Lewis University  
CPSC 50900: Database Systems   
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<https://github.com/apuroopsharan/database-project.git>

# **LIBRARAY MANGMENT SYSTEM**

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**Introduction:**

Our proposed project aims to develop a database system for managing library resources, borrower information, and library transactions. The Library Management System will have a user-friendly interface that will allow library staff to easily manage and access the library's collection of books, journals, magazines, and other resources. The system will also allow library members to borrow and return books, renew borrowed items, and pay fines online. The proposed system will help improve the overall efficiency and effectiveness of library services, making it easier for both staff and members to access and manage library resources.

A library management system is a software application that helps manage the operations of a library. The system can be used by librarians to keep track of books, patrons, loans, and returns. It can also be used by patrons to search for and request books.

Objectives:

Create a database that can store information about books, patrons, loans, and returns.

Allow librarians to search for books by title, author, subject, edition.

Allow patrons to search for books by title, author, subject, edition.

Allow patrons to request books that are currently checked out.

Keep track of the due dates of borrowed books and generate notifications for overdue books.

Allow librarians to add, edit, or delete books, patrons, and loan records.

Generate reports on books, patrons, loans, and returns.

Data Model:

The data model for the library management system database project will consist of the following entities:

Books: This entity will store information about books such as title, author, publisher, ISBN, and availability status.

Patrons: This entity will store information about patrons such as name, address, phone number, and email.

Loans: This entity will store information about loans such as the book ID, patron ID, loan date, and due date.

Returns: This entity will store information about returns such as the book count, return date, and late fee (if any).

Books

|  |  |
| --- | --- |
| Title | Varchar (15) |
| Author | Varchar (15) |
| Publisher | Varchar (15) |
| ISBN | INT |
| Availability\_status | CHAR |

Patrons

|  |  |
| --- | --- |
| Name | Varchar (15) |
| Address | Varchar (15) |
| Phn\_num | Int |
| Email | Varchar (15) |

Loans

|  |  |
| --- | --- |
| Book\_ID | Int |
| Patron\_ID | Int |
| Loan\_date | Date |
| Due\_date | date |

Return

|  |  |
| --- | --- |
| Book\_count | Int |
| Return\_date | Date |
| Late\_fee | int |