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CSCI 230 – Hash Table Assignment Report

4/8/18

How I am recording accesses and getting data

I am assuming that with every insert and remove if the key that is inserted at a location and that location is null on the first attempt to insert that the accesses for that insert is 1. So at the minimum one insert is at least 1 never 0.

The table was also involving integer keys and integer values. There was one error that resulted in random key generations that were inserted in the quadratic probing.

PROBING FORMULAS

All of the probing formulas are inside the p(key, slot) method and when using one method to probe the other methods are commented out. Remember to uncomment them when you go to run them.

REPORT ON GRAPHS

INSERT GRAPH

The graph in the excel sheet that is labeled INSERT GRAPH has my Insert data table and the graph associated with it. Based on my findings Linear Probing had the poorest collision resolution results and Quadratic Probing had the best collision resolution results. The Quadratic probing method seems to be the better method to use for probing but has a chance to never insert data at a higher load factor. Pseudo-Random Probing was in the middle and is a better choice to use, based on my findings from the analysis of the code. The most notable part of this graph is that everything is rather the same until the load factor reaches .8 and higher.

REMOVE GRAPH

The graph in the excel sheet that is labeled REMOVE GRAPH has my Remove data table and the graph associated with it. Based on my findings Linear Probing still had the poorest collision resolution results and, same as the insert graph, Quadratic Probing had the best collision resolution results. Pseudo-Random Probing fell in between Linear and Quadratic probing for average accesses required. The most notable part of this graph is that everything is rather the same until the load factor reaches .8 and higher. The gaps open up a lot more and are far more noticeable once the load factor gets closer to being full or at a capacity of 1.