

Slide 1

Administrivia

- Homework 3 grades and grades-so-far summary mailed yesterday. (Summary had a misleading subject line — I meant “csci 1320” of course!)
- Homework 5 on Web. Due a week from today.

Slide 2

A Little About Testing

- Both Homework 3 problems illustrate the importance of good testing — several people turned in programs that work for some inputs, not for others.
- So clearly there's more to testing than checking that the program runs for one or two inputs? Yes . . .
- Good tests check that everything in your program does what it's supposed to do — checking for various kinds of input errors, processing different kinds of okay input.
- Good tests are also ones where you can easily tell if the results are correct.
- What would be good test data for the two Homework 3 problems? (See sample solution.)
- But who would want to type that in every time you change the program, just to make sure it still works? Good time to learn about one more feature of the command line . . .

Input/Output Redirection in Unix/Linux

- We talk about `scanf` reading input “from the user” or “from the keyboard”, and `printf` printing “to the screen”.
- But that’s not quite right — really, `scanf` reads from *standard input*, and `printf` writes to *standard output*.

Slide 3

- What’s the difference? can *redirect* standard input/output to use (text) files instead. Example:

```
myprogram < test1-in > test1-out
```

to have `myprogram` get its input from `test1-in` rather than the keyboard, and put its output in `test1-out` rather than showing it on the screen. (Overwrites `test1-out`. To append instead, use `>> test1-out`.)

This is (part of) how I grade your programs!

More Examples of Loops and Recursion

- Suppose we want to read in a bunch of numbers and print their sum. How to do that? (Example program.)
- Suppose we want to read in a bunch of numbers and print them in reverse order. How could we do that? One way would be with an *array*, which we’ll talk about soon. Another way uses recursion. (Example program.)
- (Other examples as time permits — two versions of program to convert from decimal to binary.)

Slide 4

Minute Essay

- None — quiz.

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