**Lab Report 06**

Problem

Create an algorithm – adhering to the specified time complexity – that sorts the amount of times ‘sort’ appears in a number of strings given by user input, from least to greatest.

Solution Description

In my program, the user will be prompted to enter the amount of strings they wish to input, and to populate the array initialized by the given amount. Then, the array of strings will be split into halves and sorted by the amount of times ‘sort’ appears in each one. To do this, the array index and string are passed into a method that returns the amount of times the phrase appears. Then, the arrays are rearranged and merged by the found amount, all in a recursive manner.

Problems Encountered

When attempting to sort the arrays by the amount of ‘sort’s, the first two strings were strangely out of order when the rest of the strings were sorted correctly. To fix this, I separated the string iteration into its own method, which then returns the number to be compared.

4. Yes, the complexity is larger than the function

5. No, the function is larger than the complexity

6. Yes, the complexity will grow faster than the function

7. O(n2)

8. O(n2)

9. O(nlog2(n))

10. Merge sort is more efficient because the operations taken to complete it are less than selection sort, according to their time complexity.