PROJECT REPORT

Submitted by

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Under the Guidance of

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OODP COURSE FACULTY, (CINTEL)

In partial satisfaction of the requirements for the degree of

BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING

with specialization in (AIML)

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR - 603203

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SRM INSTITUTION OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR-603203

BONAFIDE CERTIFICATE

Certified that this Project Report titled **"LIBRARY MANAGEMENT SYSTEM"** is the bonafide work done by DIBYAJYOTI BHATTACHARJEE [RA2211026010340] completed the project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

SIGNATURE

Ms/Mr/Dr. <Faculty Name>

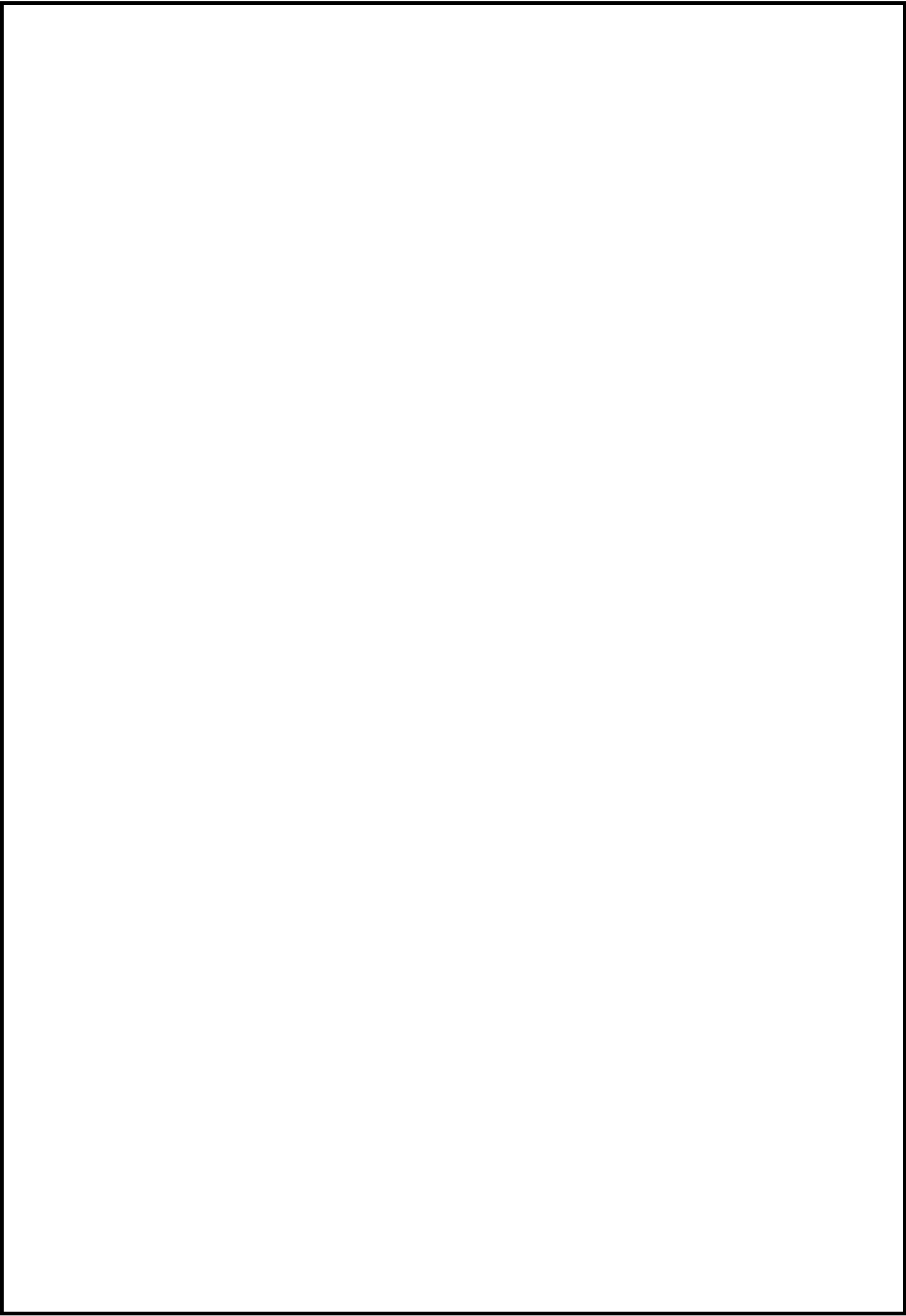**OODP – Course Faculty**

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Department of < >

SRMIST

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Ms/Mr/Dr. <Faculty Name>

Head of the Department

Department of < >

SRMIST

PROBLEM STATEMENT

Library is an assortment of sources of data and similar resources, created accessible to an outlined community for reference or borrowing. Therefore, the method of handling a library manually is incredibly hard and clumsy. As regards to the present purpose of read, the processed system for handling the activities of library management provides a comprehensive thanks to reduce physical labor, to cut back complexness of the manual system and shortly.
This project work aims to style and implement a processed librarymanagement system. The aim of the project is to develop the Management data system to modify the record keeping of Publishers, Books, Members and Book issue. Associate in nursingcomputer program is tied with the information for straightforwardaccess and interface to the information. mistreatment computer program or front-end, we are able to store, retrieve and manage alldata in correct means

MODULE OF PROJECT

- We have created separate logins for students and the librarian, inwhich the librarian is password protected.
- In this project, the librarian can add, update, delete and create booksand can also assign the books to the students.
- The students can also view the list of the books available in theentire library database.
- The entire rights are given to the librarian to adding books, issuingbooks, and modify the book.
- This project uses file handling to store the data of books in aproject.

- A Librarian can also be able to change the password.
- Reissuing and returning the books are the main features of thisproject.
- The student can also be able to see which student has alreadyborrowed the book.

  - Add Book.
  - Modify Book.
  - Delete Book.
  - Search Book.
  - Issue Book.
  - Return Book.

↪ Student

The student will not require additional sign in, he or she will be able to access the software directly. When the student enters the choice as 1 then following lists appears:

- **View Booklist:**

  In this menu option all the students according to their branches will be able to view the books present in the database along with their details.

- **Search for a Book:**

  We have given access to the students to search for a particular book. The student can search book either by bookname or by book id. Both the options are available in the project**.**

- **Go to Main Menu:**

  When the user has done the required operations and if he wants to again move to the main menu, then pressing 3 as choice he'll moved to the main menu**.**

- **Close Application:**

  By pressing the choice as 4 the application will be closed**.**

Librarian:

To access the features of the librarian menu, He will require to signin using the password which is "Tanu170103". We've also given the facility to change the password in the Librarian menu. Only Librarian has rights to change the password. When the user pressesthe choice as 2. then the software will ask you to enter the correct password. If the password is incorrect the application will show the error of wrong password. And if the password is correct then the librarian menu will be visible to the user where he or she can do the operations listed below:

- **View Booklist:**
  Same as students view booklist, librarians will also able tosee the books available in the library database.

- **Search for a Book:**
  The Librarian can search book either by book name or bybook id. Both the options are available in the project.

- **Modify/Add Book:**

  In this menu option Librarian can do three main operations
  i.e. Adding a Book, deleting a Book and Modifying the existing Book. As we are using the file handling methods inthis project, every time new file is generated to store the details of the books. i.e. Booksdata.txt.

- **Issue Book:**
  Due to this option the 70% of the work is been reduced. Inthis option Librarian can do the following operations:
  - Issue a Book.
  - View Issued Books.
  - He can also search the students who issued the books.
  - Librarian can also reissue the book to the same student.
 - Return the Book.

DIAGRAMS:-

    a.Use Case Diagram

    b.Class Diagram

    c.Sequence Diagram

    d.Collaboration Diagram

    e.State Chart Diagram

    f.Activity Diagram

    g.Package Diagram

    h.Deployment Diagram

    i.Component Diagram

USE CASE DIAGRAM

A UML use case diagram is the primary form of system/softwarerequirements for a new software program underdeveloped. A keyconcept of use case modeling is that it helps us design a system from the end user's perspective. It is an effective technique for communicating system behavior in the user's terms by specifyingall externally visible system behavior.

A use case diagram is used to show the detail of the project just by:

- Only summarizing some of the relationships between usecases, actors, and systems.

- It does not show the order in which steps are performed toachieve the goals of each use case.
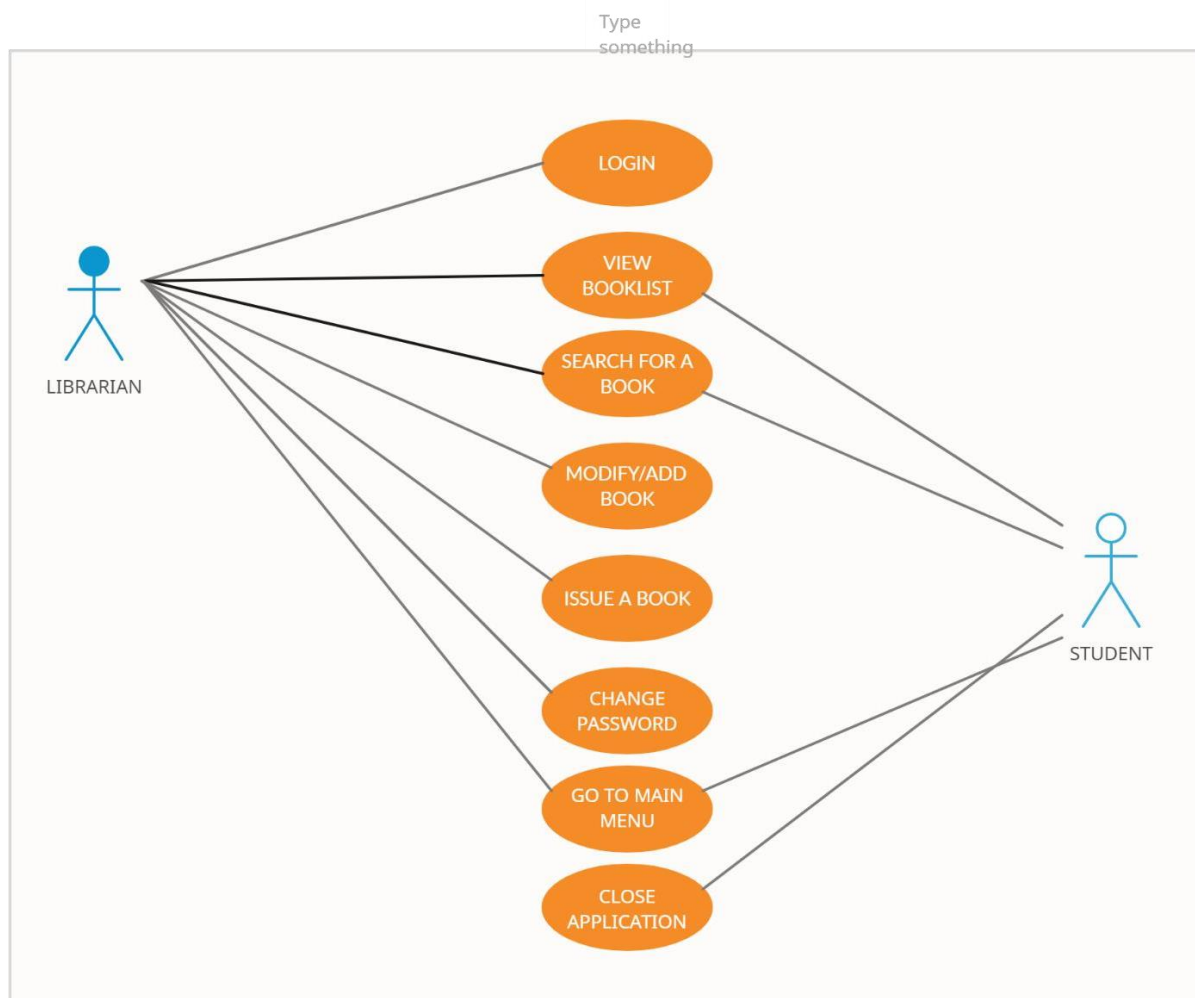
CLASS DIAGRAM

Class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modeling of object-oriented   systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages

## Class Diagram
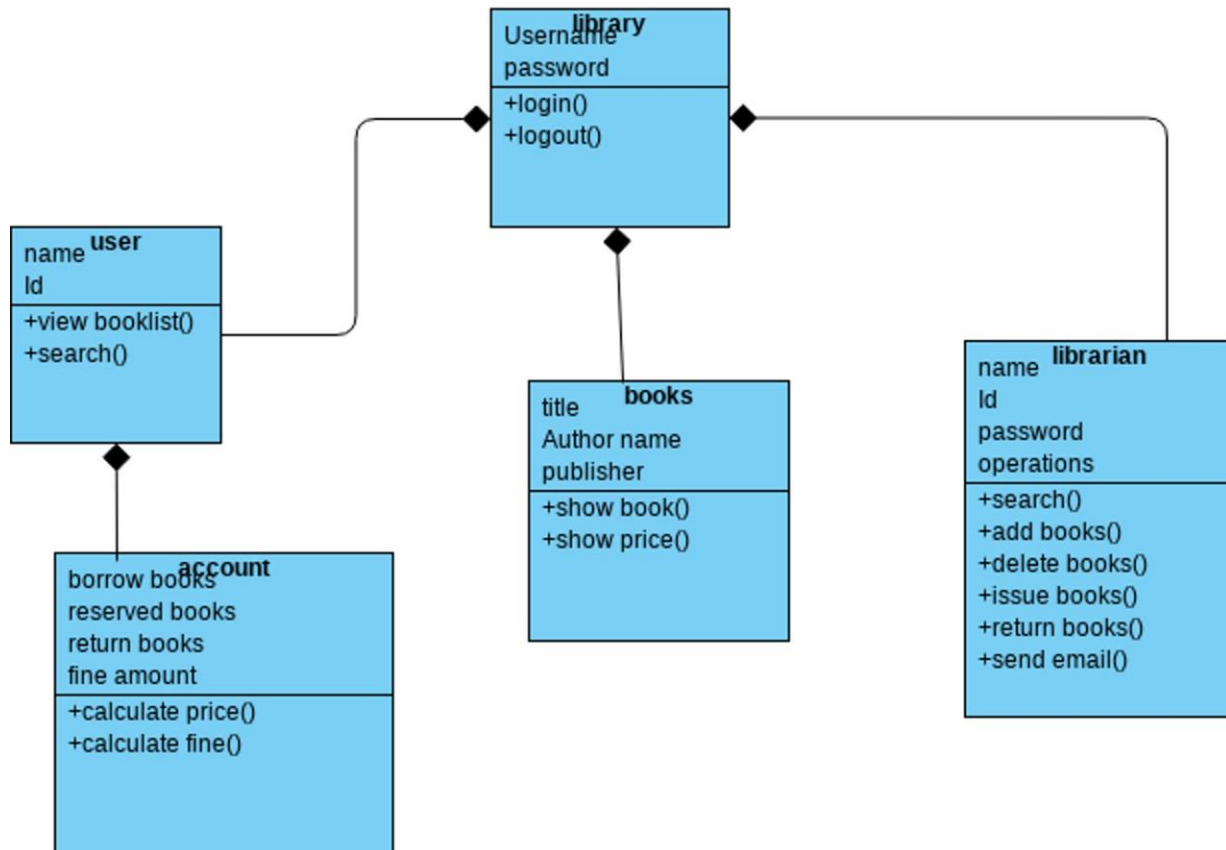
SEQUENCE DIAGRAM

A sequence diagram or system sequence diagram shows process interactions arranged in time sequence in the field of software engineering. It depicts the processes involved and the sequence of messages exchanged between the processes needed to carry out the functionality.
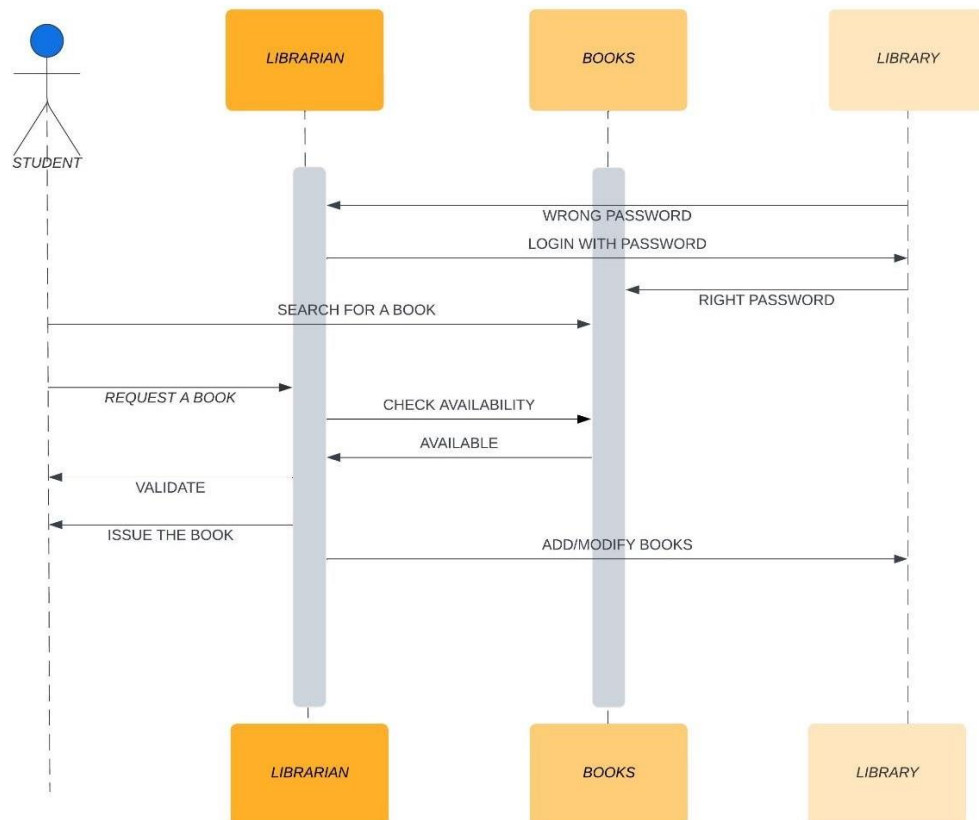
COLLABORATION DIAGRAM

A collaboration diagram, also known as a communication diagram, is an illustration of the relationships and interactions among software objects in the Unified Modeling Language (UML). Developers can use these diagrams to portray the dynamic behaviorof a particular use case and define the role of each object.

FOR ISSUING BOOK
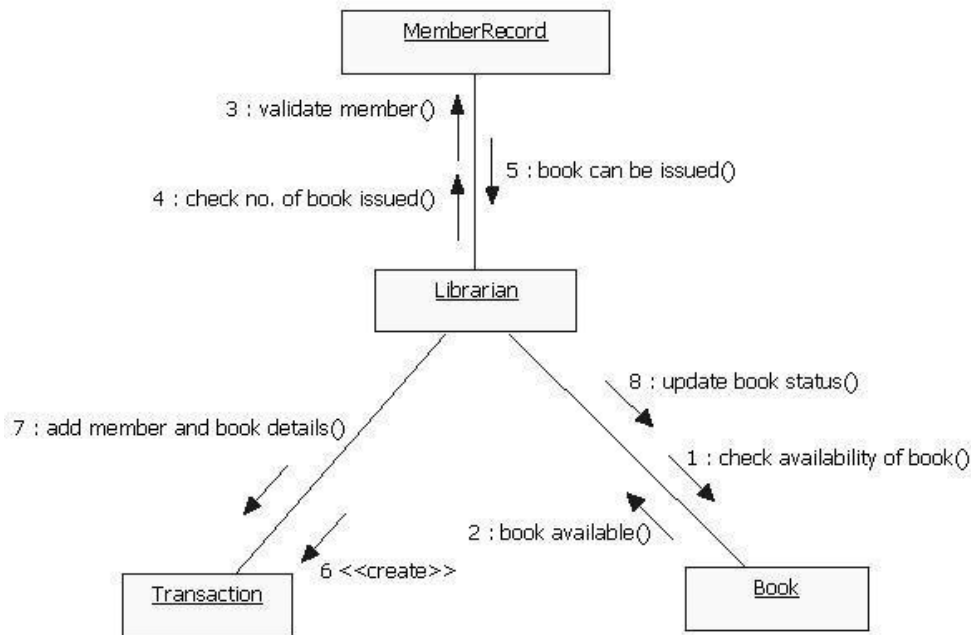
RETURNING BOOK
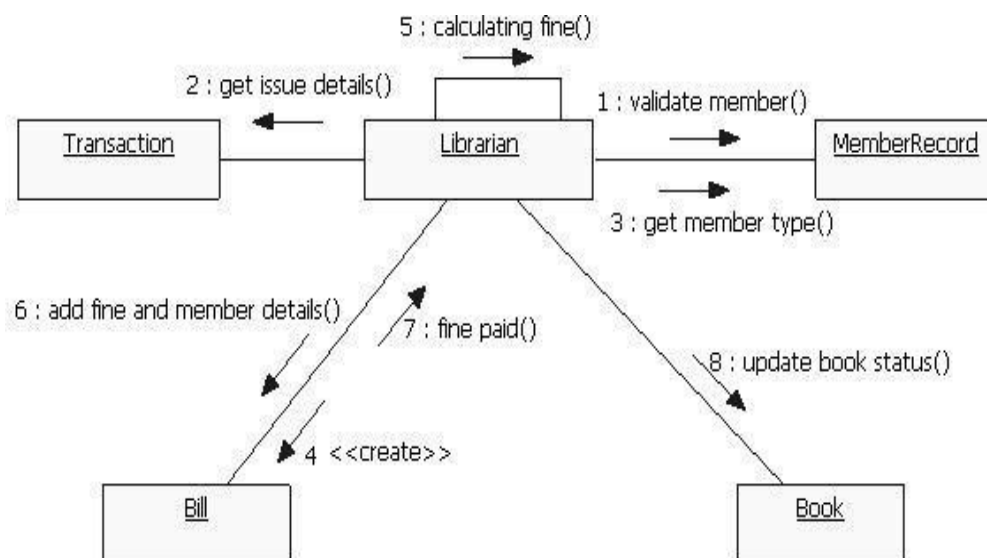
ACTIVITY DIAGRAM

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration andconcurrency. Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent.
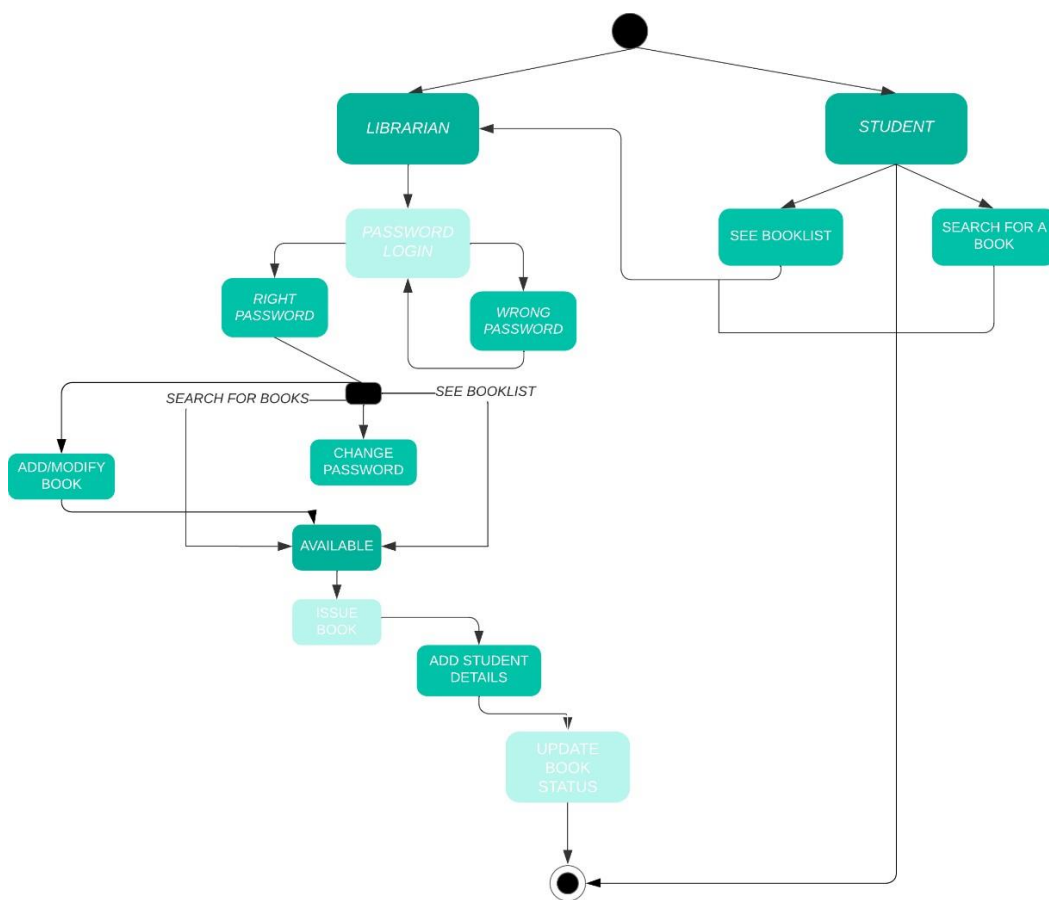
STATE CHART DIAGRAM

A state diagram is a type of diagram used in computer science and related fields to describe the behavior of systems. State diagrams require that the system described is composed of a finite number of states; sometimes, this is indeed the case, while at other times this isa reasonable abstraction.
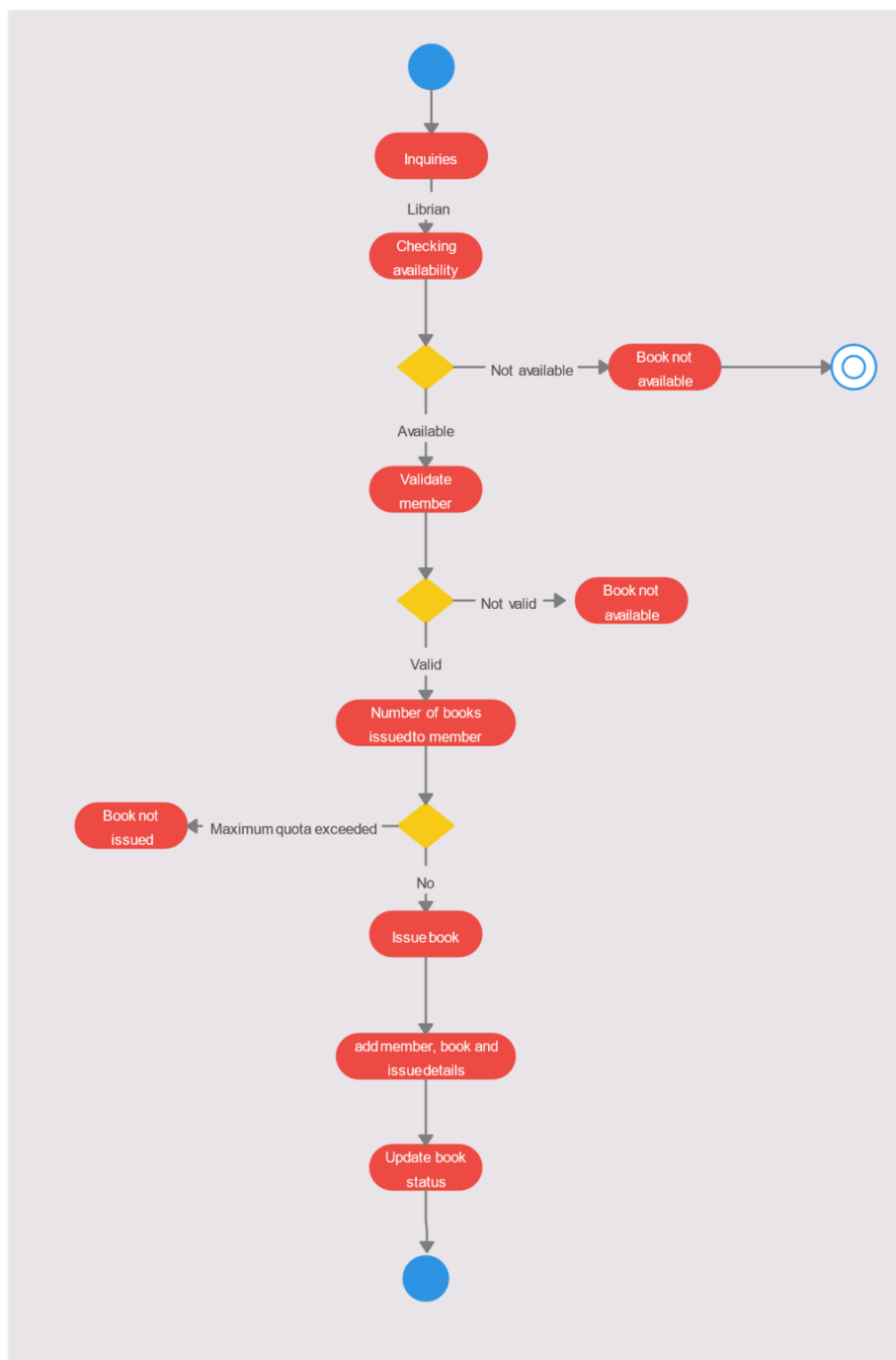
PACKAGE DIAGRAM

Package diagram, a kind of structural diagram, shows the arrangement and organization of model elements in middle to large scale project. Package diagram can show both structure and dependencies between sub-systems or modules, showing different views of a system, for example, as multi-layered (aka multi-tiered) application - multi-layered application model.
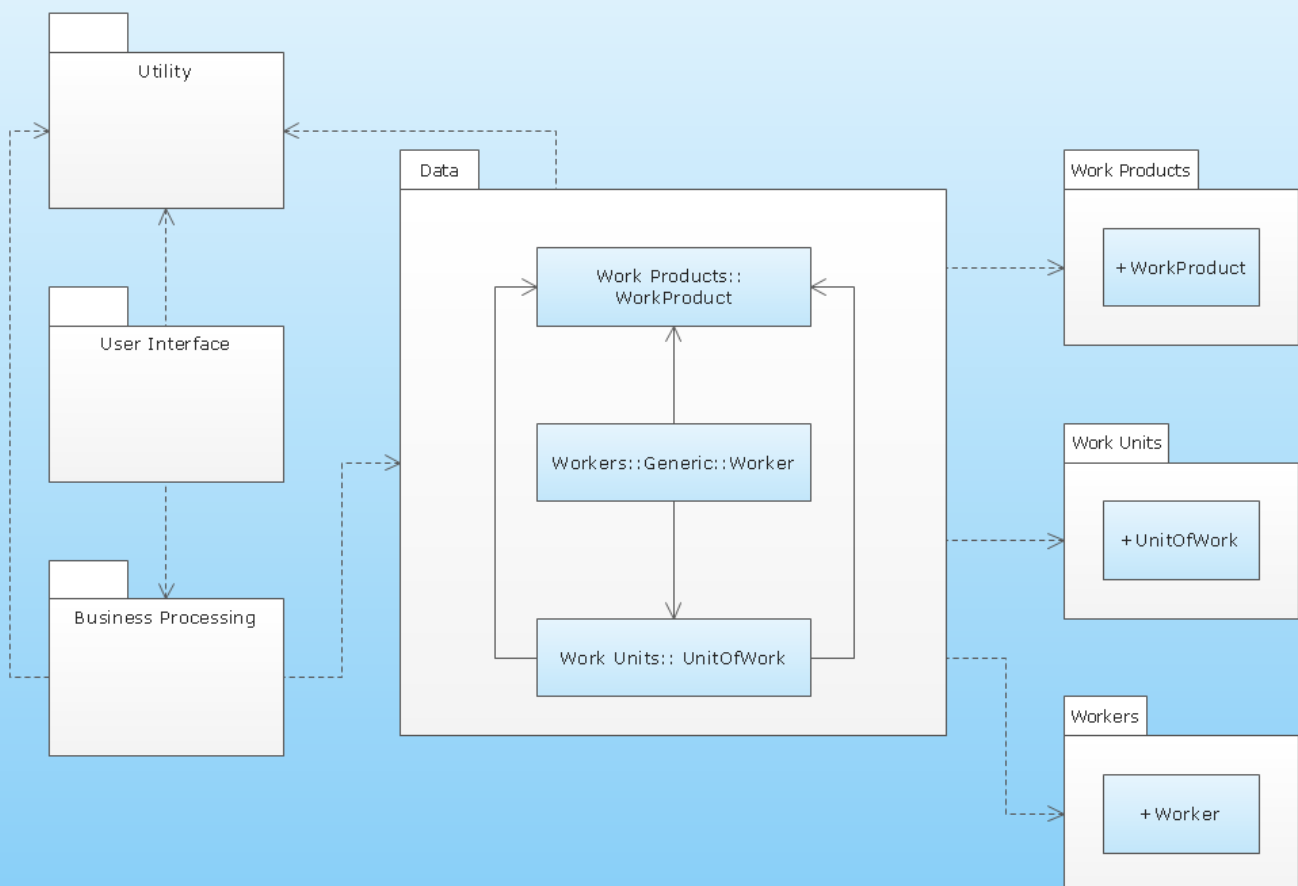
DEPLOYMENT DIAGRAM

A deployment diagram is a UML diagram type that shows theexecution architecture of a system, including nodes such as hardware or software execution environments, and the middleware connecting them. Deployment diagrams are typically used to visualize the physical hardware and software of a system.
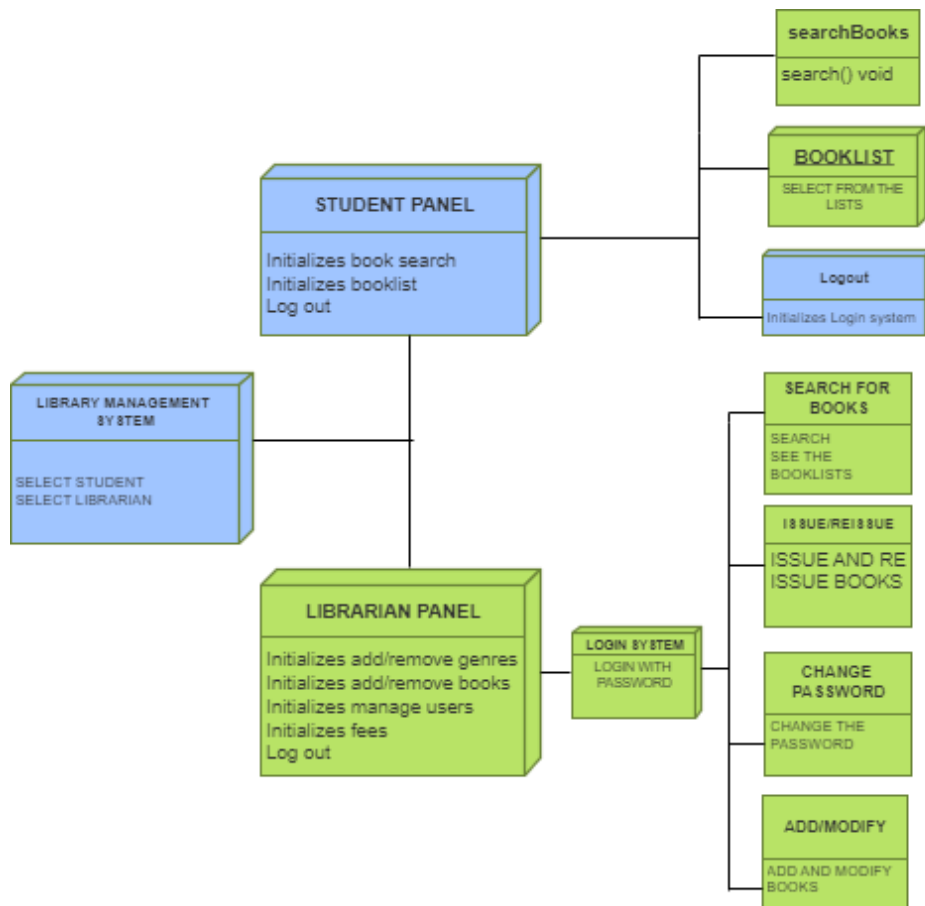
COMPONENT DIAGRAM

The purpose of a component diagram is to show the relationship between different components in a system. For the purpose of UML2.0, the term "component" refers to a module of classes that represent independent systems or subsystems with the ability to interface with the rest of the system.
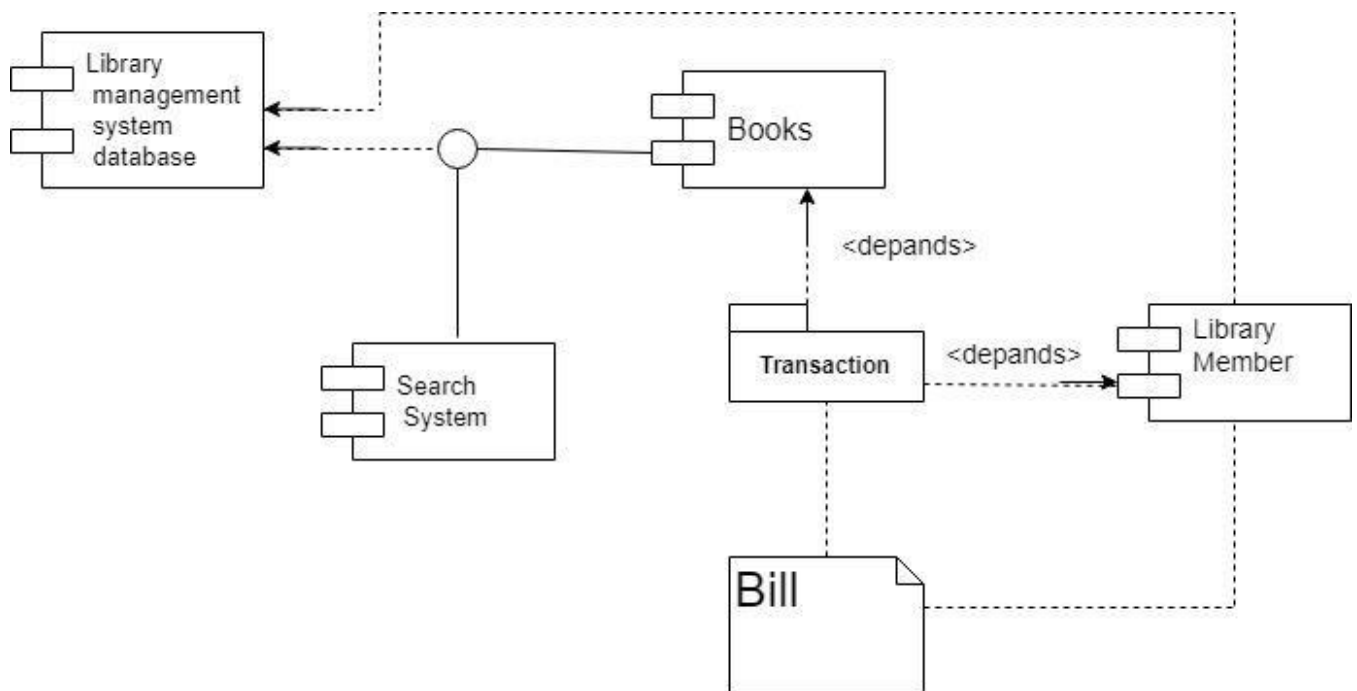
CODE:-

```cpp
#include<iostream>
#include<stdio.h>
#include<stdlib.h>
#include<fstream>
#include<string.h>
#include<conio.h>
using namespace std;
class Lib
{
public:
char bookname[100],auname[50],sc[20],sc1[50];
int q,B,p;
Lib()
{
strcpy(bookname,"NO Book Name");
strcpy(auname,"No Author Name");
strcpy(sc,"No Book ID");
strcpy(sc1,"No Book ID");
q=0;
B=0;
p=0;
}
void  get();
void student();
void pass();
void librarian();
void password();
void getdata();
void show(int);
void booklist(int);
void modify();
```

```cpp
void see(int);
int branch(int);
void issue();
void der(char[],int,int);
void fine(int,int,int,int,int,int);
};
void Lib::getdata()
{
int i;
fflush(stdin);
cout<<"\n\t\tEnter the details :-\n";
cout<<"\n\t\tEnter Book's Name : ";
cin.getline(bookname,100);
for(i=0;bookname[i]!='\0';i++)
{
if(bookname[i]>='a'&&bookname[i]<='z')
bookname[i]-=32;
}
cout<<"\n\t\tEnter Author's Name : ";
cin.getline(auname,50);
cout<<"\n\t\tEnter Publication name : ";
cin.getline(sc1,50);
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(sc,20);
cout<<"\n\t\tEnter Book's Price : ";
cin>>p;
cout<<"\n\t\tEnter Book's Quantity : ";
cin>>q;
}
void Lib::show(int i)
{
cout<<"\n\t\tBook Name : "<<bookname<<endl;
cout<<"\n\t\tBook's Author Name : "<<auname<<endl;
cout<<"\n\t\tBook's ID : "<<sc<<endl;
```

```cpp
cout<<"\n\t\tBook's Publication : "<<sc1<<endl;
if(i==2)
{
cout<<"\n\t\tBook's Price : "<<p<<endl;
cout<<"\n\t\tBook's Quantity : "<<q<<endl;
}
}
void Lib::booklist(int i)
{
int b,r=0;
system("cls");
b=branch(i);
system("cls");
ifstream intf("Booksdata.txt",ios::binary);
if(!intf)
cout<<"\n\t\tFile Not Found.";
else
{
cout<<"\n\t    *********** Book List *********** \n\n";
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
if(b==B)
{
if(q==0 && i==1)
{

}
else
{
r++;
cout<<"\n\t\t********** "<<r<<". ********** \n";
show(i);
}
```

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```cpp
}
intf.read((char*)this,sizeof(*this));
}
}
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
if(i==1)
student();
else
librarian();
}
void Lib::modify()
{
char ch,st1[100];
int  i=0,b,cont=0;
system("cls");
cout<<"\n\t\t>>Please Choose one option :-\n";
cout<<"\n\t\t1.Modification In Current Books\n\n\t\t2.Add
New Book\n\n\t\t3.Delete A Book\n\n\t\t4.Go back\n";
cout<<"\n\n\t\tEnter your choice : ";
cin>>i;
if(i==1)
{
system("cls");
b=branch(2);
ifstream intf1("Booksdata.txt",ios::binary);
if(!intf1)
{
cout<<"\n\t\tFile Not Found\n";
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
librarian();
```

```
}
intf1.close();
system("cls");
cout<<"\n\t\tPlease Choose One Option :-\n";
cout<<"\n\t\t1.Search By Book Name\n\n\t\t2.Search By
Book's ID\n";
cout<<"\n\t\tEnter Your Choice : ";
cin>>i;
fflush(stdin);
if(i==1)
{
system("cls");
cout<<"\n\t\tEnter Book Name : ";
cin.getline(st1,100);
system("cls");
fstream intf("Booksdata.txt",ios::in|ios::out|ios::ate|ios::binary);
intf.seekg(0);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
for(i=0;b==B&&bookname[i]!='\0'&&st1[i]!='\0'&&(st1[i]==bo
okname[i]||st1[i]==bookname[i]+32);i++);
if(bookname[i]=='\0'&&st1[i]=='\0')
{
cont++;
getdata();
intf.seekp(intf.tellp()-sizeof(*this));
intf.write((char*)this,sizeof(*this));
break;
}
intf.read((char*)this,sizeof(*this));
}
intf.close();
}
```

```cpp
else if(i==2)
{
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(st1,100);
system("cls");
fstream intf("Booksdata.txt",ios::in|ios::out|ios::ate|ios::binary);
intf.seekg(0);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
for(i=0;b==B&&sc[i]!='\0'&&st1[i]!='\0'&&st1[i]==sc[i];i++);
if(sc[i]=='\0'&&st1[i]=='\0')
{
cont++;
getdata();
intf.seekp(intf.tellp()-sizeof(*this));
intf.write((char*)this,sizeof(*this));
break;
}
intf.read((char*)this,sizeof(*this));
}

intf.close();
}
else
{
cout<<"\n\t\tIncorrect Input......(\n";
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
modify();
}
if(cont==0)
{
```

```cpp
cout<<"\n\t\tBook Not Found.\n";
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
modify();
}
else
cout<<"\n\t\tUpdate Successful.\n";


}
else if(i==2)
{
system("cls");
B=branch(2);
system("cls");
getdata();
ofstream outf("Booksdata.txt",ios::app|ios::binary);
outf.write((char*)this,sizeof(*this));
outf.close();
cout<<"\n\t\tBook added Successfully.\n";
}
else if(i==3)
{
system("cls");
b=branch(2);
ifstream intf1("Booksdata.txt",ios::binary);
if(!intf1)
{
cout<<"\n\t\tFile Not Found\n";
cout<<"\n\t\tPress any key to continue ....";
getch();
intf1.close();
system("cls");
```

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```cpp
librarian();
}
intf1.close();
system("cls");
cout<<"\n\t\tPlease Choose One Option for deletion:-\n";
cout<<"\n\t\t1.By Book Name\n\n\t\t2.By Book's ID\n";
cout<<"\n\t\tEnter Your Choice : ";
cin>>i;
fflush(stdin);
if(i==1)
{
system("cls");
cout<<"\n\t\tEnter Book Name : ";
cin.getline(st1,100);
ofstream outf("temp.txt",ios::app|ios::binary);
ifstream intf("Booksdata.txt",ios::binary);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
for(i=0;b==B&&bookname[i]!='\0'&&st1[i]!='\0'&&(st1[i]==bo
okname[i]||st1[i]==bookname[i]+32);i++);
if(bookname[i]=='\0'&&st1[i]=='\0')
{
cont++;
intf.read((char*)this,sizeof(*this));

}
else
{
outf.write((char*)this,sizeof(*this));
intf.read((char*)this,sizeof(*this));
}
}
```
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```cpp
intf.close();
outf.close();
remove("Booksdata.txt");
rename("temp.txt","Booksdata.txt");
}
else if(i==2)
{
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(st1,100);
ofstream outf("temp.txt",ios::app|ios::binary);
ifstream intf("Booksdata.txt",ios::binary);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
for(i=0;b==B&&sc[i]!='\0'&&st1[i]!='\0'&&st1[i]==sc[i];i++);
if(sc[i]=='\0'&&st1[i]=='\0')
{
cont++;
intf.read((char*)this,sizeof(*this));
}
else
{
outf.write((char*)this,sizeof(*this));
intf.read((char*)this,sizeof(*this));
}
}
outf.close();
intf.close();
remove("Booksdata.txt");
rename("temp.txt","Booksdata.txt");
}
else
{
cout<<"\n\t\tIncorrect Input......:(\n";
```

```cpp
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
modify();
}
if(cont==0)
{
cout<<"\n\t\tBook Not Found.\n";
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
modify();
}
else
cout<<"\n\t\tDeletion Successful.\n";

}
else if(i==4)
{
system("cls");
librarian();
}
else
{
cout<<"\n\t\tWrong Input.\n";
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
modify();
}
cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
librarian();
```
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```cpp
}
int Lib::branch(int x)
{
int i;
cout<<"\n\t\t>>Please Choose one Branch :-\n";
cout<<"\n\t\t1.Class
12th\n\n\t\t2.CS\n\n\t\t3.EC\n\n\t\t4.CIVIL\n\n\t\t5.MECH
ANICAL\n\n\t\t6.1ST YEAR\n\n\t\t7.Go to menu\n";
cout<<"\n\t\tEnter youur choice : ";
cin>>i;
switch(i)
{
case 1: return 1;
break;
case 2: return 2;
break;
case 3: return 3;
break;
case 4: return 4;
break;
case 5: return 5;
break;
case 6: return 6;
break;
case 7: system("cls");
if(x==1)
student();
else
librarian();
default : cout<<"\n\t\tPlease enter correct option :(";
getch();
system("cls");
branch(x);
```

```cpp
}
}
void Lib::see(int x)
{
int i,b,cont=0;
char  ch[100];
system("cls");
b=branch(x);
ifstream intf("Booksdata.txt",ios::binary);
if(!intf)
{
cout<<"\n\t\tFile Not Found.\n";
cout<<"\n\t\t->Press any key to continue....";
getch();
system("cls");
if(x==1)
student();
else
librarian();
}

system("cls");
cout<<"\n\t\tPlease Choose one option :-\n";
cout<<"\n\t\t1.Search By Name\n\n\t\t2.Search By Book's
ID\n";
cout<<"\n\t\tEnter Your Choice : ";
cin>>i;
fflush(stdin);
intf.read((char*)this,sizeof(*this));
if(i==1)
{
cout<<"\n\t\tEnter Book's Name : ";
cin.getline(ch,100);
system("cls");
```

```cpp
while(!intf.eof())
{
for(i=0;b==B&&q!=0&&bookname[i]!='\0'&&ch[i]!='\0'&&(ch[i
]==bookname[i]||ch[i]==bookname[i]+32);i++);
if(bookname[i]=='\0'&&ch[i]=='\0')
{
cout<<"\n\t\tBook Found :-\n";
show(x);
cont++;
break;
}
intf.read((char*)this,sizeof(*this));
}
}
else if(i==2)
{
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(ch,100);
system("cls");
while(!intf.eof())
{
for(i=0;b==B&&q!=0&&sc[i]!='\0'&&ch[i]!='\0'&&ch[i]==sc[i];i
++);
if(sc[i]=='\0'&&ch[i]=='\0')
{
cout<<"\n\t\tBook Found :-\n";
show(x);
cont++;
break;
}
intf.read((char*)this,sizeof(*this));
}

}
```

```cpp
else
{
cont++;
cout<<"\n\t\tPlease enter correct option :(";
getch();
system("cls");
see(x);
}
intf.close();
if(cont==0)
cout<<"\n\t\tThis Book is not available :( \n";

cout<<"\n\t\tPress any key to continue ....";
getch();
system("cls");
if(x==1)
student();
else
librarian();


}
void Lib::issue()
{
char st[50],st1[20];
int b,i,j,d,m,y,dd,mm,yy,cont=0;
system("cls");
cout<<"\n\t\t->Please Choose one option :-\n";
cout<<"\n\t\t1.Issue Book\n\n\t\t2.View Issued
Book\n\n\t\t3.Search student who isuued
books\n\n\t\t4.Reissue Book\n\n\t\t5.Return
Book\n\n\t\t6.Go back to menu\n\n\t\tEnter Your Choice : ";
cin>>i;
fflush(stdin);
```

```cpp
if(i==1)
{
system("cls");
b=branch(2);
system("cls");
fflush(stdin);
cout<<"\n\t\t->Please Enter Details :-\n";
cout<<"\n\t\tEnter Book Name : ";
cin.getline(bookname,100);
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(sc,20);
//strcpy(st,sc);
der(sc,b,1);
cout<<"\n\t\tEnter Student Name : ";
cin.getline(auname,100);
cout<<"\n\t\tEnter Student's ID : ";
cin.getline(sc1,20);
cout<<"\n\t\tEnter date : ";
cin>>q>>B>>p;
ofstream outf("student.txt",ios::binary|ios::app);
outf.write((char*)this,sizeof(*this));
outf.close();
cout<<"\n\n\t\tIssue Successfully.\n";
}
else if(i==2)
{
ifstream intf("student.txt",ios::binary);
system("cls");
cout<<"\n\t\t->The Details are :-\n";
intf.read((char*)this,sizeof(*this));
i=0;
while(!intf.eof())
{
i++;
```

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```cpp
cout<<"\n\t\t********** "<<i<<". ********** \n";
cout<<"\n\t\tStudent Name :
"<<auname<<"\n\t\t"<<"Student's ID :
"<<sc1<<"\n\t\t"<<"Book Name :
"<<bookname<<"\n\t\t"<<"Book's ID :
"<<sc<<"\n\t\t"<<"Date : "<<q<<"/"<<B<<"/"<<p<<"\n";
intf.read((char*)this,sizeof(*this));
}
intf.close();
}
else if(i==3)
{
system("cls");
fflush(stdin);
cout<<"\n\t\t->Please Enter Details :-\n";
cout<<"\n\n\t\tEnter Student Name : ";
cin.getline(st,50);
cout<<"\n\n\t\tEnter Student's ID : ";
cin.getline(st1,20);
system("cls");
ifstream intf("student.txt",ios::binary);
intf.read((char*)this,sizeof(*this));
cont=0;
while(!intf.eof())
{
for(i=0;sc1[i]!='\0'&&st1[i]!='\0'&&st1[i]==sc1[i];i++);
if(sc1[i]=='\0'&&st1[i]=='\0')
{
cont++;
if(cont==1)
{
cout<<"\n\t\t->The Details are :-\n";
cout<<"\n\t\tStudent Name : "<<auname;
cout<<"\n\t\tStudent's ID : "<<sc1;
```

```cpp
}
cout<<"\n\n\t\t******* "<<cont<<". Book details *******\n";
cout<<"\n\t\tBook Name : "<<bookname;
cout<<"\n\t\tBook's ID : "<<sc;
cout<<"\n\t\tDate : "<<q<<"/"<<B<<"/"<<p<<"\n";
}
intf.read((char*)this,sizeof(*this));

}
intf.close();
if(cont==0)
cout<<"\n\t\tNo record found.";
}
else if(i==4)
{
system("cls");
fflush(stdin);
cout<<"\n\t\t->Please Enter Details :-\n";
cout<<"\n\n\t\tEnter Student's ID : ";
cin.getline(st,50);
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(st1,20);
fstream intf("student.txt",ios::in|ios::out|ios::ate|ios::binary);
intf.seekg(0);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
for(i=0;sc[i]!='\0'&&st1[i]!='\0'&&st1[i]==sc[i];i++);
for(j=0;sc1[j]!='\0'&&st[j]!='\0'&&st[j]==sc1[j];j++);
if(sc[i]=='\0'&&sc1[j]=='\0'&&st[j]=='\0'&&st1[i]=='\0')
{
d=q;
m=B;
y=p;
```
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```cpp
cout<<"\n\t\tEnter New Date : ";
cin>>q>>B>>p;
fine(d,m,y,q,B,p); //fn1
intf.seekp(intf.tellp()-sizeof(*this)); //fn3
intf.write((char*)this,sizeof(*this)); //fn5
cout<<"\n\n\t\tReissue successfully."; //fn3
break;
}
intf.read((char*)this,sizeof(*this));
}
intf.close();
}
else if(i==5)
{
system("cls");
b=branch(2);
system("cls");
fflush(stdin);
cout<<"\n\t\t->Please Enter Details :-\n";
cout<<"\n\t\tEnter Book's ID : ";
cin.getline(st1,20);
der(st1,b,2);
cout<<"\n\n\t\tEnter Student's ID : ";
cin.getline(st,20);
cout<<"\n\t\tEnter Present date : ";
cin>>d>>m>>y;
ofstream outf("temp.txt",ios::app|ios::binary);
ifstream intf("student.txt",ios::binary);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
{
for(i=0;sc[i]!='\0'&&st1[i]!='\0'&&st1[i]==sc[i];i++);
for(j=0;sc1[j]!='\0'&&st[j]!='\0'&&st[j]==sc1[j];j++);
if(sc[i]=='\0'&&sc1[j]=='\0'&&st[j]=='\0'&&st1[i]=='\0'&&cont
```

```
==0)
{
cont++;
intf.read((char*)this,sizeof(*this));
fine(q,B,p,d,m,y);
cout<<"\n\t\tReturned successfully.";
}
else
{
outf.write((char*)this,sizeof(*this));
intf.read((char*)this,sizeof(*this));
}
}

intf.close();
outf.close();
getch();
remove("student.txt");
rename("temp.txt","student.txt");
}
else if(i==6)
{
system("cls");
librarian();
}
else
cout<<"\n\t\tWrong Input.\n";

cout<<"\n\n\t\tPress any key to continue ....";
getch();
system("cls");
librarian();
}
void Lib::fine(int d,int m,int y,int dd,int mm,int yy)
```

```cpp
{
long int n1,n2;
int years,l,i;
const int monthDays[12] = {31, 28, 31, 30, 31, 30,31, 31, 30, 31,
30, 31};
n1 = y*365 + d;
for (i=0; i<m - 1; i++)
n1 += monthDays[i]; //fn1353
years = y;
if (m <= 2)
years--;
l= years / 4 - years / 100 + years / 400;
n1 += l;
n2 = yy*365 + dd;
for (i=0; i<mm - 1; i++)
n2 += monthDays[i];
years = yy;
if (m <= 2)
years--;
l= years / 4 - years / 100 + years / 400;
n2 += l;
n1=n2-n1;
n2=n1-15;
if(n2>0)
cout<<"\n\t\tThe Total Fine is : "<<n2;

}
void Lib::der(char st[],int b,int x)
{
int i,cont=0;
fstream intf("Booksdata.txt",ios::in|ios::out|ios::ate|ios::binary);
intf.seekg(0);
intf.read((char*)this,sizeof(*this));
while(!intf.eof())
```

```cpp
{
for(i=0;b==B&&sc[i]!='\0'&&st[i]!='\0'&&st[i]==sc[i];i++);
if(sc[i]=='\0'&&st[i]=='\0')
{
cont++;
if(x==1)
{
q--;
}
else
{
q++;
}
intf.seekp(intf.tellp()-sizeof(*this));
intf.write((char*)this,sizeof(*this));
break;
}
intf.read((char*)this,sizeof(*this));
}
if(cont==0)
{
cout<<"\n\t\tBook not found.\n";
cout<<"\n\n\t\tPress any key to continue ....";
getch();
system("cls");
issue();
}
intf.close();
}
void Lib::get()
{
int i;
cout<<"\n\t*********** LIBRARY MANAGEMENT SYSTEM
***********\n"<<"\n\t\t\t   Learnprogramo <<LMS>> C++\n";
```

```cpp
cout<<"\n\t\t>>Please Choose Any Option To login \n";
cout<<"\n\t\t1.Student\n\n\t\t2.Librarian\n\n\t\t3.Close
Application\n";
cout<<"\n\t\tEnter your choice : ";
cin>>i;
if(i==1)
{
system("cls");
student();
}
else if(i==2)
pass();

else if(i==3)
exit(0);
else
{
cout<<"\n\t\tPlease enter correct option :(";
getch();
system("CLS");
get();
}
}
void Lib::student()
{
int i;
cout<<"\n\t*********** WELCOME STUDENT ***********\n";
cout<<"\n\t\t>>Please Choose One Option:\n";
cout<<"\n\t\t1.View BookList\n\n\t\t2.Search for a
Book\n\n\t\t3.Go to main menu\n\n\t\t4.Close
Application\n";
cout<<"\n\t\tEnter your choice : ";
cin>>i;
if(i==1)
```

```
booklist(1);
else if(i==2)
see(1);
else if(i==3)
{
system("cls");
get();
}
else if(i==4)
exit(0);
else
{
cout<<"\n\t\tPlease enter correct option :(";
getch();
system("cls");
student();
}
}
void Lib::pass()
{
int i=0;
char ch,st[21],ch1[21]={"learnprogramo"};
cout<<"\n\t\tEnter Password : ";
while(1)
{
ch=getch();
if(ch==13)
{
st[i]='\0';
break;
}
else if(ch==8&&i>0)
{
i--;
```

```cpp
cout<<"\b \b";
}
else
{
cout<<"*";
st[i]=ch;
i++;
}
}
ifstream inf("password.txt");
inf>>ch1;
inf.close();
for(i=0;st[i]==ch1[i]&&st[i]!='\0'&&ch1[i]!='\0';i++);
if(st[i]=='\0'&&ch1[i]=='\0')
{
system("cls");
librarian();
}
else
{
cout<<"\n\n\t\tWrong Password.\n\n\t\ttry again .... \n";
getch();
system("cls");
get();
}
}
void Lib::librarian()
{
int i;
cout<<"\n\t*********** WELCOME LIBRARIAN
***********\n";
cout<<"\n\t\t>>Please Choose One Option:\n";
cout<<"\n\t\t1.View BookList\n\n\t\t2.Search for a
Book\n\n\t\t3.Modify/Add Book\n\n\t\t4.Issue
```

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```cpp
Book\n\n\t\t5.Go to main menu\n\n\t\t6.Change
Password\n\n\t\t7.Close Application\n";
cout<<"\n\t\tEnter your choice : ";
cin>>i;
switch(i)
{
case 1:booklist(2);
break;
case 2:see(2);
break;
case 3:modify();
break;
case 4:issue();
break;
case 5:system("cls");
get();
break;
case 6:password();
break;
case 7:exit(0);
default:cout<<"\n\t\tPlease enter correct option :(";
getch();
system("cls");
librarian();
}
}
void Lib::password()
{
int i=0,j=0;
char ch,st[21],ch1[21]={"learnprogramo"};
system("cls");
cout<<"\n\n\t\tEnter Old Password : ";
while(1)
{
```

```
ch=getch();
if(ch==13)
{
st[i]='\0';
break;
}
else if(ch==8&&i>0)
{
i--;
cout<<"\b \b";
}
else
{
cout<<"*";
st[i]=ch;
i++;
}
}
ifstream intf("password.txt");
intf>>ch1;
intf.close();
for(i=0;st[i]==ch1[i]&&st[i]!='\0'&&ch1[i]!='\0';i++);
if(st[i]=='\0'&&ch1[i]=='\0')
{
system("cls");
cout<<"\n\t**The Password Should be less than 20 characters
& don't use spaces**\n\n";
cout<<"\n\t\tEnter New Password : ";
fflush(stdin);
i=0;
while(1)
{
j++;
ch=getch();
```

```cpp
if(ch==13)
{
for(i=0;st[i]!=' '&&st[i]!='\0';i++);
if(j>20 || st[i]==' ')
{
cout<<"\n\n\t\tYou did't follow the instruction \n\n\t\tPress
any key for try again....";
getch();
system("cls");
password();
librarian();
}
st[i]='\0';
break;
}
else if(ch==8&&i>0)
{
i--;
cout<<"\b \b";
}
else
{
cout<<"*";
st[i]=ch;
i++;
}
}
ofstream outf("password.txt");
outf<<st;
outf.close();
cout<<"\n\n\t\tYour Password has been changed
Successfully.";
cout<<"\n\t\tPress any key to continue .....";
getch();
```

```cpp
system("cls");
librarian();
}
else
{
cout<<"\n\n\t\tPassword is incorrect....\n";
cout<<"\n\t\tEnter 1 for retry or 2 for menu";
cin>>i;
if(i==1)
{
system("cls");
password();
}
else
{
system("cls");
librarian();
}
}
}
int main()
{
Lib obj;
obj.get();
getch();
return 0;
}
```

RESULTS

```
************ LIBRARY MANAGEMENT SYSTEM ************

                Learnprogramo <<LMS>> C++

        >>Please Choose Any Option To login

        1.Student

        2.Librarian

        3.Close Application

        Enter your choice :
```

```
************ WELCOME STUDENT *************

        >>Please Choose One Option:

        1.View BookList

        2.Search for a Book

        3.Go to main menu

        4.Close Application

        Enter your choice :
```

```
************ LIBRARY MANAGEMENT SYSTEM ************

                Learnprogramo <<LMS>> C++

      >>Please Choose Any Option To login

      1.Student

      2.Librarian

      3.Close Application

      Enter your choice : 2

      Enter Password : **********
```

```
************* WELCOME LIBRARIAN *************

      >>Please Choose One Option:

      1.View BookList

      2.Search for a Book

      3.Modify/Add Book

      4.Issue Book

      5.Go to main menu

      6.Change Password

      7.Close Application

      Enter your choice :
```

Refernces

https://www.researchgate.net/
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