Lab Report 05

*<<Damian Sclafani>>*

# Problem

State the given problem clearly in one’s own words. Copy and pasting from the assignment will result in an overall 0 for the entire lab report.

This lab asks us to allow the user to enter any amount of strings, then the program should sort out the Strings with a O(nlg(n)) complexity that are sorted from least to greatest amount of instances of the word “sort” (case doesn’t matter). The program must then print out the newly sorted list of strings. This program must be able to be repeated as well.

# Solution

Explain how the program solves the problem. This description must be detailed and high-level without using the direct implementation – do not just copy and paste the programming solution’s code. You may think of this as explaining how the software works to another non-computer entity, like a human. It should cover the finer points of the lab while justifying implementation decisions. While pseudocode may be used it must be accompanied by said clear and understandable description. Flow Charts and graphics are strongly encouraged, and in some cases required.

1. The user enters any amount of strings
   1. The loop stops if the user enters “quit”
   2. Each string is entered into a linked list
2. The strings in the linked list are added into an array
3. The strings are sorted using a merge sort system
   1. Sorted from least number of instances of the word “sort” to the greatest number
4. The newly sorted array is then printed out

# Implementation Problems Encountered

Enumerate the issues that arose from creating this solution. Include major syntax, run-time, and logical errors with their respective solutions. If you did not have any problems then you may put, “No problems encountered”, but if the solution is not correct then this section will receive no points.

I had some problems with resetting the linked list so that the program could be repeated. Other than that, I didn’t have many other problems.

# Lab Report Questions

1. What is the Big O complexity for quick sort? O(n2)
2. What is the Big O complexity for merge sort? O(nlg(n))