#include <iostream>

#include <string>

using namespace std;

const int MAX\_BOOKS = 100;

class Book {

public:

string title;

string author;

int pages;

bool checkedOut;

};

class Library {

private:

Book books[MAX\_BOOKS];

int numOfBooks;

public:

Library() {

numOfBooks = 0;

}

void addBook(string title, string author, int pages) {

Book newBook;

newBook.title = title;

newBook.author = author;

newBook.pages = pages;

newBook.checkedOut = false;

books[numOfBooks] = newBook;

numOfBooks++;

cout << "Book added successfully." << endl;

}

void removeBook(int index) {

for (int i = index; i < numOfBooks - 1; i++) {

books[i] = books[i+1];

}

numOfBooks--;

cout << "Book removed successfully." << endl;

}

void displayBooks() {

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

cout << books[i].title << " by " << books[i].author << " (" << books[i].pages << " pages)" << endl;

}

}

void checkoutBook(int index) {

if (books[index].checkedOut) {

cout << "Sorry, this book is already checked out." << endl;

} else {

books[index].checkedOut = true;

cout << "You have checked out " << books[index].title << "." << endl;

}

}

void returnBook(int index) {

if (!books[index].checkedOut) {

cout << "This book has not been checked out." << endl;

} else {

books[index].checkedOut = false;

cout << "You have returned " << books[index].title << "." << endl;

}

}

};

int main() {

Library library;

// Add some books

library.addBook("The Catcher in the Rye", "J.D. Salinger", 224);

library.addBook("To Kill a Mockingbird", "Harper Lee", 281);

library.addBook("1984", "George Orwell", 328);

int choice;

while(true)

{

cout << "Library Management System" << endl;

cout << "------------------------" << endl;

cout << "1. Add Book" << endl;

cout << "2. Remove Book" << endl;

cout << "3. Display Books" << endl;

cout << "4. Check Out Book" << endl;

cout << "5. Return Book" << endl;

cout << "6. Exit" << endl;

cout << "Enter your choice: ";

cin >> choice;

cout << endl;

switch (choice) {

case1:

string title, author;

int pages;

cout << "Enter book title: ";

cin.ignore();

getline(cin, title);

cout << "Enter book author: ";

getline(cin, author);

cout << "Enter number of pages: ";

cin >> pages;

library.addBook(title, author, pages);

break;

case2:

int index;

cout << "Enter index of book to remove: ";

cin >> index;

library.removeBook(index);

break;

case3:

library.displayBooks();

break;

case4:

return 0;

}

}return 0;

}