LaTeX: Eh?

What is it, what isn't it, who cares?

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- TeX comes from $\tau\epsilon\chi$, the Greek letters short for "technical" or "technique". As such, it is pronounced to rhyme with "blech", not like the cowboy (Tex). LaTeX is either "la-tek" or "lay-tek".

History

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- And DVI, and MetaFont, and the Computer Modern fonts, and most of the research in computerized typesetting and hyphenation.
- In the 1980s Leslie Lamport at DEC decided TEX was too hard for secretaries (other than Knuth's) to use... and thus LATEX was born.

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- Portable. Runs on everything.
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- No bugs. Really.
  - OK, in TEX, but really.

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```
\frac{-d}{dx} D(x)
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\Sigma_a\phi_{\mathrm{e}}(x) = ...
```

$$\begin{bmatrix} B & 2C & & & \\ A & B & C & & \\ & \ddots & \ddots & \ddots & \\ & & A & B & C \\ & & & 2A & B \end{bmatrix} \vec{\phi}_l = \frac{1}{k_l} \vec{\phi}_l$$

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- Almost endlessly configurable and extensible.

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- Very hard to force it into a page-layout program.
- Not widely used; for collaboration, MS Word is the standard.
- Steeper learning curve than graphical tools, closer to programming.

Usage

- Create an input file ending in `.tex`.
- Process that file with `latex` a couple of times; LaTeX is a single-pass compiler that saves its state in auxiliary files.
- — or — process the file with `pdflatex`
- LaTeX output is a device independent (DVI) file; this can be converted to PostScript or PDF, among other things.

Usage

```
\documentclass[12pt]{article}
\usepackage{graphicx}
\title {My Summer Vacation}
\author {Andy Caird}
\begin{document}
\maketitle
\tableofcontents
\section{\label{driving}Driving to Akron}
In the first paragraph, we packed up the car, see
Figure \ref{FirstFigure}.
\begin{figure}
\includegraphics[width=4in]{car-packed.ps}
\caption{\label{FirstFigure}Our packed car}
\end{figure}

In the second paragraph, we got on the highway.

\section{\label{pancakes}Eating at IHOP}
As mentioned in section \ref{driving} we
were on the highway, and dad said ‘‘Who’s hungry?’’
\end{document}
```

TEX-like Alternatives

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- Jade / OpenJade
  - An implementation of “Document Style Semantics and Specification Language” (DSSSL)
  - XML document preparation
  - Backends for RTF (Word) and TEX
  - Paul uses this; I don’t

Resources

- *LaTeX: A Document Preparation System (2nd Edition)* by Leslie Lamport
- *The LaTeX Companion* by Mittelbach et al.
- *Math Into LaTeX* by George Gratzer
- *The (Not So) Short Introduction to LaTeX2e* by Tobias Oetiker ($\Leftarrow$ free!)
- Comprehensive TeX Archive Network: `http://www.ctan.org`
- TeX Users Group: `http://www.tug.org`
- Lyx: `http://www.lyx.org`
- Usenet (aka Google Groups): `comp.text.tex`

Serious Resources

- *The TEXbook* by Donald Knuth
- *The METAFONTbook* by Donald Knuth
- *Computers & Typesetting* by Donald Knuth

Questions

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http://www-personal.engin.umich.edu/~acaird