Library Management System.

Problem Statement:

Existing library management system lack comprehensive functionality support from information users and have complex interfaces. A robust library management System (LMS) is needed to efficiently catalogue books, manage users, while ensuring seamless integration and compliance with industry standard.

1.1 Purpose of this Document:

This section clarifies why the SRS document is necessary. It serves as a guide for the development team and anyone involved in the project.

1.2 Scope of this Document:

The overall working and main objectives are described. It also outline what value the system will provide to customers and stakeholders along with estimates of development cost and Time.

1.3 Overview:

This section provides a summary of high-level review of the library management system. It briefly describes what the system is about and its key functionalities.

General Description:
This section provides a broad overview of the library management system, including its general functions; user characteristics, feature and benefits.

Functional Requirements:
describes the specific functions or capabilities that the library management System must perform. This includes actions such as cataloging books, managing user, transactions.

Interface Requirements:
detail how it should communicated with users, other software systems and external devices.

Performance Requirements:
specify how the library management system should perform under various conditions. This includes factors such as response time, scalability and system reliability.

Design constraints:
design constraints outline any limitations or restrictions that the development team must adhere to when designing This could include platform compatibility requirements, hardware limitations or constraints

Non-Functional Attributes :
Are qualities or characteristics of the
library management system that
are not directly related to its
specific functions. This includes
attributes like security, reliability,
portability & scalability.

Preliminary Schedule and Budget :
Includes a timeline and Budget
estimates. It outlines the phases of
the project such as requirements
gathering, design, implementation,
testing and deployment

libray Management System

```
┌─────────────────────────────┐          ┌──────────────────────┐
│ libraryManagmentSystem      │          │ libray               │
│  + userName                 │──────────│  + libraryId         │
│  + userPassword             │          │  + libsayName        │
│  + login ()                 │          │                      │
│  + logout ()                │          └──────────────────────┘
└─────────────────────────────┘                    │
                                                    ◆
                                                    │
                                          ┌──────────────────────┐     ┌──────────────┐
                                          │ BorrowedItem         │     │ Book         │
                                          │  + Title             │     │  + ISBN      │
                                          │  + publication       │◁────│  + author    │
                                          │  + edition           │     │              │
                                          └──────────────────────┘     └──────────────┘
                                                    *
                                                    │
                                                    1
                                          ┌──────────────────────┐
                                          │ Patron               │
                                          │  + id                │
┌──────────────────────┐                  │  + name              │
│ PatronAccount        │      has         │  + email             │
│  + patronId          │──────────────────│                      │
│  + accontId          │                  └──────────────────────┘
│  + dueAmount ()      │                        │         ┌──────────────────────┐
└──────────────────────┘                    takes         │ Payment              │
                                                *          │  + acconted          │
                          ┌──────────────────────┐        │  + paymentDate       │
                          │ loan                 │        │  + payFine ()        │
                          │  + loanId            │        └──────────────────────┘
                          │  + loanDate          │            △          △
                          │  + itemReturn ()     │        ┌──────┐   ┌──────┐
                          └──────────────────────┘        │ cash │   │ Card │
                                                          └──────┘   └──────┘
```

LibraryManagementSystem

+userName
+userPassword

+login()
+logout()
+register()

Library

+libraryId
+libraryName
+libraryLocation

BorrowedItem

+title
+publication
+publisher
+edition

*

+borrows

1

Book

+ISBN
+author
+genre

Journal

+ISSN
+editor
+issue
+volume

E-Book

+ISBN
+author
+genre

PatronAccount

+patronId
+accountId
+balance
+loan

+dueAmount()

+has

Patron

+id
+name
+email
+address

1

+pays

Payment

+paymentId
+accountId
+fineAmount
+paymentDate
+paymentStatus

+payFine()

+takes

*

Loan

+loanId
+borrowedItem
+loanDate
+dueDate

+itemReturn()

«enumeration»
PaymentStatus

Processing
Completed
Failed

Cash

Card