LIBRARY MANAGEMENT SYSTEM

1. Develop a problem statement

Problem statement

Managing book inventories, member records and transactions manually is inefficient and error prone. An automated LMS is needed to streamline cataloging, circulation and reporting.

2. Develop a IEEE standard SRS Document

Software Requirement Specification

1. Introduction

   1.1 Purpose of this document

   The purpose of this document is to define the requirements and specifications of the Library Management System. It will outline objectives, scope and deliverables.

   1.2 Scope of this document

   This document defines the working of the Library Management system, including project time and cost estimation.

   1.3 Overview

   The Library Management System is a software designed to handle cataloging, issuing/returning of books, member management and reporting for efficient library operations.

2. General Description

   The system will serve librarians, members, and administrators by providing book inventory management, user records and transaction logs.

3. Functional Requirements

3.1 Book Catalog Management

The system shall maintain a searchable database of books. Trace book availability and location.

3.2 Member Management

Register new members with personal details and track borrowing history of members.

3.3 Circulation Management

The system shall assist in issuing and returning books, and impose fines for late returns.

3.4 Reporting

The system shall generate reports on book usage and member activity, and provide inventory statistics for administrators

4. Interface Requirements

4.1 User Interface

simple, user-friendly portal for librarians and members, and ensure web and desktop accessibility.

4.2 Integration Interfaces

Integration with barcode scanners for book identification, and support for online catalog sortie search engines.

5. Performance Requirements

5.1 Response Time

Search and display transaction responses within 2 seconds.

5.2 Scalability
   Support atleast 2000 active members
5.3 Data Integrity
   Ensure accurate book and member record management.

6. Design Constraints
   6.1 Hardware constraints
      Standard computers and barcode scanners in libraries.
   6.2 Software Dependencies
      The system should use relational databases, and have backend implementation in Java Spring boot.

7. Non-Functional Attributes
   7.1 Security
      Protect member data and library records with authentication.
   7.2 Reliability
      High availability during peak library hours
   7.3 Scalability
      The system should be able to expand to support larger book collections.
   7.4 Portability
      The software must be accessible via desktops, kiosks and mobile apps.
   7.5 Usability
      Easy Navigation for users with limited technical skills.
   7.6 Reusability
      The system should ensure modular design for future upgrades.

7.7 Compatibility

The system shall be compatible with common web browsers.

7.8 Data Integrity

The system shall ensure consistent management of book inventory and member records.

8. Preliminary Schedule and Budget

The Library Management System is estimated to take 4 months, with a budget of $80,000 including development, testing and deployment.