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Research Papers

OPEN SOURCE LIBRARY MANAGEMENT SOFTWARES

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Abstract

Open source software are those which permit execution, copy, read, distribution and improvement of the software without any restrictions. Library Management Software (LMS), is an enterprise resource planning system for a library, used to track items owned, orders made, bills paid, and patrons who have borrowed. Commercial library management software are very expensive. Therefore, open source library management system can be appropriate alternatives for automatic library systems. This paper discusses features of open source library management software, criteria of selection of best open source library management software, their, advantages and limitations. Open source library management software is a solution to reduce that cost. The paper describes in brief about the feature of some of the open source library management software like Koha, NewGenlib, Evergreen, SENAYAN, ABCD, and BiblioteQ.

KEYWORDS:

Open Source Software, Library automation, Library Management Software.

INTRODUCTION

Library automation is concerned with managing, controlling and automating library activates, and services. In an automated library, computers are used in most of the activities, such as acquisition, cataloguing, circulation control and periodical management. Library automation not only does housekeeping activities, but it also provide the current and relevant information to the users, according to their demands. Libraries do not have huge funds to experiment, and they don't usually purchase additional resources. The need for library management software, its installation, training and the lack of financial resources have forced many libraries to stand for themselves when it comes to staying up to date with the latest technology. Unless, of course, they adopt the open source movement and use a few of them available to overcome these problems. Most software that we all use everyday is known as "proprietary", which means that it costs money and that the actual code of the software is restricted, in which the code of the software cannot be modified, copied, or changed from its original construction. The code is "unreadable" and pretty much is what it is. Open source software (OSS), on the other hand, is quite the opposite. The open source mentality revolves around sharing and collaboration, and these two important elements describe open source software perfectly. First and foremost, open source software is free for

anyone to have; more importantly, not only is the software free, but it is also free for anyone to copy, hack, modify, etc. This increases the possibilities of a software program's potential because of this freethinking model. There are many different kinds of open source library management software solutions out these days that could be embraced by the library.

Advantages of Open Source Software

The availability of the source code and the right to modify, it is very important to enable us to improve and extend the lifetime of a software product.
Source code availability also makes it much easier to identify errors, and to fix them.
The right to redistribute modifications and improvements to the code, and to reuse other open source code, permits all the advantages due to the modifiability of the software to be shared by large communities.
For continuous improvement does not require users to pay for it. There is no single entity on which the future of the software depends. This is a very common concern with proprietary software.
There are fewer conflicting priorities due to marketing pressures. Usually open source software is delivered ``when it is ready'', and when the development team feels that its quality is good enough. This means that software usually does not need as many ``service packs'', updates as such thereby reducing the maintenance cost.
It provides a new forum for democratic action, collaboration, mutual benefit without geographical or any other barrier/bias.
It forces commercial software vendors to keep their product price at a reasonable level.

Limitations of Open Source Software

For any upgradation/change in the OSS, the library needs support. In case of OSS, there is no body to solve problem, either one has to hire some expert to solve the problem or library should make arrangement with some company. Open source products require technical expertise to operate and maintain open source costs more to support because the software is typically self- supporting. Generally, a commercial software company will immediately respond on customer requests for any problem. With OSS, if one doesn't do it himself, he/she is at the mercy of a disjoint community of developers.

Selection of Library Management Software

Selection of library management software is not a simple task. Sometimes librarians go with either renowned software or maximum number of usage of the library. Selection of LMS may require the following points/steps, which might help the librarians to select the right software for their housekeeping operations as well as information retrieval. There are many LMS, which are very popular and being used by number of libraries. Librarians may have to do the comprehensive study about them before taking decision in this regard. While examining the software, librarian must have the following information about the software which might help them to select the right software for housekeeping operations as well as information retrieval:

How it matches the library's requirements
Product quality
Features and functions
Staff training and support service
Operating system
Hardware and software requirements
Functionality: What modules are available, value addition to existing functions
User interface: Navigation, error alerts, intuitive, customization
Design: Flexibility, switching from one module to another, multifunction modules, does it enhance the productivity
Conforming to standards: MARC, Z39.50, ISO-2709, etc.

Scalability: Single user-multi user network. Can it be used in client server LAN architecture or fully webbrowsing architecture
User-controlled customization
Reports that help to take decisions
Security levels migration of data or data transfer

Library Management Softwares:

Library Management Software is capable of managing all the functionalities of a library. It is suitable for small to big libraries viz. Schools, Colleges, Universities, medical libraries, legal libraries, corporate houses, charitable trust and others. There are quite a few open sources library management software available. One has to select the right kind of package depending on their specific need. Examples of some of these are as follows:

1.Koha

Koha is a promising full featured open source ILS (Integrated Library System) currently being used by libraries all over the world. For those of you who are unfamiliar of what an ILS is, well, it is a system of keeping track of the operations of a library - payroll, expenses, purchases, and most importantly, keeping track of the various media being checked out by the librarians patrons. Many smaller libraries cannot afford to purchase, install, and maintain an ILS. For then Koha is a perfect alternative. Koha is built using library ILS standards and uses the OPAC (open public access catalog) interface. In addition, Koha has no vendor-lock in. So libraries can receive technical support from any party they choose.

Features: Koha is web-based ILS, with a SQL database (MySql preferred) backend with cataloguing data stored in MARC and accessible via Z39.50. The user interface is very configurable and adaptable and has been translated into many languages. Koha has most of the features that one expects in an ILS, including:

Simple, clear interface for librarians and members (patrons)
Various Web 2.0 facilities like tagging and RSS feeds
Union catalog facility
Customizable search
Circulation and borrower management
Full acquisitions system including budgets and pricing information (including supplier and currency conversion)
Simple acquisitions system for the smaller library
Ability to cope with any number of branches, patrons, patron categories, item categories, items, currencies and other data
Serials system for magazines or newspapers
Reading lists for members

2.NewGenLib

NewGenLib (New Generation Library) is an Integrated Library Automation and Networking Solution Developed by Verus Solutions Pvt Ltd and The Kesavan Institute of Information and Knowledge Management, India. In March 2005, NewGenLib version 1.0 was released and versions 2.0 and 2.1 came up later. On 9th January 2008, NewGenLib has been declared Open Source Software under GNU GPL Licence by the Verus Solutions Pvt Ltd, Hyderabad, India. Currently, NewGenLib 3.0.4 is the latest running version. It is estimated that 2,500 libraries across 58 countries are using NewGenLib as their Primary integrated library management system.

Features:

Functional modules are completely web based. Uses Java Web Start™ Technology
Compatibility - Complies with international metadata and interoperability standards: MARC-21, MARC-XML, z39.50, SRU/W, OAI-PMH
Uses chiefly open source components
Scalable, manageable and efficient
OS independent - Windows and Linux flavours available
z39.50 Client for federated searching
Internationalized application (I18N)
Unicode 4.0 complaint easily extensible to support other languages
Data entry, storage, 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 OpenOffice templates
Extensive use of set up parameters enabling easy configuration of the software to suit specific needs, e.g., in defining patron privileges
Supports multi-user and multiple security levels
Allows digital attachments to metadata

3.Evergreen

Evergreen ILS is another option when researching open source ILS options. Evergreen was developed by the Georgia Public Library Service (GPLS) to support 252 public libraries in the Public Information Network for Electronic Services (PINES) consortium. Development began in June 2004 when state librarian Lamar Veatch announced in an open letter that after reviewing options available, GPLS decided to develop its own library automation system. GPLS believed it could develop a system customized to fit it needs better at a lower cost than the fees currently being paid. Programmers in the GPLS developed the project for two years, and PINES successfully completed the transition to Evergreen in September 5, 2006. In the next two years, the PINES consortium increased to over 270 libraries and five other systems in the United States and Canada implemented Evergreen.

Features: Development priorities for Evergreen are that it be stable, robust, flexible, secure, and user-friendly. Evergreen's features include:

Circulation: for staff to check items in and out to patrons
Cataloging: to add items to the library's collection and input information, classifying and indexing those items.
Online public access catalog (OPAC): a public catalog, or discovery interface, for patrons to find and request books, view their account information, and save book information in Evergreen "bookbags." The OPAC received a makeover in early 2009 with the new, optional skin, Craftsman.
Acquisitions: for staff to keep track of those materials purchased; invoices, purchase orders, selection lists, etc.
Statistical Reporting: flexible, powerful reporting for retrieval of any statistical information stored in the database.
SIP 2.0 support: for interaction with computer management software, self-check machines, and other applications.
Search/Retrieve via URL and Z39.50 servers

Evergreen also features the Open Scalable Request Framework (OpenSRF, pronounced 'open surf'), a stateful, decentralized service architecture that allows developers to create applications for Evergreen with a minimum of knowledge of its structure.

4.SENAYAN

Senayan is an open source Library Management System. It is build on Open source technology like PHP and MySQL. Senayan provides many features such as Bibliography database, Circulation, Membership and many more that will help "automating" library tasks. As a complete Library Managements System, SENAYAN has many features that will help library and librarian to do their job done easily and quickly.

Features:

Online Public Access Catalog (OPAC) with thumbnail document image support (can be use for book cover), Simple Search and Advanced Search mode
Documents record detail in XML format
Bibliographic/catalog database management with book cover image support
Document items database management
Master Files management to manages document referential data such as GMD, Collection Types, Publishers, Authors, Locations, Authors and Suppliers
Circulation support with following sub-features :
Loan and Return transaction
Collections reservation
Quick return
Configurable and flexible Loan Rules
Membership management
Stock Taking module to help Stock-taking process in library.
Reporting and Statistics

System modules with following sub-features:

Global system configuration
Modules management
Application Users and Groups management
Holiday settings
Barcodes generator utility
Database backup utility

Data import/export

Z39.50 support, including SRU
MARC import (SLIMS5)

5.ABCD

ABCD (Automation of Libraries and Documentation Centers) is a full integrated library automation system based on ISIS-technology as the underlying database. It encompasses all main functions of ILS: cataloging, OPAC, Loans, Acquisitions, Statistics, but adds a 'Site' (with CMS built-in) for easy production of a library website with integrated meta-search. As a special feature it is to be mentioned that ABCD allows creation by system managers but using the ABCD-interface itself to create any bibliographic structure along with the pre-defined ones (MARC21, UNIMARC, CEPAL). This makes the system very flexible and versatile for use in documentation centers with non-standard database-structures or for non-bibliographical applications such as events or experts databases. Both the standard loans-module and the 'Advanced Loans' module (which adds external links with SQL-databases) can deal with several catalogs and catalog-structures. In an upcoming version 2.0 of ABCD also a 'digital library' feature will be included, offering possibilities to build collections of documents (PDF, DOC...) with full-text indexing.

Features:

ABCD is built with such technologies as ISIS database, ISIS formatting language, CISIS, ISIS Script, ISIS NBP, Java Script, Groovy and Jetty, PHP, MySQL, Apache, and YAZ. Here is a list of major features of ABCD:

The software is fully web-based, so, it can be used and managed from any current web-browser.
All main functions of the library management are integrated by using the same interface and databases.
Bibliographic records can be imported from external library catalogs / servers through Z39.50 facilities.
Full MARC 21 compatibility with fields, indicators, and subfields defined by Library of Congress.
OPAC with simple Google-like search as well as advanced search with Boolean operators, truncation, and field-limitation for all kind of databases, locally created or external.
Access to both physical and electronic documents (local or on the internet) with the same interface.
Library staff can define, copy or edit any new database structure with existing ISIS-applications such as MARC, CEPAL, UNIMARC, and Dublin Core.
Available in many languages like English, French, Spanish, Portuguese while more language versions are on the way.
Import and export data in ISO-2709 format or text-format.
Contents and bibliographic resources, both local and external, can be added easily without HTML-programming.
The basic loan module offers detailed definition of objects and users categories and policies for each combination, fine calculation and calendar definitions, etc., while the advanced module adds reserve, "my library" page, multiple loan policy definitions, and access to external SQL-based user-data.
Excellent serials management with a fully implementation of the ISSN standard and union catalog function.
Statistical report generation with graphical presentation of any defined set of variables in the databases.
Freedom of database structure. ISIS records carry their individual structural description as a "header" within themselves, unlike that in relational table-based databases where all records in the same table share the same structure by necessity. Therefore, each record can have its own different structure. In fact for most record-related operations in ISIS, there is no need to formally describe the structure. So one could consider ISIS as using "scheme-less" records. As a consequence of this, ISIS accepts any structure and includes structure-definition tools, and so does ABCD.

6.BiblioteQ

BiblioteQ strives to be a professional cataloging and library management suite, utilizing a Qt 4.x interface and providing connectivity to PostgreSQL and SQLite. The Z39.50 protocol is used for retrieving data for books, journals, and magazines. The software is available for all major operating systems and should be compatible with any system that supports Qt.

Features:

Administrator roles.
Cataloging of books, DVDs, journals, magazines, music CDs, and video games.
Cover images with drag and drop support.
Customizable displays.
Customizable item data, pricing information, and currencies.
Embedded hyperlinks for localized searches of similar items.
Exporting of views to CSV files.
Free and Open Source technology.
Front cover image retrieval via Amazon.
Internationalization (translation) support. BiblioteQ currently supports the Czech, Dutch, English, German, and Greek languages.
Item reservation histories for patrons.

Item reservation.
Listings of overdue items, requested items, and reserved items.
Patron information.
PostgreSQL accounts with various privileges.
Print support.
Rich search capabilities, including custom SQL queries.
Support for multiple Z39.50 sites.
Support for requesting unavailable items.
Threaded data retrieval via the standard Z39.50 protocol for books, journals, and magazines.
Transactional database queries.
True PostgreSQL and SQLite pagination.
Uniform functionality across various platforms.

4. CONCLUSION:

The Library & Information Science (LIS) professionals should keep eyes on development in order to choose appropriate technology depending upon Institution's needs. Since, numbers of libraries worldwide are using OSS for managing their library systems more economically and effectively. Librarians and programmers should worked together in order to implement open source integrated library systems and at the same time, library professional are also required to acquire new skills for developing and managing the library by using open source LMS. For taking benefit from OSS additional technology, education, and training of the professionals is essentially required.

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