CREATION OF ELECTRONIC DATABASES PORTAL PAGES FOR BIOINFORMATICS

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Abstract

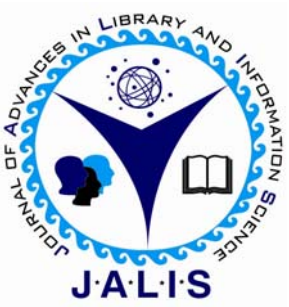
The present study focuses the issues related to designing of portal for bioinformatics subject. In order to access information, students, researchers as well as faculty members keep shuttling between e-books, e-journals, patents, theses, e-database, and bioinformatics software and so on. To give a bird's eye view of various resources in the field of bioinformatics, a single window service was conceptualized in the form of a bioinformatics portal.

Keywords

Bioinformatics, Information Management, web portal.

Electronic access

The journal is available at www.jalis.in



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Introduction

With the vast development of various technologies, learning today is no longer confined to classrooms with lecture delivery as the only method of conveying knowledge, rather, an electronic means of learning has continued to evolve. Electronic learning (e-Learning), which facilitates education using communication network, has made learning possible from anywhere at anytime using the Internet, wide area networks or local area networks. A subject portal can assist the students in e-learning by providing wide variety of digital resources and web based library services. Subject portals are important tools for users to access and utilize library and information services over a network. Thus the subject portals are act as a single user interface for accessing wide variety of resources in a single window. After knowing the demand of this kind of portal we have develop a subject portal in Bioinformatics discipline to assist the Bioinformatics learners in accessing variety of information related to their subject in single a log in.

Bioinformatics was applied in the creation and maintenance of a database to store biological information at the beginning of the "genomic revolution", such as nucleotide and amino acid sequences. Development of this type of database involved not only design issues but the development of complex interfaces whereby researchers could both access existing data as well as submit new or revised data.

Bioinformatics

Bioinformatics is the application of computer technology to the management of biological information. Computers are used to gather, store, analyze and integrate biological and genetic information which can then be applied to gene-based drug discovery and development. The science of Bioinformatics, which is the melding of molecular biology with computer science, is essential to the use of genomic information in understanding human diseases and in the identification of new molecular targets for drug discovery. In recognition of this, many universities, government institutions and pharmaceutical firms have formed bioinformatics groups, consisting of computational biologists and bioinformatics computer scientists. Such groups will be key to unraveling the mass of information generated by large scale sequencing efforts underway in laboratories around the world.

Bioinformatics derives knowledge from computer analysis of biological data. These can consist of the information stored in the genetic code, but also experimental results from various sources, patient statistics, and scientific literature. Research in bioinformatics includes method development for storage, retrieval, and analysis of the data. Bioinformatics is a rapidly developing branch of biology and is highly interdisciplinary, using techniques and concepts from informatics, statistics, mathematics, chemistry, biochemistry, physics, and linguistics. It has many practical applications in different areas of biology and medicine.

Need for a bioinformatics portal

In order to access information, students, researchers as well as faculty staffs keep shuttling between e-books, e-journals, patents, theses, e-database, bioinformatics software, research and so on. To give a bird's eye view of various resources in the field of bioinformatics, a single window service was conceptualized in the form of a bioinformatics portal. It aims to provide information related to bio information and its allied subjects, through a single user interface and to access a wide variety of electronic resources in the field subscribed to by the biological institution and also other scholarly information sources that are available in full text on the web. Searching and filtering the sources available on the web and then judging what will prove useful to bioinformatics students was of course a very tedious job.

Web Portal

A web portal is a term, often used interchangeably with gateway, for a World Wide Web site whose purpose is to be a major starting point for users when they connect to the Web. There are general portals and specialized or niche portals. Some major general portals include Yahoo, CNET, AOL, and MSN. Examples of niche portals that are accessible to the public include Garden.com (for gardeners), Fool.com (for investors), and DPReview.com (for photographers). Private niche portals are those that are used by employees of a company. Companies such as IBM and MasterCard use portals to help disseminate information to their employees in a timely and efficient manner.

A number of large access providers offer portals to the Web for their own users. Most portals have adopted the Yahoo style of content categories with a light-weight, text-based page that loads quickly. Companies with portal sites have attracted much stock market investor interest because portals are viewed as able to command large audiences which in turn translates to a large number of advertising viewers.

Typical services offered by public portal sites include a directory of Web sites, a facility to search for other sites, news, weather information, e-mail, stock quotes, phone and map information, and sometimes a community forum. Private portals often include access to payroll information, internal phone directories, company news, and employee documentation.

ARL (2004) The Association of Research Libraries (ARL) has agreed with Fretwell-Downing that its priorities for a post-implementation development of their joint Scholars Portal project will focus on three priority areas:
(1) integration with courseware – this includes the ability to move seamlessly between courseware and the Scholars Portal, searching profiles, and accessing reading lists; (2) intelligent search with increased support for standard targets; and (3) results set management.
Dharani kumar and Gayathri (2011**)** The portals are considered as the advanced tools of information retrival where the information can be personalise, customize and integrate in a web based environment for the user's individual preference. The present study focuses the issues related in designing of subject portal for biochemistry subject. Study outlines for creating a web page and an attempt has been made to design a subject portal having qualitative information with all the ease of learning. This paper also discusses the issues related in getting free web space and hosting of subject portal and submission of portals to search engines. The URL of model in Bio-chemistry subject has portal in www.biochem-ku.webs.com.

Scope and methodology

The present research is focusing on creating of subject portal in Bioinformatics using HTML web designing tool. The scope of this research is limited mainly to Bioinformatics subject offered in Bioinformatics institutions. Bioinformatics is a major branch of study related to many interdisciplinary components such as Biological Science, Medicine, Pharmaceutical Industry etc., so the available information is more both in terms of printed and online. For the convenience of the research we

consider curriculum structure of the subject as a limitation to surf the information. For designing the subject portal we collected the some relevant sources of information according to the syllabus offered by the bioinformatics institution. Those collected information is organized in single portal which is designed using HTML web building software.

Objectives

The main aim of the bioinformatics portal is to fulfil information requirements of the faculty members, students, researchers in the Department of bioinformatics and also its allied departments at bioinformatics institutions, (India). As such, its objectives are to:

1 To analyse the value of added service of web portals
2 To know and analyse the sites that currently use of web portals
3 To access easy, reliable and variety of disparate informatics
4 To collect major web resources useful in the field of bioinformatics
5 To design and develop a web portal for sharing the bioinformatics databases and web resources

Answering these objective questions contributes to a better understanding of Web Services and Web Portals, helping designers to better develop the appropriate tool for the user.

Bioinformatics Portal

The Online Books Page (http://www.e-booksdirectory.com) facilitates access to thousands of books that are freely readable over the internet. It also points to significant directories and archives of online texts, exhibits interesting classes of online

The bio information developed the bioinformatics Portal to provide an easy for information accessing Web services through a common user interface. The user's experience is an important element of the infrastructure, providing a common "look and feel" for the user. The bioinformatics is the gateway to these capabilities and information. Figure show how a potential recruit can use a bioinformatics to create his own personal to access information about a bioinformatics career.

Designing of Bioinformatics Portal

Designing and development of a bioinformatics portal is a complicated bioinformatics information for those who are not aware of mark up languages like HTML, XML but the web editors have made this job easier. Here, the designer must have an idea about designing languages, software, and the web space providers which are essential for a simple designing. When we start a simple designing we must take care of the entire things like selecting a background template, colour, images, icons, content organization and other related links which are to incorporate in the bioinformatics portal.

E-Books

In this page an attempt has been made to provide links to all free access for bioinformatics books related to books Bioinformatics discipline. Just by clicking the heading of the appropriate books it will navigate the user to original document which is available in their database.

books and also supports the growth of online books. It lists all department of free books on the web. Information on new listings can be automatically retrieved via RSS feeds updated daily.

Figure 1: Bioinformatics E-Books Portal page

E-Journals

E-journals are simply electronic versions of periodicals that publish articles relating to the scholarly work of a field, generally written by the experts in that field. The BMC Library subscribes to electronic versions or journals whenever possible to give library users the ability to use these journals regardless of their physical location via our website. Electronic availability is often dependent upon the year of the journal's publication, with older journals being less likely to be accessible this portal.

In this page an attempt has been made to provide links to all free open access journals and commercial journal related to Bioinformatics discipline. Just by clicking the heading of the appropriate journal it will navigate the user to original document which is available in their database.

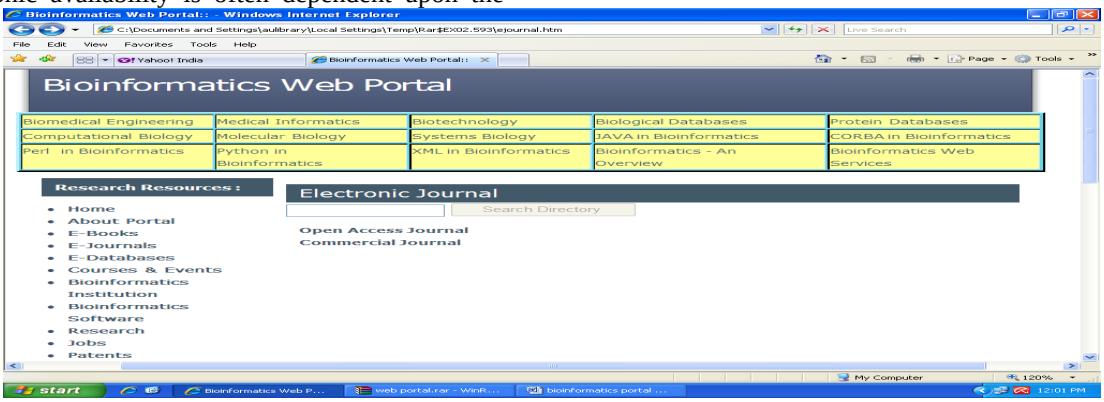

Figure 2 : Bioinformatics E-Journal Portal page

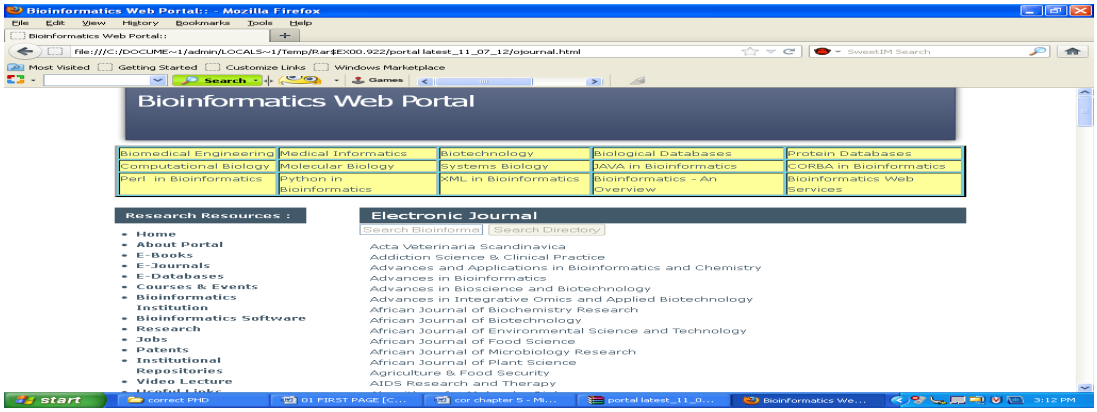

Figure 2.a : Bioinformatics Open Access E-Journal Portal page

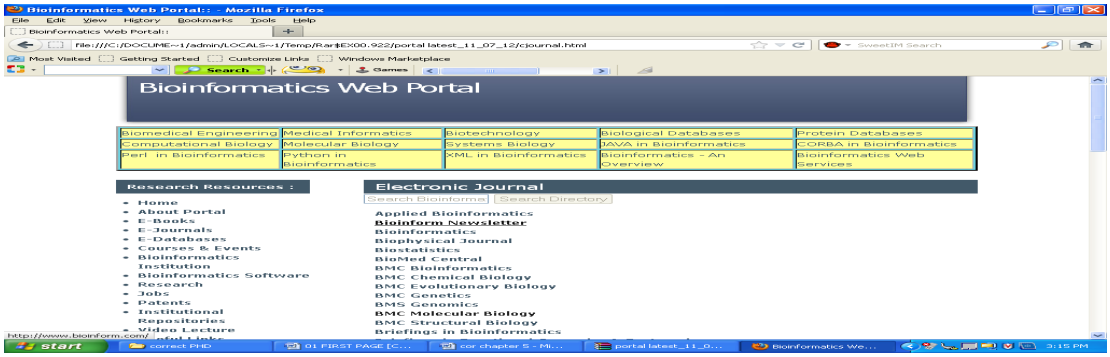

Figure 2.b : Bioinformatics Commercial E-Journal Portal page

E-Databases

An e-database is an organized collection of information, of a particular subject or multi-disciplinary subject areas. The information of an e-database can be searched and retrieved electronically.

In this portal an attempt has been made to provide links to all free access database related to bioinformatics discipline. Just by clicking the heading of the appropriate database available in their.

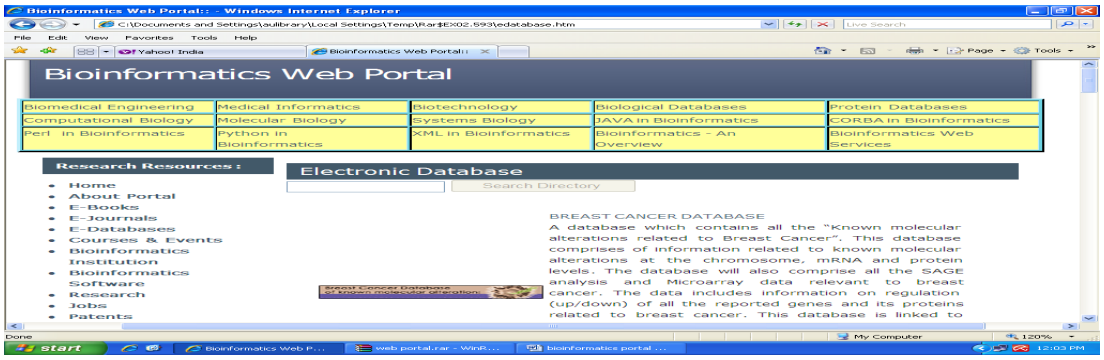

Figure 3 : Bioinformatics Electronic Databases Portal page

Bioinformatics Software

Software is a general term for the various kinds of programs used to operate computers and related devices. Computer instructions or data. Anything that can be stored electronically is software.

In this Bioinformatics portal we have been focused on the bioinformatics software. Here we have covered the main facets of bioinformatics software and allied areas, is also included in the portal which are free open access software source and commercial software from the various bioinformatics software available in the portal.

Bioinformatics software from the Open Directory Project which is used for analysing the content related to bioinformatics and its allied areas, is also included in the bioinformatics portal.

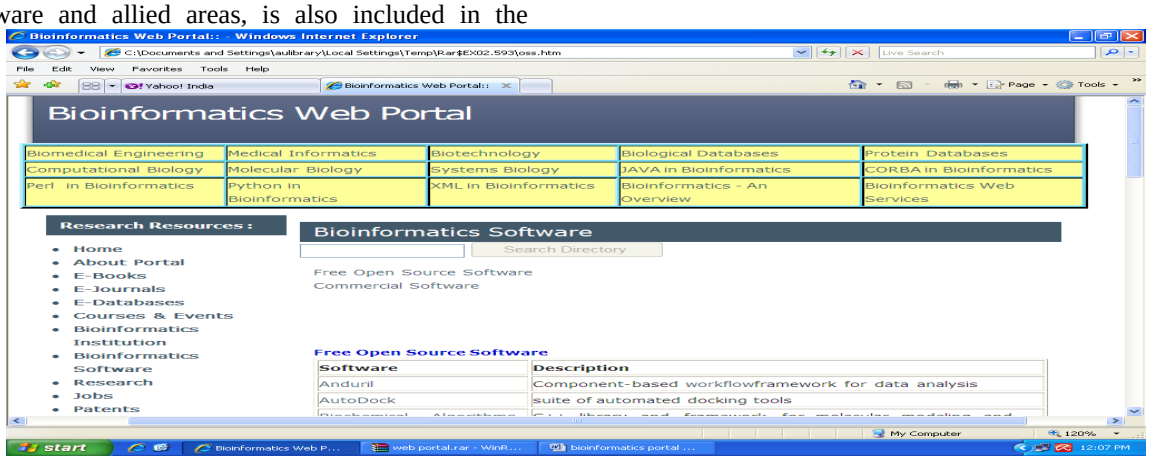

Figure 4 : Bioinformatics Software Portal page

Institutional Repositories

The Repository is a versatile, easy-to-use online storage site where you can archive and share digital images, forms, documents, audio or video files, anything in digital form. In fact, any document that you can get onto your computer you can store and index in the Repository. The architecture is expandable and its overall storage capacity is virtually limitless. Imagine being able to make your most useful shelf of collections or collection of photographs or data available for reference by any other Extension worker or client. Then multiply that

by all of your colleagues' most useful collection shelves and collections. Finally, imagine being able to draw information from throughout this archive and assemble it easily into new, useful Extension materials and presentations. That is the Repository.

In this page an attempt has been made to provide links to bioinformatics institutional repository. In this Bioinformatics institutional repository portal we have been focused on the bioinformatics institutional repository related information. Here we have covered the main facets of bioinformatics thesis which are selected from the various bioinformatics institution. Following contents are covered in the model bioinformatics institutional portal.

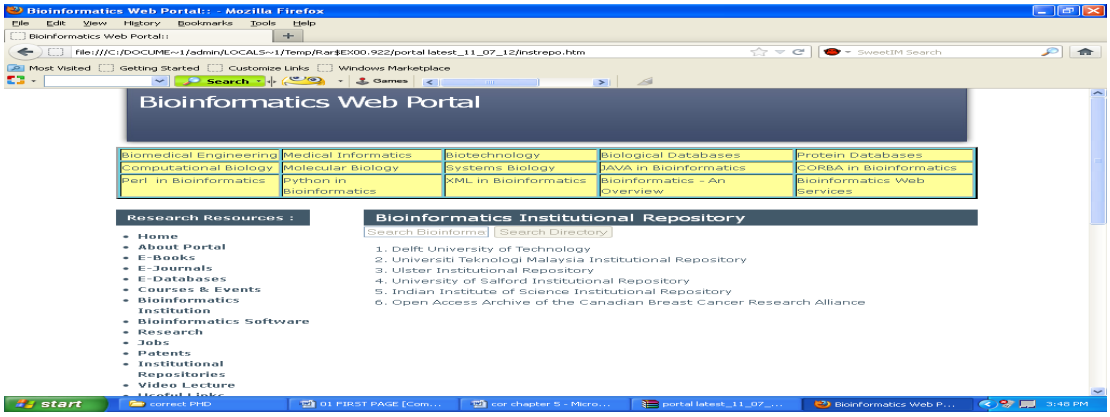

Figure 5: Bioinformatics Institutional Repository Portal page

Conclusion

In the age of information explosion, when everybody is talking of information overload, satisfying users' information needs in a simple, personalised and efficient way is becoming a challenge for library and information centers. Just subscribing to online sources does not serve the purpose until and unless the users are informed about them so that such resources are fully utilised. The budget at the disposal of libraries is limited and the demand for information by the researchers is increasing, whereas the time at their disposal is limited. Hence, such portals are important as they are user friendly and provide information through a single window. It is extremely useful for researchers as they can find all the information related to their discipline at one place.

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