SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

System Name: Library Management System

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1. Introduction

1.1 Purpose

The Library Management Systems (LMS) functional and non-functional requirements are outlined in this Software Requirements Specification (SRS) document. Book cataloging, Member Management, borrowing, and returning are among the tasks that the system is designed to automate and oversee. Developers, testers, and stakeholders can use this paper as a reference.

1.2 Scope

Enabling users to find, check out, and return books, the Library Management System will assist librarians in effectively managing library resources.

1.3 Definitions, Acronyms, and Abbreviations
- **LMS** – Library Management System
- **SRS** - Software Requirements and Specification
- **Admin** – Librarian or system administrator

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2. Overall Description

2.1 Product Viewpoint
The Library Management System is a stand-alone program created with Windows Forms, C#, and a **database (such as MySQL or SQL Server). It takes the place of manual record-keeping in libraries.**

2.2 Product Functions

- Manage book records
- Manage library members
- Borrow and return books
- Track due dates and fines
- Provide search functionality

2.3 Operating Environment

- Operating System: Windows 10 or higher
- Programming Language: C# (.NET Framework / .NET)
- Database: SQL Server / MySQL
- Platform: Windows Forms Application

3. Functional Requirements

3.1 User Authentication

- The system shall allow administrators to log in using a username and password.

3.2 Book Management

- The system shall allow administrators to add new books.
- The system shall allow administrators to update book details.
- The system shall allow administrators to delete book records.

3.3 Member Management

- The system shall allow administrators to register new members.
- The system shall allow administrators to update member information.
- The system shall allow administrators to remove members.

3.4 Book Borrow

- The system shall allow administrators to issue books to members.
- The system shall record borrow date and due date.

3.5 Book Returning

- The system shall allow administrators to process book returns.
- The system shall update book availability upon return.
- The system shall calculate fines for late returns (if applicable).

3.6 Search Functionality

- The system shall allow users to search books by title, author, or category.
- The system shall display search results accurately.

4. System Models

4.1 Use Case Diagram (Description)

- Login
- Manage Books
- Manage Members
- Borrow Book
- Return Book

4.2 Entity Relationship Diagram (Description)

- Entities: Book, Student, Guest, Admin, Staff, Fines

- Relationships: Borrow Books, Admin manages records, Pay fines, Check books

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5. Future Enhancements

- Online access for members

- Barcode scanning

- Email notifications for due dates