CS 277 Lab 2
Book List
Due 11:59pm PST Friday February 14, 2014

Assignment

In this assignment, you will be implementing a small program that reads a list of book titles and prices from standard input and stores the book titles and prices in memory. The program will continue reading titles and prices until it encounters the string DONE_FILL. Next the program will print the total number of books added to standard out. Then the program will read title search queries from standard input and search the book list for the title queried. The program will print the number of matches for the search to standard out. Searching will continue until the string DONE_SEARCH is encountered. Finally, the program will print to standard out the full list of book titles and prices sorted alphabetically and with duplicate titles printed last-in-first-out order.

A sample binary and sample input file are provided with the assignment. The output from your program should match the output from the sample binary exactly. You can assume that for evaluation the input passed to your program will be similar to the sample input file, so you do not need to worry about exhaustive error checking for bad input. Any blank lines encountered in the input should be ignored and your program should gracefully handle encountering a premature EOF. To run the example binary with sample data type the following in a terminal:

books <sample.dat

Submission

To submit, create a .tar file called lab2-yourusername.tar containing all source and header files (you may include a makefile if you are familiar with compiling with make) and email it to mharmon@lclark.edu before the due date and time.

Hints and Tips

Be sure to allow your book list the ability to grow dynamically as titles arrive via standard input. (in other words, don't use a fixed-size array for storing the book data.. who knows how large my test data is..mwu ha ha ha).

You are free to implement however you choose but using a linked-list and insertion sort will make your life easy and help ensure you won't have to cancel any valentines/singles awareness day plans at the last minute :)

Evaluation

To receive full credit:

1. Submit your .tar file on time.
2. Code should compile and run on a lab machine (25% if it compiles, 25% if it runs).
3. Correctness. I will run your solution with various sample data files and compare the output of your program with the output from the sample binary. Exact match equals full credit. (35%)
4. Stlye. Clean, concise and modular code. Comments where appropriate. Allocated memory is free()'d. (15%).