

CSE2031

Lab 5 Winter 2017

In this lab, you will implement a program to implement a small database and you will learn how to store it in a binary file.

This lab is due Midnight Wednesday 22 (Feb.)

Problem Description

You are to write a program that reads records of a database and stores it in a file (binary file).

The record on the following format.

Title	Authors	Publisher	Price
Up to 60 characters	Up to 50 characters	Up to 50 characters	Float.

The maximum number of records in the file is 40.

The program starts by reading the file "book.dat" to retrieve the existing database and stores it in an array of structs. A struct can hold all the information about one book.

If the file does not exist, then you have to create it

Think of how to open such a file, binary, create if not there, and you can append to it.

Then the program outputs the to the standard input the number of records in the file in the following format

book.dat contains xx records

xx is the number of records and is less than or equal 40.

If the number of records is 40, it displays

The file is full

The you proceed to the "inquiry" state.

If the number is less than 40, the program will prompt you to enter more books

Enter the name of the book

To stop entering, press enter at the beginning of a line

You enter the book title or a new line at the beginning of the line. If new line, it goes to "inquiry state"

Enter the author

You enter the author

Enter the publisher

You enter the publisher

Enter the price

You enter the price

If the number of books = the maximum number, go to Inquire state" else you go back to "enter the name of the book" until the user enters a new line at the beginning of the line, or you reach the maximum number of books.

Inquiry state

Your program prompts the user

Enter Q to end, or T or A to search for title and author

Enter Q, T, or A followed by newline (enter).

If you entered T, or A the program prompts you as follows

Enter the book title (in case of T) (**Enter the book author** in case of A).

You enter the book title/Author (you might want to get fancy and remove any white spaces at the beginning or end, but you will not be graded/tested on that

The program responds as follows

If the book exists, it displays

Title: the title of the book

Author: the author(s) of the book

Price: the price (%f\n") ←

How many zeros after the decimal point? On my system 2. To be sure, use %.2f

If the book does not exist, the program displays

No such book (followed by a new line).

Then it goes back to "Enter Q to end, or T or A"

If you enter Q

The program quits.

Things to consider

1. Try to make sense out of the binary file "book.dat" How the data stored in this file?
2. There is no need to use memory allocation for this, the array should have a maximum length of 40
3. Please do not use magic numbers.