Introduction to Algorithms **Some Thoughts on 482 Homework**
CS 482 Spring 2002

To help in thinking about the problem sets in the course, here are some comments based on experience in previous years.

- First, it's important to recall from the opening handout — when a question asks you to "give an algorithm" for something, you should also provide a proof of correctness and an analysis of its running time. Unless otherwise specified, when a question asks for an "efficient algorithm," we are looking for an algorithm that runs in polynomial time.

- You'll notice that some of the questions consist mainly of an English description, without much mathematical notation. This is intentional — part of the point of the problem sets is to practice formalizing algorithmic problems that are initially described in free text.

  You can see examples of this process in the book for the course — the problems we consider there are initially described informally, then formalized using mathematical notation. You should do the same, defining enough notation to be able to express the problem and its solution carefully, and explaining the meaning of all the notation you use.

- Typically, the clearest way to explain an algorithm is in English, with the use of some notation. A clear explanation followed by annotated pseudo-code is also fine.

  On the other hand, solutions that consist of a long piece of pseudo-code with no accompanying explanation tend to be basically indecipherable by anyone but the author (and usually indecipherable by the author as well, after a few days pass). Moreover, our experience is that solutions like this usually turn out to have inaccuracies that render them incorrect. We reserve the right to deduct a significant number of points for solutions that consist only of pseudo-code with no explanation, even if they turn out to be correct.

  Along these lines, it's in your interest to write up solutions neatly — this makes it easier to understand what's going on in your solution, and to assign partial credit even if it isn't completely correct.

- There are a number of problems at the end of the chapters in the book. These represent a good way to get more practice solving problems related to the material (for example, to help in studying for the prelims). If you do work on any of these problems, we will be happy to discuss your solutions with you in office hours.

  If you want to use a result claimed in one of these end-of-chapter problems as part of the solution to one of the assigned homework problems for the course, you must include a proof of this result with your solution. (I.e. you can't simply cite the fact that the question was asked in the book and rely implicitly on the answer. This is, of course, in contrast to the rest of the text, which you should feel free to cite as part of homework solutions.)

- Regrades: If you believe your solution to a question was correct, and it was marked incorrect, you should write up an explanation of the grading error, attach it to the problem set, and bring it to the TA who graded the question. Alternately, you can bring the problem set and written explanation to Esha Molette in 4119 Upson. Note that we're talking here about correct algorithms that were treated as incorrect; in general, we will not look at regrade requests that are simply arguing about the amount of partial credit assigned.

  We will generally process regrade requests periodically in batch mode, rather than on the spot.