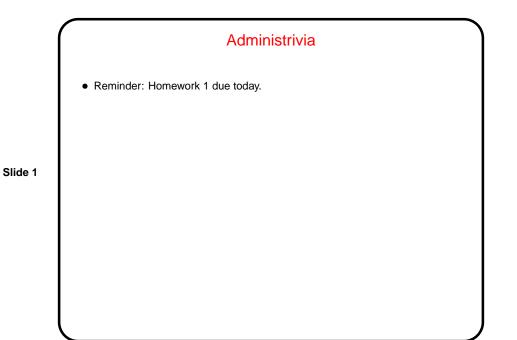
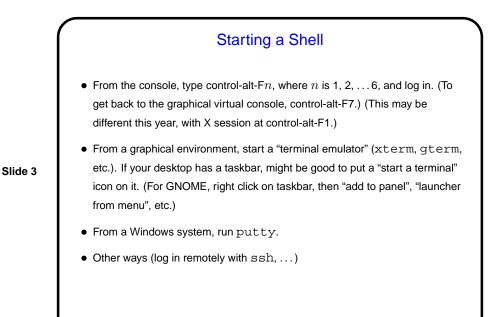
Slide 2

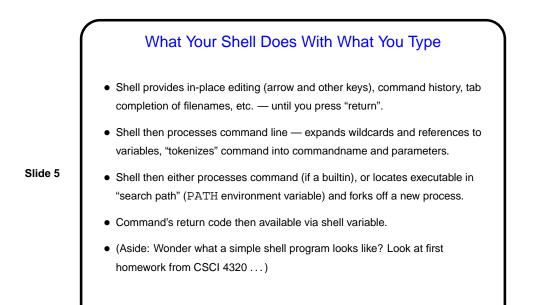


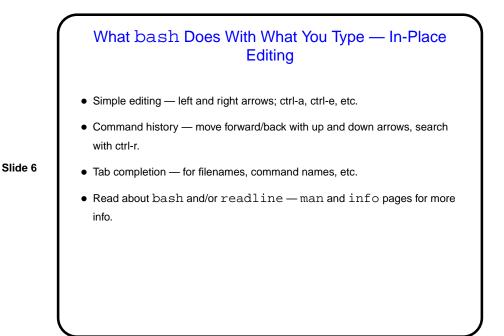
Basic Organization / Terminology
Kernel — heart of operating system, manages processes and files and so forth.
Shell — program that interprets what you enter, calls ("launches") other programs.
This being UNIX, there are several, mostly offering similar functionality but maybe with different syntax.
Several ways to start a shell — next slide.
Graphical environments, window managers, etc. Also several of these!

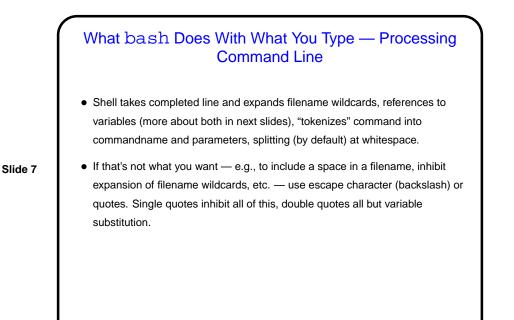
Slide 4



## A Little About Shells Several choices; most commonly used are probably bash and tcsh. By default, you get the one in your entry in the password file. How to find out what that is? echo \$SHELL. (This displays the environment variable SHELL. More about those later.) How to change? chsh command on some systems; on others, can only be changed by administrator. Or start a different one by typing its name, like any other command. Following discussion is about bash, but many other shells offer similar functionality.





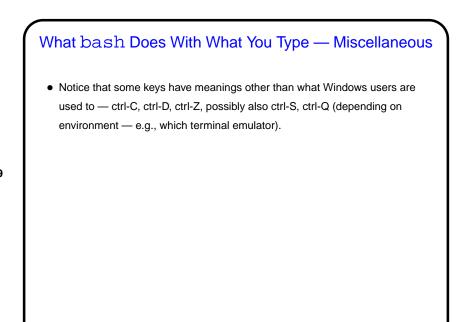


What bash Does With What You Type — Processing Command Line
Shell locates command. Two cases:

Builtin command — shell executes directly.
External command — shell finds an executable by looking in "search path" (PATH environment variable) and forks off a new process.
(Why the distinction? Some things can't reasonably by done in a new ("child") process!)

Command's return code then available via shell variable. (Why would anyone care? Useful in writing scripts.) (Where does the return code come from? whatever is returned by program — e.g., from C program's main.)

Slide 8



Slide 9

## Environment Variables Associated with a process (e.g., a shell) there can be "environment variables". Useful as another way (in addition to command-line arguments, input from file/keyboard, etc.) of giving process information. Some variables of interest — PATH, SHELL, HOME, USER. Some variables of interest — PATH, SHELL, HOME, USER. To display current value, printenv FOO or echo \$FOO. To set value, FOO=value (no spaces) in bash. To make value available to other commands, export FOO.

