ADT Hash Table

Hash Table = {HT = {a1, a2, a3, a4,...,ai}, i > 0 ∧ i ϵ Z + i = the array index. HT[i] = (element.evalue)}

Construction Operations:

*Create table: ---> HashTable

Modifier Operations:

*TableInsert: newItem --> HashTable
*TableDelete: searchKey --> HashTable

Analyzer operations:

*isEmpty: HashTable --> boolean
*tableLength: HashTable --> Integer
*tableRetrieve: HashTable --> HashTable

Create (Value)
"Creates an empty table with length passed by parameter"
{ pre: TRUE }
{ post: HashTable.length = value ∧ HastTable[i] = null }

tableInsert(newItem)
"Inserts newItem into a table in its proper sorted order according to the newItem's search key"
{ pre: TRUE }
{ post: HashTable[i] = newItem }

tableDelete(searchKey)
"Remove an element with a give search key from the table"
{pre: element to be removed is in the HashTable}
{post: False is the element wasn't removed, True otherwise}

tableRetrieve(searchKey)
"Reatrieves an element with a given search key from the hash table"
{ pre: HastTable[i] != null }
{ post: HashTable[i] if HashTable[i].key() == sarchKey null otherwise}

isEmpty(HashTable):
"Informs if the HastTable is empty"
{ pre: TRUE }
{ pre: HashTable = {a1, a2, a3, a4,...,ai}}
{ post: False if HashTable[i] != null, True otherwise }

tableLength(HashTable):
"Returns an integer which represents the length of the Hash Table"
{ pre: TRUE }
{ post: n | n ϵ Z+ }