UNIT 3
Indexing and Subject Headings

Contents

3.0   Unit Overview and Description

This chapter will provide information about the basic concept of indexing and subject headings used in the field of Library and Information Sciences. It will help the student to understand the commonly used alphabetical subject heading systems.

Knowledge and skill outcomes:

- Definitions, needs and purpose of indexing and subject headings
- Knowing the various types of Indexing Languages
- Learning different types of Indexing Systems

- Keyword Indexing Systems
- Various Subject Heading Systems
- Importance of indexing and subject authority in Information Management

Resource Material

1. Broughton, V. (2012). Essential Library of Congress Subject Headings. London: Facet Publishing.

2. Cutter, C.A.(1904). Rules for a dictionary catalog (4th ed.). Washington: Government Printing Office.

3. Girja Kumar & Krishan Kumar.(1999). Theory of cataloguing (5th ed.). New Delhi: Vikas Publishing House.

4. IGNOU (2001). Library Cataloguing Theory. New Delhi: Indira Gandhi National Open University.

5. Index, indexer, indexing. (1974). In A. Kent, H. Lancour & J. E. Daily (Eds.). Encyclopedia of Library and Information Science (Vol. 11). New York: Marcel Dekker.

6. Miller, J. (Ed.). (1994). Sears list of subject headings (15th ed.). New York: H.W. Wilson.

7. Moreiro, J.A, Morato, J, Sanchez-Cuadrado, S & Fraga, A. (2009). Indexing languages in information management, promising future or an obsolete resource?. TripleC 7(2), 309-322. Retrieved from

   www.triple-c.at/index.php/tripleC/article/download/95/134

8. (NISO). National Information Standards Organization (U.S). (1993). Guidelines for the construction, format, and management of monolingual thesauri. Approved August 30, 1993, by the American National Standards Institute, (ANSI/NISO Z39.19-1993).NISO Press.

9. Olson, H.A & Boll, J.J. (2005). Subject analysis in online catalogs(2nd ed.). Chennai: Rain Tree Publishing.

10. Robare, L. (2011). Basic subject cataloguing using LCSH: Trainee manual. Retrieved from http://www.loc.gov/catworkshop/courses/basicsubject/pdf/lcsh-trnee-manual.pdf

11. Rowley, J.E & Hartley, R.J. (2008). Organizing knowledge: an introduction to managing access to information (4th ed.). England: Ashgate Publishing.

12. Rowley, J. (1994). The controlled versus natural indexing languages debate revisited: A perspective on information and retrieval practice and research. Journal of Information Science, 20(2): 108-19.

13. Sharifabadi, S.R, Khosravi, A & Zeinolabedini, M.H. (2009). A study on the feasibility of subject authority control of web-based Persian medical databases: An Iranian experience. International Journal of Information Science and Management, 7(2), July/Dec. Retrieved from http://www.srlst.com/ijist/ijism-Vol7No2/ijism72-1-14.pdf

14.   Subject Cataloging Manual: Subject Headings updates. (n.d). Retrieved from http://www.loc.gov/cds/PDFdownloads//scm/index.html

15.   Tennis. (2008). Pre- and Post-coordinate Indexing. Retrieved from IMT 530 .https://courses.washington.edu/is530/win08/lecture%20notes/2.5%20Pre-%20and%20Post-Coordinate%20Indexing.pdf

16.   Timoteo, C. B. Indexing. (Slideshare). Retrieved from http://www.slideshare.net/ImeAmorMortel/indexing-10954481

17.   Westby, B. M. (Ed.). (1982). Sears list of subject headings (12th ed.). New York: Wilson.

Duration: Total Hours 8

Learning outcomes:

Unit 3: Indexing and Subject Headings	Outcomes
3.2: Indexing Languages	• Understand meaning of indexing languages • List types of Indexing languages • Understand definitions and concept of authority lists and thesauri
3.3: Indexing Systems	• Identify basic concept of indexing systems • List various types of indexing systems like Chain Procedure, PRECIS, POPSI, etc.
3.4: Key word Indexing Systems	• List different types keyword indexing such as KWIC, KWOC, KWAC, etc.
3.5: Subject Heading Systems	• Understand types of subject heading systems like LCSH and SLSH • Identify formation of subject headings • List different types of subdivisions • Define cross-references • Identify entry formation and filing order
3.6: Indexing and subject authority in information management	• Understand importance and impact of indexing and subject authority in information management

Assessment Plan(for the teachers)-

Unit 3	Topic	Assessment Method	Time Plan	Remarks
3.2	Indexing Languages	Activity Exercise: Question & Answer	1 Hr	
3.3	Indexing Systems	Activity Exercise: Question & Answer	1 Hr	
3.4	Key word Indexing Systems	Activity Exercise: Question & Answer	1 Hr	
3.5	Subject Heading Systems	Activity Exercise: Question & Answer	4 Hrs	
3.6	Indexing and subject authority in information management	Activity Exercise: Question & Answer	1 Hr	

3.1 Introduction

The library is called the knowledge house. One of the primary functions of the library is to make available the documents and information it possesses to the users and this is possible through the library catalogue. According to Cutter, purposes of the subject catalogue are to enable a person to find a book of which subject is known and to show what the library has on a given subject.

In order to increase the visibility and access of the library documents, the cataloguer must take into account the intellectual content as well as the physical entities of the items added to the library collection. Thus, with the help of keywords in the tracing section of the catalogue card as per AACR II rules, we can prepare the indexes of the document of the library collection.

Definition

In Encyclopedia of Library and Information Science an index is described as "a systematic guide in or concepts derived from a collection. These items or derived concepts are represented by entries arranged in a known or stated searchable order, such as alphabetical, chronological or numerical". According to Broughton, indexing is "the act of determining the subject content of items and assigning appropriate subject indexing terms or notations" and subject heading as "a linguistic expression (a word or group of words) representing the subject content of a document, and used for retrieval in a catalogue, bibliography or index". Subject heading can be a single term or phrase used to describe a subject representing a concept, event, or name.

Needs and Purpose

The basic need and purpose of indexing subjects and subject headings or a subject catalogues is to bring together all related materials at a single point and to provide direct retrieval and prompt approach to finding material on a particular material.

The purpose of subject headings is also to give the cataloguer a way to describe the content of materials in the library. Many a times this can be done in a single word or sometimes in phrases, where the subject heading concepts that are covered, required further definitions or a more specific definition of the content.

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Review question:

   i.   Define Indexing?

   ii.   What is the Purpose of subject headings?

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3.2 Indexing Languages

An index is used for one and only one resource or document. An indexing language is used for many resources and it serve as tools for communication and it is also used to describe the subject matter of documents by assigning terms or word-like symbols (vocabulary) to represent what the document is about. These assigned terms or codes can be used as access points in an index. The indexing language is used in indexing, if the terms and codes are assigned by indexer at the time of the database creation. Index comprise entries within a card catalogue, machine readable forms such as magnetic tape, disk, microfilm or in printed book form, which provide access to the document under the selected index terms representing their subject matter. There are two broad indexing languages namely: Natural Indexing language and Controlled indexing language. Each of these is briefly discussed below:

3.2.1 Uncontrolled or Natural Indexing Language

A natural language is 'natural' in the sense that it is free from any control and it is not possible to keep clear of synonyms and homonyms. An uncontrolled or natural language or free text indexing language uses the actual words of a document or some description of it from its title, abstract or other text of documents as index terms. Natural language indexing can be executed by a human indexer, or automatically by the computer. Indexing through the computer can be done by limiting stop-list of very common terms in the document. Some of the developed applications of alphabetical natural indexing language are such as 'Uniterms' and 'Keywords-in-Context' (KWIC) indexes.

3.2.2 Controlled Indexing Language

According to Rowley, controlled indexing languages are indexing languages in which both the terms that are used to represent subjects, and the process whereby terms are assigned to particular documents, are controlled or executed by a person. The controlled indexing language or controlled vocabulary is most often used to identify a preferred word forms (terms) of the subject heading representing the contents of documents or subject interest profiles of users. In controlled vocabulary a limited set of terms is used by indexers and searchers allowing cross-references and leading to the preferred term. The need for controlled vocabulary is to promote consistency in indexing and searching in the rapidly changing terminology.

There are two types of controlled indexing languages. They are:

   1)   Subject heading authority lists, and

   2)   Thesauri

1) Subject Headings Authority Lists

Subject headings authority lists is a lists of authorised controlled vocabularies or terms arranged in alphabetical order to provide access to the subject of documents. The subject terms are ready made and mainly pre-coordinated headings where these are selected as needed by the cataloguer and are attached to the catalogue record of each item.

Subject headings authority lists helps to ensure that the same heading is assigned to all works on the same subject. When existing subject headings are revised or new headings are added, cross-references often serves as the source for verification and validation of subject headings to individual cataloguing records for uniformity, consistent and current terminology. Thus, cross-references guide users to related headings and retrieve useful records.

The alphabetic types of subject heading lists are such as Library of Congress Subject Headings (LCSH), Sears List of Subject Headings (SLSH) and Medical Subject Headings (MeSH).

2) Thesauri

The word thesaurus is a Greek word, and the dictionary meaning of the word 'thesaurus' is 'a list of subject headings or descriptors usually with a cross-reference system for use in the organization of a collection of documents for reference and retrieval'. The National Information Standards Organization (NISO) defines a thesaurus as "a controlled (indexing language) vocabulary arranged in a known order and structured so that equivalence, homographic, hierarchical, and associative relationship indicators among terms are displayed clearly and identified by standardized relationship indicators that are employed reciprocally".

Thesaurus is a controlled vocabulary language commonly used to index documents consisting of single term or concepts, which are combined by the indexer to create the document description. The thesaurus relates in a number of ways of each term to other terms in the vocabulary by used of codes such as UF, USE, BT, NT and RT, indicating broader, narrower and related terms, and thus enabling the indexer to navigate the vocabulary.

Examples of controlled indexing language are such as Art & Architecture Thesaurus (AAT) and Thesaurus of ERIC Descriptors.

> **Review question**
> i. What is the use of Indexing language?
> ii. Define Controlled Indexing language?
> iii. Name the different types of controlled Indexing languages?

3.3 Indexing Systems

Indexing is a process of preparing entries to provide in-depth access to chapters, articles, detailed listings of topics of the items. Thus the preparation of a series of entries for inclusion in a subject catalogue or printed index is known as indexing. Indexing is a technique for providing service operation. An index is a tool, and it is a means to an end, never an end in itself. In other words, indexing systems is a communication link between a collection of a library and those who intend to obtain some information

from it. The indexing systems can be divided into two basic groups namely: Pre-coordinate Indexing, and Post-coordinated Indexing.

3.3.1 Pre-coordinate Indexing System

Pre-coordinate indexing systems are conventional systems found mostly in printed indexes. In a pre-coordinated system, the indexer is required rather than the searcher to create and combine chain or strings of headings or terms to define the subject content of the document. The leading term (heading) determines the position of the entry in the catalogue or index, while the other terms are subordinated to it. The pre-coordinated terms are decided before any particular request are made, it can be words or notations or even images, so the index is known as pre-coordinate index. Pre-coordinate systems find their application in printed indexes and library catalogues. Some examples of pre-coordinate indexing are discussed below:

1)   Chain Procedure

In 1983, S.R Ranganathan designed a new method of deriving subject headings from a class number, in a more or less mechanical way. The class number of a subject is the result of subject analysis of a document into its facet ideas and every concepts becomes linked, or chained together by a set of indicator digits, like in Colon Classification Schemes. As this chain is used for deriving subject index entries on the basis of a set of rules and procedures, this new system is called "Chain Procedure".

The rules and procedures of Chain Procedure were also formulated for deriving subject headings for a dictionary catalogue too.

Example: Victorian period English poetry (821.8)

Hierarchy: 8 – Literature

2 – English

1 – Poetry

.8 – Victorian period

Chain index entries that will be generated are the following:

Victorian period: Poetry: English: Literature 821.8

Poetry: English: Literature   821

English: Literature   820

Literature   800

2)   PRECIS

Preserved Context Index System (PRECIS) was developed by Derek Austin as an alternative procedure in order to produce printed alphabetical subject headings for British National Bibliography (BNB).

Context – dependency is the principle of PRECIS. It involves the following steps:

    1.   Determining the specific subject content of the documents.

2.	Analysing and selecting appropriate indexing terms.

3.	Determining the relationship of a term to other terms in the database.

4.	Generating index and alphabetical arrangement of entries.

Example: "Selection of personnel in leather industries in India", the input string is

India > Leather industries > Personnel > Selection

Note: Symbol > indicates a direct relationship between adjacent terms.

Chain index entries that will be generated are:

India

Leather industries: Personnel : Selection

Leather industries : India

Personnel : Selection

Personnel : Leather industries : India

Selection

Selection : Personnel : Leather industries : India

The subject index is generated directly from the machine readable records undertaken by the British Library. The indexer prepares the input strings and codes giving necessary instructions to the computer to generate index entries according to the regulated format.

PRECIS method of producing subject indexes has been adopted by a number of indexing agencies like national bibliographies, indexes to audio-visual materials, library catalogues, etc.

## 3)	POPSI

Postulate-Based Permuted Subject Indexing (POPSI) was developed at the Documentation Research & Training Centre (India) and was designed by G. Bhattacharyya and A. Neelameghan. The indexing system shows that the features of the classified catalogue system could be incorporated to a great extent in the dictionary catalogue system without affecting its advantages. The codes used for index string generation is based on Colon Classification.

A comma "," precedes the entity segment; a semicolon ";" is a property segment; a colon ":" is a process segment; a hyphen "-" is a qualifying sub segment; and a greater than ">" is a narrow term.

POPSI subject indexing system work by keeping the structure of each specific subject heading parallel to the horizontally presented chain serving as the basis. POPSI can be applied to micro and macro level documents available in the form of non-print/non-book forms. It can also be put to use for information retrieval.

3.3.2 Post-coordinate Indexing System

In post-coordinate indexing systems, the terms were kept loose and the searcher controls how terms are combined for a search and the set of documents retrieved according to its own coordination. So, the

coordination of terms are done by the searcher at the stage of outputting, thus, it is called post-coordinate indexing. In many cases, post-coordinate indexing involves the use of controlled vocabulary of indexing terms. Some examples of post-coordinate indexing are given below:

- Uniterms Indexing of M. Taube
- Batten System of W.E Batten
- Peak-a-boo System
- Optical Coincidence System

Review question

i. Name the different kinds of indexing system?

ii. What is post coordinate Indexing system?

3.4 Keyword Indexing Systems

With the development of technology the retrieval system has undergone sea changed.

Key-Word-In-Context (KWIC) was introduced by Hans Peter Luhn in 1959. It is a notated index most commonly derived from the titles of document. Each keyword appearing in a title becomes an access point and printed in the middle of the page. All of the words in the title of documents for which an index is required are matched by the computer against a stop-list. This stop-list or stop-wordlist such as articles, prepositions, and pronouns which are part of the title but are insignificant in an index so are not keywords.

Example: Cataloguing and classification for Indian.

Cataloguing and classification

classification for Indian

Indian. Cataloguing and classification

Key-Word-Out-of-Context (KWOC)-A technical variation of KWIC, in which keywords are removed from the context of the titles that contain them. It appear as headings in a separate line index and usually omitted with the left margin.

In KWOC, a keyword used as an access point index is sometimes not repeated in the title but is replaced by an asterisk (*) or some symbols. Example:

Cat – The * and the economy.

Economy – The Cat and the *.

Key-Word-And-Context (KWAC) – designed and produced by computer algorithm to preserve the work pairs and phrases in alphabetical sequence of keywords in traditional format with the lead term on the left margin.

Keyword indexing systems such as KWIC, KWOC and KWAC differ only in terms of their formats but indexing principles/techniques remain more or less same. Keywords are now an important retrieval

device in most OPACs. Internet search services rely primarily on keywords rather than on controlled indexing terms.

Example: Cataloguing and classification for Indian.

Cataloguing and classification for Indian.

Classification for Indian. Cataloguing

Indian. Cataloguing and classification for

Review question

i.   Write the full form of the following abbreviations:

        a. KWIC   b. KWOC   c. KWAC

ii.   Differentiate between KWIC and KWOC?

3.5 Subject Heading Systems

The important function of a library catalogue is to provide access to documents in a library through their subject contents. In other word, subject headings are created for use in cataloguing and it reflect the topics covered in a given collection. A classified catalogue facilitates subject approach to documents in a library and the dictionary catalogue provides an alphabetical subject index through verbal subject representation of the content of documents. Subject headings for the document are constructed following their own designed, developed standard of rules and procedures. The subject heading systems commonly used by most libraries and bibliographical publications are Library of Congress Subject Headings (LCSH) and Sears List of Subject Headings (SLSH).

3.5.1 Library of Congress Subject Headings (LCSH)

The Library of Congress Subject Headings is an alphabetical list of subject headings, and the most widely accepted control vocabulary devices in the English language. LCSH is used in many colleges, universities and large libraries in the world as a means of subject searching in library catalogues.

Background

LCSH was first conceived over a hundred years ago, and has been in a state of continuous development. The Library of Congress developed LCSH as the principal means of subject access to its own collections, but was quickly taken up by the American libraries and other libraries worldwide. The Library of Congress's cataloguing information has increased considerably with the Machine Readable Catalogue (MARC) Programme and LCSH is now available in five volumes printed form (sometimes called the red books), on microfiche, on CD-ROM, and online through the internet. LCSH is used today not only in the library catalogues but in many bibliographic resources, abstracting and indexing services, and other databases. The current edition of LCSH is 34th edition, 2012.

Formation of Subject Headings

LCSH is an alphabetical list of pre-determined subject headings, used in the Library of Congress catalogues, together with the thesaurus-type cross-references that helps the cataloguers to navigate the list and select the appropriate headings.

For providing subject headings, an indexer or a cataloguer choose readymade subject headings from controlled vocabulary of LCSH list and match with that of the subject content of the document being indexed or catalogued.

Figure 1. Library of Congress catalogue record

Figure 2. Subject headings in the catalogue's subject index
(Can be seen at Appendix 1 & 2)

In the LCSH, subject headings are constructed in a variety of ways, and are grouped by the number of words that comprise the heading, and also by word order. Let us examine these headings in LCSH.

(1)   Single Word Headings

Most single word headings are usually a noun which represents the names of disciplines, activities, classes of persons, objects, etc. Examples: **Actors, Airplanes, Dogs, Heat, Scooters, etc.**

Homonyms headings

Homonyms are differentiated by providing the meaning of the word and placed in brackets, which are known as qualifiers. The qualifier forms part of the heading. Examples:

Cricket (Game)   Cricket (Insect)

Boxers (Dogs)   Boxers (Sports)

Singular and Plural Forms

Concrete nouns (or count-nouns) are made plural e.g **Cars, Students Pencils;** while abstract nouns are in the singular form e.g Essay, Density.

Exceptions to this rule include parts of the body, musical instruments, and species of plants and animals e.g **Ear, Brain, Eye, Drums, Dangerous plants.**

(2)   Phrase Headings

In phrase headings, two or more words are used to express a subject.

(i)   Adjectival Phrase Headings

Adjectival phrase headings consist of a noun or noun phrases where a noun is qualified by an adjective or another noun. Sometime the noun is referred to as the focus and the qualifying adjective or noun as the qualifier or modifiers. E.g: **Dwarf trees,** where 'trees' is the focus and 'dwarf' is an adjective qualifying the noun 'trees'. *Note that only the first word in the heading is in capital letter*.

Inverted Headings: Sometime adjectival headings are inverted, bringing the noun into the lead position such as time period, nationality, or culture.

History, Modern

Drama, Russian

(ii)   Conjunctive /"And" Phrase Headings

LCSH use conjunctive phrase headings expressing the general relationship between two disciples, or between two more specific topics, connected by the word 'and'.

Books and reading

Religion and science

Good and evil

(iii)   Prepositional Phrase Headings

Some concepts can be expressed only by one or more phrases connected by prepositions.

Quality of life

Legumes as food

Figures of speech

(3) Compound Headings

The phase relations treat subjects in relations to each other that include general, bias, influence, comparison, effects, etc. In LCSH, the documents dealing with these relations are given subject headings either by a single or multiple numbers of headings.

Single Heading

Sometimes an item with a very simple subject, a single main heading maybe sufficient to represent the subject, examples:

1. Document title: India in the cinema

   Subject Heading: **India- -in motion pictures**

Multiple Headings

When selecting headings, the headings with the one closest to the subject of the document should be listed first, example:

1. Document title: Wild orchids of Arizona and New Mexico

   Subject Headings: **Orchids - - Arizona**

   Orchids - - New Mexico

Subdivisions : In LCSH, there are four main types of subdivisions:

1. Topical - Archaeology - - Methodology

2. Form- Archaeology - - Fiction

3. Geographic - Archaeology - - Egypt

4. Chronological - Archaeology - - History - -18th century

a) Topical Subdivisions

Topical subdivisions are used under the particular main heading, or other subdivisions. They are identified by a double dash preceding the subdivisions.

1. Document title: Victorian myths of the sea

   Subject Heading: **Ocean- -Mythology**

b) Form Subdivisions

Examples of Form subdivisions indicate the form in which the material on a subject is structure, organised and presented.

--Periodicals

--Biography

c) **Geographic Subdivisions**

A geographic subdivision makes provision for the local specification of a subject. Headings accompanied by the legend (May Subd Geog), standing for "May Subdivide Geographically", may be subdivided by name of the place. Example: **Plasma astrophysics** (May Subd Geog)

If a heading contains both a geographic and topical subdivision, the location of the geographic subdivision depends on which elements can be subdivided by place. Example:

Cricket (May Subd Geog)

- - Bowling

- - Coaching (May Subd Geog)

Subject Headings can be constructed as:

Cricket--India

Cricket--Bowling

Cricket--Coaching--India

d) **Chronological Subdivisions**

Examples of Chronological subdivisions indicating period, date and time.

Italian poetry--15th century

India--History--1526-1765

Free-floating Subdivisions

Free-floating subdivisions are those that are not attached to any particular main heading but can be used more generally.

(i) Free-floating subdivisions of general application

Some subdivisions are generally applicable to a long number of headings. These include form, presentation, time, place, etc.

History--15th century

- Poetry

--Dictionaries

--By-laws

For electronic information sources there is no subdivision as a form.

--Blogs

--Databases

(ii) Free-floating subdivisions under specific types

Subdivisions such as classes of persons, with particular countries or regions, with art and art forms, languages and literatures, and ethnic groups are used with the main headings. Examples: **Indian Americans** and **Working class families.**

(iii) Free-floating subdivisions indicate by 'multiples'

Some subjects carry more than one free-floating subdivision with a main heading. They are added in combination with repeating the main heading.

Fishes- -Anatomy

Fishes- -Classification

(iv) Free-floating subdivisions controlled by pattern headings

Some topical subdivisions are relevant only to a particular heading but are applicable to lots of headings in the same subject area. The group of headings is known as a pattern heading.

Category	Pattern Headings
Chemicals	Copper Insulin
Materials	Concrete Metals
Musical instruments	Piano

Cross-References

Cross references are provided in the alphabetical subject catalogue to guide users from their search terms to valid headings and also to link related headings.

USE and UF references

USE tag directs the cataloguer non-preferred term to a preferred heading. USE and UF relationships are called equivalence relationship.

Walking a dog

USE Dog walking

Dog walking

UF Walking a dog

BT, NT, RT and SA references

Subject headings in LCSH are linked to other subject headings through cross-references tags used in thesauri to indicate BT (Broader Terms), NT (Narrower Terms), RT (Related Terms) and SA (See Also). BT and NT relationships are also called hierarchical relationship. The RT relationship links headings that are related in subject concept. The 'SA' references indicate where topic occurs both as main headings and subdivisions.

Potatoes

    BT   Solanum

    RT   Cookery (Potatoes)

    NT   Frozen potatoes
             Potato peeling
             Seed potatoes

Physicians	**Medicine**
see also	see also
Medicine	**Physicians**

Entry Format and Filing Order

In LCSH the subject headings terms are listed in boldface types and the cross- reference terms in light types. When a heading is followed by the legend (May Subd Geog), shows that the heading may be subdivided by places. The various listed cross-references terms associated with the headings are such as: USE and UF, BT, NT, RT, and SA. The different punctuation marks for different types of headings are listed below:

Comma: used to separate parallel terms in headings, noun from a qualifier in an inverted heading, the surname from the forename of a person.

    Naval history, Modern

    Obama, Barack

Dash and Hyphens: Dashes are used to indicate subdivisions of a main heading. Double dashes are used to differentiate structured headings from headings containing hyphenated words or compound words.

    Brazil- -History- -Naval Revolt, 1893-1894

    CD-ROMs

Parentheses (Round brackets): are used to enclose a qualifier.

    Cookery (Puddings)

    Waste (Economics)

Period or Full stop: is used as an abbreviation mark and also for named created works like in literary texts or musical compositions. For examples:

    Shakespeare, William, 1564-1616.Hamlet

    James, P.D.

Filing Order

LCSH uses word-by-word filing, sometimes called 'nothing before something' of subject heading. Numbers that are expressed in digits, both Arabic and Roman, are file before alphabetic characters and are arranged in increasing numeric value. Most of the punctuation marks like commas, apostrophes,

brackets, full stops are ignored for filing. The hyphenated words are filed as separate words. Valid headings or preferred headings are in bold type.

Examples: **1 Wall Street**

10 Downing Street

Father and child

Father Christmas

There is no doubt that LCSH represent the subject headings of the richest and largest national libraries in the world the Library of Congress itself. The 'Subject-Headings Manual' which is rules for application of LCSH is published separately in a loose-leaf format. Library of Congress's electronic version of classification and subject headings is 'Classification Web', and sometime referred as 'Classweb' (http://classificationweb.net).

3.5.2 Sears List of Subject Headings (SLSH)

Sears List of Subject Headings (SLSH) is an abridged version of the Library of Congress Subject Headings. SLSH was named after Minnie Earl Sears who compiled a list of subject headings in response to demands more suitable to the needs of the small library. List of Subject Headings for Small Libraries was first published in 1923. H.W. Wilson Company published the SLSH which incorporate the new headings or changes in old headings. SLSH is widely used in the world by general libraries.

Formation of Subject Headings

SLSH like Library of Congress Subject Headings (LCSH) is an enumerated list of subject headings. In order to provide subject headings, the cataloguer has to only navigate through the standard list of subject headings like SLSH, and select the most appropriate heading which matches the contents of the documents being indexed.

The headings, terminology and subdivisions used in SLSH, is similar to the pattern and practice of LCSH, with some modifications to serve the needs and requirements of small and medium libraries. The principles that guide the indexers in the choice and rendering of subject headings in SLSH are 'Specific Entry', 'Common Usage' and 'Uniformity'.

a)   **Specific Entry:** A work should be entered under the most specific subject heading which accurately and precisely represents the content of the book. If a reader wants a book about bridges, the direct approach is to consult the catalogue under the heading **Bridges**, not under the large topic **Engineering**, or even the more restricted field, **Civil engineering**.

b)   **Common Usage:** The subject heading chosen to express the contents of the document should be popular or common usage as preferred over scientific or technical names. A reader in a small public library will look under **Birds**, not **Ornithology**.

c)   **Uniformity:** One uniform heading must be selected from several synonyms, and this heading must be applied consistently for the same topic. China, Chinaware, and Porcelain are all entered under **Porcelain**.

(1) Single Word Heading (Single Noun)

The simplest form of subject heading consists of a single noun. Examples: **Art, Birds, Flowers, Tools**, etc.

Homonyms Headings

These headings are differentiated by providing a contextual meaning of the word.

Seals (Animals)

Seals (Law)

Singular and Plural Headings

Choice must be made for used of singular (abstract ideas) and plural (objects and things) forms of single words as headings, as they carry different meanings.

Painting - - - - - - - - - - - refers the art.

Paintings - - - - - - - - - - refers to the object.

(2) Phrase Headings

Sometime the subject content of the document can be expressed only by more or less complex phrases. The different types of phrase headings recognised in SLSH are as follows:

Adjectival Phrase Headings

A noun is qualified by an adjective to get the specific concept of the subject.

American literature

Electric engineering

Prepositional Phrase Headings

Some concepts can be expressed only by more or less noun phrases connected by prepositions.

Freedom of information

Information storage and retrieval systems

Medicine as a profession

Women as physicians

(3) Compound Headings

The compound headings used two nouns joined by 'and' to connect or express a relationship between two subjects which cannot be separated easily in concept and which are usually treated together in books.

Boats and boating

Religion and science

Good and evil

Joy and sorrow

Subdivisions

Examples of Form subdivisions:

Geology-Maps

Chemists-Directories

Bible-Pictorial works

Cross-References

Examples of subdivisions subject headings from a particular point of view:

Education-History

Religion-Philosophy

Radio-Laws and regulations

Examples of Chronological subdivisions:

United States-History-1945-1953

Examples of Geographic name subdivisions – Subject divided by place:

Agriculture-India

Music, Spanish

Examples of Geographic name subdivisions – Names of Places subdivided by subject:

India-Census

Italy-History

China- Climate

Cross-References

With the SLSH 15th edition, 1994, 'x' (See ref.) and 'xx' (See also ref.)was replaced by thesaurus symbols such as UF (Used For)/USE, SA (See Also), BT (Broader Terms), NT (Narrower Terms),and RT (Related Terms). Below is a sample heading from the SLSH.

Card games

UF   Cards, Playing

      Playing cards

SA   names of card games, to be added as needed

BT   **Games**

NT   **Bridge (Game)**

      Canasta (Game)

      Card tricks

      Solitaire (Game)

      Tarot

RT   **Gambling**

The three types of cross-references used in SLSH are discussed below:

1) Specific "See" References

The UF label stands for "Used for" and it designates those unpreferred terms or phrases for which the subject heading is used instead. Such words and phrases might include the following:

(a)   Synonyms or terms so nearly synonymous; e.g Cards, Play see **Cards games**

(b)   Compound heading; e.g Evil and good see **Good and evil**

(c)   Inverted form of a heading, when the noun is preceded by an adjective; e.g Education, Adult see **Adult Education**

(d)   Variant spellings; Coloursee **Color**

(e)   Opposite of a term; Intemperance see **Temperance**

(f)   Singular of a plural term; Mouse see **Mice**

2) Specific "See Also" References

As a rule, a term has only one broader term, unless the term is an example or aspect of two or more things. Following the BT label is a term 'Games' that a broader in application than the main heading term 'Card games'. The reference entry in the catalogue will be **Games** See also **Card games**.

Following the NT label are terms that are narrower than the main heading. The reference entries in the catalogue will be

Card games

     See also

         Bridge (Game)

         Canasta (Game)

         Card tricks

         Solitaire (Game)

         Tarot

Following the RT label are terms related to the main term, on similar or associated subjects. Related terms are of more or less equal specificity, neither broader nor narrower. The term **Card games** is related to **Gambling** because not all card games involve gambling and not all gambling involves card games. Reference entry will be **Card games** See also **Gambling**.

3) General References

The SA stands for "See also" and introduces a "General Reference", not to a specific heading but to a general group or category of things. In the example of **Card games** given above, the "SA" label

introduces the general reference to "names of card games, to be added as needed". This instruction provides reminder to the cataloguer not to be limited to the examples of card games given in the SLSH. In above example, there happen to be three card games appearing in the NT field under **Card games**, but if the library acquires a work devoted to the card game **Rummy (Game)**, then the reference entry will be **Card games** See also **Rummy (Game).**

Entry Format and Filing Order

The SLSH remains an alphabetical subject heading list and has adopted thesaurus format to help cataloguer to distinguish relationships among terms and to establish appropriate references in the public catalogue based upon these relationships.

Like LCSH, the subject entries in SLSH are printed in boldface and the cross-references terms appear in light faces. SLSH follows the ALA Rules for Filing where all punctuations marks are ignored.

Sears List of Subject Headings is fairly much simpler to use than the Library of Congress Subject Headings. As the rules and principles used in SLSH follow the same pattern as LCSH, it becomes easy for a library to change over to Library of Congress list when the library collection becomes large enough. As SLSH does not backed any library collections, so updating and revision of subject headings cannot keep pace with changing current terminology and growth of new subjects.

Review question
i. Write a brief note on Sears List of subject heading.
ii. Write the full form of the following:
a) U F b) S A c) B T d) N T e) R T

3.6 Indexing languages and subject authority in information management

Librarians have always been responsible for organizing information resources by means of various methods and tools either manually or digitally like such as cataloguing and indexing. In recent times with the technological innovations, advances in IT and coming of World Wide Web (WWW), there has been significant challenges, but also new opportunities in the field of Library Science especially in information access, searching and items retrieval.

Indexing and subject heading lists or controlled vocabularies for information search and retrieval has been in libraries since the 16th century B.C such as in Babylon libraries, Charles A. Cutter's Rules for a dictionary catalogue (1962), Dewey Decimal Classification (1979), Universal Decimal Classification, etc.

Due to the ever-changing and development nature of the Internet and web-based technologies or the heterogeneous nature of internet, there is a language compatible gap between information seekers and information providers. Authority control method is a way to avoid this ambiguity affecting information retrieval that uses natural languages. But in a diverse digital environment these controlled vocabularies face rejection, and instead a new controlled languages demand for a place in the Web. In digital and Web environment, controlled and natural languages must co-exist with indexing and free-searching

systems, and need to made adjustment so that these languages are used and incorporated into ontologies in the Semantic Web and in the Web 2.0.

Review question

    i.   How the language compatible gap between information seekers and information providers can reduced?

3.7 Summary

In this Unit, we explained the concepts, its need and purpose of indexing, subject cataloguing and subject headings. The process of indexing, how it helps in the subject cataloguing, and the two broad groups of indexing languages such as natural indexing language and controlled indexing language has been discussed. The major indexing systems namely, pre-coordinate indexing such as Chain Procedure, PRECIS, POPSI, post-coordinate indexing and Keyword indexing methods and techniques has been explained. The important role play by subject headings authority lists and thesaurus in indexing, subject cataloguing and providing access have also been discussed. Two subject headings systems of enumerative controlled vocabularies lists namely – Library of Congress Subject Headings (LCSH) and Sears List of Subject Headings (SLSH), their rules and procedure, features, brief historical background, formation of subject headings, cross-references, entry format and filing order has been explained. Finally we have also discussed indexing language and subject authority in information management.

3.8 Exercise

1.   What is an Indexing Language?

2.   What are the different categories of indexing languages?

3.   What do you understand by an Indexing Systems? Name the various categories of indexing systems?

4.   What is the difference between pre-coordinate indexing and post-coordinate indexing systems? Given examples.

5.   Give the full forms of PRECIS and POPSI.

6.   What are the different keyword indexing systems?

7.   What is the full form of KWIC, KWAC and KWOC?

8.   List the types of headings in LCSH.

9.   List the types of subdivisions in LCSH.

10.   What is a pattern heading in LCSH? Give two examples.

11.   Describe the various cross-references symbols use in SLSH?