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Assignment Four
Word Comparisons
3/28/17

Abstract:

The problem at hand was to import words from a randomized dictionary and store them in an array of linked lists called list. The array length is 26. list[0] stores all words beginning with ‘a’, list[1] stores all words beginning with ‘b’ and so on throughout the entire alphabet. The next thing the program will do is read from a book in the form of a text file named “oliver.txt”. It will go through the text file word by word to see if the word from Oliver is also a word in the list. The algorithm will check what the first letter of the word from Oliver, then go to the corresponding linked list within the array and linearly search from there. The algorithm will count the number of elements it searches through until it finds the matching word. If the word is not found, then the number of searches is just the size of the linked list. The algorithm keeps track of two other counts: number of words found, and number of words not found. Lastly, it will take the number of comparisons of words found, divided by the total number of words found which will give the average number of comparisons per word, given that the word is in the dictionary. The same is done for the words that are not found giving average number of comparisons per word, given that the word is not in the dictionary.

Outputs:

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Words found: 914054
Words not found: 64537
Comparisons found: 3248624234
Comparisons not found: 479381586
Average comparisons found: 3554.0835
Average comparisons not found: 7428.0116
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