

LaTeX Tutorials & Workshops

Sponsored by Personal TeX, Inc.

UC Berkeley Faculty Club

October 12, 2007

L^AT_EX tutorials

Organization of sessions

Introduction to L^AT_EX - Lance Carnes

Segment 1 - The basics

Segment 2 - Typing text and math

Segment 3 - Workflow, recovering from errors, general guidelines

Organization of sessions

- ▶ Presenter will speak for 15 minutes
- ▶ Attendees will work on an exercise for 10 minutes
- ▶ The presenter will answer questions for 5 minutes
- ▶ There will be three of these segments per 90-minute session.

The presenters

- ▶ **David Auslander**, Professor of the Graduate School, Department of Mechanical Engineering, UC Berkeley. David has been a L^AT_EX user for twelve years and uses it to generate teaching materials in the Mechanical Engineering graduate school.

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- ▶ **Lance Carnes**, President, Personal TeX, Inc., has been using T_EX since 1980. PCT_EX has been available since 1985.

Introduction to L^AT_EX

Presented by Lance Carnes

Why use L^AT_EX?

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- ▶ Professional looking output for self-publishing or any publishing need

How does L^AT_EX relate to T_EX?

- ▶ T_EX is a program for high-quality formatting developed by Donald E. Knuth in 1982
- ▶ The original release of T_EX came with a “macro package” called Plain
- ▶ T_EX + Plain is the bare minimum needed to format with TeX
- ▶ L^AT_EX is another “macro package” developed by Leslie Lamport in the early 1980's
- ▶ When you use L^AT_EX you are using the T_EX program + L^AT_EX macros
- ▶ Other macro packages: Facil-T_EX (early 1980's, rarely used today), AMST_EX (early 1980's), ConT_EXt (late 1990's)

When to use L^AT_EX

- ▶ When writing books or articles for publication
- ▶ When writing any type of multi-page document
- ▶ When writing documents that contain mathematics or scientific material
- ▶ L^AT_EX is not well suited for small, intricate documents, such as fliers or advertisements

How to use L^AT_EX

- ▶ Graphical User Interface (GUI)
- ▶ Command line

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- ▶ **Bold**, *italic*, and regular

`\textbf{Bold}`, `\textit{italic}`, and

`\textrm{regular}`

Will using T_EX or L^AT_EX make me a typographer?

- ▶ Short answer: No. It takes a lot of training and experience to learn page design and typographic conventions.
- ▶ However, L^AT_EX gives you a lot for free, with no markup required:
- ▶ Letter kerning — AVOID AVOID
- ▶ Ligatures — fi ff ffi fi ff ffi
- ▶ Hyphenation
- ▶ Sophisticated line breaking
- ▶ Page layout smoothing (typographic color)
- ▶ Basic document styles

What will be covered today

- ▶ You will learn only a small fraction of L^AT_EX's capabilities
- ▶ ... the possibilities are endless but not needed for everyday use
- ▶ You will not become a typographer or L^AT_EX expert
- ▶ ... but you can continue learning on your own if you wish
- ▶ You will be able to write an article with math and figures using L^AT_EX

Exercise 1

Write the following using L^AT_EX:

- ▶ A 6-pack of A&W Root beer is on sale for \$2.56, a 25% savings.
- ▶ "Over the weekend I read Treasure Island," John revealed.
- ▶ It's the #1 best-seller - in the 18-25 age group.
- ▶ LaTeX is much easier than I thought it would be.

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Typing text and math

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- ▶ Make a simple document `article.tex`
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- ▶ Enter a paragraph of text
- ▶ Enter an itemized list
- ▶ Enter a simple math equation

Exercise 2 — add to the sample article

- ▶ Add foreign words, j'écris caffè peña
- ▶ Add a new math equation $\int f(x)dx$
- ▶ Add a new displayed math equation

$$\int f(x)dx$$

- ▶ Add an enumerated list:
Groceries 1. eggs 2. carrots 3. spam

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$$\int f(x)dx$$

- ▶ `\[\int f(x) dx\]`

Workflow

- ▶ Show typeset view, jump to the source, edit and re-typeset

Recovering from errors

- ▶ Once the error appears read the error message and try to correct from that
- ▶ If this isn't helpful, try to narrow down where the error occurred by commenting out blocks of text using %
- ▶ Errors are usually misspelled commands, misplaced commands, or misused commands (e.g. a missing part of the command such as an argument)
- ▶ Some errors will not cause L^AT_EX to stop — check your typeset output carefully

Guidelines

- ▶ Keep the source file simple — avoid using complicated L^AT_EX commands
- ▶ Write a small amount and then typeset — easier to recover from errors
- ▶ Let L^AT_EX do the formatting work — do not try to force the look you want
- ▶ Watch out for special characters
- ▶ Be patient

L^AT_EX resources

- ▶ Use the web, for example
 Google "LaTeX tables"
 for useful information
- ▶ Use available online documentation, for example
 PCTeX Help..LaTeX Guide
 PCTeX Help..LaTeX Packages
- ▶ Look at document examples, e.g. The PracT_EX Journal
 (tug.org/pracjourn)
- ▶ Wikipedia.org for math examples
- ▶ Books:
 - George Grätzer, *Math Into L^AT_EX*
 - Kopka & Daly, *A Guide to L^AT_EX*
 - Mittelbach et. al., *The L^AT_EX Companion*, 2nd ed.