3. Library Management System

1 Introduction

1.1 Purpose

The purpose of this document is to define the requirements for the library management system. It ensures proper handling of books, member borrowing/returning, fines, and catalog search.

1.2 Scope

The system will automate library operations including book issue, return, catalog search, fine calculations, and membership management.

1.3 Overview

LMS will replace manual record-keeping with a digital system, enabling librarians and students to access resources efficiently.

2 General Description

The system supports librarians, staff and members, offering catalog browsing, issue/return tracking, overdue management, and report generation.

3. Functional Requirements

Book management: Add, update, and delete books. Maintain availability status.

Member Management: Maintain member records, registration, and borrowing limits.

Issue/Return System: Track borrowing/returning with due dates.

Fine calculation: Automatically calculate overdue fines.

Search & Catalog: Search by title, author, ISBN, or category

Reports: Generate reports on issued books, overdue items, and member activity.

4. Interface Requirements:

UI: Simple web-based and mobile interface.

Intigration: Barcode/RFID support for book issue/return.

5. Performance Requirements

Response time ≤ 2 seconds
Handle upto 500 concorrent users.
Ensure real-time inventory update.

6. Design Constraints

Relational DB (MySQL/PostgreSQL)
Web-based architicture with Java/Python backend

7. Non-Functional Requirements

Security: Role-based access (admin, librarian, student).

Reliability: 99% uptime.

Scalability: Expandable for large university libraries.

Portability: Accessible via web & mobile.

8. Preliminary Schedule & budget
Development duration: 4 months.
Estimated budget: $50,000.