Institut for Matematik & Datalogi
Syddansk Universitet

May 2, 2003
JBJ

DM69 — Weekly note 12

As announced earlier the course will end on May 9 th. That day I will also announce the final pensum for the course.

Material covered in week 18

Chapter 30 in Cormen on the fast Fourier transform. and Complexity of Counting problems. Kozen Chapter 26+27.

Plan for week 19

Thursday we will discuss the following exercises

- Find an argument that shows that the reduction we made in chapter 27 is a polynomial reduction.
- Problems 26-1 and 26-2 on page 692 in Cormen.
- Problem 26-3 page 697 in Cormen.
- Problem 26-7 on page 696 in Cormen.

Friday we will go through the whole pensum according to the main questions below and talk about the most importrant topics (and examples of what one could choose the talk about).

Exam questions (final list)

The following are the possible main questions (hovedspørgsmål). You should be prepared to be asked also in the other parts of the stuff we covered.

1. Shortest paths in digraphs.
2. The maximum (s,t)-flow problem and the minimum (s,t)-flow problem.
3. Polynomial algorithms for maximum flows.
4. Minimum cost flows.
5. The assignment problem and the transportation problem.
6. Matchings: characterizations and algorithms.
7. Matroids and the greedy algorithm.
8. Matroid intersection and matroid partition: algorithms and applications.
9. Scheduling: basic concepts and examples of proofs.
10. PRAM algorithms.
11. Sorting Networks
12. The fast Fourier transform
13. Complexity of counting problems