DM19 – Algorithms and Complexity – E03 – Lecture 8

Announcements

The discussion sections on October 30 and 31 are cancelled. The problems which were assigned for those dates will be discussed the following week. On Friday, November 7, and Friday, November 14, the discussion section will be in U82E.

Lecture, October 20

Lecture was cancelled due to illness.

Lecture, October 27

We will begin on NP-completeness from chapter 34 in the textbook and the section by Papadimitriou and Steiglitz from the first set of notes. This will include a brief introduction to undecidability. For more details, see chapter 5 of the textbook by Lewis and Papadimitriou, which is on reserve for DM17 in the library.

Lecture, November 3

We will continue with NP-completeness from chapter 34 in the textbook and the section by Papadimitriou and Steiglitz from the first set of notes.

Problems to be discussed in week 45

- 34.1-3, 34.1-5.

- 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.

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

- 34.2-3, 34.2-5, 34.2-8, 34.2-10.

- 34.3-2, 34.3-6.