On-Line Algorithms – F10 – Lecture 2

Lecture, April 13

We began with an introduction to the course. Then, we covered up through section 1.3 in the textbook, and up through the first style of the potential function method in section 1.4.

Lecture, April 15

We will continue with chapter 1 in the textbook.

Lecture, April 20

We will finish chapters 1 and 2 in the textbook.

Problems for April 22

Note that we may not finish all of these problems. If not, we will continue on April 22.

1. Problems that we didn't finish on April 16.

2. Exercise 1.11 in the textbook. To make the factoring lemma hold in the full cost model, change the definition of $\mathrm{ALG}(x, j)$ to add one for the positive comparison. Try adding something to the original definition, even in the case where r_j is in front of x. Then, when comparing MTF to OPT, try looking at two different times where MTF pays the maximum, while OPT pays the minimum.

3. Exercise 1.12 in the textbook.

4. Give a request sequence for TIMESTAMP, where TIMESTAMP's performance ratio is asymptotically 2 in the partial cost model. You may assume any starting configuration.