Administrivia

- Reminder: Project proposals due.

"Programming" Problems

- Continued from last week — for a couple of semi-real-world problems, think of as many ways as we can to solve them using tools presented so far.

Slide 3

Finding Broken Links

- How many ways can we think of to find "broken" (or "stale") symbolic links?

- Linux has a `symlinks` command too. Other ways?

Slide 4

Finding Broken Links, Continued

- Another way would be to combine `find` and `readlink`, e.g.:

```
for link in  find . -type l
do
  file= readlink $link
  if [ ! -e $file ]
  then
    echo broken link $link
  fi
done
```

- But this only works for links in the current directory — for links in subdirectory, test for link target's existence is wrong. How to fix this?

Slide 5

Finding Broken Links, Continued

- The following seems to work for both Linux and OS X:

```
find . -type l | while read link
do
  dir= dirname $link
  name= basename $link
  here= pwd
  cd $dir
  target= readlink $name
  if [ ! -e $target ]
  then
    echo "broken link $dir/$name"
  fi
  cd $here
done
```

Slide 6

More Real-World(?) Examples — Locally-Written Scripts

- `p`

- `find-big-files`, `sorted-disk-usage`

- `up`, `atlas`, etc.

- `logon`

- (These are in `/usr/local/bin`.)

More Real-World(?) Examples — Scripts

- Scripts I use to help me with grading programming assignments — split up mailbox file into individual messages, put each in a folder with a name based on "from" line, compile, test, etc. Commands used include `formail`, a bit of Perl.

Slide 7

- Scripts for computing grades and mailing results (mostly `awk`). (Yes, most people use spreadsheets for this purpose! but they were fun to write.)

More Real-World(?) Examples — LaTeX and makefiles

- Makefile to automatically generate slides in different configurations (one-per-page for class, two-per-page for Web, with notes) from LaTeX source,

- Makefile to generate HTML and PDF from LaTeX source (for, e.g., syllabus).

Slide 8

- LaTeX macros that add up points for an assignment or exam, based on points for individual problems.

Slide 9

Minute Essay

- None — sign in.