Session 3
Fundamentals

Lecture Summary

Efficiency Classes

1. Analysis framework recap
2. Observation, using asymptotic behavior of functions to classify
3. Classification of efficiency (understanding, examples, math definition)
   - Setting an upper bound: O-notation
   - Setting a lower bound: Ω-notation
   - Similar growth class: Θ-notation
4. 👁 A useful property of asymptotic efficiency
5. Using limits to compare orders of growth
6. 🕮 Common efficiency classes

Session Exercise

P5. Modify the bubble sort code in *jsdemo1.js* (from Lecture 1) to count the number of times the compare operation is performed. Print the counts for n=5, 10, 15, 100, 1000, and 2000. Can you guess a formula for $C(n)$?

👁 Results will be discussed in a later class.

🕮 **Exercise 2.2** • 1, 2, 3

Reading List

🕮 2.2

Keywords

Asymptotic [efficiency], bound, [problem] instance