Session 7
Fundamentals

Lecture Summary

Analysis of Recursive Algorithms

1. Efficiency analysis plan for recursive algorithms
2. Simple examples (results from 🕮 Appendix B)
   - Factorial: decrease-by-one
   - Binary digits: decrease-by-constant-factor
3. Classic problem: Tower of Hanoi
   - Understanding recursive solution
   - Performance analysis: another example of backward substitutions
   - Understanding exponential growth (answer to slide exercise: 584 million years)

Session Exercise

P8. Write a recursive algorithm for sequential search. Analyze the performance of your recursive search using information from 🕮 2.4. Post your work to the discussion group.

🕮 **Exercise 2.4** • 4, 9 🛠 8.a, *14

👁 Exercises after 🛠 are design exercises, graded according to the rubric in assignment page.

Reading List

- 🕮 2.4
- 🕮 Appendix B (p. 479)

Keywords