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Spell Checker with linked lists

Programming Assignment Four

07/12/2015

Spell Checker With Linked Lists

This particular program required the class to create a spell checker. The mechanics of the spellchecker utilized an array of linked lists which was very different from our previous assignment which used a binary search algorithm on just a big array of Strings. The primary idea behind this program centered itself around creating an array that contained a linked list for every letter in the alphabet, and then putting each word from a dictionary file into their respective linked list depending on their first letter. This was a rather cheeky way of improving the complexity of the search, because it enabled us to just search through a list where the first letters were the same instead of having to look through the entire list.

The assignment proved to be an interesting one especially because we got to essentially solve a similar problem already, and could see the difference in the two algorithms by looking at how many comparisons they had to make before finding if the word would be found or not found in the spellchecker. The fact the dictionary wasn't sorted like last time increased the overall complexity of the program. It just allowed us to explore a very different approach to a similar problem.

One of the most interesting parts of doing this particular program that it was the very first group project. Working with someone else made it a bit different, and utilizing GitHub was a bit awkward at first. The overall experience was a positive one however, because solving any error in the code became twice as easy with two people working on the program instead of one. An overall positive experience.

Output:

Enter the file name to be read:

> oliver.txt

Total words found: 939674

Total comparisons for words found: 3289725222

Average comparisons per word found: 3500.9218324653016

Total words not found: 52466

Total comparisons for words not found: 388324176

Average comparisons per word not found: 7401.444287729196

BUILD SUCCESSFUL (total time: 47 seconds)