

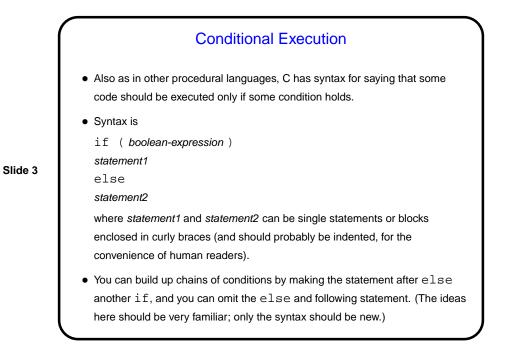
Slide 1

C Basics — Review/Recap

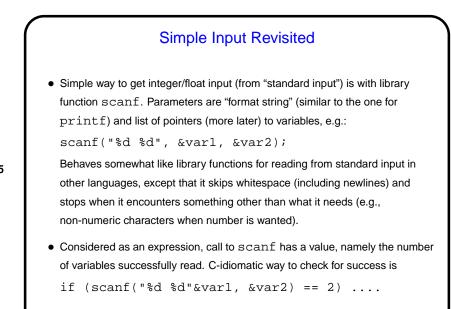
- Unlike Python and Scala scripts (but like Java programs), C programs include some standard boilerplate (#include for library functions, explicit main).
- Variables must be explicitly declared (including type).
- Expressions similar to those in Python/Scala/Java but with a few differences.
- Statements are also similar, but assignments are considered to be expressions too, with a value. Allows chaining, e.g.,

a = b = 10;

• A caveat: The C standard does not spell out everything (e.g., size of int type) so experimental results are not necessarily conclusive (might be specific to a particular compiler/system).



Conditional Expressions
Scala and Python both provide a way to include if/else idea within an expression.
C does too, but it's not as obvious — "ternary operator", e.g., int sign = (x >= 0) ? 1 : -1



Example — Finding Roots of a Quadratic Equation

• As an example of all of this, let's write a program that finds and prints the root(s) of a quadratic equation of the form

$$ax^2 + bx + c = 0$$

Slide 6

$$x = \frac{-b \pm \sqrt{b^2 - 4aa}}{2a}$$

• (We'll also include in this program an example of getting input from standard input.)

