Chip Design
Summer term 2015

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Exercise Set 9

Exercise 9.1:
Show that the approximation algorithm for the RECTILINEAR SINK CLUSTERING PROBLEM presented in the lecture can be implemented to run in $O(|D| \log |D|)$ time.
Note: You can assume without proof that a shortest rectilinear spanning tree on n terminals can be computed in $O(n \log n)$ time.

(5 points)

Exercise 9.2:
Consider the linear TIME-COST TRADEOFF PROBLEM.

1. Show that the deadline version is the dual of a MINIMUM COST FLOW PROBLEM.

   (3 points)

2. Use (a) to develop a polynomial time algorithm for the budget version.

   (2 points)

Deadline: Thursday, June 25th, before the lecture.

The websites for lecture and exercises are linked at

http://www.or.uni-bonn.de/lectures/ss15/ss15.html

In case of any questions feel free to contact me at ahrens@or.uni-bonn.de.