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Programming Assignment #5

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The concrete design of the program is to compare the difference of constructing a Binary Search Tree using spell checking and searching technique that collect data and compares on average comparisons. The object of the program is to have one file be read and compared while the other file finds the words that are spelled correct and words spelled incorrect. Now when the program is printed, we test it in three different forms. The function was to insert the read file function. It just showed the print out of the original comparisons of the dictionary. The time complexity for this was around 12 seconds. The average number of words compared found was 3559.07.

The spell checker design in Assignment two was same concept of compare the words found from words incorrect and give the comparisons, but this program used an Array List. We tested this same concept of data but came up with different time complexity. This time were set around 10 seconds. Barely shy of two second difference than the Binary Search Tree. The average number of words compared found was 16.

In Assignment four we also compared words found and not found on average comparisons. Although in is assignment we used a Linked list. This program also had 26 linked lists, which was on letter of every character lowercase in the alphabet. When this program ran the time complexity was very high. The final time was 1 minute 21 seconds. This time was 1 minute and 9 seconds longer than the Binary Search. When it comes to the linked list it is a dynamic structure built for adding and removing words at the beginning. Now Binary Search Trees you use an element which would be the root and split to smaller to children to find the correct node. The Binary Search Tree would be the fastest search, but that doesn’t mean the most sufficient.

Using the Binary Search Tree for comparing words gives a high understanding of the concept on the reason why it is used, but the process is faster and accurate. Now with looking at all three the Binary Search Tree, the Array List, and the Linked list; there is no clear cut method that you would think is better suited to do the job. Everything depends on what your preferences are intended for.

Assignment 2

run:

number of incorrect words: 96402

average number of incorrect comparisons: 18

number of corrrect words: 895738

average of correct comparisons: 16

BUILD SUCCESSFUL (total time: 10 seconds)

Assignment 4

run:

number of incorrect words: 54648

average number of incorrect comparisons: 7381.378348704436

number of corrrect words: 937492

average of correct comparisons: 3559.0711131401654

BUILD SUCCESSFUL (total time: 1 minute 21 seconds)

Assignment 5

run:

number of incorrect words: 54648

average number of incorrect comparisons: 573591.5018298931

number of corrrect words: 937492

average of correct comparisons: 614831.2917326228

BUILD SUCCESSFUL (total time: 12 seconds)