**Software Requirements Specification (SRS) Document**

**1. Introduction**

**1.1 Purpose**

The Secure Library Management System (SLMS) has been developed to enhance the effectiveness of library administrators in the performance of their duties while ensuring that the work is secure and accurate. It will assist librarians in processing books, keeping track of transactions, and identifying users in a secure manner. The system will also maintain data accuracy, use role-based access control, and log all activities in order to guarantee transparency and accountability.

**1.2 Scope**

SLMS will be a full fledged system for controlling libraries, whereby the administrators and the librarians will be able to control the book records, user accounts and the borrowing activities efficiently. It will have features such as book marking, overdue fines, and due date notification. Features for security will include encryption of data, restricted access and tracking of activities in order to protect the user’s information and prevent unauthorized use. The system should also be able to incorporate changes and enhancements in the future.

**1.3 Definitions, Acronyms, and Abbreviations**

* SLMS – Secure Library Management System
* RBAC – Role-Based Access Control
* SRS – Software Requirements Specification

**1.4 References**

* IEEE Standard for Software Requirements Specification
* Secure Coding Guidelines

**2. Functional Requirements**

**2.1 User Management**

* User Registration & Authentication – Users will need to sign up and log in using securely encrypted credentials.
* Role-Based Access Control (RBAC) – The system will have different roles with specific permissions:
  + Admin – Manages users and books.
  + Librarian – Handles book inventory, checks records, and processes borrowing/returns.
  + Student – Can search for books, request loans, and view their borrowing history.

**2.2 Book Management**

* Book Database – Users with the required access will be able to add, update, delete, and search books.
* Borrowing & Returning Books – The system will manage book borrowing based on availability, track due dates, and apply overdue penalties if necessary.
* Book Reservation – Students can reserve books if they are currently unavailable.

**2.3 Security Features**

* Data Encryption – User credentials and other sensitive data will be encrypted.
* Access Control – Only authorized users will have access to specific functionalities.
* Activity Logging – All system interactions will be recorded for security and monitoring purposes.

**2.4 Notifications**

* Overdue Reminders – Automated notifications (email/SMS) will alert users when their borrowed books are due.
* Admin Alerts – The system will notify administrators about security issues or system malfunctions.

**3. Non-Functional Requirements**

The system is designed with an object oriented approach to facilitate code reusability and accommodate improvements.

Having a layout and clear documentation, for the code will ensure that it remains easy to upkeep and modify with hassle.

The system must guarantee 99.99 % uptime. Have error handling features to avoid interruptions．

Security measures, with a rating of 34 have been implemented.

Role Based Access Control (RBAC); This system guarantees that users can only access features that're pertinent, to their designated roles.

• Data encryption ensures the protection of information such, as login details and transaction data, against access.

• Monitoring and Oversight. Maintains records of all actions to deter misuse and enhance visibility into the systems operations.

**4. Conclusion**

The Secure Library Management System (SLMS) created to offer an user friendly way to manage library tasks efficiently for librarians and students alike, with top notch security features and easy maintenance strategies set in place along, with a design that can easily grow as needed while upholding quality software practices.