Library Management System

Introductions

Library Management System is a desktop application which is used by librarian to manage the library using a computerized system where he/she can record various transactions like issue of books, return of books, addition of new books, addition of new students etc. Books and student maintenance modules are also included in this system which would keep track of the students using the library and also a detailed description about the books a library contains. With this computerized system there will be no loss of book record or member record which generally happens when a non-computerized system is used.

In addition, report module is also included in Library Management System. If user's position is admin, the user is able to generate different kinds of reports like search of students registered, search of books, issue and return reports. All these modules are able to help librarian to manage the library with more convenience and in a more efficient way as compared to library systems which are not computerized.

Objectives

- Improvement in control and performance, system is developed to cope up with the current issues and problems of library. The system can add user, validate user and is also bug free.
- Save cost after computerized system is implemented less human force will be required to maintain the library thus reducing the overall cost.
- Save time librarian is able to search record by using few clicks of mouse and few search keywords thus saving his valuable time.

Functional Requirements

- Admin Login
- Register New Librarian

- Register New Book

- Register New Student

- Search Book

- Issue and Return Book

Data Dictionary

For Admin:

```
+----------+-------------+------+-----+---------+----------------+
| Field    | Type        | Null | Key | Default | Extra          |
+----------+-------------+------+-----+---------+----------------+
| id       | int         | NO   | PRI | NULL    | auto_increment |
| user     | varchar(30) | NO   | UNI | NULL    |                |
| name     | text        | NO   |     | NULL    |                |
| password | text        | NO   |     | NULL    |                |
+----------+-------------+------+-----+---------+----------------+
```

For Book:

```
+--------------+--------------+------+-----+---------+----------------+
| Field        | Type         | Null | Key | Default | Extra          |
+--------------+--------------+------+-----+---------+----------------+
| book_id      | int          | NO   | PRI | NULL    | auto_increment |
| name         | varchar(300) | NO   |     | NULL    |                |
| author       | varchar(300) | NO   |     | NULL    |                |
| availability | varchar(30)  | NO   |     | NULL    |                |
+--------------+--------------+------+-----+---------+----------------+
```

For Issue Book:

```
+-------------+-------------+------+-----+---------+----------------+
| Field       | Type        | Null | Key | Default | Extra          |
+-------------+-------------+------+-----+---------+----------------+
| issue_id    | int         | NO   | PRI | NULL    | auto_increment |
| book_id     | int         | NO   | MUL | NULL    |                |
| stud_id     | int         | NO   | MUL | NULL    |                |
| issue_date  | varchar(30) | NO   |     | NULL    |                |
| return_date | varchar(30) | NO   |     | NULL    |                |
+-------------+-------------+------+-----+---------+----------------+
```

For Student:

```
+--------------+--------------+------+-----+---------+----------------+
| Field        | Type         | Null | Key | Default | Extra          |
+--------------+--------------+------+-----+---------+----------------+
| stud_id      | int          | NO   | PRI | NULL    | auto_increment |
| name         | varchar(300) | NO   |     | NULL    |                |
| phone_number | varchar(30)  | NO   |     | NULL    |                |
| address      | text         | NO   |     | NULL    |                |
+--------------+--------------+------+-----+---------+----------------+
```

Use Case Diagram

Library Management System
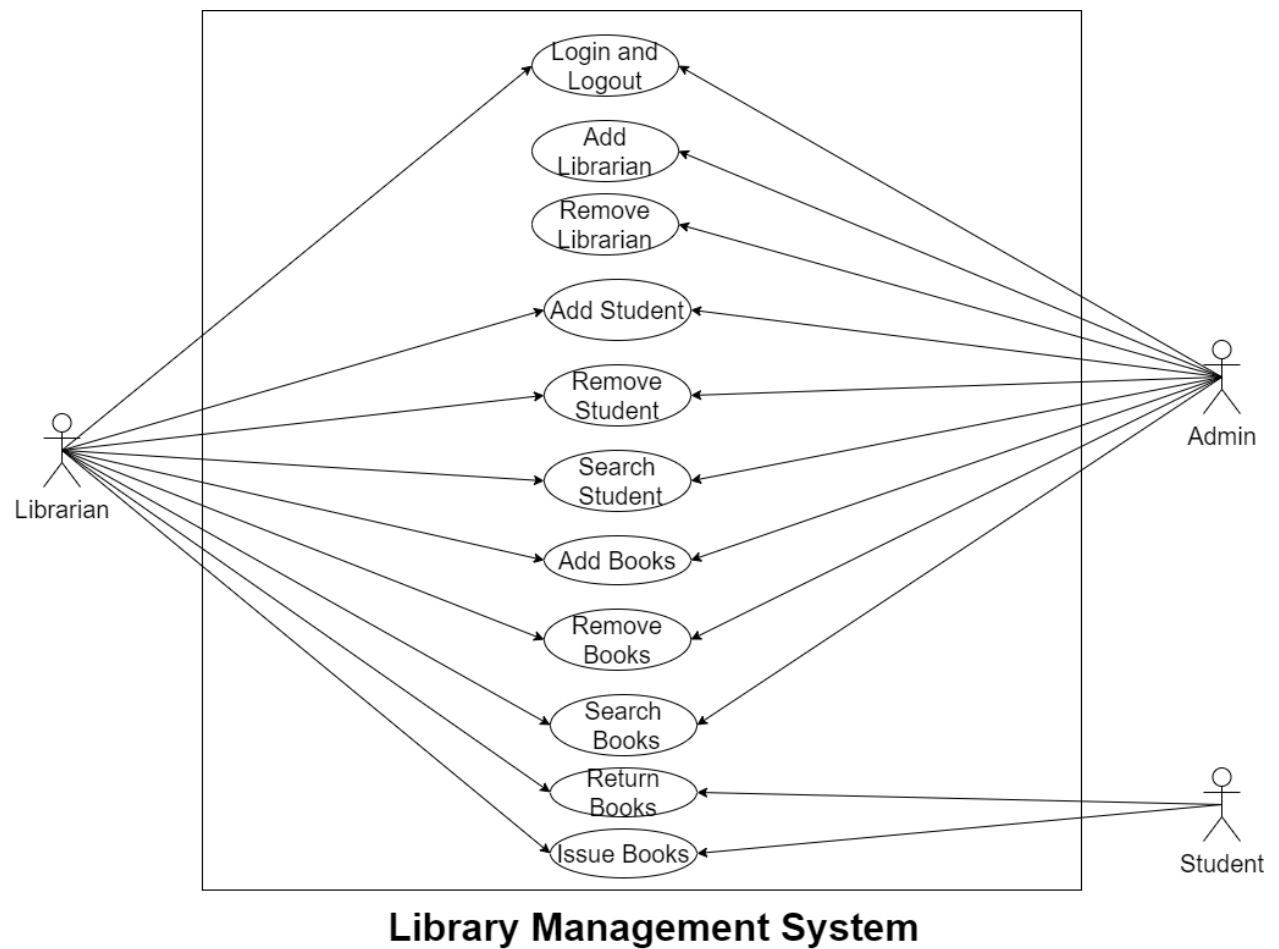
ER-Diagram
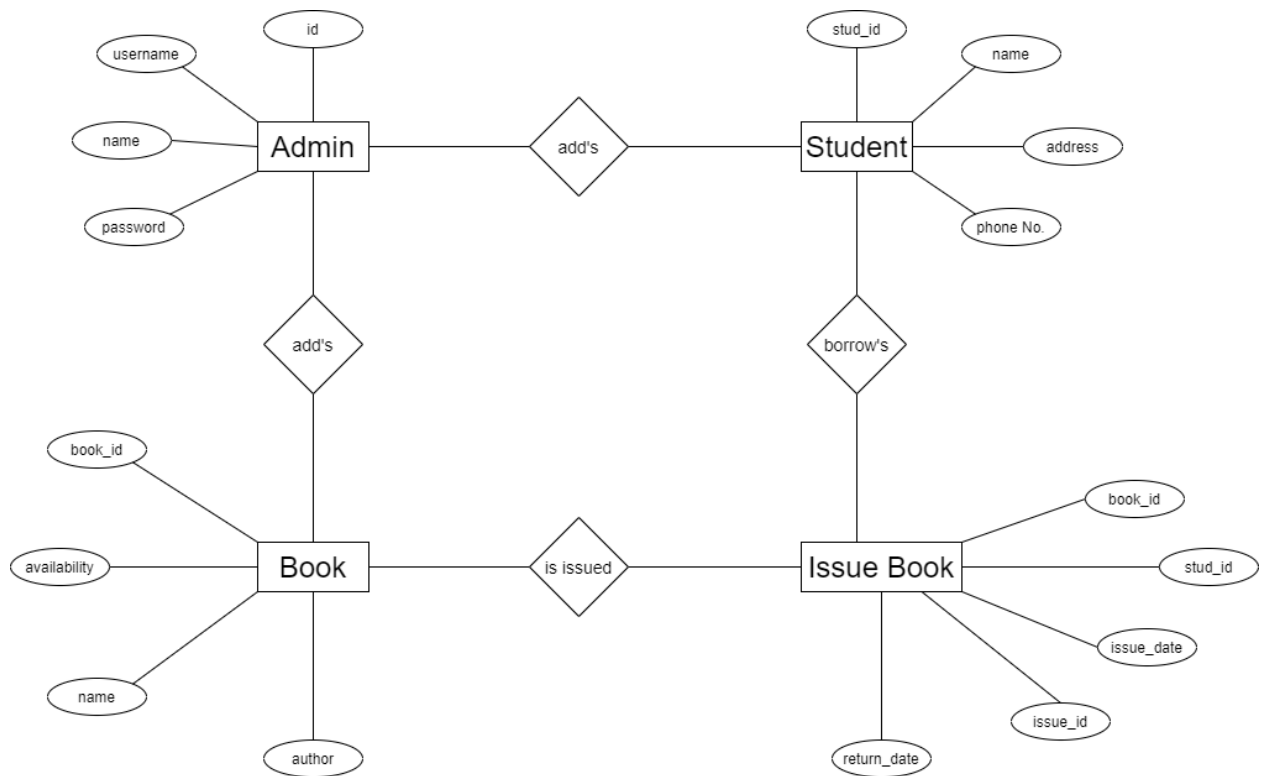
Conclusion

This desktop application of library management system which will benefit the students as well as librarian. It makes entire process computerized where librarian can search books, generate reports and do book transactions.