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Lab-1
Library Management System

problem statement

To design & develop a Library Management system to automate all activities with little or no human interaction

SRS document

1) Introduction

1.1 purpose:

This document defines the requirements for a LMS, which will manage booking, issue/return transactions & user accounts digitally

1.2 Scope:

The system will support book cataloging, member registration, book issue/return, fine calculations & reporting. It will improve accuracy, reduce manual work & give faster access to library resources

1.3 overview

LMS is a centralized system accessible by librarians, student & admin, It'll ~~show~~ store book details, track issued/returned book & generate usage reports

2) General description:

- users: librarians, student, teacher & admin
- users characteristics:
  - student & teacher get a simple UI for searching books
  - librarians manage records, issue/return & give fines
  - admins maintain system & generate reports
- Features: book cataloging search, issue/return, fine managment

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- benefits: faster transactions, reduced paperwork, accurate records & easy access to information

3) functional requirements:

- Book catalog management (add, update, delete)
- member registration & management
- book issue & return Tracking
- fine calculation for late returns
- search functionality for books & users
- admin control

4) Interface requirements

- User interface:
  - librarian / admin dashboard
  - student / teacher portal

- software interface: database (MySQL), barcode / ID integration & email / SMS notification

- communication: secure internal network or internet access for online usage

5) Performance requirements
- support atleast 500 concurrent users
- response time < 3 secs
- DD retrival time < 2 secs
- system uptime ≥ 99.5%

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6) design constraints

- Must run on standard server environment
- support major browsers for web access
- requires secure login with unique credentials
- daily database backup required

7) Non-functionality attributes

- security
- reliability
- portability
- scalability
- data integrity
- usability

8) Preliminary schedule & budget

schedule

- Requirement analysis - 3 weeks
- system design - 4 weeks
- development - 9 weeks
- Testing - 4 weeks
- Training - 2 weeks

Total - 22 weeks

Budget

- Development : ₹ 23 lakhs
- Infrastructure : ₹ 6 lakhs
- Annual maintenance : ₹ 3 lakhs