Task N0.5 – Library Management System

* Code:

#include<iostream>

#include<string>

using namespace std;

struct Book{

string Title,Author,ISBN;

int available;

};

struct Borrower{

string Name,Email,Phone;

};

struct Transaction{

Book book;

Borrower borrower;

string checkoutDate,returnDate;

float fine;

};

Book books[500];

Borrower borrowers[500];

Transaction transactions[500];

int numBooks,numBorrowers,numTransactions=0;

void addBook(){

cout<<"\n\t Enter Title for book: ";

cin>>books[numBooks].Title;

cout<<"\n\t Enter Author of the Book: ";

cin>>books[numBooks].Author;

cout<<"\n\t Enter book ISBN: ";

cin>>books[numBooks].ISBN;

books[numBooks].available=true;

numBooks++;

}

void searchBooks(){

string searchBook;

cout<<"\n\t Enter the book to search: ";

cin>>searchBook;

for(int i=0;i<numBooks;i++){

if(books[i].Title==searchBook||books[i].Author==searchBook||books[i].ISBN==searchBook){

cout<<"\n\t Book Found: "<<books[i].Title<<" by "<<books[i].Author;

}

}

}

void checkoutBook(){

string bookISBN;

cout<<"\n\t Enter book ISBN: ";

cin>>bookISBN;

for(int i=0;i<numBooks;i++){

if(books[i].ISBN==bookISBN){

if(books[i].available){

books[i].available=false;

transactions[numTransactions].book=books[i];

cout<<"\n\t Enter name of borrower: ";

cin>>borrowers[numBorrowers].Name;

cout<<"\n\t Enter email of borrower: ";

cin>>borrowers[numBorrowers].Email;

cout<<"\n\t Enter phone no. of borrower: ";

cin>>borrowers[numBorrowers].Phone;

transactions[numTransactions].borrower=borrowers[numBorrowers];

transactions[numTransactions].checkoutDate="17-07-2024";

numTransactions++;

numBorrowers++;

cout<<"\n\t Book checked out successfully!";

}

else{

cout<<"\n\t Book not available!";

}

}

}

}

void returnBook(){

string bookISBN;

cout<<"\n\t Enter book ISBN: ";

cin>>bookISBN;

for(int i=0;i<numBooks;i++){

if(books[i].ISBN==bookISBN){

books[i].available=true;

for(int j=0;j<numTransactions;j++){

if(transactions[j].book.ISBN==bookISBN){

transactions[j].returnDate="17-08-2024";

cout<<"\n\t Book returned!";

}

}

}

}

}

void calculateFine(){

for(int i=0;i<numTransactions;i++){

if(transactions[i].returnDate>transactions[i].checkoutDate){

transactions[i].fine=50.0;

cout<<"\n\t Fine will be: "<<transactions[i].fine;

}

}

}

int main(){

int choice;

while(true){

cout<<"\n---------------------Library Management System------------------";

cout<<"\n\t 1.Add Book\n\t 2.Search Book\n\t 3.Checkout Book\n\t 4.Return Book\n\t 5.Calculate Fine\n\t 6.Exit";

cout<<"\n\t Enter your choice: ";

cin>>choice;

switch(choice){

case 1:

addBook();

break;

case 2:

searchBooks();

break;

case 3:

checkoutBook();

break;

case 4:

returnBook();

break;

case 5:

calculateFine();

break;

case 6:

exit(0);

default:

cout<<"\n\t Invalid Choice!";

}

}

return 0;

}

* Output:





