**LIBRARY MANAGEMENT SYSTEM**

**INTRODUCTION:**

A library management is a project that manages and stores books information electronically according to student’s needs. The system helps both students and library manager to keep a constant track of all the books available in the library. It allows both the admin and the student to search for the desired book. This task if carried out manually will be tedious and includes chances of mistakes. Thus this system reduces manual work to a great extent allows smooth flow of library activities by removing chances of errors in the details. The system excludes the use of paper work by managing all the book information electronically. The system has books well organized and systematically arranged in different categories in the system so that user can easily search and find the book. Thus, it saves human efforts and resources.

**MODULES:**

Create book-allows to create new book to the library

Display Book-Display all the books in the library

Specified Book-Display specified book in library

Update Books: can add books to the system by entering the details of the books and can even update the details.

Create student-allows to create new student user to the library

Display Students-Display all the student users in the library

Specified Student-Display specified student user in library

Update student: can add student user to the system by entering the details of the student and can even update the details.

**SOURCE CODE:**

#include<fstream>

#include<iostream>

#include<cstring>

#include<iomanip>

using namespace std;

fstream fp,fp1;

class book

{

char bno[6];

char bname[50];

char aname[20];

public:

void create\_book()

{

cout<<"\nNEW BOOK ENTRY...\n";

cout<<"\nEnter The book no.";

cin>>bno;

cout<<"\n\nEnter The Name of The Book ";

cin>>bname;

cout<<"\n\nEnter The Author's Name ";

cin>>aname;

cout<<"\n\n\nBook Created..";

}

void show\_book()

{

cout<<"\nBook no. : "<<bno;

cout<<"\nBook Name : ";

puts(bname);

cout<<"Author Name : ";

puts(aname);

}

void modify\_book()

{

cout<<"\nBook no. : "<<bno;

cout<<"\nModify Book Name : ";

cin>>bname;

cout<<"\nModify Author's Name of Book : ";

cin>>aname;

}

char\* retbno()

{

return bno;

}

void report()

{cout<<bno<<setw(30)<<bname<<setw(30)<<aname<<endl;}

}bk;

class student

{

char admno[6];

char name[20];

char stbno[6];

public:

void create\_student()

{

cout<<"\nNEW STUDENT ENTRY...\n";

cout<<"\nEnter The admission no. ";

cin>>admno;

cout<<"\n\nEnter The Name of The Student ";

cin>>name;

cout<<"\n\nStudent Record Created..";

}

void show\_student()

{

cout<<"\nAdmission no. : "<<admno;

cout<<"\nStudent Name : ";

cout<<name;

}

void modify\_student()

{

cout<<"\nAdmission no. : "<<admno;

cout<<"\nModify Student Name : ";

cin>>name;

}

char\* retadmno()

{

return admno;

}

char\* retstbno()

{

return stbno;

}

void getstbno(char t[])

{

strcpy(stbno,t);

}

void report()

{cout<<"\t"<<admno<<setw(20)<<name<<setw(10)<<endl;}

}st;

void write\_book()

{

char ch;

fp.open("book.txt",ios::out|ios::app);

do

{

bk.create\_book();

fp.write((char\*)&bk,sizeof(book));

cout<<"\n\nDo you want to add more record..(y/n?)";

cin>>ch;

}while(ch=='y'||ch=='Y');

fp.close();

}

void write\_student()

{

char ch;

fp.open("student.txt",ios::out|ios::app);

do

{

st.create\_student();

fp.write((char\*)&st,sizeof(student));

cout<<"\n\ndo you want to add more record..(y/n?)";

cin>>ch;

}while(ch=='y'||ch=='Y');

fp.close();

}

void display\_spb(char n[])

{

cout<<"\nBOOK DETAILS\n";

int flag=0;

fp.open("book.txt",ios::in);

while(fp.read((char\*)&bk,sizeof(book)))

{

if(strcmp(bk.retbno(),n)==0)

{

bk.show\_book();

flag=1;

}

}

fp.close();

if(flag==0)

cout<<"\n\nBook does not exist";

}

void display\_sps(char n[])

{

cout<<"\nSTUDENT DETAILS\n";

int flag=0;

fp.open("student.txt",ios::in);

while(fp.read((char\*)&st,sizeof(student)))

{

if((strcmp(st.retadmno(),n)==0))

{

st.show\_student();

flag=1;

}

}

fp.close();

if(flag==0)

cout<<"\n\nStudent does not exist";

}

void modify\_book()

{

char n[6];

int found=0;

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

cout<<"\n\n\tEnter The book no. of The book";

cin>>n;

fp.open("book.txt",ios::in|ios::out);

while(fp.read((char\*)&bk,sizeof(book)) && found==0)

{

if(strcmp(bk.retbno(),n)==0)

{

bk.show\_book();

cout<<"\nEnter The New Details of book"<<endl;

bk.modify\_book();

int pos=-1\*sizeof(bk);

fp.seekp(pos,ios::cur);

fp.write((char\*)&bk,sizeof(book));

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

found=1;

}

}

fp.close();

if(found==0)

cout<<"\n\n Record Not Found ";

}

void modify\_student()

{

char n[6];

int found=0;

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

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

cin>>n;

fp.open("student.txt",ios::in|ios::out);

while(fp.read((char\*)&st,sizeof(student)) && found==0)

{

if(strcmp(st.retadmno(),n)==0)

{

st.show\_student();

cout<<"\nEnter The New Details of student"<<endl;

st.modify\_student();

int pos=-1\*sizeof(st);

fp.seekp(pos,ios::cur);

fp.write((char\*)&st,sizeof(student));

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

found=1;

}

}

fp.close();

if(found==0)

cout<<"\n\n Record Not Found ";

}

void display\_alls()

{

fp.open("student.txt",ios::in);

if(!fp)

{

cout<<"ERROR!!! FILE COULD NOT BE OPEN ";

return;

}

cout<<"\n\n\t\tSTUDENT LIST\n\n";

cout<<"==================================================================\n";

cout<<"\tAdmission No."<<setw(10)<<"Name"<<setw(20);

cout<<"\n==================================================================\n";

while(fp.read((char\*)&st,sizeof(student)))

{

st.report();

}

fp.close();

}

void display\_allb()

{

fp.open("book.txt",ios::in);

if(!fp)

{

cout<<"ERROR!!! FILE COULD NOT BE OPEN ";

return;

}

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

cout<<"=========================================================================\n";

cout<<"Book Number"<<setw(20)<<"Book Name"<<setw(25)<<"Author\n";

cout<<"=========================================================================\n";

while(fp.read((char\*)&bk,sizeof(book)))

{

bk.report();

}

fp.close();

}

void intro()

{

cout<<setw(40)<<"\*\*LIBRARY ";

cout<<"MANAGEMENT "<<"SYSTEM\*\*\n";

cout<<setw(58)<<"-----------------------------";

}

void admin\_menu()

{

int ch2;

cout<<"\n\n\n"<<setw(40)<<"ADMINISTRATOR MENU\n";

cout<<setw(40)<<"--------------------";

cout<<"\n\n"<<setw(42)<<"1.CREATE STUDENT RECORD";

cout<<"\n\n"<<setw(48)<<"2.DISPLAY ALL STUDENTS RECORD";

cout<<"\n\n"<<setw(53)<<"3.DISPLAY SPECIFIC STUDENT RECORD ";

cout<<"\n\n"<<setw(42)<<"4.MODIFY STUDENT RECORD";

cout<<"\n\n"<<setw(33)<<"5.CREATE BOOK ";

cout<<"\n\n"<<setw(39)<<"6.DISPLAY ALL BOOKS ";

cout<<"\n\n"<<setw(43)<<"7.DISPLAY SPECIFIC BOOK ";

cout<<"\n\n"<<setw(33)<<"8.MODIFY BOOK ";

cout<<"\n\n"<<setw(38)<<"9.BACK TO MAIN MENU";

cout<<"\n\n"<<setw(50)<<"Please Enter Your Choice (1-9):";

cin>>ch2;

switch(ch2)

{

case 1:

write\_student();

break;

case 2:display\_alls();

break;

case 3:char num[6];

cout<<"\n\n\tPlease Enter The Admission No. ";

cin>>num;

display\_sps(num);

break;

case 4:modify\_student();

break;

case 5:

write\_book();

break;

case 6: display\_allb();break;

case 7: {

char num[6];

cout<<"\n\n\tPlease Enter The book No. ";

cin>>num;

display\_spb(num);

break;

}

case 8: modify\_book();

break;

case 9: return;

default:cout<<"Invalid Entry";

}

}

int main()

{

char ch;

intro();

do

{

cout<<"\n\n\n"<<setw(45)<<"MAIN MENU";

cout<<"\n\n"<<setw(50)<<"01. ADMINISTRATOR MENU";

cout<<"\n\n"<<setw(36)<<"02. EXIT";

cout<<"\n\n"<<setw(55)<<"Please Select Your Option: ";

cin>>ch;

switch(ch)

{

case '1':admin\_menu();

break;

case '2':cout<<endl<<setw(55)<<"!...Sucessfully Exiting...!";

break;

default :cout<<"Invalid Entry";

}

}while(ch!='2');

}