SYLLABUS

History, Purpose and Types of Library Catalogues
Library Catalogue: Objectives, Purposes and Functions, History and Development of Library Catalogue Codes, Physical Form of Library Catalogues and Types of Catalogue

Format of Catalogue Entries
Kinds of Entries, Data Elements in Different Types of Entry, Filing of Entries – Classified and Alphabetical, Centralized Cataloguing, Cataloguing-in-Publication and Pre-Natal Cataloguing, Machine Formats: MARC and CCF

Choice and Rendering of Headings and Cataloguing of Non-Print Media
Personal Authors (Western and Indic Names), Corporate Authors, Pseudonymous and Anonymous, Works and Uniform Titles and Cataloguing of Non-Print Media

Subject Indexing, Vocabulary Control and Recent Developments in Cataloguing
Subject Cataloguing – Problems, Vocabulary Control: Subject Heading Lists and Thesauri, Subject Indexing Models, Techniques for Subject Indexing and Recent Trends in Library Cataloguing

Suggested Readings:

1. Nirmal Kumar Swain, Introduction to Cataloguing Theory, Chandos Publishing
3. Girja Kumar, Krishan Kumar, Theory of Cataloguing, Vikas
CHAPTER I

History, Purpose and Types of Library Catalogues

Learning Objectives

- To define and describe a library catalogue.
- To explain the objectives and functions of a library catalogue.
- To explain the cataloguing process
- Discover ways to make the use of the catalogue easier for students.
- To identify various forms of Catalogue.

1.1 Library Catalogues: Objectives, purpose and Functions

1.1.1 Introduction

Library catalogue is a complete, organized record of a library’s contents which refers to:

- maps
- periodical archives
- artwork
- computer files
- microfilm
- books.

Library catalogues are limited to a particular library or a single group of libraries, but nearly all library catalogues today share the same basic search features and organization. After the advent of online catalogues in the '70s, physical card catalogues became nearly obsolete, but some libraries retain their card catalogues for decorative or commemorative purposes.

Library catalogue is a list of all bibliographic items found in a library or group of libraries, such as a network of libraries at several locations. A bibliographic item can be any information entity such as:

- books
- computer files
- graphics
- regalia
e. cartographic materials

They are considered as library material (e.g., a single novel in an anthology), or a group of library materials (e.g., a trilogy), or linked from the catalog as far as it is relevant to the catalog and to the users of the library.

It was seen that, a card catalog was a familiar sight to library users for generations, but it has been effectively replaced by the online public access catalog. Some still refer to the online catalog as a "card catalog". Some libraries with OPAC access still have card catalogs on site, but these are now strictly a secondary resource and are seldom updated. Many of the libraries that have retained their physical card catalog post a sign advising the last year that the card catalog was updated. Some libraries have eliminated their card catalog in favour of the OPAC for the purpose of saving space for other use, such as additional shelving.

Library is major collections house of materials on various different topics and in many different formats. The challenge in making these things available for the use of library patrons is letting those patrons know what is in the library collection. This is the reason for having a library catalog and for taking the time to correctly catalog library materials.

It was observed that the library catalog could be compared with the index of a book. The index provides the reader with a way to find information in the book without having to read every page. The index denotes the students or the reader, the page on which the information about a specific subject can be present or located. In library catalog, the information denotes about the library user where materials meeting serves as a specific needs, with the call number of the book corresponding to the page number in an index.

It was found that the information contained in the cataloging record provides many access points as required by the patron that looks for the required information in the library. Usually, the library card catalog provided access by the author’s name, the title of an item, and the subject(s) covered in the item. Other points of access were additional authors, names of series, illustrators, and sometimes the titles of contents.

1.1.2 Objectives
During the year 1876, Charles Cutter suggested that the goals of a bibliographic catalogue while defining his Rules for Printed Dictionary Catalog justified that a person should be able to find a book knowing either the author, title, or subject; that the catalogue should show the user all books that a library owns by any given author, subject, or type of literature; and that it should be useful in guiding the user's choices regarding a book's edition and character. Cutter's goals have remained relevant up until the present day, although several groups have made updates. The newest explanation of a catalogue's function comes from the Functional Requirements for Bibliographic Records, which states that a catalogue should enable four tasks: find, identify, select and obtain.

Further, Charles Ammi Cutter on his first explicit statement in respect to explaining objectives of a bibliographic system declared that his Rules for a Printed Dictionary Catalog was reflected in 1876. According to him, the objectives were:

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

It was observed that, the objectives can still be recognized in more modern definitions formulated throughout the 20th century. During 1960 and 61 Cutter's objectives were revised by Lubetzky in the Conference on Cataloging Principles (CCP) which was held in Paris. The attempt to describe a library catalog's goals and functions was made in 1998 with Functional Requirements for Bibliographic Records which defines four user tasks: find, identify, select, and obtain.

1.1.3 Use

Nowadays, online card catalogues feature dynamic, complex search functions as they can:

a. spell-check a user's mistakes
b. facilitate partial searches
c. link variants of the same title or author names.
Libraries regarded as having particularly good online catalogues include the Law School Library, the Public Library and the library at the University of California, Irvine.

The objectives behind library catalogue are to enable a user to find a book when one of the author, or title, or subject is known; to show what the library has by a given author, on a given subject, in a given kind of literature; and to assist in the choice of a material as to the edition or as to its characteristic.

Generally, the prime functions of a library catalogue are to enable the library users to determine:

- whether the library has a certain item
- which works by a particular author are in the collection
- which editions of a particular work the library has, and
- what materials the library has on a particular subject

It was observed that, a catalogue is a list of things exhibited, articles for sale, school courses offered, etc., usually with descriptive comments and often illustration. A library catalogue serves the same purpose. It is a file of records for a library's collection. It is important to both library users and library staff. Its functions include giving a comprehensive record of materials owned by the library, listing what the library possesses by a certain author, on a given subject, and with a certain title, and enabling library materials to be located easily. The catalogue provides multiple access points to the library's collection.

In spite of these purposes and characteristics, the use of the catalogue is very poor in most university libraries. Ezomo, reveals that a poor use of the catalogue in Library, attributed to lack of user education programmes. Fister states that undergraduates find the university library threatening and doing research intimidating because they do not have library skills.

The only solution to this problem is prolonged and intensive user education and current awareness services. According to Kakai, Ikoja-Odongo, and Kigongo-Bukenya, the university library faces a number of challenges in its user instruction programmes, yet it is through user education that librarians' work is made easy and students' effort reduced. If the library is for the use of all, then all must be able to use the catalogue to access the library materials. As per Ranganathan, libraries are for use. Therefore we must be sure that whatever we do serves the ultimate purpose of the library.

Moreover the prime function of Catalogue in library is to:

a. Finding a specific book
If you know the book/s you are looking for, in most cases you will know the author/s (or editor/s) names and at least some of the title of the book. You can then do a quick keyword search e.g.:

- 'Learning mathematics' by Anthony Orton, type
- 'Mastering the dynamics of innovation' by James M. Utterback, type

Finding books on general subject area
If you are not looking for a specific book you will not have the author/title details, instead you will know the general topic you are looking for, therefore you can:

Do a Keyword search

- To find books on management accountancy, do a Keyword search for using the truncation symbol (?) to include all words beginning with account - accountancy, accounts, accounting etc.

Do a class number search?

- Because books on the same topic are shelved together, you can either browse the shelves at the appropriate class. number or do a class. number search in the Catalogue

Finding the book on the shelves
To find the book in the Library you need to know the location, the status and the class. number:

- The status tells you whether or not the item is available ie the books:
  - which are available are shown as being Not on Loan
  - which are on loan show the date when the book is due to be returned
  - which have been ordered for the Library, but not yet received from the supplier are shown as being On Order
  - which are waiting to be collected by someone are shown as being On Hold
  - which have recently been returned and not yet re-shelved are shown as being returned
- location tells you which Library the item is held. If it is not in your 'local' Library, it can be recalled.
- class tells you where to find the item on the shelf
  - Initially the books are grouped together by number and then within that number by a 3-letter code:
  - 100s come before 200s, which further come before 300s
All books in Library are shelved on Level 3 with the exception of books in the Dictionaries Room (Level 1) and Quick Reference and Three Hour Loan sections (Level 2).

Use the floor plans, the indicators on the ends of shelves and other signs to identify the shelves where your books are kept; then look for the exact class number in the numerical sequence. Within each class number, books are arranged by the 3 letter code. You can place a reservation for any book which is on loan, or which you cannot find on the shelves. You will be informed when it is available for you to borrow.

Find the book online

When doing a keyword search, the results list will show all of our holdings of that title i.e. all editions (if there is more than one) and all formats (e.g. if we have the book in print and electronically). If the book is available electronically the catalogue record will give you the link to access that book and give details of any access restrictions.

If you wish to limit your search to only eBooks use a keyword search for [keyword ebook].

How to find journals
You can find whether we have a particular journal in stock, by searching for the title of the journal in the Other Searches option.

- To find journals starting with a word e.g. ECONOMICS, use Journal title - A-Z list.
- To find journal titles containing a word e.g. ECONOMICS, use Journal Title - single word or phrase

The display will show you whether we have an electronic or print subscription, and when our subscription started (and finished, if appropriate).

If we have an electronic subscription, the display will provide a link to the journal's home page, and will give information about how to get access from off-campus (if available).

It was seen that, If somebody has a print subscription, the display will show which Library the journal is kept in, and will also show the most recent issues received. Take a note of the title given in
the Catalogue, and the corresponding class number of the journal (Riccarton Library only). In the Riccarton Library journals are arranged on the shelves by class numbers, and then alphabetically by title within these class numbers. At the Scottish Borders Campus Library journals are arranged alphabetically by title on the Ground Floor of the Library (current issues) and on the First Floor.

If you cannot find the journal part or volume on the shelves, please go to the Service Desk. The staff will check whether it is on loan; if so, they will reserve it for you and inform you when it is returned. If it is not on loan, they will search for it in the Library and inform you when it is available for consultation.

How to find theses in the catalogue
If you know the author and/or title of a thesis, search for it in exactly the same way as you would a book.

- Finding all theses
- Finding theses on a subject
- Finding theses by department

Finding all theses

If you want to see all the theses which the Library has, use the Other Searches option, and search for Theses as the Class number.

To find theses by award, first click the Search Limits button. Select Theses Collection from the Location list and click the Set Limits button. Then use the Basic Search and search for Ph D or MBA or M Sc (note the spacing must be as indicated).

Finding theses on a subject

First click the Search Limits button. Select Theses Collection from the Location list and click the Set Limits button. Then use the Basic Search option and search for keywords(s) describing your subject.

Finding theses by School

If you wish to see a list of all theses presented in a particular School please ask at the Service Desk, where there is a printed list of theses. There is no way at present to search the catalogue to list theses by School.
Search

- The Keyword is the default search from the Library website or you can select the Keyword search from the 'Other Searches' tab in the main Library Catalogue.
- You can truncate any word by putting a ? after it - so 'manage?' will find 'manager', 'management', 'managerial' etc.
- You can restrict your search by using the 'Set limits' feature. This lets you limit your search by language, by which of our libraries it is in, or by date. You can combine limits - you could limit your search to books in French or German, in the Riccarton Library, and published since 2000.
- The Everything index includes everything in the catalogue record - the ISBN, the publisher, the date of publication, the edition.
- There is no stop list of words which are not indexed - like 'of' or 'the' - but it's still quicker to leave them out. Only 'and', 'or', and 'not' are prohibited words, unless you are searching 'As a phrase'.
- Symbols are not indexed - a common problem with library catalogues - so you can't search for 'C++', just 'C'.

How to place a reservation for a book

You can use the catalogue to reserve books which are on loan to other readers, which have been ordered for the Library but not yet received from the supplier, or which are currently on the New Books display. You can also use the catalogue to reserve books in the Riccarton, Martindale or Orkney Libraries and have them sent to your "home" library for you to consult.

Note that if you reserve a book which is shown in the catalogue as being "Not on Loan", other readers can borrow it if they find it first.

- First look up the book in the catalogue and go to the screen with the list of individual copies. Click on the Request button and log in if you have not done so already.
- If the request can not be placed for any reason you will get a message saying so. Otherwise you will be asked to click OK to continue with your request.
- You can choose to have the first available copy or one particular copy or volume, the library you want to collect it from, and how long you want the request to be kept open.
- When you have made your choices, fill in your barcode again, and click on Submit Request.

If necessary we will recall the book from the person who has borrowed it. We can fill most book reservations within a week of the request. When the item is returned to the Library, you will be sent
an email message to tell you that is ready for collection. You can also check yourself to see if you have any items awaiting collection.

You may also use the catalogue to cancel your reservations. If you need any help with reserving books, please ask at the Service Desk.

How to check your Library Record
You can manage your own library account by clicking on the Patron Functions button.

- Enter your barcode, your PIN and your surname to login.
- All readers start with the same PIN - 12345. We strongly advise you to change it straight away by clicking on the Change PIN button.
- Under Personal Information you will see your name and address (term address for students) as recorded on our system. Let us know if it is not correct.
- The MyBookbag button allows you to see the records of any books you saved when you searched the catalogue, and to print out or email it to yourself.
- The Saved Searches button allows you view, change or delete the steps in any search which you saved when you searched the catalogue.
- Patron Blocks shows any blocks on your borrower record.
- Items on Loan shows what books you have on loan, with the option to renew them where this is possible.
- Request Information shows what book requests you have at present, including any available for collection (you can also cancel reservations which you no longer need).
- Fines and Fees shows any unpaid fines or other charges on your borrower record

How to check and/or renew items on loan
The library catalogue allows you to check which books you have on loan, and to renew them. Access the catalogue at website. Click on the Patron functions button, then Login to your record by entering your barcode, PIN and surname. Scroll down the page to the list of books on loan to you. Click in the boxes next to the book(s) you wish to renew, then click on Renew Items. If it is possible to renew the book, this will be confirmed and the new date will be displayed. If it is not possible to renew the book, you will get the message Not Renewed and the original due date will apply.

1.2 History and development of library Catalogue Codes

Library catalogs originated as manuscript lists, arranged by format (folio, quarto, etc.) or in a rough alphabetical arrangement by author. Printed catalogs, sometimes called dictionary catalogs, began to
be published in the early modern period and enabled scholars outside a library to gain an idea of its contents. Copies of these in the library itself would sometimes be interleaved with blank leaves on which additions could be recorded, or bound as guard books in which slips of paper were bound in for new entries. Slips could also be kept loose in cardboard or tin boxes, stored on shelves. The first card catalogs appeared in the late 19th century after the standardization of the 5 in. x 3 in. card for personal filing systems, enabling much more flexibility, and towards the end of the 20th century the Online public access catalog was developed. These gradually became more common as some libraries progressively abandoned such other catalog formats as paper slips and guard books. The beginning of the Library of Congress's catalog card service in 1911 led to the use of these cards in the majority of American libraries.

In case of title catalog, one can distinguish two sort orders:

- In the older catalogue, the grammatical sort order was the most important word of the title is the first sort term. The importance of a word is measured by grammatical rules; for example, the first noun may be defined to be the most important word.
- In the mechanical sort order, the first word of the title is the first sort term. Most new catalogs use this scheme, but still include a trace of the grammatical sort order: they neglect an article (The, A, etc.) at the beginning of the title.

The grammatical sort order has the advantage that often, the most important word of the title is also a good keyword and it is the word most users remember first when their memory is incomplete. However, it has the disadvantage that many elaborate grammatical rules are needed, so that only expert users may be able to search the catalog without help from a librarian.

In most of the catalogs, individual names are standardized, i.e., the name of the person is always (cataloged and) sorted in a standard form, even if it appears differently in the library material. This standardization is achieved by a process called authority control. An advantage of the authority control is that it is easier to answer question 2 (which works of some author does the library have?). On the other hand, it may be more difficult to answer question 1 (does the library have some specific material?) if the material spells the author in a peculiar variant. For the cataloguer, it may incur (too) much work to check whether Nishit Mathur is Nishit, Mathur or Mathur, Nishit.

For some works, even the title can be standardized. The technical term for this is uniform title. For example, translations and re-editions are sometimes sorted under their original title. In many catalogs, parts of the Bible are sorted under the standard name of the book(s) they contain. The plays of William Shakespeare are another frequently cited example of the role played by a uniform title in the library catalog.

Many complications about alphabetic sorting of entries arise. Some examples:
Some languages know sorting conventions that differ from the language of the catalog. For example, some Dutch catalogs sort IJ as Y. Should an English catalog follow this suit? And should a Dutch catalog sort non-Dutch words the same way?

Some titles contain numbers, for example 2001: A Space Odyssey. Should they be sorted as numbers, or spelled out as Two thousand and one?

As per Lubetzky's Cataloging Rules and Principles, developed for the Board of Cataloging Policy and Research of Library Association received general approval. Because of his approach towards the design of an effective code of cataloguing rules, Lubetzky was invited by the ALA Catalog Code Revision Committee to prepare a new edition of ALA. Being influenced by Cutter's 'Objectives', Lubetzky produced his Code of cataloging rules, author and title entry: an unfinished draft, 1960, known as CCR. Lubetzky stated the objectives on which the rules were formulated as follows:

The objectives which the catalog has to serve are two:

1. To facilitate the location of a particular publication, i.e., a particular edition of a work which is in the library?

2 To relate and display together the editions which the library has of a given work and the works which it has of a given author? The two functions are complementary, but both are essential to the effectiveness of the catalog.

It was found that, Lubetzky adopted Cutter's 'Objectives' with minor changes. Here, the word 'Book' is replaced by the words 'Work' and 'Edition' to give priority to the literary unit concept and to cater for the inclusion of various types of 'non-book' items in the code. By a clear definition of the main entry concept, Lubetzky tried to remove inconsistencies within Cutter's Code, AA and ALA in which "the main entry sometimes represents 'work' and sometimes 'edition'". His emphasis was on the 'work' and he considered that a major function for the main entry was the assembling of the editions of a certain work by a certain author. To Lubetzky, the 'work', rather than the 'edition,' was the primary unit. He assumed that "...the catalogue user is interested in the work represented by the particular publication rather than in its embodiment in any particular edition". In determining the basic principles of his rules, Lubetzky followed Cutter's "convenience of the public" and considered the reader's approach to be an important factor.

As CCR was written primarily for the construction of a card catalogue using the concept of a unit cataloguing method, added entries carried far more information than in older Anglo-American codes. Main entry was not considered as the most important entry for a work and lost its importance significantly in the sense that the code avoided the use of the term "main entry". Instead, it used terms like "entry is made under..." or "...is entered under the person..." However, the significance of
the main entry concept in single-entry catalogues, such as union catalogues in hard copies, could not be disregarded.

While comparing the older Anglo-American cataloguing codes, the concept of authorship was broadened and extended to all types of materials in CCR (1960). The utility of such an approach to authorship in the case of non-book materials has been challenged. In this regard, Tait pointed out that:

Certain types of material may not be amenable to or require author entry as such, and one has the impression that CCR occasionally forces author entry, presumably for the sake of consistency....This would appear to be pushing the authorship concept rather too far, but is almost inevitable within the general framework of the philosophy of CCR.

The code emphasised the concept of corporate authorship. Rule 22 was a general rule for works of corporate bodies.

Another concept emphasised in the code was a reliance on title-page information in providing standard cataloguing data. In this respect, Lubetzky followed Panizzi, who was the first to recognise the importance of the title-page. This is in line with the users' knowledge of or familiarity with books as known or seen by them. In this regard, it is generally said that the cataloguer can avoid the difficulty of determining the intellectual responsibility of the item in hand. However, this approach may be in conflict with the uniformity which is necessary in the assembling of different editions of a work under one form of heading. In relation to the above-mentioned discussion it should be added that, unlike ALA, CCR avoided the subjective judgements required of the cataloguer in distinguishing between different types of multiple authorship. As noted earlier, this was possible by relying on title-page criteria.

Because of its logical consistency and its compilation on a solid theoretical basis, CCR (1960) received favourable reaction. However, in terms of the alterations that would result in catalogues from the possible implementation of the code, it was criticised by reference librarians who claimed that they would find answering reference questions difficult and by library administrators who preferred the simplification of cataloguing rules and less costly practices.

CCR was very influential at the time and Lubetzky was hailed as one of the great theoreticians in descriptive cataloguing. Suffice it to say that the principles adopted and internationally agreed upon at the International Conference on Cataloguing Principles, Paris, 1961 were to a large extent influenced by CCR.

Early English Language Cataloguing Codes
The first major English-language cataloguing code was that developed by Sir Anthony Panizzi for the British Museum catalogue. Panizzi’s 91 rules were approved by the British Museum in 1839, and published in 1841.

The British Museum rules were revised up until 1936.

The library departments of the British Museum became part of the new British Library in 1973.

Cutter’s Rules for a Dictionary Catalog

The first edition of Charles Ammi Cutter’s *Rules for a Dictionary Catalog* was published in 1876.

Cutter’s rules set out the first principles of cataloguing, and included a statement of the objectives of the catalogue.

The code covered rules for dictionary catalogues including both entry (for authors, titles, subjects, and form headings), and description.

Anglo-American Code

Developments in the United States

The American Library Association (ALA) cataloguing rules –Condensed Rules for an Author & Title Catalog” were first published in the *Library Journal* in 1883.

In 1900 ALA appointed a committee led by J.C.M. Hanson of the Library of Congress to revise these rules. Of particular focus was agreement of the ALA rules and the rules of the Library of Congress due to the upcoming introduction of Library of Congress printed cataloguing cards.

In 1902 an advance edition of the revised ALA rules was produced by the Library of Congress.

Efforts were made to bring about uniformity between the ALA rules and the fourth edition of Cutter’s rules (published in 1904).

Developments in the United Kingdom

In 1893 the –Cataloguing Rules” of the Library Association (LA) were published.

In 1902 a Committee was formed to revise these rules, and in its work drew heavily on the British Museum rules, and the advance edition of the revised ALA rules.

A draft revision of the LA rules was discussed at the 1904 meeting of the Library Association.

Co-operation
In light of the similar work being done on both sides of the Atlantic, Melvil Dewey suggested that there should be co-operation to produce an Anglo-American code. The American Library Association and the Library Association formally agreed to co-operate in 1904. Consultation between the two bodies occurred by correspondence.

The first international cataloguing code was published in 1908 in an American edition (*Catalog Rules, Author and Title Entries*) and a British edition (*Cataloguing Rules, Author and Title Entries*). Both editions contained 174 rules covering both entry and heading for authors and titles, and description.

Areas of disagreement between the two editions centred on authors and publications that changed names or titles.

In both editions disagreements were explained either in a note or by printing two versions of the rule. Library of Congress supplementary rules were also included where necessary.

**A.L.A. Cataloging Rules**

**1941 edition**

- In the 1930s committees of American Library Association and the Library Association discussed revision of the 1908 rules. The two bodies co-operated until 1939 when the Second World War ended British involvement.

- A preliminary second edition of the American edition of the 1908 rules was published by the American Library Association in 1941, and contained 324 rules in two parts: Part I, Entry and Heading; Part II, Description of book; as well as various appendices, including one on "authority cards."

**1949 edition**

- The 1941 edition was criticised for being too detailed and complex, and in 1949 *A.L.A. Cataloging Rules for Author and Title Entries* was published. This edition contained only rules for entry and heading.

- American alternative rules in the 1908 code were reflected in the 1949 code.

**Rules for Descriptive Cataloging in the Library of Congress**

- As the 1949 ALA code did not contain rules for descriptive cataloguing, the Library of Congress took responsibility for documenting rules of this nature. As Library of Congress catalogue cards were widely used by American libraries, there was interest in the rules used by the Library of Congress.
\begin{itemize}
\item \textit{Rules for Descriptive Cataloging in the Library of Congress} was published in 1949, and the rules were adopted by the American Library Association. Included were rules for separately published monographs, serials, and some non-book materials.
\item Supplementary rules were subsequently issued for additional non-book formats.
\end{itemize}

Anglo-American Cataloguing Rules

\textbf{AACR 1967}

\begin{itemize}
\item In 1951 the American Library Association asked Seymour Lubetzky, of the Library of Congress, to analyse the 1949 ALA code. An approach was also made to the Library Association regarding co-ordination of revision of the 1949 code.
\item In 1953 Lubetzky’s report (\textit{Cataloging Rules and Principles}) was published. This work advocated a move towards a principle-based rather than case-based code.
\item In 1956 Lubetzky was appointed editor of the revised code, and in 1960 he produced the draft \textit{Code of Cataloging Rules; Author and Title Entry}.
\item The International Conference on Cataloguing Principles was held in Paris in 1961 to examine the choice and form of headings in author/title catalogues. The outcome was a statement of 12 principles known as the Paris Principles.
\item In 1962 C. Sumner Spalding, of the Library of Congress, became the new editor of the code.
\item The American Library Association and Library Association co-operated by exchanging minutes and working papers, and attending each other’s meetings. In addition, the Library of Congress assisted with revision of the descriptive cataloguing rules, and the Canadian Library Association was involved in reviewing drafts of the rules.
\item In 1967 two versions of the \textit{Anglo-American Cataloguing Rules} (AACR) were published, a North American text and a British text.
\item Both texts of AACR contained three parts:

\begin{center}
\begin{tabular}{l}
\textbf{Part} & \textbf{I, Entry} & \textbf{and} & \textbf{Heading} \\
\end{tabular}
\end{center}
\begin{itemize}
\item Based on the Paris Principles, the 1949 ALA rules, and Lubetzky’s 1960 draft.
\end{itemize}

\begin{center}
\begin{tabular}{l}
\textbf{Part} & \textbf{II, Description} \\
\end{tabular}
\end{center}
\begin{itemize}
\item Consisted of revised rules from the 1949 Library of Congress rules.
\end{itemize}

\begin{center}
\begin{tabular}{l}
\textbf{Part} & \textbf{III, Non-book materials} \\
\end{tabular}
\end{center}
\begin{itemize}
\item Contained rules for both entry and description of non-book materials.
\item Consisted of revised rules from the 1949 Library of Congress rules, and supplementary Library of Congress rules.
\end{itemize}
• Each text contained an appendix listing rules for entry and heading that differed in the other version.
• In 1966 there was a “memorandum of agreement” for continued revision of AACR between ALA and LA. In light of their earlier involvement, the Library of Congress and the Canadian Library Association were also formally represented in the revision process.

ISBD and AACR Revisions

• At the International Meeting of Cataloguing Experts in Copenhagen in 1969, a program of International Standard Bibliographic Description (ISBD) was developed. The objective was to identify components in a bibliographic description, their preferred order, and the necessary punctuation.
• The first ISBD standard to be produced was that for Monographs (ISBD(M)) in 1971.
• AACR chapter 6 was revised in line with ISBD(M), and published in two versions in 1974. The revised chapter contained rules for printed monographs and reproductions of printed monographs (including microform reproductions)

AACR2 1978

• In 1974 the Joint Steering Committee for the Revision of AACR (JSC) was established, with membership from the American Library Association, the British Library, the Canadian Library Association (represented by the Canadian Committee on Cataloguing), the Library Association, and the Library of Congress.
• The JSC was charged with incorporating the North American and British texts into a single version. The JSC appointed two editors for the revised code, Michael Gorman of the British Library, and Paul W. Winkler of the Library of Congress.
• The Anglo-American Cataloguing Rules, Second edition (AACR2) was published in one version in 1978.
• AACR2 was divided into two parts:

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>– I.</td>
<td>– Based on the ISBD(G) framework.</td>
</tr>
<tr>
<td>–</td>
<td>– Included a general chapter (chapter 1), and chapters for individual formats, including new chapters for machine-readable data files (chapter 9) and three-dimensional artefacts and realia (chapter 10).</td>
</tr>
<tr>
<td>–</td>
<td>– The rules for non-book materials were based on alternative codes that were published in the 1970s.</td>
</tr>
</tbody>
</table>
AACR2 was adopted by the Library of Congress, the National Library of Canada, the British Library, and the Australian National Library in January 1981.

In 1981 an abridged version, the Concise AACR2 was published [22].

Revisions to AACR2 were adopted in 1982, 1983 (published 1984), and 1985 (published 1986).

A draft revision of AACR2 chapter 9 (renamed: Computer Files) was published in 1987.

From 1981 an Australian Committee on Cataloguing (ACOC) representative was sent to JSC meetings, and from 1986 ACOC became a full JSC member.

1988 Revision

- The 1988 Revision was published in both book and loose-leaf format.
- One set of amendments was published in 1993.

1998 Revision

- The 1998 Revision was published in book and CDROM format.
- Amendments packages were published in 1999 and 2001. The 2001 amendments included a complete revision of chapter 9 (renamed: Electronic Resources).

2002 Revision

- The 2002 Revision of AACR2 incorporated the 1999 and 2001 amendments, and changes approved in 2001, including complete revisions of chapter 3 (Cartographic Materials) and chapter 12 (renamed: Continuing Resources).
- The revision of chapter 12 arose from a recommendation of the International Conference on the Principles and Future Development of AACR, and IFLA-led efforts to harmonize ISBD(CR), ISSN practice, and AACR2.
- In 2002 AACR was published only in loose-leaf format.

1.3 Physical form of Library Catalogue

1.3.1 Format

The types of physical form of a library catalogue are:

- book catalogues
- card catalogues
c. microform catalogue
d. online catalogue.

Any kind of these types has advantages and disadvantages. Thus, in deciding whether a library uses any type of a catalogue, certain considerations should be made. The library catalogue should, for example, be flexible and up-to-date to the changing of library collection; easy to use; and easy to produce in multiple copies. Since the catalogue is a record of what is available in the library, entries should be added or removed as a certain material is added, removed or discarded from the library.

The printed book or book catalogue is the oldest type of catalogue which was commonly used in American libraries. The characteristic of this type was expensive to produce and quickly became out of date or inflexible in changing of the collection. The libraries using this type should provide more copies, this is due to provide access for more users. Thus this type was gradually replaced by card catalogues.

On the other hand, with the more modern, cheaper methods of printing and with the advent of automation for quicker cumulation that the book catalogue again became popular in certain type of libraries. It is produced in more modern production techniques, such as by National Library of Medicine, the Library of Congress, and the New York Public Library. This catalogue is easy to be sent to other libraries or information agencies.

It was seen that, the card catalogue is the library most often found in the worldwide. Each entry is prepared on a standard 7.5 x 12.5 cm. card. These cards are then filed in alphabetically order by author, subject, title, or call number in the drawers to provide access to the collection. The card catalogue is very flexible, it can be easily added or removed whenever necessary. Changing can be made on cards and they can be refiled. It can be provided by references. In large library, however, filing a large of new entries takes a long time and, of course, it needs more spaces. Other disadvantages are any changing is made manually and the users tend to manipulate the trays or drawers, so that other users may have to wait them.

Microform catalogues have become much more popular with the development of computer-output microform (COM). COM catalogues are produced in microfilm or microfiche. It provides a complete data of library holding which is periodically updated. Both book and COM are inflexible in changing, they cannot be added or deleted until the new editions are produced. But, by which they are computer-produced, they are flexible in making changes of entries. With a certain command can be made to change many entries. To meet the users demand, COM should be made in many copies. They are also easy to be sent to other libraries or information agencies.
It was believed that the online catalogue is the newest. The bibliographic records stored in the computer memory are printed on the video screen in response to a request from a user. Entries may comprise the full bibliographic record, or medium, or only a brief, it is depending on the system and/or the desires of the users.

Online catalogue is the most flexible and current. Additions, deletions, and changes of entries can be made at any time, and the results are immediately available to the users. However, it is quite expensive to build up compared with other three types.

Advantages:
The main benefit of the online catalogue is that:

a. in this, the database can be searched in almost any item of information of interest to the users
b. in this the users can retrieve information in a variety of ways
c. it provides very rapid search.
d. it can be used from far a way location, so that the users can access a local, national and international cataloguing database
e. in this, filing of indexes is no longer a consideration
f. database in online catalogue can be updated online or at frequent intervals, as needed; provided instructional help
g. it provided links to card form catalogues, reference help and circulation
h. in this the online database with a certain instruction in the system, can be produced in any other physical form of catalogues; and global changing can be made.

Disadvantages:
Some of the disadvantages are:
a. it is much more sensitive in spelling
b. any error indicates unexpected or different information is printed on the computer screen
c. in this the users get frustrated by getting a quite few citations or sometimes too many citations
d. it requires a new way of getting information or training for its users
e. it will be unavailable if there is no power or if the computer breaks downs.

1.4 Types of Catalogue

1.4.1 Library Catalogue
It is found that, a library catalogue is a registry of some type of collection that a particular library possesses or shares with a group of libraries. Card catalogues were originally how a library stored information about its collections. Small cards were filled out with a book's pertinent information, such as title, author, year of publication, publisher, Dewey Decimal and ISBN numbers, and these cards were then housed in drawer-filled cabinets that were accessible to library patrons. With all exceptions, library catalogues are now fully automated and the same type of information that was formerly available in small drawers is much more easily accessed on a computer terminal. By 'structure of the catalogue' is meant how the catalogue is built up, the kinds and content of files and indexes constituting it and the relationships of these files and indexes to one another. For example, a card catalogue, whether in dictionary or divided form, may include different files such as authors (personal; and corporate); references; titles (including other title information and series titles); subject headings (including references) and shelflists.

The arrival of the online catalogue has given new dimensions to the catalogue's structure. It is generally maintained that the online catalogue can support a more complex yet more dynamic structure than that of the card catalogue. The online file may be independent and self-contained, it may be related to files of similar scope and structure or it may be integrated with other files such as holdings, circulations, acquisitions and authority files. The online catalogue provides services that were not part of the traditional library catalogue. Access to circulation information, status information, holding information, indexing of special collections, serials and so on has become possible through the development of the contents and structure of the catalogue.

It was observed that the structure of the card catalogue is based on the concept of several discrete entries for a single item, the online catalogue maintains a single-entry structure for a single item (i.e., in a master file), but with several indexes as access points to records in the master file. Emphasising what constitutes the structure of an online catalogue, Svenonius states that:

Generally, structure refers to an aggregate of elements related, or arranged with respect, to each other. The structure of a catalog or catalog database consists of bibliographic, authority, and holdings records arranged in a given order and referencing one another through a variety of synthetic relationships. Thus, filing rules, together with ordering devices, such as the main entry and sees and sees also references, define a catalog structure.... The structure of bibliographic descriptions consists of data elements arranged and presented in a given order. Thus, card catalog formats and MARC format represent different but related bibliographic structures, the former intended for display and the latter for communication.

In terms of addition to the contents of the catalogue, the online catalogue has a growing ability to enlarge its own scope. Results of a nationwide survey on the use of online catalogues in the United
States revealed that respondents were enthusiastic about accessing journal articles, newspaper articles, encyclopedias, dissertations, films and government documents through online catalogues. Other studies showed that users wanted the catalogue to be expanded to include journal titles, government publications and dissertations, and journal citations, indexes to collections, content services, abstracts and book reviews. Thus, it can be concluded that the contents of the online catalogue will be expanded in parallel with developments in the technology of catalogue construction.

Briefly, the Catalogue allows you to search and locate the Library’s print and electronic collections. Items from our University’s research repository, Opus, are also included.

It will give you the information you need to locate a print item on the Library shelves and to navigate easily to the full-text of electronic resources.

The shelf mark used for print books is a mixture of numbers and letters. The numbers represent the subject of the book, so books at the same number are on the same subject. The letters are the first part of the author's name.

Books are arranged in shelf mark order on the relevant subject floors. As well as helping you locate useful information, the Catalogue can be used to place holds (reserve) on books which are on loan to other people.

For comprehensive searches for articles in your subject area, we recommend that you use the appropriate databases listed on your Subjects pages.

1.4.2 Types

1.4.2.1 General Catalogues

Online Public Access Catalogs were the result when libraries made the switch to automation. Not only do OPACs enable more current and accurate content maintenance but accessing a library's holdings is now far more swift and efficient no matter which of the many types of available library catalogues you wish to access. Prior to automation, libraries would have to maintain multiple manual catalogues, such as author catalogues, subject catalogues and title catalogues, which are the types of information most commonly searched at public and academic libraries. With the advent of OPACs, a library customer can customize his search with the simple click of a mouse.

1.4.2.2 Special Collections
In case of special catalogue, a special research activity was involved. Perhaps you are researching your family's history or you are an art historian investigating the origins of an obscure painting. Perhaps you are interested in learning more about sociology, political life in the twentieth century or the life cycle of a grasshopper. Do you need an historical photograph to complete a report? There is a library catalogue available to help you find the relevant information you are seeking. In case of Library of Congress, a vast repository of information and is a gateway to a multitude of special-collection catalogues.

1.4.2.3 Legal

Legal research differs greatly from the type of research conducted at a public or academic library. Those in the field of law may have to investigate previous law cases or statutes that are relevant to a case they are building. Law-related library catalogues offer the user many ways to search, including by type of law, legal jurisdiction and citations.

1.4.2.4 Medical

Medical researchers may want to delve into articles on clinical trials for a medication or for protocol used by other medical professionals in dealing with a rare malady. Along with those in the legal field, medical researchers have the ability to conduct highly detailed searches using library catalogues designed specifically for providing the meticulous information they need to help their patients.

1.4.2.5 Traditional catalogue

The old card catalogue had some qualities that were lost when converting to the online catalogues. Some say that these qualities are now unneeded because we can access with free text search every item in a catalogue record. I do not quite agree. James Duff Brown published two works on libraries in the beginning of the 20th century. The first one is entitled Manual of library economy, the second one from which this is cited, is entitled Library classification and cataloguing. This is his proposal for filing cards in the catalogue the works of an author with extensive production.

• Single works in chronological order of publication
  ➢ Originals, including manuscripts
  ➢ Reprints
  ➢ Translations in foreign languages
Parodies
Criticism, etc., of single works

• Collected works in chronological order of publication
  • Author’s editions
  • Editor’s editions
  • Selections
  • Paraphrases and condensed version
  • Dramatic versions of works
  • Musical settings of works

• Bibliography
• Index

Now if you were to pull out a drawer in the card catalogue with this structure, you would be presented to the authors whole life and works at a glance, with the help of guide cards.

The intellectual work put down in the filing according to specific rules disappeared when converting to the online data base catalogue. When the card catalogue represented structure, the online catalogue was just a huge amount of single records. When you perform a search in an online catalogue the result list is often without structure even though it is based on the same cataloguing rules as the card catalogue.

Some years after the 2nd world war Seymour Lubetzky started out as a librarian at the Library of Congress. At that time the cataloguing rules of the library was a mess - a spaghetti - with even its own rule for cataloguing works about a certain building in Brazil.

1.4.2.6 Computer catalogs

It provides access to any part of the information contained in the record for an item in the library. The invention of MARC which is Machine Readable Cataloging was invented in 1960’s that made possible to encode all areas of a cataloging record to be searchable. In this type of cataloging, each part of information in a catalog record is given in a numerical coding, or field, and sometimes an alphabetical or numerical sub field. This coding makes it possible for a computer program to be written that looks for particular numbered fields when a particular type of search, such as a subject or title, is requested. Since every information in the cataloging record is encoded, searches could optionally be done by considering:

a. by ISBN number
b. by series

c. by publisher

d. by date

e. by any information stored in the cataloging record.

MARC has set the standard for all computer catalogs used in libraries today, and if the records contained in the catalog comply with MARC requirements, the only controls on areas to be searched are the limits of the particular cataloging program.

Review Questions

1. What is the basic purpose of library Catalogue?
2. Explain the idea of Charles Ammi Cutter with respect to Cataloguing?
3. What is the present status of Catalogues in libraries?
4. What is AACR2 1978 Catalogue Act?

Discussion Questions

Discuss the basic physical forms of Catalogues as present in libraries? Do these forms of Catalogues gives benefits to students with respect to Information?

Application Exercises

1. Suggest the library on laying out an informative Catalogue should explain all necessary information about the products available in the library?
2. Using the resources of your library, suggest the design of a catalogue along with detailed description about layout?
3. Highlight the primary importance of Online Catalogue with necessary information required to be put?
CHAPTER 2
Format of Catalogue Entries

Learning Objectives

- To know about catalogue entries.
- To analyse the different data elements.
- To know more about the entries to be filled in catalog.
- To explain about centralized cataloguing.
- To identify standard systems of library classification.

2.1 Kinds of Entries

Catalog entry normally behaves as an e-commerce entry that describes a product sold on your portal or website. It is same as content in the rest of Ektron which is CMS400.NET, which applies in case of catalog entries.

Catalog entries have following features:

- content status
- approvals and permissions
- metadata
- schedule
- can be private
- history and the ability to restore previous versions
- search
- taxonomies to categorize products

Catalog entries contain unique information such as:

- Tax Class which shows which taxes apply to item
- Physical dimensions calculates shipping costs
- Inventory tracking
- Pricing as described could be fixed or variable for any currency
- Tier pricing, that is, price adjusts when quantity reaches new plateau. For example, 1-9 items cost $500 each. But if 10 are sold, the price drops to $450 each.

- Images (full sized and thumbnail) to display the product on your Web Site

### 2.1.1 Tabs on Catalog

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>The entry’s content page.</td>
</tr>
<tr>
<td>Summary</td>
<td>The content summary, by default the first 40 characters of the content text.</td>
</tr>
<tr>
<td>Properties</td>
<td><strong>eCommerce information about the catalog entry:</strong></td>
</tr>
<tr>
<td></td>
<td>SKU number</td>
</tr>
<tr>
<td></td>
<td>Number of Units</td>
</tr>
<tr>
<td></td>
<td>Tax Class</td>
</tr>
<tr>
<td></td>
<td>Archived</td>
</tr>
<tr>
<td></td>
<td>Buyable</td>
</tr>
<tr>
<td></td>
<td>Dimensions</td>
</tr>
<tr>
<td></td>
<td>Inventory</td>
</tr>
<tr>
<td>Pricing</td>
<td>Lets you define list and sales price. For each enabled currency, you can set a fixed price or have it float with exchange rate</td>
</tr>
<tr>
<td></td>
<td>Allows tier pricing</td>
</tr>
<tr>
<td></td>
<td>For subscription products, you enter recurring billing interval and term</td>
</tr>
<tr>
<td>Attributes</td>
<td>Additional information to help describe a catalog entry</td>
</tr>
<tr>
<td>Tab</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Media</td>
<td>Lets you add images that appear on several eCommerce server controls</td>
</tr>
<tr>
<td>Items</td>
<td>Catalog entries that you are adding to this “umbrella” item.</td>
</tr>
<tr>
<td></td>
<td>If you add catalog entries to a simple product, it becomes a complex product.</td>
</tr>
<tr>
<td></td>
<td>For bundles, add catalog entries that make up a bundle.</td>
</tr>
<tr>
<td></td>
<td>For kits, enter groups and their options.</td>
</tr>
<tr>
<td></td>
<td>For subscription products, define membership and Ektron CMS400.NET user groups to which users are assigned when they purchase the subscription.</td>
</tr>
<tr>
<td>Metadata</td>
<td>Enter meta tags, title tags, etc.</td>
</tr>
<tr>
<td>Alias</td>
<td><strong>Note:</strong> This tab only appears if Aliasing is enabled.</td>
</tr>
<tr>
<td></td>
<td>View and edit the catalog entry’s primary manual alias</td>
</tr>
<tr>
<td></td>
<td>View all automatic aliases assigned to this catalog entry</td>
</tr>
<tr>
<td>Schedule</td>
<td>Lets you control when a version of a catalog entry becomes visible on the Web site. Similarly, you can remove a catalog entry on a predetermined date and time.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The Archive and remain on the site option is not available with catalog entries.</td>
</tr>
<tr>
<td>Comment</td>
<td>View comments on changes made when editing a catalog entry.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> To view and edit catalog entry comments, open the editor and choose Change &gt; Comment.</td>
</tr>
</tbody>
</table>
The comment also appears on the View Content and Content History screens. Use it to help distinguish one version from another.

View tasks assigned to this catalog entry.

**Note:** To add a task from the View Entry screen, click **Action > Add Task**.

Add a taxonomy category to the catalog entry.

A list of available taxonomies and whether one is required are defined on the Catalog properties screen.

### 2.1.2 Menu Options on Catalog Entry

<table>
<thead>
<tr>
<th>Menu Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action Menu</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Save</strong></td>
<td>Saves the catalog entry without leaving the editor. It is a good idea to save your work frequently.</td>
</tr>
</tbody>
</table>
**Menu Option**  | **Description**  
--- | ---  
**Check in**  | Save and check-in the document. This action returns the changed content to the database and exits the editor. It does not submit the content into the approval chain. Rather, it allows you and other users to continue changing it.  

**Submit/Publish**  

- **Submit** the content into the approval chain. This action also returns the new or updated content to the database and exits the editor.  
- **Publish** the content to the Web site.  

**Note:** Only the last approver in the approval chain sees this button. If no approval chain is assigned to the content’s folder, every authorized user sees this button.  

This action also returns the changed content to the database and exits the editor.  

**Undo checkout**  | Exit screen and do not save changes made since you began editing this catalog entry.  

**Change Menu**  

**Comment**  

Enter comments on changes made when editing a catalog entry.  

The comment also appears on the View Content and Content History screens. Use it to help distinguish one version from another.  

2.1.3.Folder View Menu options  

The following menu options are available when you open a catalog folder.
Menu option | Description
---|---

**New Menu**

Catalog | Create a new catalog folder underneath the current one.

Create a new catalog entry based on one of the displayed product types. Your product types may not match the ones shown below.

*Product types assigned to folder*

Product types are assigned to a catalog’s via the **Product Types** screen.

**View Menu**

All types, products, kits, bundles | Lets you change the display of catalog entries. You can see all entries in folder, or only those of a selected product class.

Language | Limits display of catalog entries to one language.

Also determines the language of any new catalog entries you create in this folder.
<table>
<thead>
<tr>
<th>Menu option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archive</td>
<td>Displays archived catalog entries.</td>
</tr>
<tr>
<td>Catalog</td>
<td>Lets you view and edit catalog folder information. See Also: Creating a Catalog Folder</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>Delete Menu</td>
<td>Lets you delete a catalog folder or a catalog entry within it.</td>
</tr>
<tr>
<td>Catalog</td>
<td>Deleting Folders</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Entries</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Action Menu</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.4 Basic Entries are:

1. Catalog table comprises of basic information from the entries for an individual catalogued items. Each actual catalog entry, in text form, is included, but the information has also been tabularized, as can be seen from the following description of the contents of this table.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Text</td>
<td>Catalog Number</td>
</tr>
<tr>
<td>CatEntry</td>
<td>Memo</td>
<td>Actual catalog entry from paper version</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Phase to which vessel is assigned. Phases are described on pp. 3-10 of The Pottery of Lerna IV</td>
<td></td>
</tr>
<tr>
<td>CatEnID</td>
<td>Index Key (assigned by us, not found in the catalog)</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>Class as defined in CLASSES table</td>
<td></td>
</tr>
<tr>
<td>Ht</td>
<td>Height in cm.</td>
<td></td>
</tr>
<tr>
<td>HtRemarks</td>
<td>Explanation of Ht number (e.g., est. or range of values)</td>
<td></td>
</tr>
<tr>
<td>RimDiam</td>
<td>Rim diameter in cm.</td>
<td></td>
</tr>
<tr>
<td>RimRemarks</td>
<td>Explanation of RimDiam number (e.g., est. or range of values)</td>
<td></td>
</tr>
<tr>
<td>MaxDiam</td>
<td>Max. diameter of vessel in cm.</td>
<td></td>
</tr>
<tr>
<td>DiamRemarks</td>
<td>Explanation of MaxDaim number (e.g., est. or range of values)</td>
<td></td>
</tr>
<tr>
<td>BaseFoot</td>
<td>Base or foot diameter in cm.</td>
<td></td>
</tr>
<tr>
<td>BaseRemarks</td>
<td>Explanation of BaseFoot number (e.g., est. or range of values)</td>
<td></td>
</tr>
<tr>
<td>FormShape</td>
<td>Form as defined in MORPHOLOGY table</td>
<td></td>
</tr>
<tr>
<td>FormRemarks</td>
<td>Remarks about uncertainty of shape assignment</td>
<td></td>
</tr>
<tr>
<td>FormType</td>
<td>Form type as defined in MORPHOLOGY table</td>
<td></td>
</tr>
<tr>
<td>FormDetail</td>
<td>Remarks about uncertainty of type assignment</td>
<td></td>
</tr>
<tr>
<td>Syntax</td>
<td>Syntax code as defined in SYNTAX table</td>
<td></td>
</tr>
<tr>
<td>SyntaxRemarks</td>
<td>Remarks about uncertainty of syntax assignment</td>
<td></td>
</tr>
<tr>
<td>TopOfLid</td>
<td>Description of decoration on top of lid, including pattern as defined in PATTERN table</td>
<td></td>
</tr>
<tr>
<td>SideOfLid</td>
<td>Description of decoration on side of lid, including pattern as defined in PATTERN table</td>
<td></td>
</tr>
<tr>
<td>InteriorRim</td>
<td>Description of decoration on interior of vessel or rim, including pattern as defined in PATTERN table</td>
<td></td>
</tr>
<tr>
<td>ExteriorRim</td>
<td>Description of decoration on exterior of vessel or rim,</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Neck</td>
<td>Text</td>
<td>Description of decoration on neck, including pattern as defined in PATTERN table</td>
</tr>
<tr>
<td>Shoulder</td>
<td>Text</td>
<td>Description of decoration on shoulder, including pattern as defined in PATTERN table</td>
</tr>
<tr>
<td>Handle</td>
<td>Text</td>
<td>Description of decoration on handle, including pattern as defined in PATTERN table</td>
</tr>
<tr>
<td>LowerBody</td>
<td>Text</td>
<td>Description of decoration on lower body, including pattern as defined in PATTERN table</td>
</tr>
<tr>
<td>UndersideBase</td>
<td>Text</td>
<td>Description of decoration on underside of base, including pattern as defined in PATTERN table</td>
</tr>
<tr>
<td>Foot</td>
<td>Text</td>
<td>Description of decoration on foot, including pattern as defined in PATTERN table</td>
</tr>
<tr>
<td>DecorativeDesc</td>
<td>Text</td>
<td>Description of decoration on other areas</td>
</tr>
<tr>
<td>Figure</td>
<td>Text</td>
<td>Figure number in paper version</td>
</tr>
<tr>
<td>Plate</td>
<td>Text</td>
<td>Plate number in paper version</td>
</tr>
<tr>
<td>FitchLabSampleNo</td>
<td>Number (Integer)</td>
<td>Sample number assigned by Fitch Lab (chemical analysis)</td>
</tr>
<tr>
<td>TempleLabSampleNo</td>
<td>Text</td>
<td>Sample number assigned by Temple Lab (petrographic analysis)</td>
</tr>
<tr>
<td>Clay</td>
<td>Text</td>
<td>Description of clay grade and inclusions</td>
</tr>
<tr>
<td>Fracture</td>
<td>Text</td>
<td>Munsell number and description of clay color at fractures</td>
</tr>
<tr>
<td>UnpaintedInt</td>
<td>Text</td>
<td>Munsell number and description of clay color on interior</td>
</tr>
<tr>
<td>UnpaintedExt</td>
<td>Text</td>
<td>Munsell number and description of clay color on exterior</td>
</tr>
<tr>
<td>Paint</td>
<td>Text</td>
<td>Munsell number and description of paint color</td>
</tr>
<tr>
<td>Profile</td>
<td>Text</td>
<td>Description of type of profile</td>
</tr>
<tr>
<td>Conservation</td>
<td>Text</td>
<td>Conservation work done on vessel</td>
</tr>
<tr>
<td>WearPattern</td>
<td>Text</td>
<td>Description of wear seen on sherds</td>
</tr>
<tr>
<td>Incrustations</td>
<td>Text</td>
<td>Description of incrustations found on sherds</td>
</tr>
<tr>
<td>FigLink</td>
<td>OLE Object</td>
<td>Drawing of vessel</td>
</tr>
<tr>
<td>PlateLink</td>
<td>OLE Object</td>
<td>Photograph of vessel</td>
</tr>
</tbody>
</table>
### Relationships with Catalog

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Sherds</td>
<td>CatNo</td>
</tr>
<tr>
<td>CatNo</td>
<td>LernaInvNo</td>
<td>CatNo</td>
</tr>
<tr>
<td>CatNo</td>
<td>PotContext</td>
<td>CatNo</td>
</tr>
<tr>
<td>CatNo</td>
<td>PrevPub</td>
<td>CatNo</td>
</tr>
<tr>
<td>Class</td>
<td>Classes</td>
<td>Class</td>
</tr>
<tr>
<td>FormShape</td>
<td>Morphology</td>
<td>FormShape</td>
</tr>
<tr>
<td>FormType</td>
<td>Morphology</td>
<td>FormType</td>
</tr>
<tr>
<td>Syntax</td>
<td>Syntax</td>
<td>Syntax</td>
</tr>
<tr>
<td>TopOfLid</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>SideOfLid</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>InteriorRim</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>ExteriorRim</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>Neck</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>Shoulder</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>Handle</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>LowerBody</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>UndersideBase</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>Foot</td>
<td>Pattern</td>
<td>Pattern</td>
</tr>
<tr>
<td>FitchLabSampleNo</td>
<td>FitchAnalsis</td>
<td>FitchLabSampleNo</td>
</tr>
<tr>
<td>TempleLabSampleNo</td>
<td>ThinSection</td>
<td>TempleLabSampleNo</td>
</tr>
</tbody>
</table>

2. In case of Classes table, the information is taken from classification tree. This table contains classes of the traditionally used term *ware*. Each class is defined exclusively in terms of decorative treatment, fabric, surface treatment and color; two to four attributes may define a class. Even the rare imported sherds that are included in this database are fitted into this classification scheme.

### Classes

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Text</td>
<td>Class as defined</td>
</tr>
<tr>
<td>Fabric</td>
<td>Text</td>
<td>Description of fabric</td>
</tr>
</tbody>
</table>
ClassID | Number (Long) | Index Key (assigned by us, not in catalog)
IsPainted | Text | Yes or No answer to "Is vessel painted?"
IsPatterned | Text | Yes if vessel is patterned, no if solidly painted.
IsLightOnDark | Text | Yes if pattern is light-on-dark; no if dark-on-light.
IsBurnished | Text | Yes/No.
IsGray | Text | Yes/No.

Relationships with Classes

Field Name | Related tables/files | Linked Field Names
Class | Catalog1 | Class

3. The Context table contains the basic information about site contexts - the phase(s) to which they belong and plans or elevations that show their relationships to other contexts and the site itself. Due to time and computer file constraints no links to plans or elevations were included.

Context - Descriptions of the findspots

Field Name | Field Type | Field Description
Findspot | Text | Code for findspot: Lot Number/Group/Trench/Bothros Number
Phase | Text | Phase to which findspot is assigned.
Illustration | OLE Object | Included for link to plan or elevation but not currently utilized
ContextID | Number (Long) | Index key (supplied by us, not from catalog)

Relationships with Context

Field Name | Related tables/files | Linked Field Names
Findspot | PotContext | Findspot

4. Fitch Analysis table analyse results from different forms of chemical analysis. Once the chemical compositions of the samples were determined, these compositions were subject to cluster analysis. It is only the results of the cluster analysis that are recorded here. Of course, the full chemical compositions could have been recorded.

FitchAnalysis

Field Name | Field Type | Field Description
FitchLabSampleNo  Number (Integer)  Sample Number assigned by Fitch Lab
NeutronCluster  Text  Cluster assigned by neutron activation analysis
SpectrometryCluster Text  Cluster assigned by atomic absorption spectrometry
FitchID  Number (Long)  Index Key (supplied by us, not from catalog)

**Relationships with Fitch Analysis**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>FitchLabSampleNo</td>
<td>Catalog1</td>
<td>FitchLabSampleNo</td>
</tr>
</tbody>
</table>

5. Lerna InvNo table consist of inventory numbers assigned to the vessels during the original excavations. Here the inventoried vessels have more completely restored profiles and more detailed catalog entries.

**LernaInvNo - The table of Lerna inventory numbers**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Text</td>
<td>Catalog Number</td>
</tr>
<tr>
<td>LernaInv</td>
<td>Text</td>
<td>Lerna inventory number originally assigned during excavation</td>
</tr>
<tr>
<td>InvId</td>
<td>Number (Long)</td>
<td>Index Key (supplied by us, not from catalog)</td>
</tr>
</tbody>
</table>

**Relationships with LernaInvNo**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Catalog1</td>
<td>CatNo</td>
</tr>
</tbody>
</table>

6. In Morphology table, the information describes about the range of vessel forms. Form is the broadest descriptor while type refines this general classification.

**Morphology**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FormShape</td>
<td>Text</td>
<td>The form/shape number</td>
</tr>
<tr>
<td>IsOpen</td>
<td>Text</td>
<td>Yes or No answer to &quot;Is this an open shape?&quot;</td>
</tr>
<tr>
<td>FormName</td>
<td>Text</td>
<td>Name of the form/shape</td>
</tr>
<tr>
<td>NumbHandles</td>
<td>Number (Integer)</td>
<td>The number of handles or lugs on the vessel</td>
</tr>
<tr>
<td>HandleForm</td>
<td>Text</td>
<td>Description of the handle form as defined in PROFILET</td>
</tr>
<tr>
<td>HandleAttach</td>
<td>Text</td>
<td>Description of where handles or lugs are attached</td>
</tr>
</tbody>
</table>
RimForm    Text        Description of the rim form as defined in PROFILET
NeckForm   Text        Description of the neck form as defined in PROFILET
BaseForm   Text        Description of the base or foot form as defined in PROFILET
BodyForm   Text        Description of the body form
FormDesc   Text        Detailed description of form
FormType   Text        Type number
TypeDesc   Text        Detailed description of type
Illustration OLE Object Drawing of form prototype
FormID     Number (Long) Index Key

**Relationships with Morphology**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>FormShape</td>
<td>Catalog1</td>
<td>FormShape</td>
</tr>
<tr>
<td>FormType</td>
<td>Catalog1</td>
<td>FormType</td>
</tr>
<tr>
<td>RimForm</td>
<td>ProfileT</td>
<td>Nomenclature field in a &quot;Rim&quot; row/record</td>
</tr>
<tr>
<td>NeckForm</td>
<td>ProfileT</td>
<td>Nomenclature field in a &quot;Neck&quot; row/record</td>
</tr>
<tr>
<td>HandleForm</td>
<td>ProfileT</td>
<td>Nomenclature field in a &quot;Handle&quot; Lug row/record</td>
</tr>
<tr>
<td>BodyForm</td>
<td>ProfileT</td>
<td>Nomenclature field in a &quot;Body&quot; row/record</td>
</tr>
<tr>
<td>BaseForm</td>
<td>ProfileT</td>
<td>Nomenclature field in a &quot;Base&quot; Foot row/record</td>
</tr>
</tbody>
</table>

7. The pattern table includes painted decorations available on Light-On-Dark and Dark-On-Light painted ware with illustrations.

**Pattern**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>Text</td>
<td>Code (Roman numeral) for pattern</td>
</tr>
<tr>
<td>PatternSort</td>
<td>Number (Integer)</td>
<td>Pattern Code as an Arabic numeral</td>
</tr>
<tr>
<td>PatternDesc</td>
<td>Text</td>
<td>Description of pattern</td>
</tr>
<tr>
<td>Motif</td>
<td>Text</td>
<td>Motif (variant of pattern type)</td>
</tr>
<tr>
<td>MotifDesc</td>
<td>Text</td>
<td>Description of motif</td>
</tr>
<tr>
<td>PatternIll</td>
<td>OLE Object</td>
<td>Illustration of pattern and motif</td>
</tr>
<tr>
<td>PatternID</td>
<td>Number (Long)</td>
<td>Index Key</td>
</tr>
</tbody>
</table>
Relationships with Pattern

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>InteriorRim</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>ExteriorRim</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>Neck</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>Shoulder</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>LowerBody</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>UndersideBase</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>TopOfLid</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>SideOfLid</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>Foot</td>
</tr>
<tr>
<td>Pattern</td>
<td>Catalog1</td>
<td>Handle</td>
</tr>
</tbody>
</table>

8. Plan Elevation table comprises of plans and elevations. Here the findspots are indicated on particular drawings.

**PlanElevation**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PlanID</td>
<td>Number (Long)</td>
<td>Index Key</td>
</tr>
<tr>
<td>Description</td>
<td>Text</td>
<td>Description of plan or elevation</td>
</tr>
<tr>
<td>Image</td>
<td>OLE Object</td>
<td>Drawing</td>
</tr>
</tbody>
</table>

9. Where as in Pot Context table, data on findspots of catalog contains entries. There could be several findspots per vessel because sherds from a single pot may have been scattered over the site.

**PotContext**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Text</td>
<td>Catalog number</td>
</tr>
</tbody>
</table>
The Prev Publication table contains references to other publications which mention specific catalog entries.

**PrevPub**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Text</td>
<td>Catalog Number</td>
</tr>
<tr>
<td>Publication</td>
<td>Text</td>
<td>Previous publication of vessel</td>
</tr>
<tr>
<td>PubID</td>
<td>Number (Long)</td>
<td>Index Key (supplied by us, not in catalog)</td>
</tr>
</tbody>
</table>

In case of Profile Terminology table, links to illustrations of the various profile descriptors are used.

**ProfileTerminology**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Text</td>
<td>Area of vessel to which term applies: rim, neck, base, foot, handle, lug, lid</td>
</tr>
<tr>
<td>Nomenclature</td>
<td>Text</td>
<td>Descriptive term</td>
</tr>
<tr>
<td>Image</td>
<td>OLE Object</td>
<td>Illustration of profile</td>
</tr>
<tr>
<td>DescID</td>
<td>Number (Long)</td>
<td>Index Key (supplied by us, not in catalog)</td>
</tr>
</tbody>
</table>

In case of Profile Terminology table, links to illustrations of the various profile descriptors are used.

**ProfileTerminology**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Text</td>
<td>Area of vessel to which term applies: rim, neck, base, foot, handle, lug, lid</td>
</tr>
<tr>
<td>Nomenclature</td>
<td>Text</td>
<td>Descriptive term</td>
</tr>
<tr>
<td>Image</td>
<td>OLE Object</td>
<td>Illustration of profile</td>
</tr>
<tr>
<td>DescID</td>
<td>Number (Long)</td>
<td>Index Key (supplied by us, not in catalog)</td>
</tr>
</tbody>
</table>

In case of Profile Terminology table, links to illustrations of the various profile descriptors are used.
Nomenclature in a "Neck" Morphology NeckForm
Nomenclature in a "Shoulder" Morphology ShoulderForm
Nomenclature in a "Handle" Morphology HandleForm
Nomenclature in a "Lug" Morphology HandleForm
Nomenclature in a "Base" Morphology BaseForm
Nomenclature in a "Foot" Morphology BaseForm

12. Sherds table mentioned describes existing sherd types from each catalog entry. There may be multiple sherd types found for any given vessel.

**Sherds (SHERDS)**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Text</td>
<td>Catalog number</td>
</tr>
<tr>
<td>FragmentType</td>
<td>Text</td>
<td>Sherd types found</td>
</tr>
<tr>
<td>FragID</td>
<td>Number (Long)</td>
<td>Index Key</td>
</tr>
</tbody>
</table>

**Relationships with Sherds**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>CatNo</td>
<td>Catalog1</td>
<td>CatNo</td>
</tr>
</tbody>
</table>

13. Here the Syntax table contains a number of standard decorative schemes which are used in pottery. The patterns used and their placement on individual pots both change in Lerna IV from the preceding EHII examples.

**Syntax**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax</td>
<td>Text</td>
<td>Syntax code</td>
</tr>
<tr>
<td>InteriorRim</td>
<td>Text</td>
<td>Description of pattern found in this area</td>
</tr>
<tr>
<td>ExteriorRim</td>
<td>Text</td>
<td>Description of pattern found in this area</td>
</tr>
</tbody>
</table>
Neck Text Description of pattern found in this area
Shoulder Text Description of pattern found in this area
LowerBody Text Description of pattern found in this area
UndersideBase Text Description of pattern found in this area
Foot Text Description of pattern found in this area
SyntaxId Number (Long) Index Key (supplied by us, not in catalog)

**Relationships with Syntax**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax</td>
<td>Catalog1</td>
<td>Syntax</td>
</tr>
</tbody>
</table>

14. In case of Thin Section table, photographs of thin section petrography done by the Mineralogy Laboratory, Department of Geology.

**ThinSection**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Type</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TempleLabSampleNo</td>
<td>Text</td>
<td>Laboratory Sample Number</td>
</tr>
<tr>
<td>Image</td>
<td>OLE Object</td>
<td>Link to photograph of thin section</td>
</tr>
<tr>
<td>TempleID</td>
<td>Number (Long)</td>
<td>Index Key (supplied by us, not in catalog)</td>
</tr>
<tr>
<td>Description</td>
<td>Text</td>
<td>Description of sample</td>
</tr>
</tbody>
</table>

**Relationships with ThinSection**

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Related tables/files</th>
<th>Linked Field Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>TempleLabSampleNo</td>
<td>Catalog1</td>
<td>TempleLabSampleNo</td>
</tr>
</tbody>
</table>

### 2.2 Data elements in different Types of Entries

#### 2.2.1 Data Elements

Data included 365 vessels found in Phase I, Level IV, where not all graphics associated with vessels, patterns, and thin sections are available. Even without all the illustrations, several of these tables/files are very large.

In case of information related to pottery, the layout is designed in tabular form. To the best of the ability, the organizational scheme was set up. This organization provides a primary table that presents most of the data from an individual catalog entry as a single record or row. Some data items, such as findspots and Lerna inventory numbers, may require multiple entries for a single catalog item, but such multiple entries (called "repeating" fields) create a variety of problems, and we did not
wish to use them. Therefore, there are related subsidiary tables for data such as findspots and Lerna
inventory numbers, each table containing at least one entry per catalog item and possibly many
entries per catalog item. Together, the catalog table and these subsidiary tables provide all the
information from the paper catalog entries.

It was observed that there was another group of tables that provide auxiliary information to define
terms in the catalog. In case of Morphology table, its individual records contain the descriptive
terms that define standard morphological types, such as rim-handled tankards (defined by body
shape, handle number and position, etc.). Thus, any rim-handled tankard is described by the entry for
rim-handled tankard in the morphology table. We have included a representative sample of such
auxiliary material, but certainly not all the ancillary information that Mr. Rutter makes available in
his book. In general, we created a structure that can be easily expanded to incorporate data not
already included. For example, information linking findspots to architectural features of Lerna IV,
phase I, is not present in this sample data base, but it is included in Mr. Rutter's analysis. With the
inclusion of this group of auxiliary tables, essentially all of the data provided in the book could be
included within the data base.

In this the resulting design comprised a set of 14 separate tables with the links connecting them.
These tables were then placed into a computer database form, using the program called Access. As a
result, full database systems are available for users of either database management system, Access or
FileMaker Pro. Either database may be downloaded for use and experimentation. Users will need to
read the following, though, to learn more about the way the data have been organized and to know
how best to use the systems.

To authorize access to the information and the database experiment, the data is provided in a more
open format commonly called as ASCII (comma delimited). ASCII files, however, will require users
to understand how the different data tables are to be used; so they will need to attend very carefully
to the following information about the data tables. The users of these files must also download the
images separately and re-establish links to include images in their database. In this, the image files
are in TIFF format and are provided in a separate compressed file. We had originally planned to
provide a set of DBF-formatted files; after starting to generate them, however, we discovered that
this format was producing files too large to handle conveniently. ASCII files may be utilized if you
have software that requires DBF formatted files.

In catalogue entries we not only provide for access points to meet the variety of user needs to find a
document but also information about the document. The information we give in the main entry will
help the user form an idea as to the nature and the contents of the document. Users will, thus, be able
to decide the usefulness or otherwise of a document in the particular context of their requirements.
At the same time we cannot overdo in providing information by giving every possible detail. Therefore, a catalogue code speaks of the extent of information to be given in a catalogue entry - main or added. It names the various parts of the entries and the type of information given in each part.

Each part contains certain elements of information. For example, the part known as 'Title and Responsibility' part contains information on the title of the work; its sub-title if there is a sub-title; alternative title when the work is in a different language. Similarly, this part also gives information about the author or authors and other collaborators responsible for the work.

It was observed that the different elements that provide information about the document in the catalogue entry are the data elements. A group of data elements arranged in a prescribed order constitutes an area of description. In a part of a main entry sometimes there may be two or more areas of description.

<table>
<thead>
<tr>
<th>Field</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>(AB)</td>
</tr>
<tr>
<td>Copyright Information</td>
<td>(CI)</td>
</tr>
<tr>
<td>Affiliation</td>
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</tr>
<tr>
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<td>(IRAD)</td>
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<tr>
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<td>(AID)</td>
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<tr>
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<td>(AU)</td>
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<td>(FAU)</td>
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<tr>
<td>Book Title</td>
<td>(BTI)</td>
</tr>
<tr>
<td>Collection Title</td>
<td>(CTI)</td>
</tr>
<tr>
<td>Comments/Corrections</td>
<td></td>
</tr>
<tr>
<td>Corporate Author</td>
<td>(CN)</td>
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<tr>
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<td>(LR)</td>
</tr>
<tr>
<td>Date of Electronic Publication</td>
<td>(DEP)</td>
</tr>
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<td>Date of Publication</td>
<td>(DP)</td>
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<tr>
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<td>(EN)</td>
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<td>(ED)(FED)</td>
</tr>
<tr>
<td>Entrez Date</td>
<td>(EDAT)</td>
</tr>
<tr>
<td>Gene Symbol</td>
<td>(GS)</td>
</tr>
<tr>
<td>General Note</td>
<td>(GN)</td>
</tr>
</tbody>
</table>
2.3 Filing of Entries- Classified and Alphabetical

2.3.1 Classification

A library classification is a system of coding and organizing documents or library materials that includes:

a. books
b. serials
c. audiovisual materials
d. computer files
e. maps
f. manuscripts
g. realia

As per the subject and allocating a call number to that information resource is required. Bibliographic classification systems group entities together that are relevant to the same subject,
typically arranged in a hierarchical tree structure. A different kind of classification system, called a faceted classification system, is also widely used which allows the assignment of multiple classifications to an object, enabling the classifications to be ordered in multiple ways.

Library classification form part of the field of library and information science. It is a form of bibliographic classification where the library classifications are used in library catalogs, while "bibliographic classification" also covers classification used in other kinds of bibliographic databases. It goes hand in hand with library (descriptive) cataloging under the rubric of citing library materials is called a cataloguer or catalog librarian. Library classification systems are one of the two tools used to facilitate subject access. The other consists of alphabetical indexing languages such as Thesauri and Subject Headings systems. Library classification of a piece of work consists of two steps. Firstly, the "aboutness" of the material is ascertained. Next, a call number based on the classification system in use at the particular library will be assigned to the work using the notation of the system.

It was observed that, unlike subject heading or thesauri where multiple terms can be assigned to the same work, in library classification systems, each work can only be placed in one class. This is due to shelving purposes: A book can have only one physical place. However in classified catalogs one may have main entries as well as added entries. Most classification systems like the Dewey decimal classification and Library of Congress classification also add a cutter number to each work which adds a code for the author of the work.

Classification systems in libraries generally play two roles:
- they facilitate subject access by allowing the user to find out what works or documents the library has on a certain subject.
- they provide a known location for the information source to be located.

Until the 19th century, many libraries had closed stacks, so the library classification only served to organize the subject catalog. In the 20th century, libraries opened their stacks to the public and started to shelve the library material itself according to some library classification to simplify subject browsing.

It was believed that, some classification systems are more suitable for aiding subject access, rather than for shelf location. In case of UDC which uses a complicated notation including plus, colons are more difficult to use for the purpose of shelf arrangement but are more expressive compared to DDC in terms of showing relationships between subjects. Similarly faceted classification schemes are more difficult to use for shelf arrangement, unless the user has knowledge of the citation order.
Depending on the size of the library collection, some libraries might use classification systems solely for one purpose or the other. In extreme cases a public library with a small collection might just use a classification system for location of resources but might not use a complicated subject classification system. Instead all resources might just be put into a couple of wide classes. This is known as a "mark and park" classification method, more formally called reader interest classification.

2.3.2 Types

There are many standard systems of library classification in use, and many more have been proposed over the years. However in general, classification systems can be divided into three types depending on how they are used:

a. Universal schemes covering all subjects.

i. Dewey Decimal Classification

In this system of library classification, there are ten classes, each divided into ten divisions, each having ten sections. It was observed that although there are only 99 of 100 divisions and 908 of 999 sections in total, as some are no longer in use or have not been assigned.

In case of an alphanumeric system, the DDC is hierarchical; it also uses some aspects of a faceted classification scheme, combining elements from different parts of the structure, to construct a number representing the subject content (often combining two subject elements with linking numbers and geographical and temporal elements) and the form of an item, rather than drawing upon a list containing each class and its meaning. For example, 330 for economics + .9 for geographic treatment + .04 for Europe = 330.94 European economy; 973 for United States + .05 form division for periodicals = 973.05 periodicals concerning the United States generally.

In libraries, books are catalogued in ascending numerical order. When two or more books have the same classification number, the system sub-divides the class alphabetically, by the use of a call number usually the first letter, or letters, of the author's last name, or the title if there is no identifiable author.

The DDC has a number for all books, including fiction. Most libraries create a separate fiction section to allow shelving in a more generalized fashion than Dewey provides for, or to avoid the space that would be taken up in the 800s, or simply to allow readers to find preferred authors by alphabetical order of surname.
Some parts of the classification offer options to accommodate different kinds of libraries. An important feature of the scheme is the ability to assign multiple class numbers to a bibliographical item and only use one of them for shelving. The added numbers appear in the classified subject catalog. For the full benefit of the scheme the relative index and the tables that form part of every edition must be understood and consulted when required. The structure of the schedules is such that subjects close to each other in a dictionary catalog are dispersed in the Dewey schedules.

ii. Universal Decimal Classification

In case of **Universal Decimal Classification** (UDC), a bibliographic and library classification was developed by the Belgian bibliographers Paul Otlet and Henri La Fontaine at the end of the 19th century. It provides a systematic arrangement of all branches of human knowledge organized as a coherent system in which knowledge fields are related and inter-linked.

In the beginning, the Dewey decimal classification was developed as a new analytico-synthetic classification system with a significantly larger vocabulary and syntax that enables very detailed content indexing and information retrieval in large collections. In its first edition in 1905, the UDC already included many features that were revolutionary in the context of knowledge classifications: tables of generally applicable (aspect-free) concepts - called common auxiliary tables; a series of special auxiliary tables with specific but re-usable attributes in a particular field of knowledge; an expressive notational system with connecting symbols and syntax rules to enable coordination of subjects and the creation of a documentation language proper. Although originally designed as an indexing and retrieval system, due to its logical structure and scalability, UDC has become one of the most widely used knowledge organization systems in libraries, where it is used for either shelf arrangement, content indexing or both. UDC codes can describe any type of document or object to any desired level of detail. These can include textual documents and other media such as films, video and sound recordings, illustrations, maps as well as regalia such as museum objects.

In the first edition in French "Manuel du Répertoire bibliographique universel", UDC has been translated and published in various editions in 40 languages. UDC Summary, an abridged Web version of the scheme is available in over 45 languages. The classification has been modified and extended over the years to cope with increasing output in all areas of human knowledge, and is still under continuous review to take account of new developments.

iii. Library of Congress Classification

In **Library of Congress Classification (LCC)** a system of library classification was introduced and developed by the Library of Congress, which was used by most research and academic libraries in
U.S. and several other countries. Most public libraries and small academic libraries continue to use the older Dewey Decimal Classification (DDC) Indeed, the Taipei public library in ROC uses Dewey for English-language books.

LCC should not be confused with LCCN, the system of Library of Congress Control Numbers assigned to all books (and authors), which also defines URLs of their online catalog entries, such as "82006074" and "http://lccn.loc.gov/82006074". The Classification is also distinct from Library of Congress Subject Headings, the system of labels such as "Boarding schools" and "Boarding schools--Fiction" that describe contents systematically.

This classification was invented by Herbert Putnam in 1897, just before he assumed the librarianship of Congress. With advice from Charles Ammi Cutter, it was influenced by his Cutter Expansive Classification and by the DDC, Dewey. It was designed specifically for the purposes and collection of the Library of Congress to replace the fixed location system developed by Thomas Jefferson. By the time Putnam departed from his post in 1939, all the classes except K (Law) and parts of B (Philosophy and Religion) were well developed.

LCC has been criticized for lacking a sound theoretical basis; many of the classification decisions were driven by the practical needs of that library rather than epistemological considerations. Although it divides subjects into broad categories, it is essentially enumerative in nature. That is, it provides a guide to the books actually in one library's collections, not a classification of the world.

b. Specific classification schemes

It is for particular subjects or types of materials such as:

i. Iconclass

ii. British Catalogue of Music Classification

The British Catalogue of Music Classification (BCM Classification) is a faceted classification that was commissioned from E. J. Coates by the Council of the British National Bibliography to organize the content of the British Catalogue of Music. The published schedule (1960) was considerably expanded by Patrick Mills of the British Library up until its use was abandoned in 1998. Entries in the catalogue were organized by BCM classmark from the catalogue's inception in 1957 until 1982. From that year the British Catalogue of Music (which from 1974 onward was published by The British Library) was organized instead by Dewey Decimal Classification number, though BCM classmarks continued to be added to entries up to the 1998 annual cumulation.
In this, a schedule is divided into two main parts:
- A-B representing Musical literature
- C-Z representing Music Scores and Parts

There are also seven auxiliary tables dealing with various sub-arrangements, sets of ethnic/locality subdivisions and chronological reference points.

The document is retroactive using uppercase alphabetic characters omitting I and O, with the addition of slash / and parentheses ( ) which have specific interiorizing functions. Retroactive notation requires that the classifier combines terms in reverse schedule order. This has the benefit of producing a compact notation by removing the need for facet indicators.

In schedule A, Music Literature parallels that from the Scores and Parts schedules thus Choral Music is at D while books about Choral Music are at AD; Harp Music is at TQ so books on harp music are at ATQ. The schedule at B accommodates books about specific composers and music in non-European traditions.

As per S. R. Ranganathan, a fully faceted scheme in which the BCM class numbers are capable of being chain-indexed, allowing index access to each step of the hierarchy.

BCM classification had a strong influence on Russell Sweeney's so-called Phoenix Dewey 780 schedule which in turn influenced the 780 Music schedule in the 20th edition of Dewey Decimal Classification. The music schedule of the second edition of the Bliss Classification is also strongly influenced by BCM.

iii. Dickinson classification

It was seen that, the Dickinson classification is based on library classification scheme that was used to catalogue and classify musical compositions. It was developed by George Sherman Dickinson during the year 1886 - 1964 and is used by many music libraries. It is fully detailed by Carol June Bradley in The Dickinson classification : a cataloguing & classification manual for music; including a reprint of the George Sherman Dickinson Classification of Musical Compositions published by Carlisle Books in the year 1968.

iv. NLM Classification for medicine.

In the National Library of Medicine (NLM) classification system, a library indexing system was introduced that covers the fields of medicine and preclinical basic sciences. The NLM classification is patterned after the Library of Congress (LC) Classification system: alphabetical letters denote
broad subject categories which are subdivided by numbers. For example, QW 279 would indicate a book on an aspect of microbiology or immunology.

In case of NLM classification, one- or two-letter alphabetical codes are used as a limited range of letters namely QS–QZ and W–WZ. This allows the NLM system to co-exist with the larger LC coding scheme as neither of these ranges are used in the LC system. There are, however, three pre-existing codes in the LC system which overlap with the NLM: Human Anatomy (QM), Microbiology (QR), and Medicine (R). To avoid further confusion, these three codes are not used in the NLM.

The headings for the individual schedules may be letters or letter pairs are given in brief form (e.g., QW - Microbiology and Immunology; WG - Cardiovascular System) and together they provide an outline of the subjects covered by the NLM classification. Headings are interpreted broadly and include the physiological system, the specialties connected with them, the regions of the body chiefly concerned and subordinate related fields. The NLM system is hierarchical, and within each schedule, division by organ usually has priority. Each main schedule, as well as some sub-sections, begins with a group of form numbers ranging generally from 1–49 which classify materials by publication type, e.g., dictionaries, atlases, laboratory manuals, etc.

c. National schemes specially created for certain countries. \\

In case of National schemes, there exists Swedish library classification system and Sveriges Allmänna Biblioteksförening.

d. In terms of functionality, classification systems are often described as:

i. Enumerative:
In this the subject headings are listed alphabetically, with numbers assigned to each heading in alphabetical order.

ii. Hierarchical:
In this, the subjects are divided hierarchically, from most general to most specific.

iii. Faceted or analytic-synthetic:
In this, the subjects are divided into mutually exclusive orthogonal facets.
It was observed that there exist few completely enumerative systems or faceted systems which were mostly systems that are blended but favouring one type or the other. The most common classification systems, LCC and DDC, are essentially enumerative, though with some hierarchical and faceted elements (more so for DDC), especially at the broadest and most general level. The first true faceted system was the Colon classification of S. R. Ranganathan.

### 2.4 Centralised Cataloguing: Cataloguing in Publication and Pre Natal Cataloguing

#### 2.4.1 Introduction

It was in the jurisdiction of the cataloguing department to decide on the appropriate form for identifying authorship of works in the collection that describes the item as a physical item or a virtual source which assigns subject access points. In the cataloguing, on the process lip, headings for different types of entries to be prepared should be listed. The headings should be listed on the pattern of a tracing section. At this stage, the cataloguer should pass on the volumes along with process slips to the typist to type out catalogue cards or to handwrite the card. At last, the product of cataloguing is similar like a card or in modern sense an entry in the OPAC giving essential general information about informational entity. This essential general information includes details about:

a. author  
b. title  
c. place of publication  
d. name of publisher  
e. year of publication  
f. edition  
g. editorship  
h. pagination  
i. illustration

in this, the individual cards which bear the class number or call number to enable the item to be located are arranged in some definite order. It may be noted that for each volume, an additional card called shelf list card shall be prepared.

In areas of publishing and library science, Cataloging in Publication commonly represent as CIP is basic cataloging data for a work that was prepared in advance of publication by the national library of the country where the work is principally published or by the library of a publishing organisation such as a government department. The name reflects the usual practice of including that information in the corresponding publication—in the case of books, near the bottom of
the copyright page, and can be very useful for less experienced cataloguers when adding such items to their collections. The national libraries’ CIP staffs restrict the range of publications that CIP will be prepared for, for instance requiring access to assistance from the publisher’s staff.

It was observed that a frequent problem with CIP is that when publishers change bibliographic details such as the wording of a title, after receiving the CIP data, the CIP data as published in the item will be incorrect and not able to be used by subsequent cataloguing agencies without manual amendment. If a pre-publication record has been entered onto a database it can be difficult to locate and edit to match the details on the item itself.

A Cataloging in Publication record is a bibliographic record prepared by the Library of Congress for a book that has not yet been published. When the book is published, the publisher includes the CIP data on the copyright page thereby facilitating book processing for libraries and book dealers. The British Library contracts the administration of the CIP Programme and the creation of records to Bibliographic Data Services Limited (BDS). BDS is an independent, privately-owned company specialising in the creation of high-quality bibliographic data for use by libraries, booksellers and publishers.

BDS gathers information from publishers on new and forthcoming books. BDS can supply publishers with pre-printed forms to send in book information or can accept publishers’ advance information sheets. It is important that information is sent to BDS at least four months in advance of publication and that they are notified of any changes, in particular to the scheduled date of publication and to the price.

It should be noted that, Publishers should include ISBNs with their advance information. The ISBN is a product number used in the book community for listing, ordering and stock control purposes. Publishers requiring ISBNs should contact the UK ISBN Agency.

The CIP excludes:

1. websites, blogs
2. publications published by a non-Canadian publisher, even if they are printed or distributed in Canada.
3. publications published by a non-Canadian publisher, even if they are written by a Canadian.
4. school material at the elementary and secondary levels (student texts as well as teachers' resources and all ancillary material), including readers.
5. periodical/serial publications, as well as loose leaf publications which are intended to be updated.
6. publications intended for a limited or circumscribed distribution (family members, friends, group members or participants at an event, conference or seminar, or clients of a company).
7. musical sound recordings.
8. music scores and sheet music.
9. electronic versions of material previously published in print or other format
   10. ephemeral publications, such as leaflets, calendars, diaries, trade catalogues, phone books, game books, colouring books, crossword books, blank books.
11. games.
12. posters.
13. maps.

2.5 Machine Format: MARC and CCF

2.5.1 MARC

**Machine-Readable Cataloging** is basically an international standard digital format for the description of bibliographic items that was developed by the Library of Congress during the 1960s to facilitate the creation and dissemination of computerized cataloging from library to library within the same country and between countries. By 1971, the MARC format had become the national standard for dissemination of bibliographic data and by 1973, an international standard. There are several versions of MARC in use in the world, the most predominant being MARC 21, created in 1999 as a result of the harmonization of U.S. and Canadian MARC formats, and UNIMARC, widely used in Europe. The MARC 21 family of standards now includes formats for authority records, holdings records, classification schedules, and community information, in addition to formats for the bibliographic record.

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

2.5.1.1 Record structure

**ISO 2709**

In ISO 2709, MARC records are usually stored and transmitted as binary files, usually with several MARC records concatenated together into a single file. MARC uses the ISO 2709 standard to define the structure of each record. This includes a marker to indicate where each record begins and ends, as well as a set of characters at the beginning of each record that provide a directory for locating the fields and subfields within the record.
2.5.1.2 Field designations

It was observed that, each field in a MARC records provides information about the item the record is describing. Since it was first developed at a time when computing power was low, and space precious, MARC uses a simple three-digit numeric code right from 001-999 in order to identify each field in the record. The bibliographic standard, for example, defines 100 as the primary author of a work, 245 as the title, 260 is used for publisher information, and so on.

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

Content

It was observed that in case of MARC, it is a metadata transmission standard which is not a content standard. Other than a handful of fixed fields defined by the MARC standards themselves, the actual content a cataloger will place in each MARC field is usually governed and defined by standards outside of MARC. Anglo-American Cataloguing Rules particularly define about the physical characteristics of books and how other item should be cataloged. The Library of Congress Subject Headings (LCSH) provides a list of authorized subject terms to describe the main content of the item. Other cataloging rules, subject thesauri, and classification schedules can also be used.

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

2.5.1.3 MARC formats

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority records</td>
<td>Provide information about individual names, subjects, and uniform titles. An authority record establishes an authorized form of each heading, with references as appropriate from other forms of the heading.</td>
</tr>
</tbody>
</table>
Bibliographic records describe the intellectual and physical characteristics of bibliographic resources (books, sound recordings, video recordings, and so forth).

Classification records are MARC records containing classification data. For example, the Library of Congress Classification has been encoded using the MARC 21 Classification format.

Community Information records are MARC records describing a service providing agency. For example, the local homeless shelter or tax assistance provider.

Holdings records provide copy-specific information on a library resource such as number, shelf location and volumes held.

**MARC 21**

It was seen that, MARC 21 is a result of the combination of the United States and Canadian MARC formats as USMARC and CAN/MARC. It is based on the ANSI standard Z39.2, which allows users of different software products to communicate with each other and to exchange data. MARC 21 was designed to redefine the original MARC record format for the 21st century and to make it more accessible to the international community. MARC 21 has formats for the following five types of data: Bibliographic Format, Authority Format, Holdings Format, Community Format, and Classification Data Format. Currently MARC 21 has been implemented successfully by The British Library, the European Institutions and the major library institutions in the United States, and Canada.

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

**MARCXML**

MARC XML is an XML schema based on the fairly common MARC21 standards. It was developed by the US Library of Congress and adopted by it and others as a means of easy sharing of, and networked access to, bibliographic information.

Being easy to parse by various systems allows it to be used as an aggregation format, as it is in software packages such as MetaLib, though that package merges it into a wider DTD specification.
The design goals are:

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

2.5.1.4 Future

It was believed that the future of MARC formats is a concern of debate among libraries. On the other hand, the storage formats are quite complex and are based on outdated technology. On the other, there is no alternative bibliographic format with an equivalent degree of granularity. The billions of MARC records in tens of thousands of individual libraries (including over 50,000,000 belonging to the OCLC consortium alone) create inertia.

2.5.2 Common Communication Format (CCF)

CCF is basically a structure format for creating bibliographical records and for exchanging records between groups of information agency and libraries. An international symposium in Taormina, Sicily conducted by UNESCO was held in April, 1978. On the recommendations of the symposium UNESCO / PGI formed the adhoc group on the establishment of a Common Communication Format (CCF). The first edition of CCF was published in 1984 under the editorship of Peter Simmons and Alan Hopkins and its second edition was published in 1988 in two volumes called CCF/B and CCF/F. Several countries have adopted this standard for exchange and creation of bibliographic records at national level.

2.5.2.1 Structure of CCF

The structure of CCF is commonly an implementation of ISO-2709, which comprises of the following:

a) Record Labels:

Each CCF record begins with a fixed record label of 24 characters and consists of data element which contains the record. Each data element is identified by its relative character positioning the label.
b) Directory:

It was seen that, directory is a table containing a variable number of 14 characters entries i.e the length of each directory entry is of 14 characters terminated by a fixed separator character. In this, each directory entry corresponds to a specific variable. Data fields in the record are divided into four sub sections or parts, each containing data for the following data elements:

i) Tab

ii) Length of the data field

iii) Starting character position

iv) Implementation defined section

c) Data Fields:

In the CCF a data field is defined as consisting of-

i) Indicator

ii) Sub Fields: A sub field consists of a subfield identifier followed by a data string which is terminated by either another sub field identifier or a field separator.

iii) Field Separator: The field separator is that character which constitutes the final character of every data field except for the final data field in the record.

iv) Record Separator: The record separator is that character which makes the end of the final data field in the record and constitutes the final character of the record.

2.5.2.2 Limitation of CCF

It should be clearly seen and analysed that, CCF is not designed to meet the requirement of all types of libraries and information organizations for local implementation. It is also not expected that institutes will use CCF record format for internal storage and processing purpose.

The major limitations of CCF are-

a) It is not sufficiently detailed in its definition and coverage of all data elements necessary for creating a bibliographical database for an individual library.
b) It does not include its cataloguing rules nor does it align itself with any particular cataloguing code or set of rules oriented towards a specific or fixed type of information output form.

c) Except for standard CCF fields CCF recommends the use of alphanumeric code for tags but it may not be possible to use alphanumeric code for tags in all cases (e.g., when library system uses CDS/ISIS, this recommendation cannot be implemented).

d) Though in CCF further addition of the new data elements and their respective content designator is possible, the unrestricted interpolation by different users can create complication for exchanging data among libraries. In such cases, the content designators of newly added data elements are likely to vary which may cause inconvenience for exchanging data from one database to another.

Review Questions

5. Explain the data elements present by highlighting special fields?
6. What is the general information’s as explained by OPAC?
7. What are some of the MARC formats used?
8. What are the basic limitations of Common Communication Format?

Discussion Questions

1. What are the various TABS available on library catalogue?
2. Discuss the Benefits of Dewey Decimal Classification with examples?

Application Exercises

4. By using library classification concept, how the inventory of the library could be arranged? Sketch the various aspects required to arrange?
5. Using the resources of your library, design and explain the library catalog entry screen with illustrations?
6. Explain cataloguing with necessary examples and illustrations?
CHAPTER 3
Choice and Rendering of Headings and Cataloguing of Non Print Media

Learning Objectives

- To know more about Personal Authors.
- To generalize Corporate Authors.
- To know more about Pseudonymous and Anonymous Works.
- To explain about Non print Media and its generalized terms.

3.1 Personal Authors (Western and Indic Names)

3.1.1 Early Names

In case of an Indic name borne by a person who flourishes before the middle of the nineteenth century, it is seen that the first part of the personal name shows the first element, ignoring honorifics and religious terms of address which can be preceded. For the treatment of such terms as integral parts of names, see below. Do not include the enclitic -ji (or -jee) sometimes added to the personal element of the name. (e.g. Kālidāsa)

Where as in case of the name of an ancient or medieval Sanskrit author or an author of a Prakrit text, records has been taken as Sanskrit form of the name which could be the preferred name. Such names have title such as:

a. Shri (Sri)
b. Swami
c. Sastri
d. Acharya
e. Bhatta
f. Saraswati
g. Muni

These are basically the integral part of the name as it usually appears with the name in reference sources as Śrīharṣa. For the name of a Buddhist author of a Pali text, record the Pali form of the name as the preferred name. (e.g. Dhammakitti)

3.1.2 Modern Names
It is seen that in case of exceptions, for an Indic name of a person flourishing after the middle of the nineteenth century, record the surname or the name that the person is known to have used as a surname as the first element of the preferred name. If there is no surname, record the last name as the first element. (e.g. Dutt, Romesh Chunder)

3.1.2.1 Exceptions

i. Kannada, Malayalam, Tamil, and Telugu names.

It was believed that, if the name in one of these languages and does not contain a surname or a name known to have been used by the person who bears the name as a surname, record the given name as the first element of the preferred name. In such case, the given names in these languages are normally preceded by a place name and occasionally by the father’s given name and may be followed by a caste name. (e.g. Sankaran Nair, C.)

ii. Sikh names

The Sikh name of a person who does not use Singh or Kaur as a surname, record the first of his or her names as the given name since the first element of the preferred name as Khushwant Singh.

iii. Religious names

In case of a modern person of religious vocation whether Hindu, Buddhist, or Jain, record the religious name as the first element of the preferred name, that is followed by a comma and the religious title as Chinmayananda, Swami.

3.1.4 Romanized Indic Names

Technically, when a systematic romanizing headings for Indic personal names containing characters or groups of characters attempts to reproduce the sound of English initials, then romanisation characters will allow their equivalents from the romanization tables. Refer from a form giving the same romanization of the surname but representing the abbreviated forms by the equivalent English initials whose sound they attempt to reproduce.

100 1# Sa Kuppucāmi, Pi. Ār.
400 1# Sa Kuppucāmi, P. R.
100 1# Sa Muttucāmi, Es.
3.1.4.1 Spelling

It was estimated that the names of persons living in countries where orthographic reform has taken place such as in Indonesia, Netherlands, Portugal and Soviet Union, the first item received gives the person's name in the old orthography, by establishing the name in that form. Make one reference from the form in the new orthography but only if the primary elements of the name are affected.

- heading in old orthography: 100 1# $a Sembiring, Djaja name in new orthography: Jaja Sembiring 400 1# $a Sembiring, Jaja
- heading in old orthography: 100 1# $a Garrett, João de Mello name in new orthography: João de Melo Garrett reference: none

When, next, the first item with the name in the new orthography is received, change the heading to reproduce the new orthography. Make a position from the earlier form without look upon to the primary elements of the name.

Under such parameters, if the person's works issued during his or her lifetime are all in the old orthography and posthumous publications begin to show the new orthography, then the delay changes the heading until 80% of the file agrees with the change to the new orthography. Make a reference from the later form without regard to the primary elements of the name.

3.1.5 Filipino Names

Establish the names of Filipino authors writing chiefly in Spanish according to the rules for
Spanish names. Establish the names of modern Filipino authors writing in English or in one of the indigenous languages (e.g., Tagalog, Ilocano) according to the following guidelines: Modern Filipino names usually contain one or more forenames and the paternal surname. Sometimes the maternal surname is inserted preceding the paternal surname as a kind of middle name. Enter these under the second surname, i.e., the paternal surname.

100 1# $a Pil, Teresita Veloso
400 1# $a Veloso Pil, Teresita

It was found that the names of many Filipino women give the paternal surname, also as a kind of middle name, followed by the husband's surname the two being linked by a hyphen. Although the hyphen causes the combination of surnames to look like a compound surname, Philippine sources consistently list these women under the husband's surname. Enter these also under the second surname, i.e., the husband's surname.

100 1# $a Leuterio, Mercedes Mabbun-
400 1# $a Mabbun-Leuterio, Mercedes

There are some cases of Filipinos bearing compound surnames that should be entered under the first surname element. The most easily recognized category of these is represented by names including two surnames linked by the conjunctions "y" or "e."

100 1# $a Paredes y Babila, Quintin
400 1# $a Babila, Quintin Paredes y
100 1# $a Sevilla ni Alvero, Rosa L.
400 1# $a Alvero, Rosa L. Sevilla ni
100 1# $a Alvero at Sevilla, Aurelio
400 1# $a Sevilla, Aurelio Alvero at

In all cases refer from the surname that is not the entry element. If the surname chosen for the entry includes a prefix (e.g., De, De la, Del), enter under the prefix. Refer from the element(s) following the prefix.

100 1# $a De Castro, Arturo
400 1# $a Castro, Arturo de

3.1.6 Spanish
In case of a Spanish-language author abbreviates the first of the two surnames as the normal entry element, then it is consider that this is an indication of the person's preference. Make a reference from the first surname.

name used: Luis G. de Valdeavellano
full name: Luis García de Valdeavellano
heading: 100 1# Sa Valdeavellano, Luis G. de $q (Luis García)
400 1# $a G. de Valdeavellano, Luis $q (García de Valdeavellano)

3.1.7 Hungarian

It was found that, if a Hungarian name consists of two surnames and the first surname is represented by an initial or an abbreviation, enter the name under the second surname. Make a reference from the first surname.

name: B. Kovács László
heading: 100 1# Sa Kovács, László B.
reference: 400 1# Sa B. Kovács, László

Change existing headings established before November 2000 not in accord with this policy when the headings are needed in current cataloging.

3.1.7 Names Consisting of Initials/Letters

In case of a name bearing entirely of initials, then a reference from the inverted form is taken alone (not a name-title reference), beginning with the last initial. If the heading contains as a parenthetical addition the full form of the name for which the initials stand (cf. 22.18A), add the parenthetical addition in the reference as well. For names consisting entirely of initials or entirely of separate letters that are presumed not to be initials, a single space is left between the initials/letters in all cases.

100 0# $a H. D. $q (Hilda Doolittle), $d 1886-1961
100 0# $a D. S., $c Master
100 0# $a i. e., $c Master
100 0# $a X Y Z
With the idea of filing and machine searching in LC, initials/letters should be separated by a space, a period, or a combination of a period-space are treated as a series of words; letters not separated by a period or a space or a combination of a period-space are treated as a single word. Under such circumstances, for names consisting entirely of initials or entirely of separate letters, make, in addition to other references, one from the "closed up" form, i.e., the form without periods or spaces.

100 0# $a H. D. $q (Hilda Doolittle), $d 1886-1961
400 0# $a HD $d (Hilda Doolittle), $d 1886-1961
100 0# $a i. e., $c Master
400 0# $a ie, $c Master
100 0# $a X Y Z
400 0# $a XYZ

For references in a form other than the "closed up" form, use periods or not, depending on whether they are used in the heading.

100 0# $a H. D. $q (Hilda Doolittle), #d 1886-1981
400 0# $a D., H. $q (Hilda Doolittle), $d 1886-1961
100 0# $a X Y Z
400 0# $a Z, X Y

3.2 Corporate Authors

It was visualized that, the Corporate Author index contains all Corporate Author terms that comprises of usually business or company names that are linked to catalogue records. A Corporate Author search will retrieve all Titles that have a Corporate Author attached to them that matches the term/s entered. In such cases, word or words should be entered in full, or you can use an asterisk * at the end of any ONE word in the search term field to truncate the term. The search term/s entered can appear in any part of the Corporate Author name.

Under certain cases, a corporation is considered as an author, where certain government documents and reports are issued by organizations and corporations. Under such cases, conference proceedings are done where the conference itself is listed as the author in library bibliographic records.

3.2.1 Legal significance

Legally under copyright law, there is a necessity for small flexibility on to what constitutes authorship. As per United States Copyright Office, copyright is a form of protection provided by the
laws of the country to authors of original works of authorship. Holding the title of "author" over any "literary, dramatic, musical, artistic, or certain other intellectual works" give rights to this person, the owner of the copyright, exclusive right to do or authorize any production or distribution of their work. Under such conditions, any person or entity wishing to use intellectual property held under copyright must receive permission from the copyright holder to use this work, and often will be asked to pay for the use of copyrighted material. After a fixed amount of time, the copyright expires on intellectual work and it enters the public domain, where it can be used without limit.

It was observed that, copyright law has been amended time and time again since the inception of the law to extend the length of this fixed period where the work is exclusively controlled by the copyright holder. However, copyright is merely the legal reassurance that one owns his/her work. Technically, someone owns their work from the time it's created. An interesting aspect of authorship emerges with copyright in that it can be passed down to another upon one's death. The person who inherits the copyright is not the author, but enjoys the same legal benefits.

Questions arise as to the application of copyright law. How does it, for example, apply to the complex issue of fan fiction? If the media agency responsible for the authorized production allows material from fans, what is the limit before legal constraints from actors, music, and other considerations, come into play? As well, how does copyright apply to fan-generated stories for books? What powers do the original authors, as well as the publishers, have in regulating or even stopping the fan fiction?

### 3.2.2 Literary significance

Under the literary theory, critics find complications in the term author ahead of what constitutes authorship in a legal manner. In the wake up of postmodern literature, critics such as Roland Barthes and Michel Foucault have examined the role and relevance of authorship to the meaning or interpretation of a text.

Barthes claimed with this idea that a text can be attributed to any single author. It quoted, that it is language which speaks, not the author”. The words and language of a text itself determine and expose meaning for Barthes, and not someone possessing legal responsibility for the process of its production. Every line of written text is a mere reflection of references from any of a multitude of traditions, or, as Barthes puts it, "the text is a tissue of quotations drawn from the innumerable centres of culture"; it is never original.

With this, the perspective of the author is removed from the text, and the limits formerly imposed by the idea of one authorial voice, one ultimate and universal meaning, are destroyed. The explanation and meaning of a work does not have to be sought in the one who produced it, "as if it were always in the end, through the more or less transparent allegory of the fiction, the voice of a single person,
the author 'confiding' in us". The psyche, culture, fanaticism of an author can be disregarded when interpreting a text, because the words are rich enough themselves with all of the traditions of language. To expose meanings in a written work without appealing to the celebrity of an author, their tastes, passions, vices, is, to Barthes, to allow language to speak, rather than author.

Another author argues, that all authors are writers, but not all writers are authors. He states that "a private letter may have a signatory as it does not have an author". In case of a reader to assign the title of author upon any written work, it attribute certain standards upon the text which Foucault, are working in conjunction with the idea of "the author function". Foucault's author function is the idea that an author exists only as a function of a written work, a part of its structure, but not necessarily part of the interpretive process. The author's name "indicates the status of the discourse within a society and culture", and at one time was used as an anchor for interpreting a text, a practice which Barthes would argue is not a particularly relevant or valid endeavor.

According to Alexander Nehamas, Foucault suggests an author is whoever can be understood to have produced a particular text as we interpret it, not necessarily who penned the text. It is this difference between producing a written work and producing the explanation or meaning in a written work as both Barthes and Foucault are interested in. Foucault warns of the risks of keeping the author's name in mind during interpretation, because it could affect the value and meaning with which one handles an interpretation.

As per Barthes and Foucault, readers should not rely on or look for the notion of one overarching voice when interpreting a written work, because of the complications inherent with a writer's title of "author." They warn of the dangers interpretations could suffer from when associating the subject of inherently meaningful words and language with the personality of one authorial voice. As a substitute, readers should allow a text to be interpreted in terms of the language as an author.

3.2.3 Authorship

Librarians perhaps have a very realistic view of what authorship explains as its key element for bibliographic control. Depending on their job titles, assignments and proclivities, librarians are more or less familiar with the detailed rules for determining authorship for bibliographic control. In fact, libraries were identifying works by the name of the author long before author’s rights developed in the 17th century.

The concept of authorship to library users shows as one was to ask them, probably not much. Most library users simply have not pondered the matter. If they were prodded about how they use the concept of authorship, they should be able to list the following as ways they use an author.

a. the name of the author is an important way to locate materials in the library collection.
b. author’s name is the first part of a citation to indicate responsibility for the work, a concept with which law students should have particular familiarity.

c. users should know that the name of the author can serve as an indication of subject, or quality, date or importance of the work.

d. author is a shorthand device to describe a style of writing or ideas conveyed or a literary genre.

It was observed that, whole collections or portions of many library collections are simply arranged by author’s last name. As seen, the fiction collection in many libraries is not classified by subject but instead is arranged alphabetically by author’s last name. Many libraries still use the Cutter Tables, based on the alphabet, to assign alphanumeric call numbers that reflect last name of the author and shelve materials in this order. Even the Library of Congress (LC) Classification scheme arranges modern works of fiction in class P; they are then alphabetized by the last name of the author within broad time periods. So, although an LC classification number that appears on the book’s spine, a large part of that number is based on the last name of the author.

With the library’s catalog, there are other finding aids such as bibliographies and indexes. The difference between bibliography and catalog is that the best bibliographies list every relevant item on a particular subject, or every item that is produced in a particular locale or is published during a certain period of time. It was seen that the bibliographies typically do not provide location for the materials listed. Catalogs, on the other hand, list and detail the holdings of a particular library or collection and include the location of the material through a call number or other location device. An index usually provides access to portions of larger items, such as articles in periodical issues, poetry in collections or chapters in books. By contrast, cataloging provides access to entire works, such as books, journal issues, and the like. Early indexes also recognized the importance of author entries even as an adjunct to a subject index.

For any library, the author catalog or author entry in a dictionary catalog, i.e., one that interfiles author, title and subject headings, is an essential finding tool. The principles of authorship for the catalog are closely related to the concept of authorship in copyright law. The reasons that the author catalog is so important to libraries are both historical and practical.

a. as the name of the author is printed on the spine of the book and on the title page of the work which makes it the most readily identifiable feature of a book.

b. if the library patron has spelled the author’s name correctly, the author catalog is the only one from which she can determine whether the library has a particular title.

In fact, early author catalogs were really an inventory of the bookstock of a library; and in medieval libraries, this inventory feature was particularly important. A third reason for the importance of the
author catalog is the assumption that library users will group books by author rather than by title, the other readily identifiable feature of books. But even these purposes are not the most important purpose of an author catalog.

It was seen that the important reason is one that tracks the copyright concept of authorship, and that is to identify the person who has intellectual responsibility for the creation of work. “The fact that a work is the embodiment of a person’s thought is of supreme importance in relation to that work.” When it is not possible to identify an author, then libraries traditionally designate the title entry for a work as the main entry in the catalog. So the two main criteria for the author catalog are identification and intellectual responsibility. The history of cataloging codes over the past 150 years demonstrates that the view about which of these two criteria is the most important has changed over time, but is somewhat related to what one considers the main purpose of the author catalog to be.

Anglo American cataloguing code in 1908 explains the author as “The writer of a book, as distinct from translator, editor, etc. The Corporate bodies, considered the authors of publication issued in their name of by their authority.” By 1967 and the Anglo-American Cataloging Rules defined author similarly – “By author is meant the person or corporate body chiefly responsible for the creation of the intellectual or artistic content of as work.” “The definition of author from these codes broadens the definition to include editors and compilers. In case of modern Anglo-American Cataloging Rules, defines personal author as—the person mainly responsible for creation of intellectual or artistic content of work” and defines corporate author as—an organization or group of persons that is identified by a particular name and that acts, or may act, as an entity.” The concept of authorship in the Anglo-American Cataloging Rules is complex, and is likely to become more so. For library catalogs and other finding tools, some scholars have suggested that the term “author” be replaced with terms such as "originator," "agent" or "creator" as a way to express various facets of the concept of authorship.

3.2.4 Comparison

Authorship as mentioned in AACR2 explains about the reference to works of personal authorship. It appear to encompass those relationships mentioned earlier between that person and responsibility for the work. Most probably the other relationships between a person or persons and the content of an item (e.g., responsibility for performance in editing) fall outside the scope of “authorship.” Most notoriously, entry under the heading for a collaborator in a work of shared responsibility is made only if there are no more than three principal authors or three persons responsible; this is the so-called “rule of three.” Even as it is certain that the possibility to include entries for more authors, at some point was decided as per the limit of quantity to 3. In an era of card catalogs, this made
absolute sense because there was a need to restrict the size of any library’s card catalog since the physical space demands could be enormous. Moreover, the work to file the cards and to maintain the entries was very expensive. In the digital age, however, these space restrictions are considerably reduced, and no card filing is required, therefore, the rule of three is of questionable utility. Some maintenance work is still required to clarify the form of certain names, but this can be done globally via electronic means as opposed to manually.

In case of published works, authorship is comparable easy to show and verify, but not always. Archival materials, manuscripts and early printed works present different challenge. Anonymous and pseudonymous works also present challenges. For many years libraries have been in the business of trying to uncover pseudonyms and to assign responsibility for anonymous works. Perhaps librarians do not like uncertainty, but eliminating this uncertainty about particular works has been a considerable boon to researchers. It seems today that there are many fewer anonymous works produced, and authors who write under pseudonyms often reveal their identities within a few years after the work appears, so neither of these issues creates the problems for catalog librarians that they once did.

It was believed that, libraries treat authors of any work identical whether they are artists, photographers, playwrights, composers, etc. But what if the author or artist is truly unknown? Libraries often identify the work by how closely an unidentified artist worked with an identified artist during the expressions, such as “school of Rembrandt” or “copyist of Rodin” which indicates an influence. This is often referred to as “shadowy authorship” and occurs more frequently as librarians catalog more art objects and surrogates of art objects such as slides, photographs and digitized images.

The case of corporate authors as indicated in companies, universities, other institutions, publishers, the concept for bibliographic control is to credit the entity responsible for the creation of the work. Unlike patents, the named responsible party does not have to be an individual. Thus, if the work is a work for hire, the copyright law establishes that the employer is the author. Libraries accept this, not because of the copyright law, but because usually multiple individuals within the corporation are somehow responsible for that work, or the company itself has accepted responsibility for the work of some unsung hero and listed itself on the title page of the work as the author.

Authorship generally is not certified to editors, translators, performers and the like in library catalogs. These individuals may be referenced in the bibliographic record but not as an author. This is similar to the way these individuals are treated in copyright law, usually that they are not an
author, but note that translators may be authors if the work evidences sufficient creative authorship.

Ownership of the copyright is a tremendously important issue in copyright law because it determines who may exercise the exclusive rights. It is unimportant for library bibliographic control purposes, however. Responsibility for the work is real issue. Many reference works are compilations, and most often the publisher owns the copyright in these works of corporate authorship. The work may have an individual editor, but that person is not the author, and the main entry likely will be under title and not under the name of the publisher.

3.2.5 Complications

Nowadays as libraries increasingly offer access to online materials, they are adding bibliographic records to these Internet works to their catalogs. There is considerable debate about whether and how to catalog works on the Internet, especially since what is available increases exponentially. Not only that but works that exist on the web disappear with some frequency; and for countless others, the location on the web simply changes. Thus, any attempt to add Internet resources to any library catalog is extremely complicated.

The easy accessibility of online materials, and the fact that digitized forms can be easily and economically created and altered by individuals, having shaken some of fundamental concepts of:

a. intellectual property rights
b. authorship
c. publishing
d. bibliographic control.

There is a necessity to assess whether extra relationships between persons and corporate bodies along with the content of an item in context of newly emerging forms of intellectual and artistic expression and multimedia productions should be reflected in catalogs. For example, is it time to reconsider how libraries treat joint and multiple authors, especially for scientific journal articles?

In case of sequential authorship, it was manifested only in new editions of a work or in series of works, each complete in itself. Websites are constantly updated but not necessarily within the confines of the digital equivalent of an edition, and the responsibility for the intellectual content may change. If a law professor creates course webpages she may turn them over to another professor who teaches the course in subsequent semesters. Now, there is a second author. Suppose that the second author makes extensive changes, and then he permits yet another faculty member to use the webpages, and that third author also makes numerous additions and changes. Perhaps all three are
authors, but they never exactly agreed to be joint authors, much less agreed in writing. Further, at some time, the content has changed to such an extent that the only contribution of the first author was the idea to create course webpages. All contents as well as the design may allow little relation to the original. At present, there is simply no way with bibliographic control to deal with what may be come a norm for digital works; thus bibliographic control may have to develop fluidity to meet the challenge of sequential authorship.

In case of digital works, libraries and others printed works gets cleared when the work was complete so the point at which the publisher distributed copies to the public. Even in the legal world, titles were published in loose leaf format and continuously updated, but the work was considered complete only when a new edition was published. In the digital environment, a work may never complete. In case of authors who create their own original works or permit others to digitize their analog works, there are questions of when an online product is final. Since digital renditions can easily be corrected and updated, libraries need better ways of identifying which version a user is viewing on the screen as well as which versions catalogers will want to describe, and which library selectors will want to obtain and preserve for the future.

Joined with the problem of chronological authorship or even overlapping authorship, fresh solutions will have to be found to the problems of authentication. The easy availability of online materials, and the fact that digitized forms can be easily and cheaply created and altered by individuals, have shaken some of the fundamental concepts of intellectual property rights, authorship, publishing and bibliographic control. Individuals can self publish on the web. Moreover, it is far too easy to capture someone else's work and modify it to be one’s own without paying the original creator for that right or receiving permission.

To some amount, it is hardly a new problem that arises with the digital age. Texts in manuscript form that were copied over and over again, were subject to corruption certainly. Who is the author, and who published the work? Can the authors and publishers be trusted (are they worthy of one's research time)? Is the rare e-book what it purports to be? Is the manuscript actually by the person to whom it is attributed, and is its date accurate? These questions are now being asked more openly of objects that originate in digital form because libraries have not yet adopted practices or standards for providing ready answers to them.

In deciding what is required to authenticate digital objects, the same may be informed from past practices with non-digital objects. As digital objects shear less evidence of authorship, provenance, originality and other commonly accepted attributes than do analog objects, they are subject to additional suspicion. Tests must be devised and administered for authentication. While objects
appear in electronic form, it may be even more difficult to certify that the object is the product of its author. Absent a deliberate and distinctive marking as in case of digital watermark as implemented by the author, a mark that could not be guessed by another or altered by anyone, it may be impossible to authenticate an electronic document beyond doubt.

If authors of files or images do not take steps to establish authorship of their work, a library’s only alternative for cataloging is to accept the assertions of others. There simply will not be the same type of evidence that might exist for a physical object such as handwriting, marginal notes, ink, binding, etc., and the work is more changeable, either intentionally or accidentally. On the other hand, it is possible to fight false authorship with traditional tools such as having the author register the work with a third party, or register the work for copyright. For scholars and historians who use digital objects in their research, authentication will continue to be a huge issue, and authorship is one of the principal issues to be authenticated. Electronic files created by someone who has taken no steps to establish authorship are problematic, and the cataloger will be the one to establish authorship. In the case of a digital object, this is more difficult than if it were an analog object due to the lack of physical evidence provided by analog objects -- evidence that offers the means to test the cataloger.

The problem arises in locating missing authors as it is even more difficult for digital works. It is difficult enough in the analog world, as it is far difficult in the digital environment. Anyone who uses the web to any extent has found an article or other object on the web and been absolutely unable to identify who wrote it. If there is an indication that the work came from the New York Times, then there is a possibility of identifying the author through the publisher. But what if there is no absolutely no information, even in the metatags? Then the dearth of clues to help identify the author probably means that it cannot be done, and the bibliographic and indexing information will just remain incomplete without authorship attribution.

Setback of the copyright to the author or her heirs between the 35th and 40th year may have interesting implications for digital works that are included in electronic databases. The statute provides that during this five year window, when the author has transferred rights to the work to a third party such as a publisher, the rights revert to the author or to his heirs during this time period. How will this impact the ability to track and identify authors? It could result in a problem similar to that experienced when freelance authors were recognized by the U.S. Supreme Court as holding the electronic rights in their articles which had not been specifically transferred. Some publishers that had included articles by freelancers in electronic databases felt they had no choice but to remove these articles systematically. Certainly, publishers could have paid royalties to freelance writers, but the publishers elected not to do so claiming that it was almost impossible to do and would not be cost effective. Further, each author would receive very little in the way of compensation.
If an author has assigned the copyright to a publisher, that includes the digital work in a database, then the copyright reverts to the author, in case when an author exercises the reversion right, then the database owner would have to renegotiate with the author for the right to continue to include the work in the database. Under these conditions, databases of digital objects may not have the stability that was once thought.

Sharing of copyright shows transfer of copyright in a work as it does not affect authorship at all concerning the responsibility for digital works, thereby should not matter for bibliographic control. However, if the work is one that continues to be supplemented or changed, then the transfer might actually affect authorship if the updating is done by someone else.

3.3 Pseudonymous and Anonymous Works and Uniform Titles

3.3.1 Introduction

While an anonymous work is considered along with pseudonymous work or a work made for hire, the copyright endures for a term of 95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first. If, before the end of such term, the identity of one or more of the authors of an anonymous or pseudonymous work is revealed in the records of a registration made for that work under subsections (a) or (d) of section 408, or in the records provided by this subsection, the copyright in the work endures for the term specified by subsection (a) or (b), based on the life of the author or authors whose identity has been revealed. Any person having an interest in the copyright in an anonymous or pseudonymous work may at any time record, in records to be maintained by the Copyright Office for that purpose, a statement identifying one or more authors of the work; the statement shall also identify the person filing it, the nature of that person’s interest, the source of the information recorded, and the particular work affected, and shall comply in form and content with requirements that the Register of Copyrights shall prescribe by regulation.

3.3.2 Anonymous Works, Pseudonymous Works, and Works made for Hire.

While computing the term from author’s death, it was required specially to deal with cases where the authorship is not revealed or where the “author” is not an individual. Under Section 302 (c) a special term for anonymous works, pseudonymous works, and works made for hire: of those if it exists for more than 75 years from publication or 100 years from creation, whichever is shorter. In 101, the status of anonymous and pseudonymous works depend on what is revealed on the copies or
phonorecords of a work; a work is "anonymous" if no natural person is identified as author," and is "pseudonymous" if the author is identified under a fictitious name."

While considering section 302 (c), the 75- and 100-year terms for an anonymous or pseudonymous work can be converted to the ordinary life-plus-50 term if the identity of one or more authors is revealed in special records maintained for this purpose in the Copyright Office. The term in such cases would be "based on the life of the author or authors whose identity has been revealed." Instead of forcing a user to search through countless Copyright Office records to determine if an author’s identity has been revealed, the bill sets up a special registry for the purpose, with requirements concerning the filing of identifying statements that parallel those of the following subsection (d) with respect to statements of the date of an author’s death.

The another terms establish in section 302 (c) 75 years from publication or 100 years from creation, whichever expires first as necessary to set a time limit on protection of unpublished material. For example, copyright in a work created in 1978 and published in 1988 would expire in 2063. A question arises as to when the copyright should expire if the work is never published. Both the Constitution and the underlying purposes of the bill require the establishment of an alternative term for unpublished work and the only practicable basis for this alternative is "creation." Under the bill a work created in 1980 but not published until after 2005 would fall into the public domain in 2080.

In section 101, the creation takes place when a work is fixed in a copy or phonorecord for the first time. Inspite of the concept of creation is inherently lacking in precision, its adoption in the bill would, for example, enable a scholar to use an unpublished manuscript written anonymously, pseudonymously, or for hire, if he determines on the basis of internal or external evidence that the manuscript is at least 100 years old. In the case of works written over a period of time or in successive revised versions, the definition provides that the portion of the work "that has been fixed at any particular time constitutes the work as of that time," and that, "where the work has been prepared in different versions, each version constitutes a separate work." So a scholar or other user, in attempting to determine whether a particular work is in the public domain, needs to look no further than the particular version he wishes to use.

Though "publication" would no longer play the central role assigned to it under the present law, the concept would still have substantial significance under provisions throughout the bill, including those on Federal preemption and duration. Under the definition in section 101, a work is "published" if one or more copies or phonorecords embodying it are distributed to the public—that is, generally to persons under no explicit or implicit restrictions with respect to disclosure of its contents—without
regard to the manner in which the copies or phonorecords changed hands. The definition clears up the question of whether the sale of phonorecords constitutes publication, and it also makes plain that any form or dissemination in which a material object does not change hands performances or displays on television, for example—is not a publication no matter how many people are exposed to the work.

On the other hand, the definition also makes clear that, when copies or phonorecords are offered to a group of wholesalers, broadcasters, motion picture theaters, etc., publication takes place if the purpose is “further distribution, public performance, or public display.” Although the periods of 75 or 100 years for anonymous and pseudonymous works and works made for hire seem to be longer than the equivalent term provided by foreign laws and the Berne Conventions, this difference is more apparent than real. In general, the terms in these special cases approximate, on the average, the term of the life of the author plus 50 years established for other works. The 100-year maximum term for unpublished works, although much more limited than the perpetual term now available under common law in the United States and under statute in some foreign countries, is sufficient to guard against unjustified invasions of privacy and to fulfill our obligations under the Universal Copyright Convention.

Records and Presumption as to Author’s Death. Subsections (d) and (e) of section 302 together furnish an answer to the practical problems of how to discover the death dates of obscure or unknown authors.

3.4 Cataloguing of Non Print Media

3.4.1 Introduction

Today non-print materials (NPMs) such as audiovisual materials, electronic materials etc, are competing with print material in proliferation. Every day something new and revolutionary emerge in the format of non-print; and the teacher and the librarian alike can no longer think exclusively only in terms of the book. The literature carries a wide range of terms such as non-print materials, non book materials, audio visual materials etc when explaining the different media collections. However, each term has its on limitations. Many professionals have tried to define this term in number of occasions. According to Feather and Sturges—Audio visual materials is a generic term to describe information content held in storage and transmission media and formats that use images and sound rather than or sometimes in addition to textual matter. This includes audio CD, records and tapes; photographs, slides, films and video; and formats that combine two or more of the formats. Many of these formats are out dated now.” However, the non-print resources within the context of this paper include only audiocassettes, videocassettes, motion picture films,
slides, microforms and CD ROMs.

The past ten years of relevant English-language literature includes many publications that stress the importance of providing thorough and consistent cataloging for non print resources”. Various aspects of non-print materials have been discussed by many LIS professionals through a variety of publications namely manuscripts, journal articles, research papers etc. However, there has been no proper survey of the NPMs in Sri Lankan libraries. Therefore, a study to investigate the level of availability (numbers and diversity) of NPMs, the usage of organizing techniques (cataloguing, classification, shelving) and the difficulties encounter by the librarians in organizing NPMs, was very much needed in order to judge our current position in the path of access to information in all formats to all people.

The study was conducted in two phases: preliminary survey and the main survey. The data collection was carried out from February 2003 to September 2003. The aim of the preliminary survey was to identify the sample for the main survey.

3.4.2 Availability of Non-print Materials

It was seen that non-print collections were few and small in Sri Lanka. The concept of media librarianship is relatively new and particular kinds of collections and materials only since about 1950s. By now audiovisual materials and electronic materials are important as well as popular source of information in most resource collections of special libraries around the world due to their unmatchable merits such as;

- Economy of space – solution for acute storage space of the library.
- Portability and easy to transport
- Monotonous topics made interesting and easy to understand
- Condensation of text helps in quick transmission- there by saving time in learning
- Quick and easy to grasp and remember etc. (CEMCA workshop proceedings)

However, the situation is not that favorable to non-print materials in Sri Lanka. The preliminary survey revealed that the availability of non-print materials in Sri Lankan special libraries was at a substandard level. According to the findings of the preliminary survey there were only 31 libraries, which included 100 or above non-print items in their collections.

3.4.4 Cataloguing Practices of Non-print Materials
It was suggested that, cataloguing of non-print materials has specific difficulties other than the common difficulties of cataloguing such as multilingual and multiscript issues. The spectrum of non-print materials is wide and complex. Inconsistencies in publications are causing serious problems in tracing bibliographic information that bears lack of definite source like title page of the book. In addition, cataloguing audiovisual and electronic formats needs external machinery support to browse through the program to find the necessary details. However, the librarians are trying hard to overcome these difficulties and organizing all formats of materials in their collections to enhance the usage.

As per survey, it was clearly shown that the commitment of librarians in organizing their collections, despite of many obstacles such as lack of skilled staff, budgetary constraints, lack of support and recognition from authorities etc. Nearly 70% of the surveyed libraries had catalogued their non-print materials while almost 100% of them catalogued their printed materials. In addition, cataloguing of non-print materials showed significant increase with increasing number of materials in the collection.

3.4.5 Usage of Cataloguing Rules

In cataloguing, standards play an important role in maintaining uniformity institutionally, regionally, nationally or internationally. Main overhauls in cataloging rules have taken place since the development of non-print collections in libraries. Rule changes have helped to create logical conventions for describing non-print items. For example Anglo-American Cataloguing Rules, second edition (AACR2), was revised to include machine-readable data files”. In addition, there are cataloguing codes dedicated to non-print as such as The FIAF Cataloguing Rules for Film Archives,
3.4.6 Practices of Non-print Materials

Intershelving non-print materials with other materials enhances the usage as it provides opportunity to locate valuable materials that might otherwise be kept in shielded. However, the complete integration is not possible due to various reasons such as the non-conformity of shapes, fragile in nature etc. Partial integration is possible and is recommended for materials, which could be packaged like books. Placing dummies to represent non-print materials in the book collection, is popular among European countries as it not only allows to store the fragile non-print materials safely while ensuring the effect of intershelving but it also allows to convey the message on existence of non-print materials such as online journals that cannot be physically displayed. However, according to the survey findings, any form of intershelving is not in practice among the special libraries of Sri Lanka.

3.4.7 Pattern of Access of Non-print Materials

Ease of access is another main issue for the librarian to consider in the physical arrangement of non-print materials. Some libraries prefer closed access in order to ensure adequate security, prevent constant handling and consequent damage. While others prefer open access as it is self-advertising and thereby draws the attention of patrons who may not be aware of their existence. Nowadays, the trend is towards an open access, that facilitates partial integration and discourages the wrong belief that non-print resources are special materials, which need special treatment. The situation among Sri Lankan special libraries is not very discouraging as significant percentage of libraries provides open access to non-print materials.

As per survey report, the percentages of libraries that provide open access to selected types of non-print materials are as follows;
- audiocassettes (56%)
- videocassettes (50%)
- slides (40%)
- CD ROMs (42%)

In addition, certain formats of non-print materials are available for loan in significant percentage of libraries particularly, audiocassettes (74%), videocassettes (70%), motion pictures (67%). There is no gainsaying that non-print resources, because of their physical nature, need adequate protection to
prevent loss and damage. The ultimate aim is to ensure the maximum utilization of the resources and at the same time ensure their safety.

3.4. 8 Librarians’ Attitudes Towards Media Access

Attitudes are not easy to change but can be improved and developed through experiences and education. Positive attitudes are needed more than anything else for the success of any effort.

The following attitudes were investigated in the attitudinal survey, which was participated by 26 librarians who responded the main survey;

• Desirability of equal bibliographic treatment for all materials.
• Desirability of equal physical access to all materials.
• Perception of the cost of non-print materials

With the results of such survey of librarians of special libraries were clearly in favour of integrated bibliographic access as 64% of surveyed librarians agree to the statement “I want to see entries for every thing in the library in one catalogue” while just 33% agree to the statement “Each medium should have its own catalogue”. Additionally, 59% of them disagreed to the statement “It is difficult to apply AACR2 to non-print materials.” However, there were only 2 librarians showed their interest towards physical integration in the form of partial intershelving. However, 65% of librarians approved open access to non-print materials. Generally 60% of librarians who were involved in the survey believed the costs of non-print materials were affordable by their libraries. However, 72% of them stated that they need more funds in order to develop non-print collections and maintain reference services for users.

The researcher visited over 80% of libraries in the sample and talked to the librarians personally. Most of the libraries did not have a suitable environment, space, storage devices or equipments to develop and maintain healthy non-print collection. Preliminary survey revealed that the availability of NPMs in Sri Lankan special libraries was in a disastrous level. Only 31 libraries out of the total of 142, possessed more than 100 non-print items. Further, the majority of them belonged to the small size collections group (100-1000). There were only 07 libraries that can be considered as multimedia libraries, which included significant portion of both formats, printed and non-print. Application of cataloguing and classification techniques to NPMs demonstrated somewhat similar pattern of behaviour. Both techniques showed significant improvement with the increment of number of NPMs in the collection. However, the level of classification as well as the level of cataloguing of NPMs was always below that of printed materials.
Shelving NPMs for easy access seems to be the area that received the least attention of librarians out of the three, organizational practices surveyed. Number of libraries providing close access exceeded the number of libraries providing open access to all materials except for audiocassettes and videocassettes. However, librarians were not strongly against the idea of lending such materials. The researcher tried to identify the reasons for this unsatisfactory status of classification, cataloguing and shelving of NPMs through observations and oral conversations with librarians. Lack of funds, shortage of skilled staff, difficulty in tracing bibliographic information, small size, fragile nature, and absent of proper environment are the major constraints.

The lack of proper training on non-print media was another significant factor that retarded the growth of multimedia libraries in Sri Lanka. Over 80% of participants responded negatively to the question that asked for the participation of special training programs or workshops on non-print media. The meeting the needs of users in information society with only printed materials is impossible and ineffective. Therefore, we should take immediate steps to eliminate the barriers to ensure that our clientele enjoy their share of information in spite of the format they stored. The government, authorities of parent organizations and institutions who involve in library education can play a vital role for the development of media librarianship in Sri Lanka by providing physical resource and empowering the library staff with skills and knowledge. Above all librarians should motivate themselves to face the challenges for the sake of our clientele.

It was observed that, there has been enormous progress technologically, conceptually, and operationally, progress on the level of implementation remains slow for many of the reasons stated above. It must be observed that a better working relationship must be developed between the media specialist and the cataloging specialist. If the cataloger is challenged by how to describe a particular interactive CD-ROM, he or she should not have to deal with any bureaucratic or political complexities in asking the media person for assistance. It would help a great deal if locally on each campus more funding were made available to improve, in the short run, the media cataloging now being maintained. It was seen that, perhaps as a follow-up to the recently published Guidelines, one might look forward to a major conference involving catalogers, media catalogers, and media experts being convened to set a universal media cataloging policy for the entire country. In the interim, while awaiting that day, media people and their cataloging colleagues will have to improvise and make do as best they can.

**Review Questions**

9. Why there was the use of Indic Names?
10. Define the exact meaning of Corporate Author with example?
11. List some of the important cataloguing rules?
12. What are the different patterns of non print material?

Discussion Questions

Discuss the Benefits of online learning material available in your library? List down the advantages and disadvantages?

Application Exercises

7. Write and explain about the non print material and create an activity?
8. Collect the information related to Early names that was invented and created?
CHAPTER 4
Subject Indexing, Vocabulary Control and Recent Development in Cataloguing

Learning Objectives

- To know more about subject indexing.
- To analyse the necessity of vocabulary control.
- To recognise the recent developments in cataloguing.
- To know about Thesaurus.
- To generalize subject indexing model.

4.1 Subject Cataloguing – Problems

4.1.1 Cataloguing

The different formats encompass digital works that makes it difficult to apply cataloging controls developed in the context of print-based collections to cataloging in digital libraries. This is also reflected in traditional library descriptive cataloging practices by the vast number of resources devoted to helping catalogers determine how to catalog an electronic resource. In digital libraries, although the digital works included may not have been born digital (i.e., they are digitized versions of a traditional print book or other analog work), cataloging a digital work within a digital environment can be difficult.

While determining the subject of a digital work would appear to perhaps be simpler than full descriptive cataloging; if one interacts with a digital work, one should be able to obtain a sense of the about-ness and of-ness of the work. Though, there is currently no one standardized way for subjects to be recorded in a digital library. This is not to say that there are no standards in use. Traditional library standards for recording subjects such as the Library of Congress Subject Headings are available for use but unless the digital library is directly associated with a traditional library, such standards are rarely used.

It was seen that, Dublin Core happens to be a popular metadata standard that was created specifically for cataloging objects that greatly vary in format, from books to visual media to cultural objects, and addresses a variety of metadata categories which include subject. The deliberate simplicity of Dublin Core, as compared with that of LCSH or the complex classification and data standards of Library of Congress and AACR2r, is useful in providing greater flexibility to the digital library cataloger. It becomes much easier to include textual objects in the same digital library as multimedia works. But, Dublin Core is purposefully easy to modify as a metadata structure and there is no standardization or
regulation of how metadata should be entered and recorded. Consequently, although this encourages interoperability, it can create problems with centralization of information and accuracy of information retrieval in digital libraries.

Creators of digital libraries have begun to target on the new possibilities for subject cataloging and indexing that the digital environment affords by analyzing and extracting subject terms from digital works. In case of textual works, one prevalent method for obtaining subject terms is to perform automated full-text indexing. This method, although it produces a large number of indexed terms, that brings to the forefront the possibilities and problems inherent in automated full-text indexing. A multitude of metadata is produced, but, without human interaction with the metadata to provide intellectual organization and arrangement, there is no contextualization of the identified terms. Non-textual and multimedia works cannot be readily automatically indexed and thus still require a person to assign terms for subject access.

The importance of the known subjects in a digital library with regard of whether in the form of index terms or keywords or subject heading strings – is on the content contained within those subjects that can be communicated to the user rather than the form in which the subjects are recorded for cataloging purposes. Whereas in traditional libraries it was essential to accurate information retrieval that the data be standardized in form, digital libraries are moving towards the ideal that variety in types and forms of materials necessitates a new approach to subject cataloging and indexing.

Perhaps, Digital libraries are looking at subject access in terms of interoperability rather than centralization. In that regard, standardization of subject metadata is needed for accurate and consistent information retrieval. Though, it is standardization of what terms are used and how they are determined, not the form in which they are structured that is of increasing importance to subject cataloging and indexing in digital libraries.

4.1.2 Subject Access

Libraries are structured to make possible access to controlled collections of information. Established libraries are organized to give direct access to physical informational objects and indirect access to the information contained within informational objects. It was observed that, digital libraries are organized to provide direct access to the information contained within a digital informational object. Often the inherent combination and conflation of metadata about the informational object itself and the information content contained within the object causes the user to bypass the informational object itself. On the other hand, the user’s ability to access this information or the informational object is directly determined by how queries are performed, how they are structured, and to an extent, how the metadata being searched is created and searched.
In conventional libraries one of the services performed by librarians is positioned, or rather query assistance. Librarians help users to refine the topics of their investigation by asking questions to clarify the user’s information needs. This process draws upon the librarian’s knowledge of her collection and the cataloging system. The result is a query that is formulated to the specifications of a particular cataloging system in order to retrieve information pertaining to a specific user’s information needs. The librarian is in fact acting as a mediator between the user and the cataloging system.

It was observed that, in traditional libraries mediated searches have a far higher rate of success than un-mediated searches. “This can be attributed to the interaction between users and mediators. In the interaction process, the mediators help users elicit information needs and construct better queries”. Digital libraries must compensate for the loss of this process of interaction. Without a librarian to mediate between the user and the query, digital libraries must find ways to create a framework that takes advantage of the possibilities for generating subject access inherent to digital works in a digital environment and yet still provides substitutions or new alternatives for the vital librarian services available only in traditional libraries.

4.1.3 Concept

On customary, libraries use controlled vocabulary as a means to avoid the difficulties that arise from the syntactic and semantic complexity and the high levels of ambiguity that are typically associated with general expressions in natural language. Natural language refers to the language used within a specific informational object. Automatic full-text indexing in particular inherently conforms to the natural language of an informational object but different informational objects have potentially diverse natural languages. Without some sort of concept structures based upon the specific informational objects being indexed it can be difficult to collocate subject terms and improve the accuracy of information retrieval in a digital library.

Perhaps, control vocabularies can be difficult for the user to understand without mediation. In traditional libraries, this mediation role is fulfilled by librarians who can guide both the user’s query formation as well as the user’s grasp of how the catalog is organized. Since controlled vocabularies are not used by all digital libraries, so it depends on how they obtain and structure their metadata. Controlled vocabularies are usually a component of any digital library associated with a traditional library.

Newer digital libraries are also trying to incorporate more concept structures such as controlled vocabularies and thesauri into their subject cataloging metadata. Concept structures such as thesauri that are incorporated into digital libraries can in some ways compensate for the missing service of mediation which librarians provide. These thesauri can be viewed as specifying to the user the terms
of a simple language in conjunction with related terms. Often these relations are modeled on those used in traditional libraries and generally include “broad term/narrow-term,” “related term” and “synonymous term” which, if effectively conveyed, can give some guidance to users. For the reason that digital libraries emphasize content more so than form, their implementation of concept structures are not always the same as that of traditional libraries.

On the bases of Query-based concept hierarchical structures, the replication in the digital library environment processed the librarians in the traditional library so to clarify and reformulate user queries. This is talent through applying a clustering algorithm. The basic idea is to provide users alternative terms that, when searched, might prove more effective in the retrieval of information pertinent to the user’s topics of inquiry. The clustering algorithm groups together terms that, through user queries, are often found associated with informational objects containing similar topical concepts. This process thereby creates a digital library concept structure which is dynamically generated based on user queries. Because the concept structure hierarchy is generated through the use of algorithm clusters, as the digital library evolves adding and possibly subtracting digital works, the concept structure can continue to evolve and be tailored to the needs of the users of the specific digital library.

While query-based concept hierarchical structures are effective in improving subject access in digital libraries, the dynamically generated structures do not replicate the fully formed classification schemas prevalent in traditional libraries. There is something to be said for the utilization of classification schemas that have been refined by information professionals over the last century. Although there is a different emphasis in how one approaches subject cataloging in the digital library environment, it seems slightly irresponsible to disregard classification schemas which have proven to be exceedingly effective for decades in the traditional library environment.

4.1.3 Non-textual Subject Indexing

In case of non-textual media there has been a push to find alternative methods of providing subject access that do not include textual searching. One of the earliest and most successful examples of this is IBM’s Query By Image Content (QBIC) technology. It was seen that, QBIC will allow user to search collections of non-textual digital works, primarily visual artworks or video, by colors. These color searches are refined by establishing the percentage of a specific color(s) and color combinations present in compositions for which the user wishes to search. An example query conducted on the digital collection of the Hermitage in St. Petersburg, where the user is searching for a composition that is approximately one-half orange, one-sixth dark blue and one-sixth yellow. Though this does not initially seem akin to traditional subject access, paintings and other types of artworks often have little subject metadata ascribed to them.
Searches of this natural world would be specifically useful for Modern painting, specifically color field paintings or other abstract expressionist works which often have no particular textually ascribed subject matter by which one could search. The visual resources profession (including museums, visual resource collections, and other digital initiatives) are traditionally uninterested in providing subject access to any great extent. Unless the subject matter of the artwork is somehow included in the title of an artwork, it is rarely included elsewhere in the record for the artwork.

Further, QBIC provides a different level of access centered on the subject of color, which is particularly useful for aspiring and practicing artists or designers. Similar technologies perform spatial analyses which allow the user to draw freehand and define shapes for which he or she would like to search. By searching for a specific shape amongst multimedia images, the user could identify instances of a specific emotional response in a video or perhaps trace the visual history of the use of a traditional portraiture pose across the medium of painting, photography and video. For visual artworks as well as video, this provides a new or at least different type of access to the subject matter contained within a work that previously has been unexplored by traditional subject cataloging methods.

4.2 Vocabulary Control: Subject Headings List and Thesauri

Control vocabularies offer a way to arrange knowledge for subsequent retrieval. They are used in subject indexing schemes, subject headings, thesauri, taxonomies and other form of knowledge organization systems. Control vocabulary schemes mandate the use of predefined, authorized terms that have been preselected by the designer of the vocabulary, in contrast to natural language vocabularies, where there is no restriction on the vocabulary.

4.2.1 Library and information science

It shows that in library and information science, control vocabulary is a carefully selected list of words and phrases, which are used to tag units of information so that they may be more easily retrieved by a search. Control vocabularies solve the problems of homographs, synonyms and polysemes by a bijection between concepts and authorized terms. Generally, control vocabularies reduce ambiguity inherent in normal human languages where the same concept can be given different names and ensure consistency.

In Library of Congress the subject headings is a control vocabulary, that authorized terms to be chosen to handle choices between variant spellings of the same concept, choice among scientific and popular terms, and choices between synonyms, among other difficult issues.
Choices of authorized terms are based on the principles of user warrant (what terms users are likely to use), literary warrant (what terms are generally used in the literature and documents), and structural warrant (terms chosen by considering the structure, scope of the controlled vocabulary).

Controlled vocabularies also naturally handle the problem of homographs, with qualifiers. For example, the term "pool" has to be qualified to refer to either swimming pool, or the game pool to ensure that each authorized term or heading refers to only one concept.

There are two main kinds of controlled vocabulary tools used in libraries: subject headings and thesauri. While the differences between the two are diminishing, there are still some minor differences.

Traditionally, subject headings describes about the books in library catalogs by catalogers while thesauri were used by indexers to apply index terms to documents and articles. Subject headings tend to be broader in scope describing whole books, while thesauri tend to be more specialized covering very specific disciplines. Since the card catalog system shows subject headings tend to have terms that are in indirect order, while thesaurus terms are always in direct order. It is observed that, subject headings also tend to use more pre-coordination of terms such that the designer of the controlled vocabulary will combine various concepts together to form one authorized subject heading, while thesauri tend to use singular direct terms. Lastly thesauri list not only equivalent terms but also narrower, broader terms and related terms among various authorized and non-authorized terms, while historically most subject headings did not.

Further, the Library of Congress, shows that the Subject Heading itself did not have much syndetic structure until 1943 and was not until 1985 when it began to adopt the thesauri type term "Broader term" and "Narrow term".

In this, the terms are chosen and organized by trained professionals that include librarians and information scientists, who have expertise in the subject area. Controlled vocabulary terms can accurately describe what a given document is actually about, even if the terms themselves do not occur within the document's text. Well known subject heading systems include the Library of Congress system, MeSH, and Sears. Well known thesauri include the Art and Architecture Thesaurus and the ERIC Thesaurus.

Choosing authorized terms to be used is a tricky business, besides the areas already considered above, the designer has to consider the specificity of the term chosen, whether to use direct entry, inter consistency and stability of the language. Lastly the amount of pre-co-ordinate (in which case
the degree of enumeration versus synthesis becomes an issue) and post co-ordinate in the system is another important issue.

Controlled vocabulary elements (terms/phrases) employed as tags, to aid in the content identification process of documents, or other information system entities qualifies as metadata.

4.2.2 Types of controlled vocabularies

Currier distinguishes between the following kinds of controlled vocabularies to which we added metadata schemes.

Flat list:
A simple flat list of terms

Glossary:
An alphabetical list of terms with some explanation

Subject headings list:
A systematic list of subject headings like the ones used for library catalogues. A subject header provides one of the access points to information.

Taxonomy:
Elaborating any kind of well defined list of terms
In different way, it is a mono-hierarchical classification of terms. Here a child term inherits in principle the properties of the parent term. E.g. controlled vocabularies are a kind of vocabularies, or XHTML is a kind of XML application which is a kind of formalism for defining a formal grammar. This is the equivalent of a kind of typology.

On the other hand, controlled vocabulary are represented by preferred terms, formally organized so that paradigmatic relationships between the concepts are made explicit, and the preferred terms are accompanied by lead-in entries for synonyms or quasi-synonyms”. In other words, one also could define a taxonomy with non-hierarchical relationships, but we would rather call these "thesauri".

Classification scheme
A classification scheme is primarily developed for browsing, rather than as indexing or search tools. We therefore could qualify it as a kind of taxonomy.

Metadata schemes
Metadata are a kind of classification scheme or taxonomy. The most well known scheme for the Internet is Dublin Core and in e-learning Learning Object Metadata Standard is popular.

Thesaurus
A thesaurus is like a taxonomy or a classification scheme, but richer. Leonard Will defines it as "controlled vocabulary in which concepts are represented by preferred terms, formally organized so that paradigmatic relationships between the concepts are made explicit, and the preferred terms are accompanied by lead-in entries for synonyms or quasi-synonyms". Joan M. Reitz provides a similar definition: "Also refers to an alphabetically arranged lexicon of terms comprising the specialized vocabulary of an academic discipline or field of study, showing the logical and semantic relations among terms, particularly a list of subject headings or descriptors used as preferred terms in indexing the literature of the field."

Topic map
In this, an ISO standard is there to organize a forest of resources. It's something in between a taxonomy and an ontology.

Ontology
It is a model for describing the world that consists of a set of types, properties, and relationship types. Exactly what is provided around this varies, but this is the essential of an ontology. There is also generally an expectation that there be a close resemblance between the real world and the features of the model in an ontology"

4.2.3 Indexing languages

There are three main types of indexing languages.

1. Controlled indexing language - Only approved terms can be used by the indexer to describe the document
2. Natural language indexing language - Any term from the document in question can be used to describe the document.
3. Free indexing language - Any term can be used to describe the document.

When indexing a document, the indexer also has to choose the level of indexing exhaustivity, the level of detail in which the document is described. For example using low indexing exhaustivity, minor aspects of the work will not be described with index terms. In general the higher the indexing exhaustivity, the more terms indexed for each document.
In recent years free text search as a means of access to documents has become popular. This involves using natural language indexing with an indexing exhaustively set to maximum. Many studies have been done to compare the efficiency and effectiveness of free text searches against documents that have been indexed by experts using a few well chosen controlled vocabulary descriptors.

Controlled vocabularies are often claimed to improve the accuracy of free text searching, such as to reduce irrelevant items in the retrieval list. These irrelevant items (false positives) are often caused by the inherent ambiguity of natural language. Take the English word football for example. Football is the name given to a number of different team sports. Worldwide the most popular of these team sports is Association football, which also happens to be called soccer in several countries.

The English language word football is also applied to Rugby football (Rugby union and rugby league), American football, Australian rules football, Gaelic football, and Canadian football. A search for football therefore will retrieve documents that are about several completely different sports. Controlled vocabulary solves this problem by tagging the documents in such a way that the ambiguities are eliminated.

In comparison to the free text searching, the use of a controlled vocabulary can dramatically increase the performance of an information retrieval system, if performance is measured by precision as the percentage of documents in the retrieval list that are actually relevant to the search topic. Many cases, the controlled vocabulary can improve recall as well, as unlike natural language schemes, once the correct authorized term is searched, you don't need to worry about searching for other terms that might be synonyms of that term.

On the other hand, a controlled vocabulary search may also lead to unsatisfactory recall, in that it will fail to retrieve some documents that are actually relevant to the search question. This is particularly problematic when the search question involves terms that are sufficiently tangential to the subject area such that the indexer might have decided to tag it using a different term. Essentially, this can be avoided only by an experienced user of controlled vocabulary whose understanding of the vocabulary coincides with the way it is used by the indexer.

There are other chances where the article is not tagged by the indexer since indexing happens to be low. For example an article might mention football as a secondary focus, and the indexer might decide not to tag it with "football" because it is not important enough compared to the main focus. But it turns out that for the searcher that article is relevant and hence recall fails. A free text search would automatically pick up that article regardless.
On the other hand, free text searches have high exhaustivity so it has potential for high recall (assuming you solve the problems of synonyms by entering every combination) but will have much lower precision.

It was observed that, control vocabularies are quickly out-dated and in fast developing fields of knowledge, its authorized terms are available that might not be available if they are not updated quickly or regularly. Even in the best case scenario, controlled language is often not as specific as using the words of the text itself. Indexers trying to choose the appropriate index terms might misinterpret the author, while a free text search is in no danger of doing so, because it uses the author's own words.

Using controlled vocabularies is a bit costly as compared to free text searches since human experts or expensive automated systems are necessary to index each entry. Furthermore, the user has to be familiar with the controlled vocabulary scheme to make best use of the system. But as already mentioned, the control of synonyms, homographs can help increase precision.

Numerous methodologies have been developed to assist in the creation of controlled vocabularies, including faceted classification, which enables a given data record or document to be described in multiple ways.

4.2.4 Applications

Controlled vocabularies, as the case of Library of Congress Subject Headings, where the essential component of bibliography such as study and classification of books are narrated. They were initially developed in library and information science. In the 1950s, government agencies began to develop controlled vocabularies for the burgeoning journal literature in specialized fields; an example is the Medical Subject Headings developed by the U.S. National Library of Medicine. Subsequently, for-profit firms emerged to index the fast-growing literature in every field of knowledge. During 1960s, an online bibliographic database industry developed based on dialup X.25 networking. These services were seldom made available to the public because they were difficult to use; specialist librarians called search intermediaries handled the searching job.

During 1980s, the first full text databases appeared that contains the index articles as well as the bibliographic information. Online bibliographic databases have migrated to the Internet and are now publicly available; however, most are proprietary and can be expensive to use. Students enrolled in colleges and universities may be able to access some of these services without charge; some of these services may be accessible without charge at a public library.
Big organizations support controlled vocabularies just to improve technical communication. The use of controlled vocabulary ensures that everyone is using the same word to mean the same thing. This consistency of terms is one of the most important concepts in technical writing and knowledge management, where effort is expended to use the same word throughout a document or organization instead of slightly different ones to refer to the same thing.

In areas of Web searching, the improvement arises as a result of introduction of controlled vocabulary that shows Web pages. By using such vocabulary, the culmination in a Semantic Web takes place where the content of Web pages is described using a machine-readable metadata scheme. One of the first proposals for such a scheme is the Dublin Core Initiative. An example of a controlled vocabulary which is usable for indexing web pages is PSH.

4.2.5 Thesaurus

It is studied that, thesaurus is a list of words and phrases, or subject terms, used to index documents in ProQuest collections. It is also known as a subject list or a controlled vocabulary. The Thesaurus tool displays a list of thesaurus terms. The CINAHL® and ERIC databases use their own custom thesaurus.

When you have found a term you want to add to your search, select the operator to use when adding the term, and click Add to Search.

- Find a term
- Thesaurus Tools
- Add a term to your search
- Select an operator for adding terms
- Explode a Search Term
- View Browse List
- Get the complete vocabulary

Find a term
The terms listed in the Thesaurus list are based on terms found in the ProQuest thesaurus, a set of specialized terms used to categorize information in ProQuest. They are listed in alphabetical order, making it easy for you to browse them.

Scan the list for the term you want to use for your search.

Jump to terms starting with a particular letter by selecting the letter from the list.

You can also search for a term. Enter the term in the box and click Find Term. You will be taken to the nearest match (alphabetically).

If you reach the end of a page and haven't come to the term you want, just click a page number to advance to that page of the list.

Thesaurus Tools

Beneath each term you'll see linked words and phrases associated with the term you found. These words and phrases are categorized using the following criteria:

- Use for (synonymous concepts pointing you to authorized terms).
- Use instead (preferred thesaurus terms for your search)
- Narrower terms (more restrictive terms associated with a subset of records)
- Broader terms (less restrictive terms associated with a larger set of records)
- Related terms (similar terms suggested for use with your search)

For some terms, you'll also find:

- Scope Note Notes on the term and its significance.
- History Note Explains where to find information on this term in previous years.
- Year of Publication The year the selected term or broader/narrower/related terms appeared in the database is displayed in superscript.

Add a term to your search

Once you have found a term, select the operator to use when adding the term to your search and click Add to Search.

If a query existed in the search field, then this term is appended to the existing query along with the selected operator.

Select an operator for adding terms

You can add the terms you find to your search using AND, OR, or AND NOT.
View Browse Lists

If your database collection supports the use of Browse Lists, you can switch to this tool by clicking Browse Topics at the top of the window.

Exploding a Search Term

To explode a term, click
View exploded results.

Get the Complete Vocabulary

Several ProQuest Professional Research Collections use a unique thesaurus, sometimes called a subject list or controlled vocabulary. This thesaurus is a list of words and phrases, or subject terms, used to index records in the collection.

In ProQuest thesaurus, a list of words and phrases, or subject terms is used to index documents in the ProQuest collections. The Thesaurus tool displays a list of thesaurus terms.

The CINAHL® thesaurus contains the list of word and phrases used to index documents in the CINAHL® ProQuest Professional Research Collection. You can order a print version of the CINAHL® Subject Heading List directly from CINAHL® Information Systems. Contact CINAHL® Information Systems by visiting their web site at http://www.cinahl.com.

The PsycINFO® thesaurus contains the list of words and phrases used to index documents in the PsycINFO® ProQuest Professional Research collection. ERIC thesaurus contains the list of words and phrases used to index documents in the thesaurus used for indexing documents in the ERIC ProQuest Professional Research Collection.

4.3 Subject Indexing Models

4.3.1 Introduction

The function of indexing is to describe the "abruptness" of documents

- Indexing terms are used to present content of document
- Challenge
  - to select a set of indexing terms to represent the document contain thousands of words faithfully
    - Process
  - subject analysis
4.3.2 Process of Subject Indexing

Subject analysis
➢ Analyze content of texts and distill the subject concepts
➢ Basis of subject indexing

Subject translation
➢ Translate the subject concepts to index terms
➢ Two approaches
    natural language indexing (free-text indexing )
    controlled vocabulary indexing

4.3.3 Tasks of Indexing

- Analysis of the subject content of the document
- Review of indexing policies and authorities to aid in the correct assignment of terms
- Presentation of the index terms in the appropriate order of the indexing system
- Weighting of index terms
- Quality control of the index terms

4.3.4 Indexing Consistency

The degree of agreement in the representation of the essential information content of the document by certain sets of indexing terms selected individually and independently by each of the indexers in the group.

- all studies indicated that consistency was very low
- a figure of 30% often was used
- Indexing consistency can vary on several factors
   familiarity with the indexing policies
   experience with the specific subject
   the document most recently indexed
   the time allowed to complete the task

4.3.5 Measure Consistency
inter-indexer consistency
  - the overlap in index term assignment by two or more indexers for the same document
intra-indexer consistency
  - the same indexer indexes the same document at two different times

4.3.5.1 Increase Indexing Consistency

Manual Aids
  - Vocabulary control
  - thesauri
  - scope notes
Indexer may choose not to use manual aids
  - takes additional time
  - relevance of the aid to the problem is not apparent
  - indexer believes there is no problem at all

4.4 Techniques for Subject Indexing

4.4.1 Introduction

Subject indexing describes or classify a document in terms of index terms or other symbols in order to indicate which document is about, to summarize its content or to increase its findability. It identifies and describes the subject of documents. Indexes are constructed, separately, on three distinct levels: terms in a document such as a book or objects in a collection such as a library and documents within a field of knowledge.

Mainly, the subject indexing is used in information retrieval to create bibliographic databases to retrieve documents on a particular subject. Examples of academic indexing services are:
  a. Zentralblatt MATH
  b. Chemical Abstracts
  c. PubMed.

Here the index terms were mostly assigned by experts but author keywords are also common. The process of indexing begins with any analysis of the subject of the document. The indexer must then identify terms which appropriately identify the subject either by extracting words directly from the document or assigning words from a controlled vocabulary. The terms in the index are then presented in a systematic order.
4.4.2 Subject analysis

Initially, the indexing decides on the subject matter of the document. In case of manual indexing, the indexer would consider the subject matter in terms of answer to a set of questions such as "Does the document deal with a specific product, condition or phenomenon?". As the analysis is influenced by the knowledge and experience of the indexer, it follows that two indexers may analyse the content differently and so come up with different index terms. This will impact on the success of retrieval.

4.4.2.1 Automatic vs. manual subject analysis

Automatic indexing follows set processes of analysing frequencies of word patterns and comparing results to other documents in order to assign to subject categories. This requires no understanding of the material being indexed therefore leads to more uniform indexing but this is at the expense of the true meaning being interpreted. A computer program will not understand the meaning of statements and may therefore fail to assign some relevant terms or assign incorrectly.

Human indexers focus their attention on certain parts of the document such as the title, abstract, summary and conclusions, as analysing the full text in depth is costly and time consuming. An automated system takes away the time limit and allows the entire document to be analysed, but also has the option to be directed to particular parts of the document.

4.4.2.2 Term selection

Secondly, indexing involves the translation of the subject analysis into a set of index terms which involves extracting from the document or assigning from a controlled vocabulary. With the ability to conduct a full text search widely available, many people have come to rely on their own expertise in conducting information searches and full text search has become very popular.

In subject indexing, experts, professional indexers, catalogers, and librarians, remains crucial to information organization and retrieval. They understand controlled vocabularies and are able to find information that cannot be located by full text search. The cost of expert analysis to create subject indexing is not easily compared to the cost of hardware, software and labor to manufacture a comparable set of full-text, fully searchable materials. With new web applications that allow every user to annotate documents, social tagging has gained popularity especially in the Web. One application of indexing, the book index, remains relatively unchanged despite the information revolution.
4.4.3 Extraction indexing

In an extraction indexing, the words are taken directly from the document. It uses natural language and lends itself well to automated techniques where word frequencies are calculated and those with a frequency over a pre-determined threshold are used as index terms. In this a stop-list containing common words such as the, and would be referred to and such stop words would be excluded as index terms. Automated extraction indexing may lead to loss of meaning of terms by indexing single words as opposed to phrases. Although it is possible to extract commonly occurring phrases, it becomes more difficult if key concepts are inconsistently worded in phrases. It was observed that in automated extraction indexing, problem are there even regarding a stop-list to remove common words such as -the,” some frequent words may not be useful for allowing discrimination between documents. For example, the term glucose is likely to occur frequently in any document related to diabetes. Therefore use of this term would likely return most or all the documents in the database.

Post-co-ordinated indexing where terms are combined at the time of searching would reduce this effect but the onus would be on the searcher to link appropriate terms as opposed to the information professional. In addition terms that occur infrequently may be highly significant for example a new drug may be mentioned infrequently but the novelty of the subject makes any reference significant. One method for allowing rarer terms to be included and common words to be excluded by automated techniques would be a relative frequency approach where frequency of a word in a document is compared to frequency in the database as a whole. Therefore a term that occurs more often in a document than might be expected based on the rest of the database could then be used as an index term, and terms that occur equally frequently throughout will be excluded. Another problem with automated extraction is that it does not recognise when a concept is discussed but is not identified in the text by an indexable keyword.

4.4.4 Assignment indexing

In assignment indexing, index terms are taken from a controlled vocabulary. This has the advantage of controlling for synonyms as the preferred term is indexed and synonyms or related terms direct the user to the preferred term. In this, the user can find articles regardless of the specific term used by the author and saves the user from having to know and check all possible synonyms. It also removes any confusion caused by homographs by inclusion of a qualifying term. A third advantage is that it allows the linking of related terms whether they are linked by hierarchy or association, e.g. an index entry for an oral medication may list other oral medications as related terms on the same level of the hierarchy but would also link to broader terms such as treatment. It is used in manual indexing to
improve inter-indexer consistency as different indexers will have a controlled set of terms to choose from. Controlled vocabularies do not completely remove inconsistencies as two indexers may still interpret the subject differently.

4.4.5 Index presentation

The final phase of indexing is to present the entries in a systematic order. This may involve linking entries. In a pre-coordinated index the indexer determines the order in which terms are linked in an entry by considering how a user may formulate their search. In a post-coordinated index, the entries are presented singly and the user can link the entries through searches, most commonly carried out by computer software. Post-coordination results in a loss of precision in comparison to pre-coordination.

4.4.6 Depth of Indexing

Indexers must make decisions about what entries should be included and how many entries an index should incorporate. The depth of indexing describes the thoroughness of the indexing process with reference to exhaustivity and specificity.

4.4.7 Exhaustivity

Exhaustive index lists all possible index terms. If the exhaustivity is more then a the relevant articles are being retrieved, however, this occurs at the expense of precision. It shows that the user may retrieve a larger number of irrelevant documents or documents which only deal with the subject in little depth. In a manual system a greater level of exhaustivity brings with it a greater cost as more man hours are required. The additional time taken in an automated system would be much less significant. At the other end of the scale, in a selective index only the most important aspects are covered. Recall is reduced in a selective index as if an indexer does not include enough terms, a highly relevant article may be overlooked. Therefore indexers should strive for a balance and consider what the document may be used. They may also have to consider the implications of time and expense.

4.4.7.1 Specificity

Specificity shows how closely the index terms match the topics they represent. An index is said to be specific if the indexer uses parallel descriptors to the concept of the document and reflects the
concepts precisely. It was observed that, specificity tends to increase with exhaustivity as the more terms you include, the narrower those terms will be.

4.4.8 Indexing theory

Hjørland found that theories of indexing are at the deepest level connected to different theories of knowledge:

Rationalist theories of indexing believe that subjects are constructed logically from a fundamental set of categories. The basic method of subject analysis is then "analytic-synthetic", to isolate a set of basic categories (=analysis) and then to construct the subject of any given document by combining those categories according to some rules (=synthesis).

Empiricist theories concerns on selecting similar documents based on their properties, in particular by applying numerical statistical techniques. Historicist and hermeneutical theories of indexing suggest that the subject of a given document is relative to a given discourse or domain, why the indexing should reflect the need of a particular discourse or domain. According to hermeneutics is a document always written and interpreted from particular horizon. The same is the case with systems of knowledge organization and with all users searching such systems. Any question put to such a system is put from a particular horizon. All those horizons may be more or less in consensus or in conflict.

In order to index a document, try to contribute to the retrieval of “relevant” documents by knowing about those different horizons. Pragmatic and critical theories of indexing is in agreement with the historicist point of view that subjects are relative to specific discourses but emphasizes that subject analysis should support given goals and values and should consider the consequences of indexing one way or another. Both theories believed that indexing cannot be neutral and that it is a wrong goal to try to index in a neutral way. Indexing is an act (and computer based indexing is acting according to the programmers intentions). Acts serve human goals.

It was believed that, libraries and information services also serve human goals, since their indexing is done in a way that supports these goals as much as possible. At a first glance this looks strange because the goals of libraries and information services are to identify any document or piece of information. Nonetheless is any specific way of indexing always supporting some kind of uses at the expense of other. The documents to be indexed intend to serve some specific purposes in a community. Basically the indexing should intend serving the same purposes. Primary and secondary documents and information services are parts of the same overall social system.
Such system bears different theories such as epistemologies, worldviews etc. that may be at play and users need to be able to orient themselves and to navigate among those different views. This calls for a mapping of the different epistemologies in the field and classification of the single document into such a map. Excellent examples of such different paradigms and their consequences for indexing and classification systems are provided in the domain of art by Ørom and in music by Abrahamsen.

4.5 Recent trends in Library Cataloguing
4.5.1 Introduction

In a broad point of view, each of first several numbers of Library Trends will be concerned with a specific branch of the field, as college and university, public, school, special and governmental libraries. In substance, the purpose is to offer a general status quo statement of social, political, educational, and economic tendencies now affecting libraries, with some forecasts of things to come and attempts to identify areas in need of further investigation. The present issue, dealing with the principal trends in college and university libraries, opens the series.

The information in this issue offers a comprehensive view of the state of college and university libraries at mid-century that advances present conditions, problems and future prospects. There are many reasons for satisfaction in this over-all look, but few causes for complacency as we tackle the many important tasks ahead.

A library is a planned collection of books, manuscripts, and other records, i.e., a collection selected and organized to meet the reading, study, or research needs of a specific clientele. Types of libraries, then, it would seem, may be distinguished by two principal characteristics, the clientele served and the nature of the collection, the former being the primary determinant of the latter.

The information here clarifies the concept of special librarianship and makes a constructive and timely contribution to this vital aspect of the profession of librarianship as a whole. Certainly, we special librarians have a vital stake in nurturing our own professional inheritance.

In planning the third issue of Library Trends an effort has been made to concentrate attention upon certain influences which are at work in the school library field. They affect the shaping, developing, and hindering of the modern school library program, the administrative phases of the school library, the types of library services that have evolved in the elementary or secondary school, the research carried on in the field, and methods of evaluating the progress of school libraries in the United States and in England. The selection of materials for children and young people and its developmental
effect upon behavioral patterns of youth have, for the most part, been omitted. These important aspects of the subject deserve separate and full treatment in the future.

There are at least three main reasons that such attempts to review the status and assess the trends in public library development are needed often and soon, even on the heels of the Public Library Inquiry. These are the necessity for flexibility in the face of changing social trends, the importance of a clear statement of goals and objectives, and the values potential in a program of research.

Every information deals with an area in need of study; and the research needed not only is greater in amount than can possibly be done at library schools, but in many cases lends itself more to treatment by practitioners and in the field than by students. If the public library is to be an effective agency, those directing it must be conscious continually of the major modifications in the society it serves. Such changes may be sorted out in the light of the institution's goals, and the evaluation of progress made is best done by the research method. These are the reasons the present collection of papers on current trends among public libraries is offered to the profession.

Just as the needs, operations, and services of the federal government run the gamut of human activities, so are its libraries variegated. They include on the one hand ivy-clad college and university libraries; on the other, special libraries for music, the graphic arts, archaeology, pure science, medicine, agriculture, and other applied sciences.

It is difficult, among such diversity of size, scope, organizational status, and service, even broadly to categorize the federal libraries. The areas of common interest among the federal librarians and their nonfederal colleagues include almost the whole range of professional concerns. The editors have attempted to find in the federal library complex not a static pattern, but dynamic evolving situations.

In this the cataloging, classification and related matters, finds the authors to adhere to the purpose of Library Trends, in order to recapitulate evaluatively current thought and practice, and to put ideas and procedures which hold potentialities for future improvement. Some have been more historical than others, but since this is the first issue of the journal devoted exclusively to the topic in question, the editor has encouraged a backward look. Because cataloging and classification result in large and complex records and systems, which are expensive to change, it is difficult for many librarians to move rapidly in the acceptance of proposals which modify drastically current rules or practice. The historical background, therefore, is pivotal.

This information group raised many unsolved problems of cataloging and classification. Administrators of large libraries particularly, since they face more complicated situations than occur
in smaller units, are beginning to take stock of current conditions so that plans may be worked out for the future. Temporary solutions to remove momentary pressures in a local library situation may be one way of proceeding, but they might well be studied in relation to the national problem of cataloging. This area of librarianship requires the attention of all thinking members of the profession.

Several years the librarians in urban universities have been struggling with problems brought about by the specific locations in urban areas. Not until the Washington Conference in 1959, however, did a group of urban university librarians formally organize as a committee of the University Section of A.C.R.L, where a program at the Montreal Conference, an open meeting under the auspices of the University Section shows the unique features of their problems in an issue of *Library Trends*.

The whole span of urban life presents problems which have not been solved. But they are being studied, and answers to some of them are unfolding. The urban university, too, is changing just as completely as is the city. And like its parent institution, the university library is undergoing change. How and to what extent and the nature of the relationships involved, the contributors to this issue of *Library Trends* have tried to assess.

4.5.2 Reorganized Rules

If you think it is hard to explain to nonlibrary users what a librarian does, try explaining the job of a cataloger. Not long ago, if someone had asked me what exactly a cataloger is, my answer would have been, “a guardian of the catalog.” This still holds true today. However, cataloging is also a dynamic, ever-changing library field. Among the many useful and practical things I learned in library school, one idea stays fresh in my mind: The library world is changing faster than you think. Now that I have been a cataloger in a professional sense for almost two years, I can say that the world of cataloging is also changing rapidly.

Just as the function of libraries and the role of librarians are not the same as they used to be, the same is true of cataloging and catalogers. The *Cataloging Annual Report 2010–2011* by Hannah Thomas, head of cataloging and special collections at Saint Mary’s College of California Library (SMCL), listed three trends in the changing landscape of cataloging: the increasing reliance on vendor-supplied records and services, the explosion of electronic resources, and the growing interrelatedness of local library catalogs with systems outside the library.

After the introduction which will explain the principles of the catalog, the RDA will be organized differently than the AACR; it will have three parts, the first of which concerns descriptive cataloging. Instead of building a complete set of rules for each type of material to be cataloged, such as monograph, sound recordings and maps, there will be a single set of general rules for description
of an item; this will eliminate the redundancy found in many AACR2 rules. This will be followed by supplementary rules for specific formats. Another revision is in the format of General Material Designations. Rather than merely conveying the physical format as they currently do, the RDA proposal will allow for a two-part GMD:

- the first half will describe the content
- the second part will describe the physical format.

In a digital atlas, if the stars align, there may be a revised format for the International Standard Bibliographic Description published at the same time as RDA, and the two will be in accordance.

4.5.3 From print to electronic

With respect to statistic shown, annual report shows a dramatic change in the percentage of the types of holdings in the library collections. During 2006–2007 on adding a few electronic collections, as Gale Virtual Reference Library, Oxford Reference Online, and Greenwood Press, was a turning point for the overall proportion of print to electronic holdings. It was seen that the online collection surged dramatically following the major purchase, which boosted online collections by an additional 70,000 records.

During the period 2010–2011, 39% of collection is comprised of electronic resources and the numbers will keep on increasing. Although our building reached its storage capacity 10 years ago,
we have not stopped buying print books, journals, and DVDs. It was seen that the preferred formats are:

a. e-books

b. e-journals

c. online music/videos

d. streaming files

e. electronic resources.

4.5.3.1 Tomorrow: From one to many

Library school cataloging taught a great about cataloging materials of various formats. In SMCL, mostly copying of catalogue is done. While some of our cataloging records are supplied by vendors and services like OCLC PromptCat and ebrary, the main source of our records is still OCLC Connexion.

Until 2000s, libraries probably had only one catalog, hosted by an integrated library system. By 2011, most libraries had more than one catalog featured on their library website. There are many third-party information systems that work with library catalogs. Many library catalog interfaces are also powered by enhancement tools such as Encore, VuFind, or LibraryThing. In addition to the online public access catalog, SMCL also has Reference Universe, an electronic journal list and a few named special collections to facilitate access to some of our unique resources. We recently launched a new multisearch federated search engine with EBSCO Discovery Service.
4.5.3.2 Using power tools

Cataloging is no longer about knowing every card in the library catalog, or just about giving an individual touch to each record we download into an ILS. Today, catalogers need to know the various tricks of manipulating batches of records without having to edit them one by one. In addition to using OCLC to export records into library systems, catalogers often work with batches of records supplied by vendor and publisher packages.

In case of traditional cataloging duties, original cataloging makes enhancements in cataloging records, and manages other catalog maintenance work. However, it is essential that today’s catalogers be trained to use power tools in their ILSes as well as other cataloging tools to do batch edits. At SMCL, we use OCLC Client batch searches to export a few hundred records per week for our retrospective conversion cataloging project. Our weekly routine tasks include using “create list” and “data exchange” functions in Millennium to upload our holdings to OCLC and EBSCO Discovery Service. In fact, “Create Lists,” “Global Update,” and “Rapid Update” have become indispensable functions in our everyday catalog-record maintenance. Thomas’s Cataloging Annual Report called this “the new normal” in cataloging.

Review Questions

13. What is the need of subject cataloguing?
14. Write information on subject access. Explain this with example?
15. Give brief idea about subject index model?
16. What is the difference between Automatic and Manual subject analysis?

Discussion Questions

Discuss the various techniques involved in subject indexing? List down the advantages and disadvantages?

Application Exercises

9. In your library, sketched the type of holdings that is available today with the holdings as available 2 years back?
10. Discuss with a librarian about the need of cataloguing in libraries? Generate pros and cons of your discussion?
“The lesson content has been compiled from various sources in public domain including but not limited to the internet for the convenience of the users. The university has no proprietary right on the same.”