publishers and educational/ research institutions etc. for their upcoming books, booklets, research papers, Braille publications, maps, educational/instructional films, videos, audio books on CD or DVD (talking books), electronic publications either on physical carriers (such as Machine-readable tapes, diskettes, or CD-ROMs) or on the internet.

Uses of ISBN:

- Different product forms and editions of a book can be clearly differentiated by the correct usage of ISBN.
- Finding information on available books can be expedited with the help of ISBN number.

- Since ISBN is a machine-readable in 13-digit form, it is fast and avoids mistakes.
- Numerous publishing and supply chain systems are based on ISBN.
- ISBN also helps in the effective accumulation of sales data.
- The process of ordering and distribution of books is primarily executed by ISBN.

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9.3.3 ISSN

ISSN or the International Standard Serial Number is a code that is internationally accepted, it identifies the title of serial publications. The number is eight digit that comprise of seven digits plus a check digit that is computer recognized when any error is seen. The check digit may be an X; otherwise the ISSN is fully numeric.

It is essential to note that ISSN is devoid of any ownership by any journal, it has no right to confer copyright or protect the title of the book bearing the serial from other publishers. It is not related to any legal deposit, as per the Legal Deposit Libraries Act 2003 and the Copyright and Related Rights Act 2000. All the publications that include individual serials are to be deposited with the British Library whether they carry an ISSN or not.

Uses of ISSN

Following are the uses of ISSN:

- It is for the publishers to identify their serial publications and incorporate a barcode on the magazine, journal or newspaper for sale via the major retailers.
- For libraries which use ISSN as a prime identifier to distinguish between identical serial titles and to also facilitate checking and ordering of procedures, legal deposit, collection management, interlibrary loans etc.
- Catalogue databases which use the ISSN as a record control number and can make use of the records on the ISSN register.
- Documentation centers and databases which handle bibliographic references and use the ISSN for more accurate serials citation, abstracting and indexing services etc.
- Subscription agencies who act as intermediaries between publishers and their customers use the ISSN to ensure the correct serial publication is ordered.
- Academics use ISSN to cite in full details of publications for research purposes.
- Retailers/ wholesalers use ISSN based barcodes within their own internal systems in order to assess and control magazine/newspaper circulation.

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The UK center of ISSN is responsible to assign ISSN to the serials that are published in the UK. ISSN are assigned to the titles of serial publications in agreement with the definition given below:

‘A continuing resource in any medium, issued in a succession of discrete parts [and having a common title], usually bearing numbering, that has no predetermined conclusion. Examples of serials include journals, magazines, electronic journals, ongoing directories, annual reports, newspapers, and monographic series.’

ISSN assigned to online journal titles, diskettes and CD-ROMs that are to be issued on continuous basis. Different ISSN is assigned to different editions of serials, it applies to the language editions, different physical forms of publications, and regional editions. However, at the same time it is to be understood that the ISSN are not to be given to internet resources that are predominantly of links, nor individual or company home pages including Weblogs.

When separate ISSN are assigned for different physical formats of a serial, a linking ISSN (ISSN-L) is designated from one of these ISSN. It is to be remembered that ISSN are not assigned to one-off publications, magazine specials, newspaper specials, finite publications including partworks, serials not intended for general circulation, calendars, diaries, posters or magazine packs.

ISSN and Barcodes

The International Standards Organizations (ISO) has developed ISSN owing to the requirement of a brief, unique and unambiguous identification code for serial publications. ISO took an eight digit number into consideration as sufficient for numbering the entire population of serials. The time when the barcoding system was instituted for serials, it was acknowledged that the ISSN as a unique identifying number for the title could be used as part of the barcode for the purpose of identifying the serials.

For this reason, the ISSN is said to be the title identifier within the system of barcode. The barcodes in the magazine are represented in a 2-digit add on code called the EAN code. Another part of the ISSN is the ISSN-L.

Format of the ISSN:

- The number should be printed thus: ISSN 0000-0000
- it should be preceded by the initials ISSN followed by a single space
- Then the first four digits
- Then a hyphen
- Then the last four digits

The format is only significant with the presentation that is specifically given to it, it makes the ISSN easy to read and it is recognized on the international

level. The placement of the ISSN is on the right-hand top of the printed journal. However, if design, binding or other considerations mean the cover is unsuitable the number may be printed in some other prominent position, for example along with other bibliographical information such as the name of the publisher. In electronic resources the ISSN should appear on the title screen or main menu and, if applicable, on any labels permanently affixed to the publication. The printing of the number is voluntary, but is recommended in order to gain the full benefits of the ISSN system.

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What is ISSN-L?

When the availability of the serial is in more than one physical format and a different ISSN is assigned to the each format the network of ISSN designates a different linking that is called the ISSN-L where the L stands for linking. It is available to be used in where there is need for identification and a link that is to continue the resource without any relation to format. For instance, services like OpenURL, library catalogues, search engines or knowledge bases.

What is the difference between ISSN and ISBN?

The ISSN identifies the title of a serial and it remains same unless there is a change in the title. When this happens a new ISSN is assigned.

The ISBN (International Standard Book Number) is representative of a single volume that can be anything from a novel, a monograph, a specific title within a monographic series or a specific issue of an annual or yearbook. ISBN are issued by the UK ISBN Agency.

The two systems are complementary and with this reason these are used together in same publication. On an annual basis when one is to look at ISBN it identifies a specific volume such as 1996 edition, 1997 edition whilst the ISSN identifies the title and stays the same each year.

ISBN is only assigned once a year and to a title only once within a given year.

The basic difference between these two methods is that these numbering systems come from ISBN that helps in identifying a publisher, ISSN does nothing as such.

ISSN is purely arbitrary number that is constant and is linked to the serial even though the serial may be published by different publisher each time.

The ISSN System

The ISSN network comprise of more than 80 centers worldwide. These centers are responsible for providing ISSN to serials within their own countries. The International Centre in Paris is responsible for coordinating the entire system and

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it is responsible for assigning these numbers to the serials that are published in different countries even those that are devoid of their own ISSN National Centre and to the serials published by International organizations.

The ISSN UK Centre, which is a part of the British Library, is responsible for assigning ISSN to serials published in the United Kingdom. Serials published elsewhere, regardless of whether they are distributed in Great Britain or not, should obtain an ISSN from the relevant foreign ISSN Centre.

9.3.4 RDA

Resource Description and Access or RDA is the new cataloguing standard. It has been developed to replace the Anglo-American Cataloguing Rules (AACR2). The standard is for descriptive cataloguing which provides instructions and guidelines to the libraries on creating and formulating bibliographic data. RDA is a set of cataloguing instructions and is based on FRBR or Functional Requirements for Bibliographic Records and FRAD or Functional Requirements for Authority Data. RDA was developed by the RDA Steering Committee (formerly the Joint Steering Committee for RDA) and the Committee of Principles (CoP). The full implementation of RDA was announced on March 2013 by the Library of Congress.

Benefits of RDA

As discussed above, RDA is a successor to AACR2 and has some new features that make it a robust and advantageous cataloguing code for libraries' operations. Some of the benefits of RDA are as follows:

- RDA provides a reliable, flexible and extensible framework for the description of digital resources and for resources with multiple characteristics.
- It is better suited to the digital environment.
- Since RDA is based on FRBR, it improves discoverability of materials.
- It is compatible with international principles, standards and models.
- RDA is being developed for the end-user i.e., it is organised according to user tasks – find, identify, select, obtain.

9.3.5 QR Code

Quick Response (QR) code is a unique technology that is capable of catering to the user demand for the provision of access to resources through the use of mobile device. The prime object of this technology is to generate a user response remotely while interacting with the technology. This code is also useful in library practices for the purpose of e-resource management, library orientation, OPAC. It helps in linking of electronic resources from within the library, giving library information

regarding the library space and even the library catalogue. The code is capable of serving as a comprehensive tool for the library system.

QR is a bi-dimensional code that is depicted in black and white colour in squared matrix that comprise of information used with the help of smartphones and other mobile devices. The code is scanned, that is printed on newspapers, captions, posters and it is processed with the relevant software made for it to process it. The users are able to obtain additional information and data on services and objects without having the need to search it. It is widely used on mobile devices and smartphones, users and many libraries are now using it to their benefit. The QR code is useful for delivering library services in an easy, quick and user friendly manner.

As far as libraries are concerned, they are using it for giving their users easy access to guides, manuals, library map, audio and video files.

Concept of QR Code

A QR code or the quick response code is a machine readable code with an optical label information with relation to the product or the item. If one looks at barcode, then the information appears in coded form in one dimension only. Apart from this, when it comes to a two dimensional code, that is QR code, it is the information that is coded in two directions, it is in horizontal and vertical manner. It is easy to read and also it is capable of holding a lot of information within. The QR codes are ubiquitous as marketing and information-provision tools. These codes are printed on products that can be from anywhere from candy bars to laundry detergent, on T-shirts and soft drink cups, in magazine advertisements, and elsewhere.

As far as libraries are concerned, these and academic institutions have begun placing these codes on websites and including it in printed literature and these can be found on other physical locations as well. These are placed with a purpose of attracting visitors for seeking additional information related to services and programs. The first object of implementation of QR codes as a means of connecting course content of the resources available with the library.

Examples of QR Codes in Library

If one is to look at different reasons as to why this code is used in libraries then the first thing to observe is the it is to prepare for maximum use of QR codes in relation to providing library information services. It is for the academic institutions that have begin implementing this technology for easy access. It is a convenient way of connecting the virtual to the physical world for providing useful content, that the time of need.

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A Short History of the QR Code

The QR code system first came into existence in the year of 1994 by Denso Wave. The prime purpose of this code was to track the vehicles during the time of its manufacturing. Primarily it was designed to serve the purpose of obeying the high speed component scanning. Even though it was not used for tracking parts initially, the codes however, are at present used widely and in a larger context. It is used in commercial tracking of applications as well as convenience-oriented applications that are focused at smartphone users.

It was with time that changes came in the QR code by Masahiro Hara worked on developing it in a way that would include as much information as possible within the code.

Now QR codes are utilized for the purpose of displaying the text to the users for adding vCard contact to the user's device, opening the uniform resource identifier, for composing the email or text message. Users are able to generate their own QR code taking a print out and placing it in the public access for the purpose of the users to be able to connect via smartphone users, then it encodes the image and it is able to fetch the information or the link that is associated with it. The link is then accessed automatically and connected to the web that is how it is able to fetch information.

Structure of QR Code

QR Codes are actually black modules in square patterns on white background. QR Codes consists of many areas that have specific importance.

- Finder Pattern
- Alignment Pattern
- Timing Pattern
- Quiet Zone
- Data Area

Now it is essential to understand about the QR code symbol that comprises of two regions, as follows:

- Encoding region
- Function patterns

Function patterns comprise of finder, alignment patterns and timing, these however, does not encode any data. The symbol is encircled with zone border from all the four sides. A QR Code can be read even if it is tilted or distorted. The size of a QR Code can vary from 21×21 cells to 177×177 cells by four cell increments in both horizontal and vertical direction.

Finder Pattern

The pattern is capable of being used for the purpose of positioning of the QR code. The position, angle and size of the code is determined with the help of three position detection pattern or often referred to as finder patterns that are arranged at the upper left or right and lower left corners of the symbol. The patterns are designed so as to be easily detected from all the directions.

Alignment Pattern

The alignment pattern comprises a dark 5×5 modules, light 3×3 modules and a single central dark module. This pattern is actually used for correcting the distortion of the symbol. The central coordinate of the alignment pattern will be identified to correct the distortion of the symbol.

Timing Pattern

The timing patterns are arranged both in horizontal and vertical directions. These are actually having size similar to one module of the QR Code symbol. This pattern is actually used for identifying the central co-ordinate of each cell with black and white patterns arranged alternately.

Quiet Zone

This region is actually free of all the markings. The margin space is necessary for reading the bar code accurately. This zone is mainly meant for keeping the QR Code symbol separated from the external area. This area is usually 4 modules wide.

Data Area

The data area consists of both data and error correction code words. According to the encoding rule, the data will be converted into 0's and 1's. These binary numbers will be then converted into black and white cells and will be arranged. Reed-Solomon error correction is also employed here.

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Check Your Progress

3. What do you understand by cataloguing standards?
4. Why was ISBD created?
5. What does an ISBN signify?
6. What is the format of ISSN?
7. Who developed RDA?
8. What is QR Code and how is it helpful?

9.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

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1. Cataloguing is a process of generating and keeping information in an accessible database of library material including books, journals, CDs, DVDs etc. The primary objective of cataloguing is to keep track of products and materials based on the title, authors, subject, ISBN etc.
2. The Dewey Decimal Classification System is the most popular methods for classifying books in the library. It is basically a system of numbers used to mark and arrange books. It was developed by Melvil Dewey, an American librarian, in 1876.
3. Cataloguing standards are the set of rules that provide guidelines on the formulation of data inside the data elements. Standards play an important role in cataloguing as they allow cataloguers to generate improved and powerful catalogues. Some of the popular cataloguing standards are: ISBD, ISBN, ISSN, RDA and QR Code.
4. ISBD or International Standard Bibliographic Description is a set of rules that came out as a result of the International Meeting of Cataloguing Experts, organized by the IFLA or International Federation of Library Associations and Institutions Committee on Cataloguing at Copenhagen in 1969. It was produced to create a bibliographic description in a standard, human-readable form, primarily for use in a library catalogue.
5. ISBN stands for International Standard Book Number which is calculated using a specific mathematical formula and it also includes a check digit to validate the number. An ISBN number is 13-digits long and consist of five elements namely prefix element, registration group element, registrant element, publication element, and check digit.
6. The format of an ISSN is as follows:
 - The number should be printed thus: ISSN 0000-0000
 - it should be preceded by the initials ISSN followed by a single space
 - Then the first four digits
 - Then a hyphen
 - Then the last four digits
7. RDA was developed by the RDA Steering Committee (formerly the Joint Steering Committee for RDA) and the Committee of Principles (CoP). The full implementation of RDA was announced on March 2013 by the Library of Congress.

8. Quick Response (QR) code is a unique technology that is capable of catering to the user demand for the provision of access to resources through the use of mobile device. The prime object of this technology is to generate a user response remotely while interacting with the technology. This code is also useful in library practices for the purpose of e-resource management, library orientation, OPAC.

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9.5 SUMMARY

- Cataloguing is an integral process in library that helps in preparing entries for books and helps in guiding the readers to relevant documents, books and titles written by different or same author.
- Cataloguing is a process of generating and keeping information in an accessible database of library material including books, journals, CDs, DVDs etc.
- Descriptive cataloguing is defined as a cataloguing part that is concerned with giving description of the physical details related to a book like the title, author, publication data, physical style of the work etc. and then placing the given information in a bibliographic record.
- In subject cataloguing, the bibliographic records are organized by subject, or topic and it may be similar to classification or subject indexing.
- The Dewey Decimal Classification System was developed in 1876 by Melvil Dewey, an American librarian. It is the most popular methods for classifying books in the library. It is basically a system of numbers used to mark and arrange books.
- ISBD or International Standard Bibliographic Description came out as a result of the International Meeting of Cataloguing Experts, organized by the IFLA or International Federation of Library Associations and Institutions Committee on Cataloguing at Copenhagen in 1969.
- The ISBD was first prepared for Monographic Publications in the year 1969. The first text of the ISBD (M) was published in the year 1971 which was more like set of recommendations.
- In the year 1977 meetings organized between IFLA World Congress, Brussels, the Standing Committee of the IFLA Section on Cataloguing came out with a new decision that was related to IFLA's program of ISBDs.
- ISBN stands for International Standard Book Number which is calculated using a specific mathematical formula and it also includes a check digit to validate the number. Up to the end of 2006, the ISBNs are of 10 digits in length, but since the year 2007 they are 13-digits long.

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- An ISBN, which is assigned to text-based monographic publications, is primarily used by publishers, booksellers, internet retailers, libraries for ordering, listing, sales records and stock control purposes.
- ISSN or the International Standard Serial Number is a code that is internationally accepted, it identifies the title of serial publications.
- It is to be remembered that ISSN are not assigned to one-off publications, magazine specials, newspaper specials, finite publications including partworks, serials not intended for general circulation, calendars, diaries, posters or magazine packs.
- The International Standards Organizations (ISO) has developed ISSN owing to the requirement of a brief, unique and unambiguous identification code for serial publications.
- The barcodes in the magazine are represented in a 2-digit add on code called the EAN code. Another part of the ISSN is the ISSN-L.
- When the availability of the serial is in more than one physical format and a different ISSN is assigned to the each format the network of ISSN designates a different linking that is called the ISSN-L where the L stands for linking.
- The ISBN (International Standard Book Number) is representative of a single volume that can be anything from a novel, a monograph, a specific title within a monographic series or a specific issue of an annual or yearbook. ISBN are issued by the UK ISBN Agency. ISBN is only assigned once a year and to a title only once within a given year.
- The ISSN network comprise of more than 80 centers worldwide. These centers are responsible for providing ISSN to serials within their own countries.
- Resource Description and Access or RDA is the new cataloguing standard. It has been developed to replace the Anglo-American Cataloguing Rules (AACR2). The standard is for descriptive cataloguing which provides instructions and guidelines to the libraries on creating and formulating bibliographic data.
- Records and FRAD or Functional Requirements for Authority Data. RDA was developed by the RDA Steering Committee (formerly the Joint Steering Committee for RDA) and the Committee of Principles (CoP). The full implementation of RDA was announced on March 2013 by the Library of Congress.
- Quick Response (QR) code is a unique technology that is capable of catering to the user demand for the provision of access to resources through the use of mobile device.

- QR is a bi-dimensional code that is depicted in black and white colour in squared matrix that comprise of information used with the help of smartphones and other mobile devices. The code is scanned, that is printed on newspapers, captions, posters and it is processed with the relevant software made for it to process it.
- QR codes are printed on products that can be from anywhere from candy bars to laundry detergent, on T-shirts and soft drink cups, in magazine advertisements, and elsewhere.
- The QR code system first came into existence in the year of 1994 by Denso Wave. The prime purpose of this code was to track the vehicles during the time of its manufacturing.

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9.6 KEY WORDS

- **Partwork:** It refers to a written publication released as a series of planned magazine-like issues over a period of time.
- **Monograph:** It refers to a detailed written study of a single specialized subject or an aspect of it.
- **Reed-Solomon Error Correction:** It refers to a specific type of error correction code. It follows signal processing technique to correct errors.
- **Barcode:** It refers to a machine-readable code in the form of numbers and a pattern of parallel lines of varying widths, printed on a commodity and used especially for stock control.
- **QR Code:** It refers to a machine-readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera on a smartphone.

9.7 SELF-ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Write short notes on descriptive cataloguing and subject cataloguing?
2. List a few characteristics of ISBD.
3. Write a brief note on ISBN.
4. What is ISSN-L?
5. Briefly discuss the benefits of RDA.
6. Throw some light upon the origin of QR Code along with its examples.

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Long Answer Questions

1. Discuss the difference between ISBN and ISSN.
2. What does an ISSN mean and what are its uses? Describe.
3. Examine the foundation of RDA in detail.
4. Explain the concept and history of QR Code.
5. Describe the structure of QR Code.

9.8 FURTHER READINGS

Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books

Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.

Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.

Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.

Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

BLOCK - IV
STANDARDS AND FORMATS

Metadata Creation

UNIT 10 METADATA CREATION

NOTES

Structure

- 10.0 Introduction
- 10.1 Objectives
- 10.2 Metadata: Meaning, Definition and Types
- 10.3 Purpose and Features of Metadata
- 10.4 Benefits of Metadata for Libraries and Users
- 10.5 Answers to Check Your Progress Questions
- 10.6 Summary
- 10.7 Key Words
- 10.8 Self Assessment Questions and Exercises
- 10.9 Further Readings

10.0 INTRODUCTION

Metadata explains the HTML elements that are capable of directly communicating and clarifying website information for search engines. It plays a critical role for SEO or Search Engine Optimization for retailers. It comprises of micro-communications like page titles, description tags and other protocols, and they may describe purposes, characteristics and general content.

Metadata is an organized means of communicating information with regard to a data set that is used in variety of settings. The unit is entirely dedicated to Metadata wherein you will study about the meaning and definition of metadata. You will also study about the purposes and importance of metadata, basic features of metadata. The unit goes on discussing the types and elements of metadata, advantages of metadata for both libraries and users.

10.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the concept and definition of metadata
- Describe the importance and purposes of metadata
- Discuss the basic features and elements of metadata
- Examine the various types of metadata
- Assess the benefits of metadata for libraries and users

10.2 METADATA: MEANING, DEFINITION AND TYPES

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The common definition of metadata is ‘data about data.’ However, to elaborate it, it is the information that is constructed in a proper manner. For instance, constructed information can be compared to latitude and longitude points on earth. Although the structure is not visible, but the system works in a manner that it helps navigate in a smooth manner. The second characteristic is that it is developed for a function. The map of the library would be designed with specifications that will help bring details out of the documents and the books that are kept in the library. It is essential to note that just as it is not possible to have a common map that serves all types of needs, there is not a possibility to have a metadata for all the documents or other forms of information objects available in the library. Another thing to remember is that it is not just the object that determines the metadata, but the purpose and needs of the creators and those who will be serving it.

When it comes to library catalogue, the entries serve the purpose of surrogates for the books that are arranged on the shelves. While it may be difficult for the library users to check out all the books to determine the one they would want, but it is the physical presence of the book that matters. Looking at the digital environment, the surrogate role of metadata is the key due to numerous resources that cannot be browse easily, while others are not clear with regard to the data about themselves. Rising interest in metadata application is what helps in organizing the digital resources and in providing services and access where none exists. It helps exchanging data between resources and allowing to conduct search in digital warehouses.

Metadata for SEO and Social Media

It is because of metadata that the XML based applications are categorized and context is set to pieces of data for marketers and the data is what we refer to as web pages. The purpose of a search engine is that it crawls the web page and interprets its relevancy as per the search query. Ranking is determined on matching keywords within the content body and the back-links to the page. Metadata gives the purpose to the page. Search engines crawl website and guess its purpose based on these elements. It is the metadata that enables the webmasters to be able to perform search engines regarding the title of the page that speaks volumes about the search queries as per the relevancy. Utilization of metadata is similar in social media platforms. OG or the Open Graph is a protocol that marks the web pages without information and then these are displayed whenever the web page is shared on a social media platform like Facebook.

It is to be observed that meta tags comprise of basic keywords, description tags that provide the summary of the content and the robots that is the index pages or the pass on link authority.

- Another search engine ranking factor are the title tags that should be included as relevant keywords and article names and even products.
- Image tags are yet another kind of identifiers URLs these have alternative attributes that are able to provide related text, measurements and some of the SEO signals.
- Canonical tags are utilized for the purpose of consolidating similar pages with attributes that comprise the value for only one, it reduces the likelihood of duplicate content penalty and provides a direct user experience.
- Structured data denotes those aspects of the content that are able to promote them within search results just as the Google is able to answer and the maps appear.

Metadata is able to provide powerful tool for the purpose of tailoring and for targeting the e-commerce industry within social media. It is indicated that 32 per cent of respondents are able to report positive results while using social media for pursuing clients.

Even with all of this, with the inflow of large data even these tools are not able to deliver easily in relation to assessing the customer engagement. Even with this trend of organizing and identifying within large volume of data sets, these are effectively supporting the customer service and marketing outreach.

Even when the data is google specific including metadata such as publisher and authorship tags and even plugins like CMS such as WordPress, these data analytics are able to deliver positive effects.

Types of Metadata

Metadata falls into three main categories:

- Descriptive
- Structural
- Administrative

Descriptive metadata is used for discovery and for the purpose of identification and comprises of information such as title, author, abstract and keywords.

Structural metadata is able to define how the information is put together, for example – page order to chapters.

Administrative metadata is capable of better resource management that is able to show the information as to when and how the resource was made. Even this category has two types:

- One type deal with intellectual property rights.
- Another is able to deal with preservation metadata, it is used for the purpose of archiving and preserving a vital resource.

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Check Your Progress

1. What is metadata?
2. What is the common definition of metadata?
3. Why are meta tags important in SEO?
4. Name the three types of metadata.

10.3 PURPOSE AND FEATURES OF METADATA

Metadata is able to serve numerous purposes with relation to resource discovery that is one of the most basic functions. Here, it is compared to cataloguing that includes identification of resources, defining them as per criteria, bringing together similar resources and distinguishing these among the ones that are dissimilar.

It is a robust means of organizing electronic resources that are important for the web-based resources. Basically, the links to resources are organized in the form of lists and these are built as static webpages that include names and resources coded within HTML. More efficient management would be using metadata for building these kind of pages. For Web purposes, the information can be extracted and reformatted through the use of software tools.

Metadata can also be used for the purpose of facilitating interoperability and integrating resources. It helps in describing resources that enables in understanding it by machines as well as humans. It is able to permit the most effective interoperability or in simpler terms how the data is exchanged between different systems with operating platforms, data structures and interfaces. In turn, it facilitates resource searches across the network.

Digital identification is also possible through metadata via standard numbers that are the unique identifiers for the resource as defined by metadata. Similarly, another practice is combining metadata as per the lines that would help in differentiate objects or resources, supporting validation needs.

Metadata helps in protecting the resources and their accessibility. It is a critical concern that includes all the aspects like digital information, alteration and corruption of data.

For the purpose of archiving and preservation, metadata elements that have the ability to track the object's lineage, and describe its physical characteristics and behaviour so it can be replicated on technologies in the future.

Features of Metadata

ASF or Advanced Systems Format files use metadata for the purpose of describing file contents and properties. All ASF files that are created should be able to include appropriate metadata.

The support provided by metadata through various objects of the Windows Media Format SDK is flexible and powerful.

The prime metadata features are summarized in the following list:

- **Flexible attribute size:** Metadata attributes are not limited in size.
- **Stream-level attributes:** Metadata in ASF files can be assigned to the file as a whole, or to a particular stream.
- **Duplicated attributes:** These are the named attribute that can be utilized multiple times within the same file. This feature is useful when one needs to assign content with descriptive attributes. For instance, choosing a document may have several authors, each would require a separate mention using the Author attribute within the file.
- **Multiple languages:** Every attribute has a language associated with it. It is possible to support the languages and then these are assigned to each attribute as it is created. It is possible to duplicate the attributes; you can provide the most essential attributes using different languages that would help reach out to wider audience. If a language is not specified then the default is taken or obtained from the OS or the operating system that is running the application within the computer system.
- **Complex attributes:** Some of the predefined attributes support structured data. For these attributes, the data type is binary, but the value is a structure defined in this SDK.

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Metadata functions

- Resource discovery
- Allowing resources to be found by relevant criteria
- Identifying resources
- Bringing similar resources together
- Distinguishing dissimilar resources
- Giving location information
- Organizing e-resources
- Organizing links to resources based on audience or topic
- Building these pages dynamically from metadata stored in databases

Facilitating interoperability

Metadata schemes are always use defined schemes that comprise shared transfer protocols, and crosswalks between schemes, resources across the network can be searched more seamlessly.

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Digital identification

Elements for standard numbers, e.g., ISBN

The location of a digital object may also be given using:

a file name

a URL

Some persistent identifiers, e.g., PURL (Persistent URL); DOI (Digital Object Identifier)

Combined metadata to act as a set of identifying data, differentiating one object from another for validation purposes.

Archiving and preservation

A digital information may face many challenges, such as:

- It can be easily corrupted or can be easily altered.
- It may become unusable as storage technologies change.
- Metadata is key to ensuring that resources will survive and continue to be accessible into the future.

If one is to understand about archiving and preservation, it is essential to know about the kind of special elements in doing so, these are:

- To track the lineage of a digital object
- To detail its physical characteristics
- To document its behaviour in order to emulate it in future technologies

Elements of Metadata

Table of Elements: The Table of Core Metadata Elements for Library of Congress Digital Repository Development is arranged in alphabetical order and includes the following fields:

- Name that serves the purpose of a label for the metadata element. These are intended to be easily understood and not vague at all.
- Definition gives out a brief description of the information contained in the element.
- Function is what serves the purpose of an indicator as to how the element is used. Functions served by metadata elements are access management, administration, discovery, persistent identifier, presentation, digital preservation and preservation reformatting. Preservation (D) signifies digital preservation and preservation (R) indicates preservation reformatting.
- Type facilitates the functions that the metadata is intended to support.

- Use as an indicator of frequency and requirement of the element.
- Level is an indicator of position within the repository hierarchy that the element is meaningful.

10.4 BENEFITS OF METADATA FOR LIBRARIES AND USERS

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If one is thinking of investing in metadata development there are three key areas they benefit, these are as follows:

- It has the capability to extend data longevity. If one is to look at the life span of a data set then it is very short, often it is due to the missing or unavailable important metadata that is rendered it useless. Additionally, on development of comprehensive metadata and maintaining the same is able to counters typical data entropy and degradation.
- It helps in reuse and sharing of data as metadata is key for ensuring that the data with details or complications is easily interpreted, processed and analyzed by the originator and by others.
- It is important for the maintenance of historical records that are long-term data sets eliminating any inconsistencies that may occur in documentation of data, methods and personnel. Comprehensive metadata can also enable data sets designed for a single purpose to be reused for other purposes and over the longer term.
- Development and maintenance of metadata is expensive, however, the costs that are incurred in editing and publishing data and metadata are necessary too. The long-term project may be at times cumbersome to few. Yet, metadata investment is in no way optional where the information is critical for the organization.

If one is to understand the practical implications using metadata then it is essential to find out using practical example with the following case study.

Case Study Using Metadata Structures

The metadata structures are related to the online legal information system or the OLIS within the India's environment. The guides law libraries and the library professionals follow the metadata standards within the process of building the open access database.

Purpose

It is all about discussing the metadata structure related to OLIS as is developed to match the suitability of the Indian environment. The system comprise of several types of legal information that are designed to help the lawyers, students, research scholars and common public to access resources. The quality of this system is that

it is open access that helps the users in obtaining the required information in a better manner. Dublin Core (DC) metadata standard was selected to create records in the OLIS because of ease of use and high adoption rate.

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Design/methodology/approach

The OLIS was designed utilizing the system of design and analysis that was carried out based on needs assessment survey. The survey was conducted in eight major legal organizations in Delhi. The OLIS, accessible was accessed for the purpose of identification and validation of the metadata elements along with the DC metadata standard.

Findings

Let us discuss the essential detail like the use of metadata resource within the OLIS that comprise of 15 types of resources relating to judicial and legislative information. Each of these databases includes different metadata framework, it is done to facilitate quick recall and precision with regard to information retrieval by the legal community. Additionally, numerous functions like online help. Latest news, FAQs or frequently asked questions, online discussion forum, query submission and video tutorials are integrated within OLIS.

Practical implications

It helps the law libraries and library professionals follow the standards set by metadata for building an open access database and is able to provide legal resources based on metadata framework. It enables them to be able to select good resources for their libraries.

Originality/value

The study was able to reach the conclusion that the metadata elements that are set for the purpose of managing judicial and legislative information are different. It is as per the comparison with other scholarly information. The study helps in newly created law university libraries that would help build legal information systems to be able to suit the environment and be able to satisfy the information related needs with relation to the diverse law community.

Digital Library of India (DLI) Project

The Digital Library of India (DLI) project began in the year 2002, with motivations from the Universal Digital Library Project. The project facilitates the digitization and preserving of books and preserve existing digital media of different formats like video, audio etc. The operations, scanning and preservation of digital data is able to take place at different centers such as Regional Mega Scanning Center (RMSC).

The RMSCs are recognized as individual organizations with relation to scanning the units established at different regional locations. The responsibilities related to it are regulation of the process of procurement and collection of the

books, distribution of the scanning locations maintained by it, gather the digitized content from the contractors operating at those locations and hosting the same. For these reasons DLI project is a congregation of RMSCs, it always operates parallel and independent throughout the distributed regions of our country.

Major responsibilities of DLI:

- Monitoring the progress related to RMSCs and the supply resources required for its operation.
- Contractor team managing the setup at the RMSC.
- Operating the scanning locations that are maintained by the RMSC and have a trained personnel to execute the scanning and image processing operations
- DLI host close to one tenth of a million books containing about 33 million pages. The books come from about 15 different languages and belonged to 40 varied subjects.

Data Management

Data assembling and making it easily available to be accessed is one of the most essential part of any project, especially digitization project. Metadata and scanned content is gathered at the mega scanning centre, it is obtained from the contractors operating at the scanning locations. The data is available on the web and at the same time preserved for the future. Public is allowed to access all the data that is reliable and is provided as a result of the success gained by the digitization process.

Another thing that is essential to note is that to avoid and reduce duplication it is essential to perform data management and synchronization while ensuring high availability. Immediate recovery of data too should be kept in check in case of media failures and server failures.

Process and Workflow

Majority of the problems that are mentioned earlier are addressed through the use of rigid process and by creation of a scalable and interoperable software architecture. The process and the workflow comprise of numerous committees with relation to individual responsibility of each towards it.

Metadata

The process at DLI is metadata centric. Each book present is stored and scanned with metadata for the purpose of identification, retrieval and search. Identification of metadata is to be preserved with the digital objects. After ample research and discussion regarding the DLI project the following three sub-categories of metadata schema should be included:

1. Regular Metadata

It comprises the information that includes the title of the book, date of publication, author, publisher, keywords, ISBN, subject and language. All this is followed widely

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and understood, as accepted by the Dublin Core2 format and it is extended with additional fields like the information of the book. This metadata primarily helps us to identify, categorize and retrieve the book.

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2. Administrative Metadata

It comprise of the book details, such as the location of scanning of the book, the source, and other such details. These are the details that are interesting to the operational organization. It helps in tracing the progress of the project, generating reports and for the purpose of the identification of bottlenecks with regard to scanning process. For instance, it would be easier to trace the scanner producing low quality scans. Admin metadata is gathered during the process of digitization as per the end of the contract basis.

3. Structural Metadata

The structural metadata concept is purposed within a book in a digital library. The metadata comprise of information that is related to each page for instance the size of each page, even if the page is blank or it has an important context attached to it just as the beginning page of a chapter and the end of chapter, the table of contents, preface and the index. Any such information helps into improving the navigation and the end user is able go through the book, improve the search and retrieval systems. Every digital object comprise three forms of metadata. Regular metadata is then entered with the help of source librarians or the contractor that is hired by the librarians prior to the beginning of digitization process.

Structural metadata is manually entered as per the contractor and it is also automatically detected as per the learning techniques, it is as per the heterogeneity of the structure of pages within a book.

Benefits of Metadata include the following:

1. Identify Content

Metadata is able to define the content by giving it a unique characterization that is able to distinguish it from other content. Identification metadata is descript metadata, and can include elements such as:

Unique resource identifier (URI); Filename or file reference number; Author; Title

2. Manage Content

Metadata plays an essential function, that of helping the management of content within the system. This is done in a way that the system is aware of who is given the rights to access the document, which kind of application should be called forth for displaying the file, what operations conducted on a file at given times or within certain workflows.

In this function, administrative and structural metadata capture things like:

Version number; Archiving date; Security and access permissions; Rights management settings; Retention schedule; File format; Linked resources

3. Retrieve Content

Helping the readers or anyone who accesses the system to be able to retrieve and find file is where metadata begins functioning. It happens due to the fact that it is connected with taxonomies.

In this function, descriptive metadata includes things like:

Taxonomy topics; Subject keywords added by users; Document descriptions

4. Track usage of content

If one is to look at the more complex function of metadata then it would be tracking the use of a document that is connected to other content. It serves the purpose of connecting one content to another in the process.

The examples would be as follows:

User ratings; Downloads data (who has downloaded it, or how often); Forwarding data (who has forwarded it, to whom); Search terms (search terms used immediately prior to a download); Links data (number and source of hyperlinks pointing to the content; links from the content to other pieces of content)

Metadata is critical information about information and content that allows us to navigate, find, and manage our key business information assets.

Check Your Progress

5. What is the use of metadata in ASF files?
6. What is Digital Library of India (DGI) project?
7. What are the components of regular metadata?

10.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Metadata is an organized means of communicating information with regard to a data set that is used in variety of settings. It explains the HTML elements that are capable of directly communicating and clarifying website information for search engines. It plays a critical role for SEO or Search Engine Optimization for retailers.
2. The common definition of metadata is ‘data about data.’
3. Meta tags can have a larger impact on SEO of a website as they comprise of basic keywords, description tags that provide the summary of the content and the robots that is the index pages or the pass on link authority.

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4. The three types of metadata are:
 - (a) Descriptive Metadata
 - (b) Structural Metadata
 - (c) Administrative Metadata
5. ASF or Advanced Systems Format files use metadata for the purpose of describing file contents and properties. All ASF files that are created should be able to include appropriate metadata.
6. Digital Library of India (DLI) project was started in the year 2002 with motivations from the Universal Digital Library Project. The project facilitates the digitization and preserving of books and preserve existing digital media of different formats like video, audio etc.
7. Regular metadata comprises the information that includes the title of the book, date of publication, author, publisher, keywords, ISBN, subject and language.

10.6 SUMMARY

- Metadata explains the HTML elements that are capable of directly communicating and clarifying website information for search engines. It comprises of micro-communications like page titles, description tags and other protocols, and they may describe purposes, characteristics and general content.
- Metadata is an organized means of communicating information with regard to a data set that is used in variety of settings.
- The common definition of metadata is ‘data about data.’ However, to elaborate it, it is the information that is constructed in a proper manner.
- When it comes to library catalogue, the entries serve the purpose of surrogates for the books that are arranged on the shelves.
- Metadata enables the webmasters to be able to perform search engines regarding the title of the page that speaks volumes about the search queries as per the relevancy.
- OG or the Open Graph is a protocol that marks the web pages without information and then these are displayed whenever the web page is shared on a social media platform like Facebook.
- Metadata is able to provide powerful tool for the purpose of tailoring and for targeting the e-commerce industry within social media. It is indicated that 32 per cent of respondents are able to report positive results while using social media for pursuing clients.
- Metadata falls into three main categories, namely descriptive, structural and administrative.

- Descriptive metadata is used for discovery and for the purpose of identification. Structural metadata is able to define how the information is put together and administrative metadata is capable of better resource management that is able to show the information as to when and how the resource was made.
- Metadata can also be used for the purpose of facilitating interoperability and integrating resources. It helps in describing resources that enables in understanding it by machines as well as humans.
- Digital identification is also possible through metadata via standard numbers that are the unique identifiers for the resource as defined by metadata.
- Metadata helps in protecting the resources and their accessibility. It is a critical concern that includes all the aspects like digital information, alteration and corruption of data.
- ASF or Advanced Systems Format files use metadata for the purpose of describing file contents and properties.
- Metadata schemes are always use defined schemes that comprise shared transfer protocols, and crosswalks between schemes, resources across the network can be searched more seamlessly.
- The Digital Library of India (DLI) began in the year 2002, with motivations from the Universal Digital Library Project. The project facilitates the digitization and preserving of books and preserve existing digital media of different formats like video, audio etc.
- Metadata and scanned content is gathered at the mega scanning centre, it is obtained from the contractors operating at the scanning locations. The data is available on the web and at the same time preserved for the future.
- The process at DLI is metadata centric wherein three sub-categories of metadata schema are included, namely regular metadata, administrative metadata, and structural metadata.
- Some of the benefits of metadata include identify content, manage content, retrieve content, and track usage of content.
- Metadata is critical information about information and content that allows us to navigate, find, and manage our key business information assets.

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10.7 KEY WORDS

- **Metadata:** It refers to a set of data that describes and gives information about other data.
- **Search Engine Optimization:** It refers to the process of maximizing the number of visitors to a particular website by ensuring that the site appears high on the list of results returned by a search engine.

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- **Meta tags:** It refers to a tag (a coding statement) in the Hypertext Markup Language (HTML) that describes the contents of a web page.
- **Canonical tags:** These tags are used by search engines to combat duplicate content issues and assign search engine ranking value for that content to the page designated as the 'source' URL.

10.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What role does metadata have in the SEO process?
2. List the few uses of metadata.
3. What are the different functions of metadata?
4. Write a brief note on the major responsibilities of DLI.
5. What are three sub-categories of metadata schema?

Long Answer Questions

1. Discuss the three types of metadata.
2. What are the various purposes of metadata? Discuss.
3. Assess the prime features of metadata.
4. Describe how is metadata advantageous for libraries and users.
5. Examine the different benefits of metadata.

10.9 FURTHER READINGS

Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books

Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.

Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.

Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.

Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 11 METADATA STANDARDS

Structure

- 11.0 Introduction
- 11.1 Objectives
- 11.2 Dublin Core
- 11.3 Z39
- 11.4 MARC 21
- 11.5 ISO 2009
- 11.6 Answers to Check Your Progress Questions
- 11.7 Summary
- 11.8 Key Words
- 11.9 Self Assessment Questions and Exercises
- 11.10 Further Readings

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11.0 INTRODUCTION

As discussed in the previous unit, metadata is made up of various elements which can be categorised into the different functions which they support. A metadata standard will support numerous defined functions and elements. A metadata standard is aimed to establish a common understanding of the meaning or semantics of the data which also ensures proper use and interpretation of the data. Standards help in ensuring consistency in metadata application. The metadata standards are created by internationally recognised bodies such as IFLA, ISO, NISO.

In this unit, you will study about the metadata standards which establish a uniform set of rules for labelling information. The unit gives a detailed account for standards like Dublin Core, Z39, MARC 21 and ISO 2009. You will also study about the different kinds of bibliographic records, components of bibliographic records and standards and other documents related to MARC 21 format.

11.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the importance of metadata standards
- Discuss the features and levels of Dublin Core metadata
- Understand the Z39 metadata standard
- Assess the elements and format of MARC 21
- Explain the meaning of ISO standard

11.2 DUBLIN CORE

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Dublin Core is basically an upgraded digital cataloguing system that make search engines' more efficient and accurate. The Dublin Core Metadata Element Set comprises of fifteen properties or classical metadata elements that are used for the purpose of resource description and better cataloguing. The name Dublin is all due to the origin in the year 1995 in Dublin, Ohio. Core is used due to the elements present in it that are generic and broad and used to describe wide range of resources.

The Dublin core is in fact a part of larger metadata set and its technical specifications are held within the Dublin Core Metadata Initiative (DCMI). It also comprise of sets of resource classes like the DCMI-TYPE, syntax encoding schemes and vocabulary encoding schemes. These are used as per the combination terms with others; these are compatible in the vocabulary context of application profiles and on the DCMI basis of model.

All the changes made to the core ever since the year 2001 are reviewed by the DCMI Usage Board in the context of a DCMI Namespace Policy [DCMI-NAMESPACE]. The namespace policy explains all about the DCMI terms that are assigned URIs or the Uniform Resource Identifiers and sets limitations on the range of changes made within it editorially, these can be made in definitions, labels and even usage comments that are related to the DCMI terms.

DCMI Metadata Terms or often referred to as the abbreviated form such as DCTERMS is a reference version of the element that comprises descriptions that are explained in the following standards:

- ISO Standard 15836:2009 of February 2009 [ISO15836]
- ANSI/NISO Standard Z39.85-2012 of February 2013 [NISOZ3985]
- IETF RFC 5013 of August 2007 [RFC5013]

Ever since 1998, when these elements came into the standardization track, these are the notions of the good practice within the semantic web. It evolved into a better version that is inclusive of assigning formal domains and ranges with addition to definitions in natural language.

Domains and ranges defines the described resources and the value resources that are with regard to the property. These are able to explain the meanings of the natural language even in the explicit form that is used for the purpose of automatic processing with relation to logical inferences.

When a certain property is encountered, the immediate reaction using an application that is able to make use of the information about domains and ranges assigned to property to make inferences with reference to the resources explained.

Since January 2008, DCMI is inclusive of formal domain ranges within its properties. It is still inherent with the basis where it begin from, simple Dublin

Core in RDF. These are the domains and ranges that are not yet specified with all its properties, these are:

These fifteen new properties or metadata elements have been described as the sub properties of the corresponding properties of DCMES Version 1.1 and assigned domains and ranges as listed in the more comprehensive document ‘DCMI Metadata Terms’ [DCTERMS].

Implementers may liberally choose to use these fifteen properties either in their legacy dc: variant or in the dcterms: variant depending on application requirements. The RDF schemas of the DCMI namespaces describe the sub property relation of dcterms: creator to dc: creator for use by Semantic Web-aware applications. Over the time, however, implementers are encouraged to use the semantically more precise dcterms: properties, as they more fully follow emerging notions of best practice for machine-processable metadata.

Levels of the Dublin Core Standard

The Dublin Core standard originally included two levels:

- Simple
- Qualified

The core that comprise of 15 elements is defined as Simple Dublin Core.

Qualified Dublin Core is inclusive of three additional elements, these are: Audience, Provenance and RightsHolder. It also includes a group of refinements that are named qualifiers, these are able to refine the semantics of the elements in ways that may be useful in resource discovery.

Since 2012, the two have been incorporated into the DCMI Metadata Terms as a single set of terms using the RDF data model. The full set of elements is found under the namespace. Because the definition of the terms often contains domains and ranges, which may not be compatible with the pre-RDF definitions used for the original 15 Dublin Core elements, there is a separate namespace for the original 15 elements as previously defined.

Dublin Core Metadata Element Set

The original DCMES Version 1.1 consists of 15 metadata elements:

- Title
- Creator
- Subject
- Description
- Publisher
- Contributor
- Date

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- Type
- Format
- Identifier
- Source
- Language
- Relation
- Coverage
- Rights

Each Dublin Core element is optional and it is liable to be repeated. It is created in standard ways that are able to refine the elements and use encoding with vocabulary schemes. However, it is to be noted that Dublin Core does not follow any prescribed order with relation to presenting or using the elements. The Dublin Core became a NISO standards, Z39.85, and IETF RFC 5013 in 2007. ISO 15836 standard in 2009 and is used as a base-level data element set for the description of learning resources in the ISO/IEC 19788-2 Metadata for learning resources (MLR) – Part 2: Dublin Core elements, prepared by the ISO/IEC JTC1 SC36.

Qualified Dublin Core

The DCMI Metadata Terms became more popular in the year 2008 as against the traditional core. It specified 15 elements that were within the ongoing process of developing the terms for extending and refinement of DCMES. Additional terms too were identified at the same time present within the DCMI groups and these were tested by the DCMI Usage Board. It has to be confirmed with the principles of good practice and for the Dublin Core metadata elements.

Element refinements is what narrows down the meaning of the element that is more specific. A refined element is able to share unqualified element, but within limited scope. The principle of the core states that it is not possible for the application to understand the element refinement specifically, it should therefore ignore the qualifier. It should then be treated as metadata value like an unqualified element. This may result in a partial loss, the element value that is without any qualifier would still continue to be correct and it will be a useful one for the purpose of discovery.

Additionally, the elements refinements within the core that includes recommended encoding schemes. These are designed for interpreting the element value. These are included for controlling vocabularies and for formal notations. A value expressed using an encoding scheme may thus be a token selected from a controlled vocabulary (for example, a term from a classification system or set of subject headings) or a string formatted in accordance with a formal notation, for example, ‘2000-12-31’ as the ISO standard expression of a date. If an encoding

scheme is not understood by an application, the value may still be useful to a human reader.

Audience, Provenance and RightsHolder are elements, but not part of the Simple Dublin Core 15 elements. Use Audience, Provenance and RightsHolder only when using Qualified Dublin Core. DCMI also maintains a small, general vocabulary recommended for use within the element type. This vocabulary currently consists of 12 terms.

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11.3 Z39

The Z39.98 can be explained as the Authoring and Interchange Framework for Adaptive XML Publishing Specification. It is a defined framework that is created for XML markup languages that are capable of representing different information resources such as periodicals, books etc. It is created with the intent of making documents suitable to be transformed into different formats that are universally accessible by the users. For this reason, it is the most flexible architecture that allows in creation of numerous document models that are customized for particular information resource.

The approach with relation to text production is different as it is applied with the approach from ANSI/NISO Z39.86-2005. The schema is such that it is able to provide single markup model that contains all the formats within it. Even though the Z39.86 approach is far better in its merits for the reader, it is still not capable of providing the richness as is required by the producers in numerous cases. For instance rendering high quality outputs individually that it is not capable of providing.

To understand more about complicated markup, let us take the example of print Braille with its compliant to regional codes. The process is only used for the purpose of refreshable Braille display. If it is required to be accessible, then it should be repurposed content that should be suitable for variety of forms for the readers of different abilities. It should at the same time be effective as well.

The Z39.86 text model came out to be complicated due to the inability of redefining it for specific use cases. The content required to be structured as per the specifications regardless of the end form it may take in its source. If one would focus the accessible output requirements, then it is only applicable in the production format capable for mainstream publishing requirements, limiting the ability to obtain content from source producers.

This standard format of the code is not able to provide defined markup models, it is focussed on generic, adaptable, extensible framework where the models are defined. It is able to prescribe the requirements and the rule specifications for rapid growth of newly formed content models that would be specifically defining the grammar.

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It is essential to note with the changing scenario and the growth of technology, is it essential to develop single source master documents that should be easily exchanged between the organizations. It is regardless of any restrictions on the markup with regard to individual producer.

Markup can be produced with the goal of using such a model that is able to place the standard back within the mainstream. The focus would be on representing the structure and giving meaning to the documents that are described and used as a benchmark in parallel publishing model. This would be used for the purpose that is already envisioned. The outputs that can be generated from documents that conform to Z39.98-AI profiles are not limited to accessible formats.

Z39.98-AI was primarily created for revising and replacing ANSI/NISO Z39.86, Specifications for the Digital Talking Book. After considering the trail use as the proposed version, it was recommended by the Working Group that the revision be given a new standard designation number and that the existing Z39.86 standard be reaffirmed. Trial users had indicated that the changes were so significant as to warrant this being a new standard. Additionally, content creators, software developers, and e-reader device manufacturers wanted to continue using the existing standard for the near future while they developed transition plans to the new standard. The NISO Content and Collection Management Topic Committee approved the Working Group's recommendation and this standard was assigned the new designation of Z39.98. Subsequently, ANSI/NISO Z39.86 was reaffirmed for another five years.

In conclusion to it all, this standard was approved by the members of the NISO Voting Pool.

Check Your Progress

1. What does Dublin Core (DC) mean?
2. What is DCMI Metadata Terms?
3. What are the two levels of the Dublin Core Standard?
4. What do you mean by Z39.98?
5. Which standard is approved by the members of the NISO Voting Pool?

11.4 MARC 21

The five MARC 21 communication formats are as follows:

1. MARC 21 Format for Bibliographic Data
2. MARC 21 Format for Authority Data
3. MARC 21 Format for Holdings Data

4. MARC 21 Format for Classification Data

5. MARC 21 Format for Community Information

These are the standards used for the purpose of representing the exchanging the bibliographic, authority, holdings, classification, and community information data in machine-readable form.

A MARC record is made of three elements:

- The record structure
- The content designation
- The data content of the record

The record structure is all about implementing the global standard format for Information Exchange (ISO 2709) and its American counterpart, Bibliographic Information Interchange (ANSI/NISO Z39.2).

The content designation is all about the conventions and codes that are established for identifying the characteristics of data elements within the record. It is done for supporting the data manipulation as defined within the format of MARC.

The content of the data elements that comprise a MARC record is usually defined by standards outside the formats. Examples are the International Standard Bibliographic Description (ISBD), Anglo-American Cataloguing Rules, Library of Congress Subject Headings (LCSH), or other cataloguing rules, subject thesauri, and classification schedules used by the organization that creates a record. The content of certain coded data elements is defined in the MARC formats (e.g., the Leader, field 007, field 008).

What is MARC 21 format for bibliographic data?

It is the format that includes guidelines for the way Content Designation defines the codes and conventions, such as tags, indicators, subfield codes, and coded values that identify the data elements in MARC bibliographic records. It is defined for the use of creating and maintaining bibliographic records and is useful for design and maintenance of systems of communication. It helps in processing of the records too.

Scope of the Bibliographic Format

MARC 21 Format for Bibliographic Data is expressed as the carrier for the related information regarding the manuscript and print materials these can include computer files, maps, music, continuing resources, visual materials, and mixed materials.

The data with regard to bibliography includes the titles, names, subjects, notes, publication data, and information about the physical description of an item. The bibliographic format contains data elements for the following types of material:

Books (BK) - used for printed, electronic, manuscript, and microform textual material that is monographic in nature.

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Continuing resources (CR) - used for printed, electronic, manuscript, and microform textual material that is issued in parts with a recurring pattern of publication (e.g., periodicals, newspapers, yearbooks). (NOTE: Prior to 2002, Continuing resources (CR) were referred to as Serials (SE)).

Computer files (CF) - used for computer software, numeric data, computer-oriented multimedia, online systems or services. Other classes of electronic resources are coded for their most significant aspect. Material may be monographic or serial in nature.

Maps (MP) - used for all types of printed, electronic, manuscript, and microform cartographic materials, including atlases, sheet maps, and globes. Material may be monographic or serial in nature.

Music (MU) - used for printed, electronic, manuscript, and microform music, as well as musical sound recordings, and non-musical sound recordings. Material may be monographic or serial in nature.

Visual materials (VM) - used for projected media, non-projected media, two-dimensional graphics, three-dimensional artefacts or naturally occurring objects, and kits. Material may be monographic or serial in nature.

Mixed materials (MX) - used primarily for archival and manuscript collections of a mixture of forms of material. Material may be monographic or serial in nature. (Note: Prior to 1994, Mixed materials (MX) were referred to as Archival and manuscript material (AM)).

Kinds of Bibliographic Records

MARC bibliographic records are distinguished from all other types of MARC records by specific codes in Leader/06 (Type of record) which identifies the following bibliographic record types.

- | | |
|------------------------------------|---|
| • Language material | Non-musical sound recording |
| • Manuscript language material | Musical sound recording |
| • Computer file | Projected medium |
| • Cartographic material | Two-dimensional non-projectable graphic |
| • Manuscript cartographic material | Three-dimensional artifact or natural objects |
| • Notated music | Kit |
| • Manuscript music | Mixed material |

It is to be observed that microforms whether these are reproductions or are contained as original, are not identified within the category of special record. These would be secondary material that belong to the original item like a book. Similar thing can be sighted for computer files that are secondary aspect, at the same time

it is notable that specific type of categories of electronic resources are coded as Computer Files.

Major Components of MARC Bibliographic Record

A MARC bibliographic record comprises of three major components, these are:

1. The Leader
2. The Directory
3. The variable fields.

Leader – These are the data elements that give information for the purpose of processing the record. The elements comprise numbers or often referred to as coded values and these are identified with the help of relative character position. Leader is fixed within the length of 24 characters and it is the first within the field of MARC record.

Directory – It is a series of entries that includes the tag, length, and starting location of each variable field within a record. Each entry comprise of 12 characters in length. These entries designed for variable control fields come first in the sequence by the field tag in increasing numerical order. Entries related to variable data fields follow an order of ascending trail as per the first character within the tag. It is stored in a sequential manner with variable data fields within a record that is not corresponding to the order of the directory entries. If duplicate tags appear then they are differentiated by the location within the fields in the record. The end of the directory is when the field terminator character (ASCII 1E hex) shows up.

Variable fields – These comprise the data from the MARC bibliographic record that is properly organized. Each is identified with 3 character numeric tag that gets stored within the directory entry with regard to the field. Terminator character field is the finishing point of the field. The end variable field within the record halts with field terminator and record terminator (ASCII 1D hex).

Variable fields are of two types, these are:

Variable control fields – These are also referred to as 00X fields, often identified as field tag within the dictionary. However, they do not contain indicator positions and subfield codes. These fields differ in structure from the variable data fields. They comprise either a single data element or a series of fixed-length data elements identified by relative character position.

Variable data fields - The remaining variable fields defined in the format. Additionally, it is identified by field tag within the dictionary. This category comprise of two indicator positions that are saved at the beginning of the field with two-character subfield code that precede each data element within the field.

The variable data fields form a design of a grouped blocks as per the first character tag, only in some exceptions it is able to identify the function of the data within the record. The type of information in the field is identified by the remainder of the tag.

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Components of Bibliographic Records

Typographical Conventions

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The following typographical conventions are used:

0 – It is representative of the digit zero in tags, fixed-position character positions, indicator positions, and other places numeric are used. This character must be distinguished from an uppercase letter ‘O’ in examples or text.

- It is utilized for a blank in coded fields and in other special situations where the existence of the character blank might be ambiguous. (In most textual examples, the blank is represented in the conventional way, by the absence of a character.)

\$ - It represents the delimiter portion of a subfield code. Within the text, subfield codes are referred to as subfield \$a, for example.

/ - Specific character positions of the Leader, Directory, field 007, field 008 are expressed using a slash and the number of the character position, e.g., Leader/06, 007/00, 008/12.

1 – It is representative of the digit one (hex 31). This character must be distinguished from a lowercase Roman alphabet letter l (hex 6C) and uppercase alphabetic letter I (hex 4C) in examples or text.

| - It is indicative of a fill character in MARC examples. When this mark appears in the left margin, it indicates areas of the text of this document where changes have been made.

Standards and Other Documents Related To MARC 21 Format

The MARC 21 Format for Bibliographic Data should be used with the following standards and related documentation. When a standard is applicable to the data in specific fields of the format, the fields are given in brackets following the citation.

National and International Standards

ISO publications may be obtained from the International Organization for Standardization (ISO) and their agents; and ANSI/NISO Z39 publications may be obtained from the National Information Standards Organization (NISO).

- Format for Information Exchange (ISO 2709) and Bibliographic Information Interchange (ANSI/NISO Z39.2)
- Code for the Representation of Names of Countries and their Subdivisions: Part 2, Country subdivision code (ISO 3166-2)
- International Standard Book Numbering (ISBN) (ISO 2108)
- International Standard Music Number (ISMN) (ISO 10957)
- International Standard Recording Code (ISRC) (ISO 3901)

- International Standard Serial Number (ISSN) (ISO 3297) (ANSI/NISO Z39.9)
- Representations of Dates and Times (ISO 8601)
- Serial Item and Contribution Identifier (SICI) (ANSI/NISO Z39.56)
- International Standard Technical Report Number (ISRN) (ISO 10444) and Standard Technical Report Number and Description (ANSI/NISO Z39.23)

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11.5 ISO 2009

It is a technical report that is capable of defining the responsibilities of cultural heritage of the country with respect to national libraries. The new technical report is able to define the performance indicators for these libraries that helps them in optimizing effectiveness and makes it efficient in fulfilment of set defined tasks as mentioned below:

- Coverage of the national imprint (all documents published in a country, including print and electronic)
- Speed and comprehensiveness of the national bibliography
- Efforts to preserve the national documentary heritage
- International involvement of the library

The Technical Report comprises of terminology and definitions with regard to the data that is utilized for the purpose of performance indicators. Additionally, it also comprise of brief descriptions related to performance indicators of the collection and the analysis of data needed. It also provides ample examples of the instances sighting the use of performance indicators. It is able to define the types of services that one would benefit from when using individual performance indicators with limitations included in its applications.

The performance indicators in this technical report facilitate achievement of the main objectives of national libraries:

- Building the national collection
- Making the collection accessible
- Preserving the collection
- Offering reference services
- Building potentials for development

ISO/TR 28118:2009, *Information and documentation – Performance indicators for national libraries*, was developed by ISO technical committee ISO/TC 46, Information and documentation, subcommittee SC 8, Quality – Statistics and performance evaluation. It is available from ISO national member institutes. It may also be obtained directly from the ISO Central Secretariat, price

192 Swiss francs, through the ISO Store or by contacting the Marketing & Communication department.

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ISO/TR 28118:2009 it is able serve the purpose of the performance indicators for national libraries. It is also valid to the libraries with regional tasks without having to define specific amount of population that should be served by the library. It is because numerous evaluation problem should be corresponding to these national libraries.

The performance indicators are of special interest for comparison over time within the same library. Comparisons between libraries are possible, if differences in the tasks and constituencies of the libraries are taken into account.

ISO/TR 28118:2009 should exclude performance indicators that are created for evaluation of the outcome or the impact of the services rendered by the library on the individuals or the community. It is an area that is ever expanding, these act as performance measurement and these indicators can still be included later on.

ISO/TR 28118:2009 – Not to be used for performance indicators that are unspecified.

Check Your Progress

6. What is MARC 21 format for bibliographic data?
7. List the three major components of a MARC bibliographic record.
8. When was ISO 2009 developed?

11.6 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Dublin Core is basically an upgraded digital cataloguing system that make search engines' more efficient and accurate. The Dublin Core Metadata Element Set comprises of fifteen classical metadata elements that are used for the purpose of resource description and better cataloguing. The Dublin core is in fact a part of larger metadata set and its technical specifications are held within the Dublin Core Metadata Initiative (DCMI).
2. DCMI Metadata Terms or DCTERMS is a reference version of the element that comprises descriptions that are explained in the following standards:
 - ISO Standard 15836:2009 of February 2009 [ISO15836]
 - ANSI/NISO Standard Z39.85-2012 of February 2013 [NISOZ3985]
 - IETF RFC 5013 of August 2007 [RFC5013]
3. The two levels of the Dublin Core Standard are:
 - (a) Simple Dublin Core
 - (b) Qualified Dublin Core

4. The Z39.98 can be explained as the Authoring and Interchange Framework for Adaptive XML Publishing Specification. It is a defined framework that is created for XML markup languages that are capable of representing different information resources such as periodicals, books etc.
5. The Z39.86 standard is approved by the members of the NISO Voting Pool.
6. MARC 21 is the format that includes guidelines for the way Content Designation defines the codes and conventions, such as tags, indicators, subfield codes, and coded values that identify the data elements in MARC bibliographic records. It is defined for the use of creating and maintaining bibliographic records and is useful for design and maintenance of systems of communication. It helps in processing of the records too.
7. The three major components of a MARC bibliographic record are:
 - (a) The Leader
 - (b) The Directory
 - (c) The Variable fields
8. ISO/TR 28118:2009 was developed by ISO technical committee ISO/TC 46, Information and documentation, subcommittee SC 8, Quality – Statistics and performance evaluation.

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11.7 SUMMARY

- Dublin Core is basically an upgraded digital cataloguing system that make search engines' more efficient and accurate. The Dublin Core Metadata Element Set comprises of fifteen classical metadata elements that are used for the purpose of resource description and better cataloguing.
- The name Dublin is all due to the origin in the year 1995 in Dublin, Ohio. Core is used due to the elements present in it that are generic and broad and used to describe wide range of resources.
- The Dublin core is in fact a part of larger metadata set and its technical specifications are held within the Dublin Core Metadata Initiative (DCMI). It also comprise of sets of resource classes like the DCMI-TYPE, syntax encoding schemes and vocabulary encoding schemes.
- Each Dublin Core element is optional and it is liable to be repeated. It is created in standard ways that are able to refine the elements and use encoding with vocabulary schemes.
- The DCMI Metadata Terms became more popular in the year 2008 as against the traditional core. It specified 15 elements that were within the ongoing process of developing the terms for extending and refinement of DCMES.

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- The Dublin Core standard originally included two levels: Simple Dublin Core and Qualified Dublin Core.
- The Z39.98 can be explained as the Authoring and Interchange Framework for Adaptive XML Publishing Specification. It is a defined framework that is created for XML markup languages that are capable of representing different information resources such as periodicals, books etc.
- The Z39.98 is created with the intent of making documents suitable to be transformed into different formats that are universally accessible by the users. For this reason, it is the most flexible architecture that allows in creation of numerous document models that are customized for particular information resource.
- Z39.98-AI was primarily created for revising and replacing ANSI/NISO Z39.86, Specifications for the Digital Talking Book. After considering the trail use as the proposed version, it was recommended by the Working Group that the revision be given a new standard designation number and that the existing Z39.86 standard be reaffirmed.
- MARC 21 standards used for the purpose of representing the exchanging the bibliographic, authority, holdings, classification, and community information data in machine-readable form.
- A MARC record is made of three elements:
 - o The record structure
 - o The content designation
 - o The data content of the record
- The MARC 21 format for bibliographic data is the format that includes guidelines for the way Content Designation defines the codes and conventions, such as tags, indicators, subfield codes, and coded values that identify the data elements in MARC bibliographic records.
- MARC 21 Format for Bibliographic Data is expressed as the carrier for the related information regarding the manuscript and print materials these can include computer files, maps, music, continuing resources, visual materials, and mixed materials.
- A MARC bibliographic record comprises of three major components, namely the Leader, the Directory, and the Variable fields.
- ISO publications may be obtained from the International Organization for Standardization (ISO) and their agents; and ANSI/NISO Z39 publications may be obtained from the National Information Standards Organization (NISO).
- ISO/TR 28118:2009 was developed by ISO technical committee ISO/TC 46, Information and documentation, subcommittee SC 8, Quality – Statistics and performance evaluation. It is able serve the purpose of the performance indicators for national libraries.

11.8 KEY WORDS

- **Dublin Core:** It refers to an initiative to create a digital library card catalogue for the web. It is made up of 15 metadata.
- **MARC Standards:** these are the set of digital formats for the description of items catalogued by libraries, such as books.
- **Typographical:** It refers to the design of the writing in a piece of printing or on a computer screen.

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11.9 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What is Dublin Core used for?
2. Name the 15 metadata elements of the original DCMES Version 1.1.
3. What is the purpose of creating Z39.98?
4. What are the three elements from which the MARC record is made of?
5. List the five MARC 21 communication formats.
6. Write a note on the components of MARC bibliographic record.
7. Briefly mention the purpose of ISO 2009.

Long Answer Questions

1. What do you understand by Dublin Core Metadata Initiative? Discuss.
2. Explain Simple Dublin Core and Qualified Dublin Core in detail.
3. Why is the Z39.86 text model complicated? Explain.
4. Discuss the scope of MARC 21 Format for bibliographic data.
5. Describe the main objectives of the national libraries.

11.10 FURTHER READINGS

- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

UNIT 12 AUTOMATED CATALOGUING AND INDEXING

Structure

- 12.0 Introduction
- 12.1 Objectives
- 12.2 Automated Cataloguing and Indexing
 - 12.2.1 Functions of Automated Cataloguing
 - 12.2.2 Components of Automated Cataloguing
 - 12.2.3 Features of Automated Cataloguing
- 12.3 Web OPAC
 - 12.3.1 Important Features of Web OPAC
 - 12.3.2 Advantages and Disadvantages of Web OPAC
- 12.4 Emerging Trends
 - 12.4.1 AACR2 and the New Trend in Cataloguing RDA
 - 12.4.2 Roads
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 - 12.4.4 New Trends
- 12.5 Answers to Check Your Progress Questions
- 12.6 Summary
- 12.7 Key Words
- 12.8 Self Assessment Questions and Exercises
- 12.9 Further Readings

12.0 INTRODUCTION

The technological advancement in recent times has changed the face of the cataloguing system. The new and improved cataloguing system has made the libraries more efficient. In fact, since the year 1999, we can observe the changes, which have gripped the libraries all across the world. With the advent of Web OPAC, the system no doubt has become even more easy to use. In this unit, we will discuss these very new cataloguing techniques in the library system, along with the new emerging trends.

12.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the Automated Cataloguing and Indexing
- Analyse the Web OPAC, along with its features
- Discuss the emerging trends in the cataloguing system

12.2 AUTOMATED CATALOGUING AND INDEXING

Automated cataloguing emerged in the year 1940 in the US that used mechanised recording system for recording units. The catalogue was then, automated, in which the key punched the cards and then the punched cards were sorted into required filing order using the technology of the sorters. The sorted cards were then further processed, with the help of tabulators that obtained either the card or the book catalogues. With the introduction of computers in 1950s, the automated techniques used within the Library of Congress got the tremendous boost. With the appointment of King Committee for serving mechanised system for information-retrieval process in the year 1985, a significant step towards fully automating the Library of Congress, was made. The project was called MARC or Machine Readable Catalogue, which is the latest service that is available in the WorldCat, a union catalog that itemises the collections of 72,000 libraries in 170 countries and territories. It is the world's largest bibliographic database and a well-known integrated cataloguing service.

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12.2.1 Functions of Automated Cataloguing

Automation has many advantages. A well-designed system should be able to serve the following functions:

- Creating records for a document in one go.
- No need to have prime or added entries within the catalogue.
- Possible to search any field.
- Composite and interactive searches extending versatility.
- Outputs can be obtained in any desired format.
- Data input and retrieval is much faster.
- Omission of any duplicate work.
- Import/export of bibliographic data is possible.
- Interlinking with external databases is possible.

12.2.2 Components of Automated Cataloguing

The first step in the process of automation in the library, begins with converting the card catalogue into machine readable format. For this there are certain decisions that need to be taken prior to the consideration of other details like authority file, cataloguing rules, formatting, and subject headings. If a library plans to be a member of any resource sharing data, then there are certain factors, which need to be kept in mind:

- Authority list should be decided by each library.
- A uniform format needs to be followed such as MARC, CCF, etc.
- Follow the cataloguing codes/rules.

- Create form of headings, series treatment, and subject headings.
- Define main entries and added entries.

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12.2.3 Features of Automated Cataloguing

Some software provide carry field option and input worksheet at the same time. The option is utilised for carrying out the value of the current field to the next blank record. It helps in a fast entry. However, the data entered gets stored in a temporary file. The important features of the automated cataloguing module are as follows:

- I. Import:** Allows importing of all the records that are created using other software packages like MARC, OCL, and Retro-con in a temporary file. These records are then checked for the following for accuracy sake:
 - Mandatory fields.
 - Optional fields.
 - Duplicate records (with existing OPAC).
- II. Validation:** It is one of the essential features used for automated cataloguing at the time of copying the records in a temporary file. It is done for checking for any error within the sub-field identifier in case of incorrect data type. It shows validation of each record.
- III. Edit temporary record:** If there is any error that is sighted, then it is corrected with the in-built feature, within the package. The record gets displayed on the screen and is matched with the existing records, with the use of predefined matching parameters.
- IV. Export:** This feature helps in the export of the OPAC records within the format of CCF/MARC/ISO 2709. It is for exchanging bibliographical information among libraries. At the same time, it helps to describe the field delimiter, length of the directory, and sub-field identifier.
- V. Merge:** It provides with the ability to merge the validated records pertaining to the temporary file within the prime database or the OPAC. The system merges record, one by one, and is simultaneously able to display record counters that are merging with the validated file. Additionally, all index files are updated automatically.

Check Your Progress

1. What is the first step in the process of automation in the library?
2. What are the inaccuracies for which imported records are checked?
3. How did the automated techniques used within the Library of Congress get a tremendous boost?

12.3 WEB OPAC

OPACs or the Web based online public access catalogues first appeared in the year 1990. Conceptually, Web OPACs are of recent origin, when the majority of libraries were still considering its implementation. The system is able to demonstrate an advanced version of the traditional OPACs, especially with regards to remote access by users. They have the potential of integrating many document types and sources through single interface. The six popular Web OPAC interfaces used in UK academic libraries are Talis, INNOPAC, WebCat, Voyager, GeoWeb, and ALEPH.

They serve as a gateway to the resources not just to the user-libraries, but also to the other participating libraries, without any local connection. It goes beyond the limitations of regional, national, and international boundaries. It provides access to the users, so that they are able to interact with the available documents stored on the computers all over the world. This makes it easier to access the catalogue data from the bibliographic records. With this, it becomes a search engine referred to as 'web cat' and serves the purpose of 'Information gateways'. It supports different protocols like telnets, Gopher, HTTP, FTP, other files, which are supported by the system, and portable documents like PDF and HTML. The OPAC uses GUI or Graphical User Interface that is accessible through the 'www' as opposed to the text-based interface through telnet.

12.3.1 Important Features of Web OPAC

The important features of Web OPACs are as follows:

- I. Shelf Browse:** A quick means of locating records through the use of call number that is similar to the selected record. The user is able to move one record (pertaining to bibliographic data) at a given time, forward or backward through the list. It is equivalent to physically browsing through the items left or right on a library shelf.
- II. Index Browse:** It displays a data list that is inherent in MARC record field. It allows the users to review the existing data and select a search term. It is useful for those, who are not sure about the kind of search term, which they should be using. M3 allows browsing through indexes for authors, titles, subjects, call numbers, and URLs by default. Library staff can create other indexes as needed.
- III. Bookbag:** It allows temporary storage of selected records during the search session to provide an additional review or batch printing. It is possible to create a list of items by scanning bar-codes or entering it directly into the Bookbag. However, to avoid clutter, one can use the reset function, which will clear off the information that the previous user stored.

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IV. Bulletin Board: The simplest means of delivering information by the library administrators to the users is the Bulletin Board. It can be linked via HTML file to a library home page, or a web page that the users want to view. A preconfigured HTML file is included with M3 and can be modified using any HTML editor.

V. My Account Tab: As the name suggests, it is an optional tab for the users to view their present transactions, past transactions, along with personal information stored in the library record.

Apart from the above-mentioned features, Web OPAC's most basic features are:

- It is accessed through internet.
- Search becomes easier through the independent terms like title, year, author, and keywords.
- It is able to display complete bibliographic information as it appears in reprint.
- Traditional features of OPACs such as robust bibliographic storage, full text databases, direct access to the database through PC or terminal, Easy to understand search result, and reference help are preserved.
- Uses hypertext links for facilitating navigation among bibliographic records.
- Links to complete text if it is available online.

12.3.2 Advantages and Disadvantages of Web OPAC

Following are the advantages of the Web OPACs:

- It is available worldwide and is accessible at all times.
- It is easy to find out the status of the book, that is if it is issued or not including the status of acquisition order that may be available at the staff as well as public terminals, which are placed throughout the library.
- The users are allowed to request reprints through e-mail.
- There are no limitations on searches with regard to time and space of any document.
- There is no limitation as per the local or network library related to it.

Some of the disadvantages of web OPAC are as follows:

- Few web OPACs, which even when are available as a link on the web page or through the telnet address, are still restricted to a specific user community.
- The user would need to have details like names and passwords to login.
- It is possible that there are still some web OPACs that limit the links through authors and subjects.

- Most of the web OPACs fail to provide access to online help.
- Some of the web OPACs do not display the database that is being searched and call number.

Check Your Progress

4. What is the function of a Bookbag?
5. Which Web OPACs are most popular in the UK?
6. Which protocols are supported by Web OPACs?

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12.4 EMERGING TRENDS

With the technological advancement in information technology, many changes took place in the way information is disseminated and stored and it differs from that of a library. Having a virtual library is now a reality. Now the concept of good library has changed from that of storing huge volume of books to having databases that are remotely accessible and linked to network information with the information system.

Librarians like majority of professionals were associated with a physical library in the past. However, with the development in technology, today librarians are vectors that are searching and establishing connections. The library, where they work, is more like a virtual set-up rather than a physical location. It can be defined as a set of connectors. With the technological advancement and tools available in software format, it is essential that the cataloguer too should be updated and capable enough with the following essential qualities:

- Relevant professional competence that is, he should be able to operate computer and be competent in their field of work.
- Cataloguer should be capable of working with the new information technologies, which are a part of Web OPACs accessed remotely.
- Cataloguers should be familiar with the concept of digital library and its working.
- They should be aware of the different clientele, which comes with online resources.
- It is more about the users worldwide rather than those in the local vicinity.

It is not that the work or the job of a cataloguer is threatened, but instead it gets refined with the incorporation of technology. Information technology age is able to divide work of cataloguer into two criteria:

- Creating access to information
- Communication or dissemination of information

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Access creation is the main task area of the librarian. It implies that the virtual library should be able to provide a structured workforce that is able to help create access base. It should begin from the point of interaction base that is the participation of its users at the stage of selection or acquisition. The access needs to be based on the availability of books, journals, and materials which should be indexed or catalogued and classified in a proper manner. It is essential to note that cataloguing and indexing should be based on user need rather than imaginary subject listing. This is the index theory that suggested the 'Aboutness theory' serving the means of creating access to the users. The 'user aboutness' mode of indexing is at present proposed for Nigerian libraries; they are yet to follow it.

Users' aboutness incorporates the user's context of what a document is about. When a user is in contact with a document or a book, their knowledge base gets enlarged. A modern information age user is centred enough so it becomes essential to recognise the needs of the users prior to going for the acquisitions and access creation. Ingwersen (1993) and Soergel (1995) treated the aboutness theory of indexing in detail. Soergel argued that indexers should lay more emphasis on the required-oriented indexing. This means that the cataloguer should know his users and their information needs. It is clear that in this information and communication technology age, it is not just about cataloguing; it is cataloguing for the clientele.

12.4.1 AACR2 and the New Trend in Cataloguing RDA

In the mid of year 2010, Resource Description and Access or RDA was introduced as a alternative solution to the traditional cataloguing practices. The new code helps in identifying resources that emerged from numerous global collaborations and is able to produce a proper interconnected metadata for the digital environment, offering a way to keep libraries relevant on the Web. RDA is built on the traditions of the Anglo American Cataloguing Rules (AACR).

It all became possible through the Joint Steering Committee's (JSC) efforts for the development of RDA, recognized during the 1990s that AACR2, the code was created properly around card catalogues and the linear displays as per citations, which were created for the internet. Additionally, well-formed metadata was included, which will be utilised by the computerised system. It was during the 1990s, the JSC received many critical views about AACR2, which are:

- Became complex due to the additional updates, especially to address new digital resources.
- Lacks logical structure as it would solely focus on individual rules for each type of material rather than on commonalities and basic principles for a simplified and consistent approach.
- Was arranged by class of materials, which caused problems when cataloguing e-resources with multiple characteristics.

- Could not purposefully address the bibliographic relationships, which created problems as the web is all about networks of interconnected information.
- Was able to display strong Anglo-American bias, even if it was used globally.
- Segregated bibliographic data from the rest of the information community's data, in a world of its own with MARC (Machine-Readable Cataloging 1) formatted records. Although MARC is widely used among libraries worldwide, it is not used by the larger information community (Tillet, 2011).

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12.4.2 Roads

ROADS or the Resource Organisation and Discovery in Subject-based Services is yet another process that helps in cataloguing of internet resources. In simpler words, it acts as an information gateway that can be a list of links that are maintained manually. The information gateway approach gives way to subject list of links that are maintained and created. It specifies the full description of the internet resources, allowing the end user to judge it for the relevancy prior to accessing it. It is properly organised.

The organisation and description of resources adds value to an information gateway. ROADS gives the user the ability to create databases that are also called templates. This task is carried out using World Wide Web forms that the user has to fill in. It is a data entry that comprise of number of fields like keyword field and title field. The software includes tools that are capable of automatically creating classified listing of the resources and a search mechanism.

12.4.3 Digital Library

Digital library is yet another concept of the modern technology that comprises all the digital information. The system is different from that of traditional library system, which is carried out in a physical library. The distribution of books is done virtually on a global level and the user is able to easily retrieve information remotely. It can be done anywhere and at any time. All that is required is a computer and internet. Additionally, the information it makes available is as follows:

- Non-text information (such as photographs, drawings, illustrations, art, etc.).
- Streams of numeric data (such as satellite information, chronological data, Meteorological data, etc.).
- Digitised sound and moving visual images; multidimensional representation of Forms (e.g., holograms).
- The capacity to integrate these data into new representations drawn from many different sources.

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With all the information easily accessible, the user no longer gets lost in the digital information, unless all is organised in a proper manner. Organising information can be done by using digital library environment, where everything is catalogued properly, with regards to all the materials. It should be able to give multiple and easy access to the users so they are able to retrieve the required information easily. There are many research projects, which are undertaken to understand all about the working and management of online information, which is the appropriate means of finding solution to catalogue and other problems. OCLC, the Library of Congress, the British Library, etc., are again taking a leading role in these research activities.

12.4.4 New Trends

Some of the common trends seen in libraries across the world are:

- a) **Technology/automation:** Technology has improved the procedures, tools, workflow of the cataloguer, and increased holdings in bibliographic utilities throughout the years.
- b) **Management:** Libraries have adopted the business model. For example, their employees do more with less, along with added responsibilities.
- c) **Static library budgets:** They are reducing staff and outsourcing.
- d) Adapting to changes in cataloguing practices.
- e) Staffing becoming more efficient and customer-oriented.

2001-2007

The latest trend in digital catalogue is to help the users find the information that helps them with their aspirations of research, so that they become productive citizens and fulfil their need of the hour whether related to research or to creation of a document for their project. Within the last five years many dramatic changes are seen in cataloguing, which are as follows:

- Increase in the purchasing of digital materials (eBooks, databases, streaming videos).
- Budgets showing little or no change.
- Decrease in cataloguing staff.
- Development of new position of the Collection development librarian, who teaches information literacy classes and continue working in reference.
- Shift from print to electronic, which requires more maintenance (de-duping project- eliminating duplicate periodicals).
- Digitising project of archival collection.
- Development of new position of the Cataloguing/Metadata Librarian to create metadata for digitising archival collection.

Personal experience of users

The personal experience of users gets enhanced by:

- Card catalogue
- Reference resources such as CD-ROMs, InfoTrac, and print periodicals
- VTLS Prism for cataloguing
- OCLC exporting, updating, and producing cards-cards filed in card catalogue
- Elimination of redundant cataloguing practices.
- Development of New Cataloguing Standards.
- RDA (Resource Description Access) is recommended because it has more flexibility for machine-based cataloguing designed for the digital world.
- FRBR (Functional Requirements for Bibliographic Records) is the foundation for RDA.
- Metadata, value-added information that documents the administrative, descriptive, preservation, technical, and usage history and characteristics associated with resources.
- Development of Institutional Repositories or IRs.
- Use of Electronic Resource Management System for serials and databases. 1999
- Effects on Public Service
- Research regarded purchase of library integrated system.
- Purchase of Innovative Interface, Inc (III) Millennium.
- Increase in purchasing of databases, electronic journals, and eBooks.
- Shift to OCLC Connexion client-edit, batch, and export bibliographic records to local system.
- Cataloguers editing 856 MARC tag, adding codes for various formats in local systems to bibliographic and item records to identify items in the online catalogue.
- Introduction to FRBR and RDA-changing the set of rules in cataloguing practices.
- Starting covering the reference desk as a copy cataloguer.
- Keeping the lines of communication open is the best way to help public service staff and patrons at the JUL and the other TCC campuses.
- Sharing any changes made to policies or standards, and getting feedback.
- Training public services staff and users in the effective use of the catalogue and classification systems.
- Teamwork in order to provide a more effective library service.

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2008-Present

The Ultimate goal is to provide all the users with the best possible library and information retrieval service. The current trends in cataloguing are:

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- Cataloguers having information and awareness about the working of catalogue and improving it.
- Being aware about the means of improving the service to the patrons.
- Making it easier to search databases and catalogue.
- Easy to detect glitches, errors, and make corrections.
- Giving updates and maintaining the catalogue quality that helps the staff and the users toward the right direction.
- Cataloguers and public service staff working together to improve the quality of services, teamwork, and responsible staff.
- Information is served in multimedia format and libraries are now digital, virtual, or hybrid.
- Discovering a service that is suitable to all formats of information and is easily deliverable and searchable for users.

Check Your Progress

7. List any two trends in library cataloguing in the years 2001-2007.
8. How does the information technology divide work of cataloguer?
9. What is ROADS?

12.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The first step in the process of automation in the library begins with converting the card catalogue into machine readable format.
2. The inaccuracies for which the imported records are checked for are:
 - a) Mandatory fields.
 - b) Optional fields.
 - c) Duplicate records (with existing OPAC)
3. The automated techniques used within the Library of Congress got a tremendous boost, with the introduction of computers in 1950s.
4. A Bookbag allows temporary storage of selected records during the search session to provide an additional review or batch printing.

5. The six popular Web OPAC interfaces used in UK academic libraries are Talis, INNOPAC, WebCat, Voyager, GeoWeb, and ALEPH.
6. Web OPACs support different protocols like telnets, Gopher, HTTP, FTP, other files, which are supported by the system and portable documents like PDF and HTML.
7. The trends observable in the years 2001-2007 are.
 - a) Budgets showing little or no change.
 - b) Decrease in cataloguing staff.
8. The information technology divides work of cataloguer into two criteria:
 - a) Creating access to information
 - b) Communication or dissemination of information
9. ROADS or the Resource Organisation and Discovery in Subject-based Services is a process that helps in cataloguing of internet resources. In simpler words, it acts as an information gateway that can be a list of links that are maintained manually.

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12.6 SUMMARY

- Automated cataloguing emerged in the year 1940 in the US that used mechanised recording system for recording units. The catalogue was then, automated, in which the key punched the cards and then the punched cards were sorted into required filing order using the technology of the sorters.
- OPACs or the Web based online public access catalogues first appeared in the year 1990. The system is able to demonstrate an advanced version of the traditional OPACs, especially with relation to remote access by users. They have the potential of integrating many document types and sources through single interface.
- Librarian like majority of professionals were associated with a physical library in the past. However, with the development in technology, today librarians are vectors that are searching and establishing connections.
- It is essential to note that cataloguing and indexing should be based on user need rather than the imaginary subject listing. This is the index theory that suggested the aboutness theory serving the means of creating access to the users.
- In the mid of year 2010, Resource Description and Access or RDA was introduced as a methodology, which is an alternative solution to the traditional cataloguing practices.

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- **ROADS** or the Resource Organisation and Discovery in Subject-based Services is yet another process that helps in cataloguing of internet resources. In simpler words, it acts as an information gateway that can be a list of links that are maintained manually.
- Digital library is a modern technology that comprises all the digital information. The system is different from that of traditional library system that is carried out in a physical library.

12.7 KEY WORDS

- **Cataloguing:** It is the process of creating metadata representing information resources, such as books, sound recordings, moving images, etc.
- **MARC:** MARC or Machine Readable Cataloguing are a set of digital formats for the description of items catalogued by libraries, such as books.
- **Field Delimiter:** It is a sequence of one or more characters used to specify the boundary between separate, independent regions in plain text or other data streams
- **Interface:** It is a shared boundary across which two or more separate components of a computer system exchange information.

12.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. What are the functions of automated cataloguing?
2. Define digital library.
3. What is Web OPAC?

Long Answer Questions

1. Describe the important features of Web OPAC?
2. Explain the features of automated cataloguing.
3. Is Web OPAC an immaculate process? Discuss.

12.9 FURTHER READINGS

Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.

Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.

Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.

Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.

*Automated Cataloguing
and Indexing*

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UNIT 13 INFORMATION RETRIEVAL

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Structure

- 13.0 Introduction
- 13.1 Objectives
- 13.2 Information Retrieval
 - 13.2.1 In-house Information Retrieval Systems
 - 13.2.2 Online Information Retrieval System
- 13.3 Types of Searches
- 13.4 Answers to Check Your Progress Questions
- 13.5 Summary
- 13.6 Key Words
- 13.7 Self Assessment Questions and Exercises
- 13.8 Further Readings

13.0 INTRODUCTION

In the constantly changing world of technology, there are new and improved tools being invented every day. This is perhaps most true in the case of libraries. The libraries have been greatly enriched with this technological revolution. The main purpose of libraries is to find data for the users. For that, there are multiple tools present in the libraries, today. They are not only fast but efficient in their work. In this unit, we will discuss the information retrieval system, along with the types of search techniques in the context of libraries.

13.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand the information retrieval system
- Analyse Boolean Operators, along with its features
- Discuss the different types of searches

13.2 INFORMATION RETRIEVAL

The term information retrieval system means that the system is a part of communication system. The objective is to supply right information to the end user at the right time. Numerous materials and methodologies are deployed for this purpose that helps furnish the desired information to the user as per their requirement. The origin of the term is said to be Calvin Mooers, who came up

with it in 1951. It is all about obtaining information resources from the collection of the compiled resources that are relevant in serving the informational need. For this reason, it is often referred to as a science that is a study of these activities related to the information retrieval. In modern times, searches are not limited to physical phenomena of a physical library, it has expanded to metadata or full-text indexing. The process that comes into play thus looks similar to the following model:

Library (storage) > user > requirements of a user > search mechanism > dissemination

The earliest known use of the concept of information retrieval as per Olson was in the year 1952 and soon in the year 1961, when the concept gained a lot of popularity. That was the time when the system of retrieving information was a major advancement in libraries. The libraries were no longer seen as book storehouses; they became the place of furnishing information that was complete with indexes and catalogues. The core concept of information retrieval was related to documents or records that contain information that is recognized as an order serving the purpose of easy retrieval. The system as per the 1988 version did not serve any information to the users on any subject when enquired about it. The purpose was only to inform the users about the existence or non-existence of the documents as per the request of the user. The information retrieval system, on the other hand, forms a link between the creators of the information and the readers or the users looking for that particular information. There are two categories of Information Retrieval system which has been discussed.

13.2.1 In-House Information Retrieval Systems

In-House Information Retrieval Systems are set up by a library of a centre of information, with a purpose of primarily serving the users within a said organisation. With changes in technology, online facilities are provided for library users to carry out the retrieval process, along with remote database access. These services are available commercially. The writers suggested having a reliable system that should be able to serve the following purpose:

- Prompt dissemination of information
- Furnishing right information at the right time
- Obtaining information economically
- Filtering of information
- Capacity to browse through
- Getting information on current literature
- Personal assistance and interpersonal transmission of information

It is essential to note that there are two categories when it comes to patrons:

1. Library and information personnel
2. End users

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The library and information personnel are the intermediaries, but at the same time they must also step in the shoes of end users looking for information, either for their own use or for decision making. The core concept is that the entire system should be based on user needs. Each user has different interest that should be kept in mind and given ample importance, while designing the system that works on storage and retrieval.

With the growing quantity of information, libraries are making maximum use of information retrieval tools that would facilitate the process. The primary tools are as follows:

I. Catalogue: Catalogue is the crucial point comprising of the prime information source of the entire library. It is essential to note that everyone requires the help of a catalogue regardless of their academic background. Checking out the shelves straight away may be adventurous for a few, but when someone is looking for a specific subject-related information, it becomes important to take the help of a catalogue. Another purpose of having a catalogue in the library is to give out information on the titles, which are available on the book shelves and communicate about a particular book of a particular discipline, with its location.

The exact purpose of a library catalogue varies, it can be explained as:

- Acting as a guide to find a book even if the author is unknown and the title is known.
- Helping in searching a book through subject.
- Showing library holdings by a given author or on a subject or a related subject.
- Help choosing the books as per its edition.
- Serving as information retrieval tool.

The earlier catalogues were actually modules that were connected to automated circulation system and were not as elaborate as the later versions, due to which, they often had limited serving functionality. OPACs or Online Public Access Catalogues were the interfaces that enabled the users to communicate with the library collection.

II. Classification: The means of arranging library books is called classification. It gives an easy access and provides information retrieval facility to the readers. It is a scheme that is created for the purpose of categorising the documents into narrow topics and broad subjects. The prime rationale behind creation of the theme was to help build a knowledge map in a way that all the documents would be easily organised for future use. The documents would be organised in specific locations for easy retrieval that would help in identifying it easily. However, the collection should also be grouped as per their subject matter with books on similar subjects that should be arranged on same shelf. Classification scheme should also be kept in mind, as without

the use of this scheme, it is difficult to obtain the class numbers present on the indexes.

There are numerous types of classification themes that are defined for the creation of the library catalogues as per their size and collection. The schemes used for classification are designed to serve the purpose of organising bibliographic terms. Then, they are arranged accordingly on the shelves and the same scheme is used for organising information electronically.

III. Index: The term Index denotes a kind of bibliographic guide that comprises:

- It serves the purpose of a guide to a particular publication.
- Serves as a guide to a particular library.
- Guide to the kind of literature that is available in a particular area or at a particular period of time or timeline.

It is imperative to say here that without proper indexes it is hard to retrieve information or even find it.

- Books comprise indexes at the end of the book.
- Indexes are also based on the specific subjects to make the process of retrieval easier.
- It is easier to trace an author or subject using indexes.
- Tracing an article is easier with indexes.

Apart from the common indexes, periodical and newspaper indexes are also made on a particular subject. These are the indexes, which interest the librarians the most. Indexes that are published in newspapers and periodicals are published quarterly or monthly as per the requirement. These indexes are then used for the purpose of reference materials after being cumulated yearly. Distinct index terms are often what represents a document or query statement. The way in which all of it is compiled, is what makes the process of retrieval dependent on the semantic relationship. Documents retrieval process involves using correspondence between search terms, present in the query and in the document. Indexing systems are primarily designed to assist with the process of document retrieval, which can be manually undertaken or automatised.

IV. Bibliography: It is a tool that enables accessing of library sources comprising of the list of works that can include shorter works or a full-length book. It helps to identify the sources, where the information is present. It is due to the information provided by bibliography that we are able to locate certain subjects or they otherwise would have been lost amongst the horde of subjects lined up on the shelf. Being an essential part of the information retrieval system, bibliographers need to go an extra mile for their work related to certain author and certain subjects. There are numerous bibliography information retrieval tools that are created for different

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purposes. It is due to the presence of bibliography that it is easy to reference a book within a library, which a librarian can easily locate, with relevant topic related to the search area of the reader. Bibliography informs the reader about the existence of a work.

It is often observed that after writing a book or an article, writers have a habit of referencing the book sources that were utilised in the compilation of their work. Tracking the sources of the article or the book used by the writer is possible with bibliographies. The matter included in bibliographies are arranged in an alphabetical order of surnames including publisher, title, place of publication, number of pages, and date of publication.

Other tools used in the library include Encyclopaedia, Directories, Dictionaries, Almanacs, Handbooks, Atlases, Periodicals, and Concordances among others.

In conclusion, all libraries have been arranging reading material at an easy to access location from centuries. In modern times, it is essential to know about the traditional tools of information retrieval and various methods employed for classification, vocabulary control, cataloguing, and the means of evolution of the process. With recent developments in the system, in digital library and the web, the roots of the system still lies in the traditional methodologies and tools. Different methods are deployed for the purpose of informing the users about the different materials accessible within the library whether digital or hybrid. It is essential to note that with the modern day catalogue, it has become easier to make changes in the format, retrieving information, and utilising the information.

13.2.2 Online Information Retrieval System

Online Information Retrieval System or OIRS allows users to retrieve the information from the machine readable online databases. It can also be called a collection of computer hardware and software. It was first introduced in 1970s. Some of the features of Online Information Retrieval System are:

- a) **Direct access:** Information can be easily accessed through computer input / output device and communication channel.
- b) **Conventional mode:** Traditional modes of communications like computer, software, telecommunication network, internet, and other technologies are used.
- c) **Two-way communication:** In this, a terminal and a server network communicate with each other to retrieve information.
- d) **Centralised storage:** There is a centralised point or database for all the data found during the searching process.
- e) **Centralised control:** Everything is controlled by a central server, which acts as a focal point for all the processes involved.

- f) **Rapid response:** The best thing about OIRS is its speed with which it retrieves the information.
- g) **Real time communication:** The communication between the user and the system occurs in real time.

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Advantages of Online Information Retrieval System

The Online Information retrieval system has made the life of the users as well as of librarians easier in more than many ways. Its advantages include:

- I. **Saves time:** With its swift response in searching the information, it saves a lot of time.
- II. **Easy to understand:** It is quite easy to search for information on the OIRS.
- III. **Current information:** The information is updated faster than the printed versions.
- IV. **Database:** The database stores all the information and thus, information can be searched more effectively.
- V. **Multi database search:** It allows users to search information from the multi-database at the same time.
- VI. **Multiple concepts:** The searching process can be carried out by multiple keywords or terms.
- VII. **Multi-user:** Multiple users are served simultaneously.
- VIII. **No geographical Barrier:** It is global in its nature and can be accessed from anywhere in the world.
- IX. **Preservation system:** There no fear of harming the material as they are preserved in their digital form.
- X. **Various Formats:** It can retrieve information in various formats, such as book, journal, PDF, document format, etc.
- XI. **Cost:** The cost of searching can be brought down.

Disadvantages of Online Information Retrieval System

Some of the common disadvantages of OIRS are:

- I. **High cost:** For a medium to low level library, it can be expensive to establish.
- II. **Lack of Budget:** The budget constraints makes it almost impossible to maintain.
- III. **IT knowledge:** OIRS makes it essential for library staff to possess IT skills.
- IV. **Power problem:** Not every area is blessed with proper power facilities, which makes this system prone to failure.
- V. **Lack of internet facility:** As with the power, the internet too plays an important role, without which this system becomes useless.

VI. Irrelevant information: The system is prone to retrieving superfluous information which can annoy users.

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Check Your Progress

1. Who came up with the term information retrieval?
2. How is the data in bibliographies arranged?
3. List any three advantages of online information retrieval system.

13.3 TYPES OF SEARCHES

There are different types of searches that are conducted, while searching for information in a library. These searches are discussed in the following sections.

Basic search techniques

It involves basic search that includes searching with one's own terms. It is also referred to as free text or keyword related searching. The search comes handy for searching an assignment or for the purpose of research proposal. However, if one is searching for a dissertation, research project, or systematic review, then one would need to opt for an advanced search. Some resources may only provide the basic search functionality. Numerous techniques can be used for enhancing the keyword search. However, not every technique can be used for every resource. Following are the methodologies of performing search in different manner:

I. Using 'Fields': With some resources, one can perform search through the process of using fields. Field search enables to retrieve the results, where the search keywords/terms appear within a specific part of the document. For instance, the user can restrict their search to only look for documents, where the search terms appear in the title or the summary. It helps in seeking relevant results instead of basic keyword search and retrieving information even when the term appears in the last line of the document.

Majority of databases allows to perform a field search through the use of Advanced Search option. They provide two columns, one in which to enter your search terms and other to select the field, where you wish those terms to appear. For example, the recommended field to use is the Abstract field, as this will retrieve results where your search terms appear in the summary of documents. If you find too many results you can change this to the Title field.

II. Finding variants of a search term: It has now become easy to retrieve the results based on the variants of a search term. This can be done by adding * (Truncation symbol) at the end of a word stem. Using this method, one can search for both singular and plural forms of the word. For example, on searching the term colleg*, you will get results consisting of both the

words college as well as colleges. Using * (Truncation symbol) is an effective but sometimes confusing method as it can lead to irrelevant results, for instance, in the above example, it can also give the result as collegiate.

- III. Using search terms with alternate spellings:** A selection of resources allows the user to apply the ‘Wildcard’ symbol to search for the terms, which have alternate spellings, such as those which have English and American spellings. For example: In British English, the term organisation is spelt with a ‘s’, whilst in the American spelling, it is spelt with a ‘z’. Thus, if the user is only applying the British English spelling within their search, they will fail to retrieve any results, where the American spelling is used. To find both, one could replace the ‘s’ with the wildcard symbol (the symbol varies from resource to resource, but mostly it is the # symbol) such as organi#ation.
- IV. Phrase searching:** In most of the resources, when the user is applying the phrase such as learning support, each of these terms will be considered as a phrase as well as separately as the ‘AND’ operator is automatically placed between these search terms that is, learning AND support. This means that the user will be able to find results, which will contain the phrase, but it will also render irrelevant results. Restrictions can be applied on the search results by using quotation marks around the term, for instance, ‘learning support’.
- V. Proximity searching:** Resources allow the ‘proximity search’, which helps in finding the documents, which contain the different search terms appearing in close proximity, and in different orders. If you enter the search term ‘student experiences’, for example, a database would only find results which contain that exact phrase. However, by using the proximity operators and a number indicating how far apart you want your terms to be in a document, the users can find the information. The operators will differ depending upon which resource you are using. In EBSCOhost, for example, the proximity operator is N which stands for near. The search should be entered in the following manner: student N3 experience
- VI. Adding search filters/limits:** The filter or refine option is the most common option offered by a searching tool. Most of the filters are based on age, publication date, type, language, and publication type. One can use as many filters as they want to narrow down their search results.
- VII. Boolean Search Operators:** Boolean search operators are used in library databases to join and define the relationship between different search terms. They are mostly used in the advanced search. The most common operators are AND, OR, and NOT.
- a) AND:** It is used to retrieve the result containing both the terms leading to much more focused results. For example: Management AND employees.

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b) OR: In comparison to ‘And’ the search results are much broader as it retrieves information containing either of the terms. It is specifically useful for retrieving synonymous words. For example, Manipulation OR Tuning.

c) NOT: This allows one to filter out results by excluding results with certain terms. For example, Health issues NOT Diseases

Boolean operators are essential for an advanced search. They help to save time and effort by giving out search results, which are more focused in nature. It can expand or contract the search results as per one’s convenience. Every search engine has a different way of using the Boolean operators.

Check Your Progress

4. What is basic search?
5. What are the most common Boolean operators?

13.4 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Calvin Mooers came up with the term information retrieval, in 1951.
2. The data in bibliographies is arranged in an alphabetical order of surnames including publisher, title, place of publication, number of pages, and date of publication.
3. The advantages of online Information retrieval system are:
 - (a) Saves time: With its swift response in searching the information, it saves a lot of time.
 - (b) Easy to understand: It is quite easy to search for information on the OIRS.
 - (c) Current information: The information is updated faster than the printed versions.
4. Basic search includes searching with one’s own terms. It is also referred to as free text or keyword related searching. The search comes handy for searching an assignment or for the purpose of research proposal.
5. The most common Boolean operators are AND, OR, and NOT.

13.5 SUMMARY

- It is to be understood that the information retrieval system is a part of communication system. The objective is to supply right information to the end user at the right time.

- The earliest known use of the concept of information retrieval as per Olson was in the year 1952.
- The library and information personnel are the intermediaries, but at the same time they must also step in the shoes of end users looking for information either for their own use or for decision making. The core concept is that the entire system should be based on user needs.
- With the growing quantity of information, libraries are making maximum use of information retrieval tools that would facilitate the process. The primary tools are Catalogues, Classification Schemes, Indexes, and Bibliographies. Other tools used in the library include Encyclopedia, Directories, Dictionaries, Almanacs, Handbooks, Atlases, Periodicals, and Concordances among others.
- Basic search includes searching with one's own terms. However, if one is searching for a dissertation, research project, or systematic review, then one would need to opt for an advanced search. Some resources may only provide the basic search functionality. Numerous techniques can be used for enhancing the keyword search.
- Boolean search operators are used to join the search terms. They are mostly used in the advanced search. The most common operators are And, Or, and Not.

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13.6 KEY WORDS

- **EBSCOhost:** It is an intuitive online research platform used by thousands of institutions and millions of users worldwide.
- **Abstract:** It means a summary of the contents of a book, article, or speech.

13.7 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short Answer Questions

1. Write a short note on information retrieval system.
2. List the features of indexes.
3. What is a wild card entry?

Long Answer Questions

1. How does Boolean search work? Explain.
2. Describe the features of Online Information Retrieval System.
3. How is basic search technique different from field search technique? Explain.

13.8 FURTHER READINGS

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- Ranganathan, S. R. 1995. *Cataloguing Practice*. New Delhi: South Asia Books
- Ranganathan, S. R. *Classified Catalogue Code: With Additional Rules for Dictionary Catalogue Code*. Delhi: Ess Ess Publications.
- Vishwanathan, C. G. 1990. *Cataloguing: Theory and Practice*. Delhi: Ess Ess Publications.
- Khan, M. T. M. 2005. *Anglo American Cataloguing Rules (AACR)*. New Delhi: Shree Publishers & Distributors.
- Hunter, Eric J. and K. G. B. Bakewell. 1983. *Cataloguing*. London: Clive Bingley Publisher.