PROJECT NAME

BOOK HUB

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SUBMITTED TO

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1. Introduction

With the increase in the number of readers, better management of the library system is required. The library management system focuses on improving the management of libraries in a city or town. “What If you can check whether a book is available in the library through your app?” or “what if instead of having different library cards for different libraries you can just have one?” or “you can reserve a book or issue a book from your app sitting at your home!”. The Integrated Library Management system provides you the ease of issuing, renewing, or reserving a book from a library within your town through your system. The Integrated Library Management system is developed on the web forms which basically focuses on issuing, renewing and reserving a book.

1.1 PURPOSE

The purpose of the project is to maintain the details of books and library members of different libraries. The main purpose of this project is to maintain a easy circulation system between clients and the libraries, to issue books using single library card, also to search and reserve any book from different available libraries and to maintain details about the user (fine, address, phone number). Moreover, the user can check all these features from their system.

1.2 Scope

- Manually updating the library system into a system-based application so that the user can know the details of the books available and maximum limit on borrowing from their computer.
- The BOOK HUB provides information like details of the books, insertion of new books, deletion of lost books, limitation on issuing books, fine on keeping a book more than one month from the issued date.

1.3 Documentation Conventions

In the documentation of this project, we are using a simple standard for it. The conventions used to prepare the document is given bellow

- Font Times Open sans
- Bold, size 18 for Main headings
- Bold, size 16 for Sub headings
- Bold, size 13 for Sub-sub headings
- Font Size 11 for the rest of document

In document every requirement statement is to have its own priority. Document contains the details of everything.

1.4 Intended Audience and Reading Suggestions

It will help the evaluation team to evaluate the progress of Project. The document will provide the evaluators with the scope, requirements and details of the project to be built. It will also be used as basis for the evaluation of the implementation and final project

Reading suggestions:

The SRS begins with the title and table of contents. All level 1 and level 2 headings are given in the table of contents, but the sub headings are not included. Each main heading is succeeded by several sub headings, which are all in bold format. The product overview is given at the start, succeeded by the complete detailed features, including both functional and nonfunctional requirements.

1.4 Objectives

Our major objective is to develop an application that is to maintain an easy circulation system between clients and the libraries, to issue books using a single library card.It will provide all the mentioned features .

2. Overall Description

2.1 PRODUCT PERSPECTIVE

The proposed Library Management System will take care of the current book detail at any point of time. The book issue, book return will update the current book details automatically so that the user will get the updated current book details.

2.2 Product Functions

The main features of BOOK HUB are highlighted below:

1. The problems, Refunds and fine calculation can be handled with this product.
2. Record keeping records according to end user criteria.
3. Enter and issue books
4. The librarian can check the library status between the selected dates.

2.3 User Classes and Characteristics

The system provides different types of services based on the type of users [Member/Librarian].

- The Librarian will be acting as the controller and he will have all the privileges of an administrator.
- The member can be either a student or staff of the university who will be accessing the library.
- The features that are available to the Librarian are: -
    - A librarian can issue a book to the member.
    - Can view the different categories of books available in the library
    - Can view the List of books available in each category
    - Can take the book returned from students
    - Add books and their information to the database
    - Edit the information of existing books
    - Can check the report of the existing books
    - Can check the report of the issued books
    - Can access all the accounts of the students
- The features that are available to the Members are: -
    - Can view the different categories of books available in the library
    - Can view the List of books available in each category
    - Can own an account in the library.
    - Can view the books issued to him
    - Can put a request for a new book
    - Can view the history of books issued to him previously

- Can search for a particular book

2.4 Operating Environment

The product will be operating in a windows environment. The BOOK HUB is an application and shall operate in all visual studios, for a model we are taking is visual 2022 ..Also it will be compatible with the Net 5.0. The hardware configuration includes Hard Disk: 40 GB, Monitor: 15" Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitors etc.

2.5 Design Constraints

Whenever a library member wants to take a book, the book issued by the library authority can check all the book information as well as the student details and store it in the library database. Each member will have an identification card that will be used for the library book issue, fine payment etc. A great deal of human interference can be avoided in the event of book retrieval.

2.6 Assumptions and Dependencies

The assumptions are: -

- The coding should be error free
- The system should be user-friendly so that it is easy to use for the users
- The information of all users, books and libraries must be stored in a database that is accessible by the application.
- The system should have more storage capacity and provide fast access to the database
- The system should provide search facility and support quick transactions
- The Library System is running 24 hours a day
- Users may access from any computer that has Internet browsing capabilities

The dependencies are: -

- The specific hardware and software due to which the product will be run on the basis of listing requirements and specification the project will be developed and run the end users (admin) should have proper understanding of the product
- The system should have the general report stored
- The information of all the users must be stored in a database that is accessible by the Library System

2.8 CONSTRAINTS

Any update regarding the book from the library is to be recorded to have update & correct values, and any fine on a member should be notified as soon as possible and should be correctly calculated.

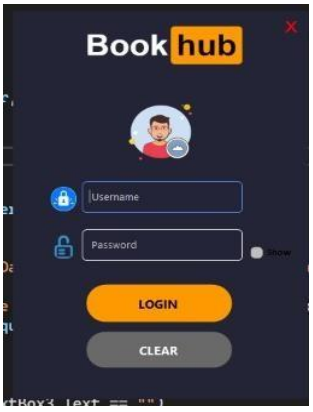
Use Case Selection	Description
Use case name	Add student and library record
Level	Sub-Functional level
Primary actor	Student Library
Stakeholders and interest	Student: wants to register into system Library: wants to register into the system and update book details. Administrator: responsible for the management of the transaction of fine and also login and register details.
Pre-condition	Students and Library have submitted their registration form
Post-condition	Record for a student/library has been added.
Main success scenario	1. Student/Library opens the application to access the services of the LMS 2- Student/Library sign-up to get registered online. 3- He / She provides correct information and secret password. 4- He / She got registered.
Alternative Flow	1- Student/Library opens the application in their phone 2- He / She tries to sign-up

	3- He / She fails and receives an error 4- He / She will report an error and the error will be rectified as soon as possible.
Specific requirement	• The response time for registration is 1 minute • The response time for login is 1 minute

3. Interface and System Requirement

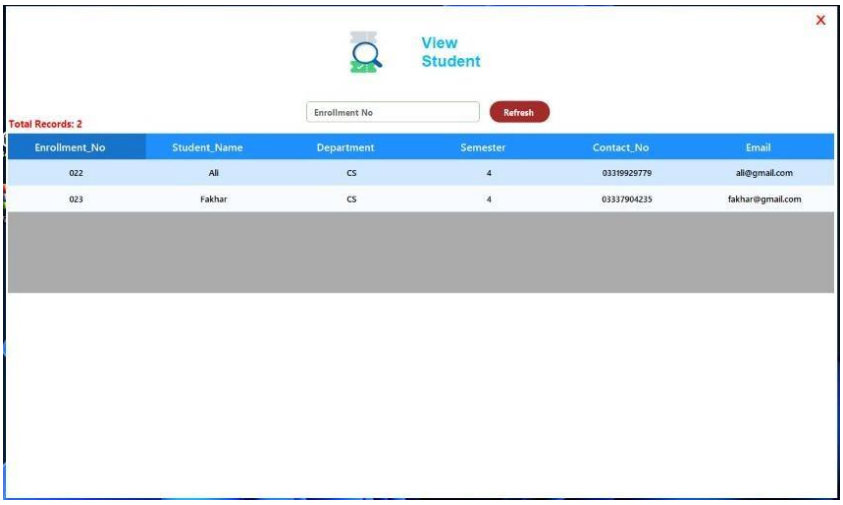
The software provides good graphical interface for the administrator can operate on the system, performing the required task such as create, update, viewing the details of the book.

Login Interface: - For login the administrator/student can access it from his own username and password. He will make login only if he entered correct information.



Add new book: - The administrator can add books in his BOOK HUB system. By inserting the specific information.

Check the status: The librarian can check the issued books details including the data of members.



Add new student: The librarian can add new student and he will collect all info about student

3.1 SOFTWARE REQUIREMENT

Front end:

- Visual Studio 2022
- Net core 4.0

Back end:

- MySQL

3.2 HARDWARE REQUIREMENT

- Operating system: window
- Hard disk 40GB
- RAM 256MB
- 1.2 GHz processor
- Intel i6

4. System features

This is possible by providing: -

- User authentication and validation of members using their unique member ID
- Proper monitoring by the administrator which includes updating account status, showing a list if the member attempts to issue a number of books that exceed the

limit provided by the library policy, assigning fine to members who skip the date of return

4.1 FUNCTIONAL REQUIREMENT

- ### 4.1.1 Register Description

First the user will have to get register/sign up. There are two different types of users.

The library manager/head: The manager has to provide details about the name of the library, address, phone number, email id.

Student: The user has to provide details about his/her name of address, department, semester, number, email id.

1. **Sign up Input:**

Detail about the user as mentioned in the description.

Output: Confirmation of registration status and a membership number and password will be assigned to user by the administrator.

Processing: All details will be checked and if any errors are found then an error message is displayed else a membership number.

2. **Login Input:**

Enter the membership number and password provided.

Output: Users will be able to use the features of software.

- ### 4.1.2 Manage books by user

1. **Books issued:**

Description: List of books will be displaced along with data of return

2. **Search Input:**

Enter the name of the author's name of the books to be issued. Output: List of books related to the keyword.

3. **Issues book State:**

Searched for the book the user wants to issue.

Input: click the book the user wants.

Output: confirmation for book issue and apology for failure in issue. Processing: if selected book is available then book will be issued else error will be displayed.

4. **Renew book State:**

   Book is issued and is about to reach the date of return. Input: Select the book to be renewed. Output: confirmation message. Processing: If the issued book is already reserved by another user, then error message will be sent and if not, then conformation message will be displayed.

5. **Return Input;**

   Return the book to the library. Output: The issued list will be updated and the returned book will be listed out.

6. **Reserve book**

   Input: Enter the details of the book.

   Output: Book successfully reserved.

- ## 4.1.3 Manage book by librarian

The librarian has access to manage the books and the following actions he can do.

1. **Update details of books**

   Input: Search for the book and then enter the details that you want to update

   Output: confirmation of Update details.

2. **Add books**

   Input: Enter the details of the books such as names, author, edition, quantity.

   Output: confirmation of addition.

3. **Remove books**

   Input: Enter the name of the book and quantity of books.

   Output: Update the list of the books available.

4. **Fine**

   Input: check for the fines.

Output: Details about fines on different books issued by the user.

Processing: The fine will be calculated, if it crossed the date of return and the user did not renew if then fine will be applied by Rs 30per day.

5. **Register users/students**

   Input: Enter the details of student.

   Output: If the details are correct and don't have any duplicate record then it will approved otherwise show error.

5. Non-Functional Requirements

5.1 Usability Requirement

The system shall allow the users to access the system from the phone using system application. The system uses a system application as an interface. Since all users are familiar with the general usage of mobile app, no special training is required. The system is user friendly which makes the system easy.

5.2 Availability Requirement

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

5.3 Efficiency Requirement

Mean Time to Repair (MTTR) - Even if the system fails, the system will be recovered back up within an hour or less.

5.4 Accuracy

The system should accurately provide real time information taking into consideration various concurrency issues. The system shall provide 100% access reliability.

5.4 Performance Requirement

The information is refreshed depending upon whether some updates have occurred or not in the application. The system shall respond to the member in not less than two seconds from the time of the request submission. The system shall be allowed to take more time

when doing large processing jobs. Responses to view information shall take no longer than 5 seconds to appear on the screen.

5.5 Reliability Requirement

The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. The system will run 7 days a week, 24 hours a day.

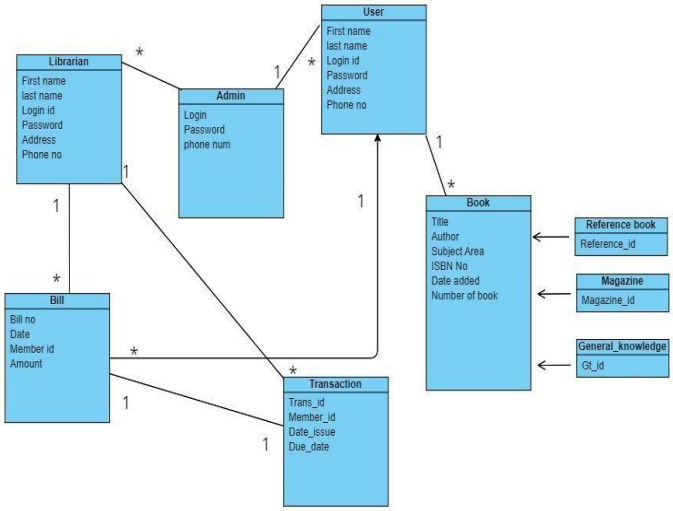
5.6 Data Requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. In this project the inputs will be the queries as fired by the users like create an account, selecting books and putting them into account. Now the output will be visible when the user requests the server to get details of their account in the form of date and which books are currently in the account.

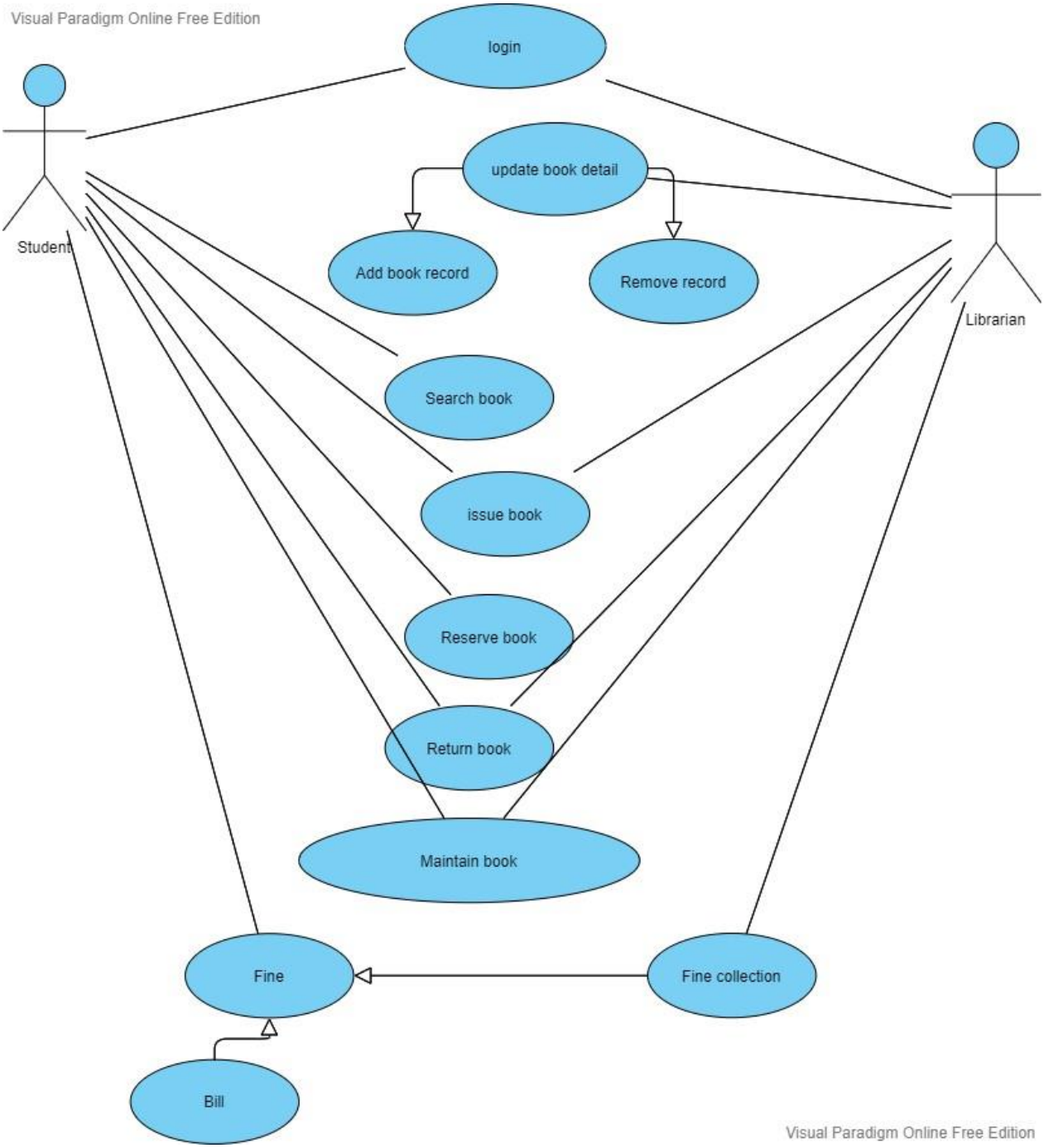
6.Diagrams

6.1 Class Diagram

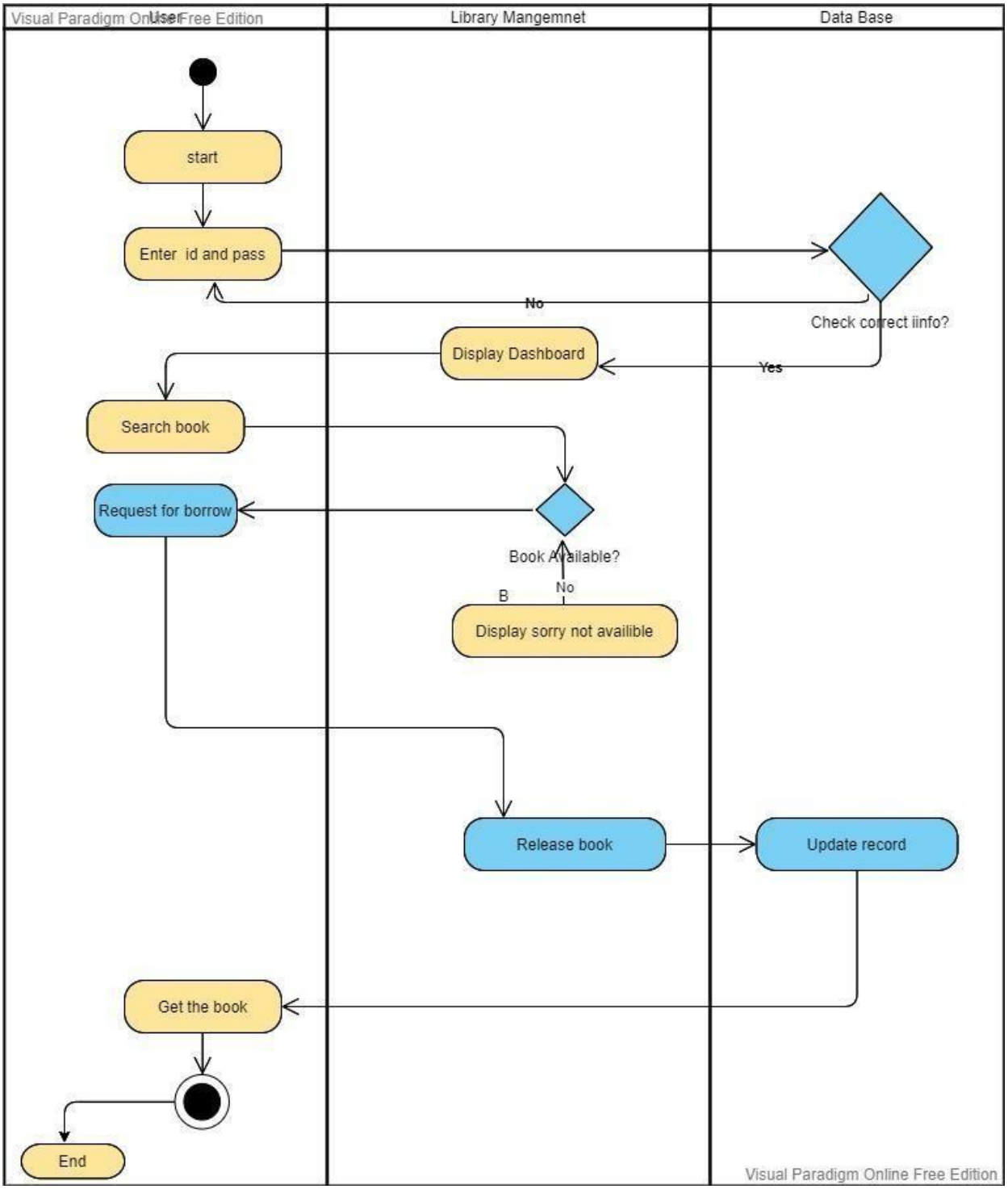
CLASS DIAGRAM



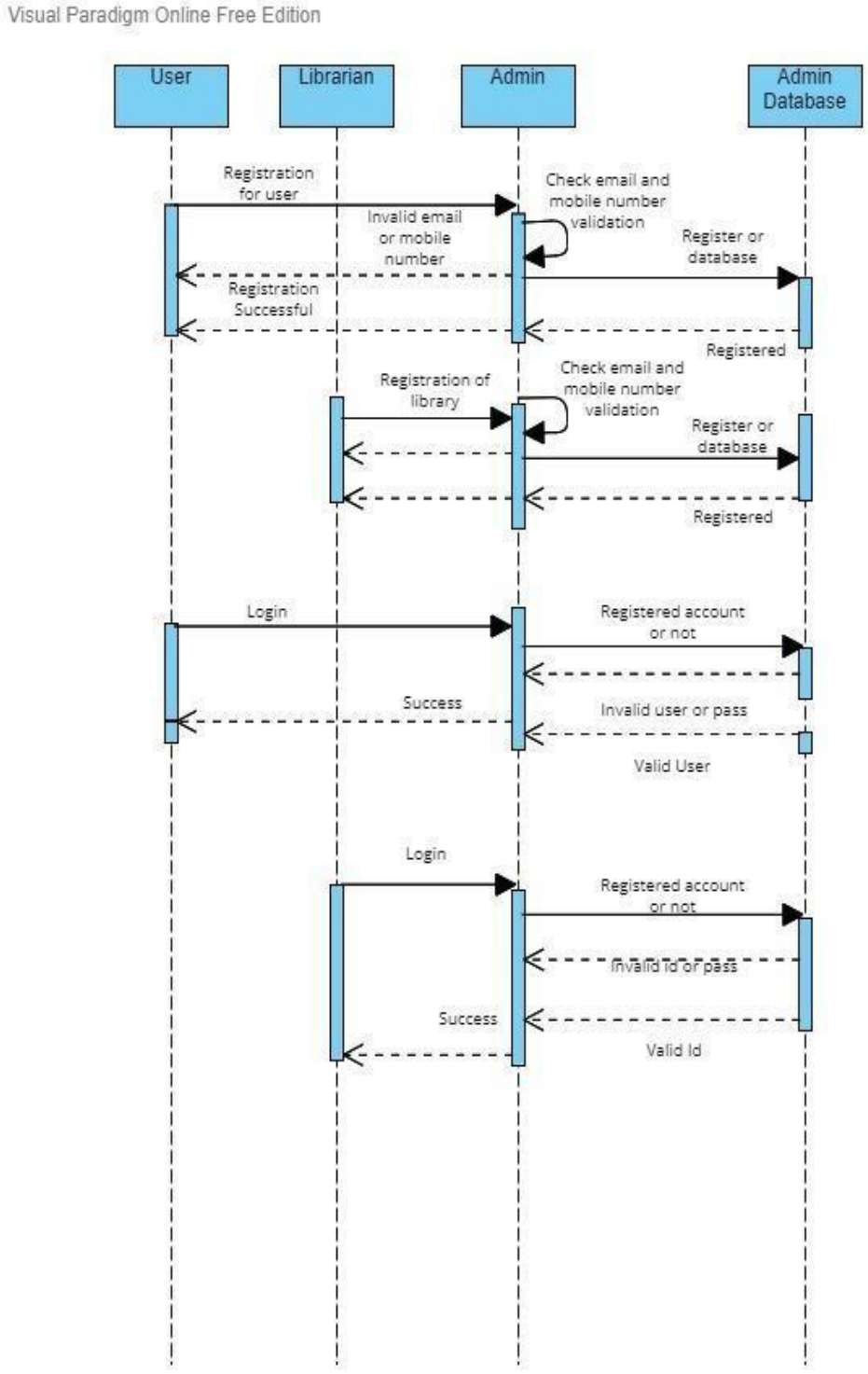
6.2 USE CASE DIAGRAM



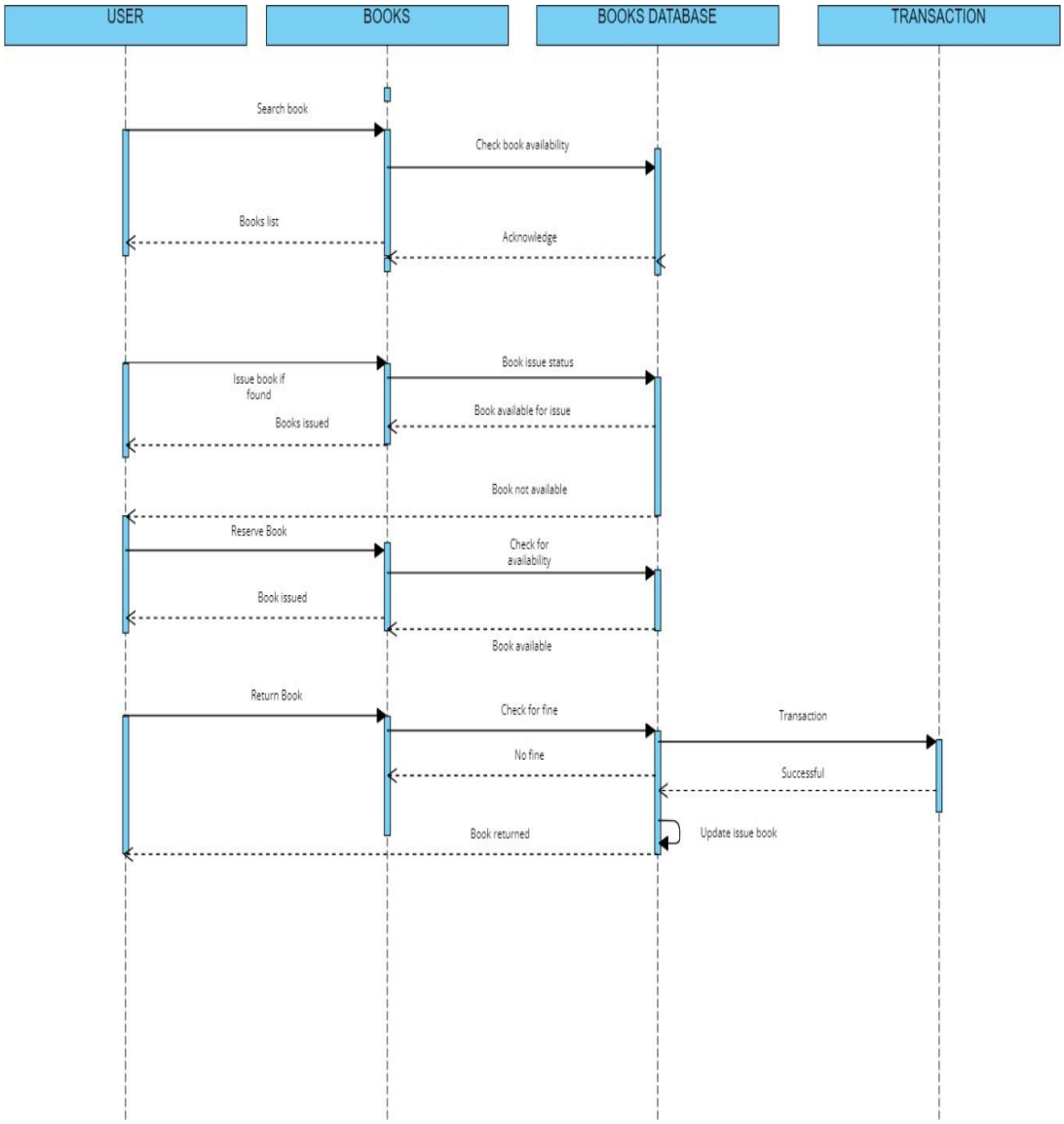
6.3 Activity Diagram



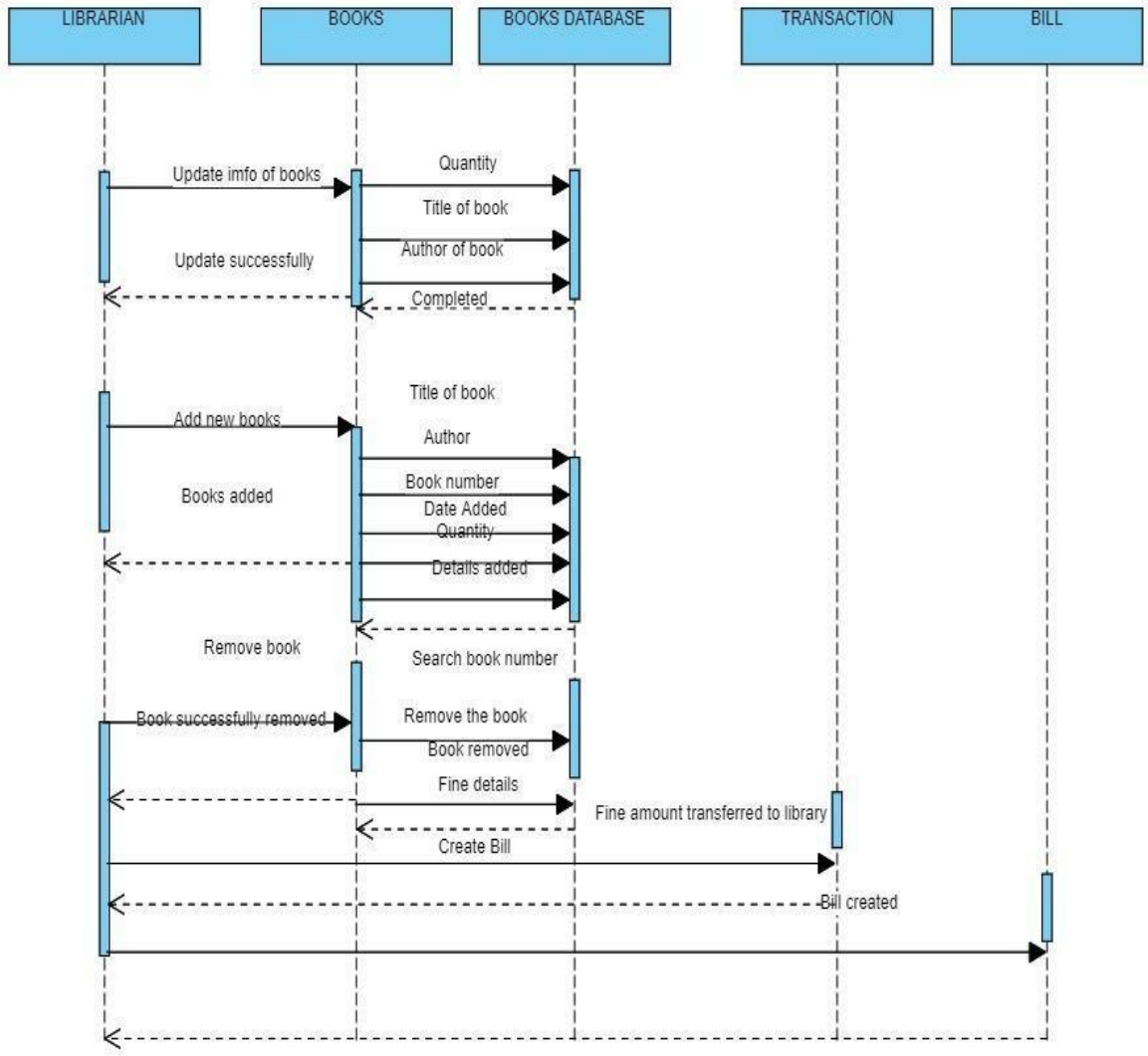
6.4(a). Sequential Diagram- (Register and login sequence diagram)



6.5(b). Sequential Diagram- (Services user could use)



6.6(c). Sequential Diagram- (Services of a library)



6.7 (c). Sequential Diagram- (Full working of the system)