

**CS 2604 Data Structures and File Management
Homework #3**

**Summer II 2003
Due: 7 Aug 2003, 12noon**

This homework is optional and is worth 20 extra-credit points (2% of your final grade). It is due Thursday noon and **no late work will be accepted**. There will be two items worth 10 points each. For each item, you will get 10 points if you get it correctly and 0 points if not. Hence, the possible scores for this homework is 0, 10, and 20. If you did not follow directions as specified in this sheet, you will get a 0.

As before, you will submit this homework through the curator system. Your answers should be placed in a separate document provided in the website so all you need to do is submit an updated copy of that document (fill in the values in the slots provided). Make sure to fill in the slots for your name, ID number, and email address.

1. Assume a hash table with 13 slots (positions go from 0 to 12). The hash function is $h(K) = K \% 13$, and the conflict resolution policy is described by the function $(\text{home} + 3i) \% 13$. Starting with an empty hash table, you are to insert the following numbers, in the indicated order: 28, 38, 16, 27, 19, 15, 2, 12, 32. Illustrate the resulting hash table.
2. Beginning with an empty 2-3 tree, insert the following elements, in the indicated order: 28, 38, 16, 27, 19, 15, 2, 12, 32, 50, 36, 51, 29. Illustrate the resulting 2-3 tree.