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Theory of Network Communication

Fall 2004

Assignment 8

Problem 17 (10 points)**:**
The task of this assignment is to implement the hyperring for two levels and $k = 0$. That is, you just have to implement the base ring with two intertwined subrings on top of it so that no edge of one of the intertwined subrings bridges more than three edges in the base ring. Remember to keep the nodes in the base ring sorted according to their names, where arbitrary, distinct user-defined names may be chosen (which may just be integers for simplicity). Three operations have to be implemented for this:

- JOIN(q): this allows a new peer p to join the truncated hyperring. It requires the ROUTE operation to forward a join request to the closest successor of Name(p) so that p can be integrated.
- LEAVE(): this allows a peer to leave the hyperring.
- ROUTE($name, msg$): this allows to route a message msg to the peer q with name $name$. In our context, the only relevant message is a join request.