Institut for Matematik og Datalogi
Syddansk Universitet

January 31, 2011
JFB

DM508 – Algorithms and Complexity – 2011
Lecture 2

Lecture, January 31

We began with an introduction to the course. Lower bounds from section 2.4 of the first part of the notes were discussed (part of this is also in section 8.1 of the textbook). We also began introducing adversary arguments from section 3.1.2 of those notes.

Lecture, February 1

We will finish sections 3.1, 3.2, 3.3 and 3.5 of the DM508 notes, plus median finding from chapter 9 (section 9.3) in the textbook.

Lecture, February 7

We will begin on NP-completeness, from chapter 34 in the textbook and the section by Papadimitriou and Steiglitz from the course notes.

Problems to be discussed on February 9

Do problems:

1. 9.3.1, 9.3.2, 9.3-3, 9.3.4, 9.3-7, 9.3-9,
2. 34.1-3, 34.1-5, 34.2-3.
3. Suppose that there is a language L for which there is an algorithm that accepts any string $x \in L$ in polynomial time and rejects any $x \notin L$, but this algorithm runs in super-polynomial (more than polynomial) time if $x \notin L$. Argue that L can be decided in polynomial time.