**Assignment 6 Questions**

1. Give an example of two words that would hash to the same value using

stringHash1() but would not using stringHash2().

1. drumer & murder – stringHash1() gives 4 for both. But stringHash2(drumer) == 4 & stringHash2(murder) == 5

2. Why does the above make stringHash2() superior to stringHash1()?

1. Assures that a word of the same size and similar set of letters will hash out to a different value.

3. When you run your program on the same input file but one run using

stringHash1() and on the other run using stringHash2(). Is it possible

for your size() function to return different values?

1. Yes, even on the trivial set above stringHash1() would produce size == 1, and stringHash2() would produce size == 2.

4. When you run your program on the same input file using stringHash1()

on one run and using stringHash2() on another, is it possible for your

tableLoad() function to return different values?

1. No, the load factor is a ratio of two constants (input file word count) / table size.

5. When you run your program on the same input file with one run using

stringHash1() and the other run using stringHash2(), is it possible for

your emptyBuckets() function to return different values?

1. Yes, in the trivial case above stringHash1() would have (TableSize – 1) empty buckets, and stringHash2() would have (TableSize – 2) empty buckets.

6. Is there any difference in the number of 'empty buckets' when you change

the table size from an even number, like 1000 to a prime like 997 ?

1. Yes, you changed the maximum number of empty buckets available from the first iteration with no data in the table. From there iteration 1 would give you two different values for the empty buckets.

7. Using the timing code provided to you. Run you code on different size hash

tables. How does affecting the hash table size change your performance?

1. Makes the runtime grow looks like in a linear fashion, then it grows at a smaller rate as you increase the size of the table beyond the number of elements in your input file.