

### Administrivia

- Reading for `gnuplot` added.
- $\LaTeX$  example reworked quite a bit.
- (Status of next homework.)

Slide 1

### Minute Essay From Last Lecture

- One person said `make` homework took less time than expected; another said the example was helpful (as intended!). Still another said having to work through details helped him understand how `make` works — less scary than it seems.
- One person liked how `make` can do things other than compile. Another found implicit rules “cool”.

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## L<sup>A</sup>T<sub>E</sub>X and make

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- As noted previously, processing of many L<sup>A</sup>T<sub>E</sub>X documents requires multiple passes. `latexmk` automates that. (And one might write a simple makefile using it, with a `make clean` to clean up.)
- However, `latexmk` seems not able to recognize some kinds of dependencies, such as those involved in bibliographies. So for my “sampler” document I wrote a more complicated makefile.

## Diagrams and Plots for L<sup>A</sup>T<sub>E</sub>X — xfig

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- As mentioned previously: `xfig` is a somewhat clunky graphical program to create diagrams, notable because it works well with L<sup>A</sup>T<sub>E</sub>X.
- `xfig` can export to many formats, including a couple of L<sup>A</sup>T<sub>E</sub>X environments for drawing pictures (which may be limited in what they can do well) and combined L<sup>A</sup>T<sub>E</sub>X and PDF/EPS (which is maybe more complicated but more powerful?). These all generate L<sup>A</sup>T<sub>E</sub>X source files to be included (with `+\input`) in a document.
- With combined L<sup>A</sup>T<sub>E</sub>X source and PDF/EPS, “special” text is typeset by L<sup>A</sup>T<sub>E</sub>X. To do this for all text in a diagram, start program thus:  

```
xfig -specialtext -latexfonts -startlatexFont Default
```
- “Export” function just calls `fig2dev`, and you could do that yourself, perhaps from a makefile.
- (Example.)

### Diagrams and Plots for $\LaTeX$ — `gnuplot`

- As mentioned previously: `gnuplot` can generate output to be processed by  $\LaTeX$ .
- With terminal type `epslatex`, it generates  $\LaTeX$  source (to include via `\input`) and EPS.
- (Example — something of a work in progress.)

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### Diagrams and Plots for $\LaTeX$ — $\LaTeX$

- Base  $\LaTeX$  has `picture` environment with some diagram-making capabilities.
- Packages `epic` and `eepic` extend those.
- Package `tikz` is — complex but amazing. (Examples.)

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## Minute Essay

- None? Sign in?

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