Institut for Matematik og Datalogi
Syddansk Universitet

February 20, 2017
JFB

On-Line Algorithms – F17 – Lecture 6

Lecture, February 17

Kim Skak Larsen finished chapter 4.

Lecture, February 22

We will finish chapter 2 and begin on chapter 6.

Lecture, February 28

We will finish chapter 6.

Problems for March 1

1. Problems that we didn't finish from lecture note 3 (the last 3). And problems not finished from February 24.
2. Let OPT_k denote OPT using a cache of size k. Consider the function

   $$f(\sigma) = \min\{k \mid \forall k' > k : \mathrm{OPT}_{k'}(\sigma) = \mathrm{OPT}_k(\sigma)\}$$

   The function gives the smallest cache size for which it does not help OPT to get a larger cache. Try to define f without any reference to OPT, i.e., by only considering properties of σ.
3. Do Exercise 6.1.
4. (Part of Exercise 6.4.) Show that the algorithm PERM_π is neither a marking algorithm nor a conservative algorithm. Try using $N = k + 2$.
5. In the absent minded driver problem, is $\frac{1}{2}$ the optimal value for the behavioral strategy?

6. Do Exercise 6.5.

7. Do Exercise 6.6.