

Slide 1

Administrivia

- Homework 8 finalized. Official due date Friday, but okay to turn in Monday. Solutions available Wednesday. (Okay?) Other graded homework and solutions to be available Friday or Monday.
- Review session possible. Pick a time next class.
- Review sheet on Web soon (by Friday).
- Extra-credit problems possible if there's interest.

Slide 2

Proofs and "Proof Obligations"

- Notion of "proof obligation" — sort of an outline of a proof, sketches out "to prove Q , you need to prove Q_1, Q_2, \dots ".
- Remember that writing down a proof is not the same as solving a problem — the goal is not to come up with an answer but to convince the reader. So, some prose in addition to formulas usually helps.

Review — Proofs of Correctness

- “Hoare triple” $\{ Q \} P \{ R \}$ means “if we start with Q true and execute P , it completes, and after it completes R is true”.
Can these be chained together? (Yes.)
- What’s a “loop invariant”, and how does it help you reason about loops?

Slide 3

Recursion

- Recursive definitions — sets, sequences, operations. (Do an example?)
- Recursive algorithms. (Do an example?)
- Solving recurrence relations — useful in analysis of recursive algorithms. (Do an example?)

Slide 4

Algorithm Analysis / Computational Complexity

- Key idea is to estimate amount of work needed — will help us evaluate whether an algorithm is practical, or which of two algorithms is “better”.
- For loops, pretty straightforward. For recursive algorithms, define recurrence relation and solve. (Example.)

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Minute Essay

- Do you have concerns about the exam (availability of graded homework, solutions, review session, etc., etc.) I can address?

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