I. LIBRARY MANAGEMENT SYSTEM

1. FUNCTIONAL AND NON FUNCTIONAL REQUIREMENTS

Functional Requriements

1. Allow the librarian to add and remove new members.
2. Allow the user to search for books based on title, publication date, author, etc., and find their location in the library.
3. Users can request, reserve, or renew a book.
4. Librarian can add and manage the books.
5. The system should notify the user and librarian about the overdue books.
6. The system calculates the fine for overdue books on their return.

Non - Functional Requirements

Usability

Usability is the main non-functional requirement for a library management system. The UI should be simple enough for everyone to understand and get the relevant information without any special training. Different languages can be provided based on the requirements.

Accuracy

Accuracy is another important non-functional requirement for the library management system. The data stored about the books and the fines calculated should be correct, consistent, and reliable.

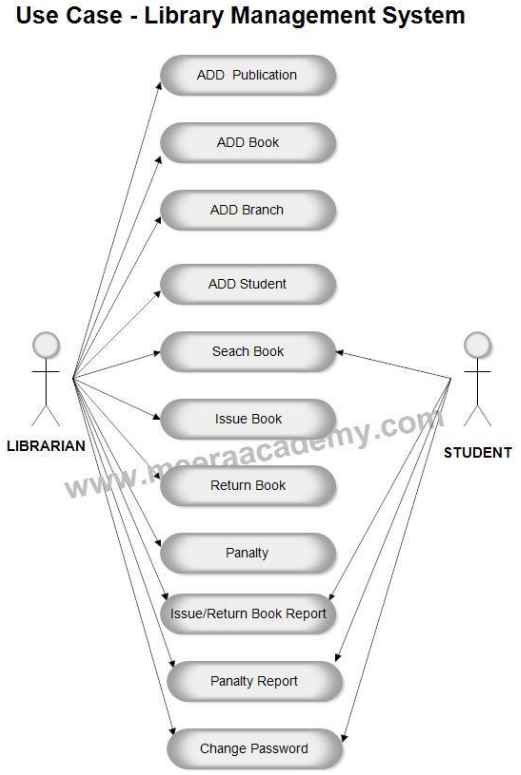
Availability

The System should be available for the duration when the library operates and must be recovered within an hour or less if it fails. The system should respond to the requests within two seconds or less.

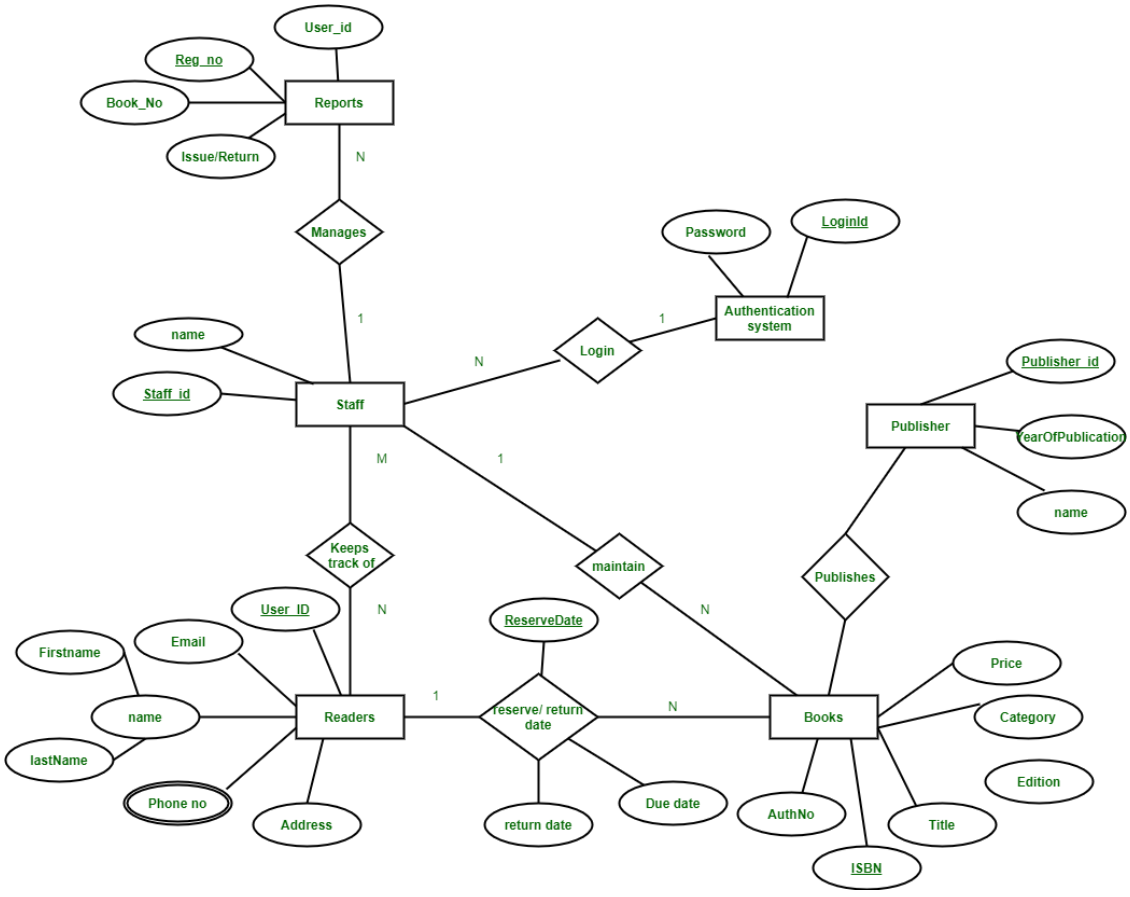
Maintainability

The software should be easily maintainable and adding new features and making changes to the software must be as simple as possible. In addition to this, the software must also be portable.

2. USE CASE DIAGRAM



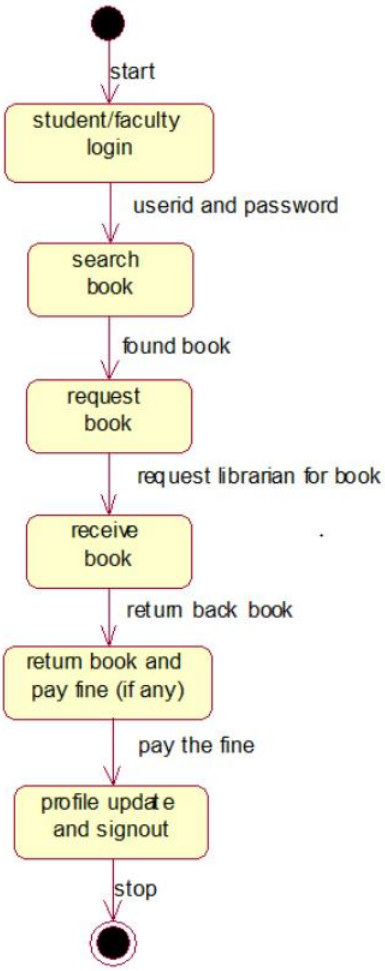
3. ER DIAGRAM



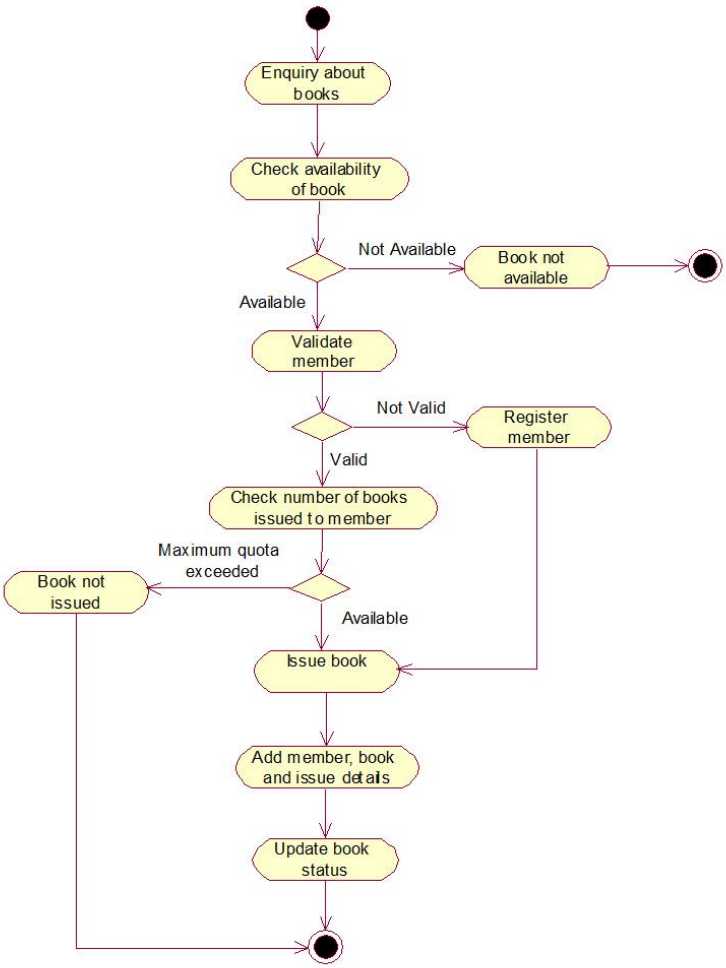
4. DESIGN DB

5. STATE CHART AND ACTIVITY STATE MODELING DIAGRAM STATECHART DIAGRAM

- **STATE DIAGRAM**

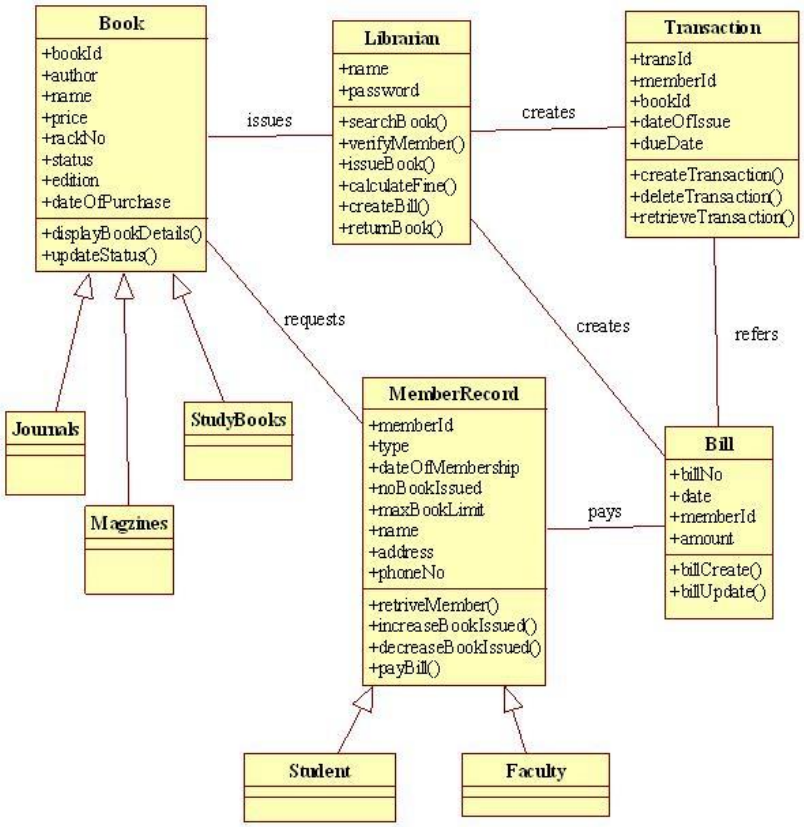


- **ACTIVITY STATE MODELING DIAGRAM**

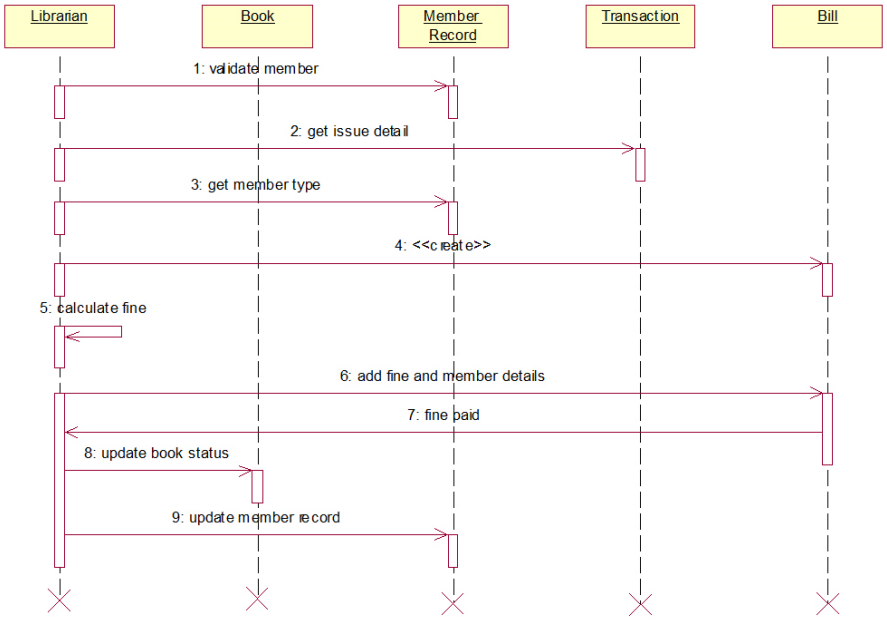


6 CLASS AND SEQUENCE DIAGRAM

CLASS DIAGRAM



SEQUENCE DIAGRAM



7) DATA FLOW DIAGRAM