

CS 85/185: Homework 6

Due: Tuesday, November 30, 2010 before class begins

Problem

We studied in class Herlihy's universal construction. Without memory management, its time complexity is $O(n)$ and space complexity is unbounded. With memory management, its time complexity is $O(n^3)$ and space complexity, i.e., the number of cells in the pools of all of the n processes together, is $O(n^3)$. This problem asks you to introduce some cleverness into the way each process manages its pool of cells so the time and space complexity of the universal construction become $O(n)$ and $O(n^3)$, respectively.