# Manthan Libraries: Library Management System (LMS)

**Version:** 1.0 **Date:** September 9, 2025 **Author:** [Your Name] **Student ID:** [Your Student ID]

## **1. Introduction**

### **1.1 Purpose**

This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements for the Manthan Libraries Library Management System. This document's purpose is to ensure all project stakeholders, including developers, testers, and project managers, have a common understanding of the system to be developed.

### **1.2 Project Scope**

The Manthan Libraries LMS will be a web-based application designed to automate the core operations of a library. The system will manage **book inventory**, **member registrations**, **book transactions** (issue, return, reissue), and integrated **online payments** for fines. The goal is to improve efficiency, reduce manual work, and provide a better experience for both librarians and members.

## **2. Overall Description**

### **2.1 Product Features**

The system will provide the following major features:

* **User Authentication and Authorization:** Secure login, registration, and password management.
* **Search and Browse:** Users can search and browse the library's book inventory.
* **Transaction Management:** Streamlined processes for issuing, returning, and reissuing books.
* **Payment Processing:** Calculation and processing of payments/fines via multiple gateways (Card, Net Banking, UPI, PayPal).
* **Administrative Interface:** A dedicated interface for librarians to manage the book inventory.

### **2.2 User Classes and Characteristics**

The system has two primary user roles with distinct privileges.

* **Member/Library Patron:** A standard user who can search for books, view their account status, borrow and return books, and make payments for fines.
* **Librarian/Admin:** An administrative user with all the privileges of a Member, plus the ability to add new books to the system and manage all book transactions.

## **3. System Features and Requirements**

### **3.1 Functional Requirements**

This section lists the specific functional requirements by module.

| Module | Requirement ID | Requirement Description |
| --- | --- | --- |
| **Authentication** | FR1 | The system shall provide a login screen for users to authenticate using a User Name and Password. |
|  | FR2 | The system shall provide a "Forgot Password" feature to allow users to reset their password. |
|  | FR3 | The system shall provide a "Create Account" screen for new users to register with their Name, User ID, and Password. |
|  | FR4 | The system shall require users to accept Terms & Conditions and the Privacy Policy during registration. |
| **Dashboard** | FR5 | The system shall display a main dashboard with a search bar and quick-action buttons. |
| **Book Management** | FR6 | The system shall allow users to search the book inventory, with results displaying the Book Title and available Quantity. |
|  | FR7 (Admin) | The system shall provide a form for librarians to add a new book by entering the Book Name, ISBN, Author, Date Published, and Date of Issue. |
|  | FR8 | The system shall provide a function to reissue a book by entering the Book Name and ISBN. |
|  | FR9 | The system shall provide a function to return a book by entering the Book Name and ISBN. |
| **Payment** | FR10 | The system shall allow users to select a payment method from: Debit/Credit Card, Net Banking, PayPal, or UPI. |
|  | FR11 | For Card payments, the system shall capture the Card Number, CVV, Expiry Date, and Cardholder Name. |
|  | FR12 | For Net Banking, the system shall allow users to select their bank from a list. |
|  | FR13 | For PayPal, the system shall capture the user's PayPal ID and Name. |
|  | FR14 | For UPI, the system shall capture the user's UPI ID. |

### **3.2 Non-Functional Requirements**

This section defines the quality attributes of the system.

| Requirement ID | Requirement Type | Requirement Description |
| --- | --- | --- |
| **NFR1** | **Usability** | The user interface shall be intuitive and easy to navigate for users with basic computer skills. |
| **NFR2** | **Security** | All passwords shall be stored using a strong, one-way encryption algorithm. Payment details shall be processed securely. |
| **NFR3** | **Reliability** | The system shall be available during library operating hours (e.g., 9:00 AM - 9:00 PM). |
| **NFR4** | **Performance** | The search functionality should return results within 3 seconds. |

## **4. External Interface Requirements**

### **4.1 User Interfaces**

The user interfaces are detailed in the provided wireframes. Key screens include:

* Login, Forgot Password, and Create Account screens.
* Main Dashboard and Search Results screens.
* Admin-specific screens like the Add Book screen.
* Book transaction screens (Reissue Book, Return Book).
* Payment screens for method selection and individual payment gateways.

### **4.2 Hardware Interfaces**

As a web application, the system requires only a server for hosting and client devices (e.g., PCs, tablets) with a modern web browser and an internet connection.

### **4.3 Software Interfaces**

* **Payment Gateway:** The system will integrate with a third-party Payment Service Provider API (e.g., Stripe, Razorpay) to handle transactions.
* **Database:** A relational database management system (e.g., MySQL, PostgreSQL) will be used to store all system data.

## **5. System Models**

### **5.1 Use Case Diagram**

A use case diagram would visually represent the system's functionality. The primary actors are the **Member** and the **Librarian**.

* **Member Use Cases:** Login, Register, Search Books, View Account, Borrow Book, Return Book, Reissue Book, Pay Fine.
* **Librarian Use Cases:** All Member use cases, plus the ability to Add Book.

### **5.2 Flow of Events Use Case: Borrow a Book**

This sequence describes the step-by-step process of a user borrowing a book.

1. The Member logs in to their account.
2. The Member searches for a book using the search bar.
3. The Member selects the book and clicks the "Issue" button.
4. The system records the transaction and automatically sets a due date.
5. If the book is returned late, the system will prompt for payment of a fine before allowing any further transactions.

## **6. Glossary**

* **API:** **A**pplication **P**rogramming **I**nterface; a set of rules allowing different software applications to communicate.
* **ISBN:** **I**nternational **S**tandard **B**ook **N**umber; a unique numeric commercial book identifier.
* **SRS:** **S**oftware **R**equirements **S**pecification; a document outlining what a software system must do.
* **UI:** **U**ser **I**nterface; the means by which a user interacts with a computer or device.
* **UPI:** **U**nified **P**ayments **I**nterface; an instant real-time payment system.

## **7. Conclusion**

This SRS document comprehensively outlines the requirements for the Manthan Libraries LMS. The accompanying wireframes provide a visual foundation for the user interface design. Any future changes to these requirements will be managed through a formal change control process to maintain project integrity.

## **8. Appendix A: Wireframes**

All system wireframes are contained in the separate document: *Library Management System.pdf*.