

Software Requirements Specification

Library Management System

Version 1.0

Prepared by

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Date: 11th March 2025

1. Introduction

1.1 Document Purpose

This document specifies the software requirements for the **Library Management System (LMS)**. The system is designed to assist libraries in managing book records, tracking borrowing activities, and making administrative processes more efficient. This SRS covers all essential functionalities, including book cataloging, user management, and automated due date tracking.

1.2 Product Scope

The **Library Management System** aims to automate and digitize the traditional library system by:

- Allowing users to search for books efficiently.
- Enabling librarians to manage book inventories.
- Tracking book borrow and return statuses.
- Managing overdue books and library usage statistics.

This system will greatly help students at educational institutions.

1.3 Intended Audience and Document Overview

This document is intended for:

- **Developers** – To understand and implement system functionalities.
- **Librarians and Staff** – To manage library operations.
- **Students and Users** – To access and borrow books.
- **Project Stakeholders** – To review project scope and requirements.

The document is structured as follows:

1. Introduction
2. Overall Description
3. Specific Requirements
4. Non-functional Requirements
5. Other Requirements
6. Appendices

1.4 Definitions, Acronyms, and Abbreviations

- **LMS** – Library Management System
- **ISBN** – International Standard Book Number
- **GUI** – Graphical User Interface
- **DBMS** – Database Management System

1.5 Document Conventions

- Font: Arial, size 11.
- Section headers in bold.
- Single-spaced text with 1-inch margins.

2. Overall Description

2.1 Product Overview

The **Library Management System** is designed to modernize book borrowing, tracking, and administration. It is a web-based application that provides:

- An intuitive dashboard for library staff.
- A searchable book catalog for users.
- Automated due date reminders and fines for overdue books.

2.2 Product Functionality

The system provides the following features:

- **Book Management** – Add, edit, delete, and search books.
- **User Management** – Register students, faculty, and guests.
- **Borrow and Return** – Track book checkouts and due dates.
- **Fine Management** – Calculate overdue fees.
- **Book Reservation** - Allow users to reserve certain books.

2.3 Design and Implementation Constraints

- The system must use **MySQL** for database management.
- It should be built using **Java/Python with Django/Flask**.
- The front-end will be developed using **Java, HTML, CSS, JavaScript**.
- The system must be accessible via web browsers.

2.4 Assumptions and Dependencies

- Users must have an internet connection to access the system.

- The system relies on a **centralized server** for database management.
- The library must provide **accurate book data** for system efficiency.

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

- The system will have a **web-based GUI**.
- Users can log in via a **username and password**.
- The system will have **search bars and filters** for book searches.

3.1.2 Hardware Interfaces

- The system should be compatible with **desktop, tablet, and mobile devices**.
- Barcode scanners will be integrated for book check-ins and check-outs.

3.1.3 Software Interfaces

- The system will interact with:
 - **Database (MySQL)**.
 - ****Authentication system ****

3.2 Functional Requirements

3.2.1 Book Management

- The system shall allow librarians to **add, update, and delete book records**.
- Users shall be able to **search books by title, author, or ISBN**.

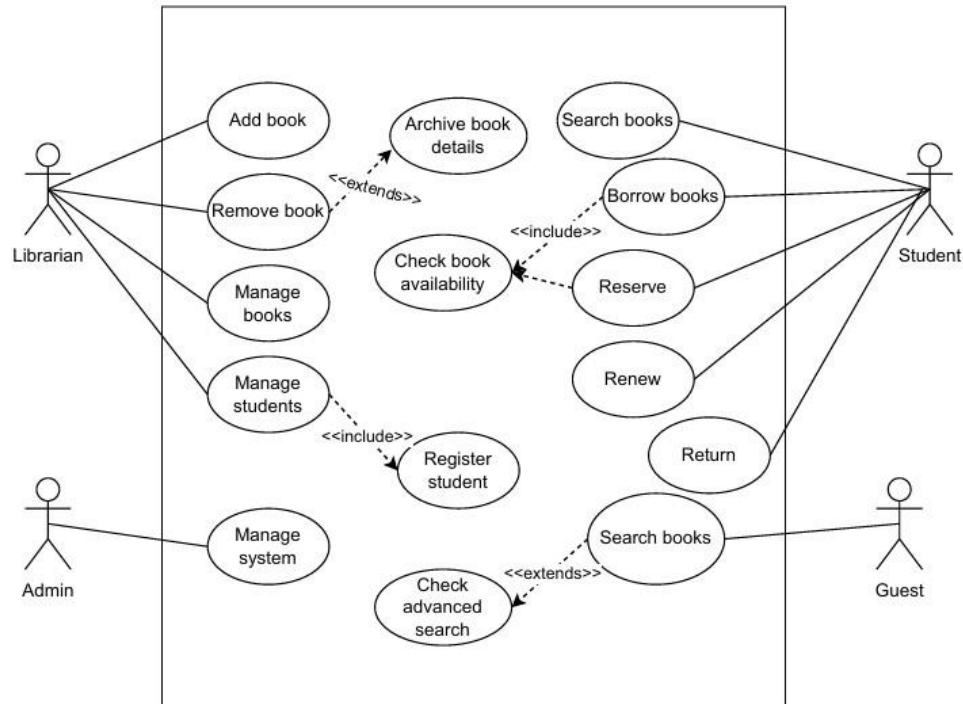
3.2.2 User Management

- The system shall allow **student and staff registration**.
- Users shall have roles: **Librarian, Student, Guest**.

3.2.3 Borrow and Return Books

- The system shall allow users to **borrow books with a due date**.
- Users shall be notified of **due dates and overdue fines**.

3.3 Use Case Model



4. Other Non-functional Requirements

4.1 Performance Requirements

- The system shall handle **hundreds of simultaneous users**.
- Book searches shall be completed in **less than 5 seconds**.

4.2 Safety and Security Requirements

- User passwords shall be **hashed and stored securely**.
- Only **librarians** can modify book records.

4.3 Software Quality Attributes

4.3.1 Reliability

- The system shall provide **99.9% uptime**.
- Automatic **database backups** will occur daily.

4.3.2 Usability

- The system shall have an **easy-to-use interface** with tooltips and FAQs.

5. Other Requirements

- The system should support **multi-language** options.
- It should allow **data export in CSV/PDF formats**.

Appendix A – Data Dictionary

Field Name	Data Type	Description
User_ID	INT	Unique identifier for users
Book_ID	INT	Unique identifier for books
Borrow_Date	DATE	Date when a book was borrowed
Return_Date	DATE	Expected return date

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