Michael Elder

Dr. Kelley

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Assignment 5.1 Hash Maps

1. Explain how a hash function is used.

A hash function is a technique that determines an index into a table using an entry’s search key. The search key produces an integer index of an element in the hash table. The data structure for a hash table with people and their phone numbers would include the key which would be the person’s name which would point to an index and then the index would point to the phone number.

1. How might a string hash function be written?

**u0gn-1 + u1gn-2 + … + un-2g + un-1**

u: the uth character in the string

g: the contstant 31

n: the length of the string so used to get character’s position

1. Explain why we might choose to use a hash function rather than search for a key.

You might choose a hash function rather than search for a key because searching for the value for a hash function is O(1) and searching for a key is O(n) which

will take more computing time than hashing it.

1. What hash function does the Java Util HashMap use for hashing strings?

The hashcode() method is the function that Java Util HashMap uses for hashing strings.