

## Theory of Network Communication

Fall 2004

### Assignment 9

**Problem 18** (10 points):

The task of this assignment is to implement a pool on top of the supervised tree network so that it satisfies the specifications in Section 11. More precisely, the network needs to support the operations

- JOIN: this allows a peer to join the system
- LEAVE: this allows a peer to leave the system
- ENQUEUE( $x$ ): this allows a peer to insert element  $x$  (a simple integer) into the pool
- DEQUEUE: this allows a peer to take any element from the pool

For simplicity, we assume here that if a branch of the tree is full, then we simply cancel any further Enqueue operations into that branch. (In the deBruijn graph there is no limit on the depth of the tree, but in the supervised tree network there is.)