CIS351

Homework 9

Submission Instructions

1. Submit completed **HashTable.java** through in Blackboard.
2. DO NOT forget to mention your full name in the Java class documentation.
3. submit a filled in **cover sheet** in Blackboard.

Introduction

Hash Table is a data structure which stores data in an associative manner. In a hash table, data is stored in an array format, where each data value has its own unique index value. Access of data becomes very fast if we know the index of the desired data.

Thus, it becomes a data structure in which insertion and search operations are very fast irrespective of the size of the data. Hash Table uses an array as a storage medium and uses hash technique to generate an index where an element is to be inserted or is to be located from.

Download Materials

For this homework, you need to download the following starter code from Blackboard:

- HashTable.java - Unfinished Hash Table.
- HashTableTest.java - Unit tests.

Part 1 - HashTable Implement

Implement the following methods in the provided `HashTable.java` class.

Put and Get

Implement the put and get method using closed hashing with linear probing.

Rehashing

Modify your put method and implement rehash so that the load factor remains below MAX_LOAD.

Removal

Implement the remove method. Note that removal should not actually remove the indicated item from the hash table. Instead it should set the tombstone flag to true. You will also need to modify your get and put methods make appropriate use of the flag.

Grading Criteria

Total points: 100 points

Put and Get - 70 pt
Rehashing - 15 pt
Removal - 15 pt

Don't forget
the submission process or
the grading criteria or
the cover sheet.

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