

Parallel Algorithms 2012, Mirosław Kutylowski

Assignment 3. Due 23.1.2013

Design an algorithm for a k -dimensional hypercube for the following problem:

input each node stores a single element. Let r_a denote the element stored by node a (as always, the nodes are labelled by bitstrings of length k).

output when the algorithm terminates, for each a the element r_a is stored by node b , where address b is obtained from a by flipping each its bit.

Write a pseudocode for your solution.

Estimate time and congestions on the nodes (congestion is understood as the maximal number of elements stored by a node during algorithm execution).