MA/CSSE 473 – Design and Analysis of Algorithms

Homework 9 (39 points total)

(Summer: Drop Box) These are to be turned in as hard copy. You can write solutions out by hand, or write them on your computer and print them. If there are multiple pages, please staple them together.

When a problem is given by number, it is from the textbook. 1.1.2 means "problem 2 from section 1.1" .

Problems for enlightenment/practice/review (not to turn in, but you should think about them):

How many of them you need to do serious work on depends on you and your background. I do not want to make everyone do one of them for the sake of the (possibly) few who need it. You can hopefully figure out which ones you need to do.

4.5.10	(Best crossover point for Strassen's Algorithm)
5.4.1	(Reasonableness of generating all permutations, subsets of a 25-element set)
5.4.9	(Generation of binary reflected Gray Code based on traversing edges of an n-dimensional cube)

Problems to write up and turn in:

1. (5) 4.4.10 (Chocolate Bar)
2. (9) 5.3.9 (Strongly connected components of a digraph)
3. (9) 5.4.2 (Examples of permutation generation algorithms)

   You do not have to write any code, but you can do it that way if you wish.
4. (5) 5.4.10 (Generation of all k-combinations from an n-element set)
5. (5) 5.4.11 (Generation of binary reflected Gray code based on Tower of Hanoi moves)
6. (6) 5.5.2 (Ternary Search)

Don't forget to work on the Quickhull implementation problem