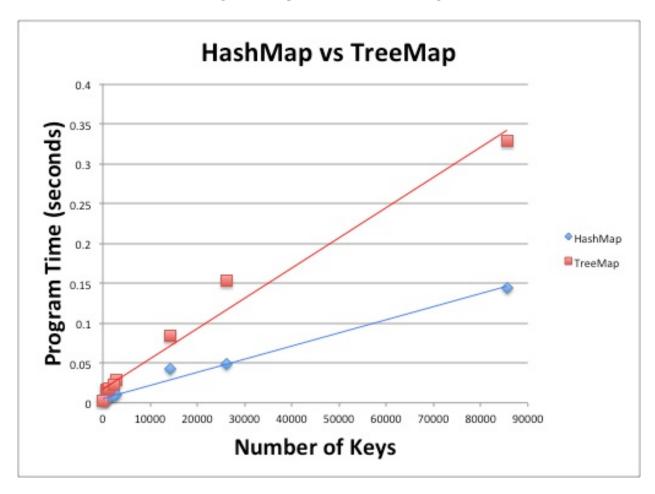Matt Elgart- Compsci 201, Markov Assignment

## HashMap vs TreeMap



For reference, to create this data an order-5 Markov model was used on various lexicons to generate 100 words in each case. From the graph, we can see that the use of the TreeMap tends to cause the program to run somewhere on the order of twice as long as the use of HashMap does. While this difference is insignificant when the number of keys in the map is very small (just a difference of milliseconds), as this number grows larger the difference becomes more pronounced (note that not pictured on the graph are the data points for the King James Bible and the collected works of Shakespeare, both of which were too large for the program to run. The difference would be even larger and more important with files as large as these). The TreeMap is likely less efficient than HashMap because as the map is created, the TreeMap must continuously update itself to ensure that it is sorted (using the compareTo method of the WordNgrams class).