

CS 12 Assignment 4

Due Friday, May 16

This assignment uses linked lists to maintain a list of books that you own. You should keep track of the title, author, and number of pages in the book. Use a class to implement the linked list.

You should give the user a set of commands to choose from that can be performed on the list. The following is the set of options:

- e** Enter a new book into the list. This choice should call a function that takes 3 parameters, the title, the author, and the number of pages. The book should be added at the beginning of the list.
- s** Calculate the number of books in the list. Call a function called `size` that returns the number of books in the list. The main program should then print the number of books in the list.
- p** Print out the book list. Call a function that prints out the title, author, and number of pages for each book in the list. This should be nicely formatted.
- s** Search for a particular book based on the title. This choice should call a function that takes one parameter, the title of the book, and should return a pointer to the first book node that has a matching title, or `NULL` if there is no such book. The main program should then print out whether the book was found or not. If found, print the author and number of pages.
- r** Remove a book from the list. Choosing this option should call the `remove` function which should take one parameter, the title of the book. This function should remove the first book node with this title, if one exists.

You should also have an appropriate constructor and destructor. The constructor should set up the list and the destructor should delete any remaining nodes in the list.

You must use Unix to do this assignment. You also must separate your program into 3 files, a class header file `list.h`, a class member function file `list.cc`, and a file with your main program, `main.cc`. You must also use a makefile. Be sure your makefile gets turned in with your assignment or you may get points marked off.