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Administrivia

- Reminder: Homework 7 due today, by e-mail.
- Homework 8 on the Web. Due next Monday.

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Minute Essay From Last Lecture

- Several good suggestions. I'll follow up on as many as I can?

LaTeX Continued

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- `\newenvironment` to define your own environment. Trivial example in `sampler` document.
- “Packages”? LaTeX’s version of library classes. `\usepackage` to reference (analogous to `#include`). Many, many available. Some have options (`babel` in `sampler`).
Some distributions have lots of them, some not so many. CTAN.org (“Comprehensive TeX Archive Network”) is a good resource.
- (Review rest of document.)

LaTeX and make

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- As noted previously, processing of many LaTeX 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 \LaTeX — `xfig`

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- As mentioned previously: `xfig` is an old and somewhat clunky/quirky graphical program to create diagrams, notable because it works well with \LaTeX .
- `xfig` can export to many formats, including a couple of \LaTeX environments for drawing pictures (which may be limited in what they can do well) and combined \LaTeX and PDF/EPS (which is maybe more complicated but more powerful?). These all generate \LaTeX source files to be included (with `+\input`) in a document.

- With combined \LaTeX source and PDF/EPS, “special” text is typeset by \LaTeX . 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.

`xfig`, Continued

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- A word of warning: Many `xfig` operations require “middle mouse button”. Can be simulated with left and right together, *if* enabled. May need to set up `.xinputrc` file to make this happen.
- (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.)

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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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A Few More \LaTeX Tips

- `\usepackage[utf8]{inputenc}` for non-ASCII input.
- `\usepackage[normalem]{ulem}` for underlining.
- `\usepackage{quotes}` to automatically convert double-quote characters to \LaTeX version of “smart quotes”
- `\usepackage{hyperref}` to make all cross-references into hyperlinks and include support for other hyperlinks.

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Minute Essay

- None really — just sign in.

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