

Administrivia

- Homework 4 to be returned shortly, but be advised that everyone got full credit.

Slide 1

Minute Essay From Last Lecture

- More than one person mentioned how that last problem on the homework was difficult and/or messy. Regular expressions — well, very powerful, but apt to be “write-only”, no? (And it doesn’t help that different programs that support them vary in details of how you write them.)
- One person mentioned how many different things you can do with `sed`. Very true, and we didn’t get into a lot of its features. Some of the examples in the `info` page(s) are, hm, astonishing?
- One person mentioned the tie-in with what’s being covered in Theory. Indeed.

Slide 2

(Mostly-)Text-Mode Plotting — gnuplot

Slide 3

- Usually run in graphical mode, but interface is text-only. Help available from within program by typing `help`. (Help is modeled after online help on VAX VMS operating system, and is — different.)
- (Interestingly enough, the name has nothing to do with the GNU project, but apparently was an attempt at humor by the authors, who wanted to call it `newplot` but didn't want to conflict with some other program by that name.)
- Admittedly the text-only interface seems clunky by comparison to GUI tools, and this does seem like the kind of application for which a GUI tool would be good, but ...

gnuplot, Continued

Slide 4

- A benefit to the text-mode interface is that commands/settings can be saved to a (text!) file for later reuse. (And since it's a text file it can be edited directly with a text editor.)
- Program can also be run in "batch" mode. Might be useful for generating many similar plots from different data, or for recreating plots as data changes.
- All this makes for something that fits nicely into the world of traditional-UNIX text-mode tools.
- Nice for \LaTeX users because it can produce output in various \LaTeX -friendly formats (including ones that allow final typesetting to use same fonts as document). (More about this in discussion of \LaTeX — next topic.)

gnuplot Basics

Slide 5

- `plot` to plot a mathematical expression or data.
- `set xrange`, `set yrange` to set ranges for two axes.
`set logscale` to scale one or more axes logarithmically.
- `set style` to use nondefault “style” (particularly useful for plotting data — default is points, but you can do lines or bars too).
- `replot` to repeat previous `plot` command, as you might want to do after changing style, etc.
- `save` to save settings to a file. `load` to retrieve them.
- `set terminal` to choose a different output format. Combine with `set output` to save plot to a file.

gnuplot Examples

Slide 6

- Some examples will be linked from “Sample programs” page.
- *Lots* of examples available at `gnuplot.sourceforge.net`

Minute Essay

- Can you think of a situation in which you might use `gnuplot`?
- What tool(s) do you usually use to make plots?

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