DM508 – Algorithms and Complexity – 2013
Lecture 2

Lecture, April 8

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 will also covered section 3.1 of those notes.

Lecture, April 9

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

Lecture, April 15

We will cover the lower bound on median finding from section 3.5 in the DM508 notes. 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 April 16

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.