**LAB 2 - LIBRARY MANAGEMENT SYSTEM**

**USN : 1BM20CS195**

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**AIM -** To write the Problem Statement and Software Requirements Specification (SRS) for Library Management System.

# **Problem Statement:**

To design a new and improved Library Management System for ABC College, it is necessary to address the shortcomings of the current system. The current system's inefficiency and lack of user-friendliness have resulted in manual management of collections and patron records, which is time-consuming and error-prone. The new system must improve the efficiency of library operations by automating the collection and patron record management, providing easy access to information, and streamlining administrative tasks. Additionally, it should provide better support for managing the collections, including advanced search capabilities and an intuitive user interface for browsing and reserving items. Ultimately, the new system must enhance the user experience for students and staff, making it easy to use and providing access to a vast collection of resources.

**Software Requirement Specification(SRS)**

**1 Introduction:**

**1.1 Purpose of this Document:**

The purpose of this SRS is to define the requirements for the development of a Library Management System. It provides a detailed description of the system and its features, along with the scope, constraints, and non-functional requirements.

**1.2 Scope of this Document:**

This document outlines the requirements for the Library Management System, which is a software application designed to manage the day-to-day operations of a library. The system is intended to provide a user-friendly interface for library staff to manage the library's resources, such as books, journals, and other materials, as well as to manage patron accounts and circulation of materials. The system will also include reporting capabilities to provide data analysis and decision support.

**1.3 Overview:**

The Library Management System is a web-based application that allows librarians to manage their library's resources and patrons. The system will include modules for managing books, journals, and other materials, as well as for managing patron accounts and circulation of materials. The system will be designed to be user-friendly and intuitive, with an emphasis on ease-of-use and efficiency.

**2 General Description:**

**2.1 Objective:**

The objective of the Library Management System is to provide a comprehensive tool for librarians to manage the library's resources and patrons. The system will be designed to streamline library operations and improve the overall efficiency of the library.

**2.2 User Characteristics:**

The system is intended for use by library staff, including librarians, library assistants, and other personnel. Users will be expected to have basic computer skills and knowledge of library operations.

**2.3 Features:**

The Library Management System will include the following features:

* Cataloging and classification of library materials
* Circulation of materials, including check-in/check-out and renewal
* Patron management, including registration, tracking, and notification
* Reporting and analysis of library data
* Integration with external databases and systems

**2.4 Benefits:**

The Library Management System will provide numerous benefits to the library, including:

* Improved efficiency and productivity of library staff
* Improved accuracy and reliability of library data
* Increased availability of library resources to patrons
* Enhanced patron experience and satisfaction

**2.5 User Community:**

The Library Management System is designed for use by libraries of all sizes and types, including public, academic, and special libraries. The system is intended to be scalable and flexible, allowing for customization to meet the unique needs of each library.

**3 Functional Requirements:**

**3.1 Cataloging and Classification:**

The system shall provide the ability to catalog and classify library materials, including books, journals, and other materials. Cataloging shall include data entry, editing, and deletion of bibliographic records.

**3.2 Circulation:**

The system shall provide the ability to circulate library materials, including check-in/check-out and renewal of materials. The system shall also provide notification of overdue materials and hold requests.

**3.3 Patron Management:**

The system shall provide the ability to manage patron accounts, including registration, tracking, and notification of account activity.

**3.4 Reporting and Analysis:**

The system shall provide the ability to generate reports and perform data analysis on library data, including circulation, cataloging, and patron activity.

**3.5 Integration:**

The system shall provide the ability to integrate with external databases and systems, including interlibrary loan systems and online databases.

**4 Interface Requirements:**

**4.1 User Interface:**

The user interface shall be designed to be user-friendly and intuitive, with an emphasis on ease-of-use and efficiency. The interface shall be web-based and accessible from any internet-connected device.

**4.2 System Interfaces:**

The system shall communicate with external databases and systems through APIs or other standard communication protocols.

**5 Performance Requirements:**

**5.1 Response Time:**

The system shall provide a response time of no more than 3 seconds for any user action.

**5.2 Capacity:**

The system shall be designed to handle a minimum of 500 simultaneous users.

**5.3 Data Storage:**

The system shall be able to handle a minimum of 100,000 bibliographic records and 50,000 patron records.

**5.4 Reliability:**

The system shall have a minimum uptime of 99.9% and shall be able to recover from any system failure within 15 minutes.

**6 Design Constraints:**

**6.1 Hardware:**

The system shall be designed to run on standard hardware configurations, including servers, workstations, and mobile devices.

**6.2 Software:**

The system shall be designed to run on standard software platforms, including web browsers and operating systems.

**6.3 Security:**

The system shall be designed to adhere to industry-standard security practices, including encryption of data and user authentication.

**7 Non-Functional Attributes:**

**7.1 Portability:**

The system shall be designed to be easily portable to different hardware and software platforms.

**7.2 Reusability:**

The system shall be designed to be easily reusable in other library settings.

**7.3 Application Compatibility:**

The system shall be designed to be compatible with other library applications and systems.

**7.4 Data Integrity:**

The system shall ensure the integrity and accuracy of all library data.

**7.5 Scalability:**

The system shall be designed to be scalable to meet the needs of libraries of all sizes.

**8 Preliminary Schedule and Budget:**

**8.1 Schedule:**

The development of the Library Management System is expected to take 12 months from the start of development to the final release.

**8.2 Budget:**

The estimated cost of development of the Library Management System is $150,000, including all hardware, software, and personnel costs.