

CS 140A - Assignment 4  
Analysis of Hashing  
Due Monday, November 24

In this assignment you will be performing hashing. You will be analyzing and comparing a variety of hash functions, hash table sizes, and hashing methods using open address hashing. Only Searches and Inserts into the hash table need to be implemented, and you do not need to worry about duplicates. You will need to keep track of the number of collisions. Each node in the table will hold a long int.

You will need to vary the following parameters:

**Table Size** You should use two different table sizes.

**Hash Function** You will need to use two different hash functions. At least one must be your original function from your homework. You will be hashing a long int.

**Probing** You must implement two of the collision resolution strategies described.

Given the variation of three parameters, each with two options, you will have a total of eight different hash tables. You will be given two sets of input to be run on each table, giving you 16 different runs. For each set of input, give a write-up describing which of the eight tables worked best for that input set. Explain why that scheme worked best and why the others may not have been as good. You should have a thorough analysis and should plot the number of collisions for each table given each set of input (thus 2 plots).

Your specifications for the assignment, a printout of your code, and the write-up of the analysis and plots are due in class on the due date. Your should also be turned in electronically.

Submit your program electronically using the instructions provided by the TA. Be sure to use good programming style and include meaningful, thorough comments. Remember that no credit will be given if your program does not compile.