

Minute Essay From Last Lecture
A few people said things that support that line I quote so often about programming not being a spectator sport.
A few people commented on the (5/9) being evaluated using integer division. (That was part of the point of this problem.)
Others commented on "int" having a limited range. Hm, interesting what examples people tried?

Quotes of the Day/Week/?

• From a key figure in the early days of computing:

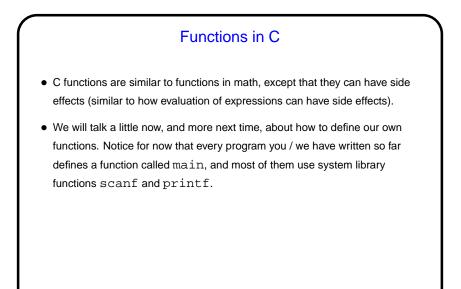
"As soon as we started programming, we found to our surprise that it wasn't as easy to get programs right as we had thought. Debugging had to be discovered. I can remember the exact instant when I realized that a large part of my life from then on was going to be spent finding mistakes in my own programs." (Maurice Wilkes: 1948)

Slide 3

• From someone in a discussion group for the Java programming language: "Compilers aren't friendly to anybody. They are heartless nitpickers that enjoy telling you about all your mistakes. The best one can do is to satisfy their pedantry to keep them quiet :)"

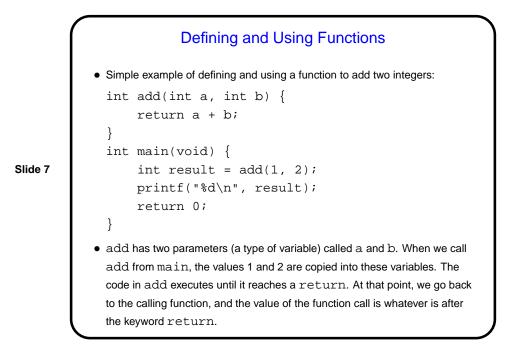
Functions and Problem Decomposition

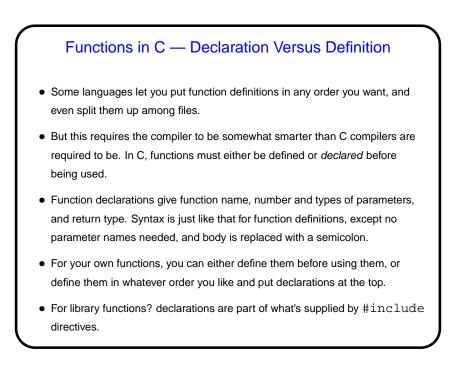
- So far all our programs have been one big chunk of code. This is okay for simple programs, but quickly becomes difficult to understand as problems get bigger.
- Further, some things we don't want to, or can't, really write ourselves, such as the code for input/output.
- So C, like many/most other programming languages, gives you a way of decomposing problems into subproblems. C calls them *functions*. Using this feature to good effect is something of an art, but may teach you something about problem decomposition in general, which is a useful skill.

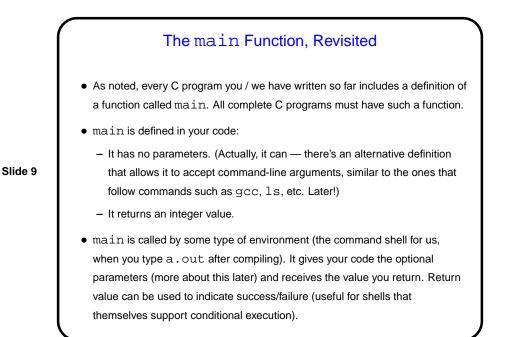


Slide 5

Functions in C, Continued Every function has A name (where rules for names are the same as those for variables). Zero or more inputs (called *parameters*). A return type (void to indicate that the function doesn't return anything). Slide 6 When you call (use) a function, you Supply values for inputs (pass in values for parameters). Optionally, use the value returned by the function. The function call is an expression, as discussed previously, and its value is the value returned by the function.







"Hello World" Program, One More Time

- Historical/cultural aside: Among computer programmers, it's considered traditional that the first program one writes in a new language just prints "hello world" to the screen — maybe not the simplest possible program, but close.
 Particularly apt for C, because the tradition was begun by an early and still authoritative work on C (*The C Programming Language*, Kernighan and Ritchie).
- Almost all of this program, and other examples, should now more or less make sense! (Exceptions are representation of character strings, & syntax for parameters. Soon!

