Episode 58: Exercises rev. 23/04/2008 23:11

Ingredients: Network algorithms, exam preparation

Exercise Session

1. R-11.2 p. 541
2. C-11.1 p. 542
3. Consider algorithm 6.19 p. 326 in GT. There are three loops in this algorithm. Formulate loop invariants for each of them.
4. Formulate a loop invariant for the first *while* loop in Algorithm 4.3 p. 221.
5. Formulate an invariant that holds at the beginning of each invocation of TreeSearch in Algorithm 3.5 p. 146
6. Do the same for BinarySearch in Algorithm 3.1 p. 143
7. Consider the following rehashing scheme for dynamic hash tables: instead of doubling the array, we increase it by 200 nodes, each time it is half full. (a) What is the complete running time of inserting n elements into such a hashtable? (b) What is the amortized running time per insertion ? (c) How does this compare to the usual doubling scheme? (Is it an improvement? In what sense it is, or it is not?)
8. C-2.32 p. 135

Problems For Self-Study

1. R-11.1 p. 541
2. R-11.3 p. 541
3. R-11.4 p. 541
4. R-11.5 p. 541