**SRS FOR LIBRARY MANAGEMENT SYSTEM**

**1. Introduction**

The LMS is a software application designed to automate and streamline the management of library resources and services. It will cater to the needs of librarians, patrons, and administrators.

**2. Overall Description**

The LMS will provide a centralized platform for managing the following functionalities:

**Resource Management:**

* *Add, edit, and delete information about books, periodicals, and other library materials.*
* *Track inventory levels and availability of resources.*
* *Categorize resources by subject, genre, or other relevant criteria.*
* *Patron Management:*
* *Register new patrons and manage their accounts.*
* *Track borrowing history and fines.*
* *Set borrowing limits based on patron type (student, faculty, etc.).*

**Circulation Management:**

* *Issue and return library materials.*
* *Renew loans.*
* *Generate automated overdue notices and fines.*
* *Manage holds and waiting lists for popular resources.*

**Reporting and Analytics:**

* *Generate reports on resource usage, borrowing trends, and patron activity.*
* *Provide insights for collection development and service improvement.*

**3. Specific Requirements**

**3.1 Functional Requirements**

**User Roles and Permissions:**

* *The system shall differentiate between users with varying roles (librarian, patron, administrator).*
* *Each role shall have specific permissions to access and manage functionalities.*

**Resource Management:**

* *The system shall allow adding resources with details like title, author, ISBN, publication date, etc.*
* *The system shall support uploading cover images or descriptions for resources.*
* *The system shall allow searching and filtering resources based on various criteria.*

**Patron Management:**

* *The system shall allow registering patrons with information like name, contact details, and membership type.*
* *The system shall allow searching and editing patron information.*

**Circulation Management:**

* *The system shall allow librarians to check out resources to patrons by scanning barcodes or searching the database.*
* *The system shall track due dates and automatically calculate fines for overdue returns.*
* *The system shall allow patrons to renew loans online or at the library.*
* *The system shall notify patrons of upcoming due dates and overdue fines.*

**Reporting and Analytics:**

* *The system shall generate reports on resource usage statistics (borrows, renewals, etc.).*
* *The system shall generate reports on patron activity and identify popular resources.*
* *The system shall allow exporting reports in various formats (PDF, CSV).*

**3.2 Non-Functional Requirements**

**Performance:**

* *The system shall respond to user queries promptly.*
* *The system shall be able to handle concurrent access by multiple users.*

**Security:**

* *The system shall protect sensitive user information (patron data, borrowing history) with secure access controls.*
* *The system shall encrypt data transmission to prevent unauthorized access.*

**Availability:**

* *The system shall be highly available with minimal downtime.*
* *The system shall have mechanisms for data backup and disaster recovery.*

**Usability:**

* *The system interface shall be user-friendly and intuitive for librarians and patrons with varying technical skills.*
* *The system shall provide online help and tutorials for user guidance.*

**4. System Interfaces**

* *The LMS will have a graphical user interface (GUI) accessible through a web browser.*
* *The system may also provide a mobile interface for patron convenience (optional).*
* *The system shall integrate with barcode scanners for efficient resource check-in/out.*