Institut for Matematik og Datalogi
Syddansk Universitet

May 9, 2003
JFB

On-Line Algorithms – F03 – Exam Questions

The exam will take place on Friday, June 20, 2003, with the first drawing a question at 10:00 AM. The oral exam will be based on the entire pensum, all topics covered in the course (see the weekly notes). You will draw one of the following questions and have half an hour to prepare a 15-20 minute presentation on that topic. It is likely that you will be interrupted by questions during your presentation. After your presentation, you will be asked questions from one or more of the other topics as well.

Emphasis should be on the analyses and proofs in the following:

1. List accessing with emphasis on TIMESTAMP
2. Randomized algorithms for list accessing
3. Upper bounds for marking algorithms and lower bounds for paging in general
4. The paging algorithm RAND
5. The paging algorithm MARK
6. K-server algorithms on the line
7. Memoryless paging algorithms with emphasis on mixed algorithms
8. Using Yao's principle to prove a lower bound on randomized paging
9. Deterministic algorithms for metrical task systems
10. The algorithm GREEDY for the identical and the restricted machine model for load balancing
11. The algorithm ROBIN-HOOD for load balancing
12. The relative worst order ratio for classical bin packing.