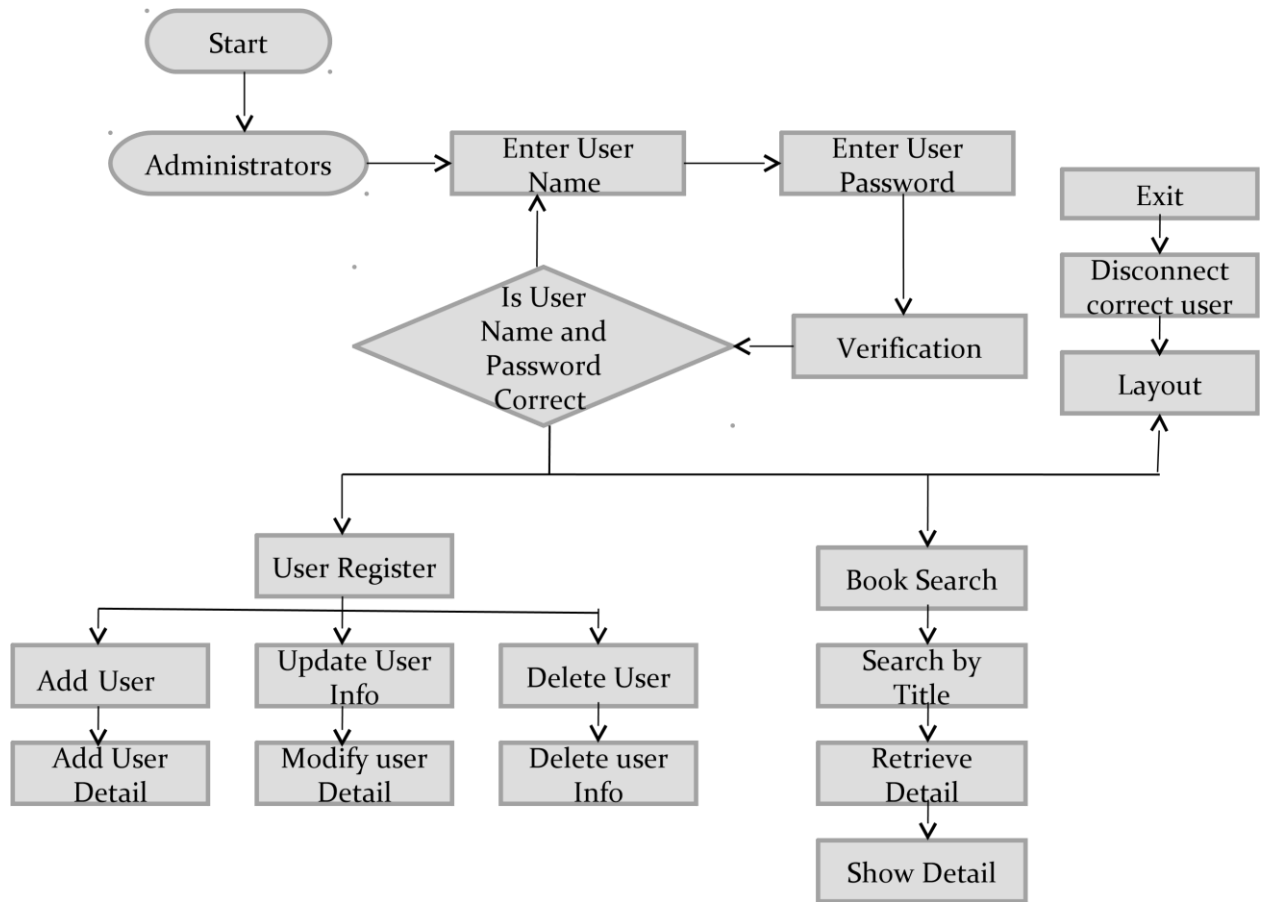# Library Management System

This software project is a library management software system with all the basic as well as some innovative features for managing a library. It consists of a large database of various books available in the library. It also lists various books issued to respective readers. The system keeps track of all the books readily available and also the books that have been issued to various readers for the time period for which the books have been issued. The system also handles books database. If the reader needs a book, he can order the book request for home delivery by just submitting an online form. Readers usually tend to forget the date to return their library books, so this system even calculates fine depending on the expiry date. Thus this innovative library management system provides enhanced library functionality for this modern world.
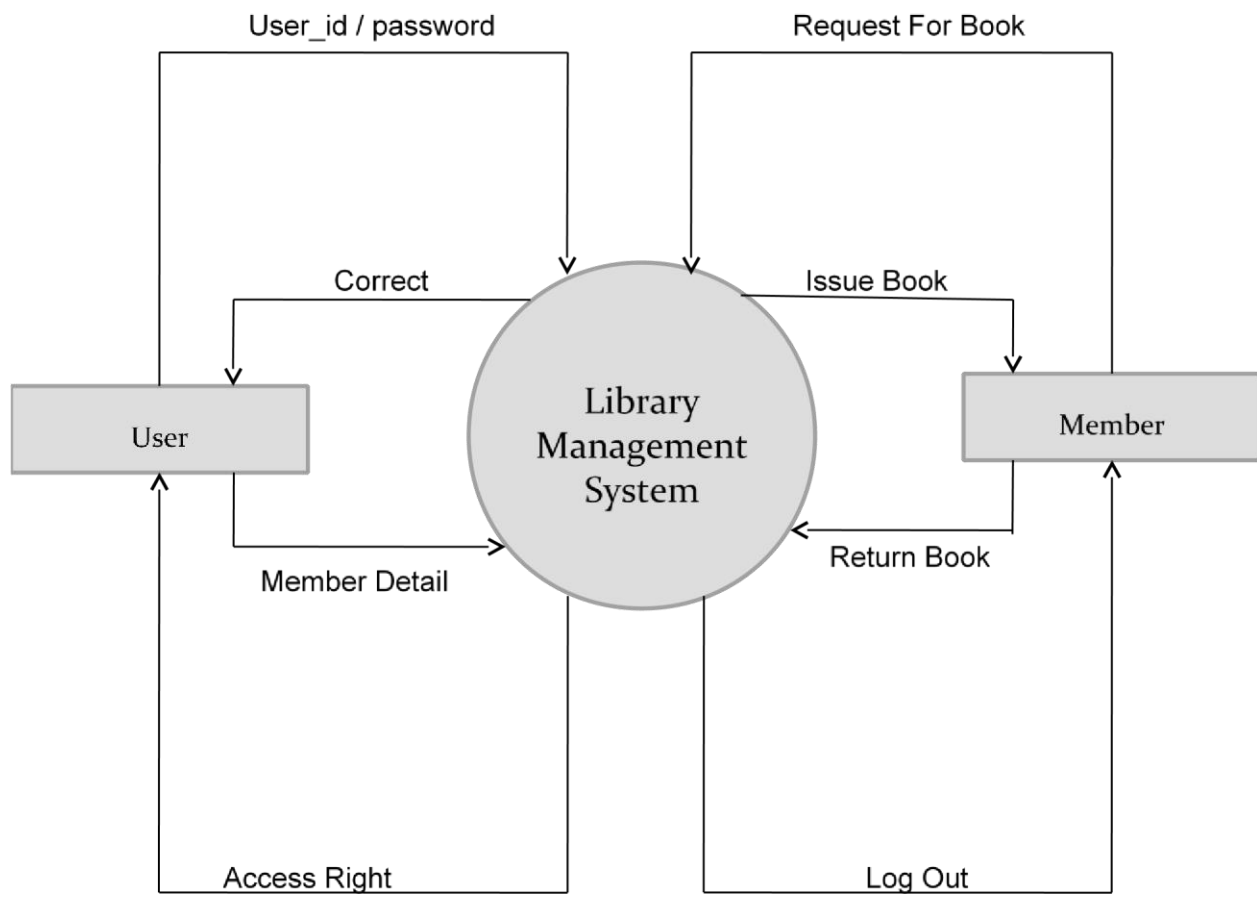
Features of the system:-

- **Admin login:** The system will be under sole control of the admin. Admin can add or remove books from the system and also maintains records of the book available and issued in the library. The admin can even update the books details if required.

- **User login:** User has to first create an account in the system to gain access. User can explore and search for the books he wants. He can place order for the books.

- **Tracking the user record:** The system can track the period for which the book has been issued to user and calculates fine if the book is not returned on time.

- **Quantity Update-** The quantity is updated by the system depending on the quantity ordered.

- **Fine calculation:** If the user is unable to return the book, the system automatically calculates the fine that the user has to pay for subsequent days.

- **View date info-** The user can view the date when he has issued the book as well as the expiry date of the book and can view fine to be paid that is calculated by the system.

- **Online search and order form:** The user may order the book online. The system provides a search option where user can order online.
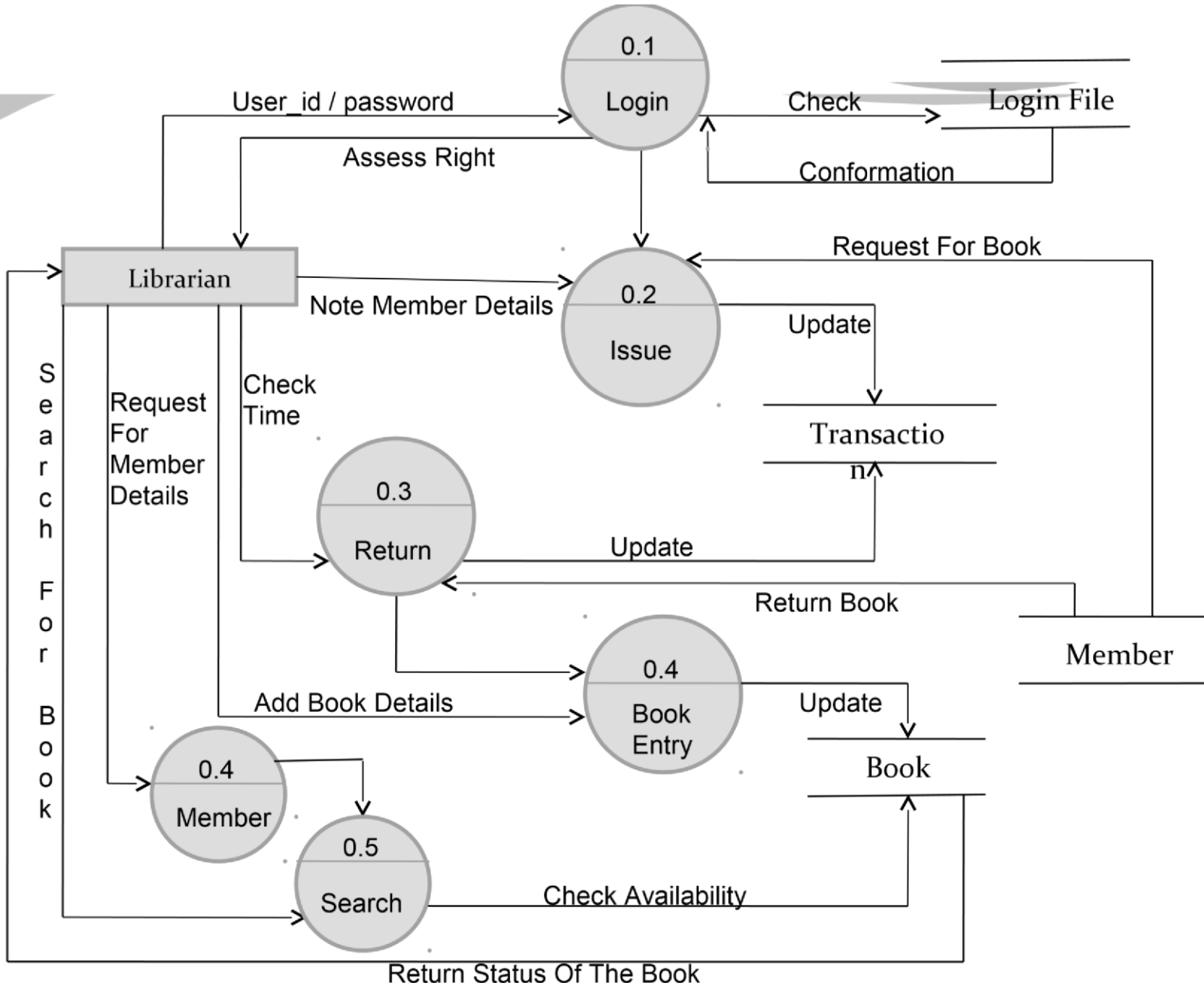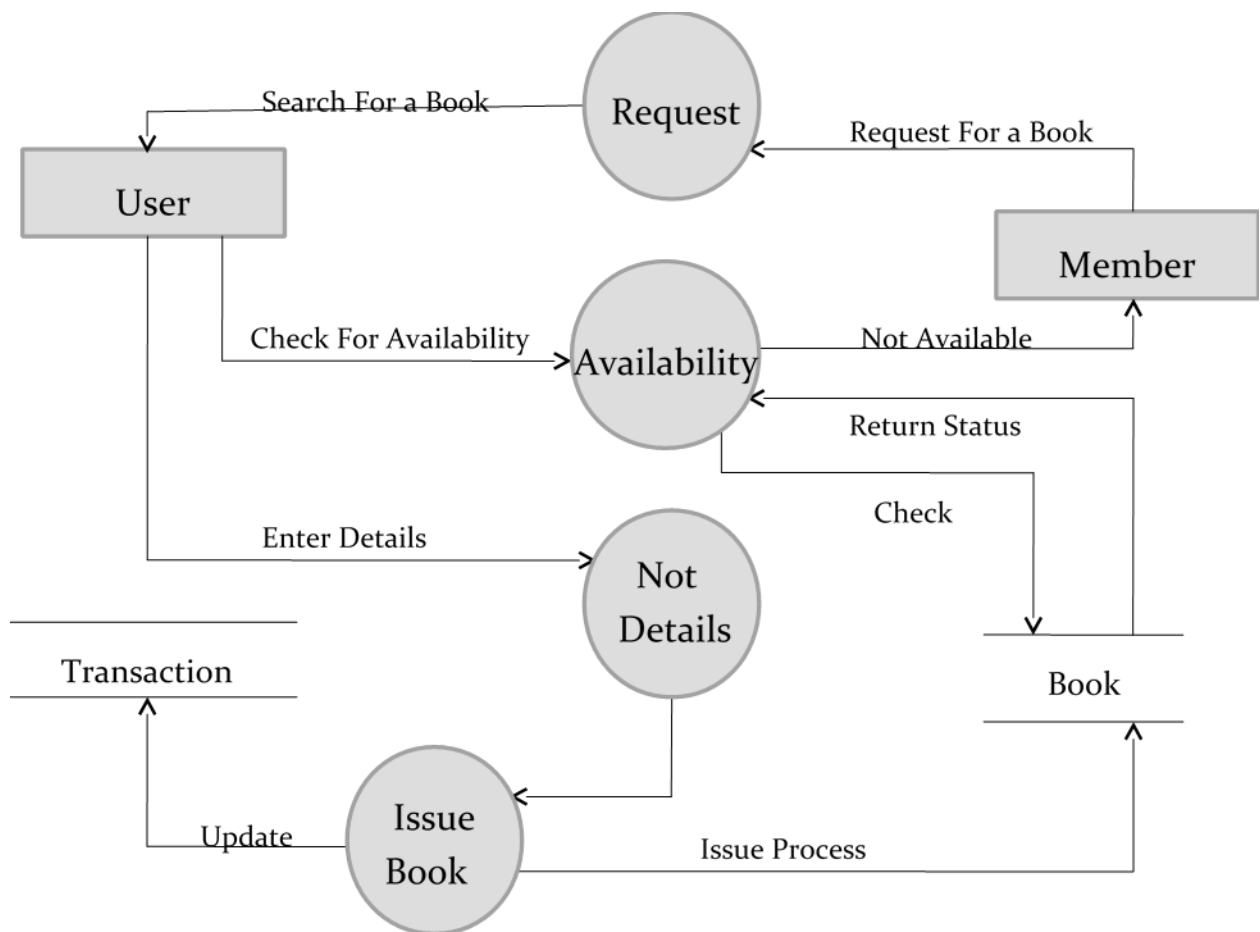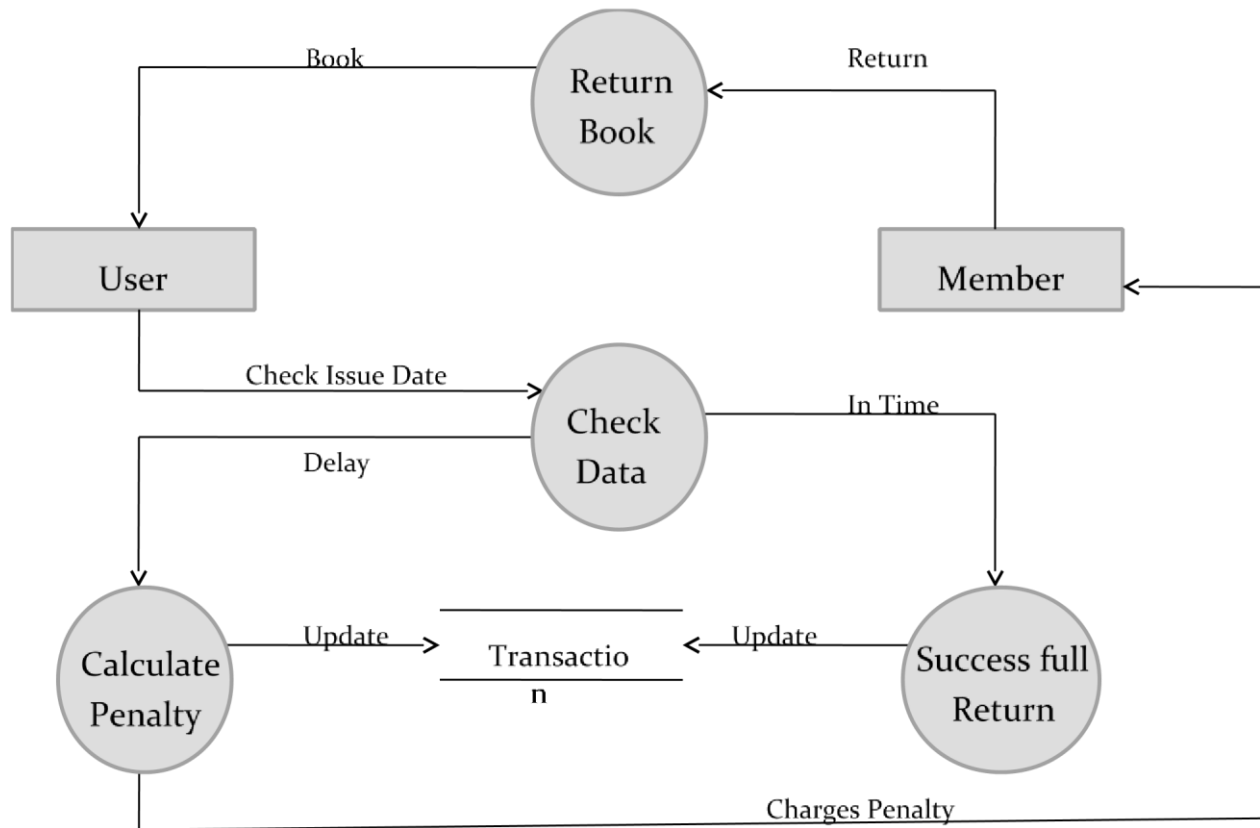
FLOW CHART

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │
                         ▼
   ┌──────────────┐   ┌────────────┐      ┌────────────┐        ┌──────────────┐
   │Administrators│──▶│ Enter User │─────▶│ Enter User │        │     Exit     │
   └──────────────┘   │    Name    │      │  Password  │        └──────┬───────┘
                      └────────────┘      └─────┬──────┘               │
                            ▲                   │                      ▼
                            │                   ▼               ┌──────────────┐
                      ┌───────────┐       ┌────────────┐        │  Disconnect  │
                      │  Is User  │       │Verification│        │ correct user │
                      │ Name and  │◀──────└────────────┘        └──────┬───────┘
                      │ Password  │                                    │
                      │  Correct  │                                    ▼
                      └─────┬─────┘                             ┌──────────────┐
                            │                                   │    Layout    │
         ┌──────────────────┴──────────────────┐               └──────────────┘
         ▼                                      ▼                      ▲
  ┌──────────────┐                       ┌──────────────┐              │
  │ User Register│                       │ Book Search  │──────────────┘
  └──────┬───────┘                       └──────┬───────┘
    ┌────┼────────────┐                         ▼
    ▼    ▼            ▼                   ┌──────────────┐
```

Enter User Name

Enter User Password

Is User Name and Password Correct

Verification

Exit

Disconnect correct user

Layout

Administrators

Start

User Register

Add User	Update User Info	Delete User
Add User Detail	Modify user Detail	Delete user Info

Book Search

Search by Title

Retrieve Detail

Show Detail

CONTEXT LEVEL

User_id / password   Request For Book

Correct   Issue Book

| User | Library Management System | Member |

Member Detail   Return Book

Access Right   Log Out

ZERO LEVEL

FIRST LEVEL

SECOND LEVEL

Advantages:

- The system excludes the use of paper work by managing all the records electronically.

- Administrator doesn't have to keep a manual track of the users

- Also the system calculates the fine levied on user so admin just have to create bill and not manually calculate.

- Admin can keep updating the system by providing the new books arrival in library and their availability thus user need not to go to library for issuing purpose. He may order it online through this system.

- Thus, it saves human efforts and resources.

Disadvantages:

- User cannot view the book in person.

- There is no human interaction if users have some enquiry.

Applications:

- This system can be used in public libraries.

- It can also be implemented in the library of schools, colleges, institutes, and organizations.