

9 Library Management System

Problem Statement:

Design and implement a Library Management System that Provides efficient, secure and user friendly management of library resources.

In traditional Library management it is difficult to maintain huge details and there are chances of misplacing of books so there is a need for LMS ~~sq~~ that is robust, extensible and improves resource discoverability, streamline library workflows, reduces manual effort.

SRS document:

1 Introduction:

1.1 Purpose of the document: The purpose of this document is to outline the requirements and specifications for the development of LMS. It will provide a clear understanding of the project objectives, scope and deliverables.

1.2 Scope of the document: This document defines the overall working and main objectives of the Library Management System. It includes a description of book cataloging, circulation, member management, fine calculation, reservation.

1.3 Overview: The Library Management System is a Software Solution designed to automate and Streamline library operations.

2 General description:

The Library Management System will cater to the needs of librarians, students, faculty, and administrators by providing seamless resource management, efficient cataloging, secure patron records.

3 Functional Requirements:

3.1 Catalog Management:

- Add, update, or delete books and journals.
- Search and filter resource by keywords.

3.2 Circulation Management:

- Issue & return books.
- Track due dates and overdue books.
- Calculate fines automatically.

3.3 Reservation and Renewal

- Allow users to reserve books.
- Notify users when reserved items are available.
- Provide online renewal options.

3.4 Reporting and Analytics:

- Generate usage reports.
- Provide monthly and annual statistics.
- Support financial reporting.

4. Interface Requirements:

4.1 User Interface:

- user friendly web and mobile application
- In Dashboards for librarians & students
- Interface for Searching, renewal of books.

4.2 Integration Interface:

- Support institutional login system
- Barcode integration

5 Performance Requirements:

5.1

Response time:

The system should respond to user queries and transaction within 2 seconds.

5.2

Scalability:

Handle at least 10,000 concurrent users.

5.3

Data Integrity:

Ensure accuracy and consistency of Catalogue.

6

Design Constraints:

6.1

Hardware:

The system should be compatible with desktop / laptop, and barcode scanner.

6.2

Software:

- Relational database (C++, MySQL)
- web frameworks (Java, Python)

7 Non Functional Attributes:

7.1 Security: Implement Secure authentication, encrypted Patron records, access control

7.2 Reliability: Ensure 99.9% system uptime

7.3 Scalability: Support libraries of varying sizes,

7.4 Portability: Accessible across multiple platforms

7.5 Usability: Provide simple interface for users

8 Preliminary Schedule and budget:

- The development of the library system is estimated to take 6-8 months

- with a budget of \$200,000

- This includes project planning, design, development, testing, deployment and staff training

