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LIBRARIANSHIP AS A CAREER

18.1 INTRODUCTION

When most of the users of libraries are asked, "What does the job of a librarian involve ?"The probable answer would be finding or issuing library books or locating information on request. This is because many people's experience of librarians is of the frontline user service staff. Have you ever considered how the books get on to the shelves and are ready for you to borrow? Behind the scenes there are teams of library professionals working to make this happen.

There are library professionals for each and every activity of any library. They select the books for purchase, process the orders, create bibliographic records and then physically prepare them for placing on the shelves. This makes it possible for you to find the books in the library catalogue.

In this lesson, we will appraise you with different aspects related to library profession. After studying this lesson, you will be able to understand the scope of library profession and decide upon librarianship as a career.

18.2 OBJECTIVES

After studying this lesson, you will be able to :

- explain the role of librarianship as a profession;
- enumerate the qualifications and qualities of library professionals;
- discuss the role of library professionals in disseminating information;
- illustrate various courses offered in the field of library and information science;

- describe the influence of modern technologies on libraries and related activities;
- list the career opportunities for trained library professionals; and
- identify the type of organizations that offer job opportunities to trained library professionals.

18.3 LIBRARIANSHIP - A PROFESSION

A profession is a body of practitioners, who undertake and undergo specialized training and studies to practice their skills in the service of the society.

Like any other profession, such as law, medicine or teaching, librarianship is a profession requiring special training.

Librarianship is an old and honoured profession. In recent years there have appeared notable increases/changes in the collections and services of libraries. The expansion in the responsibilities of librarians has brought with it a pressing need of special preparation for their work.

Librarianship is a people' profession. A librarian's job is to connect people with the information they are seeking in whatever format it is available. All library related jobs have one central purpose, i.e., to help people access and use information. It can be for education, work, or for pleasure. In all library roles, user services and communication skills are important. Libraries of all kinds are keen to demonstrate their value to as wide an audience as possible.

Librarians select materials, organize those materials and help people to use them effectively. Many librarians are seen by users working on library counter. But a great majority of them work behind the scenes in technical support and acquisitions in administration. Although librarians traditionally worked with printed resources, they have kept up with ever-evolving technology. Now they work with electronic resources that include the Internet, computerized databases and e-books. Present day librarians are also referred to as information professionals.

Skills

One has to develop several skills while training to be a librarian. But he or

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she should have certain qualities that will contribute to his or her success in this occupation. A librarian must be an active learner in order to adapt to the rapid changes in technology and the dissemination of information that are inherent to this field. He or she must have strong communication skills and the ability to work independently and as part of a team. A librarian must be good at problem solving and have strong comprehension skills.

The library profession is bound to flourish in near future in India as still libraries have not the whole population of our nation. It has been estimated by the National *Knowledge Commission of India* that the country should have at least 1500 universities to fulfil the need of higher education. Apart from this, because of *Right to Education Act*, thousands of schools are to be started. All these will also have to be supported by libraries.

18.3.1 Employment and Designation

Most librarians work in school and academic libraries. Others work in special, business, scientific research or in libraries of other organizations. Employment opportunities for library professionals are thus available in all sectors of government and industries. With experience, librarians can advance to administrative positions, such as department head, library director or chief information officer. As mentioned earlier, earning a doctorate degree can contribute to one's upward movement in the library science field.

Let us try to understand the job opportunities for librarians sector wise.

18.3.1.1 Academic Library Sector

Academic library sectors includes university, college and school libraries. The university library system has designations of Librarian, Deputy Librarian and Assistant Librarian at senior level. At middle level, the designations are Senior Professional, Professional and Semi Professional, etc. At supporting staff level, designations are Library Assistant, Library Attendant, including multi-tasking staff, etc. The college libraries have the designation of Librarian which is equivalent to the Assistant Librarian of university libraries and the middle and supporting levels are same as the university libraries. The schools libraries usually have a librarian belonging to middle level of management and two or more support staff depending upon the size of the library.

18.3.1.2 Public Library Sector

The public library system is getting momentum in India. Initially, the public library was serving to the urban people, but, now it is extending to rural areas. Hence, in coming years, there will be several rural libraries at village level. Public Libraries in India. The State Central Libraries, District Libraries and Sub-

Divisional/Town Libraries and Rural/Village Libraries have four categories of staff, namely, managerial, professional, support staff and administrative staff. The last tier, the Rural Knowledge Centres/Community Information Centres have only the professional level staff and support staff depending upon their size.

18.3.1.3 Special Library Sector

This sector has the designations like Librarian, Library and Information Officer, Scientists, Manager Library, Manager-Knowledge Management. These posts are equivalent to the officer grade-A or above in the administrative pattern of staffing. In scientific organizations like CSIR, DRDO, ISRO, etc. these posts are equivalent to different levels of scientists. The private and corporate sectors are paying as per the policy of the organization. Some of the corporate houses are paying wages more than that of the government organizations.

18.3.1.4 Corporate Sector

In the Corporate sector, large organisations maintain libraries/information centers for their informational needs. These companies employ qualified professionals as Librarians, Information Scientists, Information managers, Database managers, Resource managers, Knowledge worker, Library supervisor, etc.

INTEXT QUESTIONS 18.1

1. Define the term 'profession'. Describe librarianship as a profession.
2. Identify the job opportunities for librarians in academic sector.

18.4 QUALIFICATIONS & QUALITIES OF LIBRARY PROFESSIONALS

As you have learnt above, library jobs are different in nature from other general jobs we perform in our day to day life. Library is a social institution and librarianship is a part of service industry. It has the responsibilities to support education, research and development, self studies, etc. and become instrument in creating as well as preserving knowledge of our society. Hence the nature of this profession is completely unique.

For opting librarianship as a career, a certain amount of training plus qualities in a library worker are required. A number of training programmes in LIS are being run by academic institutions and Library Associations. Besides, possessing

academic and professional qualifications, a library professional is required to possess qualities of a good worker.

For starting career at higher level, one should possess at least a masters' degree in Library and Information Science with good academic record. Additional qualifications and skills in information and communications technology or specializations in patent information system, knowledge management, or preservation and conservation, archival studies, etc. may give an added advantage in employment. For middle and lower level, a bachelors' degree, diploma, certificate, etc. in Library and Information Science with good academic record may give good job opportunities.

To know about the qualities of library professional, let us think about a 'role model character' for librarians. Libraries are service institutions to serve the community of users. A library and information science professional should possess following qualities:

a) One whose existence is recognized by the readers/ users.

b) Someone who is accessible and give response all the time, whether face-to-face or on telephone or correspondence or via email.

c) One who is capable of giving results in accordance with what is required by the users. It implies the entire range of personal and technical competence of the librarian, viz. search skills, knowledge of resources, facilitation, cataloguing, managing budgets, managing staff, etc., whatever the tasks assigned.

d) A good librarian is someone who's passionate about the job. There can never be good/ excellent service without passion in what we do.

e) Should have teamwork skills and good interpersonal skills.

f) A librarian should be familiar with current and emerging technologies.

g) One who has the urge to gain knowledge all the time, as everyone wants latest information.

h) Lastly, a good librarian is one who understands and applies Ranganathan's Five Laws of Library Science. The Five Laws of Library Science have been covered in Module 1, Lesson 4.

INTEXT QUESTIONS 18.2

1. Enumerate qualities of professional librarian.
2. What are the qualifications required by library professionals to begin career at a higher level ?

18.5 ROLE OF LIBRARY PROFESSIONALS IN DISSEMINATION OF INFORMATION

You know that universe of knowledge, and its sources, is vast and ever expanding. On the other hand, the world of information seekers undergoes many changes. It is for the library professionals to organize, control, and manage the stored information, in such a manner that it is made available to its right user at the right time. Libraries provide a variety of quality services in order to improve the communication, use and creation of knowledge. In today's information age, increasing importance is placed on information dissemination. Librarians have an important role to play in the generation, preservation, and dissemination of this information. This is carried out by acquiring sources of information, processing, storing, retrieving these sources and providing library services.

The way knowledge is created, dissemmated and acted upon continues to go through rapid change and evolution. The role of libraries and librarians in this new knowledge economy is very important. Librarians know how knowledge is created in today's information environment. What, when and how it should be delivered to appropriate users is decided by the librarians. It involves a series of activities or operations starting from developing an understanding of users' needs to selecting appropriate information sources for retrieval of desired information. In the web world, too the librarians play a vital role in the dissemination of knowledge. This is so because, the role of the library professionals is to mediate between the user and the information resources.

Users requirements is another area which is to be considered in this connection. The role of librarian thus is all about series of operations and decisions starting from developing an understanding of user's needs to selecting appropriate resources for retrieval.

INTEXT QUESTION 18.3

1. Describe the role of librarian in dissemination of information to users.

18.6 EDUCATION AND TRAINING PROGRAMMES

The libraries and their activities are highly sensitive and specialized in nature. So much so that over a period in the past century, their contents have become a special subject, namely, Library and Information Science (LIS) for study, learning and research. Although a variety of institutions are offering courses related to library and information science education, these can be broadly placed

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under various categories, i.e., Certificate, Diploma, Degree, Masters' Degree, M. Phil and Ph. D. These programmes are offered by a variety of institutions that include: universities, polytechnics, open schools, library associations, etc. In India, LIS is being taught at various levels, as mentioned bellow:

- Senior Secondary Level
- Certificate Programme in Library Science
- Diploma Programme in Library Science
- Bachelor in Library and Information Science (B.L.I.S.)
- Master in Library and Information Science (M.L.I.S.)
- M.Phil. in Library and Information Science
- Ph. D. in Library and Information Science

INTEXT QUESTION 18.4

1. Enumerate the training programmes available for library professionals at various levels.

18.7 ADAPTATION OF MODERN TECHNOLOGIES

Advances in technology create impact in every walks of life. Library activities are no exception. Print technology (print media) helped in developing a clearer concept of library. Print media made the knowledge information available to masses. Riding on it, the libraries also could reach masses.

With the advent and adaptation of computer, communication and information technologies in the late twentieth century, the libraries (their collections and services) became global. A variety of library software have been developed to help libraries in their working. On-line services are taking place of traditional services in libraries. Collections of e-resources are replacing the traditional forms of collection. Library networks, help from search engines, digitization of old valuable records and such other technologies have become the significant features of modern libraries. The impact of new technologies is thus felt by libraries in every aspect of their activities.

INTEXT QUESTION 18.5

1. Explain the impact of print and computer and communication technologies on libraries and librarianship.

18.8 CAREER & JOB OPPORTUNITIES

For professionally trained and qualified library professionals, librarianship promises a promising career. Starting from some low position in a library one may get the opportunity to avail a senior position in a big library system, a university library, special library, national library, and libraries of United Nations, WHO, ILO etc. Jobs are available as supporting staff, semi-professionals and professionals. The Chief Executives in big library system enjoy the status and pay perks equivalent to Directors, Senior Managers, Senior Scientists, etc.

Qualified professionals are offered jobs in book trade, information industry, media, bodies of advocates and doctors. These days, library professionals are also working independently and are referred to as 'library information consultants'. Library consultant is an individual who can provide the expertise, inspiration, training, and support needed in all aspects of library activities and development. These professionals may put their professional skills to private practice. They assist in solving various library problems of finance, space management, adaptation of technology, etc. for a fee.

18.8.1 Employment Opportunities

There is a lot of scope for a career in library science. The students after acquiring library science qualifications can find employment opportunities in the libraries of following areas:

1. Public/Government libraries
2. Universities/Colleges schools and other academic institutions
3. News agencies and organisations
4. Private organisations and special libraries
5. Foreign embassies
6. Photo/film/radio/television libraries
7. Information centres/documentation centers
8. Companies and organisations including IT sector with large information handling requirements
9. Museums and galleries, which have reading rooms and research facilities

18.8.2 Salaries in Library and Information Profession

The salaries vary depending upon the nature of the organization. Many colleges and universities have adopted UGC scales of salary for the library staff. The library staff in the large establishments of the Central Government enjoy salary

scales similar to those applicable to scientific staff. Opportunities for upwards mobility based on assessment of performance at intervals, make the job attractive.

Persons possessing good academic record and adequate skills in computer and information technology, can look forward to a rewarding career in this profession.

INTEXT QUESTION 18.6

1. 'There are good job opportunities for qualified library professionals'. Comment.

WHAT YOU HAVE LEARNT

In this lesson you have learnt:

- Like advocates or doctors, librarians also form profession of librarianship.
- Librarians are in the service of 'users'. They should possess academic and professional qualifications and qualities of good worker.
- Library professionals deal with 'universe of knowledge (information)' to serve the 'universe of information seekers'. They disseminate right information to right user at the right time.
- LIS training programmes are available at senior secondary level, undergraduate level, postgraduate level and research level leading to M.Phil., Ph.D degrees.
- Libraries have adapted and benefitted from print technology, computer technology, communication technology, information technology, networking, etc.
- Librarianship promises a good and noble career. Job opportunities for qualified professionals are available at all levels, whether local, regional, state, national and international level.

TERMINAL QUESTIONS

1. Describe librarianship as a noble profession.
2. Mention the different training and education programmes available in the field of LIS.

3. 'Libraries have always responded to the advances in technologies', Comment.

4. Give your views on the career and job opportunities in the field of LIS.

5. Write a brief note on role of library consultants.

ANSWERS TO INTEXT QUESTIONS

18.1

1. A profession is a body of practitioners, who undertake and undergo specialized training and studies to practice their skills in the service of the society. Like any other profession, the librarians also form a profession. Librarianship is an old and honoured profession.

2. Academic library sectors include university, college and school libraries. The university library system has designations of Librarian, Deputy Librarian and Assistant Librarian at senior level. At middle level, the designations are Senior Professional, Professional and Semi Professional, etc. At supporting staff level, designations are Library Assistant, Library Attendant including multi-tasking staff, etc. The college libraries have the designation of Librarian which is equivalent to the Assistant Librarian of University Libraries and the middle and supporting levels are same as the university libraries. The school libraries usually have a librarian belonging to middle level of management and two or more support staff depending upon the size of the library.

18.2

1. Some of the qualities to be good librarian are:

a) One whose existence is recognized by the readers/ users.

b) Someone who is accessible and give response all the time, whether face-to-face or on telephone or correspondence or via email.

c) One who is capable of giving results in accordance with what is required by the users. It implies the entire range of personal and technical competence of the librarian, viz. search skills, knowledge of resources, facilitation, cataloguing, managing budgets, managing staff, etc., whatever the tasks assigned.

d) A good librarian is someone who's passionate about his/her job. There can never be good/ excellent service without passion in what we do.

e) Should have teamwork skills and good interpersonal skills.

f) A librarian should be familiar with current and emerging technologies.

g) One who has the urge to gain knowledge all the time, as everyone wants latest information.

h) Lastly, a good librarian is one who understands and applies Ranganathan's Five Laws of Library Science.

2. For starting career at higher level, one should possess at least a masters' degree in LIS with good academic record. Additional qualifications and skills in information and communications technology or specializations in patent information system, knowledge management, or preservation and conservation, archival studies, etc. may give an added advantage in employment.

18.3

1. The way knowledge is created, disseminated and acted upon continues to go through rapid change and evolution. The role of libraries and librarians in this new knowledge economy is very important. Librarians know how knowledge is created in today's information environment and what, when and how it should be delivered to appropriate users. It involves a series of activities or operations starting from developing an understanding of users' needs to selecting appropriate information sources for retrieval of desired information. In the web world, too the librarians play a vital role in the dissemination of knowledge. This is so because, the role of the library professionals is to mediate between the user and the information resources.

18.4

1. The LIS is being taught at various levels, such as, at Senior Secondary Level, Certificate Course, Diploma Course, Bachelor in LIS, Master in LIS, M.Phil. in LIS and Ph. D. in LIS.

18.5

1. In the past, print technology (print media) helped in developing a clearer concept of library. Riding on it, the libraries also could reach masses. The advent and adaptation of computer, communication and information technologies, the libraries (their collections and services) have became global. A variety of library software have been developed to help libraries in their working.

18.6

1. For professionally trained and qualified library professionals, librarianship

assures a promising career. Starting from some low position of attendant in a library one may get the opportunity to avail a senior position in a big library system, a university library, special library, national library, and libraries of United Nations etc. Jobs are available as supporting staff, semi-professionals and professionals. Qualified professionals are also offered jobs in book trade, information industry, bodies of advocates and doctors. In near future, there may come up a new category of and information consultants.

GLOSSARY

Academic Library: A library that is an integral part of a college, university, or other institution of post-secondary education established to meet the information and research needs of its students, faculty and staff.

Bibliographic Description: All the elements of data necessary to identify a specific document, presented in some form of record.

Body of Practitioners: Profession.

Chartered Librarian: A new category of library professionals, who are specially trained to audit a library, act as Management Consultant and help in solving many library managerial problems.

Computerization: To perform the existing manual or mechanical activities with the help of computers.

E-Resource: An information source in electronic form.

Facilitator: Service provider (staff).

Library Audit: To check, inspect and report various library activities, situations, utilization of funds, manpower and other resources whether these fulfill the preset or newly modified objectives of the library.

Library Material: All the items acquired by a library or library system to satisfy the information needs of its users, including books, newspapers and periodicals, reference material, maps, microforms, and non-printmedia, as distinct from equipment and supplies.

Library Science: The professional knowledge and skill with which recorded information is selected, acquired, organized, stored, maintained, retrieved, and disseminated to meet the needs of a specific set of users. It is usually taught at a professional library school qualified to grant the degree of M.L.I. S. or B.L.I.S. The term is used synonymously with **Librarianship**.

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Library Staff: The entire group of employees responsible for the operation and management of a library or library system, including its director, librarians, paraprofessionals, technical assistants, clerical personnel, support staff, etc.

LIS: Library and Information Science

WEBSITES

http://careers.guardian.co.uk/job-of-21st-century-librarian

http://librarycareers.drupalgardens.com/

http://lj.libraryjournal.com/2005/06/careers/how-to-become-a-librarian-updated-2/

http://lj.libraryjournal.com/2005/06/careers/how-to-become-a-librarian-updated-2/

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SEARCH TECHNIQUES: WEB BASED SEARCH

18.1 INTRODUCTION

Internet has become the biggest repository of information in the world. It can be considered as a global library where variety of information in different languages and formats is stored in digital form. The volume of information on web is enormous and it has become near to impossible to estimate its size. Because of its size and storing mechanism, finding relevant and precise information has become a difficult task. For searching information from this vast repository, we use search engines. There are thousands of search engines available on internet. For example, if you visit http://www.thesearchenginelist.com/, you will find a classified list of search engines. This list is category-wise and includes all-purpose search engines in various fields like accounting, blogs, books, legal, medical, etc.

In Lesson 17, you studied basic concepts of search techniques. Here, you will learn various aspects of searching information on web.

18.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain purpose of simple and advanced search techniques;
- develop search string using Boolean logic on a given topic;
- illustrate search string with the help of a diagram;
- give examples of simple search and advanced search on internet;
- identify various Search Engines, viz. Google, Yahoo, Google Scholar;

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- identify Search Engines on internet in different vernacular languages;
- illustrate search in specific categories, viz. maps, images; and
- modify search strings to get precise results.

18.3 PURPOSE OF THE SEARCH

People search information on web for various purposes. The best way to begin a search for information is to define information needs of the user. Information need is an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need.User may need an overview, a comprehensive search, a quick reference or fact, or an in-depth treatment of a topic. Once it is decided what is needed, a source can be selected which is likely to have the desired information. A search strategy is then planned that includes various sources. There is a vast range of sources available to help locate desired information.

18.3.1 Search Engines

A search engine is a software program that searches for websites based on terms referred to as search terms. Internet search engines are thus special sites on the Web that are designed to help locate information stored on other sites. There are differences in the way various search engines work, but they all perform three basic tasks:

- Search the Internet, or select parts of the Internet based on important words,
- Keep an index of the words they find, and where they find them, and
- Allow users to look for words or combination of words found in that index.

18.3.2 Kinds of Web Search

Information need is defined as 'an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need.' It is this perceived need for information that leads users to use an information retrieval system in the first place. The perceived need for web search can be of three types:

(i) Navigational Search

(ii) Informational Search

(iii) Transactional Search

(i) Navigational Search

A navigational search is a keyword search in which the searcher wishes to go to a specific website, or a web page on a specific site. In other words, here the searcher uses a web search engine to navigate (go to) a website. For example, if you wish to go to the website of the 'President of India'. To do so, just type the query 'President of India' in a search engine (say Google) and search the web. The list provided by Google contains a link to the President of India website along with other links.Just by clicking the link, you will reach the website. The result of this search is given in Fig. 18.1.

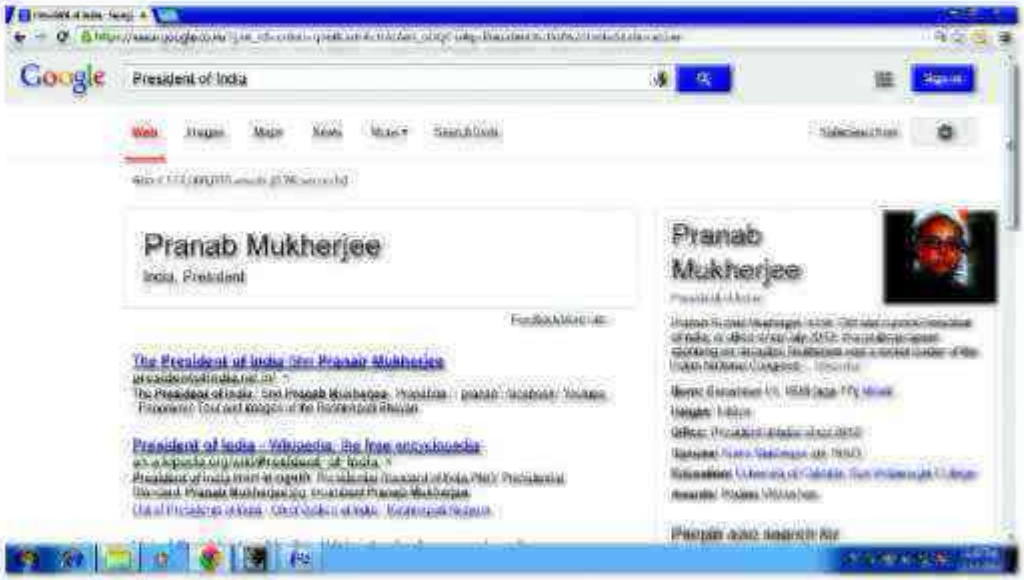

Fig. 18.1: The search result of a Google search on the topic 'President of India'

(ii) Informational Search

The intent of the informational search is to acquire some information, assuming it is available on the internet. This kind of search is conducted for study, research or any other purpose where scholarly information is required. For example, a person wants to find information on a topic 'Career in library and information science'. When the query is put to Google search engine on the web, it provides a list as search results, which contains references of 42,400 hits from across the web. The result is shown in Fig. 18.2.

After analysing the results, we find that the list contains references of different websites. The websites are of academic, research, commercial and many other institutions as well as organisations.

Search of specialized information systems, such as, LCOC, PubMed, OPAC of a particular library or likewise also fall in this category.

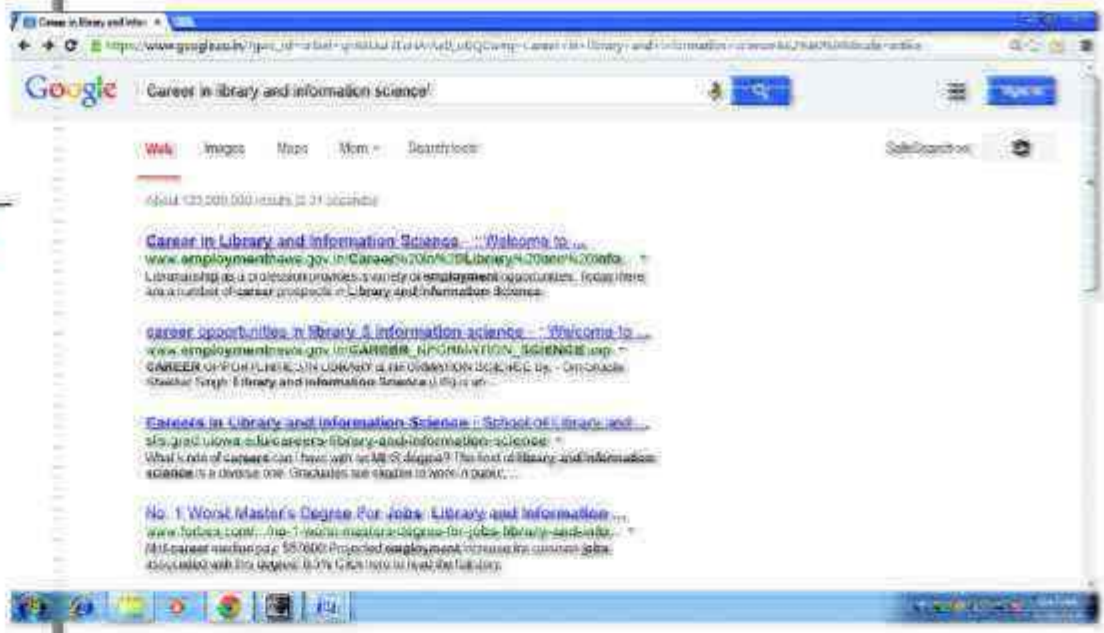

Fig. 18.2: The search result of a Google search on the topic 'Career in library and information science'

(iii) Transactional Search

Transactional search intends to reach a website for further interaction or some other activities. The purpose of such queries could be shopping, downloading various types of files, as image, song, movies, etc. and various web mediated services like gaming, etc. For example, a person can go to websites where one can buy online tickets for airplane, train, bus, movie, etc.

Searching information on web for navigational and transactional search is general in nature. But searching for informational purpose needs certain level of knowledge and skills.

INTEXT QUESTIONS 18.1

1. Define a search engine.
2. Describe the purpose of informational search on internet?

18.4 SEARCHING INFORMATION ON INTERNET

Searching information on internet is both an art and a science. One can get expertise in finding relevant information on internet. Information in the form of simple websites, databases, books, maps, journal articles, audio-visual materials, multimedia, or any desired topic can be found. As information in several formats is available on internet, finding through a particular type of

search technique or searching with the help of one search engine is not possible. In the Lesson 17, you have studied the search process, different aspects of search techniques, designing search string or query, etc. In this lesson, we will apply these aspects for searching information on internet. We can search information with the help of **simple** or **advanced** search techniques as explained below:

18.4.1 Simple Search Technique

Simple search technique is a mechanism of finding information on internet for beginners. Here, we select keywords and make a simple string or query. This query when submitted to any search engine provides a list of references of all those resources which have these keywords in their content. These keywords may appear in any part of the document, that is, title, body text or anywhere else. As the volume of information on internet is very large, huge number of references are provided by the search engines in simple search mechanism. For example, a search was conducted on www.google.com with a string 'Career selection after senior secondary' and result showed about 4,460,000 items. Fig. 18.3 shows the result of this search.

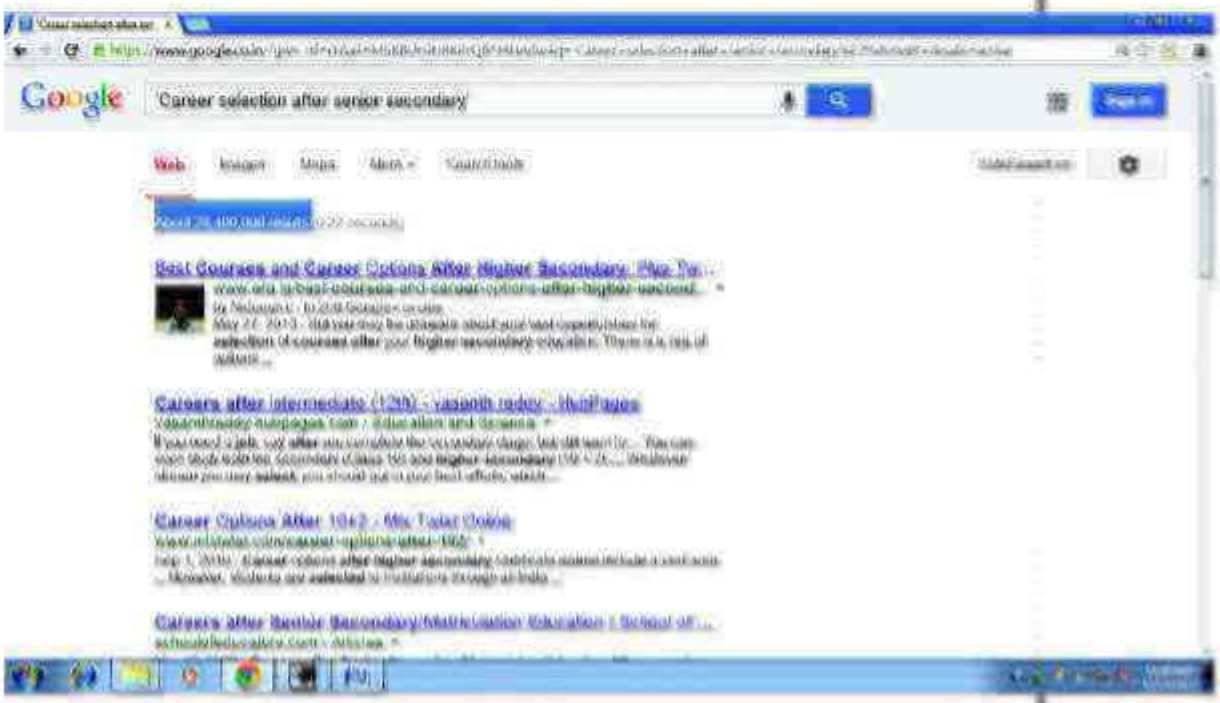

Fig. 18.3: Search Result of search 'Career selection after senior secondary' on Google

Further, the same concept was redesigned as 'Career selection after 12th' and searched through the same search engine, Google. The search showed about 8,580,000 results. Fig. 18.4 shows the result of this query.

Fig. 18.4: Search Result of search 'Career selection after 12th' on Google

After analysing the results of these two searches, you can understand that even if the concepts are same, a change in keywords yields different search results. Hence, the advanced search techniques are required to be used to get precise search results.

18.4.2 Advanced Search Techniques

Advanced search techniques are a searching mechanism, which uses different parameters for getting precise search results. In previous lesson, you have studied different operators and parameters used in designing a string to get precise results. Different search engines provide different set of parameters and operators to get relevant and precise results. It is recommended that a searcher should follow the guidelines provided by a particular search engine and accordingly design a query. Further, for reducing the number of references from the set of search results, add more parameters. For example, we selected the Google Advance at http://www.google.ca/advanced_search, for our search query 'Career selection after senior secondary'. The Google Advance provides parameters for limiting the search for getting more relevant results. The search conducted on the basis of these parameters showed 379, 000 references. The query has been shown in Fig. 18.5 and the result in Fig. 18.6.

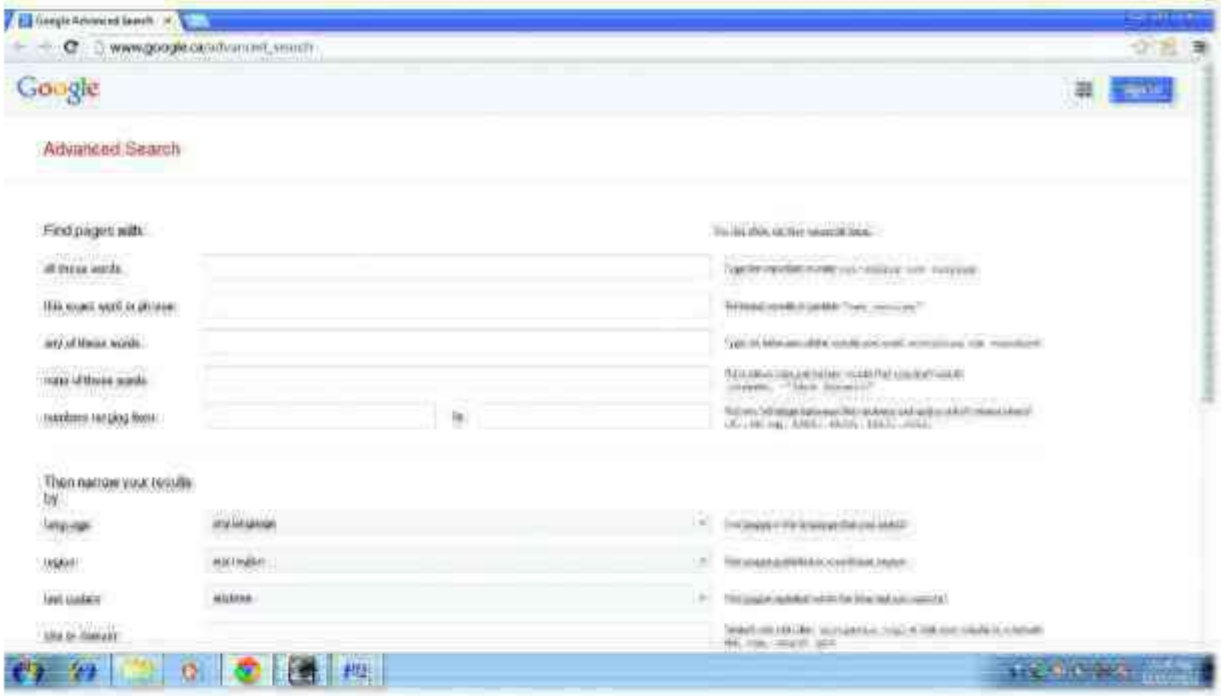

Fig. 18.5: Query 'Career selection after senior secondary' submitted to Google Scholar

Fig. 18.6: Search result for query 'Career selection after senior secondary' by Google Scholar

Further, the same search was redesigned and more parameters were added. The input box containing keywords of string has been shown in Fig. 18.7.

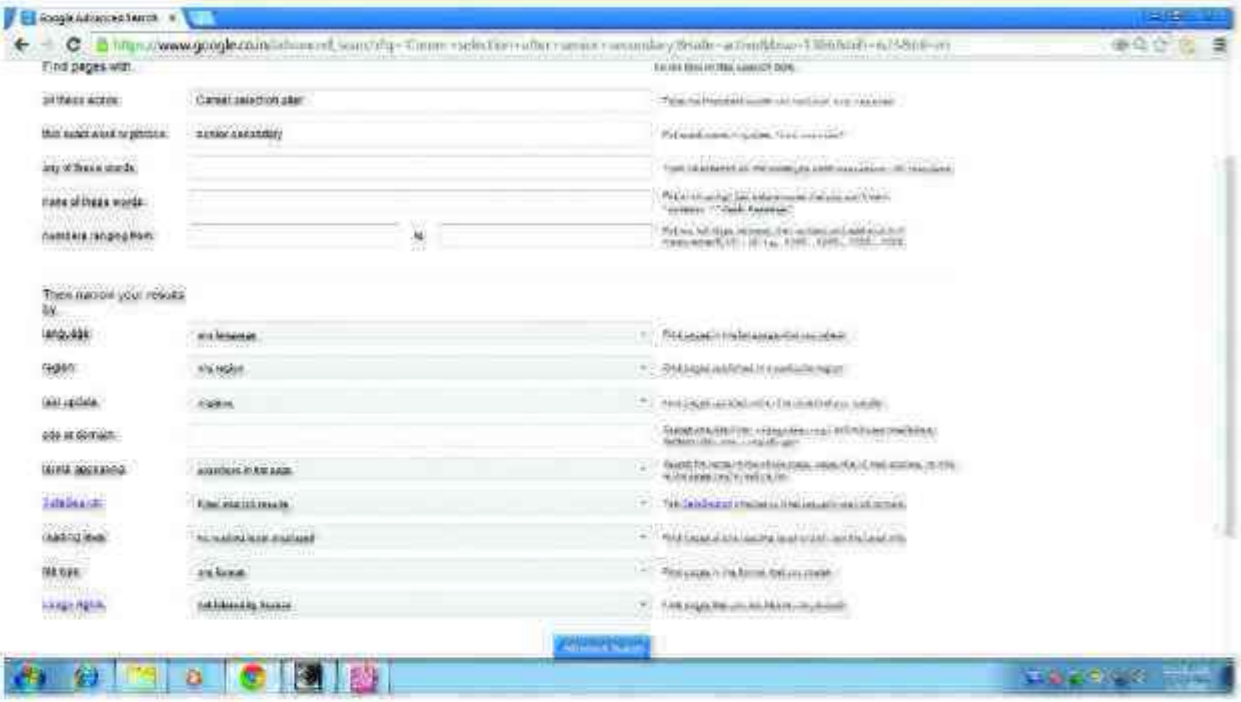

Fig. 18.7: Query "Career selection after senior secondary" in Google Scholar using parameters

With these parameters, we got a list of 49,000 references. It clearly shows the impact of adding more parameters, provided by advance search engine.

INTEXT QUESTIONS 18.2

1. Define simple search technique.
2. Explain advanced search technique.

18.5 BOOLEAN LOGIC AND QUERY

Boolean Logic and its operators have already been discussed in previous lesson. Let us now design a few search strings and search these on internet to see the impact of the logic. The Google has given guidelines for using the Boolean Operators, "AND", "OR", "NOT" and other operators at http://support.google.com/websearch/bin/answer.py?hl=en&answer=136861. Before using Google, it is recommended to go through the guidelines to get better search results.

We designed the same search as 'Career selection after' and 'Senior secondary' OR '12th' with the language parameter 'English' and region 'India'. We got a list of only four references. The result is shown in Fig. 18.8.

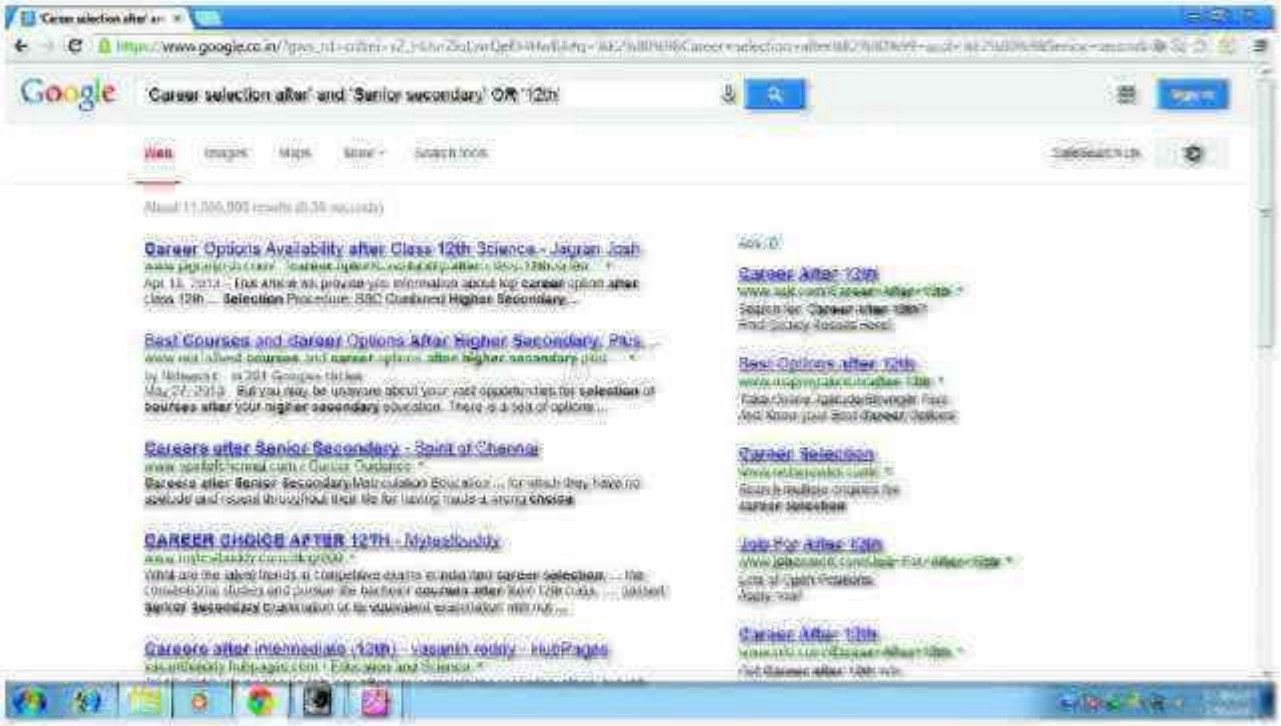

Fig. 18.8: Search result of query 'Career selection after' and 'Senior secondary' OR '12th' with the language parameter 'English' and region 'India'

INTEXT QUESTIONS 18.3

1. What is the purpose of "AND" in Boolean Logic?
2. Identify the purpose of "OR" in Boolean Logic.
3. Elaborate the purpose of "NOT" in Boolean Logic.

18.6 SEARCH ENGINES ON INTERNET

Hundreds of search engines are available on internet. There are a number of websites which provide studies and analyses about the search engines, those are active on internet. For further information, you can visit http://www.thesearchenginelist.com/. As it is not feasible to list all the search engines and their features here, a list of selected search engines with their brief introduction and categories is given below.

Search Engine	Description
Google	**Google**: The world's most popular search engine.
bing	**Bing** Search: Microsoft's entry into the burgeoning search engine market. Better late than never.
YAHOO!	**Yahoo!** Search: The 2nd largest search engine on the web (as defined by a September 2007 Nielsen Netratings report).
LexisNexis	**LexisNexis**: LexisNexis claims to be the "world's largest collection of public records, unpublished opinions, forms, legal, news, and business information". Searchable archive of newspapers, public records & more.
dieselpoint	**Dieselpoint**: Search & Navigation. Dieselpoint provides advanced full-text search with data navigation capability. It gives users highly relevant results not possible with either traditional search engines or SQL databases.
ORACLE SECURE ENTERPRISE SEARCH 10g	**Oracle Secure Enterprise Search 10g**: a standalone product from Oracle, enables a secure, high quality, easy-to-use search across all enterprise information assets.
SAP	**SAP** NetWeaver Search and Classification (TREX): finds information in both structured and unstructured data. TREX provides SAP applications with services for searching and classifying large collections of documents.
SAIC TeraText	**TeraText Suite**: Most data resides in semi-structured, primarily textual documents, not in structured, organizational repositories. Teratext is designed for text-rich data repositories.

Vivisimo Clustering Engine: developed by scientists based upon a mathematical algorithm and deep linguistic knowledge to find relationships between search terms and bring them to light. (Web search Clusty)

Guruji.com: India - an Indian Internet search engine that is focused on providing better search results to Indian consumers, by leveraging proprietary algorithms and data in the Indian context.

Rediff: India - India's leading internet portal for news, mail, messenger, entertainment, business, mobile, ecommerce, shopping, auctions, search, sports and more.

Naukri.com (India): An India-focused job search engine.

WebMD: A source for health information, a symptom checklist, pharmacy information, and a place to store personal medical information. As the leading US Health portal, it scores over 40 million hits per month.

YouTube: Owned by Google, the web's largest media site. This search will search through the videos of YouTube only.

FindSounds: Search engine to find any kind of sound file: WAV, MP3, AIFF, AU - search by sample rate and quality... a great place to find those sound effects.

Ask Jeeves was designed to allow users to get answers to questions posed in everyday, natural language. Ask.com was the first such commercial question-answering search engine for the Web.

INTEXT QUESTIONS 18.4

1. What are the features of WebMD?
2. Explain the search engine Ask Jeeves.
3. Write down the features of Dieselpoint.

18.7 SEARCH ENGINES AND CATEGORIES OF RESOURCES

The search engines on internet have categorized the information sources on the basis of types or format. For example, the Google categorises the information sources as maps, image, news, scholar, scholarly papers, and many more. The details of the categories are available at http://www.google.co.in/intl/en/about/products/. The Yahoo has categorised information in web, video, news and local categories.

Searching information on web under these categories has become effective using category specific search. A search was conducted using this feature of the Google search engines, to find the effectiveness of the engine in search output. The query was 'NIOS, NOIDA, India'. The results are shown below:

(a) Under Map category, we got location of the NIOS, NOIDA, Uttar Pradesh, India.

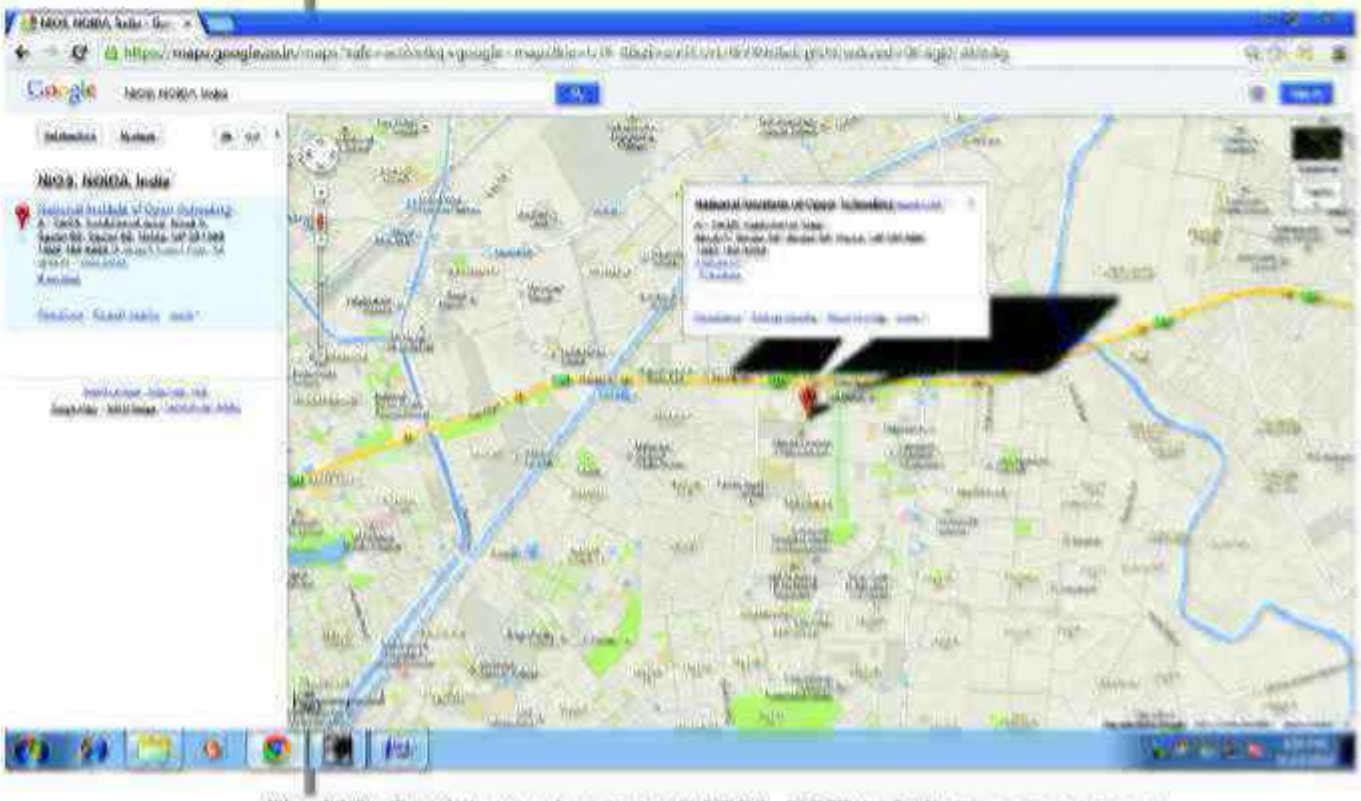

Fig. 18.9: Google's search output of 'NIOS, NOIDA, India' in map category

(b) Under image category, we got the search output of the sources which have images of the NIOS.

Fig. 18.10: Google's search output of 'NIOS, NOIDA, India'in image category

(c) Under scholar category, there were 34 hits 'NIOS, NOIDA, India'. After evaluating the articles, it was found that the articles contained this string in their text.

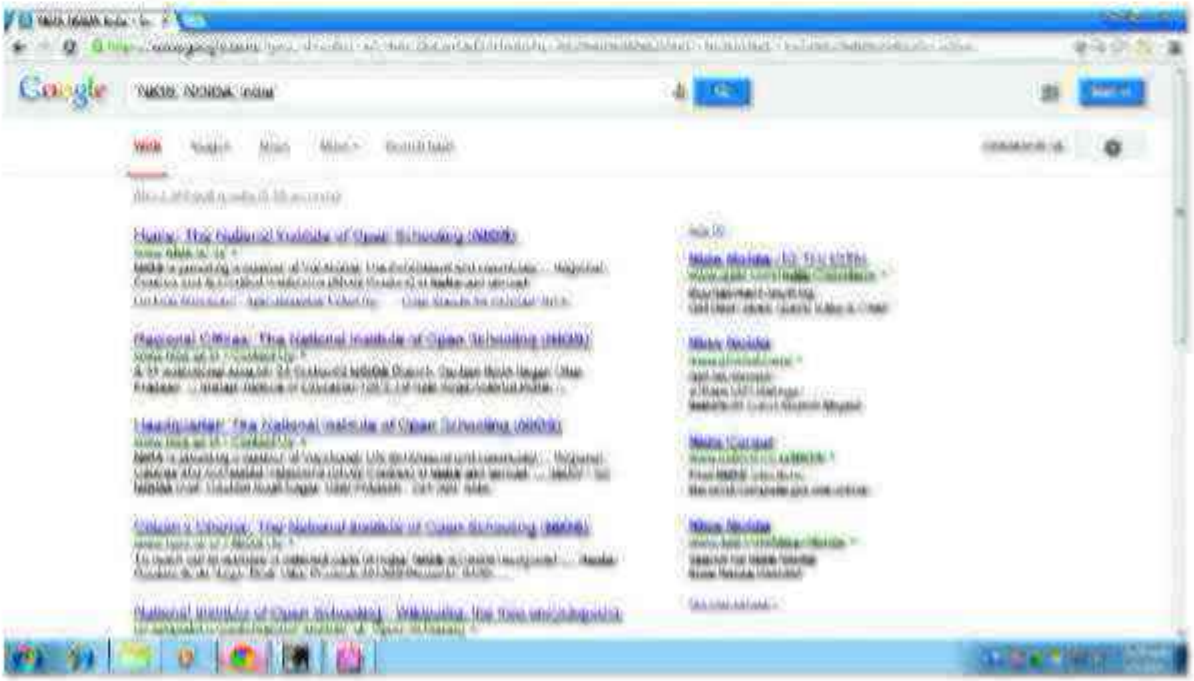

Fig. 18.11: Google's search output of 'NIOS, NOIDA, India' in scholar category

(d) Under web category, there were 293,000 hits for 'NIOS, NOIDA, India'. After evaluating a few of these references, we found that all the terms of the string appeared in the text of the web pages.

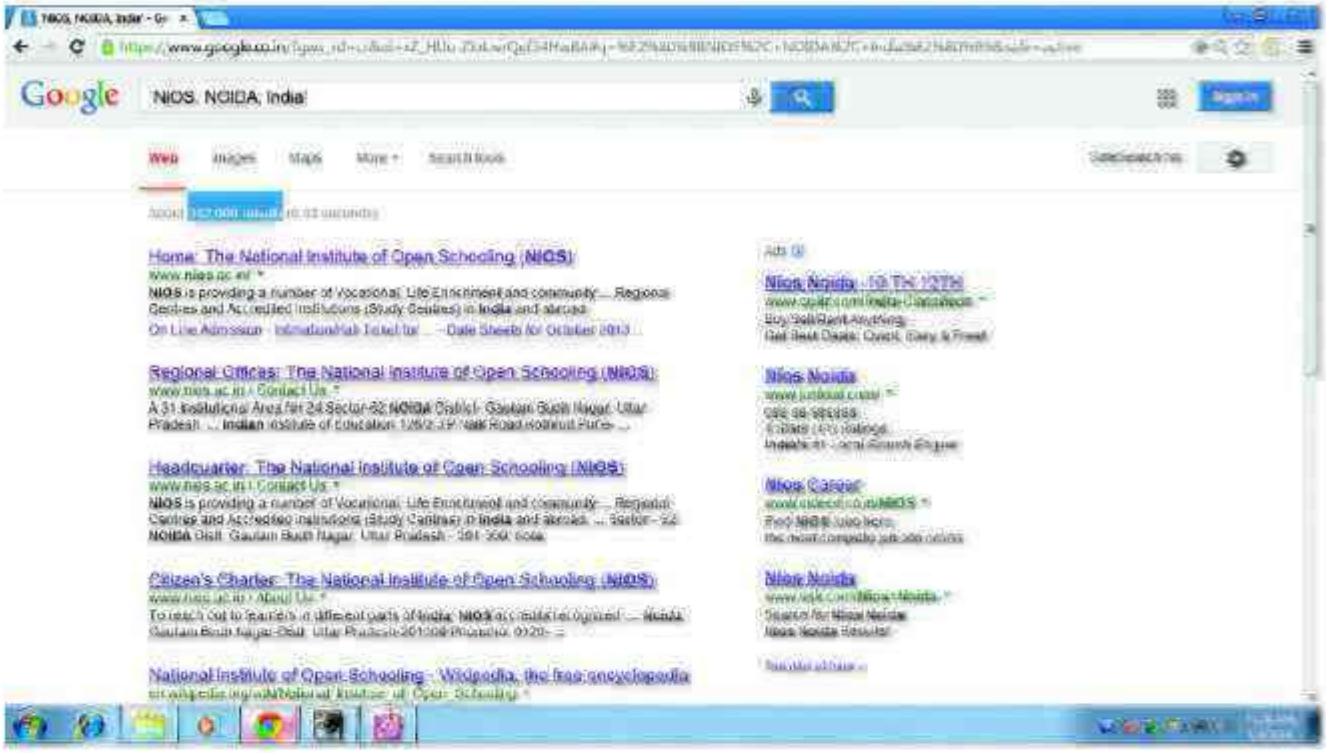

Fig. 18.12: Google's search output of 'NIOS, NOIDA, India' in web category

The analysis of these results shows that as per the need of the search, we should conduct category based search to get effective results. The category could be decided on the basis of the need of the search.

18.8 SEARCH ENGINES IN VERNACULAR LANGUAGES

Internet is the largest library in the world, if seen from the point of view of a library. There are hundreds and thousands of information sources available on internet in languages other than English. With the invention of the UNICODE, the web compatible documents are created in different languages and put on web. Therefore, now the search engines are providing facility to search information using vernacular languages. For example, the 'Google.co.in' which is the default page in India, provides search facilities in Hindi, Bengali, Telugu, Marathi, Tamil, Gujarati, Kannada, Malayalam and Punjabi other than English language. The effectiveness of the search engines can be evaluated by the people of concerned language. The official blog of Google says that, it provides search facility in forty languages. Hence, people of different languages can use the search engine for finding information on internet in their own language.

INTEXT QUESTIONS 18.5

1. What kind of information is covered by Google Scholar?
2. Name a few Indian languages in which Google can Search?

18.9 EFFECTIVE SEARCHING ON INTERNET

For getting effective results from the search engines, a searcher should have knowledge of behaviour and the features of the search engines. Almost all the search engines on internet use operators in one or another form. The operators, truncation signs and symbols or any others tools used by the search engines, should be first understood by the searcher before designing the search query and searching information. For this purpose, it is suggested that searchers should read the guidelines provided by the search engines on their websites. For example, the Google provides a dedicated website where, the guidelines for searchers have been given(http://support.google.com/websearch?hl=en). 'Tips for search' and 'Explore Google search' are two important sections that help searchers to search information on internet effectively. Other search engines, like Yahoo, Ask, Bing, etc. also provide help to the searchers for effective search. The search process on internet can best be described with the help of a diagram.

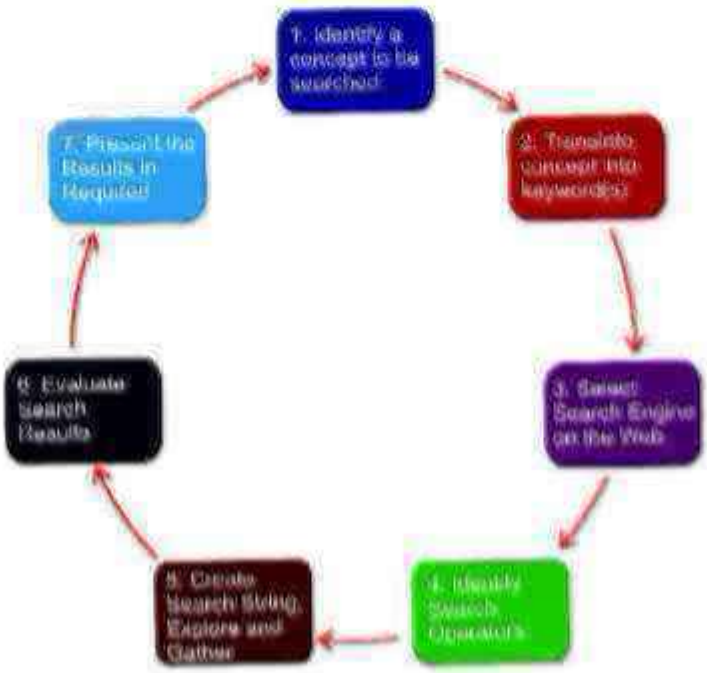

Figure 18.13: Diagram of search process on Internet

The Fig. 18.13 shows the process of searching information on internet in seven steps. The steps can be described as:

Step –1: Identify whole concept on which you want to conduct a search. Choose some keywords, subject descriptors, and/or sentences, and the types of information sources you are looking for.

Step –2: Translate the concept,terms, phrases, their alternatives and associated terms or subjects, etc. into keywords.

Step-3: Select information domain to be searched, like your library, OCLC, LISA, PubMed, etc., or suitable search engine on internet.

Step-4: Identify operators and symbols used by the search engine of the information domain.

Step-5: Create a search string using operators and/or connectors and conduct the search.

Step-6: Evaluate the result and if needed, modify the search by choosing alternate terms. Expand the scope of the subject or topics and put more parameters like date of publication, language, form, source, etc. provided in the search engines.

Step-7: Present the search results in a user friendly format.

These seven steps can make a searcher expert in finding information from Internet. The experiments with search query, permutation combination of the terms in the query, using set of symbols and analysis of the results for each and every query, as well as the impact of the change in the string, can make a searcher expert in searching the information on Internet. It is always recommended that, the searcher should use at least two search engines to get effective and relevant results.

WHAT YOU HAVE LEARNT

- Internet has become the largest repository of information in the world. It stores all kinds of information in digital form.
- There are three main purposes of searching information on internet, namely (a) Navigational Search, (b) Informational Search, and (c) Transactional Search.
- Searching information on internet is both an art and a science.
- Simple search technique is a mechanism of finding information on internet

for beginners in which one selects a search engine and enters a simple query and searches the information.

- Advanced search technique is a mechanism where one can use operators and other parameters provided by the search engines to get precise results.
- Boolean Logic uses 'AND', 'OR', 'NOT' as operators to express the concepts to be searched in terms of string to be understood by the search engines.
- There are a number of search engines on internet. One can select the search engine as per the requirements of the search.
- For getting better results, search engines have categorized information resources in different categories as Map, Images, Books, Articles, etc.
- Information resources are available on internet in languages other than the English language also. Therefore, the search engines are available in Indian languages also like Tamil, Malayalam, Bengali, etc.

TERMINAL QUESTIONS

1. Why a search engine is needed on internet?
2. Discuss the purposes of search on Internet.
3. Discuss features of advanced search techniques.
4. How do the Boolean operators work?
5. What do you understand by search engines in vernacular language?
6. Discuss various steps of effective search on internet.

ANSWERS TO INTEXT QUESTIONS

18.1

1. A search engine is a software program that searches for sites based on the words that we refer to as search terms. Internet search engines are thus special sites on the Web that are designed to help people find information stored on other sites. There are differences in the ways various search engines work.
2. With an ad hoc search, the searcher's goal is to find as many relevant documents as possible about a topic. An ad hoc search is informational in

nature, as searcher is looking for information about a subject from vast resources. The searcher may or may not have previous knowledge about the topic but, wants to read or learn more about it.The intent of the informational search is to acquire some information, assuming it is available on the internet.

18.2

1. Simple search technique is a mechanism for finding information on internet on the basis of a query submitted to search engine in term of simple keywords.
2. Advance search technique is a searching mechanism where different parameters are used for getting precise search results.

18.3

1. The purpose of the 'AND' operator is to find the information source where both the terms connected by this operator exist.
2. The purpose of the 'OR' operator is to find the information source where either of the two terms connected by this operator exist.
3. The purpose of the 'NOT' operator is to find the information source where first term exists but not the second term.

18.4

1. WebMD is a source for health information, a symptom checklist, pharmacy information, and a place to store personal medical information. As the leading US Health portal, it scores over 40 million hits per month.
2. Ask Jeeves is designed to allow users to get answers to questions posed in everyday natural language. Ask.com was the first such commercial question-answering search engine for the Web.
3. Dieselpoint provides advanced full-text search with data navigation capability. It gives users highly relevant results not possible with either traditional search engines or SQL databases.

18.5

1. The Google Scholar covers the full text of scholarly literature.
2. Indian languages in which Google can search are Hindi, Bengali, Gujarati, Marathi, Kannada, Punjabi, etc.

Notes

GLOSSARY

Browse: To browse through a web page is exploring what's there and seeing where the links take you. When you browse, you have to guess which words and links on the page pertain to your interests.

Browsers: Software programs that enable you to view web pages and other documents on the Internet. They "translate" HTML-encoded files into the text, images, sounds, and other features you see. The most commonly used browsers are Microsoft Internet Explorer, Firefox, Mozilla, Safari, Opera, and Chrome.

HTML: Hypertext Markup Language.

ISP: Internet Service Provider - a company that sells direct access to the Internet.

LCOC: Library of Congress Online Catalog

Meta-Search Engine: Search engines that automatically submit your keyword search to several other search tools, and retrieve results from all their databases.

OPAC: Online Public Access Catalogue

PubMed: It is a free database accessing primarily the MEDLINE database of references and abstracts on life sciences and biomedical topics

Server/Web Server: A computer running that software, assigned an IP address, and connected to the Internet so that it can provide documents via the World Wide Web.

Site/Web-Site: This term is often used to mean "web page," but there is a difference. A web page is a single entity, one URL, one file that you might find on the Web. A "site," properly speaking, is a location or gathering or centre for a bunch of related pages linked to form that site.

UNICODE: A set of standard coding schemes intended to replace the multiple coding schemes currently used worldwide. The Unicode Consortium developed the original standard, Unicode Transformation Format-16 (UTF-16), in 1991 as a standard coding scheme to support multiple complex alphabets such as Devanagri (Hindi), Bengali, Chinese, Japanese, Korean, etc.

URL: Uniform Resource Locator. It is the unique address of any Web document.

Vernacular Language: A vernacular language is the native language or native dialect of a specific population, community or region.

WWW: The World Wide Web

WEBSITES

http://www.thesearchenginelist.com/

http://www.ncbi.nlm.nih.gov

www.swse.org

http://www.w3.org/standards/semanticweb/

http://www.google.com

http://www.yahoo.com