

Nate Bowers
Assignment Four
Program Five Spell Checking with a Binary Search Tree
November 8, 2015

When verifying files that are written with certain programs, such as Microsoft word, a spell check tool and word count tool is available for use. However, not all files and/or documents can be verified for correct spelling or word count. This program can be used to verify two files by comparing them. This program reads in a large file containing a list of dictionary terms that could be used to create the documents. The dictionary file is changed to lower case characters to be used to for comparison, and stored in a Binary Search Tree. Then, the program reads in the file that is being verified for proper grammar. The file will be read in, all characters will be changed to lower case for comparison, and all special characters will be removed. The program will compare the two files of the unaltered dictionary. It will display the average number of comparison words found of the unaltered dictionary (16.3475). The average number of comparison words not found of the unaltered dictionary (10.3977). These numbers are much smaller than the average number of comparisons that resulted in the Linked List program. The results for the Linked List program were listed as the average number of comparison words found of the unaltered dictionary (3559.0711), and the average number of comparison words not found of the unaltered dictionary (7381.3783). However, these numbers are closer from the Spell Checker program when searching an Array. The results for the program were listed as the average number of comparison words found of the unaltered dictionary (16.8746), and the average number of comparison words not found of the unaltered dictionary (18.8791). The differences in the number of comparisons are in line with the run time comparisons of the programs. The Linked List program has a much higher number of comparisons and the amount of time it took to complete the program was almost two minutes longer (2 minutes 7 seconds) the run time of the Binary Search Tree program (27 seconds).