

ONLINE ALGORITHMS: ASSIGNMENT 2 (15/11/2008)

- Please prepare your assignment by yourself, no collaborations are allowed. For any questions or clarifications please email me at adiro@lri.fr.
- Please email me a pdf file of your assignment (scanned copy is fine) by Monday 22/11 (I encourage you though to at least go over the assignment before the exam).
- Some of the following problems are rather easy, others may require more thinking and work...

PROBLEMS

1. Prove that the BALANCE k -server algorithm (defined in class) is not competitive (i.e. does not have a competitive ratio which is a function of k and/or N) when $N > k + 1$.
2. Prove a lower bound of $2n - 1$ on the competitive ratio of any *deterministic* online algorithm for the online metric minimum matching problem. (Hint: consider a metric space which is defined by a graph in the form of a star).
3. Prove that the WFA for the k -server problem is 2-competitive for $k = 2$.