Welcome to MacTeX! What's Next?

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Everything in blue is a link. So click it.

Who? What? Where? When? Why? How?

TeX is a free, multilingual, open source typesetting system "for the creation of beautiful books—and especially for books that contain a lot of mathematics," says TeX developer Donald Knuth.

TeX runs on literally all modern computer systems, from personal computers to mainframes, and—of course—on the Macintosh with Mac OS X. With few exceptions, documents created in TeX can be transported across operating systems and look the same, no matter where they are typeset.

TeX is a programming language with 300 *primitive* typesetting commands called *control sequences*. Almost all users of TeX work with the macro *formats* that sit on top of TeX to make it easier to use. Professor Knuth, himself, developed the first format, calling it *Plain TeX*.
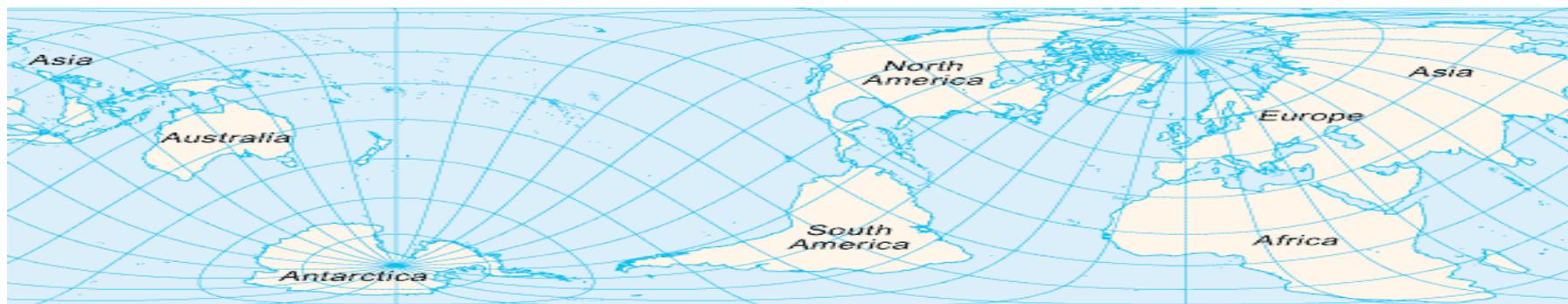
TeX Front Ends (Mac OS X)		
TeXShop	TeXworks	Others
TeX Macro Formats			
Plain	E-Plain	LaTeX	ConTeXt
TeX Primitives			
TeX Engine			

TEX for the World

TEX supports languages worldwide. It publishes from left-to-right, right-to-left and top-to-bottom. TEX languages include any with a writing system supported or supportable by fonts.

This means you can publish in almost any language. Where fonts for publishing a language are unavailable—or under development—if you ask, someone will probably help. It happens all of the time.

Supported languages include:

Arabic, Armenian, Bangla and Asamese, Basque, Bengali, Burmese, Casyl, Cherokee, Chinese, English, Japanese, Korean, Coptic, Croatian, Czech and Slovene, Cyrillic, Devanagari, Dutch, English, Epi-Olmec, Ethiopian, French, German, Greek, Gurmukhi, Hebrew, Hindi, Hungarian, Icelandic, Inuktitut, Italian, Japanese, Korean, Latin, Malayalam, Manju, Mongolian, Polish, Portuguese, Romanian, Russian, Sanskrit, Sinhala, Slovene, Somali, Spanish, Swedish, Tamil, Telugu, Tibetan, Turkish, Ukrainian, Vietnamese…
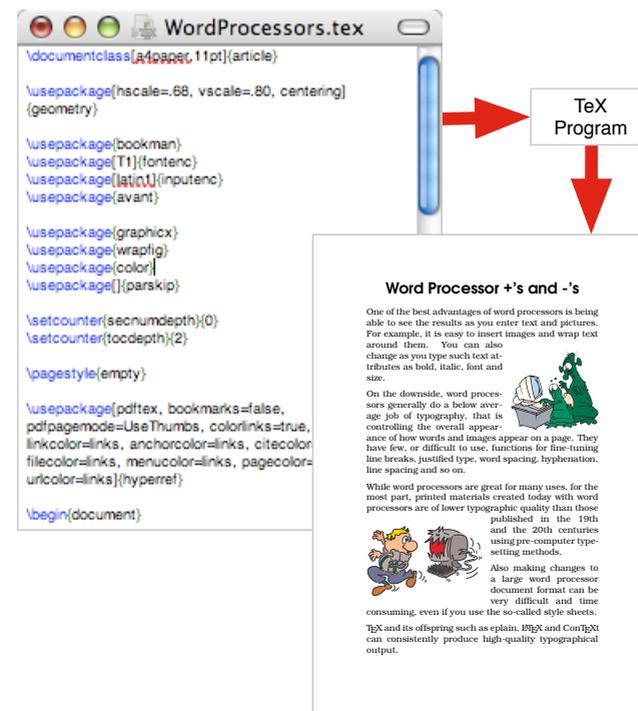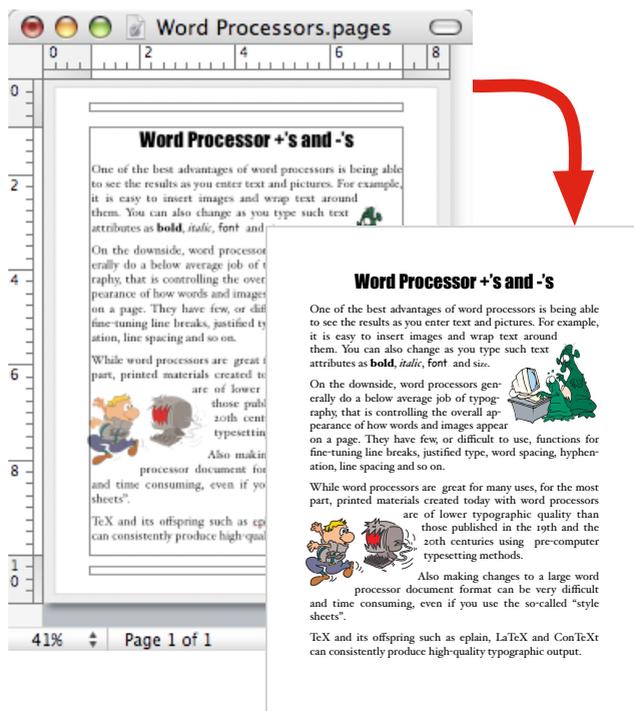
Document Processing vs. Word Processing

TEX is a document processing system, not a word processor.

A *word processor*—such as Pages or Word—shows you the results as you enter and format your content.

The TEX *document processor* typesets your content and commands into a separate output file, typically a PDF.
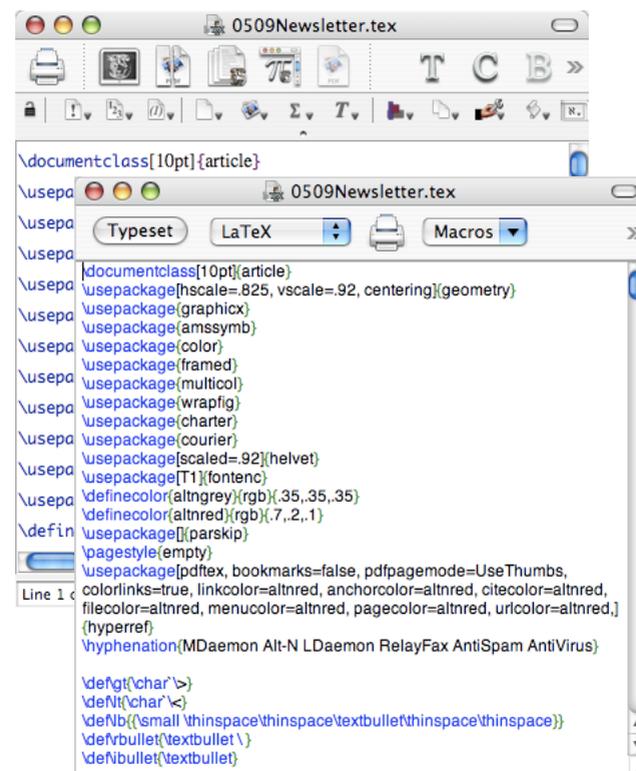
TEX Front Ends on Mac OS X

You can run TEX from the OS X terminal or—as most Mac-Tex users do—through one of the front end programs. The TEX front ends look like text editors where you type content and control sequences. To see your output document, you *typeset* or *compile* by selecting a command.

Mac OS X has several TEX front ends, including TEXShop, TEXworks and iTEXMac. TEXShop, iTEXMac are Macintosh-specific, while TEXworks is cross platform. New users typically start with TEXShop because of its regular updates, ease of use and widespread support.
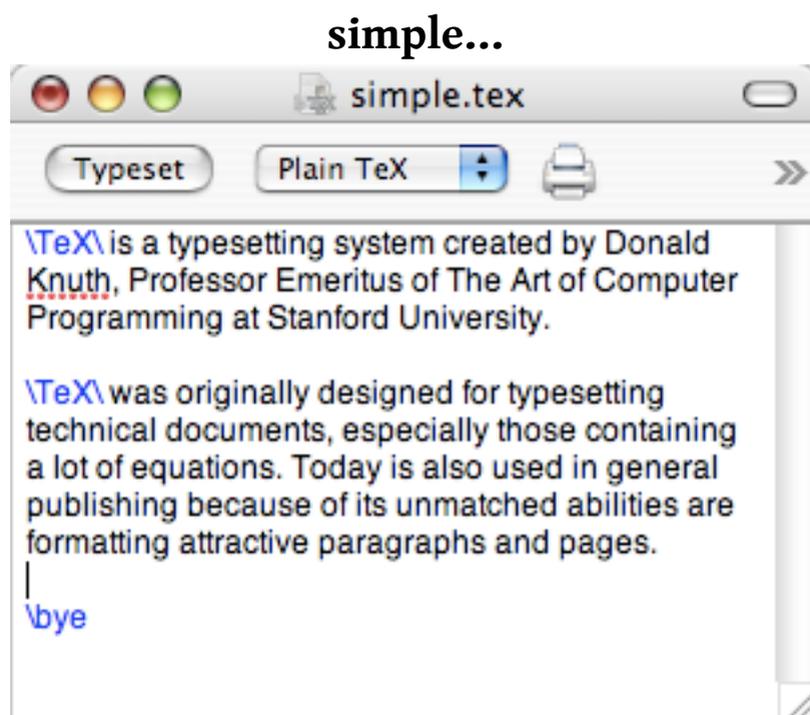
You can find more information on the front ends by visiting their websites:

⇒ TEXShop: http://www.uoregon.edu/~koch/texshop/
⇒ TEXworks: http://www.tug.org/texworks/
⇒ iTEXMac: http://itexmac.sourceforge.net/

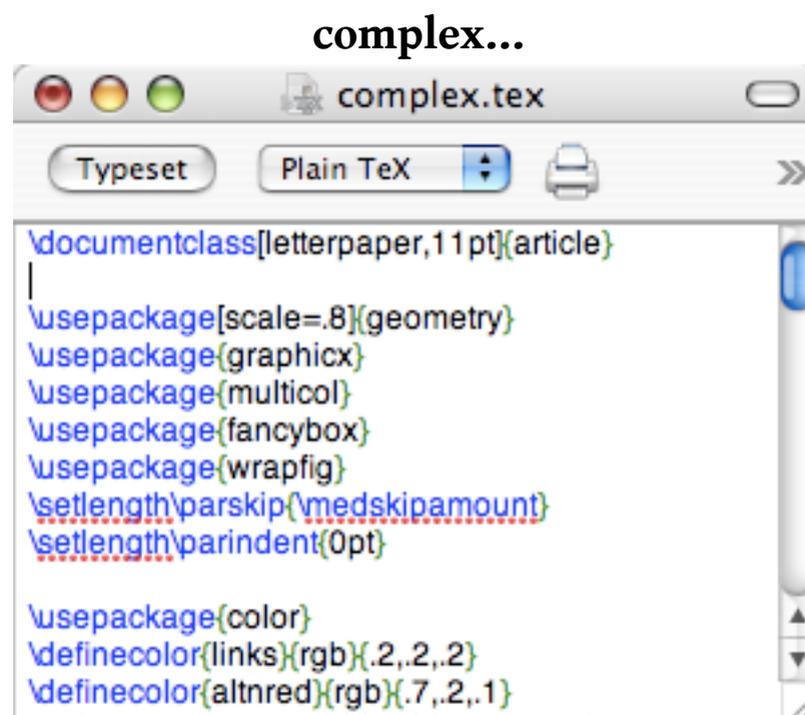# About the Learning Curve

For the things most people do, the effort needed to learn TeX is similar to that of learning a word processor with its style configurations. Learning and using TeX can be:

simple...   or...   **complex...**

```
simple.tex

Typeset    Plain TeX

\TeX\ is a typesetting system created by Donald
Knuth, Professor Emeritus of The Art of Computer
Programming at Stanford University.

\TeX\ was originally designed for typesetting
technical documents, especially those containing
a lot of equations. Today is also used in general
publishing because of its unmatched abilities are
formatting attractive paragraphs and pages.

\bye
```

```
complex.tex

Typeset    Plain TeX

\documentclass[letterpaper,11pt]{article}

\usepackage[scale=.8]{geometry}
\usepackage{graphicx}
\usepackage{multicol}
\usepackage{fancybox}
\usepackage{wrapfig}
\setlength\parskip{\medskipamount}
\setlength\parindent{0pt}

\usepackage{color}
\definecolor{links}{rgb}{.2,.2,.2}
\definecolor{altnred}{rgb}{.7,.2,.1}
```

...depending on your needs. Because of its precise typographical capabilities, the quality of TeX's output far exceeds that of any word processor.

Control Sequences, Macros and Formats

TeX includes hundreds of built-in formatting commands, called control sequences, such as `\sl` for *slanted* and `\bf` for **bold**. To simplify marking up text, control sequences can be combined into *macros*, such as `\heading` for ***bold slanted***, for example. Groups of macros can be collected into *formats* for generalized or specialized uses. Formats can set margins, number sections and paragraphs, build tables of contents and define colors, as examples. Three formats illustrating the diversity of TeX are:

LaTeX

Originally designed mostly for technical publishing, including math equations, LaTeX also supports many add-on *packages* for both special and general applications.

ConTeXt

ConTeXt is aimed at general publishing. ConTeXt is very structured, allowing you to design a document and then add text, almost without regard to the document formatting.

Eplain

Eplain TeX extends Plain TeX with indexes and tables of contents, for example. Eplain is *style-neutral*, without an underlying design influencing the structure of your documents.

All three, plus many more, are included with the MacTeX installer. You can also do-it-yourself, creating your own macros and formats, a common practice among experienced users.

LaTeX Resources—Online

The most widely used TeX format—and a good place to start with TeX—LaTeX was originally developed by Leslie Lamport and later refined by thousands. Many *packages* provide extra functions. Some helpful LaTeX starting places online include:

The Not So Short Introduction to LaTeX by Tobias Oetiker Hubert Partl, Irene Hyna and Elisabeth Schlegl. Summarizes basic concepts and control sequences in numerous languages.
http://mirror.unl.edu/ctan/info/lshort/

LaTeX for Word Processor Users by Guido Gonzato. Cross references familiar word processor commands with the equivalent LaTeX control sequences.
http://www.ctan.org/tex-archive/info/latex4wp/latex4wp.pdf

Online Tutorials for LaTeX by India TUG. For beginners, these cover lists, boxes, tables, floats, colors, footnotes, margin notes, bibliographies, math, tables of contents, indices...
http://www.tug.org/tutorials/tugindia/

Hypertext Help with LaTeX by Dr. Sheldon Green. Reference information for experienced users.
http://www.giss.nasa.gov/tools/latex/

LaTeX Resources—Books

There are many books on LaTeX, including:

LaTeX: A Document Preparation System by Leslie Lamport. Definitive book by the original developer of LaTeX. ISBN: 0201529831.

Guide to LaTeX (4th Edition) by Helmut Kopka and Patrick W. Daly. Attempts to cover all aspects of LaTeX, including most of the packages. ISBN: 0321173856.

LaTeX Companion, The (2nd Edition) by Frank Mittelbach, Michel Goossens, Johannes Braams and David Carlisle. Provides guidance on basic formatting. Includes detailed help on packages for tabular and technical typesetting. ISBN: 0201362996.

The LaTeX Web Companion: Integrating TeX, HTML, and XML by Michel Goossens, Sebastian Rahtz, Eitan M. Gurari and Ross Moore. Discusses using TeX and LaTeX with the web and XML. Not a beginner's book, but some of the tools, such as TeX4ht, make TeX to HTML conversions easy. ISBN: 0201433117.

LaTeX Graphics Companion by Michel Goossens, Sebastian Rahtz and Frank Mittelbach. Describes techniques and tricks needed to illustrate LaTeX documents. ISBN: 0201854694.

ConTEXt Resources

ConTEXt is another widely-used TEX format. It is very structured and modular, designed more for general publishing than LATEX. ConTEXt can work from XML source files. The primary developer of ConTEXt is Hans Hagen.

Good sources of information on ConTEXt are:

PRAGMA Advanced Document Engineering website This website is the home of ConTEXt. Here you can find documentation on using ConTEXt, plus updates.
http://www.pragma-ade.com/

ConTEXt Wiki This wiki include tutorials and tips by ConTEXt users.
http://wiki.contextgarden.net/

Mailing list for ConTEXt users You can get your ConTEXt questions answered here. Hans Hagen participates on this list.
http://www.ntg.nl/mailman/listinfo/ntg-context/

Plain TeX Resources

If you want to learn TeX from the ground up, Plain TeX is a technical place to start. Use it for a while, then modify and make your own macros. Resources include:

A *Gentle Introduction to TeX* by Michael Doob. Starts from the beginning and moves toward more complex usage. No previous knowledge of TeX is assumed.
http://ctan.tug.org/get/info/gentle/gentle.pdf

TeX Reference Card by J.H. Silverman. Summarizes frequently used commands in Plain TeX.
http://refcards.com/docs/silvermanj/tex/tex-refcard-letter.pdf
http://refcards.com/docs/silvermanj/tex/tex-refcard-a4.pdf

The *TeXbook* by Donald Knuth. Definitive book on TeX and Plain TeX by the developer of TeX. This is an excellent book if you want to understand TeX. Follow the instructions for multiple-pass reading. ISBN: 0201134489
http://www-cs-faculty.stanford.edu/~knuth/books.html

TeX for the Beginner by Wynter Snow. An older but very helpful book for learning Plain TeX, written in a accurate, understandable and sometimes whimsical style. ISBN: 0201547996

Other TeX Resources

TUG The TeX Users Group (TUG) is the local user group (LUG) for TeX users in North America and any area or language not supported by a local users group. It is run by its members and supported mostly through annual dues.
http://www.tug.org/

Local Users Groups Because TeX has extraordinary support for languages, local users groups are available worldwide.
http://tug.org/usergroups.html

CTAN This is the Comprehensive TeX Archive Network, the authoritative collection of materials related to the TeX typesetting system. Here you can download information, programs and packages about TeX, LaTeX, ConTeXt and more....
http://www.ctan.org/

The TeX Showcase The showcase contains examples of what you can do with TeX, macro packages such as LaTeX and ConTeXt, plus related programs like METAPOST.
http://www.tug.org/texshowcase/

Fonts for TeX—XƎTeX, ConTeXt and LuaTeX

Built-in Fonts

TeX comes with its own fonts, separate from the system fonts. Installing new TeX fonts is complicated and seldom done because of the availability of XƎTeXand LuaTeX, described below.

Fonts in ConTeXt

Using fonts in ConTeXt is fairly straight forward. You can download a fonts sampler from: http://pragma-ade.com/specials/fonts/fontspecial-s.pdf

XƎTeX

XƎTeX enables TeX and its variants to use Mac system fonts by merging Unicode and Mac OS X font technologies into TeX. XƎLaTeX typeset this document using the Gentium Book font. http://tug.org/xetex/

LuaTeX

LuaTeX offers native support for OpenType fonts. In contrast to XƎTeX, the fonts are not accessed through the operating system libraries, but through a library based on FontForge. http://www.luatex.org/

Mac OS X TeX/LaTeX Wiki & Mailing List

The *TeX on Mac OS X* wiki is a primary source for finding information about running TeX and its variations on a Macintosh.

The wiki was started in July 2008 as a replacement to the original TeX on Mac OS X website created by Gary L. Gray and Joseph C. Slater as a service to the Macintosh TeX community.

On this wiki you can find information and how-to instructions on TeX. It is located at:
http://mactex-wiki.tug.org/

You can also subscribe to the Mac-TeX mailing list:
http://mactex-wiki.tug.org/wiki/index.php/Mailing_lists

TEX Live and MacTEX

MacTEX is a complete installation of TEX Live, packaged for Mac OS X.

In addition to TEX Live, MacTEX installs:

⇒ Ghostscript
⇒ Conversion functions of ImageMagick
⇒ Latin Modern and TEX Gyre fonts in the OS X fonts folder
⇒ Several front end programs including TEXShop text editor for TEX, LaTEXiT equation editor, BibDesk bibliography manager and Excalibur spell checker.

Install options allow you to bypass installation of some of these packages.

The website for MacTEX is:

http://www.tug.org/mactex/

The website for TEX Live is:

http://www.tug.org/texlive/

Current Version of Welcome Doc

You can find the current version of this document at:

http://www.tug.org/mactex/

This document was prepared by Bob Kerstetter, who is responsible for its content, including any omissions and errors. Send your comments to tex@villagehiker.com.

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