

Library Management System

Problem statement

A library management system is a project that manages and stores books information electronically according to student's 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.

Software Requirement Specification(SRS)

1 Introduction:

1.1 Purpose of this Document:

The purpose of this project is to develop an website that will automate the whole procedure of a library. The software that would be developed should have facilities like Add / Delete Members, Add / Delete Books, Issue & Return. The application should be secured, as well as with limited access. The main requirement of the project will be the ease of use, besides being the most efficient and effective tool for the purpose. The application should be user friendly. It should be robust and scalable. An automated solution would be very beneficial to the organization, as it would bring structure to the whole process so that it can be traced for any kind of query. Also, an automated solution will lead to optimal utilization of the available resources, reducing duplication of effort, increasing efficiency and minimizing time-delays.

1.2 Scope of this document:

For Members: -

- Facility for search of Books based on Access Number, Title, Author, Subject, Keyword.
- Facility for ISSUE / RETURN Books.
- Facility for RENEWAL of Books.

For Library Staff:

- Security features like access control using passwords and login-i.d.
- Automatic calculation of late-fee.

1.3 Overview:

A library management system is software that is designed to manage all the functions of a library. It helps librarians to maintain the database of new books and the books that are borrowed by members along with their due dates. This system completely automates all your library's activities.

2. General description:

The manual library management system includes following drawbacks:

- The existing system involves a lot of paper work and manual calculation. This has led to inconsistency and inaccuracy in the maintenance of data.
- The data, which is stored on the paper only, may be lost, stolen or destroyed due to natural calamity like fire and water.
- The existing system is sluggish and time-consuming causing inconvenience to library staff.
- Since there are many books related to different scopes thus it would be very difficult to find a specific book, or edit the data of some book.

Hence the library management system is proposed with the following Product perspective:

- The computerization of the library system will reduce a lot of paperwork and hence the load on the library staff.
- It would be easy to search a specific book.
- The machine performs all calculations for fines and all. Hence chances of error are nil.
- The system provides for user-ID validation, hence unauthorized access is prevented.

3 Functional Requirements:

- Login: Users can login and check the available books.
- Add/Remove books: The staff can add or remove book by entering details.
- Search: The users can search a book by entering book details such as author's name, book name etc.
- Issues book: The staff member checks the availability of book which the member wants to get issued.
- Return book: The member wants to return the book.
- Fine: If book is not returned on the time by member then fine is charged on per day basis.

4 Interface Requirements:

User Interface : User Interface must be compatible for all type web browser such as Google chrome , Safari Browser , Internet Explorer etc.

Software Interfaces :

Web server - Apache

Database server - MySQL

Development end -Java , HTML , JavaScript,.CSS.

5 Performance Requirements:

The collection of internal electronic circuits and external physical devices used in building a computer is called the Hardware. The minimum hardware requirement specifications for developing this project are as follows:

Processor : Standard processor with a speed of 1.6 GHz

RAM : 1GB RAM or more

Hard Disk : 20 GB or more

Monitor : Standard color monitor.

6 Design Constraints:

- The system must integrate with the college/school existing hardware and software systems.
- The system should allow most the web browser usability i.e the system is designed in such a way that it can be seen in most of the browser.

7 Non-Functional Attributes:

Security: The system will use secure encryption and data protection methods to ensure students , teachers and staff data is kept confidential and safe.

Scalability: The system will be able to handle high traffic and scale up or down depending on demand.

Usability: The system will be user-friendly and intuitive, with clear instructions and minimal training required for the users of the system.

Performance: The system will be fast and responsive, with minimal downtime or lag time.

Compatibility: The system will be compatible with major web browsers and mobile devices.

8 Preliminary Schedule and Budget:

Preliminary Schedule:

Requirements gathering and analysis: 1-2 weeks

System design and architecture: 2-4 weeks

Development and testing: 10-13 weeks

Integration and deployment: 2-4 weeks

Training and user acceptance testing: 2-4 weeks

Total: 17-37 weeks

Preliminary Budget:

Requirements gathering and analysis: 5,000-7,000

System design and architecture: 10,000-13,000

Development and testing: 50,000-60,000

Integration and deployment: 10,000-13,000

Training and user acceptance testing: 5,000-7,000

Total: 80,000 - 100,000 (approximately)