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Assignment 5
Programming Assignment 5
Due date: 04-11-2017

In assignment five we had to answer the same problem as in assignment four except instead of using linked List we had to use binary search tree. We also had to use methods we implemented in abstract tree, specifically insert and search had to switched with add and contain. And BinarySearch tree.java we had to alter the search method with an array to use it as a counter of words found and words not found.

In assignment four obtaining the solution took 43 seconds. The average comparisons for words found was 7433.0 and not found 3554.0. It took 3 seconds in assignment five the same average comparisons were 11.0 and 16.0, respectively. The reasons that the new solution is faster than the solution in assignment four because in assignment 4 the linked list require you to go through the previous entry to get to the word or go through the whole list to not find the word. In the binary search tree approach each time we look for the word it splits the number of words to look for in half. Rather than going through the whole list until the word is or is not found, traversing the binary search tree rules out words without even having to process them.

Assignment 5 output.

run:
Average for word not found: 11.0
Average for words found: 16.0
wordsFound: 911672
wordsNotFound: 64139
compsFound: 14912145
compsNotFound: 737186
BUILD SUCCESSFUL (total time: 3 seconds)