#include <iostream>

#include <cmath>

#include <string>

struct book {

std::string title;

std::string author;

int isbn;

std::string genre;

int year;

int bno;

book \*next;

};

struct user {

std::string name;

long int registration;

short int no\_of\_bookorder;

std::string book\_list[3];

user \*next;

};

int index=0;

using namespace std;

class lib\_sys{

book \*first;

book \*last;

user \*ufirst;

user \*ulast;

public:

system()

{

first=NULL;

last=NULL;

}

void add\_new\_book(){

index=index+1;

book \*temp=new book;

cout<<"\nENTER THE AUTHOR NAME\n :";

cin.ignore();

getline(cin,temp->author);

cout<<"\nENTER THE BOOK TITLE\n :";

getline(cin,temp->title);

cout<<"\nENTER THE BOOK PUBLICATION YEAR\n:";

cin>>temp->year;

cin.ignore();

cout<<"\nENTER THE BOOK GENRE(TYPE) \n:";

getline(cin,temp->genre);

cout<<"\nENTER THE BOOK ISBN NUMBER IF NOT PRESS 0\n :";

cin>>temp->isbn;

temp->bno=index;

temp->next=NULL;

if(first==NULL)

{

first=temp;

last=temp;

}

else

{

last->next=temp;

last=temp;

}

}

void list\_displaying()

{

cout<<"\nTOTAL NO OF BOOK IN LIBARY ARE::"<<index<<endl;

book \*temp=first;

cout<<"TITLE \t AUTHOR \tPUBLICATION YEAR"<<endl;

while(temp!=NULL)

{

cout<<temp->title<<"\t"<<temp->author<<"\t"<<temp->year<<endl;

temp=temp->next;

}

}

void book\_delete1(){

string author,title;

int year1;

cout<<"\nENTER YOUR BOOK TITLE(UPPERCASE)\n::";

cin.ignore();

getline(cin,title);

cout<<"\nENTER YOUR BOOK AUTHOR NAME\n::";

getline(cin,author);

cin.ignore();

cout<<"\nENTER YEAR OF PUBLICATION\n::";

cin>>year1;

if(search\_book(author,title,year1))

{

book \*temp;

temp=first;

while (temp!=NULL)

{

if(temp->author==author)

{

if(temp->title==title&&temp->year==year1)

{

delete temp;

break;

}

}

temp=temp->next;

}

cout<<"BOOK DELETED KNOW\n";

}

else

cout<<"BOOK NOT FOUND:\n";

}

void update\_book1() {

string author, title;

int year1;

cout << "\nENTER YOUR BOOK TITLE(UPPERCASE)\n::";

cin.ignore();

getline(cin, title);

cout << "\nENTER YOUR BOOK AUTHOR NAME\n::";

getline(cin, author);

cout << "\nENTER YEAR OF PUBLICATION\n::";

cin >> year1;

if (search\_book(author, title, year1)) {

book \*temp = first;

while (temp != NULL) {

if (temp->author == author && temp->title == title && temp->year == year1) {

short int choice = 0;

cout << "CHOICE WHAT YOU WANT TO UPDATE\n 1) ISBN \n 2) AUTHOR \n 3) TITLE \n 4) YEAR OF PUBLICATION \n::";

cin >> choice;

cin.ignore();

if (choice == 1) {

cout << "\nENTER NEW ISBN FOR BOOK TITLE ::" << temp->title << "\n::";

cin >> temp->isbn;

} else if (choice == 2) {

cout << "\nENTER NEW AUTHOR FOR BOOK TITLE ::" << temp->title << "\n::";

cin.ignore();

getline(cin, temp->author);

} else if (choice == 3) {

cout << "\nENTER NEW TITLE FOR BOOK TITLE ::" << temp->title << "\n::";

cin.ignore();

getline(cin, temp->title);

} else if (choice == 4) {

cout << "\nENTER NEW PUBLICATION YEAR FOR BOOK TITLE ::" << temp->title << "\n::";

cin >> temp->year;

} else {

cout << "\nINVALID CHOICE:\n";

}

break;

}

temp = temp->next;

}

cout << "BOOK UPDATED NOW\n";

} else {

cout << "BOOK NOT FOUND:\n";

}

}

bool search\_book(string author,string title,int year){

book \*temp;

temp=first;

bool choice;

while (temp!=NULL)

{

if(temp->author==author)

{

if(temp->title==title&&temp->year==year)

{

choice=true;

break;

}

}

temp=temp->next;

}

if(choice)

return true;

}

void check\_book(){

string author, title;

int year1;

cout << "\nENTER YOUR BOOK TITLE(UPPERCASE)\n::";

cin.ignore();

getline(cin, title);

cout << "\nENTER YOUR BOOK AUTHOR NAME\n::";

getline(cin, author);

cout << "\nENTER YEAR OF PUBLICATION\n::";

cin >> year1;

if(search\_book(author,title,year1))

cout<<"\nBOOK IS AVAILABLE:\n";

else

cout<<"\nBOOK NOT AVAILABLE:\n";

}

void register\_user(){

user \*temp=new user;

cout<<"\n::ENTER YOUR REGISTRATION NUMBER::";

cin>>temp->registration;

cout<<"\n::ENTER USER NAME::";

cin>>temp->name;

temp->next=NULL;

if(ufirst==NULL)

{

ufirst=temp;

ulast=temp;

}

else

{

ulast->next=temp;

ulast=temp;

}

cout<<"\nTHANKS FOR REGISTRATION:";

}

user\* find\_user(long int registration) {

user \*temp = ufirst;

while (temp != NULL) {

if (temp->registration == registration) {

return temp;

}

temp = temp->next;

}

return NULL;

}

void borrow\_book() {

long int registration;

cout << "\nENTER YOUR REGISTRATION NUMBER\n::";

cin >> registration;

user \*current\_user = find\_user(registration);

if (current\_user == NULL) {

cout << "\nUSER NOT REGISTERED. PLEASE REGISTER FIRST.\n";

return;

}

string author, title;

int year1;

cout << "\nENTER YOUR BOOK TITLE(UPPERCASE)\n::";

cin.ignore();

getline(cin, title);

cout << "\nENTER YOUR BOOK AUTHOR NAME\n::";

getline(cin, author);

cout << "\nENTER YEAR OF PUBLICATION\n::";

cin >> year1;

if (search\_book(author, title, year1)) {

current\_user->book\_list[current\_user->no\_of\_bookorder] = title;

current\_user->no\_of\_bookorder++;

cout << "\nBOOK BORROWED SUCCESSFULLY\n";

} else {

cout << "\nBOOK NOT FOUND\n";

}

}

};

int main()

{

cout<<"\t WELCOME TO LIBRARY MANAGEMENT SYSTEM"<<endl;

bool check=true;

cout << "\033[1m\033[4m:::PLEASE USE UPPERCASE:::\033[0m" << endl;

lib\_sys S1;

while (check) {

short int role;

cout<<"\n SELECT YOUR ROLE \n 1) ADMIN \n 2) STUDENT \n 3) EXIT ::"<<endl;

cin>>role;

if(role==1)

{

cout<<"\t WELCOME TO ADMIN DASHBOARD \n";

int passkey;

for(int i=0;i<3;i++)

{

cout<<"ENTER YOUR PASSKEY:\n";

cin>>passkey;

if(passkey==54321)

{

break;

}

}

if(passkey==54321){

bool loopchoice=true;

while(loopchoice)

{

short int choice;

cout<<" 1) ADD NEW BOOKS \n 2) UPDATE NEW BOOK INFORMATION \n 3) DELETE BOOK \n 4) DISPLAY LIST OF BOOK \n 5) EXIT \n:";

cin>>choice;

if(choice==1)

{

S1.add\_new\_book();

}

else if(choice==2)

{

S1.update\_book1();

}

else if(choice==3)

{

S1.book\_delete1();

}

else if(choice==4)

{

S1.list\_displaying();

}

else if(choice==5)

{

loopchoice=false;

}

else

{ cout<<"INVALID CHOICE YOU SELECT AS ADMIN \n";

}

}

}

}

else if (role==2)

{

cout<<"\t WELCOME TO USER DASHBOARD: \n";

bool choiceuser=true;

while (choiceuser)

{

short int check;

cout<<"choice \n 1) CHECK BOOK AVAILABILITY \n 2) BORROW BOOK \n 3) REGISTRATION \n 4) EXIT \n:";

cin>>check;

if(check==1)

{

S1.check\_book();

}

else if(check==2)

{

S1.borrow\_book();

}

else if(check==3)

{

S1.register\_user();

}

else if(check==4)

{

choiceuser=false;

}

}

}

else

{

check=false;

}

}

return 0;

}