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LAB 2: (a) SRS DOCUMENT — LIBRARY MANAGEMENT

1. Introduction :-

1.1 Purpose :-

The purpose of this document is to specify the functional and non functional requirements for Library Management System. It intends to provide automation for common library operations including book cataloging, member registration, lending and return of books and management of fees. It is designed to increase efficiency

1.2 Scope :-

The system will manage the entire lifecycle, from book acquisition and cataloging to member services. It will support both physical and digital sources and provide a portal for members to check availability, reserve books, review borrowing history.

1.3 Overview :-

This SRS document provides description of system requirements, including architecture, functional, non functional and design constraints for the system.

2. **General Description :-**

This system is a self contained system that will be deployed on a local network or in the cloud, accessible via web browsers. It will interface with external systems such as online book databases and payment gateways for managing fees.

3. **Functional Requirements :-**

3.1 **Book Cataloging :-**
- allow to enter book details manually or via ISBN setup
- allow to catagorize books
- unique identification for each book

3.2 **Member management :-**
- allow new members to register
- assign unique ID and allow each member to login
- shows personal details, fees status, order history

3.3 **Borrowing or Returning of Books :-**
- issue books by scanning member ID & Book ID
- update availability of issued book.
- allow return of books + calculate overdue fines if applicable.

4. Interface Requirements :-

4.1 User Interfaces :-

(a) Library staff :- to add books, issue / return books, manage accounts

(b) Member interface :- allows to browse catalog, borrow books & view their accounts

(c) Administrative :- tools to configure settings and generate reports

4.2 Hardware interfaces :-

(a) Barcode scanners for issuing & returning books

(b) Printers to print member cards etc.

5. Non Functional Requirements :-

5.1 : Performance :-
- highly efficient
- fast

5.2 : Security :
- encryption of sensitive data
- Role based access control
- strong passwords

5.3 : Usability :
- intuitive and user friendly interface
- multiple languages
- accessible on all devices

5.4 : Availability :
- shall be available 24/7
- provide regular backups to prevent lose of data

6. **Performance Requirement:**

* System shall handle upto 5000 concurrent users without Performance degradation.
* The system shall return search results within 2 seconds for typical queries.

7. **Design constraints:**

* must comply with local data protection laws
* widely used barcode may or may not be compatible
* hardware upgrade may be expensive.

8. **Budget and Timeline:**

8.1 **Timeline:**

* Requirement Analysis : 2 - 4 weeks
* Designing : 4 - 6 weeks
* Implementation : 8 - 12 weeks
* Testing : 3 - 4 weeks
* Evolution : ongoing.

8.2 **Budget:**

Development cost : $50,000
Infrastructure & hosting cost : $10,000 / year