Institut for Matematik og Datalogi
Syddansk Universitet

April 26, 2006
JFB

On-Line Algorithms – F06 – Lecture 13

Lecture, April 26

We covered up through section 9.4 of chapter 9 in the textbook (we will be skipping the remainder of the chapter).

Lecture, May 3

We will cover up through section 10.4 of chapter 10, and cover the algorithm (but not the proof) in section 10.6.

Lecture, May 10

We will cover the algorithm in section 10.7, but skip the proof and then cover up through section 12.2 of chapter 12.

Problems for May 2

1. Do Exercise 9.1.
2. Explain the results in chapter in 9 with respect to the paging problem: the traversal algorithm, the lower bound, and the work function algorithm.
3. What problems would you run into in defining the classical and dual bin packing problems as metrical task systems? What changes can you make to the problem definitions to come closer to making it work?
4. What is the complexity of the dynamic programming procedure used for computing the cost of an optimal offline algorithm for the k-server problem when the request sequence is of length n. For the special case of a uniform metric space a faster algorithm exists. What is its complexity?

Problems for May 9

1. What is the complexity of the dynamic programming procedure used for computing the cost of an optimal offline algorithm for the k-server problem when the request sequence is of length n. For the special case of a uniform metric space a faster algorithm exists. What is its complexity?

2. Define and analyze a lazy version of DC for paging.

3. Exercise 10.1.

4. In section 10.2.2, there is an example where the Greedy algorithm does miserably. How does the WFA perform on this example?

5. Exercise 10.8.