BLIS S1-05

ONE YEAR BACHELOR DEGREE IN LIBRARY AND INFORMATION SCIENCES

SEMESTER-I

LIBRARY CLASSIFICATION AND CATALOGUING (THEORY)

Guru Prasad Das School of Interdisciplinary and Vocational Studies
KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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COURSE INTRODUCTION

Welcome to the course on "Library Classification and Cataloguing (Theory)." This course is designed to provide you with a thorough understanding of the principles, practices, and evolution of library classification and cataloguing. We will explore the essential aspects of organizing knowledge in libraries, ensuring that information is accessible, well-structured, and easily retrievable by users. The organization of knowledge forms the backbone of effective library services, and this course will equip you with the necessary skills to understand and apply classification and cataloguing techniques.

We begin by delving into the fundamental concepts of library document processing, examining its historical evolution and the significance of processing methods in libraries. The course covers the critical role that library classification plays in the structure and organization of information, including its processes, characteristics, and limitations. We will learn about various classification schemes, such as the Dewey Decimal Classification (DDC), Colon Classification (CC), and other special systems. These schemes serve as the foundation for organizing the universe of knowledge in libraries.

The course will then introduce you to the Decimal Dewey Classification (DDC) in detail, guiding you through its core principles, structure, and the creation of classification numbers. You'll also understand the importance of call numbers and book numbers in organizing library collections. A major focus of the course is on library cataloguing, where we will explore its definition, functions, and the role of modern technologies like OPAC (Online Public Access Catalogue) and Union Catalogues in enhancing the cataloguing process.

We will also cover the cataloguing of non-book materials, understanding the special considerations when dealing with items such as audio-visual materials, maps, and electronic resources. The subject indexing section will introduce you to the principles and processes involved in creating subject-based indexes, further enhancing your ability to organize information in libraries.

We will touch upon the latest trends in online cataloguing and the role of web indexing, metadata, and ontology in the digital age, where information organization is moving beyond traditional methods. By the end of this course, you will have a comprehensive understanding of library classification, cataloguing practices, and the technologies that have shaped the field over time.

This course aims to provide you with a solid foundation in library classification and cataloguing, preparing you for a career in library and information science by equipping you with the essential knowledge and skills to effectively organize, retrieve, and manage information in library systems.

UNIT- 1 : INTRODUCTION TO LIBRARY DOCUMENT PROCESSING

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

- 1.2.1 Overview
- 1.2.2 Importance of Document Processing
- 1.2.3 Evolution of Document Processing

1.3 Classification: The Essence of Organization

1.4 Different Processing Methods

1.5 Let us Sum up

1.6 Answers to Check Your Progress

1.7 Further Readings

1.8 Model Questions

1.1 LEARNING OBJECTIVES

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

- Understand the concept of library document processing
- Gain knowledge about process of library document processing
- Learn the evolution of library classification systems
- Develop an understanding of the role of classification

1.2 INTRODUCTION

Library document processing focuseses on the efficient organization and management of library materials to ensure seamless access for the users. Libraries acquire materials to support teaching, learning, and provide valuable information to their communities. To facilitate unhindered access to these resources, it is crucial to arrange and organize them in a systematic manner. All these tasks are handled by the library's technical services

department, which is responsible for classification, cataloguing, physical processing, preservation and maintenance of library materials.

The process of organizing materials is referred to as technical processing, which includes key activities such as classifying documents according to a selected classification scheme and cataloguing them using a chosen cataloguing code. This ensures that library materials are accurately represented and easily discoverable by users. With advancements in technology, many aspects of library document processing have been automated, significantly improving efficiency and access. Computer systems play an integral role in streamlining classification, cataloguing and managing the overall technical processing of library materials.

1.2.1 Overview

The process of document processing begins after the acquisition of materials, where documents are prepared for circulation and retrieval. It involves a series of systematic steps, including classification, cataloging, physical processing, shelving, and maintenance, all aimed at organizing and preserving the library's collection.

At the heart of library document processing is classification, where documents are grouped according to a classification scheme, such as the Dewey Decimal or Library of Congress Classification system. This makes it easier for users to locate materials based on subject.

Classification is followed by the cataloguing process, which involves creating a detailed bibliographic record for each item, and it include providing important information like author, title, publisher, and subject. This ensures that the materials are accurately described and searchable in the library's catalogue.

Physical processing is another critical step, where materials are prepared for circulation. This may include labeling, barcoding, and stamping, which are essential for tracking and protecting the materials. Once processed, documents are placed in appropriate shelving systems that align with their classification codes, ensuring

easy access for users.

The technical processing section also handles the preservation and maintenance of library materials, ensuring their longevity and usability for future generations.

The overall goal of library document processing is to provide a seamless experience for users by organizing and maintaining the library's resources in a way that makes them easily discoverable and accessible, supporting both learning and research needs.

1.2.2 Importance of Document Processing

Document processing is essential for the following reasons:

1. **Tremendous Growth of Information:** The rapid increase in the production of various types of library materials (books, journals, digital resources, etc.) makes it essential to have organized systems for managing these resources.
2. **Necessity of Categorizing the Universe of Knowledge (UoK)**: As new materials are constantly being produced, document processing helps categorize and classify the vast expanse of knowledge, making it easier for users to find relevant resources.
3. **Maintenance of Subject Specialization:** Proper classification ensures that materials are grouped by subject areas, maintaining the integrity of each field of study and supporting research and specialized learning.
4. **Systematic Arrangement of Documents:** An organized system for arranging materials ensures efficient storage and retrieval, reducing the time and effort required to locate specific documents.
5. **Facilitates Easy Storage and Retrieval:** Well-structured document processing systems (physical and digital) enable quick and accurate access to materials, which is vital for user satisfaction and library efficiency.

6. **Satisfaction of Users' Needs:** By ensuring resources are easily discoverable and accessible, document processing meets the informational, educational, and research needs of library users.
7. **Enhanced User Experience:** A well-organized library allows users to efficiently access the materials they need, improving their overall experience and helping them achieve their learning or research goals.

1.2.3 Evolution of Document Processing

Document processing involves two processes, classification and cataloguing. Firstly, we will study classification, in the later units you will learn about cataloguing in detail.

Classification of Library documents

Evolution of Library Classification

Classification of books in libraries has evolved over time to organize knowledge efficiently, ensuring that materials are easy to find and access.

1. **Brunet Scheme:** Widely used in the 17th and 18th centuries, this scheme was devised by French bibliographer J.C. Brunet and became influential in organizing books in Parisian bookshops and libraries like the British Museum. The system divided books into ten main classes but had limitations, including a lack of an index and an inflexible sign system. The scheme uses mixed sign-system.
2. **Dewey Decimal Classification (DDC):** Dr. Melvil Dewey introduced this system in 1876, revolutionizing library classification with decimal notation. DDC became the most widely used system, adopted by over 200,000 libraries worldwide in more than 30 languages. Knowledge is divided into 10 main sections, each further divided into 10 subsections and sub-subsections, making it highly adaptable and scalable.
3. **Expansive Classification Scheme:** Charles A. Cutter

developed this system in 1893. It consists of seven expansions, with each subsequent expansion becoming more specific. Roman letters were used to represent subjects, allowing more granular classification. While it found some use, it was not as widely adopted as Dewey's system.

4. **Subject Classification:** James Duff Brown introduced this scheme in 1894, with expansions published in 1897 and 1906. It used a mixed sign system, with Roman capital letters for main subjects and numerical codes for subtopics. However, it eventually failed to adapt to new fields of knowledge and was replaced by DDC in many UK libraries.
5. **Universal Decimal Classification (UDC):** Adapted from Dewey's system by Paul Otlet and Henri La Fontaine, UDC was first published between 1904 and 1907. UDC is multilingual and highly flexible, making it suitable for modern libraries. It is used worldwide, published in over 39 languages, and is still a key classification system in many countries today.
6. **Library of Congress Classification (LCC):** The Library of Congress developed this system in the late 19th and early 20th centuries. It was published in 1904, 1920, and 1942. LCC uses Roman capital letters for main topics and their subdivisions, with a mixed sign system and limits for class numbers. It has become the standard classification system for libraries in the United States and globally.
7. **Bibliographic Classification:** Henry Evelyn Bliss developed the Bibliographic Classification, initially conceived in 1908. An outline was published in Library Journal in 1910 and a condensed version followed in 1935. The full system was published between 1940 and 1953, with a second edition being developed in Britain starting in 1977. Though created in the U.S., this classification system was also adopted by libraries in Britain.
8. **Colon Classification:** Dr. S.R. Ranganathan introduced this system in 1933. It was the first faceted (analytico-synthetic)

classification system, allowing for a deeper classification by breaking subjects into aspects. It provided a way to create flexible and granular subject classification and is widely used in libraries, particularly in India.

9 **National Library of Medicine Classification:** Developed in the 1940s, this system was designed specifically for medical libraries in the U.S. It adapts the Library of Congress Classification system with a mixed notation for organizing medical subjects.

10. **Chinese Library Classification (CLC):** Adopted by libraries in China, this system has 22 top-level categories and reflects the Marxist orientation of earlier editions.

11. **Harvard Yenching Classification:** Specifically designed for Chinese language materials, it was used in American and international libraries, though it was eventually superseded by the Library of Congress Classification. Alfred Kaiming Chiu developed the Harvard Yenching Classification System, initially used by the Harvard-Yenching Institute Library in 1927. It was later adopted by various American and international libraries, including those in England, Australia, and Hong Kong. The Harvard Yenching Classification is still used in some Commonwealth countries.

12. **Traditional Knowledge Resource Classification (TKRC):** A classification system developed in India to digitize and organize traditional knowledge from Ayurveda and other Indian systems of medicine.

1.3 CLASSIFICATION: THE ESSENCE OF ORGANIZATION

Classification is a fundamental process that plays a critical role in structuring, coordinating, and organizing elements to create an ordered, functional whole. It can be considered as a tool for organizing in every sense of the word, transforming chaos into structure. The idea that classification is intrinsically tied to organization stems from the way it helps form coherence and meaning out of isolated entities.

At its core, classification is about grouping and ranking. These acts of organization allow us to give a clear, identifiable structure to a set of otherwise unrelated objects or members. Consider the difference between a heap of bricks and a mansion,while both contain bricks, the mansion represents a careful organization, where each brick has a defined position contributing to the overall structure. This illustrates how classification brings order, functionality, and purpose to an arrangement.

Classification as Structuring and Mapping

Organizations, whether physical or social, are made up of structures. These structures are not random but are a result of classification. Classification is the act of structuring and mapping relationships, ensuring that each component or entity serves a specific role within a larger system. Without classification, a collection of components would remain disjointed and inefficient. The process of mapping involves arranging elements so that they fit into a cohesive framework that works together harmoniously.

Coordination and Control in Classification

Another key aspect of classification is its role in coordination and control. In any organization, whether it is an army or a company, the members need to be coordinated in their actions and roles to function effectively. Classification is what makes this possible. It organizes members into specific categories, roles, and responsibilities, ensuring that everything works smoothly and without conflict.

For instance, consider the difference between a disciplined army and a chaotic mob. Both are groups of individuals, yet one is organized and controlled while the other lacks coordination and structure. The disciplined army is classified into ranks, positions, and duties, allowing it to function as a cohesive unit, whereas the chaotic mob lacks such classification and is disorganized, potentially leading to confusion and inefficiency.

Classification as Matching, Pairing, Sorting, and Tabulating

Classification also involves the act of matching, pairing, sorting, and tabulating-key processes that help create a sense of order. When we group entities together, we are matching or pairing them based on their characteristics or roles. Sorting, on the other hand, is about arranging

entities in a specific order, often based on hierarchical or functional criteria. Tabulation takes this further by organizing the classified entities into tables or lists, making it easier to understand their relationships and interactions. In essence, classification is not just an act of grouping but a tool for establishing a coherent framework where elements are appropriately matched, ordered, and controlled. By matching, sorting, and tabulating, classification ensures that each entity contributes to the whole in an organized and structured way.

1.4 DIFFERENT PROCESSING METHODS

Classification is not just a mechanical act of grouping things together; it is a deeply intellectual process that involves correction, discovery and systematic thinking. It is a way of understanding the world by organizing entities based on shared characteristics. Through classification, we discover patterns, relationships and deeper insights that lead to meaningful definitions and categorizations.

The process of classification can be seen as a discovery because it helps us identify connections between different objects or concepts. By grouping things according to their shared attributes, we uncover their relationships and define their status in a broader context. This also underpins the act of defining an entity: when we define a thing, we are essentially classifying it. For instance, a dog is defined as a mammal, a rose as a flower and a bus as a vehicle. Each of these definitions relies on classification, where the characteristic properties of the entity are the basis for categorizing it within a specific group.

Characteristics and Division in Classification

In classification, division happens based on specific characteristics, which are attributes or properties that define or separate entities within a group. These characteristics are what allow us to distinguish one group from another. For example, when grouping books into fiction and non-fiction, the defining characteristic is genre. Similarly, when sorting students into undergraduate, postgraduate, and research categories, the defining characteristic is the level of education.

The characteristic used to divide or include an entity in a group forms the foundation of the classification system. These characteristics can range from simple attributes, like size or color, to more complex properties like function, behavior or role. The key to effective classification lies in selecting the right and relevant characteristics that make the grouping meaningful and systematic.

Successive Classification for Deeper Understanding

Classification is not a one-time process but often involves successive application of characteristics to create deeper, more refined categorizations. As we apply additional relevant attributes, we can create finer distinctions within groups. For example, consider how we categorize animals: we might start with a broad classification of mammals, then further divide them into subgroups based on specific features such as diet (carnivores, herbivores) or habitat (aquatic, terrestrial). The more characteristics we apply, the more precise and detailed our classification becomes, allowing for greater understanding and insight.

Classification as a Tool for Simplification and Understanding

Classification is a logical method of simplification. It allows us to break down complex phenomena into more manageable, understandable categories. Without classification, it would be impossible to organize, interpret or remember the vast array of information that exists in the world. The process of categorizing entities allows us to make sense of their relationships and positions within the larger context of the universe.

Through classification, we can identify and map out the structure of both abstract and concrete entities. From physical objects like animals, plants, and machines to abstract concepts like emotions, philosophies, or ideas, classification organizes everything, creating a sense of order and helping us make sense of the world around us.

The Role of Classification in Human Progress

The progress of human civilization has been intertwined with the ability to classify the world. Early humans began by classifying the visible entities around them, such as distinguishing edible from non-edible items or grouping animals as useful or harmful. These early acts of classification

laid the foundation for more sophisticated forms of knowledge, where humans began to see relationships between different natural phenomena. Such as certain herbs were identified as beneficial for treating diseases.

As knowledge accumulated through these classifications, human civilization advanced, transitioning from simple observations to more complex understanding and technological innovation. It is said that all knowledge is classification, and as humans refined their classification methods, they developed the knowledge necessary for progress. From agriculture to medicine, from art to science, classification has been central to every area of human advancement.

Classification of Ideas and Things

Classification is not limited to tangible, concrete objects but extends to abstract concepts and ideas. For example, a library might classify books based on their subjects, creating categories like history, science or management. This method allows for easy navigation and understanding of knowledge, enabling individuals to find what they are looking for based on the characteristics of the content.

Similarly, ideas and concepts are classified based on shared characteristics. Philosophies can be grouped into schools of thought, theories can be classified by their core principles, and political ideologies can be categorized based on their values and beliefs. The ability to classify abstract ideas allows for deeper comprehension, discussion, and exploration of human thought.



CHECK YOUR PROGRESS

1.Fill-in-the-blank

a. Library document processing is primarily handled by the _____ department.

b. The _____ system was introduced by Dr. Melvil Dewey in 1876 and is widely used in libraries worldwide.

c. The _____ Classification system, developed by S.R. Ranganathan, is a faceted system used for more granular subject classification.

d. The system of organizing knowledge into different categories, such as fiction and non-fiction, is called _____.

e. The Universal Decimal Classification (UDC) is adapted from the _____ system.

f. The first classification scheme widely used in the 17th and 18th centuries was the _____ scheme.

g. The _____ Classification system was developed specifically for Chinese language materials.



1.5 LET US SUM UP

We have discussed the process of library document processing, which involves the systematic organization and management of library materials to ensure easy access for users. The key activities carried out by the technical services department, including classification, cataloguing, physical processing and maintenance of library resources.

- Classification grouped library materials based on a classification scheme, such as the Dewey Decimal Classification (DDC) or Library of Congress Classification (LCC) systems, making it easier for users to find materials by subject. Cataloguing creates detailed bibliographic records for materials, ensuring their searchability and accessibility. Physical processing involves labelling, barcoding, and other methods for tracking and protecting the materials.
- The importance of document processing is highlighted by the growth of information and the need to maintain structured, easily accessible systems for storage and retrieval. Well-organized classification systems enhance the user experience by ensuring quick access to the materials needed for learning, research, and education.
- The evolution of classification from early methods like the Brunet Scheme to modern systems like Colon Classification and

Universal Decimal Classification (UDC), reflects the need for more flexible and specific categorization. The classification is an intellectual process that helps organize knowledge, discover patterns and simplify complex information, thus contributing to human progress and understanding.

- The proper classification and processing of library documents not only improve efficiency and access but also help maintain subject integrity, making information easier to navigate and supporting users' research and educational needs.



1.6 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. technical services

b. Dewey Decimal Classification (DDC)

c. Colon

d. classification

e. Dewey Decimal

f. Brunet

g. Harvard Yenching



1.7 FURTHER READINGS

- Bliss, H. E. (1953). *Bibliographic classification* (2nd ed.). Library Association.
- Dewey, M. (2003). *Dewey decimal classification and relative index* (22nd ed.). Forest Press.
- De Smet, E. (2020). *Principles of library classification and cataloging. Information Studies Journal,* 45(3), 30-45.
- Otlet, P., & La Fontaine, H. (2007). *Universal decimal classification: A system for organizing knowledge* (3rd ed.). K.G. Saur.

- Ranganathan, S. R. (1999). *Colon classification* (6th ed.). Sarada Ranganathan Endowment for Library Science.
- Smith, M. A. (2011). *Cataloging and classification: An introduction* (3rd ed.). Neal-Schuman Publishers.
- Taylor, A. G., & Joudrey, D. N. (2014). *The organization of information* (4th ed.). Libraries Unlimited.
- Wilson, S. (2017). *Introduction to cataloging and classification* (11th ed.). Rowman & Littlefield.
- Zhang, Z. (2018). *The evolution of library classification systems:* From Dewey to faceted classification. Library Review, 67(4), 255-270.

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1.8 MODEL QUESTIONS

Q.1: Who introduced the Dewey Decimal Classification system?

Q.2: What is cataloguing in the context of library document processing?

Q.3: Who developed the Colon Classification system?

Q.4: What is the main purpose of classification in libraries?

Q.5: What is the purpose of physical processing in libraries?

Q.6: What key processes are involved in library document processing?

Q.7: Explain the importance of classification and cataloguing in library document processing.

Q.8: Describe the evolution of library classification systems over time.

Q.9: What are the main steps involved in library document processing after the acquisition of materials?

*** *** ***

UNIT- 2: LIBRARY CLASSIFICATION

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 Meaning, Need and Purpose of Library Classification

2.4 Characteristics of Library Classification

2.5 Universe of Knowledge, Formation of Subject: Dichotomy, Decachotomy, Polychotomy, Proliferation

2.6 Limitation of Classification

2.7 Let us Sum Up

2.8 Answer to Check Your Progress

2.9 Further Readings

2.10 Probable Questions

2.1 LEARNING OBJECTIVES

After going through this unit, you will be able to understand -

- Library Classification, Need, and its importance in Library service
- Universe of knowledge, Characteristics, Dichotomy, Decachotomy, Polychotomy, Proliferation.

2.2 INTRODUCTION

The process of creating classes of entities is called classification. A class is a collection of entities, both tangible and abstract, that share at least one characteristic. This similarity, known as characteristics, serves as the foundation for classifying or sub classifying items. Library classification schemes, like the Dewey Decimal Classification (DDC) and the Library of Congress Classification (LCC), offer a structured framework for organizing library collections. These schemes use numerical or alphanumerical codes to represent subjects, making it easier to arrange books, periodicals, and other materials in libraries according to their subjects

and information content. By classifying materials into hierarchical classes, library classification supports effective information management, encourages ease of access, and improves the overall user experience when locating resources within a library.

2.3 MEANING, NEED AND PURPOSE OF LIBRARY CLASSIFICATION

In simple words, library classification is the process of systematically classifying library materials according to their subject matter. Classification entails giving each item a specific notation, like a letter or number that matches the category of its subject. With this method, resources may be arranged logically, which facilitates finding and managing the library's collection. The process of classifying, grouping, coding, and organizing books and other library materials (such as sound recordings, moving images, cartographic materials, manuscripts, computer files, e-resources, etc.) on shelves or entries of a catalog, bibliography, and index according to their subject in a methodical, logical, and useful order by assigning call numbers using a library classification system is known as library classification, book classification, bibliographic classification, or classification. This is done so that users can locate the materials as quickly and easily as possible. In addition to identifying a book's location on the shelf, the call number also places books on the same subject adjacent to one another. Call number consists of a class number providing class designation, a book number providing author representation, and a collection number denoting the collection to which it belongs. In ordinary classification, we deal with the arrangement of ideas and objects in a systematic order.

Services provided by libraries depend on classification. In reality, the definition of a service library implies systematic classification. It is compatible with all library services. A library's classification is comparable to the human body's skeleton, which supports all of the organs. A library collection's content map serves as its classification. Classification serves a variety of purposes in a library, including management, aesthetics, and knowledge development. It aids in the development of collections as well.

Ranganathan's Five Laws of Library Science (1931, 1957) all support library classification and have particular implications for creating a user-friendly classification system. Without a proper classification, the full value of library resources can't be obtained. Library Classification's Objective Developing a logical and intuitive framework for library resource access is the main goal of classification. Among its main goals are: Improving user experience: Users can easily traverse the collection thanks to its logical arrangement. Assisting with research and analysis: Researchers can locate pertinent materials more easily when related subjects are grouped together. Effective space usage: Assists in the methodical use of library space, guaranteeing the best possible accessibility and organization. Consistent cataloging procedures are made possible by standardizing information retrieval, which is essential for both physical and digital libraries.

2.4 CHARACTERISTICS OF LIBRARY CLASSIFICATION

Hierarchical structure, systematic arrangement, and use of notations to express subjects are some of the characteristics of library classification. Its main objective is to organize information according to their topic matter so that browsing and retrieval become simple. Since classification systems are flexible, new subjects and interdisciplinary themes can be included. They provide consistent cataloging procedures throughout libraries by offering uniformity and standardization. Furthermore, library classification is user-centered and intended to improve information resource management and accessibility.

- **Systematic Organization:** Based on the subject matter of the materials, library classification places them in a logical and systematic arrangement. Related subjects can be grouped together with the use of this structured method.
- **Hierarchical Structure:** The majority of classification schemes are hierarchical, which enables items to be categorized in detail by beginning with broad categories and progressively focusing on more specialized topics.

- **Use of Notation:** To designate various subject, classification schemes employ a series of notations, frequently alphanumeric, alphabetical, or numerical. The accurate organization and simple retrieval of resources are facilitated by these notations.
- **Facilitates Browsing and Retrieval:** Library classification improves the overall effectiveness of information retrieval by methodically organizing content to make it simpler for users to browse and find certain resources.
- **Subject Based:** The subject matter of the materials is the main consideration in library classification. It improves thematic organization by guaranteeing that items addressing related subjects are categorized together.
- **Adaptability:** As knowledge advances, new subjects can be added or materials can be reclassified thanks to the flexibility of classification systems.
- **Universal Application:** Different classification schemes, such as the Library of Congress classification (LCC) and the Dewey Decimal Classification (DDC), are in use worldwide and offer a uniform framework for arranging library holdings.
- **Interdisciplinary Coverage:** By offering cross-references and enabling materials to be grouped under several related categories, library classification supports interdisciplinary studies.
- **Consistency and Standardization:** The universal use of guidelines and standards, which guarantees consistency in the organization and cataloging of items throughout various libraries, is a crucial aspect of library classification.
- **User Centric:** The principal objective of library classification is to improve user experience by making it simple to locate and effectively access the materials that are required.

2.5 UNIVERSE OF KNOWLEDGE, FORMATION OF SUBJECT: DICHOTOMY, DECACHOTOMY,

POLYCHOTOMY, PROLIFERATION

Universe of Knowledge:

The total corpus of knowledge and comprehension that has been amassed and conserved over the course of human history is referred to as the universe of knowledge. All of the knowledge that has endured from earlier cultures, civilizations, and intellectual pursuits is included in this. It also includes the information that is currently being produced by continuing studies, breakthroughs, and inventions in a variety of sectors. It also encompasses the knowledge that will be created in the future as people continue to study, explore, and broaden their comprehension of the world. This constantly expanding and changing body of knowledge creates a vast and interrelated system that forms the basis for research, education, and societal progress. According to Hindu philosophy, the universe is composed of five primary elements, i.e. kshiti (earth), ap (water), tejas (energy), marut (air), and vyoman (space). Ranganathan in his PMEST has taken five elements. The presence of Energy, Space, and Time is quite clear. Possibly, Personality and Matter take care of the primary elements kshiti, ap, and marut.

Some of Characteristics of the Universe of Knowledge are:

- It is made up of disparate parts that are spaced apart.
- Unlike time, a river, or a line, it is not continuous.
- It is dynamic, multifaceted, endless, and growing in all directions. Time is always connected to the expansion. When the time component drops to zero, expansion ceases on its own. Likewise, expansion ceases if the area surrounding the UoK gets limited. Therefore, for knowledge to continue expanding indefinitely, both time and space must be unlimited.
- Without activity, expansion is inexplicable. Action is therefore a fundamental part of the knowing world.
- The UoK is quite adaptable. No matter how much a section grows, there will always be room for more growth.

- There are differences in the theoretical and practical forms and speeds of expansion in all directions.
- Some segments become overwhelmed during expansion, reach critical mass, and then split into tiny segments that maintain their parent segment's bonds while forming their own identities.
- Sometimes, as time goes on, parts of two or more segments combine to create a new segment, like biochemistry, but the parent segments retain the components.
- Occasionally, a number of segments are found together in a cluster, each of which maintains its unique identity, such as oceanography, physical sciences, etc.

Formation of a Subject:

A subject is a well-organized body of knowledge. The universe of knowledge, sometimes known as the universe of subjects, is the sum of all concepts. This information is extensive, multifaceted, boundless, and ever-changing. These traits imply that a subject is a combination of related, multidirectional concepts. The connections between concepts and the formation of subjects have been thoroughly studied by a large number of philosophers and library scientists. A number of subject creation modes have been identified by Dr. S.R. Ranganathan and his adherents through in-depth analysis of subjects and their relationships, including

- **Loose Assemblage:** Putting two or more topics or disparate concepts together is known as loose assemblage. This approach creates what are known as copossite subjects. The subjects or isolated thoughts in this process of development are connected to one another. Among the components, six different kinds of these linkages have been found. These are: ***General relation, Difference, Bios, Influencing, Comparison and Tools.***
- **Lamination:** Lamination is building by overlaying facet on facet much how we make sandwich by laying vegetable layer over a

slice of bread. The other levels are isolated concepts, whereas the basic layer is a basic subject. Compound topics are the subjects created in this mode.

- **Fission:** Similar to how a piece of bread is divided into slices, subjects are created in this mode by splitting or cutting into portions. These components create an array when they are ranked, or arranged in a hierarchy. Lamina refers to each component. The subjects formed by fission display dualism. two types of fission

  ➢ **Dissection:** The universe of entities was divided into coordinate status pieces in this type of fission, meaning that each lamina created by dissection is independent of the others. It is one of the techniques used to create isolates and fundamental subjects. Ex: Asia, Europe, Africa.

  ➢ **Denudation:** Subjects are developed in this approach as incremental subsets of a main subject. Therefore, the progressive reduction of extension and rise of intension is known as denudation. Denudation is "the exposure of a new area of knowledge by erosion or divestment through research or enquiry," according to Dr. Shera. When arranged in a hierarchy or ranking, the depleted subjects create a chain. The term "denudation" in an enumerative classification refers to both basic and compound/complex themes Ex: Mathematics Algebra, Trigonometry, Calculus, Geometry etc., Asia, India, Andhra Pradesh Philosophy, Logic, Inductive logic

- **Fusion:** Fusion is the act of combining two or more elements to create a single entity. The two objects that are linked in this process lose their identities and become a new entity with new characteristics. This mode creates a new primary basic topic by combining two or more primary basic subjects in such a way that each loses its identity. For example, bio-engineering is

a fundamental field that combines engineering with biology. The combination of biology and chemistry is known as bio-chemistry.

- **Distillation:** We all refer to pure water which is produced by heating it until it turns into a gas, then cooling it and gathering the droplets that create distilled water as "distilled water." Similarly, in this manner, a pure discipline is created as the primary subject based on how it appears and functions in various subjects. Recent years have seen the publication of a large body of work on these condensed primary topics. Any subject can benefit from this kind of study. For example, research methodology Science of management
- **Agglomeration:** In this mode several main subjects are assimilated integrally to form broad subject areas which are studied as subjects. S.R.Ranganathan used the term 'Partial comprehension' for this mode of formation of subjects. Ex : Natural sciences Physical sciences Social sciences
- **Clustering:** A cluster is a collection of similar items. In this style, various subjects are brought together out of necessity without any significant integration to establish a new subject. In order to facilitate research organization, preliminary findings and data collected from various subjects in the study of a phenomenon are published in one book separately for additional research. This creates a new subject bundle or cluster.

Structure of Subjects:

- **Dichotomy:** Dichotomy means splitting into two parts. "Binary Classification" is another name for this. Here, the initial stage results in the formation of two divisions. In the second stage, each of these two sections is further divided into two divisions. In this way, the division process can be carried on with certain traits serving as the foundation for division at every level. There can only be two divisions at each level. The Tree of Porphyry is the name given to the schematic representation of dichotomy.

- **Decachotomy:** Deca is ten. Chotomy is a word that means division. The term "decachotomy" means "divide into ten." Melvil Dewey was the one who initially separated all subjects into nine major classes. A tenth class was created to hold general materials that did not fall under any of the nine primary classes. Each stage of this division into 10 is carried out repeatedly until all of the necessary sub-sections on any given topic have been produced.
- **Polychotomy:** Polychotomy was first included in Charles Amme Cutter's Expansive categorization in 1893. At each stage, he divided everything into 24 parts. The rate at which the subjects grew over the course of 50 years revealed that 24 divisions were too constrictive to hold the entire universe of topics.
- **Proliferation:** As stated by Ranganathan, "There are numerous ways in which the Universe of Subjects associated with a basic subject can expand." The following variables are responsible for this expansion: a) A basic subject can be linked to another basic subject as an aspect to generate a complex subject. b) By adding one or more separate concepts to the basic subject, a compound subject is created. c) Different combinations of isolated concepts lead to the extension of subjects and isolated concepts. It is evident from this discussion that there should be no set number of subdivisions at any one level.

2.6 LIMITATION OF CLASSIFICATION

Classification has frequently been compared to the mathematics of librarianship, yet it is never precise just like the value of Pi Not all library users will find their requirements met by classifications which are socially created rather than organic. Although they cater to the majority users with specific demands could need various setups. There are many restrictions and difficulties with library classification in particular. Various classifiers may give the same book different categories. It is a costly and subjective

process. Furthermore a single classifier may classify the same book in a different way at various times. Given that a monograph may cover several themes no classification may adequately capture all of the issues discussed in a book. Only the dominate subject is usually classified which may result in representation that is not fully complete. For instance a textbook covering both geometry and algebra would be classified under either of those subjects not both. Comparably the constraints of class numbers may cause important chapters in a cataloging textbook about the history of cataloging or C.A. Cutter's life to be omitted depriving users of important knowledge. Discipline-based classifications can also disperse similar topics; for example, a book on "Family life" may be categorized under several headings such as Sociology, Anthropology, Ethics, Social Welfare or Medicine which results in dispersion rather than collation. Classification can therefore obfuscate and disperse information more than it can expose and organize. Classifications might not meet the specific demands of every user because they are not founded on thorough user needs surveys. Despite the lack of better alternatives the 19th-century, English philosopher W.S. Jevons' criticism of classification as a logical absurdity still has some validity when it comes to library classification. As a result librarians must keep using these subpar resources.

CHECK YOUR PROGRESS

A) Fill in the Blanks



a. The systematic method of classifying library items according to their _____ is known as library classification.

b. Library classification assigns unique _____ to each item, representing its subject matter.

c. The act of creating a subject by overlaying one facet over another is referred to as _____.

d. A classification system that divides subjects into ten parts is called _____.

2.7 LET US SUM UP



A systematic approach to grouping library resources according to their subject matter is called library classification. This procedure makes it easier for users to locate and retrieve books and other resources by arranging them effectively. Classification systems, like the Library of Congress Classification (LCC) and the Dewey Decimal Classification (DDC), give each item a unique notation that represents its subject matter. These notations are typically a combination of letters and digits. This helps with categorizing as well as the actual placement of goods on shelves, making it easier for patrons to find what they're looking for in library catalogs. Organizing information is the main goal of library classification, which makes it simpler for patrons to locate and retrieve the resources they require. By assembling relevant items into groups, it also makes research easier and helps students and scholars find more resources on a certain subject. Additionally, by methodically organizing materials, classification helps libraries make the most of their space and cut down on the amount of time spent looking for certain things. The hierarchical structure of library classification systems enables the separation of subjects into more manageable, focused groups. A large variety of topics may be covered because of this methodical arrangement, which also guarantees that new subjects can be added without any problems. Furthermore, by making searching easier and encouraging effective resource usage, classification systems are user-centered and seek to improve the overall library experience. Library classification has drawbacks despite its many benefits. The subjective nature of material classification is one of its main drawbacks, since several classifiers may have differing interpretations of the subject matter. Furthermore, it can be challenging to categorize intricate works that span several topics under a single notation. Furthermore, it might be difficult to keep abreast of new developments in the field and incorporate them into preexisting classification systems.

2.8 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. Subject Content

b. Notation

c. Lamination

d. Decachotomy



2.9 FURTHER READING

- *Library Classification.* (n.d.-a). Retrieved January 20, 2025, from https://www.librarianshipstudies.com/2015/08/library-classification.html
- *Library Classification*. (n.d.-b). Retrieved January 22, 2025, from https://www.librarianshipstudies.com/2015/08/library-classification.html
- Sen, B. K., Raghavan, K. S., Kumar, K., Kashyap, M. M., & Satyanarayana, R. (n.d.). *Programme Design Committee*.



2.10 MODEL QUESTIONS

Q.1.Explain the meaning, purpose and importance classification in libraries.

Q.2.Define Universe of knowledge.

Q.3. Explain formation of subject.

****

UNIT 3: CLASSIFICATION SCHEME

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Definition

3.4 Need for Classification Scheme

3.5 Enumerative Classification Scheme

- 3.5.1 Purely Enumerative
- 3.5.2 Almost Enumerative

3.6 Faceted Classification Scheme

- 3.6.1 Almost faceted
- 3.6.2 Rigidly faceted
- 3.6.3 Almost freely faceted
- 3.6.4 Freely faceted
- 3.6.5 Analytico-synthetic classification

3.7 Common Isolates

- 3.7.1 Concepts
- 3.7.2 DDC
- 3.7.3 CC

3.8 Let us sum up

3.9 Answers to check your progress

3.10 Further Readings

3.11 Model Questions

3.1 LEARNING OBJECTIVES

After reading this unit, you will be able to-

- Define classification schemes
- Nature of classification schemes

- Learn to differentiate between enumerative and faceted classification systems
- Discuss the differences of characteristics of these schemes

3.2 INTRODUCTION

Library classification directs a specific rule for a systematic arrangement of documents and materials consist in a library. Classification means to divide objects or entities on the basis of their similarities or differences by sorting, categorising, grouping, arranging, ordering,mapping or correlating.

Classification can be categorised on many accounts- by area of coverage, by depth of coverage, by function or by structural view point.

This unit covers the structural aspects of classification scheme through their different and unique characteristics. The idea of enumerated and faceted classification identifies the advances and consequences of widely used classification systems and their role in systematic arrangement of information. The study concludes the need and aspect of such structural classification scheme which is essential for detailed classification.

3.3 DEFINITION

Library Classification is the systematic and orderly arrangement of documents and information using some guiding principles and rules. These rules and principles define a system under which the characteristics varies. The classification systems may be similar or differ as per their depth, structural view, hierarchy, dimension etc. Classification scheme differentiates those classification schemes on the basis of their nature and reflect their advantages or disadvantages.

3.4 NEED OF CLASSIFICATION SCHEME

General classification schemes of library are concerned of mapping knowledge in an order of subjects to differentiate each other spatially to represent the relation between them. These rules divide the subject disciplines into a hierarchical order to correlate them and distinguish them

from one another. In this method, the words of ideas, materialised thoughts of universe of knowledge are classified in different manners-and for this purpose subjects are further divided into classes, composed of an index that connects subject terms and the notational signs; a set of symbols known as notation that serve as signs for the classes; and Main Classes, each of which is further subdivided into more specialized subclasses.

From their structure the library classifications are broadly divided into the following categories:

a) Enumerative Systems b) Faceted Systems

3.5 ENUMERATIVE CLASSIFICATION SCHEME

According to Ranganathan, enumerative classification is a scheme for classification listing all possible subjects including compound subjects along with their class number in a single schedule. An enumerative system lists all the subjects from past, present and future as disciplines, main class and their sub divisions. The Dewey Decimal Classification, Subject Classification, Library of Congress Classification all are structurally similar and are prior to colon classification of Ranganathan (CC, 1933). To distinguish the colon classification from all the other schemes the term enumerative scheme was coined. The depth of classification can be determined by deep and granular subdivisions. A depth classification entails dividing subjects deep down into its various hierarchical subdivisions and related aspects to classify micro and non-book material. Examples of Enumerative classifications are-

Dewey Decimal Classification (1876)- A subject may appear in practically any discipline, and the DDC divides the subjects according to discipline, with the subjects being subordinate to discipline. For instance, the topic of metals may be discussed in the social sciences, scientific or physical sciences, philosophy, or religion.

Library of Congress Classification- the Library of Congress Classification was published in 1904 by Charles Martel and J.C.M. Hanson

(fathers of Library of Congress Classification). From 1904-1948 the scheme was developed as the LC collection was actually classified. This classification also contains 21main classes and 50 sub classes.

In enumerated classification the class numbers are pre-defined set of numbers and we just need to assimilate them using notation and rules.

3.5.1 Purely Enumerated

The purely enumerative classification is an essentially simple schedule enumerating all the subjects of past, present and future. The classification is based on already constructed subjects. The subjects are divided in main classes and then the main class again divided into more detailed sub classes. It indicates that the schedules list the class numbers for the various disciplines. To create a number, there are no distinct additional schedules of common isolates. Library of Congress Classification is a good example of enumerative classification consist of 45 volumes.

3.5.2 Almost Enumerated

An almost enumerative classification system consists of large schedules enumerating all the subjects. Almost enumerative includes a few schedules of common isolates with main classes of subject disciplines. The mathematical representation of this classification is-

Almost enumerative classification = purely enumerative + few schedules of common isolates. The edition 2 to 14 of Dewey Decimal Classification comes under this classification, another example is Subject Classification of J D Brown. The schedules are fairly long and the tendency of addition or emergence of new subject in this regard is comparatively more than other systems.

3.6 FACETED CLASSIFICATION SCHEME

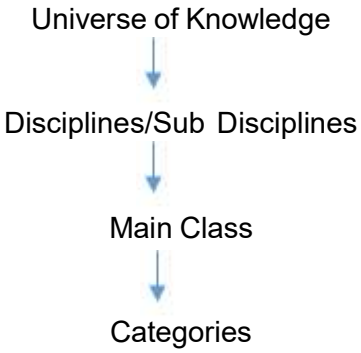
Ranganathan's Colon Classification was Implemented in libraries in the year 1933. This classification system was unique from structural point of view from all other classification systems. To distinguish this classification system from other previously used systems, Ranganathan introduced this faceted classification scheme.

Main Class: The primary classes in CC resemble the theoretical subjects in UDC and the disciplines in DDC. The number of main classes in CC are greater than of DDC and UDC.

Arrays: Systematic arrangement of numbers or symbols in an orderly manner. The arrangement, however, is referred to as the preferred sequence. The numbers, in a classification refer to a division of a subject on the basis –of a, single characteristic.

Facets: a facet is a characteristic by which a main class is divided into further groups like sub classes, to signify the whole series of arrays based on, a set of related characteristics of division. For example, literature, language, these are some facets used for classification.

Common Isolates: A common isolate is one which is likely to occur in many compound subjects of many Basic Classes. Common isolates represent such concepts as bibliography, dictionary, encyclopaedia, directory, periodical, biography, committee/commission report, seminar/ conference proceeding, history, criticism etc. Mathematical representation of knowledge classification in faceted scheme-



Facets



Common Isolates

A faceted classification is where there are no pre-defined class numbers. In order to create a class number that is coextensive with the subject, a faceted system offers rules, syntax, and techniques to join these isolates with the primary class. In a faceted categorization, each class number must be synthesized. It is multidimensional.

3.6.1 Almost Faceted

An almost faceted classification scheme enumerates complex subjects and compound subjects but many more class numbers can be constructed from them. The almost faceted scheme lies in between almost enumerative classification scheme to fully faceted classification scheme. This scheme consists a long schedule of past, present and anticipated future.

The mathematical representation for an almost faceted classification scheme is as shown below-

Almost Faceted = almost enumerated + a few schedules of special isolates

From evolutionary history we found that Universal Decimal Classification (UDC) is the first almost faceted classification (1903). Because it has some special series of common auxiliaries apart from separate tables for form, time, place, ethnic group etc. There are some indicator digits that connects the auxiliaries and isolates. another example of almost faceted classification is Bibliographic Classification. It is made up of extensive general tables that list both simple and complex topics. Schedules for space, time, and language subdivisions as well as form subdivisions are included in its supplementary tables.

3.6.2 Fully Faceted

In this classification system only basic subjects, schedules of special isolates categorized under basic classes, and maximal schedules of common isolates are present in a completely faceted categorization. The classification system also offers a few linking symbols and syntax guidelines for facets to help connect and differentiate aspects from one another and prevent clutter. Classifiers must construct class numbers for complicated and compound subjects based on the rules, regardless of how basic they can be. A faceted classification, then, is a device or procedure that creates class numbers.

Fully Faceted = Basic Subjects + Common Isolates + Special Isolates

S R Ranganathan Divided his faceted classification into two parts after constant research and observation as follows-

- Rigidly Faceted
- Freely Faceted

3.6.3 Rigidly Faceted

In the early period of the Colon Classification System the facets are pre-defined and rigid. In the first three editions the formulas were already constructed and if a facet is missing then the missing facet also have to be indicated. Absent facets were indicated with dummy connecting symbols like colon (:). Till 1950 colon was the only connecting digit used for constructing the class number. If a class number lacks facets like space, personality, matter we still have to add symbols to indicate the absent facets. For example- Class number for “Design of Electrical Generator”-

D66:121:: 4

The indicator makes it predetermined. But this rigid system created trouble during stock arrangement and searching of books.

Because a small error from classifier or user can create a huge confusion in finding the book or subject. Addition of new subject and facet is also prevented due to the rigidity. Clearly it depicts the drawbacks of early editions colon classification.

3.6.4 Freely Faceted

A freely Faceted classification is based on principles and postulates. In 1950 the rigidity of the faceted formula was solved by adopting this more flexible classification system. The rigidity was break by introducing different connecting symbols instead of colon for Time, Space, Matter, Personality and Energy. The symbol for Space and Time facet was replaced by a dot (.) and an inverted comma (‘) respectively. This formula determines its own formula based on analysis and synthesis. This is an open facet formula that positively impacts addition of new subjects and class numbers.

3.6.5 Analytico-Synthetic Classification

An Analytico-Synthetic Classification is a type of freely faceted classification where nothing is pre-determined about facets. This classification scheme also involves analysis of subjects using principles and postulates proposed by Dr. S R Ranganathan. He formatted normative principles, postulates, canons for systematic analysis of subjects. Analytico-synthetic classification based on a dynamic theory of classification has essentially to be freely faceted.

3.7 COMMON ISOLATES

3.7.1 Concepts

Ranganathan defines common isolates as "an isolate idea denoted by the same isolate term and represented by the same isolate number, quite irrespective of the compound subject in which it occurs, or the basic subject with which the compound subject

goes";. Basically common isolate indicate some repetitive subject that can be presented in several forms.

3.7.2 DDC

Melvil Dewey deserves credit for a number of things. Among these is the idea of common isolates. He initially referred to them as form divisions.

Common Isolates were initially included in the 1885 second edition of DDC. Since then, Common Isolates have changed in a number of ways. Up to the publication of the twelfth edition of DDC in 1922, the name form divisions persisted. The thirteenth edition, which was published in 1932, altered this designation to common subdivisions. The common subdivisions are further divided into three different categories- miscellaneous common subdivisions, viewpoints and form divisions. The term form divisions changed to common subdivisions in 19 th edition in1932. In the 17 th edition the whole set was renamed to Standard subdivision.

01 Philosophy and theory
02 Miscellany
03 Dictionaries, encyclopaedias, concordances
04 Special topics
05 Publications
06 Organizations and management
07 Education, research, related topics
08 Groups of people
09 History, geographic treatment, biography

Table 1 of DDC consists of the standard subdivisions (Common Isolates) which categorises a large number of subjects.

3.7.3 CC

The common isolates in Colon Classification differ from DDC, though purposively they are the same. The common isolates in CC

can be divided into two large categories as Anteriorising Common isolates and Posteriorizing Common Isolates. There are some differences in between these two up to 6 th edition, the anteriorising isolates were attached without any connecting symbol where the posteriorizing isolates are attached with connecting symbols. In the 7 th edition this distinction had been removed.

There are five common isolates in CC –

- personality common isolate
- matter common isolate
- energy common isolate
- space common isolate
- time common isolate

The common isolates along with their connecting symbols are as given below-

,P ;M :E .S ‘T

Anteriorising means that they have anterior value. Documents such as bibliographies, encyclopaedias, periodicals and histories of a subject are approach documents, and as such, they must precede other core documents on the subject in the arrangement on the shelves. This isolates sometimes may be applicable before space facet or may be after space facet.

a - bibliography

c – concordance

d – table

p - conference proceedings

v - history; these isolates are applicable before space facet.

r - periodical administration report

s - statistics (serial); applicable after space facet.

T - commission report

t4 - survey v - source material

v46 – genealogy; applicable after time facet.

Posteriorizing common isolates are of three types, energy,

space, time and matter isolates makes an exhaustive list. Space and Time common isolates can be attached to any host class number.

A personality common isolate stands mainly for institutions, some of which- are as follows:

f - investigating- institution

f2 - observational institution

f3 - laboratory

g - learned body

Applying Posteriorizing Common Isolates in CC

There are a few examples that describes the personality, matter and energy isolates and their use as follows-

For personality isolate-

- **Indian Mathematical Society founded in 1931**

  B.44,g,9N31

  Where

  B Mathematics

  44 India (all space isolates are added with a dot (.) as the connecting symbol)

  g Learned body (all lower case Roman letters represent common isolates. An element added with a comma as the connecting symbol indicates personality facet)

  9N31 A national body is represented by 9 and the date of foundation; N31 is 1931

- For matter common isolate-

The intrinsic value of paintings - N6;a72

Where,

N6 is painting

a72 is intrinsic value

Thus these two types of common isolates in colon classification categorises the 5 facets (personality, matter, energy, space and time) and assist in assigning class numbers to various subjects.

Comparison of Enumerated and faceted classification scheme

Aspect	Enumerated	Faceted
Structure	Fixed and hierarchical, llinear structure	Free and multidimensional
Flexibility	Less flexible	High flexible
Notation	Numeric or alpha numeric	Combination of multiple codes and symbols
Expansion	Not easy to expand without disrupting the structure	Easy to expand adding new facets
Example	DDC, LC	CC, UDC



CHECK YOUR PROGRESS

1. _____ and ___ are two widely used enumerative classification system.
2. Dr. S R Ranganathan proposed his Colon Classification in the year _____.
3. Subject Classification is an _____ enumerated classification scheme.
4. Bibliography is an _____ common isolate in CC.
5. The class numbers are pre-defined in a ____ faceted classification.



3.8 LET US SUM UP

The above discussion gives an idea of the structural view point of classification scheme and their flaws. The enumerative and faceted are two terms that broadly differentiates the widely used classification systems in library. The Dewey Decimal Classification and Universal Decimal Classification are two widely used library classification system; where the subject classification is pre-defined and more restricted towards addition of new subjects. Ranganthan's Colon Classification (1933) is structurally different from other classification systems including facets and common isolates that gives the opportunity for addition of more complex and multidimensional subject. This structural classification system was proposed by Ranganathan to differ his Colon Classification from the rest. This structural

differentiation will be helpful for classifiers and library user to choose the suitable classification system for the future use.



3.9 ANSWERS TO CHECK YOUR PROGRESS

1. DDC, LC
2. 1933
3. Almost
4. Anteriorising
5. Rigidly



3.10 FURTHER READING

Ranganathan, S.R. (1939). *Colon Classification.* http://archive.org/details/in.ernet.dli.2015.279875

Dewey Decimal Classification. (2025). In *Wikipedia*. https://en.wikipedia.org/windex.php?title=Dewey_Decimal_Classification&oldid = 1268843207

Satija, M.P., & Martinez-Avila, Daniel. (2017). Mapping of the Universe of Knowledge in Different Classification Schemes. International Journal of Knowledge Content Development & Technology, 7(2), 85–105. https://doi.org/10.5865/IJKCT.2017.7.2.085

Ranganathan, S.R. (1972). Comparative Study of Schemes for Library Classification, (Classification problems, 61) [PDF]. ISICAL. 9. 289-315. http://dspace.isical.ac.in:8080/jspui/bitstream/10263/1526/1/LSWASTD-9-3-1972-P289-315.pdf

Wiegand, W. A. (1998). The “Amherst Method”: The Origins of the Dewey Decimal Classification Scheme. Libraries & Culture, 33(2), 175–194.

http://www.jstor.org/stable/25548614

e-PG Pathsala (2025). Retrieved 19 January, 2025 from

https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=9JW4FTxyrU+Wsr8xl8vgiw==



3.11 MODEL QUESTIONS

1. What is an enumerative classification scheme?
2. How are subjects arranged in an enumerative classification scheme?
3. What is an almost enumerative classification scheme?
4. Name two major advantages of using faceted classification with example.
5. Who proposed the faceted classification scheme?
6. What are common isolates? What is anteriorizing and posteriorizing common isolates in colon classification?

*** *** ***

UNIT 4: GENERAL AND SPECIAL CLASSIFICATION SCHEME

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Dewey Decimal Classification

4.4 Universal Decimal Classification

4.5 Colon Classification

4.6 Current trends in classification scheme

4.7 Let Us Sum Up

4.8 Answer to check Your Progress

4.9 Further Readings

4.10 Model Questions

4.1 LEARNING OBJECTIVES

After completing this unit, you will be able to:

- Understand the Importance of Library Classification
- Understand the Universal Decimal Classification (UDC), Dewey Decimal Classification (DDC), Colon Classification System
- Recognize Current Trends in Library Classification
- Examine the Challenges and Disadvantages of classification system

4.2 INTRODUCTION

Library classification schemes are essential tools that help organize vast amounts of information in libraries, making it easier for users to locate and access resources. These systems categorize books, periodical, journal, dissertation and other materials based on subject matter, allowing libraries to create a logical structure that reflects the organization of knowledge. Various classification schemes have been developed over time, each

offering unique methods for organizing content, from broad categories to more specialized subject divisions. Some of the most widely used systems include the Dewey Decimal Classification, the Library of Congress Classification and the Universal Decimal Classification. The choice of a particular scheme depends on the specific needs of the library and its users, as well as the type of materials it holds. Understanding the different types of library classification systems is fundamental to appreciating how libraries manage and provide access to knowledge efficiently.

Advantages of Library Classification Schemes-

i. **Organization and Accessibility**: Classification schemes provide a structured way to organize resources. This increases the ease of accessibility of library collections.

ii. **Efficient Space Utilization**: By categorizing materials in a systematic way, classification systems help libraries maximize their physical or digital space. This makes it possible to store a large number of resources in a compact, organized manner.

iii. **Consistency**: A well-defined classification scheme ensures consistency in the way materials are grouped and stored across different libraries. This consistency aids in resource sharing and collaboration between libraries.

iv. **Searchability**: Classification schemes improve search functionality, whether in physical libraries or online catalogues. When resources are grouped by subject, users can more easily find related materials and explore broader topics.

v. **Adaptability**: Some classification systems, like the Faceted Classification, are flexible and can adapt to new or emerging fields of knowledge, ensuring that libraries can continue to organize information with the new disciplines or subjects' development.

vi. **Support for Library Management**: Classification systems help library staff with inventory control, acquisitions, cataloguing, and other administrative functions. By following a consistent scheme, it becomes easier to manage and update library collections.

Challenges and Disadvantages of Library Classification Schemes-

i. **Complexity**: Some classification schemes, especially systems like the Library of Congress or Colon Classification, can be highly complex and difficult to understand or apply without proper training. This can be challenging for library staff and may lead to inconsistencies in cataloguing.

ii. **Rigidity**: While some schemes are flexible others are quite rigid in their structure. This can make it difficult to accommodate newer subjects or multidisciplinary works, leading to issues with proper classification.

iii. **Overlapping Categories**: In some classification systems, materials might fit into multiple categories, but they can only be classified under one. This may lead to challenges in accurately representing interdisciplinary works or subjects that span multiple domains.

iv. **Inflexibility in Digital Resources**: Classification schemes that were originally designed for physical books may not always be well-suited for digital content, such as e-books, websites, and multimedia resources. Adapting these systems to handle non-traditional materials can be a challenge.

v. **Over-categorization**: Sometimes the classification systems can become overly granular, dividing materials into excessive categories, which can make it difficult for users to navigate or find relevant materials. This can result in confusion and inefficiency in resource retrieval.

vi. **Maintenance and Updates**: Classification schemes need to be updated periodically to reflect new knowledge and changes in society. Maintaining and updating these systems can be a time-consuming and costly process for libraries, especially those with large and diverse collections.

4.3 DEWEY DECIMAL CLASSIFICATION

Dewey Decimal Classification (DDC) was developed by Melvil Dewey in 1876. He created the system to standardize library organization and improve access to information. The development involved:

First Edition: The first edition, published in 1876, had only 7 main classes.

Evolution and Expansion: The system evolved over time, with Dewey and later librarians updating and expanding it to accommodate new knowledge fields. It is updated periodically, with the most recent edition being the 23rd edition published in 2011. DDC is one of the most widely used classification systems in the world, influencing library practices globally and forming the basis for other classification systems.

Features of Dewey Decimal Classification (DDC)-

- ·**Numerical Structure**: DDC is based on a numerical system, where books and resources are assigned a number to reflect their subject. It uses a decimal-based classification system, where the numbers range from 000 to 999.
- **Hierarchical Organization**: The DDC system is divided into ten main classes (000–999), each representing a broad subject area. These classes are further subdivided into ten divisions and each division into ten sections, allowing for precise categorization.
- · **Flexibility and Scalability**: The system allows addition of new subjects by extending decimal places. This flexibility makes DDC adaptable to new fields of knowledge.
- · **Standardization**: DDC is a standardized classification system, meaning it is widely used across libraries and institutions globally, facilitating easy information retrieval.

The DDC system is organized as follows:

Main Classes (000-999): There are ten main classes:

- 000 – General works
- 100 – Philosophy and psychology
- 200 – Religion
- 300 – Social sciences

- 400 – Language
- 500 – Science
- 600 – Technology
- 700 – Arts and recreation
- 800 – Literature
- 900 – History and geography

Divisions: Each main class is divided into ten divisions. For example, in class 500 (Science):

- 510 – Mathematics
- 530 – Physics and so on.

Sections: Divisions are further divided into sections to provide detailed classifications for specific topics, making it more specific than general subject headings.

Decimal Points: Each number can be extended using decimal points to specify even narrower subjects, allowing for continuous growth in the system.

4.4 UNIVERSAL DECIMAL CLASSIFICATION

The Universal Decimal Classification (UDC) was developed by Paul Otlet and Henri La Fontaine in the early 20th century as part of their work on the International Institute of Bibliography (now the International Federation for Information and Documentation or IFLA). UDC was initially designed as an extension of the Dewey Decimal Classification to better accommodate specialized and interdisciplinary subjects, particularly in scientific and technical fields.

First Published: The UDC was first published in 1905. It was designed to handle complex topics and ensure the possibility of subject categorization across various domains.

Continued Expansion: The system has been revised and updated over the years. Today, the UDC is maintained and published by the UDC Consortium, and new editions are regularly released to reflect advances in knowledge and technology. UDC was designed to be universally applicable

across different languages and national contexts, making it suitable for international libraries and institutions.

Features of Universal Decimal Classification (UDC)-

Universal Decimal Classification (UDC) is a detailed library classification system that is an extension of the Dewey Decimal Classification (DDC). It was developed to cater to more specialized needs, particularly in scientific and technical fields.

- **Decimal System**: Like the DDC, UDC is a decimal-based system. It uses numbers and decimal points to create a hierarchical classification structure for organizing knowledge.
- **Multidimensional Structure**: UDC supports the classification of complex subjects by allowing the combination of different numbers from multiple categories. This enables users to classify materials in a way that reflects the multiple aspects of the subject.
- **Use of Symbols**: In addition to numbers, UDC uses a set of symbols like "+" (plus), "/" (slash), and ":" (colon), which help to express relations between subjects. For example, "621.3:681" may refer to "electronics in machinery."
- **Detailed Categorization**: UDC is more detailed than many other classification systems, providing specific codes for a wide range of topics, especially in fields like science, engineering, and technology.
- **International Adoption**: UDC is used in libraries worldwide, particularly in specialized and academic libraries, and is designed to work across various languages and regions.

The UDC system is composed of the following elements:

- **Main Classes**: UDC organizes knowledge into broad subject categories, much like other classification systems. The main classes are:
    - 0 – General works, Computer science and information
    - 1 – Philosophy and psychology
    - 2 – Religion
    - 3 – Social sciences
    - 4 – Language

- 5 – Science (including natural and applied sciences)
- 6 – Technology
- 7 – Arts and recreation
- 8 – Literature
- 9 – Geography, history, and biography

- **Extensions**: The UDC system has an extended numerical range compared to DDC, and it allows for more detailed categorization using numbers with decimals. For example, instead of just "500" for "Science" as in DDC, UDC might have separate categories for "Astronomy" (523), "Physics" (531), and "Chemistry" (546).
- **Combination of Numbers and Symbols**: The UDC allows combinations of numbers from different classes to classify interdisciplinary subjects. It uses symbols like:
  - "+" to combine different subjects
  - "/" to indicate a relationship between main classes
  - ":" for linking hierarchical structures.
- **Detailed Descriptions**: UDC provides a more comprehensive and specific categorization system for various topics than DDC, particularly suited for libraries dealing with scientific and technical collections.

UDC is particularly useful in fields like science, technology, and medicine, where there are complex and interdisciplinary topics that require a more nuanced classification.The UDC system is used by libraries worldwide, especially in Europe and academic institutions, and serves as a universal tool for organizing diverse information.

- **Flexibility**: UDC's use of symbols and combinations of numbers allows for highly flexible categorization, enabling libraries to handle a wide range of materials, including non-book formats, multimedia, and digital resources.
- **Multilingual Capability**: UDC is designed to be used in various languages, making it a universal system that transcends national boundaries and cultural contexts.

- **Comparisons with Other Classification Systems**: UDC's flexibility and specialized focus make it particularly valuable for academic, scientific, and technical libraries. However, its complexity is greater than systems like the Dewey Decimal Classification (DDC), which may make it less user-friendly for general public libraries.

4.5 COLON CLASSIFICATION

Colon Classification (CC) was developed by S.R. Ranganathan, a library classification scheme designed to address the limitations of traditional enumerative classification schemes, like the Dewey Decimal Classification (DDC) and the Library of Congress (LC) Classification.

i. **Main Classes:** These are the primary, traditional subjects (such as mathematics, history, political science, etc.) used in the classification system. In CC, the number of main classes is larger than in systems like DDC or UDC. These main classes form the first level of categorization in the system.

ii. **Array**: An array refers to a systematic arrangement of classes or subjects. In CC, the array is the preferred sequence in which subjects are divided based on a specific characteristic. For instance, in the field of medicine, the organs of the human body would form an array under the relevant class.

iii. **Facet:** A facet is a characteristic used to divide or group a subject into smaller, more specific categories. Each main class is subdivided into facets that represent various related characteristics. For example, in literature, facets could include language, literary form, or national literature. Within a facet, an individual subject is called a focus (e.g., Hindi literature is a focus within the language facet of literature).

iv. **Fundamental Categories (PMEST):** Ranganathan's system is built around five fundamental categories, abbreviated as PMEST:

   - **P (Personality):** Refers to the human element or the individual involved in the subject.

- **M (Matter):** Refers to the physical substances or material involved in the subject.
- **E (Energy):** Refers to the action, process, or function related to the subject.
- **S (Space):** Refers to the spatial element, such as location or geography.
- **T (Time):** Refers to the time-related aspect of the subject (historical period, age, etc.).

v. **Time and Space:** Time and space are two key elements in classification. Time is used to identify historical periods (e.g., the 21th century), while space identifies geographical locations. These elements are often implicit in a subject, even when not explicitly stated.

vi. **Energy:** Energy refers to the action or process within a subject. For example, in medicine, treatment or diagnosis would be classified under the energy facet, as they involve action or activity.

vii. **Matter:** Matter is a core category, which in the seventh edition of CC, has been further subdivided into:

- Matter Property (MP): Characteristics of the material (e.g., anatomy, physiology in medicine).
- Matter Material (MMt): The substance or material itself (e.g., soil in agriculture).
- Matter Method (MM): The way a material is used or manipulated (e.g., pencil drawing in fine arts).

viii. **Postulates of Basic Facets:** After identifying the fundamental categories, Ranganathan's system requires these categories to be applied in a specific order to organize subjects. The main classes in CC have evolved, with more specific subclasses and facets being added over time.

ix. **Planes of Work:**

- **Idea Plane:** This is where the universe of subjects is conceptualized, categorized, and their interrelations defined.

- **Verbal Plane:** This is where the concepts from the idea plane are expressed using terms (words or phrases).
- **Notational Plane:** This is the final stage where terms are transformed into a classification notation (numbers, symbols) that can be used to organize and retrieve information.

x. **Rounds and Levels:** In some subjects, the fundamental categories (especially Personality, Matter, and Energy) may manifest multiple times, creating rounds. This allows for more complex subjects to be classified at different levels. For example, in the subject "Treatment of brain tumour by radium therapy," multiple rounds of fundamental categories are used to represent the full range of concepts (e.g., personality (P) for the brain tumour, energy (E) for treatment, etc.).

Challenges

Organizing information into categories has always been a challenge in information science, as various subjects often overlap or are complex. Traditional systems like DDC and LC are enumerative, meaning they list all possible subjects in a hierarchical, predefined structure. Each document is assigned to a single category based on its subject, which can be restrictive because it forces information into predefined boxes (also known as "pigeon-holing"). Ranganathan's Colon Classification is a faceted system, which means it allows for greater flexibility in categorizing documents. Instead of fitting information into just one category, it analyses the subject matter into multiple components or "facets" (e.g., subject, location, time period, etc.) and assigns different values to each facet. This allows for multiple aspects of a document's content to be reflected in its classification.

Colon Classification is described as the first Analytico-synthetic system in the "complete sense." This means the system analyses the subject matter into distinct categories (analysis) and then synthesizes them by assigning numbers to each relevant category (synthesis). This process allows for a more nuanced classification, where a document can be placed in multiple categories, each representing a different facet of its content.

The faceted system provides flexibility by allowing documents to be classified based on several aspects of their subject matter. This is especially useful for documents with multiple subjects or interdisciplinary topics, as they can be assigned multiple categories or values.

4.6 CURRENT TRENDS IN CLASSIFICATION SCHEME

i. **Integration with Digital Content**

The Library of Congress Classification has been updated to include categories for e-books and digital media. Many academic libraries now use the RDA (Resource Description and Access) standards to classify digital resources, such as digital theses, online journals, and multimedia files.

ii. **Interoperability and Standardization**

RDA (Resource Description and Access) is a metadata standard that aims to ensure interoperability across libraries and institutions worldwide. Libraries using RDA can easily share and search for resources across global databases, such as World Cat.

iii. **Use of Linked Data and Semantic Web**

The WorldCat catalogue, which uses the OCLC's Dewey Decimal Classification system, is integrating linked data and semantic web technologies to allow better interconnection of resources across libraries globally like linking a book to other resources like reviews, related books, and authors' works.

iv. **Incorporation of Machine Learning and AI**

Google Books uses AI algorithms to automatically classify books and assign subjects based on their content. This means that books are automatically tagged with relevant categories and keywords, improving search and discovery.

Zotero, a reference management tool, uses machine learning to automatically categorize research papers and articles into relevant topics as users add them to their library.

v**. Development of Flexible and Multidimensional Classifications**

Universal Decimal Classification (UDC) allows for combining

multiple codes for interdisciplinary topics. For example, a book about environmental economics might be classified under both 333 (Environmental sciences) and 330 (Economics), showing the interconnection between the fields.

vi**. Focus on User-Friendly and Accessible Systems**

The Dewey Decimal Classification (DDC) system, in general complex, has been simplified in digital interfaces. Library Thing, a book cataloguing site, allows users to search books by simpler terms like “Science Fiction” or “Historical Fiction,” instead of needing to navigate complex classification codes.

vii**. Adaptation for Multilingual and Multicultural Contexts**

The Dewey Decimal Classification has been translated into over 30 languages, ensuring that libraries around the world can use the same classification system regardless of language barriers. The UDC has been adapted for multicultural and multilingual usage.

viii**. Integration of New Knowledge Domains**

The most recent editions of the Dewey Decimal Classification now include categories for new and emerging topics like Artificial Intelligence (006.3) and Climate Change (363.7).

The OpenCitations project uses linked data to classify research data in emerging fields like Data Science and Machine Learning, updating taxonomies in real time as the fields develop.

ix**. Focus on Taxonomies and Ontologies**

The ICD (International Classification of Diseases) taxonomy is widely used for classifying health-related topics. Maintained by the World Health Organization (WHO), the ICD provides a system of diagnostic codes for classifying diseases, signs, symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or disease.

The Gene Ontology (GO) project is a structured vocabulary for classifying gene functions in biology. It helps researchers categorize genes in a consistent way, supporting the discovery of relationships between genes, proteins, and their biological processes.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. The Dewey Decimal Classification (DDC) system was developed by _____ in 1876 to standardize library organization.

b. In the Dewey Decimal Classification (DDC) system, the numbers range from_____ to_____.

c. The UDC system uses the symbol _____ to combine different subjects, allowing for more nuanced categorization.



4.7 LET US SUM UP

Library classification schemes are vital tools for organizing and categorizing library resources, making it easier for users to access and locate information. These systems classify materials based on subject matter and create a logical structure that mirrors knowledge organization. Widely used systems include the Dewey Decimal Classification (DDC), Universal Decimal Classification (UDC), and Colon Classification (CC), each with unique features suited to different types of libraries and user needs.

The advantages of classification schemes include better organization, efficient space utilization, consistency across libraries, improved searchability, adaptability to new subjects, and support for library management. However, challenges such as complexity, rigidity, overlapping categories, and the need for frequent updates also exist.

The DDC, developed in 1876, is a numerical and hierarchical system that is widely adopted for organizing materials. The UDC, an extension of the DDC, provides more detailed categorization and is especially useful for scientific and technical fields. The Colon Classification, created by Ranganathan, offers a more flexible, faceted approach to organizing information, allowing for nuanced classification of interdisciplinary subjects. In addition to traditional systems, current trends in library classification

include the integration of digital content, the use of machine learning and AI, and the development of flexible, multilingual classification frameworks. These advancements aim to improve the efficiency and accessibility of library systems, ensuring they can accommodate both traditional and emerging forms of knowledge.

4.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to 1.

a. Melvil Dewey

b. 000, 999

c. +

4.9 FURTHER READINGS

Cutter, C. A. (1904). *The Dewey decimal classification: A study in the history of classification systems*. The Library of Congress.

Dewey, M. (2021). *Dewey decimal classification and relative index* (23rd ed.). OCLC.

American Library Association. (n.d.). *The Dewey decimal classification system*. https://www.ala.org/

Ranganathan, S. R. (1960). *Colon classification* (3rd ed.). Sarada Ranganathan Endowment for Library Science.

Ranganathan, S. R. (2006). *Colon classification: Facets and hierarchy* (3rd ed.). Sarada Ranganathan Endowment for Library Science.

Otlet, P., & La Fontaine, H. (1934). *The universal decimal classification*. International Federation for Information and Documentation (FID).

Khan, M. L. (2010). *The universal decimal classification: A guide to its theory and practice*. Ess Ess Publications.

UDC Consortium. (2015). *UDC: Universal decimal classification: Its development and future*. https://www.udcc.org/

Ranganathan, S. R. (1967). *Introduction to library classification* (4th ed.). Sarada Ranganathan Endowment for Library Science.

OCLC. (2021). *Dewey decimal classification*. OCLC. https://www.oclc.org/en/dewey.html

UDC Consortium. (n.d.). *Universal decimal classification*. https://www.udcc.org/

Library of Congress. (n.d.). *Library of Congress classification outline*. https://www.loc.gov/catdir/cpso/lcco/



4.10 MODEL QUESTIONS

1. Who developed the Dewey Decimal Classification (DDC) system?
2. What is the main purpose of library classification schemes?
3. What symbol does the Universal Decimal Classification (UDC) use to combine different subjects?
4. What are the five fundamental categories in Ranganathan's Colon Classification system?
5. What are the main classes in the Universal Decimal Classification system?
6. Discuss the disadvantages of classification system.
7. Describe the features of Ranganathan's Colon Classification system.
8. How does the Colon Classification system differ from enumerative systems like DDC?
9. What is the role of the International Classification of Diseases (ICD) in library classification, and how does it serve the medical and health fields?

*** *** ***

UNIT 5: APPROACHES TO LIBRARY CLASSIFICATION

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Classification Theory

5.4 Postulation and System Approach

5.5 Fundamental Categories

5.6 Facet Analysis and facet sequence

5.7 Phase relation and common Isolates

5.8 Let Us Sum Up

5.9 Answers to Check Progress

5.10 Further Readings

5.11 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit, learner will be able to–

- Know about different Classification theories in Library Classification.
- Different Approaches to classification and categories.
- Concepts of Facet analysis, sequence, Phase relation and common isolates etc.

5.2 INTRODUCTION

A number of theoretical and practical approaches are used in the study of library classification, all of which support the creation of strong knowledge organization systems. “Approaches to Library Classification,” Unit 5, explores the fundamental ideas and procedures that support these systems. In order to comprehend the structure and categorization of knowledge, it starts with an examination of classification theory. The postulation and system approach, which stresses the rational and

methodical creation of classification schemes, is then examined. A key focus of this unit is the concept of fundamental categories, which in defining the relationships between different subjects, making sure consistency in the organization of resources. Apart from that, the unit explores facet analysis and facet sequence, which are advanced techniques used to break down complex subjects into their constituent parts and arrange them in a logical order and also covers phase relations and common isolates, which are important while understanding the dynamic relationships between subjects and for creating flexible classification systems that can adapt to new knowledge.

5.3 CLASSIFICATION THEORY

Libraries are set up to collect, preserve, and make accessible books and other records of mankind's history. Documents must be methodically arranged for effective retrieval. In order to accomplish this, and classification serve as the primary tool. Like physical items, books and other information resources are knowledge objects that may be categorized and organized for convenient access. Librarians have traditionally categorized books into handy groups to make it easier to find them when needed. Finding particular objects in an unstructured collection is almost impossible as they are just a pile of books. Books used to be grouped according to characteristics like language, size, binding color, authorship, or general subject groups. These strategies worked well when libraries were primarily concerned with preservation and storage rather than assisting academics, as only a few individuals had access to knowledge. Classification is the foundation of a functional library and is essential to its functions. It facilitates all library operations, such as administration, collection building, and knowledge generation. Classification offers a library organization, turning it from a disorganized pile of volumes into a well-organized, easily accessible collection, just like a skeleton gives the human body structure. The significance of classification is emphasized by Ranganathan's Five Laws of Library Science, which highlight its function in creating user-friendly systems. A library cannot accomplish its goals and the full potential of its

collection is not fulfilled in the absence of systematic classification. As a result, classification is not only a technical procedure; rather, it is a fundamental component that helps libraries fulfill their purpose of facilitating knowledge access. In simple words, when books and other resources are arranged on shelves or in catalogs to optimize user utility, this is known as library classification. The majority of modern libraries are arranged according to disciplines and subjects, although certain collections such as government records, patents, periodicals, maps, and multimedia require specific configurations. While classifiers use these systems to assign class numbers to documents, Classificationists are responsible for creating the classification systems. The concept of classification was explained by library science pioneer S.R. Ranganathan, providing five distinct meanings to the term, highlighting its multifaceted nature.

5.4 POSTULATION AND SYSTEM APPROACH

Creating a classification system based on an organized theory articulated by Laws, Canons, Principles, and Postulates is the main objective of the postulational approach. When Ranganathan created his Colon Classification between 1924 and 1933, it is interesting to note that he did so without a formal theory at first. However, it was his esteemed mentor, W.C.B. Sayers, who had introduced him to some classification canons. Following the release of the Colon Classification in 1933, Ranganathan started to consider the underlying principle that had unconsciously influenced his work. His groundbreaking work, “Prolegomena to Library Classification”, was published as a result of this (1937, with later editions in 1957 and 1967). His theory became a fundamental basis for classification in general because it was so comprehensive and objective. His theory was so comprehensive and impartial that it served as the basis for classification in general. Ranganathan developed systematic techniques for creating classification systems, some of which were even mechanical. He developed 55 Canons, 22 Principles, 13 Postulates, and 10 devices for the development and assessment of classification systems in addition to his Five Laws of Library Science. In addition to helping with system design, the postulational technique

is a standard by which to measure the scientific soundness of any classification scheme. It has created a strong base for teaching and learning classification and offers a framework for comparing various systems. Ranganathan elevated classification design to the level of a scientific profession by using this approach, moving it away from reliance on subjective flair and intuition. Ranganathan explains that a postulate is a statement that cannot be labeled as “right” or “wrong.” Instead, we can only describe a set of postulates as “helpful” or “unhelpful” (from *Elements of Library Classification*, Asia, 1962, p. 82). He identifies 17 postulates, which are further elaborated upon in his work.

The Postulational approach is also known as the “Practical Classification.” Dr. S.R. Ranganathan has laid out nine steps for beginners to follow while learning how to categorize books. To find the class number, beginners are urged to follow these procedures and, if needed, apply the pertinent postulates. First, following these steps can help one organize his/her thoughts and make the classification process more efficient. The nine suggested steps for the approach are as follows.

i. **Step 0 (Raw Title)**

The title appears as it appears in the document. It is possible to find the document’s title by visiting its title page. That must be taken into account.

ii. **Step 1 (Full or Expressive Title)**

The raw title is the source of this. This ought to be expressive. To make it a full title, ellipsis has to be filled in. If any suggested aspects are not stated in the raw title, we must include them here. One may frequently need to add a fundamental facet. The composite phrase or terms must occasionally be broken down into its constituent terms.

iii. **Step 2 (Kernel Title)**

Here, one must just use substantive terms and leave out all auxiliary terms. These substantive terms ought to be in the singular number and in the normative case.

iv. **Step 3 (Analysed Title)**

Here, one must indicate the facet's nature next to each Kernal Term.

v. **Step 4 (Transformed Title)**

Here, it is necessary to rearrange the Kernal Terms and the corresponding facet symbols in line with the relevant postulate or postulates.

vi. **Step 5 (Title in Standard Terms)**

In the event that the term used in the classification schedule differs from the kernel term, the term in the classification schedule should be used in its place. Maintaining uniformity and consistency in language is crucial.

vii. **Step 6 (Title in Focal numbers)**

It is best to keep the facet symbols that deviate from the accepted words. The usual phrases should be replaced by ordinal numbers.

viii. **Step 7 (Title in Synthesized Focal Numbers)**

The facet symbol will be removed in this stage, and the connecting symbol in accordance with the Postulates should be used to join the ordinal numbers.

ix. **Step 8 (Verification by reserves Translation)**

By using Facet Analysis and Digit by Digit Translation, we can verify whether the call number is correct or not.

x. **Step 8.1 (Facet Analysis) :** The class number should be analysed into facets

xi. **Step 8.1 (Digit by Digit Translations):** Digit by Digit Translations.

The postulational approach provides a number of benefits and help in the field of classification. At first, it eliminates confusion during the creation and application of classification systems. It allows for an objective examination of the discipline, ensuring each subject is assigned its own facet formula. The postulates facilitate the appropriate treatment of various

aspects of the universe of knowledge, enabling the development of classification systems based on scientific principles. This approach results in a 'Freely Faceted Classification' that is both flexible and comprehensive. For classifiers, the postulates provide clear guidance in constructing precise and detailed class numbers. Additionally, they allow for the comparison of different classification schemes to assess their efficiency. The postulational approach also aids in presenting the analytico-synthetic process used to build class numbers for subjects. It ensures a logical sequence among known classes of knowledge and helps integrate newly emerging classes into the existing framework with minimal disruption. Ultimately, this approach makes classification schemes self-perpetuating, extending their longevity and relevance.

Heinalata Iyer (1992) and Foskett (1980), on the other hand, investigated the systems approach to subject structure. Iyer distinguishes three types of relationships: cause-effect, probabilistic, and the systems approach, which emphasizes how a system interacts with its surroundings and contends that Ranganathan's syntax depends on concept classification. Analytico-synthetic in nature, the systems approach looks at a system's functions, design, and goal in order to understand its behavior. With a significant focus on achieving a system's goal, it is hierarchical, progressing from the specific to the general and vice versa. Bertalanffy's General System Theory, which characterizes a system as an entity formed by the nature of its parts and their relationships, has an influence on Foskett's theories. For example, a bicycle acts as a system due to the interconnection of its components, not just the elements themselves. Systems can also be part of bigger, more complicated systems, such as letters making words, words forming sentences, and so on, up to libraries as systems of books. Classification approaches that use this systems approach can produce an ordered structure that resembles Dhalberg's outline. According to Foskett, all knowledge can be fully covered by connecting topic analysis or classification to a general theory of systems, highlighting the hierarchical and interrelated character of systems in knowledge organization and comprehension.

5.5 FUNDAMENTAL CATEGORIES

In addition to his dynamic theory of library classification, S.R. Ranganathan used the Five Fundamental Categories as the basis for his Colon Classification. These five categories are: Personality (P), Matter (M), Energy (E), Space (S) and Time (T) or PMEST.

Fundamental Categories	Connecting Symbols
Personality	, comma
Matter	; Semi colon
Energy	: Colon
Space	. Dot
Times	‘ Apostrophe

Time: Although “Time” is the final essential category in the PMEST hierarchy, it is examined first since it is the most straightforward element to recognize in a subject. Because of this, while describing Freely Faceted Classification (FFC), the order is inverted. According to Ranganathan, the category of “Time” is the easiest to identify because it fits with how we typically use the term. It can take the form of well-known time periods like year, decade, century, and millennium, as well as ideas like day and night, seasons like summer and winter, and weather conditions like rainy, dry, or stormy. There are two types of time isolates. According to the Christian period, these isolates of (T) such as millennium, century, decade, year, etc., belong to a type of isolates called public time. First level time isolates (T1) is how these are referred as. The other type of time isolate is known as “Featured Time,” and it comprises time isolates related to the day, the seasons, the weather, etc. Second level time isolates (T2) are what these are referred to as.

Space: The assignment of space isolates to any Main Class does not change its meaning.

This is of two kinds

a) There are two sorts of space isolates. The first category, known as the First Level of Space Isolates (S1), consists of geographical divides such continents, nations, and states.

b) The second kind, known as the Second Level of Space Isolates (S2), is made up of physiographical characteristics, orientation divides, or population groupings.

Energy: Energy is more difficult to characterize than Time and Space alone. Actions, responses, activities, difficulties, procedures, functions, and output are usually represented by it.

Matter: Out of the Five Fundamental Categories, matter is the second most difficult to identify. Properties and materials are used to portray it. Materials such as wood, paper, iron, salt, silver, gold, cotton, jute, reading materials, and money are examples of matter isolates.

Personality: The most difficult and tangible Fundamental Category to identify is personality. Anything that does not fit into the categories of Time, Space, Energy, or Matter is categorized as Personality since it is distinguished by exclusion. Ranganathan refers to this method as the "Method of Residues" and it aids in identifying it. Whole creatures, bodily parts, religions, types of libraries, communities, people, cultural groups, institutions, plants, animals, and elements all exhibit personality.

5.6 FACET ANALYSIS AND FACET SEQUENCE

Facet analysis is also known as the subject analysis of the particular books, which are represented by the class numbers, according to Metcoff. Analyzing the basis for the analytico-synthesis of categorization is also known as facet analysis. Pamar and Welace define facet analysis as the examination of a certain subject that results from the experiment of the various characteristics. Facet analysis, according to Dr. Ranganathan, is the description of those potential chains of characteristics that serve as the foundation for the division of the main class.' Facet analysis is the thorough process of determining a subject's essential components. A topic is broken down into discrete aspects and potential constituents are found when it is divided. In the process of classifying books, their basic components and related aspects are examined. Frequently, one facet is connected to another subject's isolates. A key tool for identifying these kinds of correlations is

facet analysis. The purpose of facet analysis to synthesize the facet in a helpful order for document storage and retrieval. Facet analysis and sequence are in fact two sides of the same coin.

Facet Sequence in CC: Here, Ranganathan has given 5 postulates which are:

- Postulate of First Facet : the basic facet should be given the first position among the facets of a compound subject
- Postulate of Concreteness : The Five Fundamental Categories fall into the following sequence, when analyzed according to their decreasing concreteness: P,M,E,S,T.
- Postulate of Facet Sequence within a Round : The order of the facets of a compound subject should be Personality Facet, Matter Facet, and Energy Facet if each or all of the Fundamental Categories personality, matter, and energy; occur only once.
- Postulate of Facet Sequence with the Last Round: Each of the Fundamental Categories except Energy may appear in the final round of facets of a composite subject, and each instance only happens once. The order of the Personality, Matter, Space, and Time are the appropriate facets.
- Postulate of Level: “Any of the Fundamental Categories `Personality’ and `Matter’ may manifest itself more than once in one and the same Round within a subject; and similarly with “Space” “Time”-in the last Round. This first, manifestation of the FC within a round is known as Level 1 and a similar second manifestation within a Round as Level 2"
- Postulate of Level-Cluster : Facets of different levels of the same Fundamental Category within a Round of facets in a compound subject should be kept together.

5.7 PHASE RELATION AND COMMON ISOLATES

When two or more of a subject (basic or compound) or isolate ideas (iii one and the same facet or isolate ideas in one and the same array) combines, they results in a phase relation. The combination or assembling

is done in order to express one or other of possible relation between the components of the assembly. These results in a complex subject, complex isolate idea or complex isolate idea array. Every part of the assembly is referred to as a "phase" in turn. Based on their order in the assemblage, they are referred to as "phase 1" and "phase 2".

Phase relation can be classified in three categories:

i. ***Intra Subject Phase relation:*** Involves interaction between two subjects. For example statistical analysis in library management. Here two main subjects , Statistics and Library science are involved.

ii. ***Intra Facet Phase relation:*** Here two isolate ideas of same facet are involved to form a complex subject. For example consider the followings**:**

Comparative study of Buddhism and Jainism: Interconnection between Buddhism and Jainism, two isolates of same facet i. e Religion.

Difference between democracy and oligarchy: Between two isolates of the same facet i.e. Political Science.

Influence of aristocracy on rural folks: Here both aristocracy and rural folks belong to same facet social groups in Sociology.

iii. ***Intra Array Phase relation*****:** Here, isolate ideas belonging to the same array of a facet are in a relation with each other. Examples are

Comparison between Rural and Urban life: Here, rural and urban belong to same array of facet social groups in Sociology.

Difference between laws relating to dacoit and theft: Here, Dacoity and Theft are part of same array of common facet i.e Legal entity.

The relationship between politically handicapped and socially handicapped persons in psychology: Here, politically handicapped and socially handicapped is part of same array of facet abnormal in Psychology.

In colon classification there are 6 kinds of phase namely:

General: A broad or overarching relationship that connects a subject to its wider context or category. Example: Relation between Audio and Visual learning in Education. Audio would precede Visual and hence, the sequence of the two phases is Education, Learning, Audio, Visual T;416&t7.

Bias: A relationship between two subjects suggests that one subject's (Phase 1) explanation is skewed toward the expertise of another subject (Phase 2). This indicates that a subject's exposition is specifically tailored to the needs of a specialist through topic selection, layout, illustration selection, etc. In this case, Phase 1 is referred to as the Biased Phase, while Phase 2 is the Biasing Phase. Example: Statistics for Engineers BT&bD.

Comparison: This denotes cases where two subjects are compared. Example: Comparative psychology of man and woman (Intra-array) Psychology, Man, Woman (Sequence in CC) S,55&v6

Influence: Where one subject affects or shapes another, either directly or indirectly.

Difference: cases of documents where the difference between two subjects is expounded. Example: Difference between meditation and worship (Intra-array) Religion, Worship, Meditation (As in CC) Q;413&w4

Tool: Deals with cases of documents where one subject is used as a tool to expound the other. Example: Classification as a tool to study circulation service (Intra-facet) 2;8&p5

Common Isolates: As per Ranganathan, an isolate idea with same isolate term and same represented by same isolate number irrespective of the compound subject in which it occurs or the basic subject with which the compound subject goes.

Need of Common Isolates: Certain ideas such as forms of presentations (Outer like journal, proceedings, conference and inner forms like theory, history, biography i.e. conventional or methodological approaches to a subject) appear repeatedly across many subjects. Moreover, subjects are often treated with geographical (space) or historical (time) contexts which

are also recurring traits in classification. Common isolates helps in standardization of recurring concepts in library classification making it economic size by avoiding redundancy and reduce the length of schedule as well as gives mnemonic value by making sure that recurring concepts are represented by same symbols adding memory and ease of use**.** Classification schemes provide separate table for common isolates and include instructions for their use, ensuring uniformity and clarity.

The credit for common isolates goes to Melvil Deway when he introduced them as divisions in 2nd edition of DDC in 1885. In the 13th edition of DDC, the name changed to common subdivisions. In UDC, Common isolates are called auxiliary subdivisions. Two of the three schedules for common subdivisions in the original edition of CC were for time and space. These were only acknowledged as anteriorizing and posteriorizing common subdivisions in the fourth edition of CC. They received the designation of common isolates in the fifth edition. The seventh edition of CC contains an exhaustive list of common isolates following numerous revisions in previous editions.

Types of Common isolates in CC:

Two types of common isolates are in colon classification. They are:

I. Anteriorising Common Isolates: They have precedence in arrangement over the class numbers to which they have been attached. In short, the anteriorising common isolates have the anterior value.

Anteriorising common isolates Applicable before space face:

a – bibliography

c - concordance

d - table

f - atlas

k – Ecyclopaedia

m – periodical

p - conference proceedings

v - history

w – biography

Anteriorising common isolates Applicable after space facet:

r - periodical administration report and s - statistics (serial)

Anteriorising common isolates Applicable after time facet:

T - commission report, t4 – survey, v - source material ,v46 - genealogy ,v6 chronology

II. Posteriorising Common Isolates: Personality, matter, and energy are the three categories of posteriorizing common isolates. They must be joined to the host (core) class using the appropriate connection symbols, which are colon, semicolon, and comma. A typical personality Isolate primarily represents institutions, some of which include the following: Institution

f: Investigating; Institution,

f2: Observational institution,

f3: Laboratory,

g: learning body,

h6: museum, and

y: cultural organizations



CHECK YOUR PROGRESS

1. Fill in the Blanks:

a) The connecting symbol for PMEST is ……respectively.

b) Three types of phase relations are_____, _____&_____.

c) In CC, there are ____ types of common isolates and they are_____&_____.



5.8 LET US SUM UP

Books were originally categorized by subject, size, or language; however, contemporary classification schemes adhere to disciplinary frameworks. The importance of classification in enhancing library usability is emphasized in S.R. Ranganathan's Five Laws of Library

Science. Following the introduction of Colon categorization in 1933, he developed his Postulational Approach, which used 55 Canons, 22 Principles, 13 Postulates, and 10 Devices to formalize categorization into a scientific technique. This method simplifies system design while guaranteeing longevity and logical knowledge structure. Facet analysis divides subjects into meaningful components for accurate classification, using the Fundamental Categories (PMEST—Personality, Matter, Energy, Space, and Time) as a framework. The General System Theory-inspired systems method looks at hierarchical links in categorization, which increases its flexibility. Classificationists establish linkages between subjects using aspect analysis, preserving an organized and adaptable representation of information.



5.9 ANSWERS TO CHECK YOUR PROGRESS

Ans 1.

a) , ; : . ‘

b) i. Intra Subject Phase relation, Intra facet and intra array phase relation.

c) 2 and they are anteriorising CI and Posteriorising CI.



5.10 FURTHER READINGS

Colon Classification (Fundamental Categories).pdf. (n.d.). Retrieved February 25, 2025, from https://www.mlsu.ac.in/econtents/2886_Colon%20Classification%20(Fundamental%20Categories).pdf

Library-classification.pdf. (n.d.). Retrieved February 25, 2025, from https://lisstudymaterials.wordpress.com/wp-content/uploads/2017/12/library-classification.pdf

Unit-7.pdf. (n.d.). Retrieved February 26, 2025, from https://www.egyankosh.ac.in/bitstream/123456789/33081/1/Unit-7.pdf

Unit-8.pdf. (n.d.). Retrieved February 25, 2025, from https://egyankosh.ac.in/bitstream/123456789/33080/1/Unit-8.pdf



5.11 MODEL QUESTIONS

1. Explain the fundamental categories in Library Classification
2. What is phase relation and its types in classification.
3. Define common isolates.

*** *** ***

UNIT 6: BASICS OF DEWEY DECIMAL CLASSIFICATION (DDC)

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Core Principles and structure of Dewey Decimal Classification

6.4 Conventions for three digits classification Numbers

6.5 Introduction to DDC Tables, Schedule and Relative Index

6.6 Let us Sum Up

6.7 Answers to Check Progress

6.8 Further Readings

6.9 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to understand –

- Understand core principles and structures of DDC
- Tables, Schedules, Relative Index and other concepts of DDC.

6.2 INTRODUCTION

The organization, administration, and distribution of information resources are the central focus of the multidisciplinary area of library and information science. The efficient classification of knowledge, allowing sistematic access to information, is a fundamental component of LIS. One of the most popular library classification schemes in the world is the Dewey Decimal Classification (DDC), created by Melvil Dewey in 1876 and first published in 1876. The Dewey Decimal Classification (DDC) is a strong knowledge organization system that is based on ideas that make it a useful tool for organizing general information. It makes use of meaningful notation with distinct categories, hierarchical structures, and numerals. Additionally, the system creates a rich network of connections between subjects, which

improves its usability. Ten major classes, each representing a large topic or field of study, make up the DDC's knowledge organization system. A thorough and organized structure is produced by further subdividing these major groups into 10 divisions, each of which is further subdivided into ten parts. Because of its hierarchical structure, which guarantees thorough coverage of all subject areas, the DDC is a flexible and extensively used classification scheme.

6.3 CORE PRINCIPLES AND STRUCTURE OF DEWEY DECIMAL CLASSIFICATION

The Dewey Decimal Classification (DDC) is a great tool for organizing general information since it is based on sound concepts. It makes use of meaningful notation that includes widely accepted numerals, distinct categories, thorough hierarchies, and a vast network of topic links. Basic lessons are organized by the DDC according to disciplines or areas of study. At the most advanced level, there are ten major classes that cover every field of study. There are ten divisions within each primary class, and ten sections within each division. The DDC Summaries provide the fundamental framework of the Dewey Decimal Classification (DDC). The ten major classes are listed in the first summary; the hundred divisions are listed in the second; and the thousand sections are listed in the third. These summaries' headers associated with the numbers are streamlined for ease of browsing and might not always match the schedules' complete headings.

Core principles of DDC

- **Decimal Notation:** The Dewey decimal classification employs a decimal numbering system, with each digit indicating a hierarchical level, enabling limitless expansion and precise categorization of emerging disciplines.
- **Discipline- Based Classification:** Instead of using subjects to arrange knowledge, the DDC uses disciplines. This implies that a single subject, like "children," may be used in several fields, such as literature, psychology, or education, each with its own

categorization number. The DDC offers particular annotations and relevant indices to handle multidisciplinary subjects.

- **Enumerative Scheme:** Since the DDC is entirely enumerative, it gives each subject a predetermined number. In contrast, facets classification methods necessitate the combination of elements in order to get categorization numbers. Because the DDC is enumerative, assigning numbers is simple for librarians.
- **Relative Index:** The DDC's Relative Index, which unifies disparate facets of a subject under a single entry, is one of its distinctive features. For instance, the index may include "children" under several disciplines, assisting patrons in finding relevant resources in various library areas.
- **International Adaptability:** With its international applicability, the DDC is the most popular classification system in more than 135 nations. Its Arabic numeral-based notation system is language-neutral, making it easier for people all across the world to use.

Structural Framework of DDC

The 10 classes as per DDC are as follows:

000 (Computer science, information & general works): Encyclopedias, newspapers, and general periodicals are examples of works that fall under the broad category of class 000 since they are not subject-specific. It also encompasses specialist disciplines like computer science, library science, and journalism that are centered on knowledge and information.

100 (Philosophy & psychology): Includes philosophy, parapsychology and occultism, and psychology.

200 (Religion): covers religious topics.

300 (Social science):): This class includes sociology, anthropology, statistics, political science, economics, law, public administration, social problems and services, education, commerce, communications, transportation, and customs

400 (Language): includes language, linguistics, and specific languages.

500 (Science): Covers natural sciences and mathematics.

600 (Technology): Technology concerned subjects are included here.

700 (Arts & recreation): The class covers the arts, including general art, fine and decorative arts, music, and performing arts as well as includes recreation, such as sports and games.

800 (Literature): It covers literature, including rhetoric, prose, poetry, drama, and like works. However, folk literature is grouped with customs in the 300 class.

900 (History & geography): The 900 class mainly deals with history and geography. However, if a history is about a specific subject, it is classified under that subject instead of the 900 class.

Divisions and Sections: Each main class in the DDC is subdivided into ten divisions, with each division further split into ten sections. For example, within the main class 600 (Technology), 610 corresponds to "Medicine and health," 620 to "Engineering," and 630 to "Agriculture."

Hierarchical Structure: The DDC follows a hierarchical framework where each digit adds a layer of specificity. For instance, 600 represent a broad category, 610 refines it to "Medicine and health," and 611 further specifies it as "Human anatomy." This structure ensures systematic organization and ease of navigation.

Auxiliary Tables: Seven auxiliary tables in the DDC aid in refining classifications. These tables provide standardized subdivisions for subjects like geographical areas, languages, and ethnic groups. For example, Table 1 includes subdivisions such as "-09" for historical perspectives, which can be added to any class number.

Interdisciplinary Numbers :to classify multidisciplinary subjects, the DDC assigns specific class numbers. For example, interdisciplinary works related to "children" fall under 305.23 (Sociology of young people), with notes directing users to relevant disciplines.

6.4 CONVENTIONS FOR THREE DIGITS CLASSIFICATION NUMBERS

An enumerative and hierarchical classification technique, the Dewey Decimal Classification (DDC) system divides knowledge into 10 major classes, each of which is denoted by a three-digit number. Providing a

broad yet structured framework for classifying subjects, these three-digit numbers form the basis of the classification system. There is a natural transition from broad to specific issues because each main class is broken into ten divisions, and each division is further subdivided into ten sections. By grouping relevant topics together, this structure makes it simpler for users to find resources on a given subject. The 500s class, for instance, stands for “Natural Sciences and Mathematics.” In this course, mathematics is taken in 510, astronomy in 520, and physics in 530. These three-digit numerals offer a succinct and straightforward method of identifying general subject groups. By adding decimal places to the base number, the DDC’s hierarchical structure enables even more specificity. To precisely classify materials, for example, 530 (Physics) can be increased to 530.12 for Classical Mechanics or 530.14 for Quantum Mechanics.

The classification numbers consist of three digits and are intended to be simple and straightforward to use. With 810 standing for American literature in English, 820 for English literature, and 830 for German literature, for example, the 800s class is devoted to literature. Users may easily determine the main area of interest thanks to this logical layout, and they can then utilize additional decimal places to refine their search. For instance, English fiction is designated with the number 823, while English fiction from the 20th century is further specified with the number 823.91.

Consistency amongst libraries is further made easier by the DDC’s usage of three-digit numbers. For instance, the Technology 600s course contains Medicine 610, Engineering 620, and Agriculture 630. A book on medicine will be categorized under 610 in any library that uses the DDC system because these numbers are widely accepted. This uniformity is especially beneficial for resource sharing and interlibrary lending. The three-digit system does have some drawbacks, too. Although it offers a wide framework, it can occasionally be too strict for multidisciplinary or developing subjects. For instance, subjects like data science or environmental science might not easily fit into the designated classes, necessitating innovative library modifications. Furthermore, the DDC’s Western-centric orientation

may result in the underrepresentation of non-Western topics like Eastern philosophies or Indigenous knowledge systems.

6.5 INTRODUCTION TO DDC TABLES, SCHEDULE AND RELATIVE INDEX

All known basic and compound themes were listed in the Dewey Decimal Classification (DDC), which started out as a strictly enumerative system. Provisions for combining class numbers were included to account for the rapidly rising amount of knowledge and the emergence of more complicated disciplines over time. One of these clauses is the “add-to” device, which permits the extension of any Schedule number using whole or partial integers. In addition, a number from the Schedules can be extended by adding numbers from other Tables, which are now part of Volume 1. While Table 2, which focused on “Areas,” was published separately in the 17th edition (1965), Table 1 was originally introduced in the 2nd edition (1885). The 18th edition (1971) was the first to include the last five Tables. These are referred to as auxiliary tables, which denote that they are merely necessary for thorough classification and are hence auxiliary or non-essential. To put it another way, they are never employed on their own and always serve to augment the Schedules. These Tables are completely optional; therefore they might not be required for smaller libraries that prefer larger class counts.

Number	Name	Abbreviations
Table 1	Standard Sub divisions	s. s.-
Table 2	Area	area-
Table 3	Sub divisions of individual literatures	Lit. sub.-
Table 4	Sub division of individual languages	Lang. sub.-
Table 5	Racial, Ethnic, National Groups	r. e. n.-
Table 6	Languages	lang.-
Table 7	Persons	Pers.-

The fundamental element that arranges knowledge into a systematic, numerical framework is the Schedules in the Dewey Decimal Classification (DDC) system. Beginning with the first class, 000 (General Works), and

moving up to the 900s (History and Geography), they logically order all of the courses. Library items can be categorized and located in a clear and organized manner thanks to this number arrangement. Finding the correct classification number for any library item requires consulting the Schedules, which make up the majority of the DDC. Every class, division, and section in the Schedules has accompanying definitions, explanations, and instructions to help users create appropriate notations. Scope notes, which define the limits and uses of particular numbers, are frequently used to convey these instructions. For instance, the 500s contain basic notes about science, the 510s have more particular notes about mathematics, and the 512s contain even more thorough notes about algebra. These scope notes provide uniformity among libraries and assist users and librarians in effectively applying the classification system. Furthermore, summary lists, which offer a brief synopsis of the subdivisions within a specific class or division, are included in numerous Schedule sections. Users don't have to browse through the entire section to find the note they need thanks to these summaries. For example, a user can rapidly locate the pertinent notation by consulting the summary list if they are searching for a particular topic inside the 500s (Natural Sciences and Mathematics). The Schedules are intended to be both thorough and easy to use. In addition to listing the classification numbers, they also offer the background information and instructions required to guarantee that each number is utilized correctly. The Schedules are an essential tool for effectively classifying and accessing library works because of their numerical organization, thorough scope annotations, and summary listings. Librarians can give library materials precise and insightful notations by adhering to the format and guidelines outlined in the Schedules, which will facilitate patrons' ability to locate the resources they require.

The Relative Index (Volume 3) of the 19th edition of the DDC, as part with the Tables (Volume 1) and Schedules (Volume 2), is an essential tool for identifying a class number for a certain subject in a document. Subjects are arranged according to discipline using the Dewey Decimal Classification (DDC), which places subjects inside a particular field of study.

Concepts and subjects are logically structured in the schedules and auxiliary tables according to their whole-part linkages, following a methodical framework that progresses from general to specific. A fundamental comprehension of the subject's place in the larger universe of knowledge—basically, knowledge of the relevant discipline—is necessary in order to locate the subject and its accompanying class number in the schedules. It is difficult for anyone to have even rudimentary understanding of every subject across the whole range of knowledge, though. As a result, people frequently need to use a key to traverse the schedules, regardless of their level of knowledge. A classifier may use relative index for various reasons such as illogical placement of subjects, limited knowledge of the classifier on the subject or determine its correct placement in DDC. While the schedules are organized by discipline, the Relative Index offers an alphabetical list of terms. It streamlines the search process by compiling relevant elements of a topic in one location. For instance: The Index's "Energy" subject lists its many facets, such as nuclear, renewable, and solar energy, which are otherwise dispersed throughout the schedule's numerous classes. Contents of the relative index include important words and ideas from the timetables, illustrations and examples, create ideas based on number-building notes, all seven auxiliary tables' entries (Volume 1), synonym and related topic cross-references (for example, "Mental Health" may lead to "Psychiatry").

The Index's Limitations includes names like individuals, places, organizations, chemical substances, or manufactured things are not included in the Index. Rather, consumers ought to search under more general topics: To find "A Biography of Ratan Tata," look under "Business Leaders – Biography." To find "Delhi University," pick "Universities." Dimensions and Usefulness With nearly 80,000 entries much more than the Schedules and Tables' 29,528 entries the Relative Index is a crucial instrument for effective classification.



CHECK YOUR PROGRESS

1. Fill in the blanks

a) The Dewey Decimal Classification (DDC) was created by ___ in 1876.

b) The DDC organizes knowledge into ten major classes, each of which is further divided into _____ divisions and _____ sections.

c) The _____ of the DDC provides an alphabetical list of terms, helping users

locate classification numbers for subjects.

d) The DDC follows a _____ notation system, allowing for hierarchical classification and easy expansion.



6.6 LET US SUM UP

Melvil Dewey developed the Dewey Decimal Classification (DDC) in 1876. It is a popular library system that divides knowledge into 10 major groups (e.g., 000-General Works, 500-Science). Using a hierarchical structure based on decimals for specificity, each class is divided into ten divisions and sections (e.g., 530-Physics, 530.12-Classical Mechanics). Decimal notation, discipline-based classification, and a Relative Index connecting similar subjects are examples of fundamental concepts. Classifications are improved by auxiliary tables, and complicated topics are addressed by multidisciplinary numbers. Although its Western-centric orientation may restrict the depiction of non-Western themes, the DDC's enumerative approach and worldwide adaptability make it a flexible tool for information organization.



6.7 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a) Melvil Dewey b) 100 and 1000 c) Relative Index d) Decimal



6.8 FURTHER READINGS

Dewey Decimal Classification (DDC) | DDC Classification Scheme. (n.d.). Retrieved February 9, 2025, from https://www.libraryscience.in/2020/06/ddc-dewey-decimal-classification.html

Hjorland, B. (2025). *Dewey Decimal Classification (DDC)* [Text]. https://www.isko.org/cyclo/ddc

Index and Manual. (n.d.). Retrieved February 9, 2025, from https://lili.org/forlibs/ce/able/course7/12indexandmanual.htm

Introduction to the Dewey Decimal Classification. (n.d.).

Learning Principles of Classification with Dewey Decimal Classification. (2016). *International Journal of Humanities, Social Sciences and Education*, *3*(4). https://doi.org/10.20431/2349-0381.0304009

Loehr, C. (n.d.). *LibGuides: Call Numbers & the Dewey Decimal System: Dewey Decimal System*. Retrieved February 9, 2025, from https://libguides.uwa.edu/c.php?g=51944&p=335712

Mitra, P. (2009). Dewey Decimal System. In L. LIU & M. T. ÖZSU (Eds.), *Encyclopedia of Database Systems* (pp. 808–809). Springer US. https://doi.org/10.1007/978-0-387-39940-9_877

Rashid, M. H. A. (2024, March 25). Fundamental Principles of Classification in DDC | limbd.org. *Library & Information Management*. https://limbd.org/fundamental-principles-of-classification-in-ddc/



6.9 MODEL QUESTIONS

1. Discuss the core principles of DDC classification.
2. Explain hierarchical structure of DDC with suitable examples.
3. Discuss the purpose of auxiliary tables in DDC.

*** *** ***

UNIT 7: CALL NUMBER, BOOK NUMBER

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Book Number

7.4 Call Number

7.5 International Standard Book Number

7.6 International Standard Serial Number

7.7 Publisher code

7.8 Accession Number

7.9 Let Us Sum Up

7.10 Answer to check Your Progress

7.11 Further Readings

7.12 Model Questions

7.1 LEARNING OBJECTIVES

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

- Understand the concept of a call number
- Explain the purpose of the book number
- Understand the role of ISBN and ISSN
- Define accession number

7.2 INTRODUCTION

Class Number

The class number of a book represents its subject. The classification scheme organizes all subjects in a systematic manner, assigning each subject a unique notation using a combination of numbers, letters, and symbols. This notation serves as a code to identify and categorize the subject of the book within the scheme. Example class number of Library

Science is 2 in colon classification and 020 in Dewey Decimal Classification.

7.3 BOOK NUMBER

A book number precisely classify and arrange books on library shelves. While the class number groups books by their subject, the book number is used to further organize books that fall under the same class, ensuring that they are uniquely identified and placed in a logical order. This becomes important when there are multiple books on the same topic, like the study of solar energy or multiple books on the life of Albert Einstein, that would otherwise share the same class number.

A book number helps to sub-arrange these books by incorporating specific characteristics of a document, such as the author, title, publication year, language, volume, or edition. By adding these details, a book number ensures that books with the same class number are further sorted and placed in a unique and organized manner. The book number works alongside the class number, but its function begins where the class number ends, preventing disorganization and maintaining a logical structure on the shelves. In essence, the book number provides the finer details needed for exact placement within broader categories, making sure the classification system is efficient and orderly.

Purpose of Book Number

1. Ensures books are systematically arranged on the shelves.
2. Offers a concise and precise call number for each book.
3. Helps in easily locating a specific book within the library.
4. Acts as a code for tracking borrowed books and their borrowers.
5. Simplifies the process of returning books to their proper place.
6. Aids in the fast identification of books during inventory checks.
7. Groups all works by a particular author within a specific subject area.
8. Allows for a chronological organization of books, reflecting the evolution of a subject over time.

Book Number in DDC.

After assigning class no. to a book, book number is assigned. The Book

Number includes indicators for several aspects of the item including-The author; The title; The date; The copy (specific edition or version). But not every call number will include all of these indicators, but the combination of these elements allows for the creation of a unique call number for each library item. This system ensures that each item in the library collection can be accurately identified and located. The simplest type of author indicator is specified number of letters from the author's last name.

Example- For Dr. S. R Ranganathan's "The Five Laws of Library Science" the book number will be "RAN".

7.4 CALL NUMBER

A call number is a unique identifier assigned to a book or other resource present in a library. It is used to classify and locate it on the shelves. It typically consists of a combination of letters and numbers that represent the subject, author and edition of the work.

In every library, a call number serves as a unique identifier for each book or resource. It is typically a combination of numbers and letters that can be found on the spine or the front cover of the book. The call number acts like an "address" for the book, guiding library users to its specific location on the shelves. By using these call numbers, libraries can keep books organized and easily accessible for anyone looking for them.

There are different library classification systems, but the two most commonly used are the Dewey Decimal System and the Library of Congress Classification System. In the Dewey Decimal System, call numbers begin with a three-digit number, such as 973 for American history or 641 for cooking. These numbers are followed by additional digits and letters to further specify the book's subject, author, or edition.

On the other hand, the Library of Congress system uses a combination of one or two letters followed by numbers. For instance, books on literature might have a call number starting with "PS" (for American literature), followed by a specific number to identify the work more precisely. This system allows for a more nuanced categorization of subjects and subtopics.

What makes call numbers so crucial is their close relationship to library classification. Every field of study, from science and history to art and literature, has its own designated range of call numbers. This means that books on similar topics are grouped together based on their call numbers, making it easier for library users to find what they're looking for. The classification system helps ensure that related books are shelved near each other, streamlining the process of browsing and research.

In the Library of Congress system, the letter R represents medicine, the letter T represents technology, N represents the arts, and so forth. Each book in that field receives a corresponding call number all books about medicine have a call number beginning with R and all books about technology have a call number beginning with T. In the Dewey Decimal system, all books about medicine have call numbers in the 610's and all books about engineering have call numbers in the 620's. This is why books about the same discipline are together on the shelf. Call numbers get longer as the subject represented become more specific.

Call numbers can also include the author's last name, a date, or a version number, providing additional information to distinguish between similar titles. This system plays a crucial role in maintaining order and accessibility within the library.

Components of call number

A call number is typically made up of several components that help identify and categorize a book. These components can vary slightly depending on the library classification system used, but they generally include:

1. **Subject Classification**: This is the primary number or letter that represents the book's subject. In the Dewey Decimal system, this might be a three-digit number (e.g., 749 for dancing), while in the Library of Congress system, it might be a letter or combination of letters (e.g., Q for science, P for languages and literature).
2. **Author or Title**: In some systems, especially the Dewey Decimal system, the call number may include letters representing the author's last name or the first few letters of the title. This helps distinguish

between books on the same subject by different authors or with similar titles.

3. **Edition or Publication Date**: Some call numbers include additional information like the edition or year of publication to help identify a specific version of the book, particularly if there are multiple editions of a work.
4. **Additional Numbers/Letters**: As a book's subject becomes more specific, additional numbers and letters may be added to refine the call number. This ensures that related works are grouped together on the shelves in a logical order.

Example- For Dr. S. R Ranganathan's "The Five Laws of Library Science" the call number will be "020.1 RAN".

7.5 INTERNATIONAL STANDARD BOOK NUMBER

International Standard Book Number also known as ISBN is a unique identifier assigned to books and other printed materials to help publishers, libraries and booksellers track and manage titles efficiently. An ISBN is typically 13 digits long (since 2007), though older books may have a 10-digit version.

The ISBN provides specific information about the book, such as:

1. The publisher of the book.
2. The title of the book.
3. The format or edition of the book (hardcover, paperback, etc.).
4. A unique identifier for that specific edition.

An ISBN consists of five main components, which can be separated by spaces or hyphens. The structure varies slightly between the older 10-digit format and the current 13-digit format. The key elements for both are-

a) **Prefix Element**: This is always a three-digit number, currently either 978 or 979. It indicates that the number is part of the ISBN system.
b) **Registration Group Element**: This identifies the country, geographical region, or language area of the publisher. The length of this element can vary from 1 to 5 digits.

c) **Registrant Element**: This identifies a specific publisher or imprint within the registration group. Its length can be up to 7 digits, depending on the publisher's output.

d) **Publication Element**: This identifies a specific title or edition of a publication by that registrant. It can be up to 6 digits in length.

e) **Check Digit**: The final single digit that validates the rest of the number mathematically, calculated using a modulus 10 system with alternating weights of 1 and 3 for the 13-digit ISBN.

Example: In the ISBN 978-93-5300-895-6:

- 978 is the prefix,
- 93 is the registration group,
- 5300 is the registrant element,
- 895 is the publication element,
- 6 is the check digit.

7.6 INTERNATIONAL STANDARD SERIAL NUMBER

ISSN stands for International Standard Serial Number. It is a unique identifier assigned to serial publications, that are published in multiple issues over time irrespective of their medium namely print or electronic.

Some of the serial publication include magazines, journals, newspapers, annual publication and other publications.

An ISSN is typically 8 digits long and helps distinguish one serial from another. It is used to facilitate the management, cataloguing, and retrieval of periodical publications in libraries, bookstores and online databases.

It serves to identify a publication. It is a digital code with no inherent meaning:

- It does not provide any details about the publication's origin or content.
- It does not ensure the quality or accuracy of the content.

The ISSN is linked to the publication's title. If the publication undergoes significant changes, a new ISSN must be assigned.

For a print publication, the ISSN should ideally be placed in the upper

right corner of the cover. If that's not possible, it should appear on the pages containing editorial information. For an electronic publication, the ISSN should be shown on the homepage or main menu if it's an online publication. If the publication is on a physical medium (like CD-ROM, DVD, etc.), the ISSN should be visible on any part of the medium (e.g., the label).

If both an ISSN and an ISBN are assigned to a publication, both identifiers should be mentioned. The ISBN is used for books, the ISSN is specifically for serial publications.

Example, an ISSN might look like this: 1254-5178. The ISSN helps ensure that different editions or issues of a serial are properly tracked and identified, even when titles or publication details change over time.

7.7 PUBLISHER CODE

A publisher code is typically a unique identifier assigned to a publisher or organization, often used in various systems to track and distinguish content. It can be used in different contexts such as:

i. Advertising and Marketing: In digital advertising, a publisher code may refer to a unique identifier for a website or platform that publishes ads, helping to track ad campaigns and impressions.

ii. Books and Publications: A publisher code can be a part of a unique identifier like an ISBN, which identifies the publisher of a book or other publication.

iii. Affiliate Programs: In affiliate marketing, a publisher code may refer to a unique identifier for an affiliate marketer, which helps to track sales or leads generated by that affiliate.

7.8 ACCESSION NUMBER

Accession numbers are assigned sequentially, starting from 1 for the first item acquired in a given period. This creates a simple numeric system, making it easy to track the order of acquisition. For example: 001, 002, 003, etc.

Year-Based Numbering: Libraries may incorporate the year of acquisition in the accession number. This can help in organizing resources based on

acquisition dates and makes the number more descriptive. A typical format might look like: YYYY-NNN (e.g., 2025-001, where “2025” is the year and “001” is the sequential number of the first item acquired that year).

Alphanumeric Codes: Some libraries use a combination of numbers and letters to encode additional information in the accession number. For example, the first book in 2025 in a specific collection may have an accession number like 2025-ART-001 to indicate it belongs to the art collection.

Assignment of Accession Numbers: At the time of acquisition accession numbers are assigned when a new resource is formally acquired by the library, whether through purchase, donation or transfer from another institution. The number is typically recorded immediately upon receipt of the item. After the item is given an accession number, it is catalogued. This involves entering bibliographic data (author, title, publisher, subject, etc.) along with the accession number.

Linking Accession Numbers to Other Metadata: The accession number acts as a unique reference to the bibliographic record of the item. This means that an accession number can be cross-referenced in the cataloguing system with other metadata about the item, such as its call number, subject classification, and physical location in the library. The accession number allows the library to track the individual item’s status (available, checked out, damaged, missing) and history (checkouts, repairs, or transfers).

Role of Accession Number

i. **Collection Development**: The use of accession numbers also helps libraries manage collection development efforts. By analysing accession records, libraries can track trends in acquisition (e.g., by year, genre, or subject), ensuring a balanced and diverse collection.

ii. **Tracking Tools**: While the accession number helps track the item’s acquisition and metadata, call numbers are used for the physical organization of items on library shelves. The accession number typically does not indicate the item’s shelf location, but rather serves as an administrative and tracking tool.

iii. **Barcode or RFID**: In modern libraries, each item may be tagged with a barcode or RFID chip for automated tracking. The accession number might be linked to the barcode or RFID in the library's Automated Library System to facilitate checkouts, returns, and inventory management.

iv. **Accession Registers**: Accession Registers are physical or digital logs where each new accession number is recorded along with other important information about the item. In traditional systems, these registers were maintained in manual ledgers, but now many libraries use digital registers in their ILS or LMS. These systems allow for stock verification. Accession registers help in auditing the collection and conducting inventory, as each item's accession number can be cross-checked against its physical presence in the library.

v. **Data Integrity and Security**: As the accession number is a unique identifier for each item, ensuring data integrity is paramount. Libraries typically use data validation rules within their cataloguing systems to avoid duplication or errors in accession numbers. Access to the accession register and records is often restricted to authorized personnel to prevent tampering or accidental changes.



CHECK YOUR PROGRESS

1. Fill in the Blanks

a. The _____ number is used to categorize books by their subject in library classification systems like Dewey Decimal and Colon Classification.

b. The _____ number is used to further organize books within the same subject by incorporating details like author, title, or edition.

c. A _____ number combines both the class and book numbers to uniquely identify and locate a book on library shelves.

d. The _____ is a unique identifier for serial publications like journals, magazines, and newspapers.

e. The ISBN has been 13 digits long since _____.



7.9 LET US SUM UP

The library systems use various tools to organize and track books and resources. Class numbers categorize books by subject, with systems like Dewey Decimal or Colon Classification assigning unique notations to each subject. Book numbers further differentiate works within the same subject, incorporating details like author, title, or edition to ensure precise organization. Call numbers combine class and book numbers to uniquely identify each book, making it easy to locate on the shelves.

An ISBN is a unique identifier for books, comprising several components like a prefix, publisher, and publication details. This system helps publishers, booksellers, and libraries manage titles efficiently. ISSN is used for serial publications such as journals and magazines, distinguishing them from books. It ensures proper cataloguing and tracking of publications issued in multiple issues over time.

A publisher code identifies a publisher and is often part of the ISBN, linking books to their publishers. Accession numbers are assigned to new acquisitions in a library, helping track the order and management of items. These numbers may include year-based or alphanumeric codes for further organization.

Together, these systems maintain an efficient and systematic library organization, enabling libraries to track, locate, and manage their collections while ensuring books and serials are properly categorized, identified, and easy to access.



7.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to 1.

a. class

b. book

c. call

d. ISSN

e. 2007



7.11 FURTHER READINGS

Barden, B. R. (1937). *Book number: A manual for students with a basic code of rules*. ALA.

Satija, M. P. (1990). "Book Number and Call Number". In *Encyclopedia of library and information science*.



7.12 MODEL QUESTIONS

1. What is a call number?
2. What is the purpose of a book number in a library system?
3. What is ISBN and what information does it provide?
4. How does an ISSN differ from an ISBN?
5. What is an accession number and how is it used in libraries?
6. Describe the concept of a call number in the library classification system.
7. Explain the components of a ISBN number in detail.
8. Discuss the role and importance of the book number in library cataloguing.
9. Explain the concept of International Standard Book Number (ISBN).
10. What is the role of the International Standard Serial Number (ISSN)?

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UNIT 8: LIBRARY CATALOGUING

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.2.1 Definition

8.2.2 Need

8.2.3 Objective

8.3 Cataloguing Process

8.4 The role of technology

8.4.1 OPAC

8.4.2 Union Catalogue

8.5 Let Us Sum Up

8.6 Answer to check Your Progress

8.7 Further Readings

8.8 Model Questions

8.1 LEARNING OBJECTIVES

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

- Understand the Concept of a Catalogue
- Identify the Need for a Library Catalogue
- Understand the functions and objective of a Catalogue
- Learn About OPAC

8.2 INTRODUCTION

A catalogue is a systemized listing of the library's holdings, providing detailed information about each item, such as its title, author, subject, and location within the library. In the context of a larger institution, the catalogue essentially becomes the "mirror" of the library, as it reflects the library's resources, making them easily accessible to patrons.

With the expansion of library collections, whether physical or digital, catalogues have become increasingly complex and sophisticated. They help users navigate through thousands of books, journals, multimedia, and digital resources efficiently. A well-designed catalogue allows users to search and locate materials quickly by employing different search techniques, such as keywords, subject headings, call numbers, and authors.

8.2.1 Definition

J.D. Brown defines 'Catalogue is an explanatory logically arranged inventory and key to the books and their contents and it is confined to the books in a particular library'. According to him catalogue is always a logically arranged and it is not only confined to the books but also includes their contents.

S.R. Ranganathan in his book Library catalogue: Fundamental and Procedure of 1938 has defined catalogue as 'It is a tool which gives information about the contents of the library. It is divided into 2 parts – in subject and by author. It gives information about the arrangement and order in which they are lying in the shelves. It helps the reader to find out his or her desired book without any loss of time. It saves the time of the reader'. Ranganathan's definition is based on five laws of library science and it includes all the functions of library catalogue.

H.A. Sharp in his book 'Catalogue: A text book for use in libraries' has defined the catalogue as a 'list to books and other reading material in the holding of a library or a group of libraries. The list contains entries of books, arranged according to some definite plan'. the use of the term group of libraries creates confusion as the catalogue of group of libraries is known as union catalogue and not a catalogue.

The most systematic definition is given by Oxford English Dictionary – 'now usually distinguished from a mere list or

enumerations, by systematic or methodical arrangement, alphabetical or other order, and often by the addition of brief particulars, descriptive or aiding identification, indicative of locality, position, date, price or the like'. This definition emphasizes on descriptive catalogue, while in open access library there is no need of description about the collation and imprint.

8.2.2 Need

i. **Guide to Library Materials**: The primary purpose of a library catalogue is to act as a guide to the diverse collection of materials available in the library. It helps users determine whether the materials they are interested in are available and where they are located within the library.

ii. **Organizing Various Formats**: Libraries acquire a wide range of materials in different formats, such as printed documents, microfilms, and machine-readable forms. A catalogue helps in organizing and making these materials accessible to users, regardless of their format.

iii. **Efficient Information Retrieval**: The catalogue serves as a retrieval tool, allowing library users to quickly find information on specific topics. Just as an index in a book guides readers to the relevant pages, a library catalogue guides users to the exact materials they need by providing key details such as the call number.

iv. **Access to Multiple Points of Information**: A library catalogue offers multiple access points, allowing users to search by author, title, subject, series, or even by additional contributors like illustrators or editors. This flexibility ensures that users can find materials through different means, tailored to their search needs.

v. **Advancement in Technology and MARC**: The development of MARC (Machine-Readable Cataloguing) in the 1960s

revolutionized the cataloguing process. By encoding each piece of information in a catalogue record, libraries are able to provide more comprehensive and precise search capabilities, including searches by ISBN, publisher, date, or any other cataloguing field.

vi. **Increased Use and Satisfaction**: A well-maintained and complete catalogue increases access to library materials, which in turn leads to higher usage of the collection. The more effective the catalogue, the more satisfied library users will be in finding the information they seek, leading to a better overall library experience.

8.2.3 Objective

Charles Ami Cutter, in his 1876 work *Rules for a Dictionary Catalogue*, outlined the primary objectives and functions of a library catalogue. His guidelines focused on the essential role of a catalogue in providing users with easy and comprehensive access to the library's resources.

Enabling a person to find a book: The catalogue should allow a person to locate a book if they know one of the following:

- **The author** of the book.
- **The title** of the book.
- **The subject** of the book.

Show what the library has: The catalogue should help users understand the full extent of the library's holdings in relation to:

- **A given author**: It should list all the works by a particular author in the collection.
- **A given subject**: It should provide a list of resources related to a specific topic or field.
- **A given kind of literature**: It should show works of a particular genre or type of literature, such as fiction, non-fiction, poetry, or historical texts.

Assisting in the choice of a book: The catalogue should help users in making informed decisions about which book to choose, based on:

- **Edition**: Users should be able to find details about the edition of a book, including bibliographic information such as publication date, publisher, and other relevant edition-specific details.
- **Character**: The catalogue should give users insights into the book's literary or topical character, helping them choose based on the quality, content, or relevance of the book.

The objectives of a library catalogue are-

1. To inform about the availability of materials:

- o The catalogue helps users determine if a particular reading material is available or not in the library.
- o Users can search through the catalogue using the author's name or title of a document.
- o Entries should provide all pertinent information about the author or title.
- o If the entry is under a different name or word, a cross-reference should be provided for clarity.

2. To cater to different access points for users:

- o The title entries cater to readers who approach the catalogue through a title search.
- o The subject entry serves users interested in a particular topic.
- o Standardized terminology should be used for subject entries to ensure clarity and consistency, as subjects can be described in varied terms.

3. To show what the library has:

- o The catalogue should clearly present the available resources by a specific author, on a particular subject, or in a specific kind of literature.
- o This helps users identify the scope of materials available in

these categories.

4. To provide descriptive cataloguing:

- The catalogue follows descriptive cataloguing rules, which aim to fully describe the characteristics of documents.
- This allows users to identify and distinguish one document from many similar ones, ensuring that each resource is properly isolated and recognized.

Functions of catalogue

i. To help users find a book based on key details, such as the author, title, or subject matter they are familiar with.

ii. To provide an overview of the library's holdings, making it clear which books are available by a specific author, on a particular subject, or within a certain type of literature.

iii. To make hidden or composite content visible by offering detailed subject entries, ensuring that the full scope of a book's contents is accessible to users.

iv. To facilitate quick access for both readers and library staff, which includes organizing the catalogue into both alphabetical and classified sections for efficient book retrieval.

v. To maintain consistency and adapt to the library's evolving nature, ensuring that the catalogue stays current and follows established cataloguing codes.

vi. To direct readers to the resources, they need, whether it be books by a certain author, on a specific subject, or related to a particular title or edition.

vii. To save time for both readers and library staff, ensuring that searches are streamlined and efficient.

viii. To provide detailed bibliographical information, such as the author, title, edition, publisher, and year of publication for each book.

ix. To assist users in selecting the right edition or version of a book, ensuring they find the most appropriate resource for

their needs.

x. To help locate books associated with a specific collaborator (e.g., editor, translator, compiler) or those within a particular series.

8.3 CATALOGUING PROCESS

The definition provided by Joudrey, Taylor, and Miller (2015) in *Introduction to Cataloging and Classification* states "The process of creating metadata for resources by describing a resource, choosing name and title access points, conducting subject analysis, assigning subject headings and classification numbers, and maintaining the system through which the cataloging data is made available."

The general process includes-

Cataloguing section: There is a designated area for processing books with access to necessary supplies such as circulation systems, stamps, and labels.

Receiving and Checking Materials: When new materials arrive, they should be opened, checked against the packing slip and purchase order, and reported to the office manager.

Descriptive Cataloguing: Bibliographic details such as title, author, edition, publisher, and year of publication are recorded on OPAC or the system.Standardized cataloguing formats like MARC (Machine-Readable Cataloguing) are used for uniformity. Additional details like ISBN (International Standard Book Number) or series information may be included.

The call number is determined, which includes the classification number and the author's code. Appropriate subject headings are assigned to describe the content of the material.

Controlled vocabularies such as Sears List of Subject Headings (SLSH) ensure consistency.

If a record for the book already exists in a library database (e.g., WorldCat), it is imported instead of creating a new one.

Labelling and Cataloguing: The materials are then labelled with barcodes and spine labels, so as to add it to the circulation system.

8.4 THE ROLE OF TECHNOLOGY

Modern library catalogs have evolved significantly from traditional card catalogs. The use of online public access catalogs has streamlined the process, allowing users to access the catalog from anywhere with internet access.

8.4.1 OPAC

An Online Public Access Catalogue (OPAC) is an electronic database that provides users with an interface to search for and access library resources. It serves as the digital counterpart to traditional card catalogues, allowing users to browse a library's collection from a computer or mobile device.

Features of OPAC-

i. Search Functionality – Users can search for books, journals, e-books, audiovisual materials, and other resources using keywords, author names, titles, or subjects. It provide a web-based, interactive interface that allows users to search, browse, and filter library collections easily.

ii. Filtering and Sorting – OPAC systems allow users to refine searches based on criteria such as publication date, material type, or availability. Boolean search (AND, OR, NOT) enables precise searching.

iii. Availability Status – Users can check whether an item is available, on loan, or reserved. Some OPACs show due dates for borrowed books and allow users to place holds on items.

iv. User Accounts – Many OPAC systems enable patrons to log in to their accounts, renew books, place holds, and track their borrowing history. Users can log in to their accounts to view borrowing history, renew books, and manage reservations.

v. Integration with Digital Libraries – Modern OPACs may link to e-books, PDFs, or other digital resources, enabling users to access full-text materials. Libraries can integrate OPAC with

institutional repositories and open-access databases.

vi. Multilingual Support – Many OPACs provide search and navigation options in multiple languages for wider accessibility.

vii. Some OPACs allow users to leave book reviews, ratings, and tags. Features like book recommendations and social cataloging enhance engagement.

Advantages of OPAC

- Provides quick and efficient access to library collections.
- Reduces the need for physical catalogue cards and manual searching.
- Enables remote access to library resources from anywhere.
- Improves library management by streamlining cataloguing and circulation processes.

Examples:

- **Koha** – A widely used open-source library management system with OPAC features.
- **WorldCat** – A global OPAC that connects users to library collections worldwide.
- **Evergreen** – Another open-source library system with OPAC functionality.

8.4.2 Union Catalogue

A Union Catalogue is a centralized database that lists the holdings of multiple libraries, allowing users to search for books, journals, and other resources across different institutions. It serves as a single access point for library collections, facilitating resource sharing, interlibrary loans, and collaborative cataloguing efforts.

Features of a Union Catalogue are-

i. Centralized Database: Aggregates records from multiple libraries, providing a single interface for searching across collections.

ii. Multi-Library Search: Users can search for materials across

different institutions, saving time and effort. Helps researchers locate rare or hard-to-find resources.

iii. Standardized Metadata: Uses standardized cataloguing formats such as MARC (Machine-Readable Cataloguing), Dublin Core, or Z39.50 for uniform data representation.

iv. Interlibrary Loan (ILL) Support: Enables users to request books from other libraries if their own library does not have a copy. Facilitates cooperation among libraries to expand access to materials.

v. Digital and Physical Resource Integration: Some union catalogues include both physical and digital resources, linking to e-books, articles, and open-access repositories.

vi. Union catalogues can be: Local – Covering libraries within a city or region.
National – Listing resources from libraries across a country.
Global – Connecting institutions worldwide

vii. Bibliographic Record Sharing: Libraries contribute their catalogue data, reducing duplicate cataloguing efforts and ensuring consistency in records.

Advantages of a Union Catalogue-

i. Expands Resource Accessibility – Users can find materials beyond their local library.

ii. Enhances Interlibrary Cooperation – Libraries can share resources efficiently.

iii. Saves Cataloging Efforts – Standardized records reduce duplication of work.

iv. Supports Research and Academia – Helps scholars locate rare or specialized materials.

Examples: WorldCat (Global) – The world's largest union catalogue, maintained by OCLC, connecting libraries worldwide.

Copac (UK) – A national union catalogue for academic and research libraries in the United Kingdom.

IndCat (India) – The union catalogue of Indian university libraries.

NUC (National Union Catalogue, USA) – A historical printed catalogue of U.S. library collections.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. A _____ is a systematic listing of a library's holdings, providing details such as title, author, subject, and location.

b. The development of _____ in the 1960s revolutionized the cataloguing process by enabling machine-readable records.

c. The three main access points in a catalogue, as defined by Charles Ami Cutter, are _____, _____, and _____.

d. OPAC stands for _____.



8.5 LET US SUM UP

A library catalogue is a systematically arranged tool that provides essential information about the materials available in a library, including books, journals, and digital resources. It serves as a guide for users to locate materials efficiently based on author, title, subject, or other access points.

Different scholars have defined catalogues in various ways. J.D. Brown, S.R. Ranganathan, and H.A. Sharp emphasized its role in organizing library resources logically and systematically. Charles Ami Cutter outlined the key objectives of a catalogue, which include helping users find books, listing the library's holdings, and assisting in book selection.

The catalogue plays a crucial role in information retrieval, organizing different formats of materials, and enhancing user satisfaction. The introduction of MARC (Machine-Readable Cataloguing) in the 1960s significantly improved cataloguing efficiency, making it easier to store and retrieve bibliographic records digitally.

With advancements in technology, traditional catalogues have evolved into Online Public Access Catalogues (OPAC), which provide an interactive digital interface for users to search, filter, and access library materials. OPAC offers features like search functionality, user accounts, book availability status, and integration with digital resources, making library access more efficient.

A Union Catalogue is a combined listing of multiple libraries' holdings, allowing users to locate resources beyond their local library. These catalogues support interlibrary loans, standardized metadata, and resource-sharing among institutions. Notable examples include WorldCat (global), Copac (UK), IndCat (India), and the National Union Catalogue (USA). Both traditional or digital catalogue, it plays a fundamental role in organizing, accessing, and managing library resources, ensuring that users can find and utilize information effectively.



8.6 ANSWERS TO CHECK YOUR PROGRESS

Ans to 1. a. Catalogue

b. MARC (Machine-Readable Cataloguing)

c. Author, Title, Subject

d. Online Public Access Catalogue



8.7 FURTHER READINGS

Chan, L. M. (1994). *Cataloging and classification: An introduction* (2nd ed.). McGraw-Hill.

Young, J. L., & Joudrey, D. N. (n.d.). *Library of Congress Subject Headings: Online Training*. Library of Congress. Retrieved March 17, 2020, from https://www.loc.gov/catworkshop/lcsh/index.html



8.8 MODEL QUESTIONS

1. What is a library catalogue?
2. How does a catalogue help library users?
3. What are the three main access points in a library catalogue, according to Charles Ami Cutter?
4. What is OPAC?
5. Name two examples of Union Catalogues.
6. How does a catalogue assist in book selection?
7. Explain the different definitions of a library catalogue given by J.D. Brown, S.R. Ranganathan, and H.A. Sharp.
8. Describe the key objectives of a library catalogue, as outlined by Charles Ami Cutter.
9. Discuss the various functions of a library catalogue and its importance in information retrieval.
10. How does a library catalogue save time for both users and library staff?
11. What is the main function of a Union Catalogue?
12. List features of OPAC.

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UNIT 9: TYPES AND FORMS OF CATALOGUES

UNIT STRUCTURE

9.1 Learning Objectives

9.2 Introduction

9.3 Types of Catalogues

- 9.3.1 Classified Catalogue
- 9.3.2 Dictionary Catalogue
- 9.3.3 Alphabetical-Classified Catalogue
- 9.3.4 Card Catalogue

9.4 Bibliographic Standards

9.5 Standards for Machine-Readable Record Format

9.6 Let Us Sum Up

9.7 Further Readings

9.8 Answer to check Your Progress

9.9 Model Questions

9.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- Understand the different types and forms of library catalogues.
- Identify the functions and characteristics of various catalogue types.
- Recognize the significance of bibliographic standards like ISBD and MARC.

9.2 INTRODUCTION

The forms of library catalogue are Primarily of two kinds

i. Outer/Physical form

ii. Inner form

Physical form of Library catalogue

These refer to the external shape, size, and appearance of the catalogue, essentially how it is presented physically. The physical form of a catalogue refers to its structure or presentation format, rather than the content or organization of the catalogue itself.

Physical forms of library catalogues can be of two broad categories:

i. **Conventional Forms**
ii. **Non-Conventional Forms**

Then, within the category of Conventional Forms, the following types are listed:

- **Printed or Register or Book form**: The it refers to a catalogue where entries are hand-written or printed and then bound into a volume, much like a book. In the past, many large libraries published their catalogues in this way and updated them regularly to ensure they remained current. Examples of such printed catalogues include the Harvard Catalogue (published in 1723) and catalogues from institutions like the British Museum and the National Library of Calcutta
- **Card Catalogue**: A traditional form of catalogue where bibliographic entries are written on individual cards and arranged in drawers.
- **Sheaf Catalogue**: This form involves loose-leaf pages (sheets, slips, etc.) with entries that can be added or removed as needed, usually arranged in a binder. Typical size is 6”x4” notched on left hand side. It facilitates insertion and removal of entries.

The Non-Conventional Forms can be further divided in the following-

- **Visible Index:** A visible index catalogue consists of strips or cards mounted on a frame or held flat in hinged pockets, with only the heading visible in the steel cabinets. The cards are usually 12.6 x 20 cm in size. Cards are placed in hinged kraft pockets, exposing the top portion. These are not useful for library cataloguing of books, but can be used for listing gramophones records, illustrations or periodicals.
- **Microform catalogue:** A microform catalogue reduces catalogue entries and prints them on film or fiche and cannot be read by naked

eyes. They take less space and can be produce multiple copes at lower cost.

- **Machine readable catalogue:** The traditional catalogues are replaced by catalogue stored in magnetic tape or discs. It facilitates offline search at specific time and online search anytime on computer. It also facilitates fast update, quick search and multiple copy easily.

9.3 TYPES OF CATALOGUES

9.3.1 Classified Catalogue

A Classified Catalogue is a specialized type of library catalogue that organizes entries based on a classification scheme, rather than alphabetically by author or title. It's primarily a subject catalogue that groups books according to their subject matter, and the entries are arranged using a recognized system of classification symbols or notations, such as Dewey Decimal Classification or Library of Congress Classification. This type of catalogue is designed to help users locate materials by subject, making it particularly useful for those who approach the library from a subject-specific perspective.

Three Parts of a Classified Catalogue: A classified catalogue typically consists of three main parts or files, which together serve different purposes but are all interrelated:

(a) **Classified File or Subject File**: This is the core of the classified catalogue, where books are listed based on their classification scheme. Entries are arranged according to the call number, which reflects the subject of the book. This file groups books into subject areas and subcategories, following the classification system used by the library.

(b) **Author-Title Files or Alphabetical Author Index**: This section provides an alphabetical index of authors or titles. It is particularly

useful for users who are searching for a specific author or book. Each entry in this file will reference the call number of the book from the classified file, enabling users to easily locate the book within the subject file.

(c) **Subject File or Alphabetical Subject Index**: This index is an alphabetical listing of subject headings. It helps users who are looking for books based on a specific subject but may not know the exact classification number. Like the author-title file, the subject index also includes call numbers to help users quickly locate the relevant subject area within the classified catalogue.

Advantages of Classified Catalogue-

i. Systematic and Logical Arrangement: The entries are organized in a clear, logical, and systematic manner according to the classification scheme.

ii. Easy Access to Related Subjects: As the catalogue is organized by subject, related and allied subjects are placed near each other, which is beneficial for users exploring a particular field or theme.

iii. Consolidation of Forms of Literature: This type of catalogue groups different forms of literature (such as books, journals.) on the same subject in one place. Users can access a variety of materials related to their subject of interest without having to search through separate categories.

iv. Multiple Arrangement: The classified catalogue combines both subject-based organization (in the classified file) and alphabetical indexing (in the author and subject indexes).

v. Helpful for Subject Approach: The classified catalogue is especially beneficial for users who are searching by subject rather than specific authors or titles.

Disadvantages of Classified Catalogue-

i. Psychological Aversion: Some users might find a classified catalogue complicated or difficult to navigate, especially if they are

unfamiliar with the classification system or are used to more straightforward alphabetical catalogues.

ii. Time-Consuming for Large Libraries: In large libraries, it can take longer to find a specific book in the classified catalogue compared to an alphabetical system, as users need to identify the correct subject area first before locating the exact entry.

iii. Mismatch with Shelf Arrangement: The catalogue's arrangement may not always correspond with the physical arrangement of books on the library shelves.

iv. Limited Subject Coverage: The classified catalogue depends heavily on the classification scheme being used. If a subject isn't adequately covered or enumerated in the scheme, the catalogue might not provide easy access to books on that subject.

9.3.2 Dictionary Catalogue

A Dictionary Catalogue is a type of library catalogue in which the entries are arranged alphabetically under various headings such as author, subject, title, services, and more. This arrangement makes it similar to a dictionary, where each entry is represented by a word or a combination of words, making it easy to look up specific details. According to the Colon Classification Code, a dictionary catalogue is defined as "a catalogue in which all the entries are word entries."

Advantages of a Dictionary Catalogue-

i. Easy to Consult: The alphabetical arrangement of entries makes it straightforward to look up a specific author, subject, or title, just like searching in a dictionary or a phonebook. It's user-friendly, especially for those who are unfamiliar with more complex catalogue systems.

ii. Reader-Friendly Subject Headings: In a dictionary catalogue, subject headings are assigned in a way that reflects the reader's terminology. This means that the catalogue tries to anticipate the

language users are most likely to use, making it easier for them to find what they are looking for.

iii. Multiple Access Points: The dictionary catalogue is designed to provide multiple access points for users. Whether they are looking for books by title, author, or subject, they can approach the catalogue in various ways, making it versatile and flexible.

Limitations of a Dictionary Catalogue-

i. Lack of Organization for Related Topics: One of the main drawbacks is that related topics may not be grouped together. Unlike the classified catalogue, which organizes materials by subject and groups related topics near each other, a dictionary catalogue arranges entries alphabetically, which may separate books on similar subjects and make it harder for users to find related materials in one place.

ii. Confusing Cross-References: The use of references and cross-references (which point users to related entries) can sometimes confuse readers. Users might have to look through multiple entries to fully understand a topic.

iii. Complexity as the Catalogue Grows: As the catalogue grows and more entries are added, the system can become increasingly complex.

9.3.3 Alphabetical-Classified Catalogue

The Alphabetical-Classified Catalogue combines features of both the alphabetical and classified cataloguing systems. It is designed to offer the best of both worlds, providing the convenience of alphabetical organization along with the thematic structure of classification, which helps users find materials by both subject and access points like author or title.

Example: The General Alphabetical Catalogue (GAC) used by libraries such as the National Library of Russia (NLR). It is the primary reference tool for the library, incorporating a broad range of

materials including Books; Periodicals and serials; Graphic and cartographic publications; Technical documents and standards; Author's abstracts of dissertations; Foreign European language works (Russian, Ukrainian, Byelorussian, and others)

Structure of the Alphabetical-Classified Catalogue

i. Alphabetical Arrangement: The alphabetical arrangement is a key feature of this catalogue. Entries are listed by author, title, and subject headings in an alphabetical order.

ii. Classification Elements: While the catalogue is organized alphabetically, it also integrates classified components. For example, items can be grouped into subject areas according to a library's classification system, allowing materials related to a particular topic to be listed together. This helps users who are interested in specific subjects to find all relevant materials, even if they have different authors or titles.

iii. The catalogue includes a wide variety of materials like books, periodicals, technical standards, maps, and more, offering a holistic approach to cataloguing resources across multiple languages, broadening its scope to include international literature.

Advantages of the Alphabetical-Classified Catalogue

i. Multiple Access Points: By combining alphabetical and classified systems, the catalogue offers multiple access points for users. They can look up materials alphabetically (by author or title) or by subject, depending on what information they are seeking.

ii. User-Friendliness: The alphabetical arrangement makes the catalogue more intuitive, especially for users who may not be familiar with complex classification schemes. The ability to search by author, title, and subject allows for a straightforward and familiar search experience.

iii. Comprehensive Scope: The catalogue covers a wide range of materials, including books, periodicals, standards, and technical documents, making it a comprehensive tool for researchers and

library users.

Disadvantages of the Alphabetical-Classified Catalogue

i. Complexity in Large Collections: As libraries grow and their catalogues expand, the inclusion of both alphabetical and classified elements can lead to complexity.

ii. Potential for Redundancy: When materials are listed both alphabetically and by subject, it might create some redundancy in the catalogue, where the same resource appears in multiple places.

iii. Limitations in Certain Areas: Certain specialized types of works, such as early-printed books, Braille materials, music, and maps are not cover, limiting its scope in those specific categories.

9.3.4 Card Catalogue

A card catalogue is one of the most widely used traditional forms of library catalogues. The initial use of the card catalogue was made at Paris Academy of Science by Rosier. It consists of individual cards, usually in a rectangular size, which contain bibliographic information about library materials. Each card typically holds information about a book, journal, or other library resources, including the author, title, publisher, and other relevant details. The cards are usually organized and filed in drawers or filing cabinets, allowing users to search for resources based on various access points such as author, title, and subject.

Features of a Card Catalogue-

i. Individual Cards: Each bibliographic entry is represented by a separate card. The card typically contains information such as the title of the work, the author, the publisher, the year of publication, the classification number, and the location or call number of the item in the library.

ii. Flexible Organization: The cards in the catalogue are typically filed alphabetically.Each entry often has multiple versions of the card to provide different access points, like an author card, a title card,

and a subject card.

iii. Physical Form: The Card Catalogue is a physical system, usually organized in filing cabinets. Cards are easily accessible for users who can search through the drawers and locate the necessary information.

iv. The uniform size of the card is 12.5x7.5xcm.

Advantages of a Card Catalogue

i. Easy to Update: One of the key advantages of a card catalogue is its flexibility. New entries can be easily added by placing new cards into the appropriate drawer or section. Withdrawals or removals of outdated or deaccessioned materials are also simple, as cards can be easily replaced or taken out without disrupting the overall organization of the system.

ii. Portability and Convenience: The compact nature of individual cards makes the card catalogue portable and convenient.

iii. Multiple Access Points: A single bibliographic entry often results in multiple cards, each representing a different way to access the material, such as by author, title, or subject.

iv. Clear Organization: The cards in the catalogue are typically well-organized and easy to understand. Since they are often grouped in an orderly way (alphabetically by author, title, or subject), users can quickly find information without needing to understand complex systems.

Disadvantages of a Card Catalogue

i. No concurrent consultation, as one person can view one tray.

ii. Wear and Tear: Physical wear and tear can be an issue with card catalogues, as the cards may become damaged or folded over time due to constant handling. This can make the system less reliable and less attractive to users, as worn-out cards may be difficult to read or may not be properly filed.

iii. Space Constraints: A card catalogue requires significant physical space, especially in larger libraries with extensive

collections. As the number of entries grows, more and more filing cabinets are needed to store the cards, which can lead to space management challenges.

iv. Difficulty in Duplication: Unlike electronic systems that can easily duplicate and distribute copies of catalogues, a card catalogue is difficult to replicate or share.

v. Limited Search Capability: Although users can search by author, title, and subject, the manual searching process in a card catalogue can be time-consuming.

vi. Maintenance: As collections grow, maintaining and updating the card catalogue becomes more difficult.

9.4 BIBLIOGRAPHIC STANDARDS

Bibliographic standards are established rules that ensure consistency in bibliographic descriptions, enabling the seamless exchange of data across various systems and countries. The International Standard Bibliographic Description (ISBD), developed by the International Federation of Library Associations and Institutions (IFLA), is a key standard in this field.

The primary goal of bibliographic standards, particularly the International Standard Bibliographic Description, is to promote universal bibliographic control. This ensures that basic bibliographic data is readily and universally available in a standardized format for all published resources across different countries.

ISBD establishes guidelines for selecting and organizing bibliographic data elements, specifying punctuation to maintain consistency in bibliographic descriptions. It facilitates uniform descriptive cataloguing worldwide, enhancing the international exchange of bibliographic records.

ISBD organizes bibliographic descriptions into eight key areas:

1. Title and statement of responsibility
2. Edition
3. Material or type of resource-specific details
4. Publication, production, and distribution

5. Physical description
6. Series
7. Notes
8. Resource identifier and terms of availability

The objectives of Bibliographic standard include-

- Establish globally compatible descriptive cataloguing standards.
- Support different levels of bibliographic descriptions for various institutions, including national libraries, universities, and research collections.
- Define essential descriptive elements to help users identify and select resources.
- Focus on the required data elements rather than their presentation in specific automated systems.
- Consider cost-effective cataloguing practices while developing guidelines.

ISBD originated in 1969 when the IFLA Committee on Cataloguing organized the International Meeting of Cataloguing Experts. In 1971, the International Standard Bibliographic Description for Monographs (ISBD-M) was introduced. The first edition of ISBD was published in 1971, followed by the establishment of specialized groups for its development. In 1977, ISBD(G) was released as a general international standard for describing various types of library resources. In 2021, IFLA updated the 2011 edition to include unpublished resources and provide guidelines for describing component parts of works.

Common Communication Format

The Common Communication Format (CCF) is a standardized system created for sharing bibliographic records between libraries and information organizations. It was developed to ensure compatibility and consistency in data exchange across different computer systems.

CCF was introduced after an international symposium on Bibliographic Exchange Formats, held in Taormina, Sicily, in April 1978. This event was organized by UNESCO's General Information Programme (PGI) along with other global organizations like UNISIST, ICSU-AB, IFLA,

and ISO. The symposium led to the creation of a special group to develop a unified communication format for bibliographic records.

Structure and Components

Each CCF record has four main parts:

1. **Record Label**: A fixed 24-character label that starts each record.
2. **Directory**: A flexible-length section providing information about the data fields.
3. **Data Fields**: Variable-length sections containing the bibliographic data.
4. **Record Separator**: A single character marking the end of a record.

Purpose and Uses

CCF serves three primary functions:

- **Bibliographic Record Exchange**: It supports the exchange of bibliographic records between libraries and abstracting and indexing services.
- **Uniform Data Processing**: It enables bibliographic agencies to use a single set of software to manage records from various sources.
- **Database Format Framework**: It offers a structure for an agency's bibliographic database by providing a list of useful data elements.

9.5 STANDARDS FOR MACHINE-READABLE RECORD FORMAT

MARC standards are a set of digital formats designed for the machine-readable representation of bibliographic and related information in library catalogues. These standards ensure efficient data exchange and interoperability across library systems.

MARC components:

i. Field Designations: Each field provides specific bibliographic details, such as the author, title, publisher, publication date, language, and media type.

- Fields are identified by three-digit numeric codes ranging from 001 to 999.

- Commonly used fields:
    - 100: Primary author
    - 245: Title
    - 260: Publisher details (subfields: a for place of publication, b for publisher name, c for publication date)
- Fields above 008 are further divided into subfields, using a single letter or number for categorization.

ii. Record Structure:

- MARC records are stored and transmitted as binary files, often containing multiple concatenated records. The structure follows the ISO 2709 standard, which defines record delimiters and a directory for locating fields and subfields.
- A MARC record includes:
    - **Leader**: A fixed-length, 24-character section containing coded values for processing.
    - **Directory**: Provides tags, starting locations, and field lengths.
    - **Variable fields**: Contain actual bibliographic data.

MARC 21

MARC 21 is an updated version of the original MARC format, developed for global accessibility. It emerged from the merger of USMARC and CAN/ MARC formats and follows the NISO/ANSI standard Z39.2, ensuring compatibility across different library systems.

It Supports MARC-8 and UTF-8 (Unicode) character sets.

MARC 21 includes five specialized formats:

1. **Bibliographic Format**: Describes the intellectual and physical characteristics of bibliographic resources.
2. **Authority Format**: Manages standardized name, subject, and title headings, ensuring consistent catalogue entries.
3. **Holdings Format**: Provides location-specific details, such as call numbers, shelf locations, and volume holdings.
4. **Community Format**: Used for cataloguing service providers, including shelters and tax assistance organizations.

5. **Classification Data Format**: Contains classification schemes like the Library of Congress Classification (LCC).



CHECK YOUR PROGRESS

1. State true or false

a. Printed catalogues are a type of non-conventional physical catalogue.

b. A classified catalogue arranges materials based on subject classification.

c. Dictionary catalogues organize entries in alphabetical order by author, title, or subject.

d. The alphabetical-classified catalogue follows only alphabetical order.

e. The International Standard Bibliographic Description (ISBD) ensures uniformity in bibliographic records.

f. MARC is a standard format for digital cataloguing.



9.6 LET US SUM UP

Library catalogues exist in two main forms: physical and inner. The physical form includes conventional and non-conventional types. Conventional forms comprise printed catalogues, which are bound volumes of bibliographic records, card catalogues, where entries are written on index cards stored in cabinets, and sheaf catalogues, which use loose-leaf entries in binders for easy updates. Non-conventional forms include the visible index, where cards are displayed in hinged pockets, microform catalogues, which store entries on microfilm or microfiche for space efficiency, and machine-readable catalogues, which use magnetic tapes or digital storage for quick searches and easy updates. The inner form refers to how catalogue entries are organized, with key types including classified catalogues, which arrange materials by subject classification, dictionary catalogues, which list entries alphabetically by author, title, or subject, and alphabetical-classified catalogues, which blend alphabetical and classified structures for more

comprehensive searchability. To maintain standardization in cataloguing, bibliographic standards such as the International Standard Bibliographic Description (ISBD) ensure uniformity in bibliographic records, while machine-readable formats like MARC (Machine-Readable Cataloguing) enable seamless data exchange and integration across libraries.



9.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to 1. a. False

b. True

c. True

d. False

e. True

f. True



9.8 FURTHER READINGS

Chan, L. M., & Salaba, A. (2015). *Cataloging and classification: An introduction* (4th ed.). Rowman & Littlefield.

International Federation of Library Associations and Institutions (IFLA). (2011). *ISBD: International Standard Bibliographic Description*. Walter de Gruyter.

Miksa, F. (2019). *The development of classification at the Library of Congress*. Library of Congress.



9.9 MODEL QUESTIONS

1. What is a sheaf catalogue?
2. What does ISBD stand for?
3. What is the purpose of a classified catalogue?
4. How are entries arranged in a dictionary catalogue?
5. What does MARC stand for in cataloguing?

6. What is the function of bibliographic standards?
7. Describe the structure and function of a classified catalogue.
8. Discuss the role of bibliographic standards in library cataloguing.
9. How does an alphabetical-classified catalogue combine classification and alphabetical arrangement?
10. What are the main components of the MARC format?
11. How does ISBD contribute to international cataloguing consistency?

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UNIT 10: CATALOGUING OF NON-BOOK MATERIALS

UNIT STRUCTURE

10.1 Learning Objectives

10.2 Introduction

10.2.1 Non print materials

10.3 Types of Non print media

10.4 Cataloguing of Non book materials

10.5 Resource Description and Access

10.6 Let Us Sum Up

10.7 Answer to check Your Progress

10.8 Further Readings

10.9 Model Questions

10.1 LEARNING OBJECTIVES

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

- Define non-book materials and explain their significance in library collections
- Identify the different types of non-book materials commonly found in libraries.
- Describe the cataloging process for non-book materials.
- Learn the concept of Resource Description and Access (RDA)

10.2 INTRODUCTION

Materials that do not rely entirely on printed text to convey information. Non-print materials like audio, video, digital content and other media require special equipment for both use and reproduction. These materials are becoming a vital part of library collections with increase in the digitization. For cataloging these materials, the first step is to be familiar with various

formats and understand both the software and hardware associated with these materials. The cataloguer must keep up with technological advancements and the wide variety of non-print materials available. The cataloguing non-print media requires technical knowledge.

10.2.1 Non print materials

According to Wall (1985), non-print materials must meet three criteria that are the item should appeal to the sight and/or hearing of the user, second is it must require special equipment for usage under normal conditions and the third is printed words should not be the central aspect of the medium.

10.3 TYPES OF NON-PRINT MEDIA

Libraries house a wide variety of materials beyond traditional books. These non-book materials provide diverse information and learning experiences. The common types are:

i. **Audio-Visual Materials:** These resources offer a dynamic way to consume content and are staples in library collections.
   - CDs and Vinyl records: Collections ranging from classical compositions to modern pop hits for music enthusiasts.
   - Audio cassettes: Older recordings of music, radio shows and oral histories.
   - Digital audio files: Formats including MP3s and streaming options, for podcasts, audio books.

ii. **Motion Pictures and Video Recordings:** DVDs and Blu-rays: Provide access to movies, documentaries, and educational videos.
   - Digital video files: It includes formats such as MP4 or streaming services like films, series.

iii. **Graphic Materials:** These materials add visual dimension to library resources, aiding in education and research.
   - Photographs: These are visual documentation for history or personal collection.

- Posters: Visual representation used for advertising or informative resources.
- Maps: It represents the geography. Focus on climate, political boundaries, or historical events.
- Charts: Geographical representations of data in fields like science, economics, etc.
- Art prints: Reproduction of art work, useful for art history and appreciation.
- Slides: Used in educational settings for presentations or scientific purposes.
- Filmstrips: A series of images used for educational purposes, often accompanied by audio narration.

iv. **Electronic Resources:** The digital age has expanded libraries' collections with vast electronic materials.

- E-books: Digital versions of books accessible on various devices. These are non-print materials but use text for conveying information and are catalogued in the same way as the printed books.
- E-journals: Scholarly articles and papers available in digital formats, crucial for academic research.
- Databases: Online collections of articles, research papers, and reference materials across disciplines.
- Software: A variety of programs available for educational or professional use.
- Streaming media: Digital streaming of music, videos, and other multimedia content for easy access and entertainment.

v. **Cartographic Materials:** These materials are vital for geographic studies and travel**.**

- Maps: Essential for studying geography, navigation, history, or local planning.
- Globes: Three-dimensional representations of Earth, useful for learning geography and global studies.

- Atlases: Collections of maps and charts, often focused on a region, country, or thematic subject like climate or population.

vi. Microforms: Microforms preserve large volumes of documents while saving space, making them vital for archiving.

- Microfilm: A type of microform that stores photographic representations of documents on film, primarily used for archiving newspapers and historical records.
- Microfiche: Microfilm and microfiche are used to preserve and minimize the storage space of voluminous records, essential for archiving and providing a compact way to access back issues of newspapers and other documents

vii. Three-Dimensional Objects (Realia): These materials allow for hands-on learning and interaction.

- Models: Miniature physical representations of objects, buildings, or concepts, often used in science, engineering, or education.
- Artifacts: Objects of historical, cultural, or artistic significance that enhance the study of history, archaeology, and anthropology.
- Games: Educational or recreational games, such as board games or puzzle sets, that promote learning through play.

viii. Manuscripts: Original or handwritten documents that offer valuable historical, literary, or academic insights.

- Hand written documents: Includes historical letters, personal journals, and important literary works preserved in their original form.

ix. Musical Scores: These materials are essential for music study and performance.

- Sheet music: Printed or digital representations of musical compositions, used by musicians for performance or analysis.

10.4 CATALOGUING OF NON-BOOK MATERIALS

Cataloging non-book materials involve organizing and describing various non-traditional library resources. These materials require specific cataloging considerations due to their unique formats and information-bearing characteristics.

Cataloguing these materials is essential for achieving bibliographic control, which in turn improves access to library resources, both locally and across networks. However, the rapid development of new formats and information storage techniques makes it difficult to standardize cataloguing procedures for non-print media.

Challenges in cataloguing non-book materials

Challenges in cataloguing non-book materials arise from the unique nature of these resources and the evolving information landscape. These challenges include-

- According to Rogers and Saye; the main challenges in cataloguing non-print media include: The characteristics of the materials; The diverse nature of non-print collections; The needs and characteristics of users; Cataloguing practices and procedures.
- Complexity and Length: Non-book cataloguing records are often more detailed than those for books, requiring careful attention to detail when reviewing existing records. The variety of information available on the item and its container can be confusing.
- Lack of Standardization: Details that are easily found when cataloguing books can be harder to pinpoint for non-book materials. There may be no clear statement of responsibility or publisher listed.
- Evolving Cataloguing Rules: Cataloguing rules are constantly changing, making it difficult to accommodate technological innovations with data created using older rules. The introduction of new cataloguing terms adds to this challenge.
- Technological Skills and Infrastructure: Cataloguers may face challenges related to a lack of ICT skills, library automation, and the

acquisition of e-resources. Low computer literacy among cataloguing staff can also be a hindrance.

- Language Barriers: Assigning subject headings for works in languages that cataloguers do not understand poses a challenge.
- Keeping up with Technology: Cataloguers need to adapt to meet the needs of researchers, students, and the general public as technology changes and information is gathered from numerous sources. This includes keeping up with databases, electronic resources, online catalogues, and e-books.

Cataloguing of non-print media requires cataloguers to be familiar with various elements, such as the General Material Designation (GMD), that specifies the physical features of each format and the associated software and hardware needed. The cataloguing of non-print media in libraries and information centres initiates with selection of the classification scheme to be used and follows the same step as of the books of library. The numbering system for call numbers, the subject heading system selection,

Descriptive cataloguing includes the contexts such as:

Cataloguing Materials as Individual Items or Sets: When dealing with sets of media, a decision must be made whether to catalogue them as a single item with a unified catalogue card or as individual items, linking them through series added entries. If the items in a set are related to a single subject, they can be catalogued together. However, if the items within the set cover different subjects, they should be catalogued separately, each assigned its own class number and subject heading. In such cases, series added entries should be created to link all the materials together.

Added Entries: The number of added entries depends on the level of detail used in cataloguing the material and how users are likely to approach it. At a minimum, title, name, and series added entries should be included. Additional entries may be added as needed based on user requirements.

A catalogue entry for a document can typically be divided into three parts:

- The heading section
- The description section
- The subject description section

In the following sections, we will explore the structure and content of the bibliographic description for non-print media, as well as the sources of information used to create these descriptions.

10.4 BIBLIOGRAPHIC DESCRIPTION

Key areas in the structure of a bibliographic entry include the title, statement of responsibility (author), edition, publication details, and physical description. The bibliographic description of books and periodicals usually focuses on the physical characteristics of the material. However, for Non-Print Media, it is important to provide a more detailed description of the content. This is necessary because Non-Print Media cannot be easily browsed and often require special equipment to be used. Therefore, the description should include detailed information about the creators, such as producers, directors and the subject area. The physical details of the material should also be clearly stated.

International cataloguing standards, like ISBD, provide guidelines for describing Non-Print Media. These standards help organize the description of materials in a clear, consistent way. Additionally, indexing methods like Chain Indexing, POPSI, and PRECIS can be used to help retrieve information from Non-Print Media.

The ISBD (G) is a set of guidelines that lists all the bibliographic elements needed to describe any type of material in a library collection. It also gives a specific order for these elements and a punctuation system to make sure each part is clearly separated.

Sources of description

The non-print media's information of the title, author, and other details may not all be in one place. Instead, it can be spread across different parts of the material. To create a catalogue entry, the information can be gathered from the following sources:

1. The material itself, including its container (like the covers of audio or video cassettes, if they are part of the media).

2. Accompanying material, such as manuals, pamphlets, or any printed documents that come with the non-print media.
3. Outside sources, such as bibliographies, producer brochures, or catalogues.

10.5 RESOURCE DESCRIPTION AND ACCESS

Resource Description and Access (RDA) is a standard for descriptive cataloguing that provides instructions and guidelines for creating bibliographic data. It is designed to be a flexible and comprehensive standard, suitable for describing all types of resources, in any medium.

RDA is the successor to the Anglo-American Cataloguing Rules, Second Edition (AACR2). It was developed to address the changes in information resources and user needs in the digital age. In April 2005, the Joint Steering Committee (JSC) made the decision to transition from the title *Anglo-American Cataloguing Rules* (AACR) to a new working title RDA: Resource Description and Access. RDA is a comprehensive set of guidelines designed to help cataloging professionals formulate data that enhances resource discovery.

Conceptual Models:

RDA is based on conceptual models such as:

Functional Requirements for Bibliographic Records (FRBR): This model defines user tasks and entities in the bibliographic universe. It is a conceptual model developed to organize bibliographic information and guide the creation of bibliographic records. It focuses on the relationships between entities (such as works, authors, and publications) and the key attributes of these entities. FRBR aims to structure bibliographic data in a way that enhances resource discovery, particularly by aligning with specific user tasks. These tasks include:

1. **Find**: Enabling users to locate resources based on their search criteria.
2. **Identify**: Assisting users in confirming that the resource they've found matches their search intentions, or distinguishing between similar resources.

3. **Select**: Helping users choose a resource that best meets their needs.
4. **Obtain**: Enabling users to acquire or access the resource they have selected.

FRBR also recommends specific elements that should be included in national bibliographic records to ensure consistency and quality in metadata. RDA is built on the principles and framework provided by FRBR. It incorporates the following key aspects from FRBR:

- **Terminology**: RDA adopts FRBR's vocabulary, such as the use of the terms work, expression, manifestation, and item. These terms help clarify the different levels of bibliographic entities. For instance:
    - **Work** refers to the intellectual or artistic creation, such as a novel or a symphony.
    - **Expression** refers to the specific realization of a work, such as a particular translation or version.
    - **Manifestation** refers to a physical or digital embodiment of an expression, like a book or a digital file.
    - **Item** refers to a single instance of a manifestation, such as a copy of a book held in a library.
- **Attributes**: RDA uses FRBR's attributes (like title, author, date, publisher) as the foundation for specific data elements to be included in bibliographic descriptions. These elements help create a rich and structured description of each resource and its relationships to other resources and entities.
- **Relationships**: RDA reflects the FRBR model's emphasis on the relationships between entities. For example, the relationship between an author and a work, or between a work and its various manifestations (such as printed editions or digital formats), is crucial for ensuring users can easily discover the appropriate resource.
- **User Tasks**: RDA embraces the user tasks identified by FRBR (Find, Identify, Select, Obtain) as guiding principles for defining mandatory data elements. This ensures that bibliographic records are designed

to assist users in performing these tasks effectively.

Functional Requirements for Authority Data (FRAD): This model focuses on authority data and its role in information retrieval. It is a conceptual model that provides a structured framework for understanding the functional requirements of authority data. This model is essential for supporting authority control and ensuring the international sharing of authority data across various systems and institutions. The concept of authority control refers to the practice of maintaining consistency in the names and terms used in bibliographic records, ensuring that users can reliably identify and access resources associated with particular entities (e.g., authors, subjects, or organizations).

The primary aim of FRAD is to establish an analytical framework for analysing the functional needs of authority data. It does so by focusing on the data itself, irrespective of the format in which it is presented, such as authority records, databases, or other systems. This flexibility ensures that the model can be applied broadly, accommodating various ways of packaging and sharing authority data across different platforms.

Specific Objectives of FRAD

1. **Providing a Structured Frame of Reference**: FRAD is designed to offer a clear, structured reference for relating authority data recorded in authority records to the needs of users. This means it assists in defining how authority data should be organized and presented in a way that supports effective user interaction and resource discovery.
2. **Supporting International Sharing of Authority Data**: A core feature of FRAD is its emphasis on facilitating the international sharing of authority data. The model aids in assessing the potential for sharing authority data both within the library sector and beyond, in areas such as archives, museums, or digital repositories. By establishing standards for authority records, FRAD promotes interoperability across institutions and countries, allowing different systems to share and use authority data efficiently. This global

approach ensures that users across the world can access consistent and reliable authority data, regardless of where the data originates.

Key Benefits of FRAD

- **Authority Control**: By structuring authority data in a consistent and standardized way, FRAD supports authority control, which improves the accuracy and reliability of information about entities. This is critical for eliminating confusion when similar or identical names exist across different resources.
- **Consistency Across Systems**: FRAD ensures that authority data is organized in a manner that can be consistently applied across different cataloguing systems, databases, and institutions, promoting seamless resource discovery across platforms.
- **Facilitating Interoperability**: FRAD plays a pivotal role in the international exchange of authority data, fostering collaboration and sharing between libraries, archives, museums, and other information institutions globally.

Flexibility and Extensibility: RDA provides a flexible framework that can be adapted to describe a wide range of resources, including digital resources and those with complex characteristics. It is designed to be extensible to accommodate new types of materials and technologies.

Emphasis on Relationships: RDA places a strong emphasis on describing relationships between entities, such as works, expressions, manifestations, and items. This helps users understand the context of a resource and find related materials.

RDA Toolkit: The RDA Toolkit is an online platform that provides access to the RDA standard, as well as related resources and tools.

Significance of RDA-

Improved Resource Discovery: RDA helps to create more accurate and detailed bibliographic records, which improves resource discovery for users.

Enhanced Interoperability: RDA promotes the use of standardized data, which enhances interoperability between library systems and other information resources.

Adaptability to the Digital Environment: RDA is designed to be compatible with the digital environment, which is essential for libraries in the 21st century.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. _____ensures that names and terms are consistent across bibliographic records, making it easier to find and identify related resources.

b. Microfilm and microfiche are types of _____ used for preserving and minimizing the storage space of voluminous records.

c. FRAD stands for_____.



10.6 LET US SUM UP

We have discussed the importance and challenges of cataloguing non-print materials in libraries, which include resources like audio-visual materials, motion pictures, digital content, graphic materials, microforms, cartographic materials, three-dimensional objects, and manuscripts. These materials require specialized equipment for use and are becoming increasingly vital as libraries digitize their collections.

Cataloguing non-print materials requires a deep understanding of their unique characteristics, technology, and cataloguing procedures. Challenges include complexity, lack of standardization, evolving cataloguing rules, and the need for technological skills. Non-print media must be described in more detail compared to books, focusing on creators, physical details, and the technology required for access.

The bibliographic description of non-print materials follows international standards like ISBD and RDA. RDA (Resource Description and Access) is a flexible standard designed for the digital age and is based on conceptual models like FRBR (Functional Requirements for Bibliographic Records) and FRAD (Functional Requirements for Authority Data), which enhance resource discovery and ensure authority control across systems.

The overall aim is to improve the organization, discovery, and accessibility of diverse resources in a rapidly evolving technological landscape.



10.7 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. Authority control

b. microforms

c. Functional Requirements for Authority Data



10.8 FURTHER READINGS

Chan, L. M. (2015). *Cataloging and classification: An introduction* (8th ed.). Libraries Unlimited.

IFLA. (2009). *Functional requirements for authority data (FRAD): Final report*. International Federation of Library Associations and Institutions. https://www.ifla.org/publications/functional-requirements-for-authority-data

RDA Steering Committee. (2020). *RDA: Resource description and access*. RDA Toolkit. https://www.rdatoolkit.org/



10.9 MODEL QUESTIONS

1. What are non-book materials in the context of libraries?
2. Name three common types of non-book materials found in libraries.
3. What is the primary challenge in cataloguing non-print media?
4. What is the role of FRBR in the cataloguing process?
5. Why is the cataloguing of non-book materials considered more detailed than traditional books?
6. Discuss the importance of cataloguing non-book materials in libraries and the challenges faced in the cataloguing process.

7. Explain the role of Resource Description and Access (RDA) in the cataloguing of non-book materials and its relationship with FRBR.
8. How does the Functional Requirements for Authority Data (FRAD) model help in the management and sharing of authority data in library cataloguing?
9. What are the different sources of description used in cataloguing non-book materials.

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UNIT 11: BASIC OF SUBJECT INDEXING

UNIT STRUCTURE

11.1 Learning Objectives

11.2 Introduction

11.3 Index

11.4 Indexing

- 11.4.1 Subject Indexing
- 11.4.2 Purpose of Indexing
- 11.4.3 Indexing Principles
- 11.4.4 Indexing Policy
- 11.4.5 Types of Indexing

11.5 Indexing Process

11.6 Evolution of Indexing

11.7 Cataloguing and indexing

11.8 Let Us Sum Up

11.9 Answer to check Your Progress

11.10 Further Readings

11.11 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- Define and explain Subject Indexing
- Understand the Indexing Process
- Learn Indexing Principles

11.2 INTRODUCTION

In this unit we are going to explore the fundamental concepts, principles, and processes of subject indexing. The next step after cataloguing and classification in document processing is indexing that facilitates retrieval.

We will address the key challenges in indexing. Understanding these basics is essential for librarians, researchers, and information professionals aiming to improve information organization and accessibility.

Among the various techniques employed for efficient information retrieval, subject indexing holds a significant place. It is the process of analysing and representing the subject matter of documents to facilitate their retrieval based on topics rather than just titles or authors.

Historically, subject indexing evolved alongside the growth of libraries, with early forms appearing in ancient Rome, where the use of bibliographic lists and systematic arrangements of subjects were common. With the increasing complexity of information resources in the 19th and 20th centuries, indexing systems evolved to become sophisticated, incorporating standardized vocabularies and classification structures.

Subject indexing serves multiple purposes, including enhancing information retrieval, improving search precision, and ensuring consistency in how subjects are represented. Unlike descriptive cataloguing, which focuses on bibliographic details like author and title, subject indexing delves into the thematic content of documents, making it easier for users to find relevant materials based on specific topics.

11.3 INDEX

The origin of the term “index” traces back to its Latin root *indicare*, which means “to point out, to guide, to direct, to locate. An index is a systematically arranged list of terms, concepts, or items that provides references to the location of related information within a document, database, or collection of records. It serves as a guide to help users quickly locate specific topics or subjects without having to browse the entire content.

According to the British Standards (BS 3700: 1964), an index is:

“A systematic guide to the text of any reading matter or to the contents of other collected documentary material, comprising a series of entries, with headings arranged in alphabetical or other chosen order and with references to show where each item indexed is located.”

Types of Indexes:

1. **Back-of-the-Book Index** – Found at the end of books, listing important topics with page numbers.
2. **Subject Index** – Organizes content by topics to facilitate retrieval in libraries or databases.
3. **Citation Index** – Lists references cited in scholarly works, aiding research tracking.
4. **Keyword Index** – Uses important words from titles or abstracts for document retrieval.

Web Indexing – Used in search engines to catalogue and retrieve online information.

11.4 INDEXING

Indexing is the process of analysing and representing the content of a document or information resource to facilitate efficient retrieval. It involves assigning subject terms, keywords, or classification codes to documents, making it easier for users to locate relevant information. An index serves as a structured guide, helping users access documents based on subject matter rather than just bibliographic details like title or author.

11.4.1 Subject Indexing

Subject indexing is the process of analysing and representing the content of documents in a structured manner to facilitate efficient retrieval based on topics. It provides a verbal subject approach to information resources by assigning subject terms or headings to materials, ensuring that users can locate relevant documents based on their subject matter.

Subject indexing serves as a key component of information retrieval systems, particularly in libraries and databases. It involves:

- The identification and assignment of subject terms to represent the conceptual content of documents.
- The creation of index records that allow users to retrieve materials on a given topic.

- The differentiation between subject cataloguing (which deals with whole books or documents) and subject indexing (which applies to smaller units like journal articles or research papers).

The use of controlled vocabulary and standard indexing rules are important to ensure consistency and accuracy in subject representation. Without proper subject indexing, retrieving specific information from large collections would be difficult and inefficient.

11.4.2 Purpose of Indexing

Indexing helps in information retrieval by organizing content systematically for easy access. The primary goal of indexing is to improve information retrieval by:

1. **Providing subject-based access** – Organizing materials so users can find them based on topics or subject.
2. **Enhancing search efficiency** – Reducing the time and effort needed to locate relevant documents.
3. **Standardizing information retrieval** – Ensuring consistency in how topics are labelled and accessed. Standardizes the representation of topics using controlled vocabularies or classification systems.
4. **Linking related subjects** – Connecting different materials on the same or related topics.
5. **Improving accessibility** – Helps in organizing vast amounts of data, making it easier to navigate extensive archives and digital libraries.
6. **Enhancing Digital and Library Systems** – Improves database searches, library catalogues, and online information systems by structuring content in an organized manner
7. **Supporting Research and Decision-Making** – Helps researchers, professionals, and students find accurate and relevant information efficiently.

11.4.3 Indexing Principles

Indexing is guided by a set of principles that ensure consistency, accuracy, and efficiency in information retrieval. The key principles of indexing are:

1. **User as the Focus** – The subject headings and index terms should align with the way users think and search for information. The index should be designed to match user needs and expectations.
2. **Unity** – A subject index must bring together all documents related to a particular topic under a single heading, regardless of variations in terminology used by authors. The selected term should be unambiguous and distinct.
3. **Common Usage** – The terms used in the index should reflect common language or the vocabulary preferred by the target users, whether general or specialized (scientific, technical, etc.).
4. **Specificity** – Indexing should be as precise as possible, ensuring that terms accurately represent the subject content. Instead of broad headings, more specific subject terms should be used.

11.4.4 Indexing Policy

To apply these principles effectively, an indexing policy must be established. This includes:

- **Exhaustivity in Indexing** – Determining how detailed the indexing should be (i.e., whether to include all topics in a document or just the primary ones). High exhaustivity improves recall (finding all relevant documents), but may retrieve irrelevant items.
- **Specificity in Indexing** – Ensuring that the indexing terms match the exact subject of the document. High specificity improves precision (retrieving only the most relevant documents).

By maintaining a balance between **exhaustivity** and **specificity**, indexing can effectively support accurate and efficient information retrieval.

11.4.5 Types of Indexing

i. **Pre-Coordinate Indexing** – Subject terms are arranged in a specific order before being stored, as seen in traditional library catalogues and subject heading lists (e.g., Library of Congress Subject Headings).

ii. **Post-Coordinate Indexing** – Subject terms are assigned individually and combined at the time of search, commonly used in digital databases and search engines.

Challenges in Indexing

- **Ambiguity in subject terms** – Different words may be used for the same concept.
- **Choice of indexing depth** – Deciding how detailed the index should be.
- **Consistency issues** – Variability among different indexers leading to inconsistent results.
- **Updating and maintenance** – Keeping the index relevant as new information emerges.

11.5 INDEXING PROCESS

The indexing process involves several intellectual and technical steps to analyse, represent, and organize the content of a document for efficient retrieval.

I. Conceptual Analysis

This stage focuses on understanding the document's content and identifying its key subject areas. It includes:

a) Examining the Document and Establishing its Subject Content: The indexer reviews the document carefully to determine its main themes and subject matter. Key areas examined include the title, abstract, introduction, conclusion, table of contents, headings, figures, and highlighted terms.

b) Identifying Principal Concepts: The indexer selects the most important concepts and keywords that best represent the document's subject.

Concepts are chosen based on their relevance and significance to potential users.

II. Translation into Indexing Language

Once the key concepts are identified, they are converted into an indexing language for consistent representation. This stage involves:

a) Selecting Indexing Terms: Choosing standardized terms from a controlled vocabulary, thesaurus, or classification system. If a term is not available, the indexer may create a new term or select the closest existing term.

b) Structuring the Index: Organizing terms into searchable format, such as alphabetical, hierarchical, or classified arrangements. Ensuring relationships between related terms (e.g., broader, narrower, or related terms) are clearly defined.

c) Applying Indexing Rules: Following standard indexing rules to maintain consistency, accuracy, and completeness. Ensuring specificity (using precise terms) and exhaustivity (covering all essential topics).

III. Evaluation and Quality Control

It involves reviewing the index to ensure accuracy and consistency. Checking for errors, redundancies, and missing terms. Testing the index for retrieval effectiveness (ensuring that relevant documents can be easily found).

11.6 EVOLUTION OF INDEXING

The process of indexing has evolved over centuries, adapting to the growing complexity of information and advancements in technology. From early bibliographic lists to sophisticated computerized retrieval systems, indexing has played a crucial role in organizing knowledge.

Ancient and Medieval Indexing

The earliest known indexing practices date back to ancient Rome, where the term *index* referred to labels on papyrus scrolls to identify content. By the 13th century, libraries began using alphabetical author indexes in systematic subject arrangements. The 15th century saw the rise of university libraries, which introduced more structured subject classifications.

Systematic Subject Indexing

- Charles Ammi Cutter (1876) introduced the Rules for a Dictionary Catalogue, providing guidelines for subject cataloguing.
- The Library of Congress Subject Headings (LCSH) and Sears List of Subject Headings were developed, standardizing subject indexing for libraries.
- Melvil Dewey introduced the Dewey Decimal Classification (DDC**)** in 1876, incorporating a subject index within classification systems.

Early 20th Century: Pre-Coordinate Indexing Systems

- Julius Kaiser's Systematic Indexing (1911) introduced the idea of categorizing terms into concretes and processes.
- S. R. Ranganathan's Chain Indexing (1934) revolutionized subject representation using classification schemes.
- E. J. Coates (1960s) refined indexing by synthesizing earlier ideas into a structured approach.

Mid-20th Century: Post-Coordinate and Automated Indexing

- Post-coordinate indexing systems like Uniterm Indexing emerged in the 1960s, allowing for more flexible subject retrieval.
- The Keyword-In-Context (KWIC) index, developed by H. P. Luhn in the 1950s, was among the first computer-generated indexes.
- Citation indexing was introduced by Eugene Garfield in 1963 with the launch of the Science Citation Index (SCI).

Digital and AI-Based Indexing

- PRECIS (Preserved Context Index System) by Derek Austin (1971) used computers for generating index entries.
- POPSI (Postulate-based Permuted Subject Indexing) provided a flexible rule-based indexing approach.
- The rise of online databases and digital libraries led to the development of Boolean search techniques and automated indexing tools.

21st Century: Web Indexing and AI-Driven Systems

- Search engines like Google revolutionized indexing using web

crawlers and algorithms.

- Artificial Intelligence (AI) and Natural Language Processing (NLP) are now used to improve indexing accuracy and relevance.
- Semantic indexing and machine learning help refine search results and understand user intent.

11.7 CATALOGUING AND INDEXING

Cataloguing and indexing are related processes, but they serve different purposes and are applied at different levels of detail.

Both cataloguing and indexing are part of the process of organizing and representing information in a way that makes it accessible. Both involve assigning labels or terms to describe the subject matter of a document. They both aim to help users locate and identify relevant content, but they do so in different ways and for different purposes.

Cataloguing involves creating a bibliographic description of the document. Indexing, on the other hand, delves deeper into the document's content. It involves analysing the document in more detail and providing access to specific concepts, themes, or parts of the document. A back-of-the-book index is an example of subject indexing, where hundreds of subject terms are provided, each representing a specific part of the document.

Cataloguing typically assigns a few subject headings or terms to represent the overall subject matter of a document. Indexing can assign many more subject terms, which represent the detailed contents within the document.

Cataloguing is typically used in library catalogues, where documents are classified and grouped based on broad subject categories, helping users identify which document may be of interest. Indexing is commonly found in books, periodicals, and databases. It breaks down the content into finer details, helping users find specific information within the document itself (e.g., a particular chapter or topic). In practice, however, these terms are often used interchangeably because the process of indexing can also involve cataloguing the subject matter of an entire document.

Controlled Vocabulary – A controlled vocabulary is a standardized set of terms used to describe the contents or subject matter of resources in a consistent and structured way. It's essential for organizing information in libraries, databases, and other information systems. The goal is to eliminate the ambiguity and inconsistencies that arise from the natural use of language, improving the accuracy and efficiency of information retrieval. (e.g., Library of Congress Subject Headings, Thesauri ensure consistency and accuracy).

One term is selected as the preferred or official term to represent a concept. This avoids the confusion of using multiple terms for the same idea. Homographs are words that are spelled the same but have different meanings (e.g., "lead" as in the metal and "lead" as in to guide). Homonyms are words that sound the same but have different meanings (e.g., "bank" as in the financial institution and "bank" as in the side of a river). Controlled vocabularies help clarify and distinguish between these terms to prevent confusion.

The primary goal of controlled vocabulary is to ensure consistency in how subjects are represented and improve the retrieval of information. By managing synonyms, homographs, and relationships between terms, it ensures that different people will use the same terms to describe the same concepts, and helps prevent the chaos of inconsistent language use.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. The term "index" comes from the Latin word_____, which means "to point out, to guide, to direct, to locate."

b. A _____index is typically found at the end of books, listing important topics with page numbers.

c. _____indexing refers to the process of assigning subject terms individually and combining them at the time of search.

d. _____indexing involves assigning subject terms in a pre-determined order before being stored in a system, as seen in traditional library catalogues.



11.8 LET US SUM UP

The subject indexing plays a pivotal role in the organization and retrieval of information, enabling users to access relevant content efficiently by focusing on the subject matter of documents rather than just bibliographic details. Through the careful process of analysing, selecting, and organizing key concepts, indexing enhances search precision, improves accessibility, and ensures consistency in information systems. The evolution of indexing, from early manual systems to modern AI-driven approaches, highlights its growing importance in handling increasingly complex information resources. By adhering to indexing principles and employing controlled vocabularies, indexing ensures accurate and effective retrieval, making it an essential tool for researchers, librarians, and information professionals striving to improve information organization and accessibility.

Indexing is a fundamental tool in information retrieval, playing a crucial role in libraries, archives, databases, and digital search engines. By systematically organizing subject matter, indexing enhances discoverability and access, making knowledge resources more useful and efficient for users.



11.9 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. indicare

b. Back-of-the-Book

c. post-coordinate

d. Pre-coordinate



11.10 FURTHER READINGS

Broughton, V. (2006). *Introduction to cataloguing and classification* (10th ed.). Libraries Unlimited.

Lancaster, F. W. (2003). *Indexing and abstracting in theory and practice*

(2nd ed.). Facet Publishing.

Taylor, A. G. (2004). *The organization of information* (3rd ed.). Libraries Unlimited.



11.11 MODEL QUESTIONS

1. What is the primary purpose of subject indexing?
2. What is the difference between cataloguing and indexing?
3. What is meant by “post-coordinate indexing”?
4. What does “controlled vocabulary” ensure in indexing?
5. Name a key principle of indexing.
6. Explain the process of subject indexing and its role in information retrieval systems.
7. Describe pre-coordinate and post-coordinate indexing.
8. Discuss the challenges faced in indexing.
9. What are the key principles of indexing, and why is each principle important for accurate and consistent indexing?
10. How does controlled vocabulary contribute to effective subject indexing and reduce ambiguity in information retrieval?
11. Describe the evolution of indexing.
12. Explain the relationship between cataloguing and indexing.

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UNIT 12: SUBJECT HEADINGS

UNIT STRUCTURE

12.1 Learning Objectives

12.2 Introduction

12.3 Subject Heading

12.4 Principles for Subject Headings

12.5 Types of Lists of Subject Headings

12.5.1 Library of Congress Subject Headings

12.5.2 Sears List of Subject Headings

12.6 Chain Procedure

12.7 Let Us Sum Up

12.8 Answer to check Your Progress

12.9 Further Readings

12.10 Model Questions

12.1 LEARNING OBJECTIVES

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

- Understand the concept and importance of subject headings.
- Explain standardized subject heading lists like LCSH and SLSH.
- Describe the advantage and disadvantages of the Chain Procedure method.

12.2 INTRODUCTION

The users typically retrieve documents based on their subjects to gain insights on the topic. To facilitate this, significant effort is made to provide comprehensive representation of subjects, including numerous cross-references that guide users to various aspects of a subject. In this context Subject Headings act as the authoritative resource for the topics.

12.3 SUBJECT HEADING

The Subject Headings provide a standardized list of headings for cataloguing, offering patterns and examples to assist cataloguers. As new works are published on emerging topics, there may be a need for new subject headings. These can be created by either introducing entirely new terms or by subdividing existing headings. The List of Subject Headings offers guidelines on how to develop new headings based on established patterns, along with rules for selecting appropriate wording and applying subdivisions.

The flexibility of the List of Subject Heading (LSH) enables it to evolve over time to meet the needs of various libraries. The level of detail for a library's collection depends on the materials it acquires. While some specialized topics may not be required in every library, general subjects might need specific headings, such as adding "dog" under the broader category of "animal." This ensures that the same heading is consistently used for all works on a particular subject, each heading accurately represents only that specific subject, and all headings adhere to the established forms.

Need of Subject Heading

The catalogue fulfills the enquiry or the need of the library resource by author, editor, title, series and by subject. This information can be found easily on the title page or other page. In academic libraries or special libraries, the most useful approach to get a book or resource is through subject, as researchers usually require document for their gain knowledge about subject contents.

During classification the most specific class number that is co-extensive with the thought content of the book and brings together like subject. Subject cataloguing also does the same function through verbal heading instead of notation. The purpose is quite similar. Cutter brought a catalogue code title "Rules for a Dictionary Catalogue" that provide guideline for the choice of subject headings. American Library Association's "List of Subject Headings" has also given some basic principles to provide Subject Headings. Minnie Earl Sear had also complied "Sears List of Subject

Heading" in 1923.

Definition of Subject Heading

Subject heading according to the expert are as follows-

- **Margaret Mann** defines a subject heading as the word or phrase used on catalogue cards to represent the theme or topic of a book.
- **Maurice F. Tauber** describes it as word groups used to convey the subject content of a document. In other words, a subject heading is a statement that indicates the specific subject addressed in a book.
- **H.D. Sharma** explains that the term "subject heading" refers to a word or group of words used in cataloguing, indexing, or documentation to describe the subject matter of a book. It serves as a miniature summary of the book.

Assigning Subject Headings

The users come to a library with primary goal of finding documents or information on a specific subject. A subject-based approach is essential for accessing and utilizing documents in a library. The first and most crucial step in subject cataloguing is identifying the true subject of the resource being catalogued. It is the prime concern for the cataloguer. The subject analysis not just work as sorting through resources and fitting them into pre-existing categories but also a key word to be used by user. Determining the subject of a work cannot always be done by relying on the title alone, as it may be unclear or misleading, leading to potential errors. The cataloguer must the following steps when assigning a subject heading:

a. Reviewing the title page, the table of contents and skimming through the preface and introduction.
b. Analysing the subject, through examining the text carefully and read relevant sections as necessary.
c. The non-book material's container, label, any accompanying guides should be inspected and if possible, view or listen to the content.
d. Technical terms can be consulted through reference sources for clarification.

The principle of specific and direct entry is fundamental in modern subject cataloguing. A work should be entered directly under the most specific

subject heading that accurately represents its content. The subject heading should neither be too broad nor too narrow but should align exactly with the scope of the work.

12.4 PRINCIPLES FOR SUBJECT HEADINGS

To maintain consistency and uniformity in subject headings for books or parts of books on the same topic, there must be a standardized system or a carefully curated list of subject headings. This ensures that appropriate and consistent headings are used.

Literary Warrant: The terminology chosen for subject headings should reflect the language commonly used in literature or scholarly work in a particular field. It ensures the terms are based on actual usage in books, articles, and other resources.

Uniform Heading: Subject headings should follow standard and contemporary English-language usage, preferring terms that are well-known to most people rather than technical jargon. They must be neutral and inclusive, especially when dealing with potentially sensitive or controversial topics. The synonyms or variations of terms are linked to the preferred, authorized heading to guide users to the correct search term.

Unique Heading: Each subject heading should refer to only one concept. If a term could represent more than one topic, it should be clarified to avoid confusion. For example, the term “Venus” could be split into different headings like “Venus (Planet),” “Venus (Roman deity),” and “Venus (Bird)” to clearly distinguish between the different meanings. In cases where necessary, a heading-subheading combination is used to provide further context.

Specific Entry: Subject headings should be as precise as possible, using specific terms rather than broad or general ones. Sometimes, terms can be so narrow that they are not widely searched, and in those cases, broader terms may be used instead.

Consistency: A subject heading may evolve or change over time, they should remain consistent in their form and structure, especially across

different editions. This helps create a predictable and reliable system for users. However, when changes are made, such as updating old terms to more current ones, the catalog records must also be updated accordingly.

Dynamism: Subject headings must be continuously updated to stay relevant. Language and terminology evolve, and so should subject headings. For instance, terms that were once considered appropriate, like “Handicapped,” are updated to reflect more current and respectful language, such as “People with disabilities.” Other examples include simplifying complex terms (e.g., “Internet (Computer network)” is now simply “Internet”) and updating outdated concepts.

Pre-coordination and Post-coordination: The LSH system generally uses a pre-coordination approach, where multiple elements (such as topics, regions, and time periods) are combined into a single heading. The post-coordination is sometimes necessary for more complex topics, allowing users to combine different headings or keywords in their searches. For example, a user might search for “Architecture, Roman—Great Britain” if they are looking for more specific information about Roman baths in Britain.

12.5 TYPES OF LISTS OF SUBJECT HEADINGS

Crestadoro introduced the idea of standardizing subject headings for cataloguing books and materials in his book *The Art of Making Catalogues*. In 1895, the American Library Association (ALA) published the first official list of subject headings called *List of Subject Headings for Use in Dictionary Catalogues*. This list was developed by a committee that included C.A. Cutter, a key figure in library science. It was discontinued when the Library of Congress (LC) started publishing its own list, called *Subject Headings Used in the Dictionary Catalogues of the Library of Congress*.

The two standardized lists of subject headings that are widely used are:

- **Library of Congress Subject Headings (LCSH)**
- **Sears List of Subject Headings (SLSH)**

12.5.1 Library of Congress Subject Headings

The Library of Congress Subject Headings (LCSH) is a list of subject headings used by libraries, created by the Library of Congress in 1898. Initially, the Library of Congress adopted the ALA's list of subject headings until it developed its own. By 1906, the Library of Congress published a list of subject subdivisions for place names and general topics. The first official printing of LCSH began in 1909 and was completed by 1914.

The 5th edition (1948) introduced "refer from" references to guide users to related topics. In the 1950s, quarterly supplements to LCSH were published. The 6th edition, released in 1957, featured a new format with three columns of subject headings on each page. During the late 20th century, new cataloguing methods emerged, such as "descriptors" and keyword indexes for online catalogues (OPACs). In 1975, LCSH was first published in two volumes, with a microfiche version available in 1976. Throughout the 1980s and 1990s, the Library of Congress worked on enhancing access to LCSH and integrating it with other systems.

These formats made it easier for other libraries to access and utilize LCSH. By 1992, LCSH had expanded to four volumes, and by 1998 (21st edition), it grew to five volumes. The latest edition, the 34th edition from 2012, contains approximately 329,000 subject headings. The Library of Congress maintains the Subject Authority File, a list of authorized subject headings that ensures consistent terminology. This file includes cross-references, and subject authority records are created when a new subject heading is first used, a process known as subject authority control.

The headings represent the content of the material, it can be a term or a phrase. The three kinds of heading that reflects the library materials include-

Topical Headings: These represent a specific concept, idea, or thing. They can include topics like: Things; Concepts (e.g.,

Philosophy); Disciplines (e.g., mathematics); Events, places, organizations, and even fictional characters.

Form/Genre Headings: These describe what the work *is* (its form or style), not what it's about, like a thesis.

Name Headings: These are used when the work is about a person, place, or organization.

- **Personal Names**: For biographies, a subject heading is used for the person being written about.
- **Corporate Names**: For works about companies or organizations.
- **Geographic Names**: Used for places, regions, or areas.
- **Titles**: Used for works discussing other works (e.g., a book about "Pride and Prejudice").

Subdivisions are used to break down a topic into smaller parts or to organize materials with the same main heading. The following subdivisions are used to combine different aspects of a topic into a single heading and to organize entries under the same main heading.

1. **Topical Subdivisions**: These focus on a specific aspect of a topic. These help to refine the concept and make it more detailed.
2. **Geographical Subdivisions**: These show the location or geographic area related to the topic. For example: Climate change—Africa.
3. **Chronological Subdivisions**: These show a specific time period in history. These can also be used for artistic, literary, or music topics (e.g., **French poetry—19th century**).
4. **Form Subdivisions**: These describe what the work is (its format), not what it's about. These show the format, like whether it's a guidebook, an index, or a manual.

12.5.2 Sears List of Subject Headings

The Sears List of Subject Headings (SLSH) was created by Minnie Earl Sears in 1923. It started as a tool for small libraries in the United States to help organize their books and materials with subject headings. Initially, the list was based on the subject headings used by nine small libraries. The first edition only used basic “See” and “refer from” references.

Second Edition was launched in 1926 which included “See also” references to further guide users. The Third Edition (1933) Added a chapter called “Practical Suggestions for the Beginner in Subject Heading Work” to help new cataloguers. Fourth (1939) and Fifth (1944) Editions ware edited by Isabel Stevenson Monro. It Included Dewey Decimal Classification (DDC) numbers alongside subject headings. Sixth Edition (1950) titled it as “Sears List of Subject Headings” dropping “for Small Libraries”. Symbols like “x” and “xx” replaced the old “Refer from” phrases to match the Library of Congress system. “Practical Suggestions” was renamed “Principles of the Sears List of Subject Headings” in the eleventh edition (1972) to focus on “principles” rather than tips and added new sections for non-book materials. The Thirteenth Edition (1986) was updated to handle online catalogues and computer validation. It catered to digital cataloguing tools and modern technologies. Fifteenth Edition (1994) was edited by Joseph Miller. Seventeenth Edition (2000), revised headings for native peoples of the Western Hemisphere, changing headings like “Indians” to “Native Americans.”

Twentieth Edition (2010): Featured hundreds of new subject headings, including topics like rainforest ecology, graphic novels, and climate change. This edition made major revisions for headings related to countries like Russia and India.

The Sears List of Subject Headings uses four main types of subject headings to organize and categorize library materials. These types are:

1. Topical Headings: They are used to describe the main idea or topic of a work. These are the words or phrases that reflect the subject matter of the material. When choosing a topical heading, it is important to consider:

a. Literary Warrant: The most commonly used word in the literature is the best choice for the heading.
b. The heading should follow the common usage of the English language.
c. Maintain uniformity by using one word or phrase for a concept rather than using multiple synonyms.

2. Form Headings: It describe what the work is (its format or structure), not what the work is about. The form headings may include:

- General purpose: Almanacs, Atlases, Directories, Gazetteers.
- Major literary forms: Fiction, Poetry, Drama, Essays (used for collections, not individual works).
- Physical forms (for non-book materials): Puzzles, Sound recordings, Comedy films.

3. Geographic Headings: They are used for places like countries, states, cities, or geographical features. Cataloguers use standard reference sources to establish geographic headings as needed. Like United States, Ohio, Chicago.

4. Name Headings: There are three types of name headings-

- **Personal Names**: These refer to individuals. These are often listed with the last name first (inverted) and include dates if needed. For example:
  - Clinton, Bill, 1946- (with a “See” reference from “Clinton, William Jefferson”).
- **Corporate Names**: These refer to organizations, companies, or events.
- **Uniform Titles**: These are titles of works that are commonly known by a particular name. For example, Literary work: “Beowulf” or “Hamlet” (for a book about Shakespeare’s play).

The Sources for Name Headings include Who's Who; Merriam-Webster's Biographical Dictionary; The Dictionary of National Biography; Encyclopaedia of Associations; Library of Congress Name Authorities on the Web. These sources used to find accurate names for individuals, companies, or organizations that need to be added as subject headings.**x**

Subdivisions- The Sears List includes several types of subdivisions:

1. Topical Subdivisions: These subdivisions show a particular aspect of a subject, like a historical or legal view.

2. Geographic Subdivisions: These subdivisions add a geographic element to a subject, like a country, state, or city. Also, subjects related to literature or arts often use adjectives to show geographic connections (e.g., American authors).

3. Chronological Subdivisions: These subdivisions show a time period or era in history.

4. Form Subdivisions: These show the form or type of the work, not its content. They are used when describing the physical or intellectual form of a material.

References

References are used to guide users from one term to another. These references help users find the correct terms when searching for a subject. The Sears List have codes like BT (broader terms), NT (narrower terms), RT (related terms), SA (See Also), and UF (Used For) to categorize and link terms. There are three types of references**:**

See References: A See reference directs the user from a term that isn't used (unpreferred) to the correct or preferred term. For example, if someone searches for "Digital art" and it's not in the catalogue, they'd be referred to "Electronic art" with a "See" reference, considering the user's age, education, occupation, and library type.

See Also References: A See also reference directs the user from one term to another related term that has already been established.

- For example, if someone searches for “shocks”, the catalogue may have a broader term like “Clothing and dress”. The catalogue would add a “See also shocks” reference under Clothing and dress.

Related term (RT) link closely connected subjects. For example, searching for “Democracy” may refer you to “Republic” (and vice versa), showing their connection.

General References: A General reference directs the cataloguer to create headings when needed and also provides instructions. These references are not specific headings but reminds about the general categories of subjects they may need to create.

A general reference guides cataloguers to create headings when necessary and provides instructions. It is not a specific heading but reminds cataloguers of relevant subject categories. For example, under “Music,” a general reference might say, “See also music genres,” prompting new headings like “Jazz” or “Classical.” It may also suggest using subdivisions when needed, such as “Animals” with a reference to “See also specific animal species,” encouraging headings like “Lions” or “Elephants.”

12.6 CHAIN PROCEDURE

The Chain Procedure method was introduced by Ranganathan in 1938 as part of his library cataloguing theory

Concept of Chain Procedure:

- **Ranganathan’s Idea:** Chain Procedure is a technique for translating class numbers into ordinary language, step by step. Each class number represents a series of divisions from general to specific subjects, and the “chain” of these divisions is used to create subject index entries.
- **Chain Indexing:** This method allows for semi-automatic generation of subject index entries. It helps in providing easier access to information by breaking down the class number into its components and translating it into terms that can be indexed alphabetically.

- **Batty C David's Definition:** Chain Procedure involves deriving index entries by following the subdivisions of a classification system, typically a classification scheme, to give both general and specific access to subjects. The method avoids arbitrary decisions by the indexer.
- **E J Coates' View:** Chain Procedure is a way to construct index entries without rearranging components, by simply listing terms from the classification chain.

Functions of Chain Procedure:

According to **A Thirmalaimuthuswamy**, the main functions of Chain Procedure are:

1. **Deriving Subject Headings:** It helps to create index headings from the class number, providing a clear subject-based index in the catalogue.
2. **Showing Relationships Between Components:** It reveals connections between different parts of a subject that might not be immediately apparent in the classified sequence.
3. **Providing Alphabetical Index:** It serves as a key to find class numbers in the classified catalogue, helping users locate the subject by its class number.

Pre-requisites for Chain Procedure: The book must be classified first, and then catalogued. The class number is assigned based on the subject, before the starting the cataloguing process. The class number assigned should fully represent the specific subject of the book. Though faceted schemes where subjects are broken down into multiple components are more suitable for Chain Procedure, it can still work with enumerative schemes where subjects are listed in fixed categories. The terms used in the class numbers should be general, widely understood, and up to date.

The method of Chain Procedure for creating subject index entries are based on a class number-

i. **Deriving Links from the Class Number**: The process starts by breaking down the class number into a series of links. Each link represents a division of the class number: The first link is formed

from the first digit. The second link uses the first two digits, and so on, until the final link uses all digits in the class number.

ii. **Translating Class Numbers into Natural Language:** After the links are created, each link is translated into natural language i.e. the terms that can be understood easily. Only terms from the classification schedule are used for this translation to ensure consistency and uniformity. The terms are then linked with the equal sign (=).

iii. **Connecting Links with Arrows:** The links are connected with a downward arrow (“!), simply to make the chain visually clear.

Selecting Links:

- **False Links:** Links that end with a connecting symbol, signature symbol, or Time Isolate are considered false links. These don’t help with subject indexing.
- **Unsought Links:** These links are not directly needed for indexing, and whether a link is unsought is up to the library’s discretion.
- **Sought Links:** These are the significant links that will be used for the subject headings in the alphabetical index of the classified catalogue. These links are the ones that provide meaningful subject information.

Process of Writing the Index: At each step in the chain, the rightmost digit is discarded, and the corresponding term (from the classification schedule) becomes part of the subject index entry. This process continues from the last link to the first.

Advantages of Chain Procedure:

a. **Saves time and resources:** It avoids the need to create large subject heading lists, which often don’t fit every library’s needs. Cataloguers don’t have to manually search for specific subjects.

b. **Reduces number of entries:** It eliminates the need to permute components of compound subjects.

c. **Mechanical and Easy to Use:** It provides a simple, almost automatic way of generating subject headings. Cataloguers only need to decide if a link is sought or unsought, making the process more straightforward.

d. **Uniformity and Accuracy:** Chain procedure ensures consistent and accurate subject headings, regardless of who is cataloguing. Unlike compiled subject heading lists, it produces uniform results every time.

e. **Better Coordination Between Classifier and Cataloguer:** The classifier assigns the class number, and the cataloguer creates the subject heading from it. If there's a mistake in the class number, the cataloguer can correct it.

f. **Alphabetical Key to the Catalogue:** Chain procedure creates an alphabetical index that directs users to the exact place in the catalogue, making it easier to find the right subject.

Limitations of Chain Procedure:

a. **Limited Subject Understanding:** Cataloguers don't have the chance to study books from a subject perspective. They only work with the class number.

b. **Dependence on Correct Class Numbers:** If the classifier assigns an incorrect class number, the cataloguer might miss the error, leading to incorrect subject headings.

c. **Relies on Classification Scheme Quality:** The success of the method depends on the classification scheme being well-organized. If the scheme isn't detailed or accurate, the chain procedure won't work well.

d. **Irrelevant Links May Appear:** Sometimes, higher-level links in the chain might not apply to the specific book, which can confuse readers.

e. **Unnatural Sequence of Terms:** The order of terms in compound headings may not match what readers expect.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. _____ provided a catalogue code titled "Rules for a Dictionary Catalogue," which gave guidelines for the choice of subject headings.

b. _____compiled the "Sears List of Subject Headings" in 1923.

c. The Chain Procedure method was introduced by_____ in 1938.

d. _____ helps to derive index headings from class numbers, showing relationships between different subject components.



12.7 LET US SUM UP

The subject cataloguing helps in organizing library materials by accurately representing their content through the use of standardized subject headings. Over the years, systems like the Sears List of Subject Headings have shaped how libraries categorize works by topic, geography, time period, and form. Key principles in subject cataloguing, such as specificity, clarity, and the use of subdivisions, ensure that materials can be easily found by users. The development of systems like the Library of Congress Subject Headings and the List of Subject Headings have further refined subject organization, facilitating efficient retrieval of information. The Chain Indexing method uses the divisions within a classification number to create a chain of related terms, making it easier to generate subject index entries. This method helps establish connections between broader and narrower concepts, providing an effective way to link various aspects of a subject.



12.8 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. Cutter

b. Minnie Earl Sear

c. Ranganathan

d. Chain Procedure



12.9 FURTHER READINGS

Kaula, P. N. (1970, October). Chain indexing. *Herald of Library Science*, *9*(4), 318-325.

Satija, M. P. (2012). *Theory and practice of subject headings: The Sears List*. Today & Tomorrow's Printers.



12.10 MODEL QUESTIONS

1. What is the purpose of subject headings in libraries?
2. What does "Literary Warrant" refer to in subject cataloguing?
3. What is the role of "Name Headings" in subject cataloguing?
4. Write about the need of the subject heading.
5. Explain the principles of subject headings.
6. Describe the key features of the Library of Congress Subject Headings.
7. What is the significance of subdivisions in subject headings?
8. Discuss the advantages and disadvantages of chain indexing.

*** *** ***

UNIT 13: ONLINE CATALOGUING

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Physical catalogue to OPAC

13.4 Online Public Access Catalogue

13.5 Web OPAC

13.6 Online Cataloguing Utility Service

13.7 Let Us Sum Up

13.8 Answer to check Your Progress

13.9 Further Readings

13.10 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- Understand the Transition from Physical Catalogues to OPACs
- Explore the Features of Web OPAC
- Familiarize with OCLC Connexion

13.2 INTRODUCTION

The evolution of library cataloguing systems has undergone a significant transformation with the shift from traditional physical catalogues to digital solutions like Online Public Access Catalogues (OPACs). This transition has been driven by advancements in technology, aiming to enhance the accessibility, efficiency, and user experience of library services. Physical catalogues, once the standard method for organizing bibliographic information, required users to be present in the library and search through manual index cards. In contrast, OPACs, particularly Web OPACs, have revolutionized the way users access library collections, offering remote

access, advanced search capabilities, and integration with multimedia resources. This shift has not only streamlined library operations but also made it easier for users to discover, request, and manage library materials from anywhere in the world.

13.3 PHYSICAL CATALOGUE TO OPAC

The shift from physical catalogues to Online Public Access Catalogues (OPAC) marks a major advancement, driven by technological progress and the need for greater accessibility and efficiency in information retrieval.

Physical Catalogues: Historically, libraries depended on physical catalogues, especially card catalogues, as tangible records of bibliographic information. These catalogues consisted of index cards stored in drawers, with each card representing an individual item in the library's collection. Users had to visit the library in person to access these catalogues, limiting their ability to search for materials quickly. The process involved manually sorting through cards categorized by author, title, or subject, which was time-consuming and cumbersome.

Introduction of OPAC: The first OPAC was introduced in 1975 at Ohio State University, signalling a move towards automated systems that allowed library users to search for materials without the need for librarian assistance. Initially, OPACs were not user-friendly and required precise search terms. However, as technology advanced, OPAC systems became more sophisticated. By the mid-1980s, OPACs began to replace traditional card catalogues in many libraries, and by 2015, physical card catalogues had largely disappeared from library systems.

The shift from physical catalogues to OPACs has fundamentally transformed how libraries function and how users access information. This change underscores the critical role of technology in improving user experience and streamlining information retrieval. As libraries evolve in the digital age, OPACs have come to symbolize efficiency, real-time updates, and a more engaging user experience. This evolution not only addresses

the changing needs of users but also demonstrates libraries' ongoing dedication to providing accessible knowledge in an increasingly digital world.

Differences Between Physical Catalogues and OPAC

The shift from physical catalogues to OPACs introduced several important differences in terms of accessibility and functionality:

- **Accessibility:**
  - *Physical Catalogues:* Accessible only to users who are physically present in the library.
  - *OPAC:* Available remotely via the internet, allowing users to search anytime and from anywhere.
- **Search Capability:**
  - *Physical Catalogues:* Limited to single-criteria searches, such as by author or title.
  - *OPAC:* Supports advanced search features, including multiple criteria and Boolean operators, enabling more efficient and accurate searches.
- **Information Presentation:**
  - *Physical Catalogues:* Provided basic information like author, title, and call number.
  - *OPAC:* Displays detailed information, including availability, summaries, reviews, and links to related resources.
- **Update and Maintenance:**
  - *Physical Catalogues:* Required manual updates for any changes or additions.
  - *OPAC:* Allows for centralized updates, instantly reflecting changes across the system, ensuring accuracy and up-to-date information.
- **Multimedia Integration:**
  - *Physical Catalogues:* Primarily text-based, making it difficult to include multimedia resources.
  - *OPAC:* Capable of handling a variety of materials, including e-books, audiovisual content, and more.
- **User Experience:**

- *Physical Catalogues:* Can be challenging to navigate, especially for users unfamiliar with library classifications.

OPAC: Designed with user-friendly interfaces, making navigation and searching much simpler and more intuitive.

13.4 ONLINE PUBLIC ACCESS CATALOGUE

An Online Public Access Catalogue (OPAC) is an electronic database that contains bibliographic information about the materials held by a library or group of libraries. It serves as a digital replacement for traditional card catalogues, allowing users to search for books, journals, and other resources by title, author, subject, or keyword without the need for librarian assistance. The first public-facing OPAC was introduced at Ohio State University in 1975. Since then, OPACs have evolved significantly with advancements in technology, transitioning from standalone systems to web-based platforms accessible globally.

13.5 WEB OPAC

Web OPAC stands for Web-based Online Public Access Catalogue. It is a digital library catalog that enables users to search and explore a library's collection through the internet or an intranet. Unlike traditional OPACs, Web OPACs uses web technologies to improve user experience and accessibility.

The key features of a Web OPAC (Online Public Access Catalogue):

1. **Z39.50 Protocol Support**: Web OPACs allow libraries to connect and search multiple databases simultaneously using the Z39.50 standard, enabling users to search across various catalogues from one interface.
2. **MARC21 Format Support**: It fully supports MARC21 formats for bibliographic, authority, and holdings data, ensuring standardized representation of library materials.
3. **AACR-II and MARC 21 Format Display**: The search results are displayed in AACR-II (Anglo-American Cataloguing Rules, Second

Edition) and MARC21 tag structure format for better cataloguing and organization.

4. **Web Portal for Libraries**: OPACs serve as a web portal for libraries, allowing users to access information anytime and anywhere through a structured and organized interface.
5. **Hyperlinking to Multimedia**: The bibliographic records can be linked to multimedia files, including tables of contents, CD information, and more.
6. **Electronic Journal Integration**: It enables the integration of electronic journals, providing direct hyperlinks to journal homepages within the catalogue records.
7. **Advanced Search Capabilities**: Users can create both simple and complex searches, browse terms from heading lists, click on hypertext terms for related information, sort results, and execute previous searches from a search history.
8. **Customizable Records**: Libraries can customize the appearance of records, choosing which fields, subfields, and options appear on the Web OPAC interface, including icons, descriptive details, and accompanying text.
9. **Direct Links to Internet Resources**: Web OPACs allow linking to external Internet resources, databases, websites, and other libraries for easy access to a networked world of information.
10. **Interactive**: Users can easily communicate with library staff through custom electronic forms for various requests, such as book orders, suggestions, interlibrary loans, hold requests, and more.
11. **Item Location and Status**: Web OPACs enable users to check the location and availability status of any item in the library.
12. **Self-Service Functions**: Most OPACs facilitate self-service functions like checkouts, renewals, and holds, empowering users to manage their library account.
13. **Comprehensive Search Capabilities**: Users can search for any word or phrase in the catalogue record, making the search highly versatile.

14. **Access to External Databases and Resources**: Today's OPACs can search not only the library's catalogue but also external bibliographic databases, full-text databases, multimedia files (images, audio, video), and other Internet resources.
15. **Relevance Feedback and Email Results**: Some OPACs offer relevance feedback on search results and allow users to send search results to themselves via email.

Advantages of Web OPAC

- **Convenience**: Users can access library resources at any time and from any location.
- **Efficiency**: Advanced search features and user services streamline library interactions.
- **Integration**: Links to external resources enhance the breadth of available information.

Overall, Web OPACs have transformed the way users interact with library collections, offering a more accessible, efficient, and integrated experience compared to traditional OPACs.

Differences Between Traditional OPAC and Web OPAC

1. **Accessibility:**
    - Traditional OPAC: Access is restricted to within the library or campus via a local area network (LAN). Users must either be on-site or connected to the library's network to use the catalog.
    - Web OPAC: Provides remote access through the internet, enabling users to search and interact with the library's collection from anywhere around the globe.
2. **Technology and Interface:**
    - Traditional OPAC: Typically employs a text-based interface or requires specific software to function. It is often integrated into the library's local network and necessitates the use of particular OPAC software.
    - Web OPAC: Leverages web technologies like HTML, offering a more user-friendly graphical interface (GUI). Navigation is

simplified with hyperlinks to various subject areas or disciplines.

3. **Integration and Features:**
   - Traditional OPAC: Primarily designed for searching and retrieving bibliographic information from the library's collection.

   Web OPAC: Includes additional features such as online material requests, renewals, and integration with other digital resources. It can also link to external databases and websites, enhancing the overall user experience.

13.6 ONLINE CATALOGUING UTILITY SERVICE

An online catalogue is machine-readable, meaning its information is stored in a format that computers can interpret. It is interactively accessible, allowing users to connect to it through terminals or workstations that are continuously linked to the central computer. The term "online" refers to being connected to a computer network.

An Online Cataloguing Utility Service typically refers to systems or platforms that offer tools and services for managing and creating bibliographic records in libraries. These services are often part of larger bibliographic utility networks, providing various functionalities to support library operations. Online catalogues can be created from scratch or imported through copy cataloguing. The copy cataloguing process involves obtaining MARC records for newly acquired materials, removing unnecessary fields, and adding the necessary ones. These tasks are automated through programs, making the process more time-efficient, cost-effective, and resource-efficient.

The goal of online cataloguing utilities is to reduce costs and improve productivity. Many websites offer free cataloguing search and download options for retrieved records. These utility services operate at both regional and international levels, offering a wide range of bibliographic support services and products. Bibliographic data in MARC format is available via subscription services, such as those offered by the Library of Congress

and OCLC.

Features of Online Cataloguing Utility Services

i. Bibliographic Record Management: These services offer databases of cataloguing records, typically in formats like MARC (Machine-Readable Cataloguing), which are crucial for organizing and managing library collections.

ii. Union Catalogues: They maintain extensive union catalogues that combine bibliographic records from various libraries, supporting resource sharing and interlibrary loan systems.

iii. Cataloguing Support: These services provide tools for downloading, editing, and creating local records, along with authority control using standard authority files, such as those from the Library of Congress.

iv. Efficiency and Cost-Effectiveness: By automating and optimizing cataloguing tasks, these services improve productivity and reduce the costs associated with manual cataloguing.

v. Integration with Other Services: They are often integrated with other library systems, such as reference searches and electronic content, offering a holistic library experience.

Examples of Bibliographic Utility Networks

Connexion

Connexion is a user-friendly tool developed by OCLC (Online Computer Library Centre) for cataloguing library materials. It provides access to WorldCat, which is the largest and most comprehensive bibliographic database. Connexion is a service provided by OCLC on subscription. Through Connexion, users can both perform original cataloguing and copy cataloguing, contributing and receiving high-quality records that improve the speed and accuracy with which information seekers find what they need. It helps libraries around the world create, manage, and share bibliographic and authority records.

WorldCat itself contains bibliographic records in over 400 languages, encompassing scripts such as Arabic, Bengali, Chinese, Cyrillic, Devanagari, Greek, Hebrew, Japanese, Korean, Latin, Tamil, and Thai, with multiple languages included in each script.

Key Features of OCLC Connexion

i. **Record Creation and Editing:** Connexion enables users to create and edit high-quality bibliographic and authority records, which can be shared with the global OCLC cooperative. This fosters standardization and collaboration among libraries worldwide.

ii. **Search and Retrieval:** Users can search for existing records in WorldCat, the largest global library catalogue, and can also adopt or modify these records for local use. This reduces the need to create new records from scratch, speeding up the cataloguing process.

iii. **Integration with Library Systems:** It integrates with various library management systems, allowing users to seamlessly load and overlay records. This integration streamlines cataloguing workflows and increases efficiency.

iv. **Advanced Search Capabilities:** The tool offers flexible search options across different scripts and languages, including Arabic, Chinese, Japanese, and more. Users can search using various methods such as derived, numeric, and phrase searches across more than 90 indexes, making it easier to find specific records.

v. **Offline Work and Batch Processing:** The Connexion client allows users to work offline and perform batch processing.

vi. **Customization and Productivity Tools:** The client version of Connexion offers features like macros and customizable keyboard shortcuts to improve user productivity.

Interfaces

- **Connexion Client:** This is a Windows desktop application that can be downloaded. It is recommended for institutions that need support for specific character sets.

- **Browser-Based Version:** The browser version was once available; it was discontinued in April 2024. The client version is now preferred because it offers more features and better support for various scripts.

- **Availability:** Connexion is accessible globally, with the exception of Germany and the Netherlands.

Benefits for Libraries

- **Efficiency and Time Savings:** Connexion enables libraries to utilize existing records and supports collaborative cataloguing, allowing them to save time and resources that would otherwise go into creating new records from the ground up.
- **Standardization and Collaboration:** The tool fosters standardized cataloguing practices and encourages cooperation between libraries, ensuring records remain consistent and easily accessible across various institutions.
- **Enhanced Collection Management:** With precise holdings information, Connexion helps libraries assess their collections and share resources more efficiently through interlibrary loan systems.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. The first OPAC was introduced in _____ at Ohio State University in 1975.

b. Web OPACs use _____ technologies like HTML to provide a user-friendly graphical interface.

c. A key feature of Web OPAC is its ability to _____ multiple databases simultaneously using the Z39.50 standard.

d. The _____ format is used by Web OPAC to represent bibliographic data in a standardized way.



13.7 LET US SUM UP

The shift from physical catalogues to Online Public Access Catalogues (OPACs) marks a significant advancement in library technology. Traditional physical catalogues, such as card catalogues, required users to be present in the library and manually search through index cards for bibliographic information. In contrast, OPACs, introduced in 1975, allowed

for automated searches, eliminating the need for librarian assistance and providing a more efficient way to access library materials.

Over time, OPACs evolved, and by the mid-1980s, they began replacing traditional card catalogues in many libraries. Today, Web OPACs has further enhanced accessibility by offering remote access via the internet. They also provide advanced search capabilities, multimedia integration, and real-time updates, making them much more user-friendly compared to older systems. These digital catalogues allow users to search, request materials, renew items, and even access external databases and multimedia resources, streamlining library operations.

Online cataloguing utility services, such as OCLC Connexion, support libraries by offering tools for managing and creating bibliographic records. These services automate tasks like copy cataloguing, saving time and resources. Web OPACs integrates with these systems, allowing libraries to update records and share resources globally, enhancing efficiency and collaboration.

Overall, the transition from physical catalogues to OPACs, particularly Web OPACs, has transformed libraries by increasing accessibility, efficiency, and the overall user experience in managing and retrieving information.



13.8 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. Ohio State University

b. Web

c. search

d. MARC21



13.9 FURTHER READINGS

Chowdhury, G. G., & Chowdhury, S. (2003). *Introduction to modern information retrieval* (2nd ed.). Facet Publishing.

Mukhopadhyay, A. (2007). *Guide to MARC 21 for cataloguing of books and serials, with functional definitions, examples, working resources.* Viva.



13.10 MODEL QUESTIONS

1. What is the primary difference between traditional catalogues and OPAC?
2. What is copy cataloguing?
3. Discuss the evolution from traditional card catalogues to OPACs.
4. Describe the features and benefits of Web OPAC over traditional OPAC systems.

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UNIT 14: OVERVIEW OF WEB INDEXING, METADATA AND ONTOLOGY

UNIT STRUCTURE

14.1 Learning Objectives

14.2 Introduction

14.3 Web Indexing

14.4 Metadata

14.5 Ontology

14.6 Let Us Sum Up

14.7 Further Readings

14.8 Answer to check Your Progress

14.9 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- Define web indexing
- Understand the role of metadata in organizing.
- Learn how ontologies help organize knowledge
- Recognize best practices for effective web indexing.

14.2 INTRODUCTION

An index is a list of important words or topics that help in finding a specific information in a document. An index can be said a tool that helps find information quickly. It acts as a list of important terms or topics related to a specific subject. It's usually found at the end of a text, making it easier to navigate. The web is a huge collection of information spread across many websites around the world. Each website contains individual pages of information. You can find this information either through an index on each website or more broadly using search engines that index information.

On a website, an index works like a map, guiding one to the needed information. A sitemap is a kind of index for websites, representing all the key the pages and topics. By clicking on the terms in the sitemap, one can go directly to the page or section. It's like a shortcut that makes browsing the website faster and easier.

A web index is a tool that helps in finding information on the web, like individual websites or pages. It's a list of terms or topics that guides to more resources on a specific subject. Indexing is the process of choosing which topics or terms should be included in the index. This is usually done by skilled people having knowledge of the subject well, but there are also automated tools that can do it.

Search engines use programs called spiders or crawlers to find and gather important terms from webpages. They visit a webpage and follow the links on that page to other pages, collecting important data such as text, images, and metadata along the way. The information gathered is then stored in the search engine's database, helping to organize and updating the search index. This allows the search engine to quickly retrieve relevant pages when a user conducts a search.

Web indexes help users find information by typing a query into a search box. Web indexing can be done manually or automatically. It has a wide application for websites, intranets, information centres and publishing houses, especially with the rise of online journals and articles.

14.3 WEB INDEXING

The first web indexing tool named the World Wide Web Wanderer, was created in 1993 by Matthew Gray. This tool indexed web pages and generated a list of URLs. The other search engines, including Google, Yahoo, and Bing, developed their own methods for indexing, which involve processes like crawling, indexing, and ranking web pages using algorithms.

Web indexing refers to the process by which search engines gather, analyse, and store information to deliver quick and accurate search results. It involves organizing web pages into a searchable database, using factors like keywords, content relevance, and popularity. The main objective is to

help search engines provide relevant responses to queries as efficiently as possible.

Key Elements of Web Indexing

• **Crawling**: Search engine bots or spiders visit and collect web pages, navigating through hyperlinks to discover new content.

• **Indexing**: The collected web pages are categorized in a database based on keywords, relevance, and popularity. The crawlers gather crucial data like keywords and meta tags, which is then stored in the search engine's index.

• **Ranking**: Indexed pages are ranked by relevance and authority. This process assigns a weight to each page, which is incorporated into search algorithms to determine the ranking of results.

Need of Web Indexing

Web indexing ensures the effective functioning of both search engines and websites. The need of web indexing includes:

- **Improved Visibility**: Indexing makes a website's pages accessible to search engines, ensuring they appear in search results. Without proper indexing, a website won't rank or attract organic traffic, limiting its online presence.
- **Boosted SEO**: Effective indexing is important for successful Search Engine Optimization (SEO). It helps search engines evaluate and categorize web pages based on relevance, keywords, and content quality, leading to better rankings and higher visibility in search results.
- **Faster and More Accurate Information Retrieval**: Indexing organizes vast amounts of web data into structured databases, allowing search engines to quickly return with relevant results. This streamlined process enhances user experience by providing accurate, fast answers to queries.
- **Higher Website Traffic**: Pages that are properly indexed are more likely to show up for relevant search queries, driving targeted traffic to the site. This increased visibility leads to higher user engagement.

- **Enhanced User Experience**: A well-indexed website allows users to navigate and find specific content more easily, improving overall satisfaction and making it easier for them to discover the information they're looking for.

Advantages of Web Indexing

- Enhanced Visibility: Quick indexing and ranking can boost a website's visibility and drive more traffic.
- Improved SEO: Proper indexing contributes to better search engine optimization and rankings. It's crucial for search engines to understand a page's content, structure, and relevance through effective indexing.
- Increased User Engagement: Efficient navigation and easy access to content can lead to higher user engagement and satisfaction on a site.

Best Practices for Effective Web Indexing

- Produce high-quality, relevant content for your target audience.
- Use appropriate keywords in your content, meta tags, and URLs.
- Ensure your site is mobile-friendly and loads quickly.
- Submit a sitemap to search engines to help them index all your pages. A sitemap is a file that lists every URL on your site, making it easier for search engines to find and crawl new content.
- Use Google Search Console to monitor your site's indexed pages.

Challenges in Web Indexing

- Duplicate Content: Multiple pages with the same content can confuse search engines and negatively impact rankings.
- Content Quality: Low-quality content can hurt user experience and rankings.
- Technical Issues: Problems like broken links, slow load times, and other technical errors can interfere with indexing and ranking.

Types of Web indexing

Web indexing involves methods for indexing the contents of a website or the Internet, and it takes different forms like:

- **Back-of-the-book style indexing** This involves hard-coded index links within a website, similar to an index in a book. These may be

called “web site A-Z indexes,” providing an alphabetical browse view or interface. Using a site index allows users to go directly to the relevant page, saving time.

- **Subject tree indexing** This involves creating subject trees of reviewed sites.
- **Metadata web indexing** This includes assigning keywords, descriptions, or phrases to web pages within a metadata tag, which helps search engines retrieve the website. Metadata indexers can improve the precision of access to web documents through search engines.
- **Website indexing** Website indexes can be similar in style to back-of-book indexes or can be designed as hierarchical pages, which both links directly to the information required.
- **Hyperlinked A-Z indexes** in a web environment, an A-Z index is a web page or a group of pages.
- **Bibliographic and database indexing**
- **Genealogical indexing** Genealogical indexes allow users to look up people’s names and find information about personal and family relationships.
- **Geographical indexing** Geographic indexers create indexes to maps, atlases, and other cartographic material.
- **Legal indexing** Legal indexing involves indexing legal materials by form and content.
- **Periodical and newspaper indexing** Periodical and newspaper indexes give access to the contents of individual articles and other items in serialized publications.
- **Pictorial indexing** Indexes to images help users identify relevant pictures in collections of photographs, artwork, videos, and films.

14.4 METADATA

Metadata refers to “data about data,” offering descriptive information that helps identify and organize other data elements without including the

actual content. It serves several functions, such as improving the organization, retrieval, and management of data across different systems and formats.

Metadata helps potential users assess whether a dataset aligns with their needs before committing time and resources to acquire and process it. By offering a detailed description of a specific object or resource, metadata plays a key role in discovering, managing, and retrieving data assets. It provides important insights into the characteristics, attributes, and context of a dataset or information resource. In essence, metadata offers vital details about the data, including its content, structure, format, and origin, which supports efficient organization, discovery, retrieval, and overall data management.

Types of Metadata

1. **Descriptive Metadata**: This type helps in identifying and discovering resources, including details like title, author, abstract, and keywords. It assists users in finding specific data.
2. **Structural Metadata**: It describes the organization of data and the relationships between different components. For example, it might explain how pages are arranged within a document or how files are structured within a database.
3. **Administrative Metadata**: This includes information required for managing a resource, such as creation date, file type, permissions, and creator details.
4. **Reference Metadata**: It provides context about the contents and quality of statistical data, helping users interpret the data accurately.
5. **Statistical Metadata**: Also called process metadata, this type describes the processes involved in collecting and producing statistical data.
6. **Legal Metadata**: This contains information related to copyright holders, licensing agreements, and other legal aspects concerning the data.

Significance of Metadata

- **Enhanced Searchability**: It improves the ability to search for and retrieve data efficiently.
- **Data Management**: It helps organize and manage datasets effectively.
- **Contextual Understanding**: It offers context to help users understand the relevance and quality of the data.
- **Interoperability**: Well-defined metadata standards make it easier to share and integrate data across different systems.
- **Data Quality and Provenance**: Metadata tracks the source, history, and changes made to the data, ensuring data integrity and quality.
- **Efficient Data Processing**: With good metadata, data can be processed, analyzed, and visualized more effectively. It helps automate workflows and ensures that the right tools and algorithms are applied to the correct datasets.

Metadata aids libraries in the organization, discovery and management of resources-

a. **Resource Discovery**

   Metadata helps users easily find specific resources by providing key descriptive details such as title, author, subject, and keywords. This boosts searchability and ensures quick and efficient retrieval of items in systems like library catalogs or digital libraries.

b. **Organization and Classification**

   Metadata plays a crucial role in organizing and classifying resources, enabling effective sorting and categorization of information. It helps create structured systems that facilitate easy navigation and retrieval.

c. **Digital Libraries**

   In digital libraries, metadata provides essential information about digital objects, such as file formats, versions, and how components are related (e.g., chapters in a book). Standards like Dublin Core and MARC are commonly used to describe and structure digital resources.

d. Administrative Functions

Administrative metadata supports the management of library collections by tracking details like acquisition dates, copyright information, and usage permissions. This ensures proper collection maintenance and efficient rights management.

e. Interoperability

By adhering to metadata standards, different library systems and platforms can communicate and share data more easily. Schemas like Dublin Core and MARC enable seamless exchange of bibliographic data across different institutions, enhancing cooperation and access.

f. Accessibility

Metadata related to accessibility ensures that library resources are available to all users, including those with specific needs, such as braille or audio formats. This ensures inclusivity and broader access to materials, making libraries more user-friendly.

g. Preservation

Metadata is essential for the long-term preservation of digital resources. It documents technical details like file formats, creation methods, and storage requirements, ensuring the integrity and continued accessibility of collections over time.

h. Collection-Level Description

Metadata can also be used to describe entire collections, such as thematic or subject-based archives, rather than focusing on individual items. This is particularly valuable for special collections or archives, where detailed descriptions of each item may not be available.

14.5 ONTOLOGY

Ontology is a formal description of knowledge as a set of concepts within a domain and the relationships that hold between them. It involves the representation, formal naming, and definitions of categories, properties,

and the relations between concepts, data, or entities. Ontologies systematically map data to meaningful semantic concepts.

Ontology is a framework used to represent the properties of a subject area and the relationships between its concepts. It helps organize complex data into clear, meaningful knowledge, improving problem-solving within a domain. In research, ontologies help bridge language barriers by maintaining a controlled vocabulary, ensuring accurate translations and communication across countries.

The term “ontology” comes from the Greek words *onto* meaning being and *logia* meaning written or spoken. Rooted in metaphysics, it deals with questions about existence and reality. The term’s modern use has expanded beyond philosophy into fields like computer science and information science.

Benefits of Ontology:

1. **Communication**: Facilitates clear communication among people, organizations, and systems by using a shared vocabulary.
2. **Reuse**: Provides a foundation for creating new ontologies, saving time and effort.
3. **Clarity**: Helps define and structure knowledge, making it easier to understand and apply.

Applications of Ontology:

1. **Information Retrieval**: Enhances search accuracy by improving queries and results beyond keyword matching.
2. **Digital Libraries**: Supports dynamic cataloguing, metadata indexing, and document annotation.
3. **Information Integration**: Enables seamless data integration from various systems.
4. **Knowledge Management**: Provides semantic access to knowledge, aiding in more efficient knowledge discovery.
5. **Natural Language Processing**: Improves machine translation and language understanding by clarifying the meaning of terms.

Key aspects of ontologies:

- **Formal Description:** Ontologies formally specify components like individuals, classes, attributes, relations, restrictions, rules, and axioms.
- **Knowledge Representation:** They introduce a shareable and reusable way to represent knowledge and can add new knowledge about a domain.
- **Relationships:** Ontologies express relationships and enable users to link multiple concepts in various ways, unlike taxonomies or relational database schemas.
- **Semantic Technology:** Ontologies are part of the W3C standards stack for the Semantic Web, providing the structure to link information on the Web of Linked Data.
- **Common Understanding:** They ensure a common understanding of information and make explicit domain assumptions.
- **Automated Reasoning:** Ontologies enable automated reasoning about data, especially in semantic graph databases.

The ways ontologies are used in library systems:

1. **Knowledge Organization**

   Ontologies provide a structured framework for representing knowledge within specific domains, defining concepts and their relationships. Additionally, ontologies enable the creation of semantic relationships between resources, such as connecting books, articles, and multimedia based on shared themes or concepts.

2. **Enhanced Search and Retrieval**

   With ontologies, libraries can implement **semantic search** capabilities that allow users to retrieve information based on meaning rather than exact keywords. For example, a search for “climate change” could return results related to “global warming” due to the conceptual links between these topics. Ontologies also improve cross-database searches by harmonizing metadata across different systems, ensuring better access to resources distributed across various platforms.

3. **Metadata Enrichment**

   Libraries use ontologies to enhance **metadata** by embedding rich, semantic descriptions that improve resource discoverability and provide deeper context. Ontologies ensure consistency in metadata standards across collections, which makes it easier to integrate new resources without causing conflicts or confusion.

4. **Knowledge Graphs**

   Ontologies help libraries create **knowledge graphs**—visual representations of relationships between entities such as authors, topics, and publications. These graphs make it easier for users to navigate and explore interconnected resources within the library, providing an intuitive way to discover related materials.

5. **Automated Reasoning**

   Ontologies enable **automated reasoning**, allowing library systems to infer new knowledge from existing data. For example, systems can identify relationships between authors or predict related topics based on current data. This enhances the overall functionality of library systems by adding intelligent capabilities to data analysis.

6. **Interoperability and Collaboration**

   Ontologies promote interoperability between library systems and external databases by providing a common framework for data exchange. This is particularly valuable for collaborative digital libraries and research repositories, allowing seamless integration and sharing of information across platforms.



CHECK YOUR PROGRESS

1. Fill in the blanks

a. The first web indexing tool, created in 1993, was called the_____.

b. _____is the process by which search engines gather, analyze, and store information to deliver search results.

c. _____refers to “data about data”, that helps organize, retrieve, and manage other data elements.

d. _____are programs used by search engines to gather and collect data from web pages.



14.6 LET US SUM UP

An index is a tool that helps locate important terms or topics in a document, facilitating navigation and quick retrieval of specific information. In the context of the web, a web index is created by search engines to organize and categorize vast amounts of online data. Through crawling, indexing, and ranking, search engines use automated programs (like spiders) to collect, analyse, and store information from websites to provide fast and relevant search results.

The need for web indexing includes improved visibility, enhanced SEO, faster information retrieval, increased website traffic, and better user experience. There are various methods of indexing, such as back-of-the-book style, subject tree indexing, and metadata-based indexing. Metadata plays a crucial role in organizing and describing web content, offering valuable information about data like titles, authors, and keywords, which improves searchability, data management, and overall data quality.

Ontology is a framework used to represent knowledge through concepts and relationships within a domain, enabling a shared understanding and semantic search. In libraries, ontologies help in knowledge organization, enhancing search and retrieval, enriching metadata, and creating knowledge graphs. They support interoperability, scalability, and automated reasoning, making them invaluable for improving library systems and data management. The web indexing, metadata, and ontologies all contribute to better organization, retrieval, and management of information, enhancing user experience, website visibility, and data interoperability across platforms.



14.7 ANSWERS TO CHECK YOUR PROGRESS

Ans 1. a. World Wide Web Wanderer

b. Web indexing

c. Metadata

d. Spiders



14.8 FURTHER READINGS

Berners-Lee, T., Hendler, J., & Lassila, O. (2001, May). The semantic web. *Scientific American*, *284*(5), 34-43.

Zhao, G., & Meersman, R. (2003). *Ontology modelling for collaborative business processes* (StarLab Technical Report). Vrije Universiteit Brussel.



14.9 MODEL QUESTIONS

1. What is the purpose of an index in a document?
2. What is a web index?
3. What is the role of spiders in web indexing?
4. What does metadata refer to?
5. What is the main objective of web indexing?
6. Define descriptive metadata.
7. Explain the concept of web indexing and its key elements.
8. What is the significance of metadata in organizing and retrieving data on the web?
9. Describe the role of ontologies in libraries.
10. How does metadata enhance the effectiveness of digital libraries?
11. What are the best practices for effective web indexing?

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