LIBRARY MANAGEMENT SYSTEM

Project Documentation

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Requirements specification for a given problem (SRS)

Introduction

1.1 Purpose:

The SRS typically contains a brief description of the project. the most objective of this document is, for instance, the wants of the project Library management system.

The purpose of this project is to supply a friendly environment to take care of the small print of books and library members.

1.2 Scope:

The document only covers the wants specifications for the Library Management System. The project is specifically designed for the utilization of librarians and library users. the merchandise will work as an entire interface for library management process and library usage from ordinary users. Library management system is often employed by the library to manage its books and books borrowing, insertion and monitoring.

1.3 Definition, Acronyms, Abbreviation:

- SQL - Structured command language
- DFD - Data flow chart
- CFD - Context flow chart
- ER - Entity Relationship
- IDE - Integrated Development Environment
- SRS - Software Requirement Specification

1.4 Overview:

The implementation of Library Management starts with entering and updating master records like book details, library information. any longer transaction like book issue, book return will automatically update the present books.

Overall Description:

2.1 Product Description:

The proposed Library Management System will look out of the present book detail at any point of your time. The book issue, book return will update the present book details automatically so that user will get the update current book details.

2.2 Product function:

- The main purpose of this project is to scale back the manual work.
- This software is capable of managing Book Issues, Returns, and Calculating/Managing Fine. Generating various Reports for Record-Keeping consistent with user requirements.
- The member's status of issue/return is maintained within the library database. The member's details are often fetched by the librarian from the database as and when required.

2.3 User characteristics:

- User module: within the user module, the user will check the supply of the books.

Book return

- Administration module: the subsequent are the submodule within the administration module.

Register user

Entry book details

Book issue

2.4 General Constraints:

Any update regarding the book from the library is to be recorded to possess update & correct values.

2.5 Assumption and dependencies:

Assumptions are:

- The system should be user friendly so that it's easy to use for the users.

- The information of all users, books and libraries must be stored in a database that's accessible by the software.
- The system should have more storage capacity and supply fast access to the database.
- The system should provide a search facility.

Dependencies:

- The end-users should have a proper understanding of the merchandise.
- The information of the users must be stored during a database that's accessible by the Library system.
- Any update regarding the book from the library is to be recorded to the database and therefore the data entered should be correct.

3. Specific Requirement:

3.1 External Interface Requirement:

3.1.1 User Interface:

The software provides a good graphical interface for the user and therefore the administrator can operate the system, performing the specified task like create, update, viewing the small print of the book.

Allows the user to look at quick reports like Book Issues/Returned etc in between particular time.

Stock verification and search facility supported different criteria.

3.1.2 Hardware interface:

- Operating system: window
- RAM: 256 MB
- Processor: Pentium(R)Dual-core CPU

3.1.3 Software interface:

- Java language
- Net beans IDE
- MS SQL server

3.1.4 Communication interface:

- Window

3.2 Functional requirements:

- Book-entry: during this module, we will store the small print of the books.
- Register student: during this module, we will keep the small print of the new student.
- Book issue: This module is employed to stay a track of book issue details.
- Book return: This module enables to stay a track of return the books.

3.3 Performance requirements:

The potential of the pc depends on the performance of the software. The software can take any number of inputs provided the database size is large enough. This can depend upon the available memory space.

3.3.1 Design constraints:

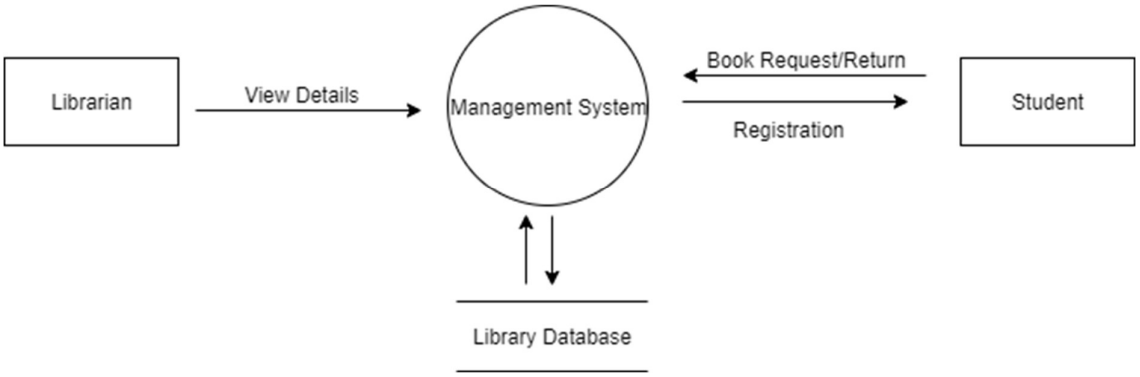
Each member will have a card which may be used for the library book issue, fine payment etc. whenever he wishes to require a book. The book issued by the library authority is going to be checked for both the book details also because of the student details and that they are going to be stored within the library database. Just in case of retrieval of the book much of human intervention are often eliminated.

3.3.2 System attributes:

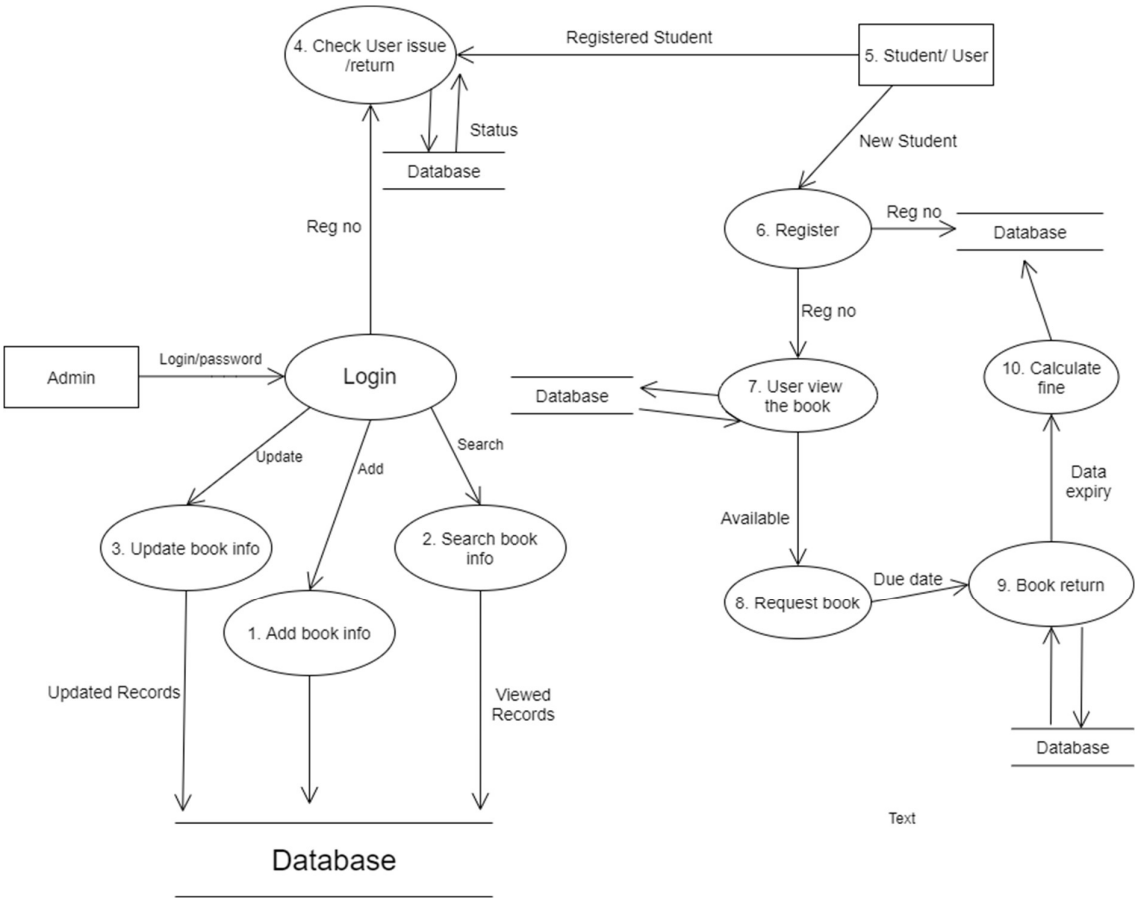
- Maintainability: there'll be no maintenance requirement for the software. The database is provided by the top user and thus is maintained by this user.
- Portability: The system is developed for the secured purpose, so it can’t be portable.
- Availability: this system is going to be available only until the system on which it's installed is running.

Data Flow Diagrams for Library Management System (DFD)

Level 0



Level 1



Data dictionary

Author table:

Field Name	Data Type	Size	Null	Description
Author ID	Nvarchar	10	Not	Primary Key
Author Name	Nvarchar	50	Not	
Phone	Nvarchar	10		
E Mail	Nvarchar	20		

Details:

- Author table is connected with author form.
- In this table included field name, data type, size of character end description.
- In the author form included author id, author name, phone number, Email.
- Author id used for primary key.
- Author information available in this table.

Category table:

Field Name	Data Type	Size	Null	Description
Category ID	Nvarchar	10	Not	Primary Key
Category Name	Nvarchar	50	Not	
Category description	Nvarchar	100	Not	

Details:

- Category table is connected with category form.
- In this table included field name, data type, size of character end description.
- In the category form included category id, category name, category description.
- Category id used for primary key.

Member Table:

Field Name	Data Type	Size	Null	Description
Member ID	nvarchar	10	Not	Primary key
Password	nvarchar	30	Not	

Member name	nvarchar	50	Not	
E Mail	nvarchar	100	Not	
Mobile	char	10		
Gender	char	2	Not	
Registration date	Date/Time		Not	

Details:

- Member table is connected with Member form.
- In this table included field name, data type, size of character end description.
- In the Member form included Member id, password, Member name, E Mail, mobile, gender, registration date.
- Member id used for primary key.

Book Table:

Field Name	**Data Type**	**Size**	**Null**	**Description**
Book ID	Nvarchar	10	Not	Primary key
Book name	Nvarchar	50	Not	
Author ID	Nvarchar	10	Not	
Category ID	Nvarchar	10	Not	
ISBN	Nvarchar	20	Not	
Price	Nvarchar	8	Not	

Details:

- Book table is connected with Book form.
- In this table included field name, data type, size of character end description.
- In the Book form included Book ID, Book name, Author ID, Category ID, ISBN, price.
- Book ID used for primary key.
- Authory ID, Category ID used a foreign key.
- Book information is available from this table.

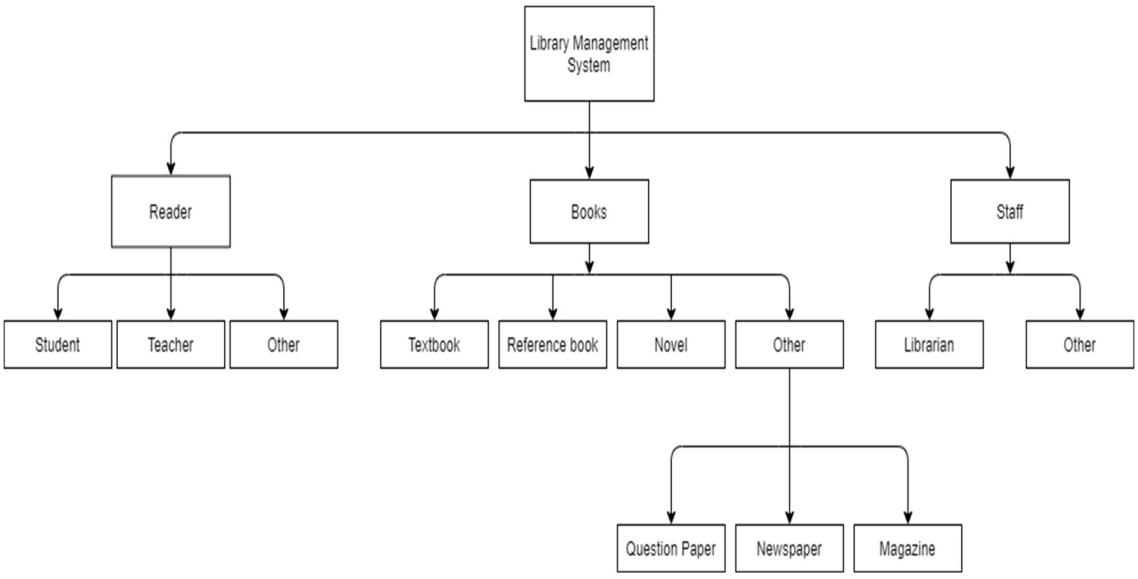
Book Transaction Table:

Field Name	**Data Type**	**Size**	**Null**	**Description**
Book ID	Nvarchar	10	Not	
Member ID	Nvarchar	10	Not	
Issue Date	Date/Time		Not	
Return Date	Date/Time		Not	
Actual return date	Date/Time			
Late Fee	Nvarchar	8		

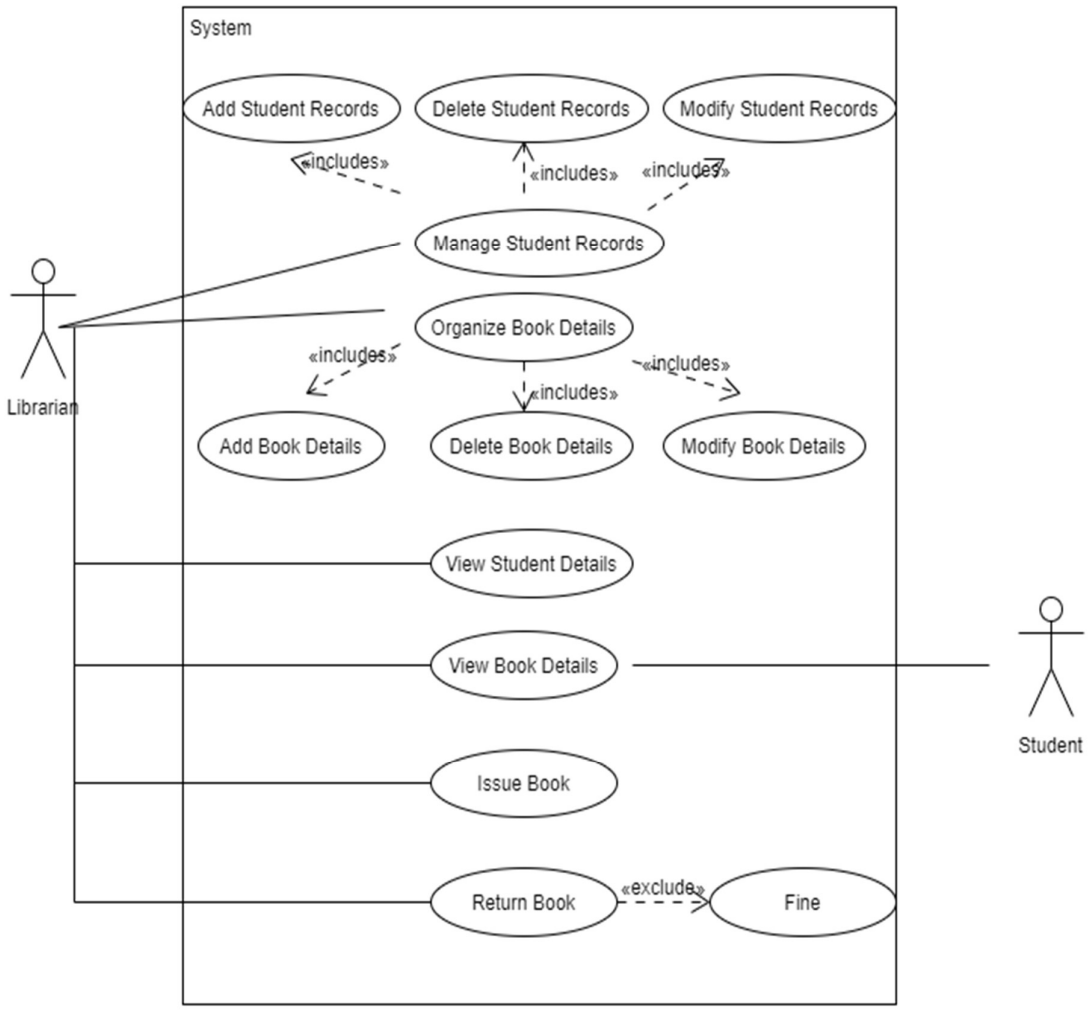
Details:

- Book transaction table is connected with Issue and return form.
- In this table included field name, data type, size of character end description.
- In the Book transaction form included Book ID, Member ID, Issue Date, Return Date, Actual Return Date, Late Fee.
- Book transaction information is available from this table.

Function oriented Structured chart

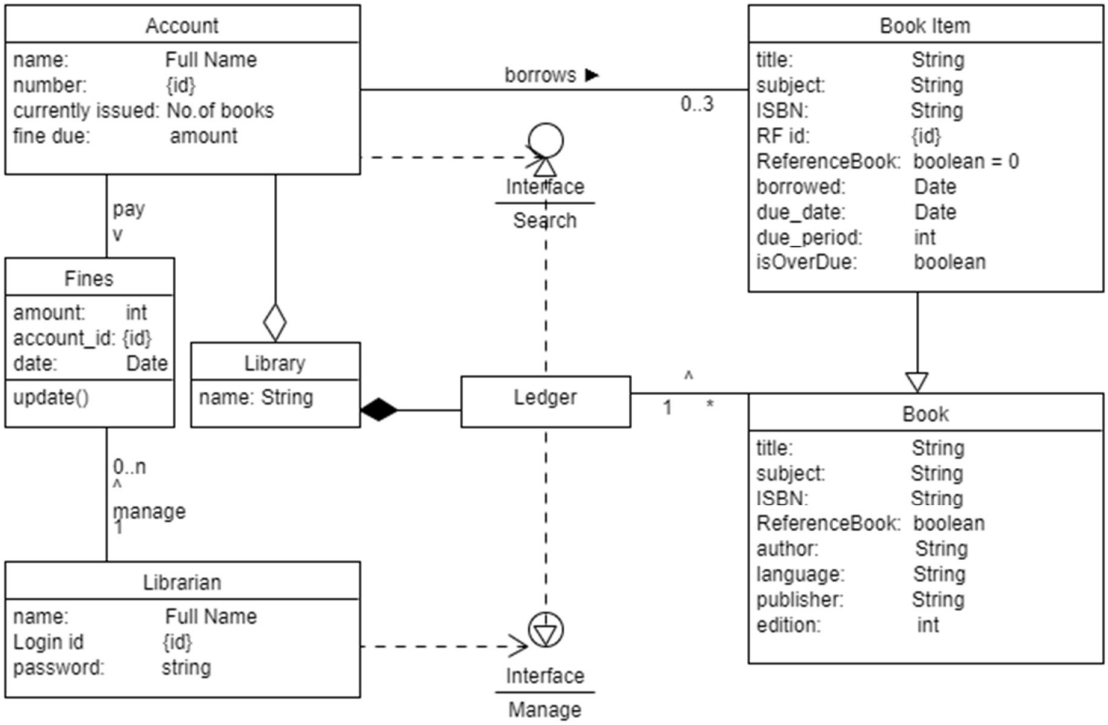


Use case diagram

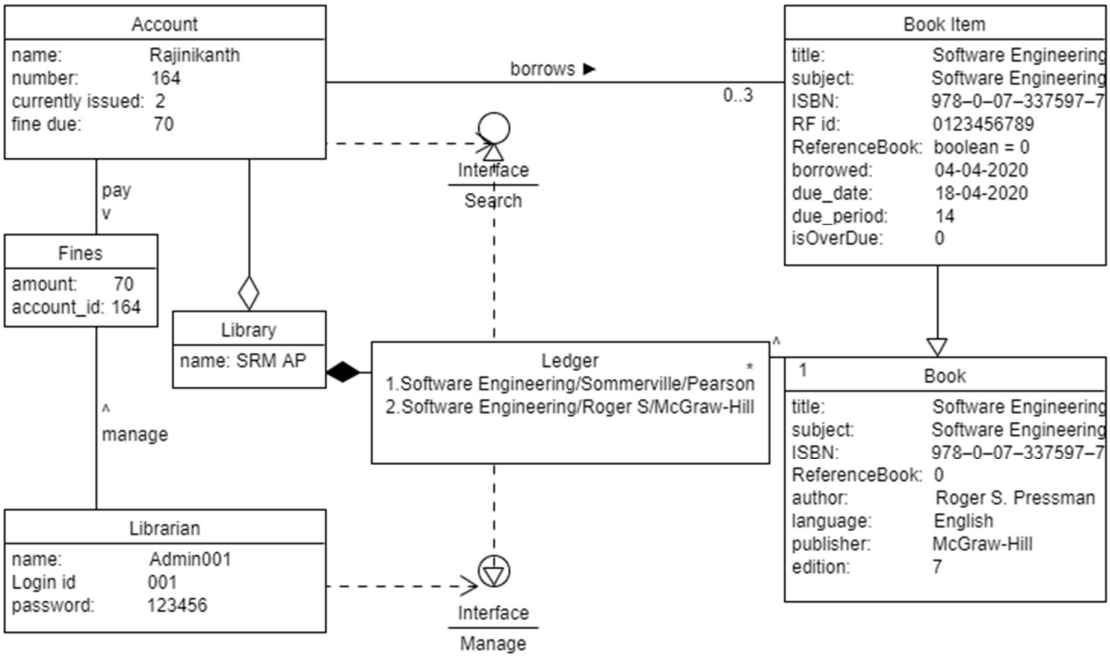


Structural view diagram

Class diagram

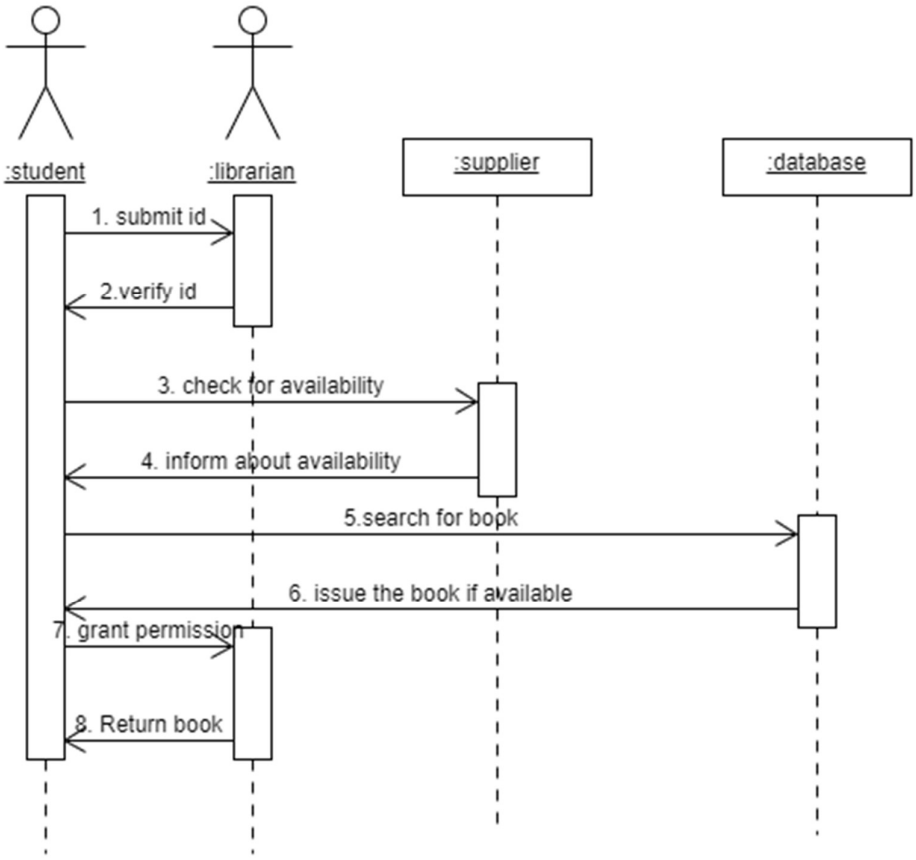


Object diagram

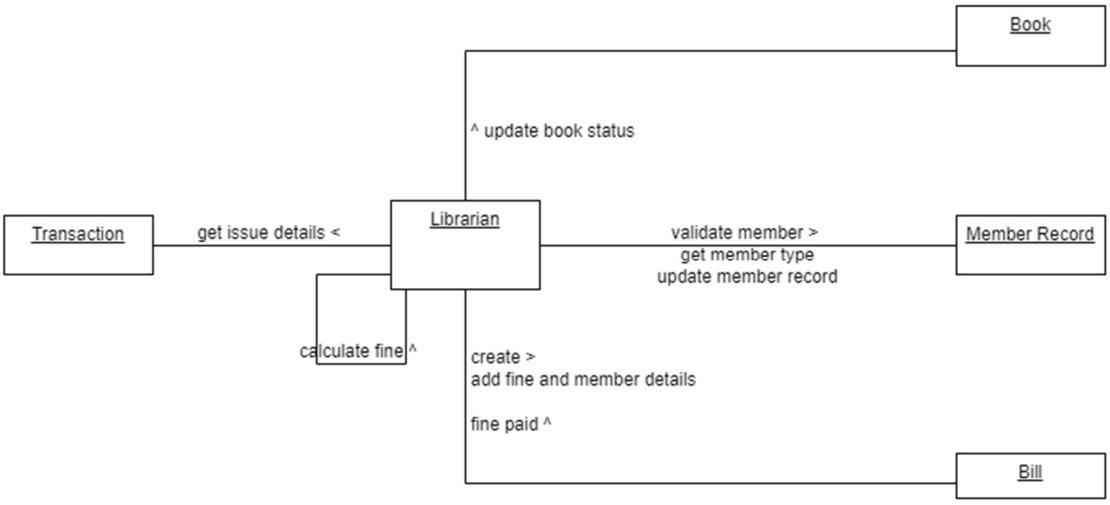


Behavioural view diagram

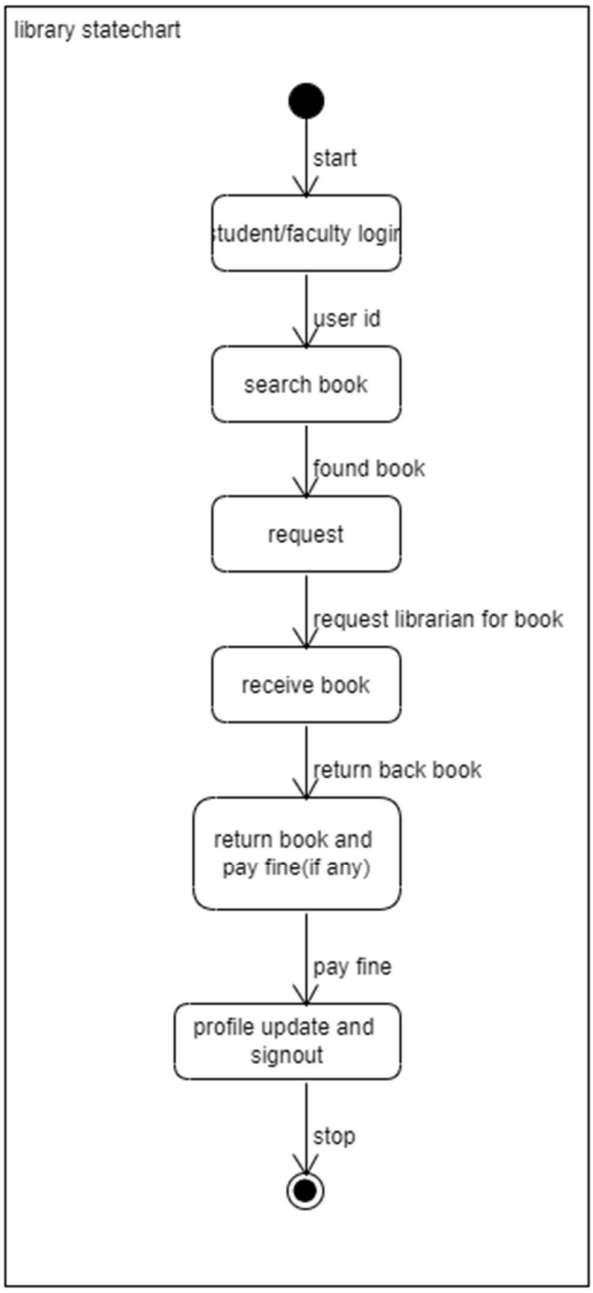
Sequence diagram



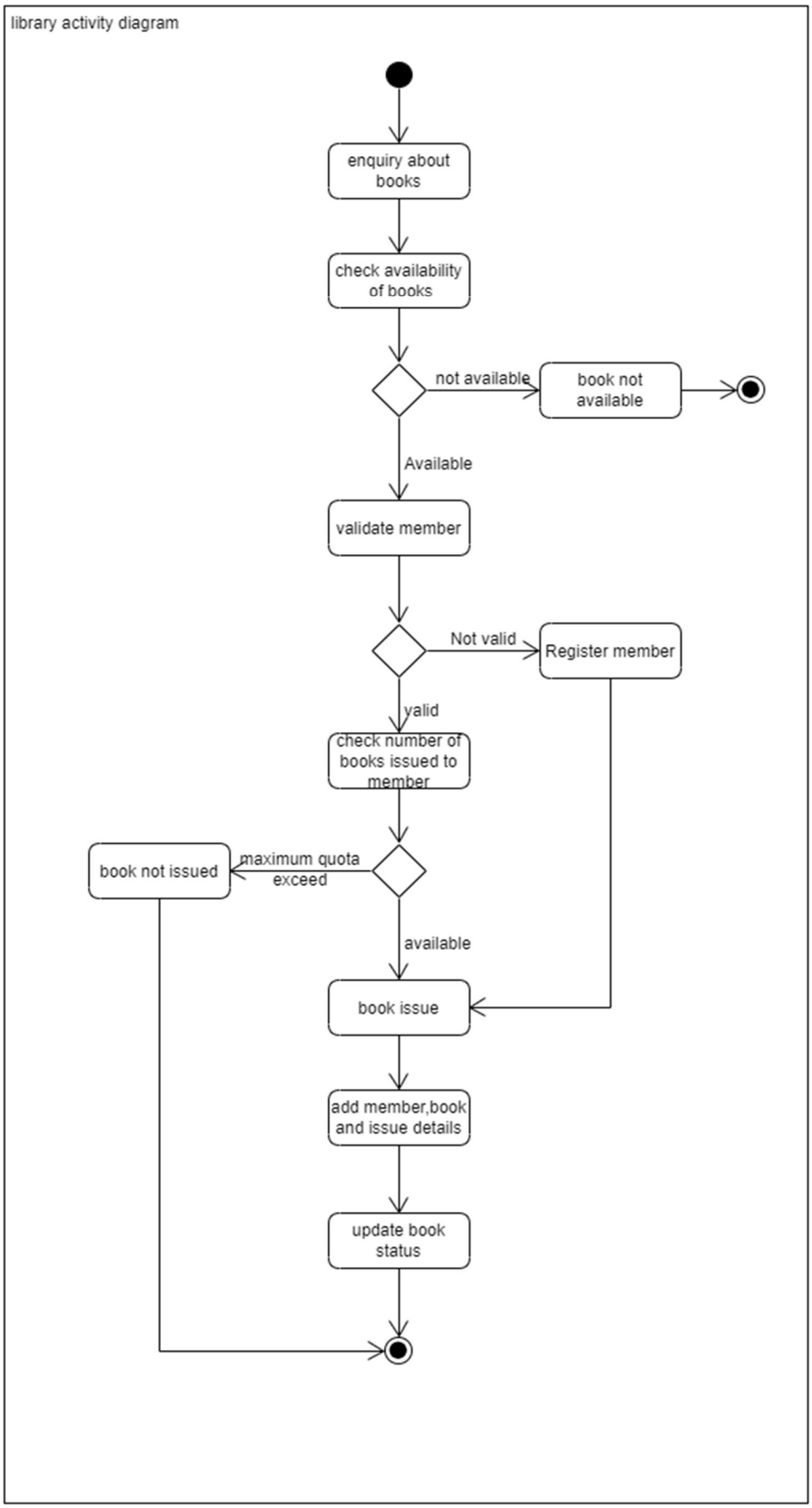
Collaboration diagram



State-chart diagram

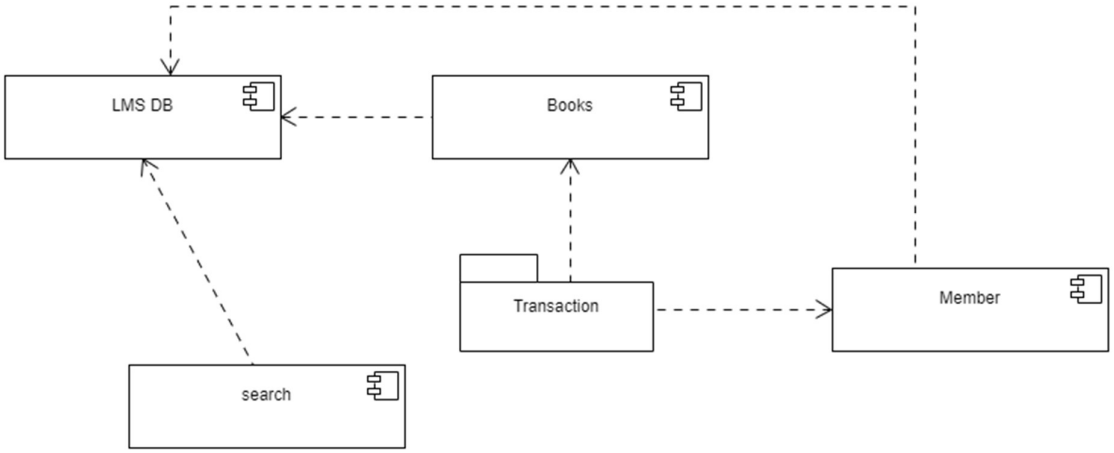


Activity diagram



Implementation view diagram

Component diagram



Environmental view diagram

Deployment diagram