

3) Library Management System

⇒ ① Develop a problem statement

In a library, keeping track of issued books, returns, fines, & availability is difficult with manual records. I need a system that organizes all this flows & streamline operation.

⇒ ② Develop a complete SRS document

1. Introduction

1.1) Purpose of this Document

The purpose of this document is to outline the required specification & development goals for Library Management System (LMS). It'll provide a structured understanding of the project goals, scope & deliverables.

1.2) Scope of this Document.

This document defines the working and objectives of the LMS. It covers cost, time & resource required to build the project.

1.3) Overview

The LMS is a software solution designed to digitize and simplify library ops, including catalog, member management, book circulation & inventory tracking.

2. General Description

The LMS will assist librarians, students, & administration by managing book catalogs, member records, & issue/return. It will track due dates, calculate fines & generate report on library activity.

3. Functional Requirements

3.1) Book Management

- Add, update, or remove books from the catalog.
- Enable searching by title, author, subject, etc.

3.2) Member Management

- Maintain member profile, personal details & track history.

3.3) Borrow/Return Process

- Record book issue, return/due dates, update late fees

3.4) Fine Management

- Generate fine receipts for overdue books.
- Accept different payments methods for fines.

3.5) Reporting

- Generate reports on book availability, book record & member activity.

4. Interface Requirements

4.1) User Interface:

- User-friendly dashboard for librarian & members.
- Accessible via web browsers & mobile devices.

4.2) Integration Interfaces:

- Integration with student/employee database.
- Barcode scanner support for book tracking.

5. Performance Requirements:

- The software should process book issue/return within 2 sec
- Support a minimum of 5,000 members & 50,000 books
- Data Accuracy, consistency & error-free record management

6. Design Constraints:

6.1) Hardware Limitations:

Compatible with library computer, printers & barcode scanners

6.2) Software Dependencies:

- Relational DBMS (MySQL / Oracle)
- Backend framework (Java, Python Django)
- Frontend framework (Tailwind, jQuery)

7. Non-Functional Attributes

7.1) Security:

- Ensure secure login for admins & members.

7.2) Reliability:

- Provide backup & recovery for book records.

7.3) Scalability:

- Allow expansion for more members, books, & branches.

7.4) Usability

- Provide simple navigation with search & filter options

7.5) Reusability:

- Modular design for easy updates.

7.6) Data Integrity:

- Ensure accurate transaction of member records.

8. Preliminary Schedule & Budget.

The LMS will be developed in 6 months, covering 3 modules with 12,000 LOC. The estimated cost is \$120,000 including development, testing & deployment.