

T-106.5250 Distributed systems

Examination, 2008-03-07

In each separate answer paper, write the name of the course, the date of the exam, the number of the answer paper and the total number of answer papers (in the form 'paper 1/2'), and your own name, study program, and student number.

Try to answer clearly. When you prepare the answer for an essay, think first what you know about the subject. Remember, that the subject may have been described in several chapters of the book. Make some notes. Design an outline for your answer and only after that start to write the answer. You can use subsection headers to make your answer clearer.

1. (12p) Give a short answer to following questions (max. 100 words per question):
 - (a) What are the ACID properties of transactions?
 - (b) Give a definition of distributed system.
 - (c) Why do we need middleware?
 - (d) Which two interaction models the course text book presents and how do they differ from each other?
 - (e) What is navigation in DNS and in what main ways it can be implemented?
 - (f) What are logical clocks and why are they needed?
2. (6p) Essay: The main classes of encryption algorithms and the use of cryptography in distributed systems.
3. (6p) Essay: Peer-to-peer systems.
4. (6p) Essay: Implementation of the request-reply protocol.