Institut for Matematik og Datalogi
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March 22, 2004
JFB

On-Line Algorithms – F04 – Lecture 8

Lecture, March 17

We began looking at the article "The relative worst order ratio applied to paging", at http://www.imada.sdu.dk/~joan/online/paging.pdf. In section 2, we only considered definitions 1 and 2 and skipped the others. We covered Lemmas 6 and 7 and Theorem 5, followed by Lemmas 3, 4, and 5 and Theorem 4. Then, we covered section 5.

Lecture, March 24

We will cover sections 3, 6 and 7. This will mean that we need to look at the other definitions in section 2, also.

Lecture, March 31

We will cover chapter 7 in the textbook quickly and then cover chapter 8.

Problems for Monday, March 15

1. In the definition of RLRU, in the case where p is requested, but there is not fault, the algorithm only marks the next page if it is different from the previous. What happens to the results on RLRU if this check is removed and the page is always marked. What if it is never marked?

2. In the definition of RLRU, what if you change the condition starting a new phase to be "the $k+2$nd different page since the start of the last phase was found" or "this was the $k+2$nd fault since the start of the last phase"? What happens to the results on RLRU?

3. Compare MTF and TRANS for the list processing problem, using the relative worst order ratio.

4. How would you define a "strict relative worst order ratio"?

5. Work out an example showing how to change a worst case ordering for LRU to a worst case ordering for PERM_π.