****

**LIBRARY MANAGEMENT SYSTEM**

SUBMITTED IN PARTIAL FULLFILLMENT FOR THE AWARD OF

DEGREE

In

BACHELOR OF TECHNOLOGY IN

COMPUTER SCIENCE AND ENGINEERING.

Team Members:

B.Krishna|AP21110010692

Sk.Shahul Hameed|AP21110010696

D.Adithi|AP21110010700

Ch.Sharas Chandra|AP21110010705

Mentor Details:

MR. SUDHAKAR REDDY.

**CONTENTS:**

1. INTRODUCTION
2. PROBLEM STATEMENT
3. PROGRAM
4. OUTPUT

INTRODUCTION:

1. A library is a collection of sources, resources, and services, as well as the structure in which it is housed.
2. It is organised for use and maintained by a public body, an institution, or a private individual.
3. In the more traditional sense, a library is a collection of books.

## PROBLEM STATEMENT :

1. The aim of the library management system is to maintain books for reading and reference purposes.
2. In this application, it will update the total number of books present in the library and how many books are issued to the users.
3. It can create profiles for the students, librarians, and professors.
4. It displays the due date for the book after it has been used.
5. New books can only be entered by the librarian in the library.

**PROGRAM:**

#include<bits/stdc++.h>

#include<iostream>

#include<fstream>

#include<stdlib.h>

#include<stdio.h>

#include<process.h>

#include<conio.h>

using namespace std;

int res\_book(int,int);

class book

{

protected:

int bookno,quant;

char bname[50];

char aname[50];

char pname[50];

public:

void createbook();

void showbook();

void showlist();

void assignbookno(int x)

{

bookno=1001;

bookno+=x-1;

start1:

bookno+=1;

if(res\_book(bookno,0))

goto start1;

}

void set\_quantity()

{

quant-=1;

}

int quantity()

{

return quant;

}

void reset\_quantity()

{

quant+=1;

}

int returnbookno()

{

return bookno;

}

};

void book::createbook()

{

int i;

cout<<"\n\t\tEnter the details:-\n";

cout<<"\n\t\tEnter Book's Name: ";

char n[50];

cin.getline(n,50);

cin.getline(bname,50);

for(i=0;bname[i]!='\0';i++)

{

if(bname[i]>='a'&&bname[i]<='z')

bname[i]-=32;

}

cout<<"\n\t\tEnter Author's Name: ";

cin.getline(aname,50);

cout<<"\n\t\tEnter Publication Name: ";

cin.getline(pname,50);

cout<<"\n\t\tEnter Book's quantity: ";

cin>>quant;

}

void book::showbook()

{

cout<<"\n\t\tBook No.: "<<bookno<<"\n";

cout<<"\n\t\tBook Name: "<<bname<<"\n";

cout<<"\n\t\tBook's Author Name: "<<aname<<"\n";

cout<<"\n\t\tBook's Publication: "<<pname<<"\n";

cout<<"\n\t\tBook's Quantity: "<<quant<<"\n";

}

void book::showlist()

{

cout<<"\n\t"<<bookno<<"\t\t"<<bname<<"\t\t"<<aname<<"\t\t"<<quant;

}

class student

{

protected:

char name[25];

int bno;

int token;

public:

void creates();

void shows();

void showlist();

void settoken(int x)

{

bno=x;

token=1;

}

void resettoken()

{

bno=0;

token=0;

}

int retbno()

{

return bno;

}

int admno;

};

bool res\_student(int);

void student::creates()

{

int i;

plane:

system("CLS");

cout<<"\n\t\tEnter the details:-\n";

cout<<"\n\t\tEnter student's Admission no: ";

cin>>admno;

if(res\_student(admno))

{

cout<<"\n\t\tRecord already exist with this admission no.";

cout<<"\n\t\tEnter a different admission no.\n";

system("PAUSE");

goto plane;

}

cout<<"\n\t\tEnter student's Name: ";

char n[50];

cin.getline(n,50);

cin.getline(name,25);

for(i=0;name[i]!='\0';i++)

{

if(name[i]>='a'&&name[i]<='z')

name[i]-=32;

}

bno=0;

token=0;

}

void student::shows()

{

cout<<"\n\t\tStudent's Admission No.: "<<admno<<"\n";

cout<<"\n\t\tStudent's Name: "<<name<<"\n";

if(token==1)

{

cout<<"\n\t\tBook Issued (Book no): "<<bno;

}

}

void student::showlist()

{

cout<<"\n\t"<<admno<<"\t\t"<<name<<"\t\t"<<bno;

}

void write\_book()

{

book bk;

ofstream outf("book1.bin",ios::app|ios::binary);

outf.seekp(0,ios::end);

int x=outf.tellp()/sizeof(book);

bk.assignbookno(x);

bk.createbook();

bk.showbook();

outf.write(reinterpret\_cast<char \*>(&bk),sizeof(book));

cout<<"\n\t\tRecord added successfully";

outf.close();

}

void write\_student()

{

student st;

ofstream outf("student.bin",ios::app|ios::binary);

outf.seekp(0,ios::end);

st.creates();

st.shows();

outf.write(reinterpret\_cast<char \*>(&st),sizeof(student));

cout<<"\n\t\tRecord added successfully";

outf.close();

}

void list\_student()

{

system("CLS");

student st;

ifstream intf("student.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

cout<<"\n\t\*\*\*\*\*Students Details\*\*\*\*\*\n\n";

cout<<"\n\tAdmission No:\tName: \tBook Issued:";

while(intf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

st.showlist();

}

intf.close();

}

void list\_book()

{

book bk;

ifstream intf("book1.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

cout<<"\n\t\*\*\*\*\*Books Details\*\*\*\*\*\n\n";

cout<<"\n\tBook No:\t\tName: \t\tAuthor's Name: \t\tQuantity: ";

while(intf.read(reinterpret\_cast<char \*>(&bk),sizeof(book)))

bk.showlist();

}

intf.close();

}

void search\_student(int x)

{

student st;

int cnt=0;

ifstream intf("student.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

while(intf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

{

if(st.admno==x)

{

cnt++;

cout<<"\n\t\tFILE FOUND!!!!";

st.shows();

break;

}

}

if(cnt==0)

cout<<"\n\t\tNo such record exists";

}

intf.close();

}

void search\_book(int x)

{

book bk;

int cnt=0;

ifstream intf("book1.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

while(intf.read(reinterpret\_cast<char \*>(&bk),sizeof(book)))

{

if(bk.returnbookno()==x)

{

cnt++;

cout<<"\n\t\tFILE FOUND!!!!";

bk.showbook();

break;

}

}

if(cnt==0)

cout<<"\n\t\tNo such record exists";

}

intf.close();

}

void modify\_book(int x)

{

book bk;

int cnt=0;

fstream intf("book1.bin",ios::in|ios::out|ios::ate|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

while(intf.read(reinterpret\_cast<char \*>(&bk),sizeof(book)))

{

if(bk.returnbookno()==x)

{

cnt++;

bk.createbook();

bk.showbook();

intf.seekp(intf.tellp()-sizeof(book));

intf.write(reinterpret\_cast<char \*>(&bk),sizeof(book));

cout<<"\n\t\tRecord Updated";

break;

}

}

if(cnt==0)

cout<<"\n\t\tNo such record exists";

}

intf.close();

}

void modify\_student(int x)

{

student st;

int cnt=0;

fstream intf("student.bin",ios::in|ios::out|ios::ate|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

while(intf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

{

if(st.admno==x)

{

cnt++;

st.creates();

st.shows();

intf.seekp(intf.tellp()-sizeof(student));

intf.write(reinterpret\_cast<char \*>(&st),sizeof(student));

cout<<"\n\t\tRecord Updated";

break;

}

}

if(cnt==0)

cout<<"\n\t\tNo such record exists";

}

intf.close();

}

void delete\_student(int x)

{

student st;

int cnt=0;

ifstream intf("student.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

ofstream outf("temp.bin",ios::app|ios::binary);

while(intf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

{

if(st.admno==x)

cnt++;

else

outf.write(reinterpret\_cast<char \*>(&st),sizeof(student));

}

intf.close();

outf.close();

if(cnt==0)

{

remove("temp.bin");

cout<<"\n\t\tNo such record exists";

}

else

{

remove("student.bin");

rename("temp.bin","student.bin");

cout<<"\n\t\tRecord deleted successfully";

}

}

}

void delete\_book(int x)

{

book bk;

int cnt=0;

ifstream intf("book1.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

cout<<"\n\t\tFile not found";

else

{

ofstream outf("temp1.bin",ios::app|ios::binary);

while(intf.read(reinterpret\_cast<char \*>(&bk),sizeof(book)))

{

if(bk.returnbookno()==x)

cnt++;

else

outf.write(reinterpret\_cast<char \*>(&bk),sizeof(book));

}

intf.close();

outf.close();

if(cnt==0)

{

remove("temp1.bin");

cout<<"\n\t\tNo such record exists";

}

else

{

remove("book.bin");

rename("temp1.bin","book.bin");

cout<<"\n\t\tRecord deleted successfully";

}

}

}

bool res\_student(int x)

{

student st;

int cnt=0,f=0;

ifstream intf("student.bin",ios::in|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

f=1;

else

{

while(intf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

{

if(st.admno==x)

{

cnt++;

break;

}

}

if(cnt==0)

f=1;

}

intf.close();

if(f)

return 0;

else

return 1;

}

int res\_book(int x,int z)

{

book bk;

int cnt=0,f=1;

fstream intf("book1.bin",ios::in|ios::out|ios::ate|ios::binary);

intf.seekg(0,ios::beg);

if(!intf)

f=0;

else

{

while(intf.read(reinterpret\_cast<char \*>(&bk),sizeof(book)))

{

if(bk.returnbookno()==x)

{

cnt++;

if(z==1)

{

bk.showbook();

if(bk.quantity()>0)

{

bk.set\_quantity();

intf.seekp(intf.tellp()-sizeof(book));

intf.write(reinterpret\_cast<char \*>(&bk),sizeof(book));

}

else

f=2;

}

else if(z==2)

{

bk.showbook();

bk.reset\_quantity();

intf.seekp(intf.tellp()-sizeof(book));

intf.write(reinterpret\_cast<char \*>(&bk),sizeof(book));

}

break;

}

}

if(cnt==0)

f=0;

}

intf.close();

return f;

}

void book\_issue()

{

int sn,bn;

system("CLS");

cout<<"\n\n\t\t\*\*\*\*\*BOOK ISSUE\*\*\*\*\*\*";

cout<<"\n\n\t\tEnter the student's admission no: ";

cin>>sn;

int cnt=0;

student st;

fstream outf("student.bin",ios::in|ios::out|ios::ate|ios::binary);

outf.seekg(0,ios::beg);

if(!outf)

cout<<"\n\t\tFile not found\n";

else

{

while(outf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

{

if(st.admno==sn)

{

cnt++;

list\_book();

cout<<"\n\n\t\tEnter the book no.:";

cin>>bn;

cout<<"\n";

int flag=res\_book(bn,1);

if(flag==1)

{

st.settoken(bn);

outf.seekp(outf.tellp()-sizeof(student));

outf.write(reinterpret\_cast<char \*>(&st),sizeof(student));

cout<<"\n\t\tBook Issued";

cout<<"\n\t\tNote: Write the current date in backside of the book";

cout<<"\n\t\t Should be submitted within 15 days to avoid fine";

cout<<"\n\t\t The fine is Rs. 1 for each day after 15 days period\n";

break;

}

else if(flag==2)

{

cout<<"\n\t\tTHE BOOK IS OUT OF STOCK!!!";

break;

}

else

{

cout<<"\n\t\tNo such record exists\n";

break;

}

}

}

if(cnt==0)

cout<<"\n\t\tNo such record exists\n";

}

outf.close();

}

void book\_deposit()

{

int sn,bn;

system("CLS");

cout<<"\n\n\t\t\*\*\*\*\*BOOK DEPOSIT\*\*\*\*\*\*";

cout<<"\n\n\t\tEnter the student's admission no: ";

cin>>sn;

int cnt=0;

student st;

fstream outf("student.bin",ios::in|ios::out|ios::ate|ios::binary);

outf.seekg(0,ios::beg);

if(!outf)

cout<<"\n\t\tFile not found\n";

else

{

while(outf.read(reinterpret\_cast<char \*>(&st),sizeof(student)))

{

if(st.admno==sn)

{

cnt++;

bn=st.retbno();

bool flag=res\_book(bn,2);

if(flag)

{

st.resettoken();

outf.seekp(outf.tellp()-sizeof(student));

outf.write(reinterpret\_cast<char \*>(&st),sizeof(student));

int days;

cout<<"\n\t\tBook deposited in no. of days:";

cin>>days;

if(days>15)

{

int fine=(days-15)\*1;

cout<<"\n\n\t\tFine: "<<fine<<"\n";

}

cout<<"\n\t\tBook Deposited Successfully\n";

break;

}

else

{

cout<<"\n\t\tNo such record exists\n";

break;

}

}

}

if(cnt==0)

cout<<"\n\t\tNo such record exists\n";

}

outf.close();

}

void admin\_menu()

{

fine:

system("PAUSE");

system("CLS");

int opt;

cout<<"\n\n\n\t\t\t\*\*\*\*\*\*ADMINISTRATOR MENU\*\*\*\*\*\*";

cout<<"\n\n\t1.\tCREATE STUDENT RECORD";

cout<<"\n\n\t2.\tDISPLAY ALL STUDENTS RECORD";

cout<<"\n\n\t3.\tDISPLAY SPECIFIC STUDENT RECORD ";

cout<<"\n\n\t4.\tMODIFY STUDENT RECORD";

cout<<"\n\n\t5.\tDELETE STUDENT RECORD";

cout<<"\n\n\t6.\tCREATE BOOK ";

cout<<"\n\n\t7.\tDISPLAY ALL BOOKS ";

cout<<"\n\n\t8.\tDISPLAY SPECIFIC BOOK ";

cout<<"\n\n\t9.\tMODIFY BOOK ";

cout<<"\n\n\t10.\tDELETE BOOK ";

cout<<"\n\n\t11.\tBACK TO MAIN MENU";

cout<<"\n\n\tPlease Enter Your Choice (1-11) ";

cin>>opt;

if(opt==1)

{

system("CLS");

write\_student();

cout<<"\n";

goto fine;

}

else if(opt==2)

{

system("CLS");

list\_student();

cout<<"\n";

goto fine;

}

else if(opt==3)

{

system("CLS");

int ad;

cout<<"\n\n\n\t\tEnter the admission no. of the student";

cin>>ad;

search\_student(ad);

cout<<"\n";

goto fine;

}

else if(opt==4)

{

system("CLS");

int ad;

cout<<"\n\n\n\t\tEnter the admission no. of the student";

cin>>ad;

modify\_student(ad);

cout<<"\n";

goto fine;

}

else if(opt==5)

{

system("CLS");

int ad;

cout<<"\n\n\n\t\tEnter the admission no. of the student";

cin>>ad;

delete\_student(ad);

cout<<"\n";

goto fine;

}

else if(opt==6)

{

system("CLS");

write\_book();

cout<<"\n";

goto fine;

}

else if(opt==7)

{

system("CLS");

list\_book();

cout<<"\n";

goto fine;

}

else if(opt==8)

{

system("CLS");

int ad;

cout<<"\n\n\n\t\tEnter the book no. of the book";

cin>>ad;

search\_book(ad);

cout<<"\n";

goto fine;

}

else if(opt==9)

{

system("CLS");

int ad;

cout<<"\n\n\n\t\tEnter the book no. of the book";

cin>>ad;

modify\_book(ad);

cout<<"\n";

goto fine;

}

else if(opt==10)

{

system("CLS");

int ad;

cout<<"\n\n\n\t\tEnter the book no. of the book";

cin>>ad;

delete\_book(ad);

cout<<"\n";

goto fine;

}

else if(opt==11)

return ;

else

{

cout<<"\n\t\tEnter correct option";

cout<<"\n";

goto fine;

}

}

bool passwords()

{

int i=0;

char ch,st[21],ch1[21]={"SRM123"};

cout<<"\n\n\t\tEnter 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++;

}

}

for(i=0;st[i]==ch1[i]&&st[i]!='\0'&&ch1[i]!='\0';i++);

if(st[i]=='\0'&&ch1[i]=='\0')

return 1;

else

return 0;

}

int main()

{

cout<<"\n\n\t\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*";

cout<<"\n\t\t\t\tSRM - AP LIBRARY MANAGEMENT SYSTEM";

cout<<"\n\t\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*";

bool a=passwords();

if(!a)

{

for(int i=0;i<2;i++)

{

cout<<"\nWrong password";

cout<<"\nYou have "<<2-i<<"attempts left";

if(passwords())

goto last;

if(i==1)

{

cout<<"\n\n\n\t\t\t All attempts failed........";

cout<<"\n\n\t\t\t Sorry, but you can't login";

exit(0);

}

}

}

last:

cout<<"\n\n";

start:

system("PAUSE");

system("CLS");

int opt;

cout<<"\n\n\t\t\t------------------------------------------";

cout<<"\n\t\t\t\tLIBRARY MANAGEMENT SYSTEM";

cout<<"\n\t\t\t------------------------------------------";

cout<<"\n\n\t\t\tWhat do you want to do?";

cout<<"\n\t\t\t1.\tBOOK ISSUE";

cout<<"\n\t\t\t2.\tBOOK DEPOSIT";

cout<<"\n\t\t\t3.\tADMINISTRATOR MENU";

cout<<"\n\t\t\t4.\tExit";

cout<<"\n\n Choose your option: ";

cin>>opt;

if(opt==1)

{

system("CLS");

book\_issue();

goto start;

}

else if(opt==2)

{

system("CLS");

book\_deposit();

goto start;

}

else if(opt==3)

{

admin\_menu();

goto start;

}

else if(opt==4)

exit(0);

else

{

cout<<"\n\t\tEnter correct option";

goto start;

}

}

**OUTPUT:**











