Homework 1 – Due Wednesday, September 5, 2007

Please refer to the general information handout for the full homework policy and options.

Reminders

- Your solutions are due before the lecture. Late homework will not be accepted.
- Collaboration is permitted, but you must write the solutions *by yourself without assistance*, and be ready to explain them orally to a member of the course staff if asked. You must also identify your collaborators. Getting solutions from outside sources such as the Web or students not enrolled in the class is strictly forbidden.
- To facilitate grading, please write down your solution to each problem on a separate sheet of paper. Make sure to include all identifying information and your collaborators on each sheet. Your solutions to different problems will be graded separately, possibly by different people, and returned to you independently of each other.

Exercises These should not be handed in, but the material they cover may appear on exams: problems in Chapter 1.

Problems to be handed in

1. (**Resident Matching**) Chapter 1, problem 4. Please give an English description and pseudocode for your algorithm. Analyze its time and space complexity.
2. (**Truthfulness in Stable Matching**) Chapter 1, problem 8. *Hint:* Try playing with several specific examples of preference lists.
3. (**Order of Growth Rate**) Chapter 2, problems 3 and 4. Please add $g_8(n) = n!$ to the list of functions in #4.
4. (**Understanding big-O notation**) Chapter 2, problem 5.