Lecture 21 - March 31

Program Verification

Weakest Precond: Predicate Transformer wp Rules: Assignments, Conditionals

Announcements/Reminders

- WrittenTest2 result released
- Lab4 released
- Bonus opportunity: Final Course Evaluation
- Office Hour this week: 3pm on Mon, Tue, Wed, Thu
- TA contact information (on-demand for labs) on eClass

Stronger vs. Weaker Assertions: Pre- vs. Post-Conditions



Program Correctness: Example (1)



Program Correctness: Example (2)



Tony Harre (guick sort) Hoare Triple: Syntax and Semantics





Hoare Triple: Incorrect Program



Program Correctness: Revisiting Example (1)



Program Correctness: Revisiting Example (2)



Expressing Pre-State vs. Post-State Values



Rules of Weakest Precondition: Assignment



Correctness of Programs: Assignment (1)



Correctness of Programs: Assignment (2)

What is the weakest precondition for a program x := x + 1 to establish the postcondition $x > x_0$?

Exertse

$$\{??\} \times := x + 1 \{x = 23\}$$

Rules of Weakest Precondition: Conditionals



Correctness of Programs: **Conditionals**

