LIBRARY MANAGEMENT SYSTEM

1. Introduction

1.1 Purpose: This document outlines the requirements for the Library Management System (LMS) to guide Stakeholders in understanding the system's objectives and functionalities.

1.2 Scope: The LMS will streamline library operations, providing functionalities for user and book management. It includes an estimate of development cost & timeline

1.3 Overview: The LMS will automate processes such as book management, member transactions and reporting enhancing operational efficiency.

2. General Description
- The LMS will serve multiple user roles including librarians, members and administrators, key features include:
- User Management: Registration & management of library members.
- Book Management: Cataloging, searching and managing library inventory
- Transaction Management: Handling book checkouts, returns and reservations.
- Reporting: Generating reports on library usage, overdue books, and inventory status
  The LMS is crucial for modern libraries to improve accessibility and service delivery

3. Functional Requirements

The LMS will include the following ranked fun requirements

- User registration and login
- Search functionality
- Check-out and return process
- Reservation of books
- Management of profiles
- Inventory management (adding, deleting, editing books)
- Generation of reports (overdue books, member activity)

4. Interface requirements.

- User Interface: A web based interface for end-users
- API Interfaces: RESTful API's for integration with external Systems (eg payment systems, other lib systems)
- Database Interface: SQL interface for data retrieval and manipulation.

5. Performance requirements:

- Response Time: system should respond to user actions within 2 seconds.
- Concurrent Users: Support up to 100 concurrent users without performance degradation.
- Data Storage: Ability to handle up to 10,000 book records and 5000 member profiles
- Error Rate: Maximum allowable error rate 1% for transactions.

6. Design constraints:

- The use of a specific DBMS (eg MySQL)
- Compliance with relevant data protection regulations
- Compatibility with existing lib hardware & software systems

7. Non - functional Attributes
- Security: Implementation of user authentication and data encryption
- Portability: The System should be accessible from various devices
- Reliability: 99.9% uptime & regular backup procedures.
- Scalibility: Ability to add more users and books as the library grows.

8. Preliminary Schedule & Budget

The estimated project duration is 6 months, with a budget of approximately $50,000 broken down as follows:
- Development costs: $30k

Testing: $10k

Deployment: $5k

Training & support: $5k