DM508 – Algorithms and Complexity – 2009
Lecture 2

Lecture, February 2

We began with an introduction to the course. Lower bounds from section 2.4 of the first part of the notes were covered (part of this is also in section 8.1 of the textbook). We will also covered section 3.1 of those notes.

Lecture, February 4

We will sections 3,2, 3.3 and 3.5 of the DM508 notes, plus median finding from section 9.3 in the textbook. We may also begin on NP-completeness, from chapter 34 in the textbook and the section by Papadimitriou and Steiglitz from the course notes.

Lecture, February 9

We will continue with NP-Completeness, defining it and covering Cook's Theorem. This is mostly from the course notes.

Problems to be discussed on February 10

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.

4. Define an algorithm to show that SATISFIABILITY is in NP.