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15

LIBRARY SYSTEM AND MANAGEMENT

15.1 INTRODUCTION

Let us understand library as a 'system'. You must have seen various existing systems, like political system, economic system, social system, education system, etc. We, the human beings, are a biological system which has many sub-systems, like, digestive system, blood circulatory system, respiratory system, etc.

A system is a set of connected parts/components forming a complex whole. It contains entities, namely, men, machines and materials. These entities are integrated to serve definite purpose and objectives. The system components are inter-related, inter-dependent and have effect on each other as a whole. Thus a library is also a system and its various sections/divisions are its components.

The primary objective of any library system is to collect, store, organize, retrieve and make available the information sources to the information users. A library, as a system, is a subsystem of some super-system (an organization in any field, whether education, research or social service). It has its own subsystems, such as, acquisition system, circulation system, administration system, etc.

In this lesson, you will learn library management and the role of library as a system.

15.2 OBJECTIVES

After studying this lesson, you will be able to –

- define library management;

- identify functions of library management;
- list various structural components of a library system; and
- explain functioning of various sections of a library, viz. Acquisition Section, Technical Processing Section, Circulation Section, Reference Section, Periodicals Section, Maintenance Section, and Administration & Finance Section

15.3 LIBRARY MANAGEMENT

Library Management is the adaptation of the principles and techniques of management to the library situation. It includes decision making and getting the work done by others. The five fundamental management functions are: Planning, Organizing, Staffing, Leading and Controlling.

15.3.1 Definition

Libraries have an important role to play in facilitating access to information for learning, education and training. It is a known fact that a well-managed library is a successful library. The library management means efficient and effective management of material (information sources), machinery, men (human resource), technology and money to meet the objectives of the library. Thus, librarian as manager performs all the functions of manager/administrator.

15.3.2 Functions

Henry Fayol (1841-1925) expounded the principles and practices of management in their modern context. Fayol devoted his attention to the study of managerial activities, and identified the basic and universally applicable five functions (applicable to library management also), such as,

a) Planning

b) Organizing

c) Commanding

d) Coordinating

e) Controlling

Planning: Planning includes formulation of goals, objectives, decision making for future, strategies, policies, and effective planning.

Organizing: Organizing includes departmentation, line and staff functions, decentralization, committees and group decisions, and effective organizing.

Staffing (Commanding): It includes selection, job description, appointing personnel, appraisal, developing library managers and organizational development.

Leading (Coordinating): It deals with human factor, motivation, leadership, and communication.

Controlling: It includes system and process of controlling, control techniques, control of overall performance, and effective managing.

15.3.3 Elements of Management

In 1937, social scientists Luther Gulick and L. Urwick described seven "major activities and duties of any chief executive". Since then, the acronym POSDCORB is used to describe the 7 functions of managers referred to as the 'Elements of Management'. The acronym POSDCORB stands for: Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting.

Planning

Planning is working out in broad outline the activities that need to be done and the methods for doing them to accomplish the purpose set for the organisation.

Organizing

Organizing is the establishment of the formal structure of authority through which various sections or divisions of the organisation are arranged, defined and coordinated for the defined objective.

Staffing

Staffing is the whole personnel function of bringing in and training the staff and maintaining favorable conditions of work.

Directing

Directing is the continuous task of making decisions and embodying them in specific and general order. It involves giving instructions by the top personnel and serving as the leader of the library.

Coordinating

Coordinating is the all-important duty of interrelating the various aspects of work in an organisation.

Reporting

Reporting is keeping those to whom the librarian is responsible informed as to what is going on. It, thus, includes keeping authorities, subordinates and users informed through records, reports, etc.

Budgeting

Budgeting refers to work related to budgeting in the form of fiscal planning, accounting and control.

The above mentioned seven elements of management are considered to be the core of management process. These essentially refer to the various steps or stages involved in running a typical information organisation.

INTEXT QUESTIONS 15.1

1. Explain library as a system.
2. What are the fundamental functions of management?

15.4 COMPONENTS OF A LIBRARY SYSTEM

Ranganathan visualized library as a trinity of:

(a) Readers

(b) Books, and

(c) Staff

Here, the books are the knowledge containers, readers are the knowledge seekers, and staff means the facilitators or providers of various library services to the users, the knowledge seekers. Whenever and wherever this Trinity exists, a library is born. A library exists when the three components of its trinity – the readers, the books and the staff – are in purposive contact with each another.

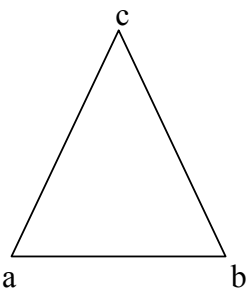


Fig. 15. 1: Illustration of the trinity

In the above Triangle,

angle 'a' refers to Universe of Knowledge Seekers,

angle 'b' is Universe of Knowledge Containers, and

angle 'c' at the top is Universe of Facilitators

A library is referred to as a 'social institution' and a 'service institution', which serves the current as well as life-long learning needs of the society. In the Trinity,

(1) The universe of knowledge containers include information sources in various formats (print, non-print and electronic media),

(2) The universe of knowledge seekers include various groups in society (children, women, students, teachers, researchers, patients in hospitals, prisoners in jails, and others), and

(3) The universe of facilitators (library staff) include providers of various library services (technical services, users services, and others).

The library provides 'perpetual self-education,' 'life-long self-education' and 'universal self-education'. Education and learning is a life-long process. The schools/class rooms provide the initial momentum. Thereafter, it is the library system which serves the necessary aids to perpetuate self-education for all.

INTEXT QUESTIONS 15.2

1. Explain the components of library system.
2. 'Library provides perpetual self-education'. Explain.

15.5 SECTIONS IN A LIBRARY

A library performs a number of specialized activities. Based on each specialization, the library work is divided into various sections. Let us know about the functions of the sections in a library. Library jobs performed in various sections are also presented in Fig. 15.5 in the form of an organizational chart.

15.5.1 Acquisition Section

Every library has to build up a collection of information sources (knowledge containers). These may be in print or non-print or electronic formats. Functions of Acquisition Section include selection, ordering, receiving supplies, making record entries in the stock register (Accessioning) and processing the bills for payment.

Acquisition of library material has three main check-controls, namely, (1) Availability of library fund, (2) use of reading material, and (3) need of library users.

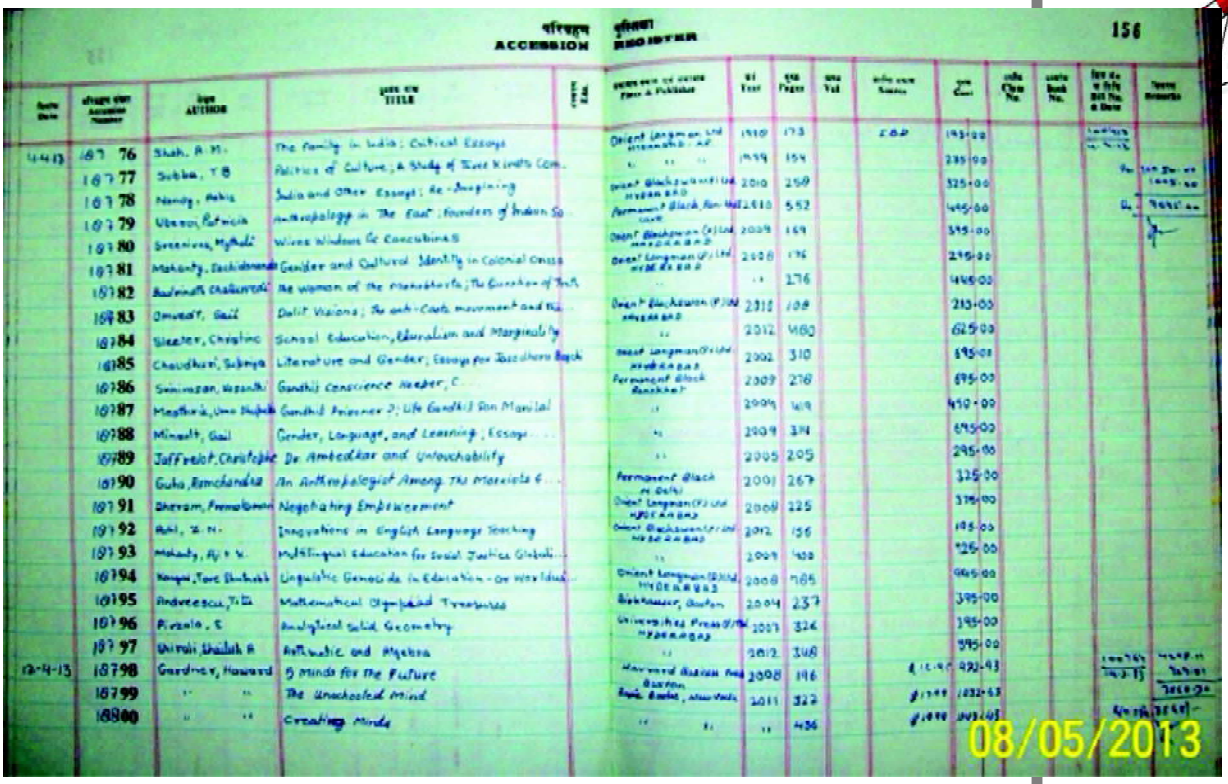


Fig.15.2: Sample pages of an Accession Register

15.5.2 Technical Processing Section

The newly acquired books are prepared for library use. For this purpose, these are classified, catalogued, entries filed in library catalogue and books shelved on display racks or in the stacks. As a visitor to library, you may not be familiar of such functions in a library, because these are performed behind the scene.

15.5.3 Circulation Section

This Section deals with membership work, issue and return work and work related to users' requirements. Generally, a specially designed circulation counter is used for doing circulation work. You are very much familiar with this section, as you use the services of circulation section frequently for borrowing and returning of the books. Fig. 15.3 shows the circulation counter of a library.

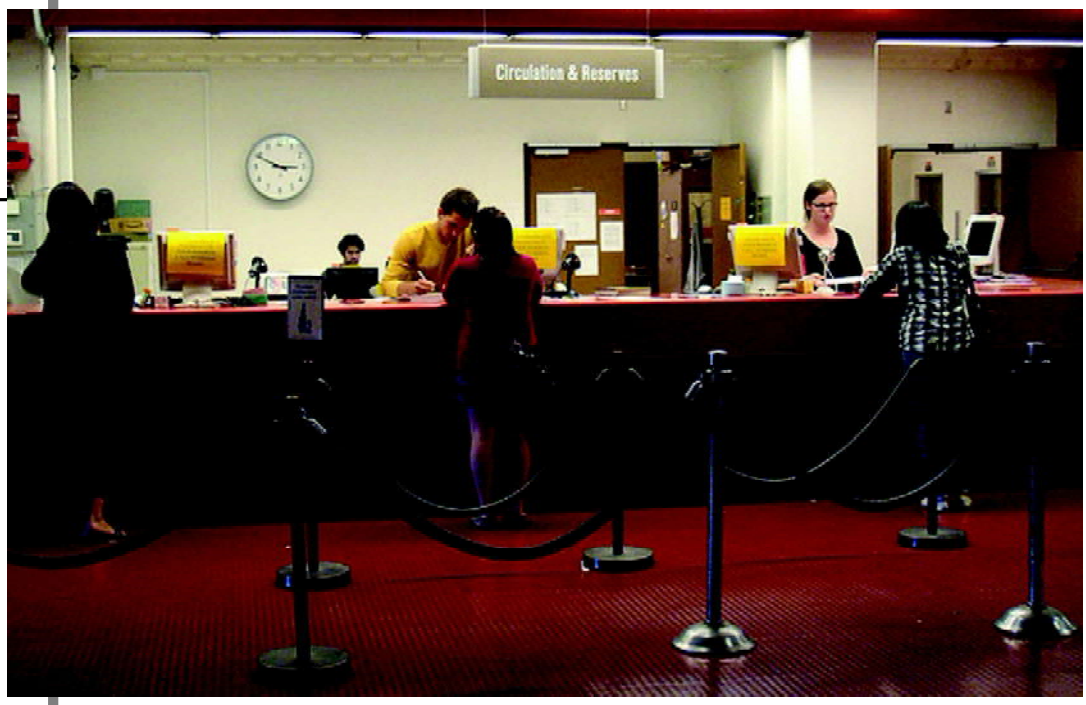


Fig.15. 3: A Circulation Counter

15.5.4 Reference Section

Reference Section collects and organizes a number of reference books. Reference book is one which is not read like text book from beginning to end. You refer to a reference book to know the answer of your specific query. This may pertain to a word, term, person, place, concept or subject. You need to consult a dictionary, thesaurus, directory, year book, encyclopedia, or such other type. The reference librarian is expected to provide right information to the right person at the right time.

15.5.5 Periodicals Section

Periodicals Section collects and organizes a number of periodical publications (such as, a journal, magazine, newspaper). A book is one-time publication, published once whether in its first edition or revised and subsequent editions. Whereas, a periodical publication (serial publication) is published in continuity and with predefined periodicity (such as, daily, weekly, fortnightly, monthly, etc.). A library first receives the current issues of the volume of a periodical publication. Later on, the completed volumes may be got bound and shelved in the Periodicals Section. The current issues are displayed in specially designed Periodical Racks as given in Fig. 15.4.

Fig.15.4: A Periodical Display Rack

15.5.6 Maintenance Section

Maintenance work is the backbone of any object, structure, organization, institution and so much so, in a library also. You already know that after buying books or stationery or computer, you have to take special care of your possessions for their proper and prolonged use. In a library, Maintenance Section is responsible for jobs such as organization of collection, shelving and re-shelving, dusting and cleaning, mending and binding, weeding and stock verification. Much of the work done in Maintenance Section is behind the scenes which helps to keep the collection live and presentable for maximum use. These activities are described in brief as follows:

Organization of Collection: A library takes into consideration the nature of material and its use, and accordingly it organizes its collection, such as, Main (General) Collection, Periodicals Collection, Reference Collection, Non-Print Material, including electronic material, etc. Books in all such collections, besides the Main Collection, are allotted a symbol for the type of collection, which is put at the top of the call number of the item.

Shelving and Re-shelving: All the items as reading material are arranged on shelves in a helpful order. The items used by users are to be re-stored (re-shelved) in their proper position on the shelf.

Dusting and Cleaning: Dust and dirt, which accumulates on the items on shelves, are to be removed regularly at periodical gaps. Dust-free and well maintained library material not only attracts the users, but also enhances its use.

Mending and Binding: At times, the items in the collection suffer minor or major damages. These are to be repaired. Mending is done for minor damages

and binding is done for major damages to the documents. With the help of mending and binding the damaged items get renewed life.

Weeding: Weeding is required for all such items which can no longer be put to use due to damage beyond repair or have become outdated.

Stock Verification: When the library collection is put to maximum use, particularly in open access, some items are lost. These lost items create a great amount of problems for the users and the staff. An item lost shows its presence in the library catalogue and other records, but is not found on shelves. To identify the lost items, stock verification of library materials required. Stock verification helps in finding out **'what is'** as against **'what it was'** in the library collections. After such findings, the library records are to be updated in view of the records of lost items. This helps smooth flow of library use and library services.

15.5.7 Administration & Finance Section

The purpose of the Administration Section is to promote those activities which relate to library administration and management issues in general. The section is intended to serve the needs of library staff especially whose who supervise other staff. It helps manage operations of other sections of the library. In large libraries, the administration and finance section are two different sections. But in small and medium sized libraries, these are handled within one section.

The Administration and Finance Section maintains the record of policy decisions, rules and regulations, guidelines and norms for working. This section maintains the records of office files, diary and dispatch, library budget proposals, budgetary allocations, accounts of library expenditure, stock registers, and such other purposeful records. It helps in taking care of library building, furniture, equipments, water and electricity fittings, and such sundry matters

15.5.8 Important Observation

It may be kept in mind that in a big library (university library, research library, state central library) functioning of all such sections, as described above, are visible. A big library may have some additional sections (e.g., children section, audio-visual section, computer section, etc.) as per some specialized library work or services. But, in a small library (school library, small public library) such sections are not visible, though these functions are perfomed by a librarian single-handedly.

An organizational chart showing the activities of different section is given in Fig. 15.5

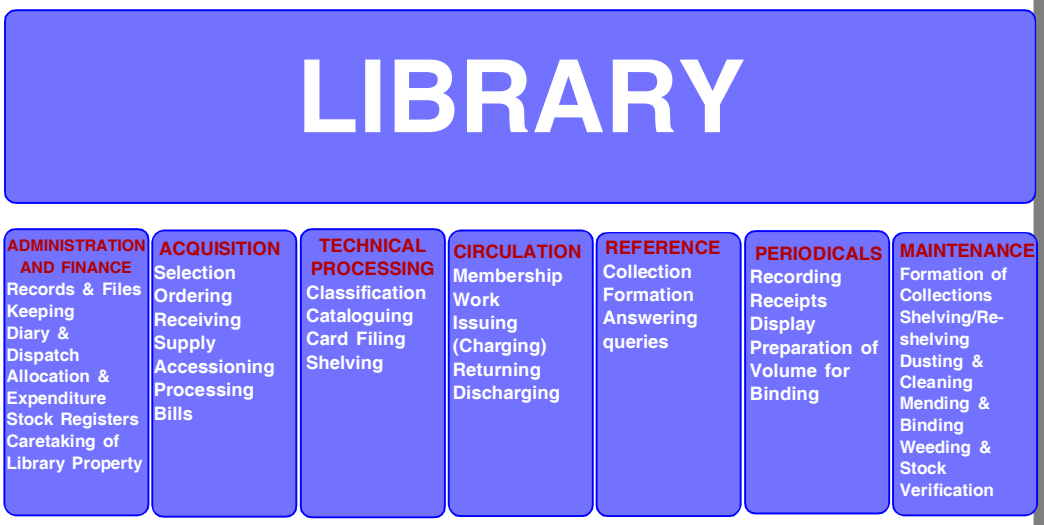


Fig.15.5: An Organisational chart of a Library showing activities of each section

INTEXT QUESTIONS 15.3

1. List the various sections of a library.
2. Explain the need for circulation system in a library.

WHAT YOU HAVE LEARNT

In this lesson you have learnt:

- Definition and examples of 'system', which is complex whole with entities to serve a purpose and has inter-related and inter-dependent components.
- Library works as system, is a sub-system of some super-system and is having its own sub-systems.
- In library management, all principles and techniques of management are applied. Library Manager performs all the five basic functions of Manager.
- Components of library system are described. Library is a Trinity of (1) Universe of Knowledge Seekers, (2) Universe of Knowledge Containers, and (3) Universe of Service Providers. It provides perpetual and life- long education.
- Sections in a library are: Acquisition, Technical Processing, Circulation, Reference, Periodicals, Maintenance, and Administration & Finance. Each Section performs specialized library activities.
- Main jobs are done by professional library staff in different sections in a big library, and by a single librarian in a small library.

TERMINAL QUESTIONS

1. Define library as a system, giving its objective and set of entities.
2. Elucidate the concept of library as a 'trinity'. Give suitable examples.
3. Define library management. Enumerate various fundamental functions of library management.
4. State in brief, the jobs being done in different sections of a library.

ANSWERS TO INTEXT QUESTIONS

15.1

1. Library is a sub-system of some super-system. Its primary objective is to collect, organize, retrieve, and serve the information needs of knowledge seekers.

2. The five fundamental functions of management are planning, organizing, staffing, leading and controlling.

15.2

1. A library is a trinity of books, readers and staff. A library system aims at serving the information needs of knowledge seekers by performing various library activities.

2. Man learns throughout his life, from birth to death. Other educational institutions provide education for a limited period, but the library perpetually helps the learner and thus provides life- long education.

15.3

1. A library has many sections, such as, Acquisition, Technical Processing, Circulation, Reference, Periodicals, Maintenance, Administration & Finance. Each section performs a set of specialized library activities.

2. The Circulation Section deals with membership work, issue and return work, reservation of documents and such related jobs. Generally, a specially designed circulation counter is used for doing circulation work.

GLOSSARY

Accessioning: Items purchased are recorded in Accession Register (Stock Register) and the activity is referred to as accessioning.

Call Number: It is the combination of Class number, Book number, Collection code and Copy number for deciding unique position of each and every document on the shelf.

Collection Formation: A library organizing its resources in to different collections as per the use or nature of the material.

Facilitators/providers: The staff working in the library facilitates and provides library services to users.

Information source: Information sources in print or non-print media, also known as Knowledge Containers.

Life-long self-education: Learning and teaching (education) process essentially attached with human life.

Mending: Repairing a slightly damaged printed resource.

Reservation work: To reserve a book in circulation for a new user needing it.

Re-shelving: Restoring a used item back on shelf in its proper position.

Technical processing: It includes, classifying, cataloguing and arranging items in a helpful order.

Trinity: Combined form of three elements, Books, Readers and Staff combined together make Trinity of Library.

Weeding: In this process the unserviceable items are sifted from live collection.

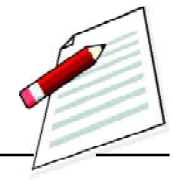
WEBSITES

http://en.wikipedia.org/wiki/Henri_Fayol

http://en.wikipedia.org/wiki/POSDCORB

http://www.reference.com/motif/science/different-sections-of-the-library

http://wiki.answers.com/Q/What_are_the_different_sections_of_a_library



Notes

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INFORMATION RETRIEVAL SYSTEM: CONCEPT AND SCOPE

15.1 INTRODUCTION

Information is communicated or received knowledge concerning a particular fact or circumstance. Retrieval refers to searching through stored information to find information relevant to the task at hand. In view of this, information retrieval (IR) deals with the representation, storage, organization of/and access to information items. Here, types of information items include documents, Web pages, online catalogues, structured records, multimedia objects, etc. Chief goals of the IR are indexing text and searching for useful documents in a collection. Libraries were among the first institutions to adopt IR systems for retrieving information.

In this lesson, you will be introduced to the importance, definitions and objectives of information retrieval. You will also study in detail the concept of subject approach to information, process of information retrieval, and indexing languages.

15.2 OBJECTIVES

After studying this lesson, you will be able to:

- define information retrieval;
- understand the importance and need of information retrieval system;
- explain the concept of subject approach to information;

- illustrate the process of information retrieval; and
- differentiate between natural, free and controlled indexing languages.

15.3 INFORMATION RETRIEVAL (IR)

The term 'information retrieval' was coined by Calvin Mooers in 1950. It gained popularity in the research community from 1961 onwards, when computers were introduced for information handling. The term information retrieval was then used to mean retrieval of bibliographic information from stored document databases. But those information retrieval systems (IRS) were document retrieval systems. These were designed to retrieve information about the existence (or non-existence) of bibliographic documents relevant to a user's query. In other words, early IRS were designed to retrieve an entire document (a book, an article, etc.) in response to a search request. Although this is what today's IRS do, but over the years, many advanced techniques have been developed and applied to design the IRS. Over the years, the connotation of information retrieval has changed and it has been variously denoted by information professionals and researchers. Some of these include, information storage and retrieval, information organization and retrieval, information processing and retrieval, text retrieval, information representation and retrieval and information access.

Let us now understand the means through which information retrieval is carried out by libraries and some of the systems, for searching information from documents in its collection. No matter how large the collection, the library is of little value if it is unable to retrieve the right documents as and when required by a user. To do this, it must maintain an information retrieval system. When a match is achieved between the information requested and information in the retrieval system, then requested documents are located. In other words, the information supplied from the document(s) matches to an acceptable degree with the information demanded by the user. Achieving a successful match is the central objective of information retrieval.

The principal function of any library is to make available to the users, the information they need. In order to fulfill this function, the information which is stored in the library must be retrieved from the library database. Information retrieval (IR) is the activity of obtaining information resources relevant to an information need from a collection of information resources. Information retrieval is the process of selecting information from the stored information. The process is becoming increasingly dependent on computers and telecommunications technology. The design of information retrieval systems has presently become an important area of applied information technology.

INTEXT QUESTION 15.1

1. Why is Information retrieval an important function of any library?

15.4 INFORMATION RETRIEVAL SYSTEM

The concept of Information Retrieval System (IRS) is self-explanatory from the terminological point of view and refers to a 'system which retrieves information'. IRS is concerned with two basic aspects: (i) How to store information, and (ii) How to retrieve information.

One may simply denote such a system as one that stores and retrieves information. IRS is comprised of a set of interacting components, each of which is designed to serve a specific function for a specific purpose. All these components are interrelated to achieve a goal. The concept of IR thus is based on the fact that there are some items of information which have been organized in a suitable order for easy retrieval.

An information retrieval system is designed to analyze, process and store sources of information and retrieve those that match a particular user's requirements. Modern information retrieval systems can either retrieve bibliographic items or the exact text that matches a user's search criteria from a stored database of documents. IRS originally meant text retrieval systems as they were dealing with textual documents. Modern information retrieval systems deal not only with textual information but also with multimedia information comprising text, audio, images and video. Thus, modern information retrieval systems deal with storage, organization and access to text, as well as multimedia information resources.

Thus, an IR system is a set of rules and procedures, for performing some or all of the following operations:

a) Indexing (or constructing of representations of documents);

b) Search formulation (or constructing of representations of information needs);

c) Searching (or matching representations of documents against representations of needs); and

d) Index language construction (or generation of rules of representation)

So information retrieval is collectively defined as a "science of search" or a process, method and procedure used to select or recall, recorded and/or indexed information from files of data.

15.4.1 Objectives and Functions of IRS

The major objective of an IRS is to retrieve the required information whenever needed. It is either the actual information or through the documents containing the information surrogates that fully or partially match the user's query. Thus, the search output may contain bibliographic details of the documents that matches the query, or the actual text, image, video, etc. that contain the required information. The database in case of an information retrieval system may contain abstracts or full texts of documents, like newspaper articles, handbooks, dictionaries, encyclopedias, legal documents, statistics, etc., as well as audio, images, and video information.

The major functions of an IRS are:

(i) To identify the sources of information relevant to the areas of interest of the target users' community;

(ii) To analyze the contents of the sources (documents);

(iii) To represent the contents of the analyzed sources for matching with the users' queries;

(iv) To match the search statement with the stored database;

(v) To retrieve the information that is relevant; and

(vi) To make necessary adjustments in the system based on feedback from the users.

INTEXT QUESTION 15.2

1. What is the major objective of Information Retrieval System (IRS)?

15.5 IMPORTANCE OF INFORMATION RETRIEVAL

Libraries contain information in various physical forms. While for many users, the book is still a major vehicle for communication of information; for others, the periodical or the technical report have taken its place; and for yet others, films or gramophone records are significant. It is clear that the same work can appear in various physical forms. The intellectual content will be the same in each case, but obviously it is not practical to try to arrange the different physical forms together. We cannot, therefore, rely on the physical arrangement of the items in a library to gather different versions of the same work. We have to rely on a substitute – a set of records (surrogates) of the content of the library. These are in the form of library catalogues and bibliographies.

The library catalogue, however, is only one of the tools which serves as the key to library documents. A library containing a large number of periodicals will not attempt to list all articles of every issue if receives. Instead, we rely on indexes, abstracts and similar bibliographic tools which present the contents of periodicals as well. This enables us to obtain access to any particular item through number of approaches.

INTEXT QUESTION 15.3

1. Explain the importance of catalogues and bibliographic tools in libraries.

15.6 SUBJECT APPROACH TO INFORMATION

Users often approach information sources with a query that requires an answer or they seek information or documents on specific topics. This method of seeking information from sources by the users is referred to as subject approach to information. In order to provide this kind of information, it is necessary for information organizations to arrange documents or surrogates of documents in library catalogues, indexes or databases in such a way that items of specific information can be retrieved. There are various methods of providing information contained in documents using the subject approach. Two chief methods for the same are:

- Alphabetical subject approach
- Display of subject relationships

15.6.1 Alphabetical Subject Approach

Here the items of information are first grouped under the subject and then arranged according to alphabetic order so that specific subjects can be retrieved easily. Some problems to be overcome here are those related to synonyms, homographs, singular or plural forms, complex and compound words or subjects and multiword concepts.

15.6.2 Display of subject relationships

Like human beings, the subjects too have relationships, these include syntactic relationships and semantic relationships. Syntactic relationships deal with the way words and phrases of a sentences are arranged to show how they relate to each other. For example, a keyword search for "Photographs and Albums", should allow users to specify whether they want "Photographs of Albums" or "Albums of Photographs". Semantic relationships deals with the meanings of

the words. For example, there is semantic difference between mercury (Planet) and mercury (metal), though two words are identical in sound and spelling.

The first librarian to consider the detailed arrangement by subject was Melvil Dewey. Librarians prior to Dewey had certainly arranged their libraries in classified order; the classified catalogue was well known. However, these classified arrangements were in broad subject groups; there was no attempt to give the detailed subject specification that Dewey suggested and which was necessary and useful. Dewey's classification scheme served two purposes: the first of these was the arrangement of books on shelves; and the second was the arrangement of entries in catalogues and bibliographies.

The Subject approach or subject indexing is the process or technique of identifying and selecting terms (words, phrases, sentences, taxonomic categories, notation) to indicate what a document is all about. It helps to summarize its contents and increases its retrieval by users. In other words, it is about identifying and describing the subject of documents. Its purpose is to facilitate finding a particular information on the basis of its subject content.

The two steps of subject indexing are:

a) Subject analysis to generate concepts that describe the document, and

b) Translation of concepts into controlled vocabulary for retrieval

INTEXT QUESTION 15.4

1. Describe how the subject approach to information came into existence.

15.7 INDEXING LANGUAGES

As discussed above, when the librarians apply subject approach to information, they are confronted with the difficult task of subject indexing. They have to deal with the complexity, variability, and richness of natural language of documents. Using unlimited or uncontrolled set of words or phrases to index leads to wasted efforts. There is also a high degree of searching failure due to vast range of words chosen by users. It is rightly said that no two words in a language mean exactly the same and there are no true synonyms. But words are often very close in meaning and more often not clearly understood. The inconsistent/varying words could lead to failure in searching as the users may not choose the words or terms that might be used by the indexer or the authors of the documents. In order to overcome various complex indexing problems, many forms of controlled vocabularies have been developed.

Retrieval of information by subjects from huge mass of documents requires that essential concepts are identified and organised in a searchable form. Indexing is a mechanism by which information contained in documents can be organised. But the problems lie with identifying and organising the concepts. In the documentary information, authors communicate in natural languages which are characterized by linguistic features. To overcome the problems of natural language, the need for an artificial language or indexing languages arises. It means that an indexing language is a language used for subject classification or indexing of documents. An Indexing language is defined as the set of terms used in an index to represent topics or features of documents, and the rules for combining or using those terms.

The purpose of an indexing language is to express the concepts of documents in an artificial language so that users are able to get the required information. The indexing language does this by depicting the relationships among the differently related concepts.

There are three main types of indexing languages.

1. Natural indexing language - Any term from the document in question can be used to describe the document.

2. Free indexing language - Any term (not only from the document) can be used to describe the document.

3. Controlled indexing language - Only approved terms can be used by the indexer to describe the document.

In the following sections, you will be introduced, in brief, to natural, free and controlled indexing languages.

15.7.1 Natural Indexing Language

Natural language refer to our language, which we normally use for communication. Whereas, languages that we design for a specific purpose or use in a specific sense or only for limited use are artificial languages. Natural indexing languages are thus 'natural language' or ordinary language of the document being indexed. Any term that appears in the document is a candidate for index terms. In practice, natural language indexing tends to rely upon the terms present in an abstract or the title of a document. Natural language indexing is based upon the full text of a document, depending on how it is archived. It may lead to very extensive indexing of each document or will involve establishing some mechanism for deciding which terms are the most important in relation to a particular document. In computerized indexing this will involve statistical analysis of the relative frequency of occurrence of terms. In human

indexing some judgment would be required in selecting the terms. Many of these problems can be minimized by restricting indexing to titles and abstracts. Either, a computer or a person can execute natural language indexing. In computer indexing the computer may well use a list of terms deemed to be useful in indexing (example, a type of thesaurus) to identify appropriate terms. The use of natural language is depicted in a Figure 15.1

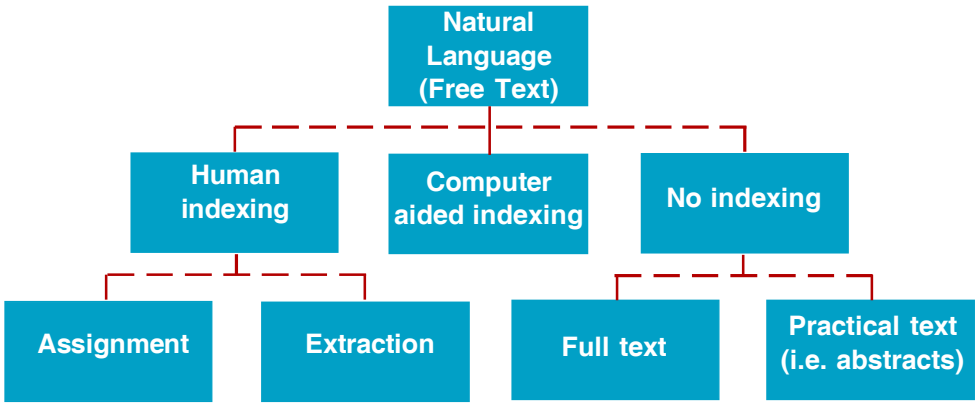

Fig 15.1 Natural Language Indexing

Any term that appears in the title, abstract or text of the document record may be an index term. There is no mechanism to control the use of terms for such indexing. Similarly, the searcher is not expected to use any controlled list of terms. It is human language in which the structure and rules have evolved from usage, usually over a period of time. In search software designed to handle input expressed in natural language, the user may enter the query in the same form in which it would be spoken or written. Any term from the document in question can be used to describe the document.

15.7.2 Free Indexing Language

In free indexing language any term, not only from the document, can be used to describe the contents of a documents. Indexing is 'free' in the sense that there are no constraints on the terms that can be used in the indexing process. Free language indexing is distinct from natural language indexing in that natural language indexing is constrained by the language of the document being indexed; free language indexing does not even recognize these constraints. Free language indexing may be conducted by humans or computers. When executed by humans with a sound knowledge of a subject and its terminology, free language indexing can result in an index which is both consistent in the assignment of index terms, and which matches the perspective of users.

However successful, free language indexing is very dependent upon the skills of an individual indexer. Computerized free language indexing is, for all practical purposes, the same as natural language indexing.

It is the nature of a free indexing language that any word or term that suits the subject may be assigned as an indexing term. The terms may be machine or human assigned although free language is most common in a machine indexing environment. The computer operates by indexing every word with which it is provided unless it is instructed to do otherwise.

Controlled vocabularies usually improve the accuracy of free text searching, reduce irrelevant items in the retrieval list. Both natural language indexing and to some extent free language indexing are used in producing both printed indexes, computerized databases and databanks.

15.7.3 Controlled Indexing Language

Controlled indexing languages are indexing languages in which the terms used to represent subjects and the process by which terms are assigned to a particular document are controlled or executed by a person. Normally, there is a list of terms which acts as the authority list in identifying the terms that may be assigned to documents. An indexing involves a person assigning terms from this list to specific documents.

There are two types of controlled indexing languages: alphabetical indexing languages and classification schemes. In alphabetical indexing languages, such as, the thesauri and subject headings lists, subject terms are the alphabetical names of the subjects. Control is exercised over which terms are used, but otherwise the terms are ordinary words. In classification schemes, each subject is assigned a piece of notation. The usual objective of assigning notation is to place a subject within a context with respect to other subjects. Both classification schemes and alphabetical indexing languages are used in a variety of contexts. These devices are used in catalogues, indexes to books and periodicals, bibliographies, current awareness bulletins, selective dissemination of information, computerized databases, and databanks, abstract and indexing services, encyclopedias, dictionaries and directories. Classification is also prominent in the physical arrangement of documents.

Normally there is a list of terms, a subject headings list or a thesaurus, that acts as the authority list in identifying terms that may be assigned to documents. An indexing involves the assignation of terms from this list to specific documents. The searcher is expected to consult the same controlled list during formulation of a search strategy. So, it is only approved terms that can be used by the indexer to describe the document.

Compared to free text searching, the use of a controlled vocabulary increases the performance of an information retrieval system.

INTEXT QUESTION 15.5

1. Explain the term 'natural indexing language'.
2. What is the nature of a free indexing language?
3. Describe a Controlled indexing language.

WHAT YOU HAVE LEARNT

- The term 'information retrieval' was coined by Kelvin Mooers in 1950.
- Information retrieval is the activity of obtaining information resources relevant to an information need from a collection of information resources.
- The term information retrieval was earlier used to mean retrieval of bibliographic information from stored document databases.
- Information storage and retrieval, information organization and retrieval, information processing and retrieval, text retrieval, information representation and retrieval and information access are different connotation of information retrieval.
- A library fulfills its function of information retrieval by maintaining some system for searching information out of documents from its collection.
- Modern information retrieval systems deal with storage, organization and access to text, as well as multimedia information resources.
- The major objective of an IRS is to retrieve the information either the actual information or through the documents containing the information surrogates – that fully or partially match the user's query.
- The first librarian to consider the detailed arrangement by subject was Melvil Dewey.
- Natural indexing language is not really a separate language but the 'natural language' or 'ordinary language' of the document being indexed.
- Free indexing language is not a listed language of terms, but the terms are provided by the indexer suitable to describe the contents of a document.

- Controlled indexing language is an indexing language in which the terms used to represent subjects, and the process whereby terms are assigned to a particular document, are controlled or executed by a person.

TERMINAL QUESTIONS

1. What are the objectives of an Information retrieval system?
2. Discuss the major functions of an Information retrieval system.
3. Distinguish natural, free and controlled indexing languages.
4. Explain the use of natural language with help of a diagram.

ANSWER TO INTEXT QUESTIONS

15.1

1. Information retrieval is the activity of obtaining information resources relevant to an information need from a collection of information resources. It is one of the most important functions of a library, because it meets the demands of required information of a user.

15.2

1. The major objective of an information retrieval system, is to retrieve the information. It is, either the actual information or through the documents containing the information surrogates that fully or partially match the user's query.

15.3

1. The library catalogue is a tool which indicates the availability and location of library documents. Catalogue does not provide information contained in the documents like articles in a periodical, etc. This information is provided by indexes, bibliographic abstracts and similar bibliographic tools in the library.

15.4

1. The first librarian to consider detailed arrangement by subject was Melvil Dewey. Librarians prior to Dewey had certainly arranged their libraries in classified order; the classified catalogue was well known. However, these classified arrangements were in broad subject groups; there was no attempt to give the detailed subject specification that Dewey suggested was necessary and useful.

15.5

1. In natural indexing language, the terms are selected from the same document to describe its content.
2. The nature of a free indexing language is that any word or term that suits the subject may be assigned as an indexing term.
3. Controlled indexing language is an indexing language in which the terms used to represent subjects and the process whereby terms are assigned to particular documents, are controlled or executed by a person.

GLOSSARY

Data Retrieval: The retrieval of information whose contents satisfy the information needs of user as per a user query.

Index Term: A pre-selected term which can be used to refer to the contents of a document.

Information Retrieval (IR): To find material (usually documents) that satisfies an information need from within large collections (usually stored on computers).

Keyword: Same as **Index Term**

Query: The expression of the user information need.

Retrieval: The task executed by an information system in response to a user request.

User Information Need: A natural language statement of an informational need of a user.

Vocabulary: Set of all the words in a text

WEBSITES

http://en.wikipedia.org/wiki/Information_retrieval

http://polaris.gseis.ucla.edu/pagre/is277.html

http://nlp.stanford.edu/IR-book/