



Institut für Theoretische Informatik

Prof. Dr. Peter Widmayer, Dr. Riko Jacob and Yoshio Okamoto

November 18, 2004

External Memory Algorithms and Data Structures Problem 5

Course Webpage: <http://www.ti.inf.ethz.ch/ew/courses/EMADS04/>

Due Date: November 25, 2004 at the lecture

Exercise 5.1

We want to evaluate a boolean circuit given as a directed acyclic graph. How can we perform this task in the external-memory setting? Give an upper bound on the number of IOs. We assume that the vertices of the directed acyclic graph are topologically sorted and the logical connectives are \neg , \vee and \wedge . (Hint: Use a buffer tree as a priority queue.)