Question 1

Give an example of two words that would hash to the same value using hash\_function\_1() but would not by using hash\_function\_2(). Explain why this is the case.

Question 2

Why does the above observation make hash\_function\_2() superior to hash\_function\_1()?

Question 3

When you run your program on the same input file once with hash\_function\_1() and once with  hash-function\_2(), is it possible for your empty\_bucket() and table\_load() functions to return different values? Why or why not?

Question 4

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?