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CHAPTER II

REVIEW OF RELATED STUDIES AND CONCEPTUAL FRAMEWORK

2.1 Review of Related Study

2.1.1 Cotabato Provincial Computerized Library System

Cotabato Provincial Computerized Library System is using a computerized setup featuring the Online Public Access Catalogue (OPAC) System, barcode system and an E-library station. The upgrading and transformation of the provincial library aims to keep pace with the ongoing technological advancement in the information sector and to fulfill the mission to improve the quality of service for the reading public.

The OPAC allows speedy access of library materials. The Barcode scanners and labels ensure that all library collections can speedily be located for research and inventory purposes. The E-library station which has four computers can be used for online browsing in accordance to prescribed internet hours of the provincial government. It also provides access to some documents of the National Library of the Philippines and locates some documents lodged at other provincial libraries.

Under the new automated set-up, books can only be borrowed through a bar-coded Reader's Card. Researched materials meanwhile can be reproduced by library users through the library's new facilities with corresponding fees. [CPCL2009].

2.1.2 The Library of IASRI – Indian Agriculture Statistics Research Institute

The Library of IASRI is one of the Regional Libraries of NARS (National Agricultural Research System) of the country. The Library has an excellent print and electronic resource base in the fields of Agricultural Statistics, Computer Applications, Agricultural Economics and allied sciences to support teaching, research and consultancy in the relevant areas. This is a sole referral library in Agricultural Statistics and Computer Applications in India. It caters to the information needs of students, faculty, researchers, scientists and trainees etc. not only of IASRI but also from different Institutes of ICAR and State Agricultural Universities under NARS both in conventional as well as electronic format.

Library Information System of the Institute is automated, bar-coded and partially digitized. All resources added in the library have been bar-coded and updated in the Library Bibliographical Database using "Alice for Windows" Library Management software. This system provides following computerized services like Computerized Circulation, Bibliographical Database, On-line Catalogue, Archival Database (Digitized Thesis and old & Fragile Journals-), On-line Journals, On-line Bibliographical Database, CD-ROM Database (on-line and off-line), Current Content Service (JCC), Internet Search, On-line Enquiry (OPAC), Current Awareness Service (New Arrivals), On-line Reservation of Documentation, On-line User Profile Service, Consortium for e-Resources in Agriculture (CeRA) (http://www.cera.jccc.in) more than 2,000 Journals through NAIP. [IASR2010].

2.1.3 King Saud University Electronic Library System

This ELECTRONIC LIBRARY System is consisting of four Parts; Firstly, the *Admin* Side applications, through it the admin can manage the overall operations of inserting and updating the specified books. Secondly, the Database, that hold all books inserted by the Admin. Thirdly, the Internet Pluggable Protocol that allow the operation of retrieving the books to User side. Lastly is the Reader which is the original web browser in the user computer.

This system is using a CSLA .NET framework. It is an application development framework that reduces the cost of building and maintaining applications. The framework enables the use of object-oriented design as the basis for creating powerful applications. Business objects based on the framework support many advanced features to simplify the creation of Windows Forms, Web Forms and Web Services interfaces.

The administrator of this system has four major functions: Firstly, Entering Electronic Library Data items like text, audio and video to produce the Data Base of the Electronic Library so the users can have access to them. Secondly is Modifying Electronic Library Data, where the Admin can update the data that are located in the Electronic Library Data files so he can improve the contents of that library Data and avoid the errors that are located in the resources. Thirdly is Deleting Electronic Library data, where the Admin can delete the unwanted Items in the resources. Lastly is Searching & Retrieving Required Item where the Admin can search for a specific item and retrieve it from the Library Data so he can do some tasks on it such as: Checking on

the item to test its readability and if it's in a suitable arrangement for the user and also he can perform some changes to the files. [KSUE2007].

2.1.4 Web-Based Library Management System with PHP and MySQL OF TURKU UNIVERSITY OF APPLIED SCIENCE

The system provided a simple interface for quick book searching, lending and returning. The interface was designed to mainly use for the common browsers, making the system migration and usage easier. The book search and lending management system which are developed are an important part of the whole library management system, mainly for retrieval, query and lending of the books in the library. This system used MySQL database management system as database back-end and PHP as scripting language.

The website implements search and book lending management and the website includes different features like the reader could search book according to the information they have by using the search bar provided in the page. Also when searching, the result is fuzzy-match which referred to the result can be found as long as the values stored in the database could contain the input. The registered reader can borrow the books based on the result they got from searching. After borrowing, the reader can return that they borrowed. The reader can check the availability of the book and borrow. [TUAC2011]

2.1.5 Library Management System project of the students of KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA [2005].

The library management system version 1.0 (LMS) is designed to provide one systematic system for librarians to manage booklist, inventory and borrowing process. The database system used was Microsoft Access and the system was created by Visual Basic. The whole system is created for Sekolah Menegah Kebangsaan Ayer Keroh's library.

Two types of application methods provided for a regular user and administrator. Regular user can only access the booklist function and book searching function. The administrator alone can access to the restricted function like create new user account, edit and remove book as well as deciding the due date of the book to be returned. These can avoid unauthorized user to access the restricted area of the system especially the database. [KUTK2005].

2.1.6 Koha (Open Source Library Management System)

Koha is open source library management software. It is a web based application built on MARC21 standard. Its development is contributed by a number of library and non-library professionals across the world. Thousands of libraries are using Koha across the world, including India. This open source library management system has different important features such as:

1.) Acquisitions – it includes,

- Recommendation management
- Ordering process to vendor
- Budget and fund management
- Late order reminder via email
- Invoicing process
- Accessioning and giving shelf location

2.) Cataloging – it includes,

- Easy to use MARC format
- Import data from LOC
- Z39.50 compliant
- Authority file for cataloging

3.) Serial Management – it includes,

- Invoicing process
- Serial planning
- Fund and budget management
- Late issue reminder
- Supplemental issue receiving
- New issue arrival notification

4.) Patron – it includes,

- Member category
- Main and alternate address
- Welcome email
- Photo upload
- Granular permissions
- Individual Account for OPAC

5.) Circulation – it includes,

- Define circulation rules
- Overdue alerts
- Fine calculation
- Circulation history
- Item reservation
- Item Renewal
- Warning if there is fine

6.) Koha – Reports

- Module wise reports
- Generate in PDF and Excel
- Library logo and name
- Standard Accession Register

- Order and Follow-up form
- Guided reports
- Module wise statistics
- Inactive and top list

7.) Administration

- Module wise preferences
- Create different branches
- Budget & exchange rate control
- Automatic or manual data back up
- Define circulation rules
- OPAC control

8.) Tools

- Can publish news
- Generate Barcode, Book Card
- Bulk patron delete
- Bulk photo upload
- Inventory and stocktaking. [KOHA2010].

2.1.7 Arrowhead Library System

At Arrowhead Library System, technology projects come under the name of Compass. COMPASS provides a library management system that is administered at the system level, a web catalogue of the holdings of members, links to MnLINK and therefore the statewide catalogue, administration of internet and staff email services which it provides to its members, group subscriptions to databases not provided through ELM, and joint purchase of hardware and software.

Mail-A-Book is available to rural residents of the seven county region who are house-bound or who live in a town without a public library. A collection of library materials are shelved in the system building. The books are mostly paperback format to save on postage. Catalogues and request cards are mailed to mail-a-book members who then request items which are sent to them in specially printed bags via the postal service.

Collections. The Arrowhead Library System provides audio book and video collections which are roving collections. The audio books rotate five times per year and the videos rotate eight times per year. The mobile library collection and the mail-a-book collections are maintained by system staff. In addition, there is a library staff professional collection and a collection of storytelling kits.

Training. The library system staff organize regular workshop and opportunities for training which may be: run by system staff; provided by grants (for example, Federal Government technology grants or the Bill and Belinda Gates foundation); or run by State Government staff such as that of training in the use of the ELM databases.

Print services. There are printing services on site, which produce materials for the Summer Reading Programs, brochures for libraries, publicity items and other print jobs.

ILL services The Library system manages interlibrary loans that need to be sourced from outside the system and requests for items that are received from elsewhere. [PLCS2003].

2.2 Conceptual Framework

2.2.1 Description of the Proposed System

The Web Based Library Management System is intentionally designed to lessen the workload of the school's librarian, most especially in generating needed reports in making book inventory and in keeping records for every book transaction that happens inside the library. The system will also lessen the time and effort of the students in making book reservation and borrowing books.

In this system, librarians are provided a comprehensive interface that enables them to easily keep records for every book transaction that happens inside the library, the system will also help the librarian to keep track on every book that was being borrowed. Different reports will be easily generated by this system like reports of borrowed books, rarely borrowed books, mostly borrowed books, unreturned books and reserved books and all of these reports are available for downloading in Microsoft Word file format.

With this system, students are provided an easy access to the school's library. They can reserve books anywhere and everywhere as long as they are connected to the internet. The system will also send a notification to students valid email address for the status of the book reservation they made and for the upcoming due date of the book they borrowed. The system will also automatically compute the penalty of the borrowed book every day after the due date of the borrowed book.

This figure shows that the end-users can access the system through the web browser. The web service engine serves as the bridge between the web application

programs to the database engine. The middleware like scripting language interpret the end-users request to interact different programs in the server to perform the request.

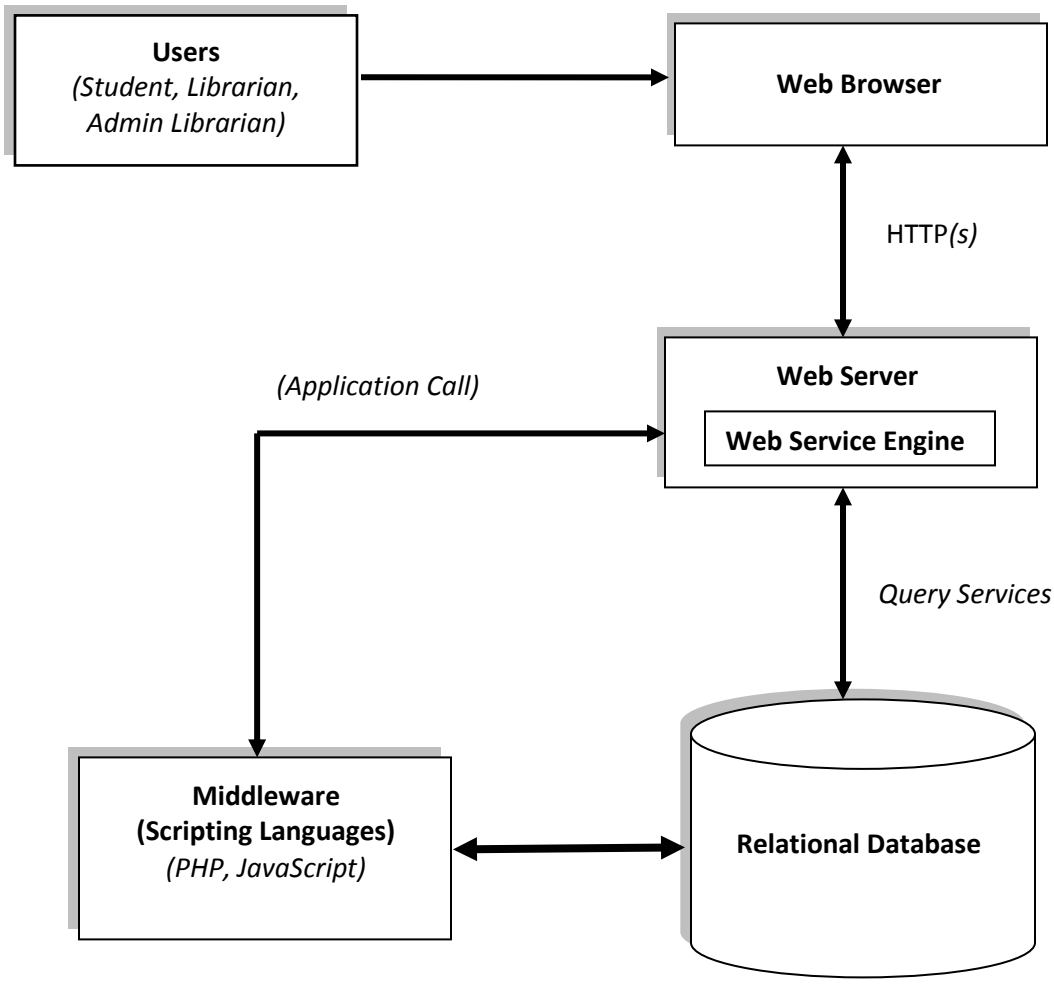

Figure 2.1 Conceptual framework of Web based Library Management System

2.3 Summary

This section provides the backbone of this capstone project. The related studies give our group an idea during the development of this project. The description of the proposed system is as well as the figure of the conceptual framework can be cited in this chapter.