Written Questions

Your written questions will be handed in electronically, preferably as comments on the TEACH turn-in page, just cut and paste from your preferred editor.

1. Give an example of two words that would hash to the same value using stringHash1() but would not using stringHash2().

“potion, option”

These are anagrams of one another, and as a result, would require a unique return. Stringhash1() simply adds the values of the various letters, whereas Stringhash2() shifts the value of the letters to make sure that no two words that have the same letter value end up being equal to one another.

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

It ensure that the result returned is unique, and won’t overlap with an anagram.

1. 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?

The size should not vary, given it is simply returning the size (number of items in the table.)

1. 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?

Yes. The tableLoad() will be different given the number of collisions which may occur while doing the StringHash1().

1. 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?

Yes. EmptyBuckets() can return different values due to improvements in hash function over the other with empty buckets.

1. 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 ?

Yes. Prime numbers will have fewer numbers to use to modify the same indices.

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?

Depending on the size of the hash, it takes longer to add the words. The length of time necessary decreases as we decrease the size of the dictionary/hash table.