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**Program 5**

After running this program several times I observed that the higher the size of the hash table, the less collisions there were. More interesting results came from using prime numbers. As it turned out, the higher the prime number used to define the size of the hash table, the number of collisions reduced significantly. I’m curious about why this is and perhaps will get a chance to study in an analysis class.

./hash romeojuliet 0 12000 13009 19423 20101 22307 40000

25577 words, 3877 different words, 27581 bytes of string space used

size =12000, alpha = 0.3231, 367588 collisions, 14.3718/word

size =13009, alpha = 0.2980, 2998 collisions, 0.1172/word

size =19423, alpha = 0.1996, 2171 collisions, 0.0849/word

size =20101, alpha = 0.1929, 2111 collisions, 0.0825/word

size =22307, alpha = 0.1738, 1945 collisions, 0.0760/word

size =40000, alpha = 0.0969, 64828 collisions, 2.5346/word