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LAB-02→ Library Management System.1. Introduction1.1 Purpose of this document

This document outlines the functional & non functional requirements for the development of a Library Management system. The purpose is to create a system that automates the management of books, users, and transactions within a library.

1.2 Scope of the document

This document covers the core features, technical specifications, and system architecture required for LMS. The system will manage, book inventory, user registrations, borrowing/returning transactions & reporting.

1.3 ~~Overview~~ Overview

The LMS will allow library staff to manage book collections and track borrowing activities, while members search for books, borrow & view their borrowing history. The system will ensure efficient library operations & improve user experience.

2. General Description

- * Manage book inventory, register users, track lending & returns.
- * Search for books, borrow, return & view history.
- * Generate reports, monitor system usage & manage users.
- * Fine calculation for overdue books.
- * Profile management.

3. Functional Requirements

3.1 User Management

- * Users must be able to register & login
- * Admins must manage user roles & permissions

3.2 Book catalog & inventory

- * Library staff must be able to add, remove, update book records
- * Users can search for books by title, author, genre

3.3 Borrowing & Returning

- * Users can borrow books & view due dates.
- * The system must track the borrowing status & calculate fines for overdue books.

3.4 Reporting

- * Admins must be able to generate reports on inventory.

4. Interface Requirements

4.1 User Interface

- * System must provide an easy to use web interface for staff and members to perform their tasks.

4.2 External system Interfaces

- * System should integrate with external databases for retrieving data.

5. Performance Requirements

5.1 System Load

- * System must support up to 1000 concurrent users without performance degradation

5.2 Response time

- * Book searches & borrow operations must be processed within 2 seconds.

6. Design Constraints

6.1 Platform & Technology

- * The system must be cloud based to ensure scalability & easy access.

6.2 Compliance

- * The system must comply with data privacy regulations.

7. Non Functional Requirements

7.1 Security

- * The system must ensure that all user & book data are encrypted at rest & during transmission.

7.2 Reliability

- * System must maintain 99.9% uptime w/ minimal disruption.

8. Preliminary Schedule & Budget

8.1 Timeline

- * Requirement gathering : 1 month
- * Development : 4 months
- * Testing : 1 month
- * Deployment : 1 month

8.2 Budget

- * Development : \$100,000
- * Infrastructure & hosting : \$20,000
- * Annual maintenance : \$10,000