# Sortable Linked List Program

This program will implement a linked list of integers. There will be two modes that it can run; one to follow the commands in an input file, and one to respond to user-enterd commands.

# The Input File

This file consists of a list of commands in this format:

ADD 12

REMOVE 3

PRINT

SORT

END

The END command ends the input file.

# Required Function: Add

This function takes the head pointer, and an integer as arguments. It adds the values to the list, and returns 0 for success, and -1 for failure.

# Required Function: Remove

This function takes the head pointer, and an integer as its arguments. It searches the list for the value, and removes it from the list and returns it. It should return a -1 when it fails (Integer not found.)

# Required Function: Sort

This function takes the head pointer as an argument. It sorts the list in ascending order. It returns 0 for success, and -1 for failure.

# Required Function: Destroy

This function takes the head pointer as an argument. It deletes all elements of the list; this needs to be called before exiting the program. (returns no value)

# Required Function: Print

This function takes the stack as an argument. It prints the stack to the screen or an error message if the stack is empty. (returns no value)

# Notes

Add, Remove, Sort, and Destroy must have NO output apart from the return value. (NO couts)

The program needs to display an error message when a function returns an error code.

The program must check for the successful opening of all files it uses.

The program must be well-commented.

The program must be printed out and turned in with this paper attached. (THIS SIDE UP)

Sortable LL Program Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| Criteria | Points Possible | Points Earned |
| Reads the file correctly | 5 |  |
| Interprets commands correctly | 10 |  |
| Error checks file opening correctly | 5 |  |
| Gives user the option to enter values or read file | 10 |  |
| Loops when completed to ask if user wants to go again | 5 |  |
| Add works | 10 |  |
| Remove works | 10 |  |
| Destroy works | 10 |  |
| Print works | 5 |  |
| Sort works | 20 |  |
| Handles errors from these functions | 5 |  |
| Commented | 5 |  |
| Late | -5 points per day late |  |
| Total: | 100 |  |