CHAPTER IV
SOFTWARE PACKAGES FOR LIBRARY AUTOMATION

4.1 Introduction

Library Automation refers to the use of computers to serve the needs of library users. The operations of a library get a quantum jump with the introductions of computers. The computers help to provide fast and reliable access to the resources available in the library as well as elsewhere. The application of computers in the library operations avoids repetitive jobs and saves lot of labour, time, speeds up operations, increases use of library resources. Computers are not only used as a tool for processing the data, but also for data storage and accessing. Planning for an automated system, no matter how big or small, should be part of an overall long-range plan for the library. Automation should always be used as a means to achieve overall better patron service. Careful planning for technology will assure that your automation project is "sustainable", i.e. enhances the organization's ability to meet its service mission without disrupting the organizational stability of the institution.

The present scenario of library worldwide is

- vastly expanded storage of indexes, statistical data bases, and document databases within the library;
- full-text storage of documents, complete with full-text keyword searching and on-demand printing;
- access by users to library databases from home or office, with direct downloading of information and text on demand;
- the ability to access remote databases across the country and the world, and to download information and text on demand;
- storage of pictorial and graphic material; and,
- availability of "intelligent systems" providing transparent, one-step searching and access to various library in-house and remote databases.

These capabilities and far more have become reality. Accordingly, today's integrated system must not only provide access to the traditional cataloguing, circulation, public catalog (OPAC) and acquisitions modules, but must be capable of
connecting through the local system into the systems of other vendors, remote bibliographic databases, CD-ROM drives on a local area network (LAN), and the Internet. Users are expecting that their library systems be capable of, among other things:

- providing seamless integration between system gateway and OPAC modules;
- providing access for external users on the Internet to the library's OPAC;
- monitoring the usage of remote databases that have been accessed through the gateway; and,
- accessing the Internet using a variety of graphical interfaces.

Essentially, what this means is that libraries must plan to use a local library system as a vehicle for achieving access to resources outside that system. Stimulated by the Internet, which has created universal connectivity to information resources heretofore unknown and/or in accessible, and by Z39.50 interoperability standards and "gateways," users of individual local systems are expecting to access the resources of other systems-- anywhere and anytime. Moreover, the traditional definition of "publishing" has been stretched by the creation and instant availability of informational home pages and Web sites worldwide. Given such increased complexities and heightened levels of expectation, libraries must learn all the more how to plan for the introduction of automation in an organized and systematic fashion. There is little mystery involved here: It is entirely a matter of building upon what you already know about your library, using tools that are readily at hand and, most importantly of all, involving the people -- staff and users --who must live with the consequences of any automation decisions.

4.1.1 Objectives of Library Automation

- To maintain bibliographical records of all the materials, in a computerized form.
- To provide bibliographical details through a single enumerative access point of holdings of a library.
- To reduce the repetition in the technical processes of housekeeping operations.
- To provide access to information at a faster rate.
- To share the resources through library networking.
- To implement new IT processes to provide high quality information.
4.1.2 Need and Purpose

Even though this question seems to be very fundamental it is essential to emphasize this aspect, as the library automation is yet to take off in majority of the Indian libraries. Secondly, while justifying need for library automation more than cost-effectiveness the benefits derived by the library users become the major consideration. To appreciate the advantages it becomes necessary to highlight the different levels of library automation.

Following are considered as important factors for Library Automation

- Information explosion
- Increase in the collection of libraries
- Inability of users to explore the unlimited literature and information of their interest
- Advances in the computer and communication technology
- Wastage of user / staff time in locating the information
- Provide wide access to resources within the libraries and elsewhere
- Better access
- Quality in service
- Cooperative efforts (Resource Sharing)

Out of all libraries an academic library has a difficult task of defining its mission and operating objectives. The automation programme will have to mange a wide range of literature associated with numerous departments and educational programmes of the academic institution. Furthermore, in an academic library the collections will be diverse unlike a special research library where the collection is relatively homogeneous. The user group will also range widely, including faculty, staff, students, scholars, administrators and the general public. The position of an academic library funded largely by the government further complicates the process of identifying and prioritizing objectives. As difficult as the task might at first appear, it is nevertheless essential to the process of establishing automated systems of any type. In addition the overall health of ones library operation will benefit from a modicum of intellectual rigor in this area.
4.1.3 Historical Perspectives

Traditional library work consisting of acquisitions, technical processing, serials control, circulation and reference services all entail time consuming manual work. Though these activities are essential to proper functioning of a library, they consume professional staff time that might otherwise go towards user services and library development. Library computerization is now gaining importance necessitating the establishment of profession-wide standards. Comprehensive studies of library computer systems world over include discussions of machine-managed acquisitions, cataloguing, serials control, circulation and bibliographic service modules. The literature in this area highlights major aspects of computer’s role in the library environment. Similar to several aspects of library management, the demand for more and faster information services and the decline in library resources are compelling librarians to appreciate the role of computers within their operations. In general, librarians are looking to maximize the benefits of automation by spreading computer use to as many aspects of library activities as possible by taking advantage of developments in computer hardware and software and telecommunications.

4.1.4 Areas of Library Automation

As a first step in a planning process, it is desirable to formulate a model for computerization listing all itemized and prioritized information systems being maintained on a manual basis by the library. For this exercise it is necessary to break down these procedures into their constituent parts. When further subdividing these activities, each item is to be considered of its functional elements. The systems and subsystems listed below are only indicative and may vary with differing library system environments.

These are:

Acquisitions
selection
ordering
claiming/cancellation
receiving/invoice processing
extended procurements
gift tracking
Fund Control
Maintains information about all library related funds
Ability to group funds (nesting)
Track fund allocations and adjustments
Fund encumbrance
Fund expenditure
Cash Balance
Free Balance
Automatic updating of fiscal information through recording of specific transactions
Track year-to-date expenditures
Create Purchase Orders
Technical Services
Books
Serials
Special Collections
Cataloguing
Books
Serials
Special Collections
Circulation
Charge/Renewal
Discharge
Loan Periods
Processing schedules
Holds
Messages
Blocks
Notices
Transaction Recording Devices for off-line processing
Member control
Inventory Control
Serials Control
Receipt (check-in)
Claiming
4.1.5 Barriers in Library Automation

Library automation brings great changes in the functioning of the library and proving effective and efficient library services. But in spite of these great advantages, there are many barriers which occur at the time of implementing the automation in libraries.

Ramesh (1998) has given the following barriers faced by the library during automation.

* Fear of adverse impact on employment.
* Apprehension that the technology could be too expensive
* The library staff has to undergo extensive training.
* Lack of support from the management, may be owing to budget constraints
* Retrospective conversion of data
4.1.6 Planning of Library Automation

Planning for library automation has been defined as planning for "integrated systems" that computerize an array of traditional library functions using a common database. While this is still generally true, rapid technological change is forcing a re-examination of what it means to "automate the library." As physical, spatial and temporal barriers to acquiring information are crumbling, libraries must plan for a broader and more comprehensive approach to providing automated services.

4.1.7 Requirements for Library Automation

Library automation has become necessity in almost all libraries to provide efficient library services to their clientele. However to achieve the mission of library automation the library should have the following essential requirements for its automation. These include;

4.1.7.1 Adequate Collection

Computerisation is not just for the sake of computerisation. Computerisation of library collection and other services is to serve the users better and to provide access to information. For this purpose first of all the collection of the library should be adequate and tolerably comprehensive. If the collection is not adequate what is the use of automation. Hence every library should aim at the good collection building first and computerise the library collection and its services next.

4.1.7.2 Financial Assistance

Finance is the back bone of any venture. UGC norms stipulate that university library be allocated 10% of the university budget. This rule is followed more in violation. Finances are required in the library for collection building, computer system and for recurring expenditures.

4.1.7.3 Hardware

Selection and purchase of a computer is a complex procedure. The university library should decide first what type of computer it wants for its work. There are variety of computers and computer makers. An academic library should require a computer system rather than a single PC-XT. In computer systems there are LAN, WAN etc. A library would at least require a LAN with facilities of internet access. There are different types of firms and organisations to supply computer hardware and
parts. Standardisation in the hardware is an important factor. Otherwise, it would become obsolete in no time. Even today, the library software agencies provide minimum hardware requirement for their software support.

4.1.7.4 Software

Computer software are generally expensive. A software will include:

- Utilities/format conversion programmes
- Application software
- Database management system and data dictionary software
- Data communication software
- Programming aids, testing aids etc,
- Additional system software

4.1.7.5 Trained Staff

Even in the present information explosion period, library staff specially in government organisations are not ready to accept the new technology in libraries because of the fact that they are not trained. For library automation and its services, trained staff is a must. Most of the libraries are facing the problem of untrained library staff and hence not yet started automation work in libraries. The working staff even not ready to get training locally or through training centres like INFLIBNET. It is said that library automation can only be possible if the library has sufficient trained staff.

4.1.7.6 User Training

Not only the library staff required to get training to adopt automation, but users should also be provided training either by the library staff or by some other training institutions. If the library is fully automated and provides all services through latest technology, if the user is not aware about the technology he or she can not use the library services because of lack of knowledge. For smooth functioning and maximum utilisation of library resources, the users should be provided training at regular intervals.

4.1.7.7 Maintenance and Development

Library staff and even the librarian can not solve every problem with regard to the hardware and software technology. Therefore, it is essential to have a support from computer science professionals to maintain and develop the entire system of
library automation. Most of the libraries take support of the staff of the computer centre of the university and if a big problem arises the expert from the hardware and software providers is also taken.

4.2 Computer Softwares for Library Automation

Design and development activity of library software packages in India started in a big way during mid-eighties with the introduction of CDS/ISIS software package of UNESCO in Indian libraries by the National Information System in Science and Technology (NISSAT). Besides CDS/ISIS, MINIMIS etc, a number of library software packages have been designed and developed indigenously and these are being used in various Indian libraries and information centres. Some of the library software packages are given in the following table.

Since there are many software packages and it may not be possible to discuss all the software packages in detail, only a few selected software packages including recently developed ones are discussed here.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Software package</th>
<th>Year</th>
<th>Developing Agency</th>
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<tbody>
<tr>
<td>1</td>
<td>Archives (1,2,3)</td>
<td></td>
<td>Microfax Electronic Systems, Bombay</td>
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<tr>
<td>2</td>
<td>Acquas, Ascat, Ascir, Asire, Seras</td>
<td></td>
<td>Ober Information System, Calcutta</td>
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<td>3</td>
<td>A LIB-2</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>Alice for Windows (Afw)</td>
<td>1996</td>
<td>Softlink Asia Pvt. Ltd.</td>
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<tr>
<td>5</td>
<td>AutoLib</td>
<td></td>
<td>AutoLib Software System, Chennai</td>
</tr>
<tr>
<td>6</td>
<td>Basisplus &amp; Techlibplus</td>
<td></td>
<td>Information DimentionInc (IDI), NIC</td>
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<tr>
<td>7</td>
<td>Bibliographic Retrieval</td>
<td></td>
<td>Software Consultants, Madras</td>
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<tr>
<td>8</td>
<td>Catman</td>
<td></td>
<td>INSDOC (now NISCAIR), New Delhi</td>
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<tr>
<td>9</td>
<td>CLMS</td>
<td>1987</td>
<td>Computer Technological Institute, Madras</td>
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<tr>
<td>10</td>
<td>CDS/ISIS</td>
<td>1985</td>
<td>UNESCO</td>
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<td>11</td>
<td>Defence Library Management System</td>
<td></td>
<td>DESIDOC, New Delhi</td>
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<td>12</td>
<td>DELSIS</td>
<td></td>
<td>DELNET, New Delhi</td>
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<td>13</td>
<td>Easylibsoft</td>
<td></td>
<td>Easylib Library Automation Services, Bangalore</td>
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<td>14</td>
<td>Golden Libra</td>
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<td>Golden Age Software Technologies, Bombay</td>
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<tr>
<td>15</td>
<td>Granthalaya</td>
<td></td>
<td>INSDOC, New Delhi</td>
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<tr>
<td>16</td>
<td>iit-KLAS</td>
<td></td>
<td>IIT, Kanpur</td>
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<tr>
<td>17</td>
<td>IMPACT</td>
<td>1994</td>
<td>CSIR, New Delhi</td>
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<tr>
<td>18.</td>
<td>INMAGIC-MICRO</td>
<td>1982</td>
<td>Developed in 1982</td>
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<tr>
<td>19.</td>
<td>ISROVERSION</td>
<td>ISRO</td>
<td></td>
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<td>20.</td>
<td>Kryger Library Manager</td>
<td>Blitz Audio Visuals, Pune</td>
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<td>21.</td>
<td>Libman</td>
<td>Datapro Consultancy Services, Pune</td>
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<td>22.</td>
<td>Libra</td>
<td>Ivy Systems Ltd. New Delhi</td>
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<td>23.</td>
<td>Librarian</td>
<td>Soft-Aid, Pune</td>
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<td>24.</td>
<td>Library Catalog System</td>
<td>Ultra Business Systems Pvt. Ltd., Bangalore</td>
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<td>25.</td>
<td>Library Management</td>
<td>RaychanSysmatics, Bangalore</td>
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<td>26.</td>
<td>Library Manager</td>
<td>System Data Control Pvt. Ltd. Bombay</td>
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<td>27.</td>
<td>Libris</td>
<td>Frontier Information Technologies Pvt. Ltd. Secunderabad</td>
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<td>28.</td>
<td>Lib Soft</td>
<td>ET &amp; T Corpn. New Delhi</td>
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<td>29.</td>
<td>Libsys, Micro-Libsyst</td>
<td>1984</td>
<td>LibsysCorpn., New Delhi</td>
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<td>30.</td>
<td>ListPlus</td>
<td>Computer System, Bangalore</td>
<td></td>
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<tr>
<td>31.</td>
<td>Loan Soft</td>
<td>Computek Computer Systems, Hyderabad</td>
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<td>32.</td>
<td>Maitrayee</td>
<td>CMC, Calcutta (for CALIBNET project)</td>
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<td>33.</td>
<td>MECSYS</td>
<td>MECON, Ranchi</td>
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<td>34.</td>
<td>MICRO-CAIRS</td>
<td>1982</td>
<td>Developed in 1982</td>
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<tr>
<td>35.</td>
<td>MINISIS</td>
<td>International Development Research Centre, Canada</td>
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<tr>
<td>36.</td>
<td>NETTLIB</td>
<td>KaptronPvt. Ltd., New Delhi</td>
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<td>37.</td>
<td>NILIS</td>
<td>Asmaita Consultants, Bombay</td>
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<td>38.</td>
<td>Nirmals</td>
<td>Nirmal Institute of Computer</td>
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<td>39.</td>
<td>OASIS</td>
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<td>40.</td>
<td>SALIM</td>
<td>Expertise, Trichurapalli</td>
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<td>41.</td>
<td>SANJAY</td>
<td>1992</td>
<td>DESIDOC, Delhi</td>
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<tr>
<td>42.</td>
<td>SCIMATE</td>
<td>1982</td>
<td>Institute for Scientific Information</td>
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<td>43.</td>
<td>Slim 1.1</td>
<td>Algorithms, Bombay</td>
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<td>44.</td>
<td>SOUL</td>
<td>INFLIBNET, Ahmedabad</td>
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<td>45.</td>
<td>Suchika</td>
<td>1996</td>
<td>DESIDOC, Delhi</td>
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<tr>
<td>46.</td>
<td>Trishna</td>
<td>NISTADS, New Delhi</td>
<td></td>
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<tr>
<td>47.</td>
<td>Tulib</td>
<td>Tata Unisys Ltd., Bombay</td>
<td></td>
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<tr>
<td>48.</td>
<td>Ulysis</td>
<td>WIPRO Information Technology Ltd. Secunderabad</td>
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<tr>
<td>49.</td>
<td>Virtua</td>
<td>1985</td>
<td>Virginia-Tech Library Management System, (VTLS), Virginia, USA</td>
</tr>
<tr>
<td>50.</td>
<td>Wilisys</td>
<td>Wipro India, Bangalore</td>
<td></td>
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</tbody>
</table>

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4.2.1 ADLIB-2

It began as prime mini computer system but later was released on UNIX or XENIX multi-user micro computers. It is menu driven and has four modules; cataloguing, circulation, acquisition and serial control.

4.2.2 AutoLib

AutoLib automation software has been designed and developed by AUTOLIB Software Systems, Chennai. AutoLib is a fully integrated, versatile, user friendly, cost effective and multiuser library software package. It is web enabled for intranet and internet environment, incorporating latest IT/WEB tools and techniques. Designed to automate various activities of libraries in universities, colleges, schools, R&D and special institutions, public libraries etc.,

4.2.3 Basisplus and Techlibplus

Basisplus software designed and developed by Information Dimensions, Inc., (IDI), USA, is being marketed in India by the National Informatics Centre (NIC), New Delhi. The Basisplus provides facilities for the storage, retrieval and electronic management of documents. It is based on relational technology and supports client-server architecture. The software has the following integrated features:

- Relational Database Management System (RDBMS)
- Full text capability with free text searching and thesaurus
- Object management
- Converter technology for document interchange
- Library automation

4.2.4 Bibliographical Retrieval

An integrated Bibliographic Retrieval Software for micro is available from Software Consultants, Madras. Author, Title, Accession Number, Source and Abstract are included. Documents can be indexed by 50 Key Terms while author, title, etc. are automatically indexed. “Interactive query redinition” is allowed. Dialog types of commands are used. First retrieval via inverted file structure is provided. Any CP/M machine with a minimum of 10 MB hard disk can be used.

4.2.5 CDS/ISIS

CDS/ISIS (Computerised Documentation Service/Integrated Set of Information System) is an integrated menu-driven software package, developed and
distributed by UNESCO, for mechanised storage and retrieval. Version 2.3 was released in India in 1989. This version provides all the major facilities available in earlier version along with special features of advanced programming facilities is PASCAL. CDS/ISIS PASCAL does not confirm to the standard PASCAL procedures and functions, but has a few of its own, written exclusively to be used with CDS/ISIS package.

4.2.6 CLMS (Computerised Library Management Software)

Developed by Computer Technological Institute, Madras CLMS is an integrated software package which includes members, enrolment maintenance; book cataloguing; purchase of books including suggestions and budget; issues/returns/reservations etc. It is menu-driven, user friendly, interactive software.

4.2.7 DLMS (Defence Library Management System)

Defence Library Management System developed by DESIDOC, Delhi during 1988 in COBOL language under multiuser UNIX environment and implemented it at Defence Science Library (DSL) in DESIDOC.

4.2.8 DELSIS

DELSIS, the networking software, as an integrated modular package developed on Basisplus by DELNET to undertake complex cataloguing and union cataloguing functions in the libraries, library networks and information centres. Some of its special features include:

- Enquiries through OPAC by author, title, subject, call no., series and keyword etc.,
- Boolean enquiries
- Full text search retrieval
- Display records in AACR II format
- Data import/export
- Automatic index generation
- Input format : Common Communication Format (CCF) developed by UNESCO
- Duplicate checking of records
- Creation of bibliographic records in Indian languages for 131 languages
- Interface to CDS/ISIS
All DELNET databases and online inter-library loan facility, etc., are functioning on this software.

**4.2.9 Granthalaya**

It is a complete library automation package designed and developed in Foxpro by INSDOC (NISCAIR), New Delhi. This package is available in MS-DOS. Salient features of the package are as follows:

- The package comprises seven modules (Data administration, query, circulation, acquisition, serials control, technical processing and library administration) designed to handle all functions of a library and information centre. Since the package has different modules, the library can implement complete package or acquire stand-alone module(s) depending upon the needs of the library to implement, and remaining modules can be implemented and integrated with the existing module(s) as and when need arises.

- The package has been developed based on object-oriented design which offers qualitatively superior end product.

- The package adopts Common Communication Format (CCF). It incorporates all mandatory fields of CCF which facilitates import/export of data from/to Granthalaya to/from various plate forms.

- Dictionary facility is provided in the package for data elements like publishers, keywords, accompanying materials, etc.

- The package is provided with sophisticated tools for retrieval of information by different search parameters. Search can be conducted by using boolean logic operators. Search terms can be typed or selected through dictionaries.

- The package is easy to learn and use. It provides on screen messages to help users.

**4.2.10 Iit KLAS**

The Indian Institute of Technology, Kanpur Library Automation System (iit-KLAS) is a comprehensive set of programs to automate the various functions of a large academic library. The software supports Acquisition, Technical Processing, Serial Control, Circulation, User Services, Current Awareness Service and Retrospective conversion of catalogues.
4.2.11 Impact

CSIR has developed a software package called Integrated Management and Project Accounting (IMPACT) for computerised accounting of S&T projects, which has been introduced in all the CSIR labs from 1994. Introduction of IMPACT is an important milestone in the modernisation of office management in CSIR.

4.2.12 INMAGIC-MICRO

INMAGIC MICRO is a micro derivative of a large software system running on mini computer. This package was introduced in 1982 and is well tried and tested. It runs on a wide range of micro-computers including the IBM-PC/XT and PC/AT and compatible machines. Its features include variable fields length full screen editing, report generation. The software is command driven with the menu interface programme. Inmagic bibliographies all data structures for library house keeping system including cataloguing, circulations, acquisition and serial control.

4.2.13 ISRO Version

ISRO has developed ISROVERSION, unique and optional stand alone low-cost digital image analysis system with a high resolution image display processor. It is the only PC/80386 processor with the 80287 coprocessor.

4.2.14 LIBRARIAN

LIBRARIAN, is a library management software, developed by Growth Compusoft Exports Limited, which takes care of all activities associated with a library. It is based on ISO2709 specifications. Developed on a client server technology, it has a network of integrated modules with many features. LIBRARIAN has very effective password security. The bibliographic database follows ANSIZ39.50 format. It supports the UNIMARC format and all the tags, fields and subfields are accordingly designed. Catalogue entries are AACRII based and is printed in the standard size cards. It generates both management and library functions reports including SDI facility, accession register, recent arrivals, circulation reports etc. Automatic reminders to members on overdue, to publishers on non receipt of periodicals are generated. The acquisition module is supported with the budget statement and finally also with the in-process titles. The user is provided with a suggestion box which is taken into consideration while preparing the acquisition list. Librarian also has an internet interface. User sitting on any terminal can search for a
book in library through web. Librarian is divided into two main divisions – the operator and the administrator. Search OPAC, Catalogue and suggestion box are the areas which are kept outside the scope of two divisions as these areas can surfed by any of the user of the library. The important modules of Librarian are:

- Operator
- Administrator
- Search
- OPAC
- Internet Interface
- Cataloguing

4.2.15 Library Catalogue System

This software is developed by ULTRA Business Systems Pvt. Ltd., Bangalore. It is a menu driven program to create a catalogue on disk. Data entry is through interactive filling up of forms at Terminal. Automatic saving of data entered every 5 records is ensued. This system provides for retrieval by all keys and compound keys wherein sub fields are separated by semi colon. About 500 records can kept on a single DSDD floppy.

4.2.16 Maitrayee

The package has been developed by CMC, Calcutta for Calcutta Libraries Network (CALIBNET) with the support of NISSAT, New Delhi. The package has been developed on INGRES as the underlying framework and works in UNIX environment. It is the first package which has been developed in India for a library network programme, providing specific network and communication facilities using TCP/IP as the communication software with X.25 protocol in addition to library management functions.

4.2.17 Micro-Cairs

Micro-Cairs developed in 1982, is a micro descendent of cairs for micro computers with the intel 8088/8086 chip running on CP/M86 or MP/M86 operating systems. It can also run on MS-DOS based microcomputers. The package is well known and its features include source module for controlled indexed searching and the report generator. It also offers library house keeping functions.
4.2.18 Minimisis

This is a generalised information management system designed to run on HP 3000 series of computers. Developed by IDRC of Canada, it is Mini, integrated set of information systems. It is primarily for bibliographic database but can handle easily many other types of data as well.

4.2.19 Nettlib

This integrated library and information management software package is developed by Kaptron Pvt. Ltd., New Delhi. It can work on a network and can accessed from other networks through web interface, or dedicated lines LAN/WAN. The software is developed on visual basic 6.0 and works in conjunction with RDBMS like SQL. The software can be operated in web enabled mode within the library, in which the software can be loaded on the server. NETTLIB can convert data from CDS/ISIS or any other software, to NETTLIB and vice versa. This is done through exchange format ISO 2709 under its import/export facility. Bar code generation is also available and it is the first software to support Indian languages. With this facility Devanagri records can be entered directly unlike other software where this is done with GIST CARD, which is an “ADD ON” device with all its limitations.

The important modules of the NETTLIB are :

- Acquisition
- Cataloguing
- Circulation
- OPAC
- Serial System
- Article Indexing and Abstracting

4.2.20 Oasis

This package has three modules standard, advanced and special, can be operated on any compatible micro computer using MS and PC-DOS 3.1 or higher equipped with 640 of RAM and IBM recommended 80 MB hard disk. OASIS can be used to manage a wide variety of material books, slides, videos, cassettes, paper clipping, magazines, maps, charts even equipments.
4.2.21 SALIM

SALIM (Software for Automation of Library Information Management) developed by Uptron India Ltd., New Delhi is an interactive menu driven package categorizing to various functions which includes; issues and returns; stock verification, catalogue cards printing, maintenance accessions register, additions list, versatile query facility, back volumes data and serials control etc.,

4.2.22 SANJAY

A library automation software package (SANJAY) has been developed in the CDS/ISIS V2.3 environment extensively using the Pascal interface to meet the requirements of a model library. Using SANJAY a user can get instant access to information, responses to queries and reports from multiple databases. It is an interactive, menu driven, and user-friendly package which carries out routine functions of a library. The software is capable of inter-relating two or more databases for a single application like acquisition or circulation.

Special features of the package are :
- User-friendly for library house-keeping operations;
- Has a set of 70 pascal programs and 25 special menus;
- Faster response time- 1 minute for a query on 12000 documents;
- Effective inert linking of database;
- Modified CDS/ISIS augmented to cover several additional applications.

4.2.23 Scimate

The Institute for Scientific Information introduced this microcomputer based software package in 1982. It is designed for use with the IBM-PC, the Apple II, the TRS 80 model II microcomputers running on the microprocessors Z-80 or 8086 supported by CP/M-80 operating system. This package includes a personal off-line database management system and a system for accessing numerous commercial on-line databases. The online component called the SCIMATE.

4.2.24 Suchika (Version1.0)

Suchika is an integrated software package for library automation, designed and developed during 1996 by DESIDOC, Delhi for its Defence Science Library and other libraries/technical information centres (TICs) of Defence Research &
Development Organisation (DRDO), scattered all over India. The purpose of developing this software is to automate all the DRDO libraries/TICs, to create and maintain a DRDO libraries holdings database and help the libraries to follow uniform standard practices. The package has been developed in C++ language in MS-DOS and UNIX versions keeping in view the requirements of big and small libraries of DRDO. The package is menu-driven and user-friendly. Suchika has powerful search facilities. Search can be conducted on any field by specifying the field(s) or through the various indexes like author, subject, keywords, report No., patent No., etc., Query may be typed or selected by using the concerned index boolean search operators can also be used. Suchika also provide facility for free text searching. Search results can be displayed according to desired format and after selecting the relevant records, print outs can also be taken. Suchika has in built facility for data validation and data duplication checking. This package has been developed in modular form such as acquisition, circulation, OPAC, serials control modules. Therefore, its implementation is quite easy. Either all the modules may be implemented at one time or module wise implementation can also be made depending upon the needs of library.

4.2.25 Software for University Libraries Version 2.0 (SOUL 2.0)

Software for University Libraries (SOUL) is a state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on requirements of college and university libraries. It is a user-friendly software developed to work under client-server environment. The software is compliant to international standards for bibliographic formats, networking and circulation protocols. After a comprehensive study, discussions and deliberations with the senior professionals of the country, the software was designed to automate all house keeping operations in library. The software is suitable not only for the academic libraries, but also for all types and sizes of libraries, even school libraries. The first version of software i.e. SOUL 1.0 was released during CALIBER 2000. The database of the SOUL 1.0 is designed on MS-SQL and is compatible with MS SQL Server 7.0 or higher. The latest version of the software i.e. SOUL 2.0 will be released by the end of the year 2008. The database for new version of SOUL is designed for latest versions of MS-SQL and MySQL (or any other popular RDBMS). SOUL 2.0 is compliant to international standards such as MARC 21 bibliographic format, Unicode based
Universal Character Sets for multilingual bibliographic records and NCIP 2.0 based protocols for electronic surveillance and control.

**Features of SOUL 2.0**

Following are the strong features of SOUL 2.0:

- UNICODE based multilingual support for Indian and foreign languages;
- Compliant to International Standards such as MARC21, AACR-2, MARCXML;
- Compliant to NCIP 2.0 protocol for RFID and other related applications especially for electronic surveillance and self check-out & check-in;
- Client-server based architecture, user-friendly interface that does not require extensive training;
- Supports multi-platform for bibliographic database such as My SQL, MS-SQL or any other RDBMS;
- Supports cataloguing of electronic resources such as e-journals, e-books, virtually any type of material;
- Supports requirements of digital library and facilitate link to full-text articles and other digital objects;
- Support online copy cataloguing from MARC21 supported bibliographic database;
- Provides default templates for data entry of different type of documents. User can also customize their own data entry templates for different type of documents;
- Provides freedom to users for generating reports of their choice and format along with template and query parameters;
- Supports ground-level practical requirements of the libraries such as stock verification, book bank, vigorous maintenance functions, transaction level enhanced security, etc.;
- Provides facility to send reports through e-mail, allows users to save the reports in various formats such as Word, PDF, Excel, MARCXML, etc.;
- Highly versatile and user-friendly OPAC with simple and advanced search. OPAC users can export their search results in to PDF, MS Excel, and MARCXML format;
• Supports authority files of personal name, corporate body, subject headings and series name;
• Supports data exchange through ISO-2709 standard;
• Provides simple budgeting system and single window operation for all major circulation functions;
• Strong region-wise support for maintenance through regional coordinators.
  Strong online and offline support by e-mail, chat and through dedicated telephone line during office hours; and
• Available at an affordable cost with strong institutional support.

Modules

The SOUL 2.0 consists of the following modules. Each module has further been divided into sub modules to cater to its functional requirements:

Acquisition

The module enables library staff to handle all the major functions, such as

• Suggestions management;
• Order processing, cancellation and reminders;
• Receipt, Payment and budgetary control;
• Master files such as currency, vendors, publishers etc.; and
• Reports.

Catalogue

Catalogue module is used for retrospective conversion of library resources. It also facilitates library staff to process of the newly acquired library resources. The strong features of catalogue module are:

• allows cataloguer to create their own templates for data entry of different library resources;
• different templates for leaders and fixed fields of MARC21;
• allows user-generated customized reports;
• facilitates authority database of person name, corporate body, subject headings and series name;
• supports copy cataloguing in MARC21 format by using ISO-2709 standard;
• master database of publishers;
multi-lingual database by using Unicode Character set; and
supports full MARC 21 bibliographic format.

Circulation

This module takes care of all possible functions of circulation. Sufficient care has been taken in designing this module starting from membership management, maintenance and status of library items, transaction, ILL, overdue charges, renewals & reminders, search status and report generation according to the status of the items. The circulation module is fully compliant with the NISO Circulation and Interchange Protocol (NCIP) version 2.0 for electronic surveillance and RFID based transaction of the items. Major functions of the circulation module:

- Membership;
- Transaction;
- Inter-library loan;
- Over due charges;
- Reminder;
- Search status;
- Maintenance of the items such as binding, lost, replace, missing, with drawl, etc.; and
- Report generation based on the various requirements.

On-line Public Access Catalogue (OPAC)

One of the major attractions of SOUL is its robust On-line Public Access Catalogue (OPAC). The OPAC has simple and advanced search facility with the minimum information of the item by using author, title, corporate body, conference name, subject headings, keywords, class number, series name, accession number or combination of any of two or more information regarding the item. Major functions provided in the module are:

- Simple Search;
- Boolean Search;
- Advanced Boolean Search;
- Displaying and downloading of records in MS Excel, PDF or MARCXML; and
- Search support for the items that are in the acquisition process in the library.
Serial Control

Managing serials is the most complicated job for a library. The module keeps track of serials in the library effectively and efficiently. The serial control module is developed based on the KARDEX system and has following functions built into it:

- suggestions;
- master databases;
- subscriptions;
- check-in of individual issues of journals;
- payment, reminder, binding, and title history;
- export / import by using ISO 2709 bibliographic exchange format;
- article indexing of journal/book articles;
- cataloguing of electronic journals; and
- keeps track of the history changes of the journals.

Administration

In addition to the features available in the Administration Module of the SOUL 1.0, some more features have been added to the administration module of the SOUL 2.0. With the inputs from the various SOUL users and requirements of the library staff and their user rights, the module has been divided into three major sections for accommodating the new features; those are User management, System Parameters and Masters. The Administration module include following features:

- grouping of users based on the policy;
- transactional rights over the systems;
- transaction level security to users;
- various configuration settings such as labels, e-mail and other parameters related to the software use; and
- common master databases being used in modules.

4.2.26 Libsys

LibSys is an integrated multiuser library management software, that caters to the needs of an advanced library and information professionals. It provides a tree structure system with each system comprising of several sub-systems having unmatchable depth in functionality. It has a powerful and user-friendly WEB-OPAC along with Windows-based OPAC.
It runs on various platforms such as WINDOWS (95/98/NT/2000/XP), UNIX (various flavors), LINUXM, etc. Further, it adheres to standards such as MARC and Z39.50 that makes it suitable for cooperative networking and resource sharing.

The LibSys system has the following important modules:

- Acquisition System
- Cataloguing System
- Circulation System
- Serial System
- Article Indexing System
- OPAC System

**Acquisition System**

It deals with approval and ordering of library materials, monitoring their receipt, invoice processing and accessioning. It also maintains expenditure and budget analyses under a variety of accounts/heads.

The **Acquisition** process consists of:

- Selecting materials for a library;
- Placing orders for the supply of books to be purchased;
- Processing materials received as gifts;
- Arranging for exchange of books;
- Receiving the books in the library;
- Accessioning them; and
- Passing the bill for payment for the books purchased.

**Cataloguing System**

It provides online catalogues in various orders maintained in traditional libraries. Additionally, it makes available instant listings under a variety of searchable fields to suit the requirements of a modern reference center.

Other than data entry facility, the system has the additional facility to accept data in standard machine readable formats such as CCF (ISO-2709), MARC (ANSI-Z39.x), etc. This makes import/export of bibliographic data in standard exchange formats possible. The system provides facilities to generate bibliographies, current awareness services and selective dissemination of information (SDI). Multimedia files
can be attached and viewed in OPAC, meeting the requirements of certain specific libraries.

**Circulation System**

It maintains up-to-date membership records as well as the latest status of the collection meant for circulation. It facilitates printing of bar-coded ID cards, along with an optional facility to attach member's photograph. It performs all the functions related to circulation, providing suitable checks at every stage. It also takes care of infrequent but routine functions such as bindery record management, books on display in the library, latest additions to the library, etc.

**Serial System**

It provides control of subscription of periodicals and subsequent monitoring of the scheduled arrival of individual issues. It maintains records of the budget sanctioned for serials under different categories, amounts spent, thus providing complete budgetary control. It also handles serials which are received gratis or in exchange.

**Article Indexing System**

It provides the facility to create and maintain a separate articles database. It facilitates special services such as SDI, listing of current articles, bibliographies, etc.

**OPAC System**

As the acronym suggests, it provides an Online Public Access Catalogue. The bibliographic databases can be accessed with printed indexes. The system includes a word-based search facility using Boolean operators that can narrow down a search to meet very specific needs. Additional features of this system are:

- Periodic listing of recent additions to the library;
- Members can find the materials checked-out to them; and
- Reserve materials that are currently in circulation.

**WEB-OPAC System**

It is an optional module and provides an advanced GUI interface to enable searching of the library database through an industry standard Web browser having all the features of OPAC.
4.3 Open Source Library Softwares

We’re seeing a great deal of market acceptance of ILS products in the open source arena. This does not necessarily mean that they offer all the nuances of functionality found in their commercial counterparts, only that libraries seem willing to adopt them. In broad terms, open source options are now well represented in the ILS products to which libraries are migrating. In the current library automation marketplace, news of libraries selecting open source ILS products has become routine. In the United States and Canada, three open source ILS products dominate – Koha, OPALS and Evergreen. While Evergreen and OPALS have not yet found wide adoption outside the United States and Canada, Koha finds use in libraries worldwide. The demographics of the libraries that have so far chosen to adopt these open source ILS products provide interesting information. Within certain bounds, open source ILS products are making great strides in adoption in libraries within the United States. Koha, while it attracts far more public libraries than other types, serves the most diverse audience. Evergreen finds use primarily in public libraries with a strong orientation to consortia. Several popular open source library management system software packages are as follows:

<table>
<thead>
<tr>
<th>Notation</th>
<th>Year</th>
<th>Open Source Software</th>
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<tbody>
<tr>
<td>Koha</td>
<td>1999</td>
<td><a href="http://www.koha.org/">http://www.koha.org/</a></td>
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<tr>
<td></td>
<td></td>
<td>originated in New Zealand</td>
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<tr>
<td>Evergreen</td>
<td></td>
<td><a href="http://www.open-ils.org/">http://www.open-ils.org/</a></td>
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<tr>
<td></td>
<td></td>
<td>originated in USA</td>
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<tr>
<td>OpenBiblio</td>
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<td><a href="http://obiblio.sourceforge.net/">http://obiblio.sourceforge.net/</a></td>
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<tr>
<td></td>
<td></td>
<td>originated in Spain</td>
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<tr>
<td>OPALS</td>
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<td>OPen-source Automation Library System</td>
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<td></td>
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<td><a href="http://www.mediaflex.net/">http://www.mediaflex.net/</a></td>
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<td>originated in USA</td>
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<td>PMB</td>
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<td></td>
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<td><a href="http://www.pmbservices.fr/nouveau_site/documentation.html">http://www.pmbservices.fr/nouveau_site/documentation.html</a></td>
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<td>originated in French</td>
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Koha is the first free software library automation package. In use worldwide, its development is steered by a growing community of users collaborating to achieve their technology goals. Koha’s feature set continues to evolve and expand to meet the needs of its user base. Koha is a true enterprise-class ILS with comprehensive functionality including basic or advanced options. Koha includes modules for circulation, cataloging, acquisitions, serials, reserves, patron management, branch relationships, and more. Koha is built using library standards and protocols that ensure interoperability between Koha and other systems and technologies, while supporting existing workflows and tools. Koha’s OPAC, circ, management and self-checkout interfaces are all based on standards-compliant World Wide Web technologies—XHTML, CSS and Java script—making Koha a truly platform-
independent solution. Koha is distributed under the Free Software General Public License (GPL) version 2 or later.

It is an important part of the free software promise that there is no vendor lock-in: libraries are free to install and use Koha themselves if they have the in-house expertise or to purchase support or development services from the best available sources. Libraries should be free to change support company and export their data at any time, make sure your support company allows this.

4.3.2 EVERGREEN

The Evergreen Project develops an open source integrated library system used by over 1000 libraries around the world. The software, also called Evergreen, is used by libraries to provide their public catalogue interface as well as to manage back-of-house operations such as circulation, acquisition of library materials, and sharing resources among libraries. The Evergreen Project was initiated by the Georgia Public Library System in 2006 to serve their need for a scalable catalog shared by more than 275 public libraries in the state of Georgia. After Evergreen was released, it has since been adopted by a number of library consortia in the US and Canada as well as various individual libraries outside of North America. Evergreen has the following characteristics.

- Evergreen is a metadata search engine
- Evergreen is a transaction processing engine
- Evergreen is just another web operation
- Evergreen is based on a robust, scalable, message passing framework open SRF

4.3.3 OpenBiblio

OpenBiblio is an easy to use, automated library system written in PHP containing OPAC, circulation, cataloging, and staff administration functionality.

4.3.4 OPALS

OPALS is a proven, open source automated library system. Over 1000 libraries around the world use OPALS every day to manage library resources that hundreds of thousands of library members can access on the Web in their institutions, at home or at a local cafe. OPALS has many attributes viz.

- Web-based
Standards-based
Feature rich
Open source
Professional management
Professional development
Professional support
Lowest Total Cost of Ownership

4.3.5 PhpMyBibli

PMB (PhpMyBibli) is a fully featured open source integrated library system. The project was initiated by François Lemarchand in October 2002, Director of the Public Library of Agneaux; it is now maintained by PMB Services (a French Company). PMB has most of the functional modules essential for a library management system.

- Circulation
- Cataloguing
- Reports
- SDI (Selective Dissemination of Information Service)
- Administration
- Acquisition

The features of PMB are,

- User friendly web interfaces for librarian and users
- UNIMARC
- Z39.50
- Barcode generator
- Detailed documentation for users and administrators
- Active development status
- Interface for database back up and bibliographical records
- Multi language support (French, English, Spanish, Italian and Portuguese)
- Import and export of bibliographic records in different formats.
- Complies to Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH).
4.3.6 Emilda

Emilda is a complete Integrated Library System that features amongst others an OPAC, circulation and administration functions, Z39.50 capabilities and 100% MARC compatibility. MARC compatibility is achieved using Zebra in conjunction with MySQL.

4.3.7 Invenio

Invenio is a free software suite enabling to run your own digital library or document repository on the web. The technology offered by the software covers all aspects of digital library management from document ingestion through classification, indexing, and curation to dissemination. Invenio complies with standards such as the Open Archives Initiative metadata harvesting protocol (OAI-PMH) and uses MARC 21 as its underlying bibliographic format. The flexibility and performance of Invenio make it a comprehensive solution for management of document repositories of moderate to large sizes (several millions of records).

Invenio has been originally developed at CERN to run the CERN document server, managing over 1,000,000 bibliographic records in high-energy physics since 2002, covering articles, books, journals, photos, videos, and more. Invenio is being co-developed by an international collaboration comprising institutes such as CERN, DESY, EPFL, FNAL, SLAC and is being used by about thirty scientific institutions worldwide.

4.3.8 NewGenlib

NewGenLib has been developed by Verus Solutions Private Limited located in Hyderabad, India. Verus Solutions is a registered private limited company under the Ministry of Corporate affairs, Government of India. Company has been incorporated in May 2003. KIJKM has provided the domain expertise for the development of NewGenLib. The software has the following important features.

- Functional modules are completely web based.
- Compatibility: compiles with international metadata and interoperability standards viz. MARC21, MARC-XML, Z39.50, SRU/W, OAI-PMH
- Uses open source components
- Scalable, manageable and efficient
- OS independent – Windows and Linux flavours available
- Z39.50 client for federated searching
• Internationalized application
• Unicode 4.0 complaint
• Easily extensible to support other languages
• Data entry, storage and retrieval in any Unicode 3.0 language
• RFID integration
• Networking – Hierarchical and distributed networks
• Automated email/instant messaging integrated into different functions of the software
• Form letters are configurable and use XML-based Open Office templates
• Extensive use of set up parameters enabling easy configuration of the software to suit specific needs
• Supports multi-user and multiple security levels
• Allows digital attachments to metadata.

4.3.9 Learning Access

The Learning Access ILS is a full-feature Open Source library automation system developed for use by small public and school libraries in the U.S. and the rest of the world. The Institute will make this system available free to libraries that, because of cost, have been unable to achieve the benefits of automation.

4.3.10 Greenstone

Greenstone is a suite of software for building and distributing digital library collections. It provides a new way of organizing information and publishing it on the Internet or on CD-ROM. Greenstone is produced by the New Zealand Digital Library Project at the University of Waikato, and developed and distributed in cooperation with UNESCO and the Human Info NGO. It is open-source, multilingual software, issued under the terms of the GNU General Public License.

The aim of the Greenstone software is to empower users, particularly in universities, libraries, and other public service institutions, to build their own digital libraries. Digital libraries are radically reforming how information is disseminated and acquired in UNESCO's partner communities and institutions in the fields of education, science and culture around the world, and particularly in developing countries.

The complete Greenstone interface, and all documentation, is available in English, French, Spanish, Russian and Kazakh.
References


“Library computerisation in India”. New Delhi, EssEss Publications, p. 121-123.


