Chapter 7

Digital Library for Engineering Education: A Prototype Design
CHAPTER – 7

DIGITAL LIBRARY FOR ENGINEERING EDUCATION:  
A PROTOTYPE DESIGN

7.1. INTRODUCTION

The world of digital library evokes a different impression and different meaning. The meaning varies according to the usage. To some, it simply suggests computerization of traditional libraries. To others who have studied library science, it calls for carrying out the function of libraries in a new way, encompassing to acquisition, new methods of storage and preservation: new approaches to classification and cataloguing, new modes of interaction with and for portions more reliance on electronic systems and networks and dramatic shifts in intellectual, organizational and economic practices. The digital library does not mean libraries in the classical sense, but a network of multimedia systems. A typical digital library is a media server connected to high speed network. Therefore, in this study based on the findings, observations and suggestions reported in chapter 5, it is through appropriate and necessary to present a prototype design model of a digital library for the discipline of engineering education, since the present study has concentrated on the Digital Initiatives by Educational Engineering Institutions in Rayalaseema Region of Andhra Pradesh.

7.2. HARDWARE AND SOFTWARE REQUIREMENTS FOR DIGITAL LIBRARY SERVER

Hardware

- Dual-Processor 500 MHz Server Class Machine
- 500+MB RAM
- Minimum of 40 GB Hard Disk Space or higher
- 10/100 NIC (Network Interface Card)
- Database Backup Solution
- UPS with atleast 1 hour battery backup time or centralized
- CD/DVD -RW
• Scanner or higher configuration Scanner
• Printer with Network Compatibility (LAN connection)

Software
• Windows, 2000, 2003, Xp Service Pack 2 + Security Rollup / Linux (Ubuntu)
• Internet Explore 6.0 or higher version
• Terminal Service setup in remote administration mode
• MDAC 2.6 Service pack 2
• Internet Information Server (IIS) (including with windows)
• Microsoft SQL Server 7 or higher
• Effective Library Software Packages
• Visual Studio Packages
• MS-Office 2007
• Photoshop 7. or Coral Draw 11.0 or higher
• Graphics Software such as Photoshop 7.0, Fractel Pinter, Illustrator or Coral Draw 11.0 or higher
• Multimedia software such as 3D Studio Max or Maya or any other Software
• Oracle 8.1 or higher

7.3. PROTOTYPE DESIGN OF RASEELELIBNET: RAYALASEEMA ENGINEERING EDUCATION LIBRARY NETWORK

The opening screen of the Rayalaseema Engineering Education Library Network (RASEELELIBNET) is shown is figure 7.1.
The screen in Figure 7.1 contains links for e-books, e-journals, e-databases and tutorials. It also provides links to the traditional library services of that particular library. The advantage of providing the links to the traditional library services to the user of digital library services have the facility for search and access the resources of their own library, where in the design is customized.

On clicking the “Digital Library Collection” in the opening screen (Fig 7.1) the next screen displayed containing Digital Library Collection in Figure 7.2.
Figure 7.2 Screen Displaying Digital Library Collection

In Figure 7.2, it can be seen that links have been provided to digital library collection on e-books, e-journals, projects, e-database and lectures for Engineering Science and Technology subjects.

By clicking the link on “E-Books” in Figure 7.2, it leads to the links of E-books on engineering subject as shown in Figure 7.3.
Figure 7.3 Screen Displaying 'E-Books List' on Engineering

On clicking any one of the e-books, it takes to the full text of the respective book in the library. On clicking "E-Journals" in Figure 7.2, it will lead to the broad subject categories of E-Journals of various publications over the Internet as shown in Figure 7.4. E-Journals by year wise will be displayed, when any particular journal is selected; an option for volume and issue is displayed, from which a specific volume and issue of E-Journal could be selected.
On clicking "E-Projects" in Figure 7.2, it will lead to the broad subject categories of E-Projects submitted by the students of respective institutions as shown Figure 7.5.

Figure 7.5 Screen Displaying 'E-Project List'
By clicking the "E-Databases" link from figure 7.2, leads to the list of E-Databases as shown in Figure 7.6. It also contains provision for browsing the database either for full text or bibliographical details.

Figure 7.6 Screen Displaying List of 'E-Databases'
On clicking the "Lectures" option from Figure 7.2, it leads to the Lectures for various subjects as shown in Figure 7.7.
On clicking "Service List" in Figure 7.2, it leads to service list web page, which denotes various services offered by digital library, as shown in Figure 7.8.
By clicking the "Related Links" option from Figure 7.2, it will lead to Related Links Web Page; it provides various related links such as search engines, Open Access Literature, Open Access Resources, which is illustrated in Figure 7.9.

Figure 7.9 Screen Displaying 'List of Related Links'

On clicking the "Contact Us" button from Figure 7.2, it leads to details for contact site, which provided address of contact person, represented in Figure 7.10.

Figure 7.10 Screen Displaying Contract Address
7.4 SALIENT FEATURES OF THE PROTOTYPE DESIGN MODEL OF DIGITAL LIBRARY FOR ENGINEERING EDUCATION

In the foregoing pages, the prototype design model of digital library for Engineering Education has been outlined. Some of the salient features of the prototype design model are as follows:

➢ The design model covers various branches of Engineering Science and Technology resources.

➢ The resources comprising of e-books, e-journals, e-databases and e-projects, lectures.

➢ It also covers web based lectures on various subject caption of lecture for various engineering subjects and also provides online lectures.

➢ The model also provides facilities to access traditional library services of the respective institutions.

➢ Facilitates to search the digital library for engineering science and education by related links.

➢ Facilitates to access the full text of the resources listed in the contents.

➢ Since it is a prototype design structure, there is every scope to update, modify and include some other provisions to make digital library a more comprehensive one.

7.5. CONCLUSION

Digital Library Initiatives in India are still at a nascent stage of development. With the advent of the Internet and World Wide Web, Digital Library Development in India begins with the goal of preservation of art, culture and heritage of the country. The digital environment in the Indian context is a new concept that became a reality through projects funded by the government. In Indian scenario, the digitization programmes are in their initial stages and much needs have to be done to prepare a long term strategy to sustain these efforts and preserve the digital resources for the future use. Digital Library
applications span widely disparate content types, values, origins, longevities and widely disparate user purposes and operating environments.

Libraries digital or traditional exist to serve diverse purposes and constituencies. A digital library deals with organization and access of a large information repository. The key to a digital library is not digitization of physical materials, but the organization of physical and electronic collection for better access. The organization provides coherence to a massive amount of shared knowledge, while the access provides convenient retrieval for a wide range of users distributed across a network.