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SRS for a Library Management System

1 INTRODUCTION:

1.1 Purpose

The purpose of this document is to define the functional and non-functional requirements for the Library Management system (LMS). This system is intended to automate and streamline the administrative tasks of a library, including the management of resources, members, and borrowing activities. The SRS will serve as the primary guide for the development team and as a point of reference for all stakeholders.

1.2 Scope:

This SRS addresses the core functionalities required for daily library operations. The scope includes cataloging resources, managing member accounts, handling borrowing and returns, calculating fines, and generating administrative reports, as well as managing the physical stock of the library. The system will be designed for a single-site library and does not include features for multi-branch synchronization or extensive inter-library loan systems.

1.3 Overview:

The LMS will be a web-based application accessible to both library staff and members. It will provide a centralized database for all library resources and member information. The system's primary goal is to enhance operational efficiency, improve record-keeping accuracy, and provide a user-friendly experience for both staff and patrons.

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2. GENERAL DESCRIPTION

The LMS will be used by two primary user classes: Librarians and Library members. It will provide a centralized database for all library resources and member information. The system's primary goal is to enhance operational efficiency, improve record-keeping accuracy, and provide a user-friendly experience for both staff and patrons. Librarians will have full administrative access to manage all system data and functionality. Library members will have limited access, allowing them to search the catalog, view their loan history, and reserve resources. The system will operate within a secure, network-based environment and is intended to be a standalone solution for automating library processes.

3. FUNCTIONAL REQUIREMENTS

The system shall perform the following core functions:

- Resource Management. Allow librarians to add, modify, and delete resources (books, journals, etc.). Each resource entry must include fields for title, author, ISBN, publication date, and genre.

- Stock Maintainance. Provide librarians with the ability to perform physical stocktaking, report missing or damaged items, and update the physical conditions of resources in the system.

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- Member Management: Enable librarians to register new members, update member information, and deactivate accounts. Each member record must include personal details and a unique member ID.

- Circulation Management:
Facilitate the process of checking out, checking in, and renewing resources. The system must track the borrower, due date, and loan status for each item.

- Search and Discovery: Provide an efficient search function for both librarians and members, allowing them to find resources by title, author, or ISBN.

- Overdue Fines: Automatically calculate and apply fines for overdue resources based on predefined rules. The system shall provide an interface for managing and recording fine payments.

- Reporting: Generate key reports for librarians, including lists of currently borrowed items, overdue resources, and popular titles.

4. INTERFACE REQUIREMENTS

- User Interface: The system shall have a responsive, web-based UI optimized for both desktop and tablet use. The interface for librarians must be distinct from that of members to reflect their differing permissions and must include specific sections for stock maintenance tasks.

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- Hardware Interface: The system must support integration with standard barcode scanners for quick and accurate processing of book and member IDs during check-out and check-in. It shall also interface with standard office printers for printing reciepts and reports.

- Software Interface: The system shall not require integration with external software but will be designed to support future APIs for potential e-book catalog or payment gateway integration.

5. PERFORMANCE REQUIREMENTS

- Response Time: All search queries for resources and members shall be completed within 1.5 seconds. The check-out and check-in processes shall be instentaneous upon scanning.

- Concurrency: The system shall support a minimum of 20 concurrent users (both librarians and members) without any noticeable degradation in performance.

- Availability: The LMS must maintain an availability of 99.8% during library operating hours.

6. DESIGN CONSTRAINTS

- Technology Stack: The system shall be developed using an open-source technology stack, such as Python with

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the Django framework and a PostgreSQL database.

- Compliance: The system must adhere to all relevant local and national data privacy regulations regarding member personal information.

- Scalability: The architecture must be scalable to accomodate a library collection of upto 100,000 resources and a member base of up to 50,000

7. NON-FUNCTIONAL REQUIREMENTS

- Security: The system shall implement a role-based access control system to secure all administrative functions. All user credentials must be encrypted at rest.

- Usability: The user interface shall be simple and intuitive, allowing librarians and members to perform core tasks with minimal training.

- Reliability: The system shall include automated daily backups of the database to ensure data integrity and facilitate quick recovery in the event of a system failure.

- Maintainability: The codebase shall be well-structured, modular, and extensively commented to facilitate future maintainance and feature additions.

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8. PRELIMINARY SCHEDULE AND BUDGET

- Schedule: The estimated development timeline for the core IMS, including stock maintainance functionality, is 6-8 months, with an additional month for testing and deployment.

- Budget: The preliminary budget for development, based on a team of 2-3 dereloperes, is estimated in the range of $40,000 to $60,000, excluding costs for hardware and ongoing ~~listing~~ hosting.