**Hash Table**

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Hash Table Programmers Guide:

Hash functions are one way functions that produce unique values depending on the input. This hash is used to place an item in a hash table in the appropriate position. The table is an array of linked lists. The linked lists are used to mitigate collisions. A good hash function will evenly disperse items throughout the list. As a side note the hash table size should be a prime number to help with even distribution. Calling the constructor on a hash table will create an array of empty linked lists. These lists are referred to as buckets. Inserting an item will add it to the hash table in one of the specified linked lists. Removing an item from the table will delete the appropriate item from the desired list. All requests for insert and remove will show feedback once the action is complete via the user interface (CLI) and must be specified with the items string value passed as the parameter. Basic getters and setters are also included for the hash table size. Print functions include a histogram of the table and output of all the items and each bucket. The main function will also populate the hash table with items containing strings that start with each letter of the alphabet. This is not necessary but was put in testing purposes. Search are also done by calling the search method and inputting the item string to be searched for as the parameter. All searches in the hash table have a o(1) runtime complexity with an added O(n) runtime determined by how big the bucket is that contains the item to be searched for.