Library Management System

Problem Statement:

Library is a place where all kinds of books are available. Intranet Library Management system is a web based application. This system contains a list of all the books and can be accessed by remote users concurrently from anywhere in the campus. But for that users must be registered users.

The various problems of physical system are described below :-

➢ If one is not very careful then there is a possibility of issuing more than one book to a user.

➢ There is a possibility of issuing a book to a user, whose membership is not there.

➢ When a user requests for the a book, one has to physically check for the presence of a book in the library

➢ Answering management queries is a time consuming process.

➢ Daily keeping a manual record of changes taking place in the library such as book being issued, book being returned etc can become cumbersome if the Library size is bigger.

Software Requirement Specification(SRS) of Library Management System

1 Introduction:

Purpose of this Document: An SRS forms the basis of the entire project. It sets out the framework that all the development teams will follow. It provides critical information to all the teams, including development, operations, quality assurance (QA) and maintenance, ensuring the teams are in agreement. The LIBRARY MANAGEMENT SYSTEM is a software application that omits the need for manual maintenance of records. The system provides easy search for books in the online library. Users need not go to the library to Issue any kind of book, he can renew the book online.

Scope of this document – The system is mainly for easy management of all the processes and operations taking place during management of books in the library. The system will consist of an online framework through which the user can get access to the books needed. The user can sign in to the system which is maintained by the system. The users can easily get the books required without the involvement of manual maintenance.

Overview -

A library management system is a software application designed to manage and automate various activities in a library, such as cataloging, circulation, patron management, and

acquisition of library materials. The system enables librarians to manage their collections effectively, track books and other library materials, and provide better services to their patrons.

The basic features of a library management system include:

- Cataloging: A cataloging module enables librarians to create, edit, and manage bibliographic records of library materials.
- Circulation: A circulation module handles the check-in and check-out of library materials and manages circulation policies, such as due dates, fines, and holds.
- Patron management: A patron management module maintains patron records and tracks their borrowing history.
- Acquisitions: An acquisitions module facilitates the purchasing and receiving of library materials.
- Reporting: A reporting module generates various reports, such as circulation statistics, inventory reports, and overdue item reports.
- OPAC: An Online Public Access Catalog (OPAC) module allows patrons to search the library catalog, place holds, and renew items online.

General description: A college library management is a project that manages and stores books information electronically according to students needs. The system helps both students and library managers to keep a constant track of all the books available in the library. It allows both the admin and the student to search for the desired book. It becomes necessary for colleges to keep a continuous check on the books issued and returned and even calculate fine. This task if carried out manually will be tedious and includes chances of mistakes. These errors are avoided by allowing the system to keep track of information such as issue date, last date to return the book and even fine information and thus there is no need to keep manual track of this information which thereby avoids chances of mistakes.

Thus this system reduces manual work to a great extent allowing smooth flow of library activities by removing chances of errors in the details.

2   Functional Requirements:

- Allow the librarian to add and remove new members.

- Allow the user to search for books based on title, publication date, author, etc., and find their location in the library.

- Users can request, reserve, or renew a book.

- Librarians can add and manage the books.

- The system should notify the user and librarian about the overdue books.

- The system calculates the fine for overdue books on their return.

3 Interface Requirements:

The interface requirements of a library management system can vary depending on the specific needs of the library and its users. However, some common interface requirements for a library management system may include:

- **User Interface:** A user-friendly interface that allows library users to search for books, reserve or borrow books, check due dates, and renew books. The interface should be intuitive and easy to use, even for those who are not tech-savvy.

- **Administrator Interface:** A backend interface that enables library administrators to manage the library's catalog, add or remove books, update book information, manage user accounts, and view reports. The interface should allow for easy navigation and customization of library settings.

- **Mobile-Friendly Interface:** An interface that is optimized for mobile devices, allowing users to access the library's resources from their smartphones or tablets.

- **Integration with Third-Party Tools:** The interface should be able to integrate with third-party tools such as databases, search engines, and payment gateways to provide users with a seamless experience.

- **Accessibility:** The interface should be designed with accessibility in mind, ensuring that users with disabilities can easily navigate the library's resources.

- **Customization:** The interface should allow for customization of the user interface, allowing libraries to tailor the interface to their specific needs and branding.

- **Security:** The interface should be secure, ensuring that user information is protected, and unauthorized access to the library's resources is prevented.

4 Performance Requirements:

A library management system (LMS) is a software application designed to help manage and organize library resources, such as books, journals, and multimedia materials, as well as user information, circulation, and other administrative functions. The interface requirements for an LMS typically include the following:

- **User Interface:** The user interface should be intuitive, easy to use, and allow library staff and patrons to access the system and its features. The interface should be designed to accommodate different types of users, such as librarians, administrators, and patrons, and provide access to features like searching the catalog, checking out materials, and managing library accounts.
- **Search Interface:** The search interface should allow users to search the library's catalog for books and other materials. The search interface should allow users to search by title, author, subject, and other criteria, and provide relevant results in a clear and organized manner.
- **Circulation Interface:** The circulation interface should allow library staff to check materials in and out, renew items, and manage hold requests. The interface should be designed to be efficient, easy to use, and provide accurate information about the status of materials and user accounts.
- **Reporting Interface:** The reporting interface should provide library staff with a range of reports that can help them manage the library more effectively. Reports could include circulation statistics, inventory reports, and financial reports.
- **Administration Interface:** The administration interface should allow library staff to manage the LMS itself, including adding new materials to the catalog, setting circulation policies, and managing user accounts. The interface should be designed to be secure and provide access only to authorized personnel.
- **Accessibility Interface:** The interface should be designed to be accessible to users with disabilities, such as those who use screen readers or other assistive technologies.
- **Mobile Interface:** The interface should be designed to work well on mobile devices, such as smartphones and tablets, so that users can access the LMS from anywhere.

Overall, the interface for a library management system should be well-designed, easy to use, and provide access to all of the system's features and functions.

5 Design Constraints:
- Programming language to be used is Java ● Storage of the data will be done on SQL database.
- The system can run on Windows and Linux.
- Internet availability is a must.

- Minimum Processor 1 GHz, 512 MB RAM and 850 MB free HDD for 32-bit or 2 GB for 64-bit.
- Windows 10 and above, Windows server 2003, Windows server 2008, Windows server 2012, Windows server 2016.
- Internet connection of 4 MBPS or higher.

6 Non-Functional Attributes:

- Security: The system should be secure and protect customer information and payment details.
- Scalability: The system should be scalable to accommodate a large number of customers and rooms.
- Reliability: The system should be reliable and available 24/7.
- Usability: The system should be user-friendly and easy to use for hotel staff and guests.
- Performance: The system should perform well and respond quickly to user requests.
- System Architecture: The Hotel Management System will be developed using a client-server architecture.

7 Preliminary Schedule and Budget:
The project is scheduled to be completed within six months of the start date. The budget is allotted for the man-hours and the different softwares and databases being used.

- Gathering requirements : $10000
- Database system - $40000
- Authentication Requirements : $50000
- Software testing and development - $70000