E-Library Management System

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Abstract:
Today most of the library is using either manual system for tracking the day to day activity or they are using desktop, spreadsheet like MS Excel application to manage the day to day activity. In this proposed Library Management System it will run in client-server mode so that user can check the book availability and system will store historical data. This project of “LIBRARY MANAGEMENT SYSTEM” gives us the complete information about the library. We can enter the record of new books and retrieve the details of books available in the library. We can issue the books to the students and maintain their records and can also check how many books are issued and stock available in the library. Throughout the project the focus has been on presenting information and comments in an easy and intelligible manner. P2P Library - Library Management System is very simple, flexible and user-friendly Library Management software that takes care of all your requirements relating to managing huge library. E-Library stores complete records of the books, members, creates library card, manage transaction, computes late fine, search books and generate MIS reports. P2P Library is a complete library solution makes this complicated function look much easier. The software is user-friendly, with user-definable preferences like Book category and extensive and search facilities, huge library of periodical data to analyze the trend of issue and receive of books.

Keywords: Back End, Front End, Master & Security Module, Transaction Module

I. INTRODUCTION

As we are aware of the fact that our life is becoming very fast day by day and here computer is the most important thing that help us to keep the pace. One computer can do the work of hundreds or thousands of people. At the same time a computer does the computational work efficiently and correctly. In almost every sphere of our life such as Government and Private Office, Business place, Store House, School, College and various organizations are interested to make their system computerized. The Library Management system is one of that digital solution to every library activity. Library Management System is a menu driven software package. It is a computerized system of the manual job to perform the transactions of a Library. The system keeps track of every transaction of the Library through Book Enquiry, Member Enquiry, New Registrations and Financial aspects like total deposit, total price of books bought and cost for book binding.

The Library Management System is designed & developed for a receipt and issuance of books in the library along with the student’s details. The books received in the library are entered in Books Entry form and the new student is entered in the student entry form. When the student wants to get the desired book the same is issued on the availability basis to the student. The issuance and due date for returning of the book is also entered into the book issue form from under third menu, Book Issue. Any education institute can make use of it for providing information about author, content of the available books. It can be used in offices and modifications can be easily done according to requirements. From an end user perspective, the Library Management System project consists of two functional element, Master and Security module and another is Transaction Module. Master and security module includes user security management, login security, book details, member master, library card, library transaction. Transaction module includes issuing, receiving book and transaction report. The technology used in this is Front End and Back End. In Front End Java is used and for Back End MySQL is used. JAVA is used as it has so many features to build applications that run can on almost all operating system. For the development environment NetBeans 6.0– Java Development IDE, MySQL 5.0– Query Browser

II. EXISTING SYSTEM

In our existing library system all transaction of book are done manually. So taking more time for borrowing a book and also for searching of member and books. Another major disadvantages that to repairing a list of book available or borrowed from the library which takes more time .Different records are maintained for different transactions of the Library. When a new transaction takes place, the Librarian staff enters the details of the transactions in a new file depending upon the type of the transaction. The staffs have to maintain different type of operation like keeping details of the members i.e. General member as well as Student, detail records of books, keeping track of members newly registered moreover financial transactions like income and expenditure for the period. The reports are generated time to time for various operations; these should also be produced to the higher authority in timely manner. The information regarding the system needs interaction and presentation at regular intervals of time.

2.1 Drawbacks of Existing System

1. Fast report generation is not possible.
2. Tracing a book is difficult.
3. Information about issue/return of books are not properly maintained.
4. No central database can be created as Information is not available in database.

III. PROPOSED SYSTEM

There will be three major components:
1. Stock maintenance.
2. Transaction entry.
3. Reports.
Proposed system provides with following solutions:
1. It provides “better and efficient” service to members.
2. Reduce the work load.
3. Reduce the workload of employee.
5. Provide facility for proper monitoring reduce paperwork and provide data security.
6. All details will be available on a click.

IV. SYSTEM ARCHITECTURE:

![System Architecture Diagram](image)

Figure 1. System architecture

DATA FLOW CHART AND PROCESS CHART:

![Data Flow Chart](image)

Figure 2. Data Flow Chart and Process Chart

V. SOFTWARE AND HARDWARE REQUIREMENT:

### TABLE 1. GENERAL REQUIREMENT FOR SERVER / CLIENT:

<table>
<thead>
<tr>
<th>Type</th>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Station/Node</td>
<td>1. Windows XP</td>
<td>1. P-4</td>
</tr>
<tr>
<td></td>
<td>2. JAVA Runtime</td>
<td>2. RAM -256 MB</td>
</tr>
<tr>
<td>Database Server</td>
<td>1. Win 2008 Advance Server</td>
<td>1. P-4</td>
</tr>
<tr>
<td></td>
<td>2. MySQL</td>
<td>2. RAM - 2GB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Hard Disk-160GB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. RAID</td>
</tr>
<tr>
<td>Application Server</td>
<td>1. Win 2008 Advance Server</td>
<td>1. P-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. RAM - 1GB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Hard Disk-40GB</td>
</tr>
</tbody>
</table>

1. Development Tools And Technologies:

A. Front End

1. JAVA:
JAVA comprises of certain features to build applications that can run in almost every operating system. We have selected JAVA programming language to develop our project for its open source, easy to deploy and robust object oriented features. Some of the features include

- Compiler and Interpreter
- Platform Independent
- Object-Oriented
- Robust and Secure
- Distributed
- Simple Small and Familiar
- Multithreaded and Interactive
- Dynamic and Extensible Code
- Distributed
- Architectural Neutral

B. Back End

1. MySQL
MySQL is the most used open source RDBMS and support small applications to large enterprise level applications with all features like relational query, different data types, joins, and query. It includes

- A broad subset of ANSI SQL 99, as well as extensions
- Cross-platform support
- Stored procedures
- Trigger
V. CONCLUSION:

This project was developed to fulfill user and business requirement however there are lot of scope to improve the performance of the library management system in the area of user interface, database performance, and query processing time etc. So there are many things for future enhancement of this project. The future enhancements that are possible in the project are as follows.

- Linking and integration of any legacy system for accounting.
- Integration with bank database through Web Services
- Connection to third-party OLAP applications
- Implement Bar code reader
- Web interface for members
- In the area of data security and system security.
- Provide more online tips and help.
- To optimize the query which is embedded in the system?

VI. REFERENCES:


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