TEXworks: lowering the barrier to entry

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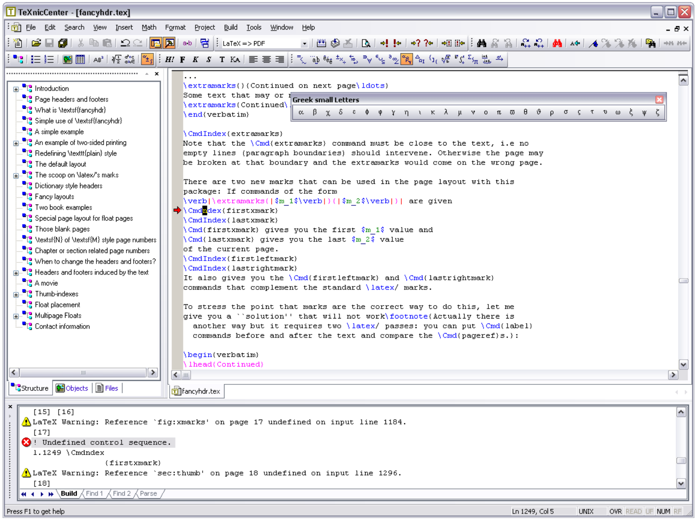
Approachable TeX?

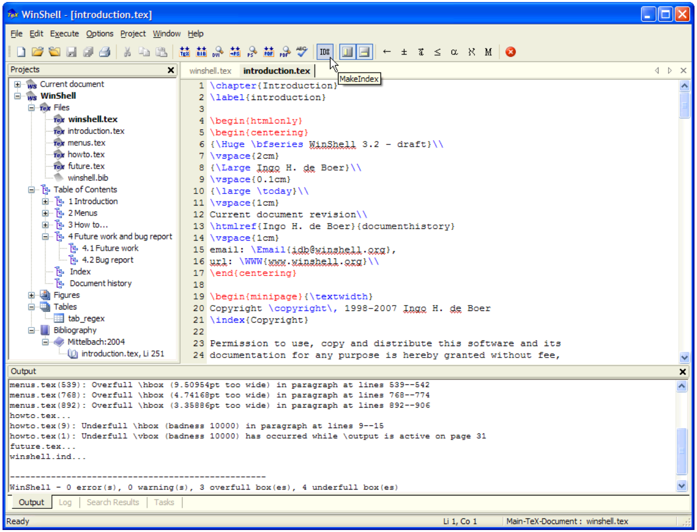

TeXnicCenter - [fancyhdr.tex]
File Edit Search View Insert Math Format Project Build Tools Window Help
LaTeX => PDF
Greek small Letters
α β χ δ ε ϕ φ γ η ι κ λ μ ν ο π ϖ θ ϑ ρ σ ς τ υ ω ξ ψ ζ
Structure Objects Files
fancyhdr.tex
Build Find 1 Find 2 Parse
Press F1 to get help
Ln 1249, Col 5 UNIX OVR READ UF NUM RF

- Introduction
- Page headers and footers
- What is \textsf{fancyhdr}
- Simple use of \textsf{fancyhdr}
- A simple example
- An example of two-sided printing
- Redefining \texttt{plain} style
- The default layout
- The scoop on \latex/'s marks
- Dictionary style headers
- Fancy layouts
- Two book examples
- Special page layout for float pages
- Those blank pages
- \textsf{N} of \textsf{M} style page numbers
- Chapter or section related page numbers
- When to change the headers and footers?
- Headers and footers induced by the text
- A movie
- Thumb-indexes
- Float placement
- Multipage Floats
- Contact information

```
...
\extramarks{}{Continued on next page\ldots}
Some text that may or n
\extramarks{Continued\
\end{verbatim}

\CmdIndex{extramarks}
Note that the \Cmd{extramarks} command must be close to the text, i.e no
empty lines (paragraph boundaries) should intervene. Otherwise the page may
be broken at that boundary and the extramarks would come on the wrong page.

There are two new marks that can be used in the page layout with this
package: If commands of the form
\verb|\extramarks{|$m_1$\verb|}{|$m_2$\verb|}| are given
\Cmdndex{firstxmark}
\CmdIndex{lastxmark}
\Cmd{firstxmark} gives you the first $m_1$ value and
\Cmd{lastxmark} gives you the last $m_2$ value
of the current page.
\CmdIndex{firstleftmark}
\CmdIndex{lastrightmark}
It also gives you the \Cmd{firstleftmark} and \Cmd{lastrightmark}
commands that complement the standard \latex/ marks.

To stress the point that marks are the correct way to do this, let me
give you a ``solution'' that will not work\footnote{Actually there is
  another way but it requires two \latex/ passes: you can put \Cmd{label}
  commands before and after the text and compare the \Cmd{pageref}s.}:

\begin{verbatim}
\lhead{Continued}
```

```
[15] [16]
LaTeX Warning: Reference `fig:xmarks' on page 17 undefined on input line 1184.
[17]
! Undefined control sequence.
l.1249 \Cmdndex
               {firstxmark}
LaTeX Warning: Reference `sec:thumb' on page 18 undefined on input line 1296.
[18]
```

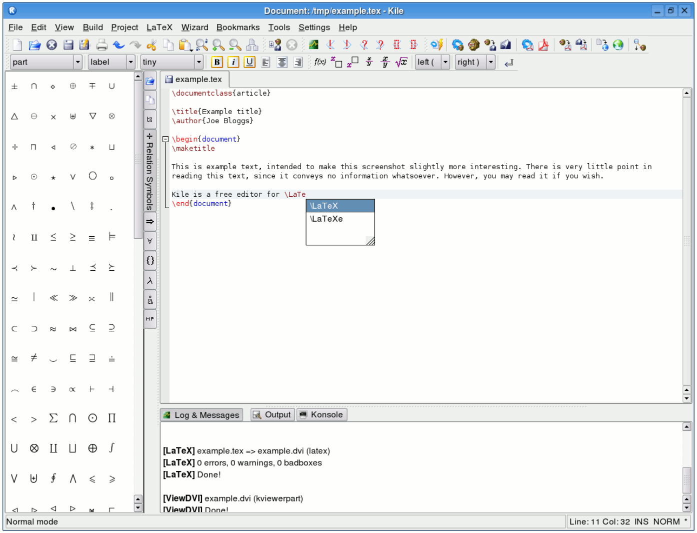
Approachable TEX?



```
\chapter{Introduction}
\label{introduction}

\begin{htmlonly}
\begin{centering}
{\Huge \bfseries WinShell 3.2 - draft}\\
\vspace{2cm}
{\Large Ingo H. de Boer}\\
\vspace{0.1cm}
{\large \today}\\
\vspace{1cm}
Current document revision\\
\htmlref{Ingo H. de Boer}{documenthistory}
\vspace{1cm}
email: \Email{idb@winshell.org},
url: \WWW{www.winshell.org}\\
\end{centering}

\begin{minipage}{\textwidth}
Copyright \copyright\, 1998-2007 Ingo H. de Boer
\index{Copyright}

Permission to use, copy and distribute this software and its
documentation for any purpose is hereby granted without fee,
```

```
menus.tex(539): Overfull \hbox (9.50954pt too wide) in paragraph at lines 539--542
menus.tex(768): Overfull \hbox (4.74168pt too wide) in paragraph at lines 768--774
menus.tex(892): Overfull \hbox (3.35886pt too wide) in paragraph at lines 892--906
howto.tex...
howto.tex(9): Underfull \hbox (badness 10000) in paragraph at lines 9--15
howto.tex(1): Underfull \vbox (badness 10000) has occurred while \output is active on page 31
future.tex...
winshell.ind...

--------------------------------------------------
WinShell - 0 error(s), 0 warning(s), 3 overfull box(es), 4 underfull box(es)
```

Approachable TEX?

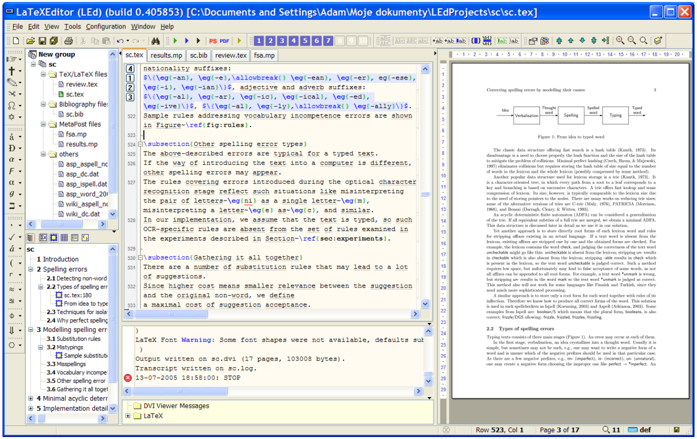

Document: /tmp/example.tex - Kile
File Edit View Build Project LaTeX Wizard Bookmarks Tools Settings Help
part
label
tiny
left (
right)
Relation Symbols
example.tex
Log & Messages
Output
Konsole
Normal mode
Line: 11 Col: 32 INS NORM

```
\documentclass{article}

\title{Example title}
\author{Joe Bloggs}

\begin{document}
\maketitle

This is example text, intended to make this screenshot slightly more interesting. There is very little point in
reading this text, since it conveys no information whatsoever. However, you may read it if you wish.

Kile is a free editor for \LaTe
\end{document}
```

```
\LaTeX
\LaTeXe
```

```
[LaTeX] example.tex => example.dvi (latex)
[LaTeX] 0 errors, 0 warnings, 0 badboxes
[LaTeX] Done!

[ViewDVI] example.dvi (kviewerpart)
[ViewDVI] Done!
```

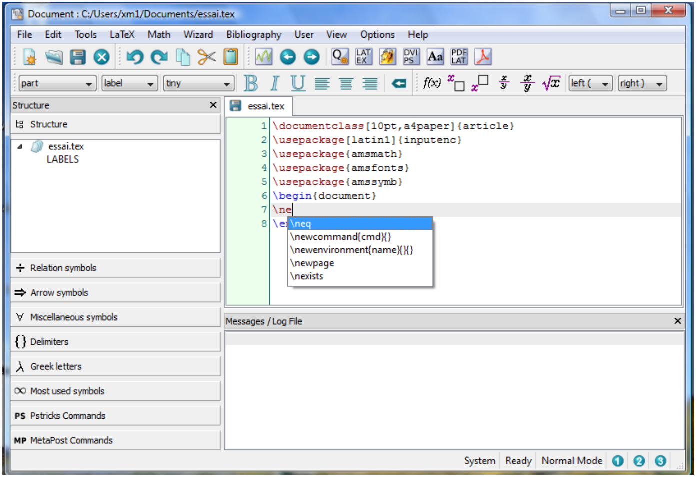
Approachable TEX?



```
nationality suffixes:
$\{\eg{-an}, \eg{-e},\allowbreak{} \eg{-ean}, \eg{-er}, eg{-ese},
\eg{-i}, \eg{-ian}\}$, adjective and adverb suffixes:
$\{\eg{-al}, \eg{-ar}, \eg{-ic}, \eg{-ical}, \eg{-ed},
\eg{-ive}\}$, $\{\eg{-al}, \eg{-ly},\allowbreak{} \eg{-ally}\}$.
Sample rules addressing vocabulary incompetence errors are shown
in Figure~\ref{fig:rules}.

\subsection{Other spelling error types}
The above-described errors are typical for a typed text.
If the way of introducing the text into a computer is different,
other spelling errors may appear.
The rules covering errors introduced during the optical character
recognition stage reflect such situations like misinterpreting
the pair of letters~\eg{ni} as a single letter~\eg{m},
misinterpreting a letter~\eg{e} as~\eg{c}, and similar.
In our implementation, we assume that the text is typed, so such
OCR-specific rules are absent from the set of rules examined in
the experiments described in Section~\ref{sec:experiments}.

\subsection{Gathering it all together}
There are a number of substitution rules that may lead to a lot
of suggestions.
Since higher cost means smaller relevance between the suggestion
and the original non-word, we define
a maximal cost of suggestion acceptance.
```

```
)
LaTeX Font Warning: Some font shapes were not available, defaults sub
 )
Output written on sc.dvi (17 pages, 103008 bytes).
Transcript written on sc.log.
13-07-2005 18:58:00: STOP
```

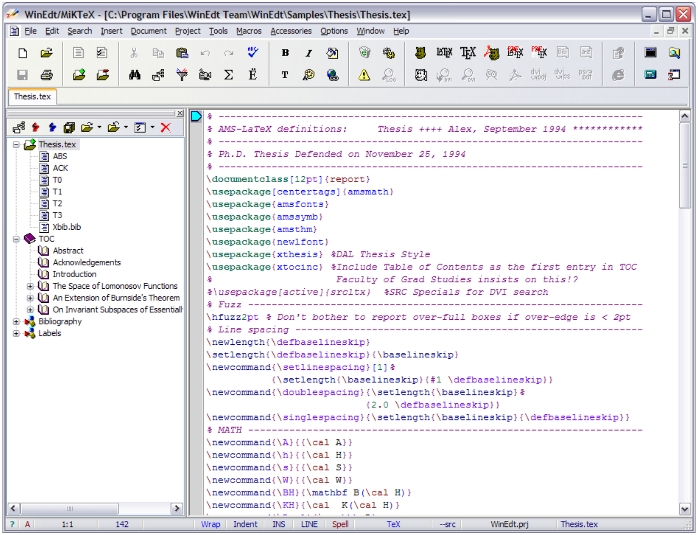
Approachable TEX?



```
\documentclass[10pt,a4paper]{article}
\usepackage[latin1]{inputenc}
\usepackage{amsmath}
\usepackage{amsfonts}
\usepackage{amssymb}
\begin{document}
\ne
\e
```

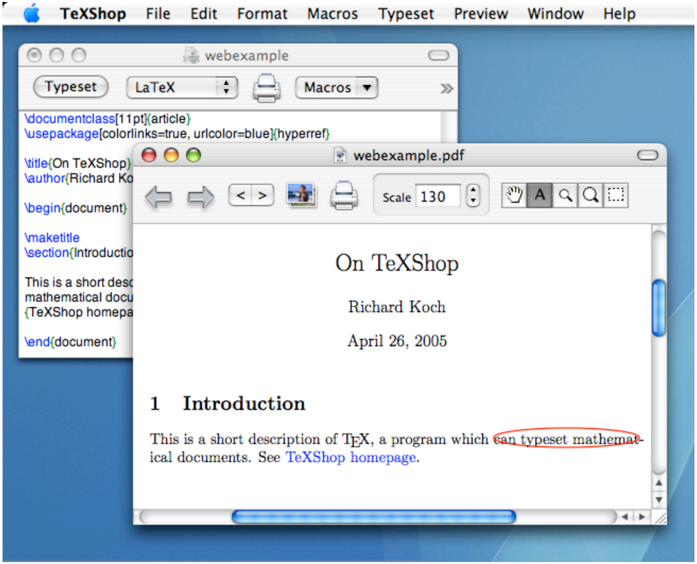
```
\neq
\newcommand{cmd}{}
\newenvironment{name}{}{}
\newpage
\nexists
```

Approachable $\TeX$?


WinEdt/MiKTeX - [C:\Program Files\WinEdt Team\WinEdt\Samples\Thesis\Thesis.tex]
File Edit Search Insert Document Project Tools Macros Accessories Options Window Help
Thesis.tex
Thesis.tex
ABS
ACK
T0
T1
T2
T3
Xbib.bib
TOC
Abstract
Acknowledgements
Introduction
The Space of Lomonosov Functions
An Extension of Burnside's Theorem
On Invariant Subspaces of Essentiall
Bibliography
Labels
? A 1:1 142 Wrap Indent INS LINE Spell TeX --src WinEdt.prj Thesis.tex

```
% -----------------------------------------------------------------------
% AMS-LaTeX definitions:     Thesis ++++ Alex, September 1994 ************
% -----------------------------------------------------------------------
% Ph.D. Thesis Defended on November 25, 1994
% -----------------------------------------------------------------------
\documentclass[12pt]{report}
\usepackage[centertags]{amsmath}
\usepackage{amsfonts}
\usepackage{amssymb}
\usepackage{amsthm}
\usepackage{newlfont}
\usepackage{xthesis} %DAL Thesis Style
\usepackage{xtocinc} %Include Table of Contents as the first entry in TOC
%                         Faculty of Grad Studies insists on this!?
%\usepackage[active]{srcltx}  %SRC Specials for DVI search
% Fuzz -----------------------------------------------------------------
\hfuzz2pt % Don't bother to report over-full boxes if over-edge is < 2pt
% Line spacing ---------------------------------------------------------
\newlength{\defbaselineskip}
\setlength{\defbaselineskip}{\baselineskip}
\newcommand{\setlinespacing}[1]%
           {\setlength{\baselineskip}{#1 \defbaselineskip}}
\newcommand{\doublespacing}{\setlength{\baselineskip}%
                           {2.0 \defbaselineskip}}
\newcommand{\singlespacing}{\setlength{\baselineskip}{\defbaselineskip}}
% MATH -----------------------------------------------------------------
\newcommand{\A}{{\cal A}}
\newcommand{\h}{{\cal H}}
\newcommand{\s}{{\cal S}}
\newcommand{\W}{{\cal W}}
\newcommand{\BH}{\mathbf B(\cal H)}
\newcommand{\KH}{\cal  K(\cal H)}
```

Approachable TEX! ☺



```
\documentclass[11pt]{article}
\usepackage[colorlinks=true, urlcolor=blue]{hyperref}

\title{On TeXShop}
\author{Richard Ko

\begin{document}

\maketitle
\section{Introductio

This is a short desc
mathematical docu
{TeXShop homepa

\end{document}
```

On TeXShop

Richard Koch

April 26, 2005

1 Introduction

This is a short description of TEX, a program which can typeset mathematical documents. See TeXShop homepage.

A TEX environment for newcomers

The introduction of TeXShop caused a TEX-boom among Macintosh users.[1]

One of the outstanding success stories of the TEX world in recent years has been Dick Koch's TeXShop environment for Mac OS X. Why has TeXShop proved so popular, among newcomers as well as experienced TEX users?

- clean, uncluttered user interface presenting only the essentials
  - "power user" features are not thrust on the new user
- simplified workflow based on PDF rather than DVI output
- user interface touches:
  - magnifying-glass tool
  - source $\leftrightarrow$ preview synchronization

[1] `http://en.wikipedia.org/wiki/TeXShop`

So what is TEXworks?

The TEXworks project is an effort to build a similar TEX front-end program that will be available for all today's major desktop operating systems—in particular, MS Windows (XP and Vista), typical Linux distros, and other X11-based systems, in addition to Mac OS X.

TEXworks was begun following discussions at a number of TUG meetings, particularly some conversations between Karl Berry, Dick Koch and Jonathan Kew. Initial design and development has received generous sponsorship through the TEX development fund.

Development approach

In order to deliver a free, robust, capable, portable application in a reasonable amount of time, TEXworks is being built on the foundation of two key open-source tools:

- the Poppler library for PDF support
- the Qt application framework

These in turn rely on additional components such as Freetype, Fontconfig, X11, zlib, etc., but Poppler and Qt are the primary dependencies of TEXworks itself.

The current code also relies on the Hunspell library for spell-checking, but this may change in the future.

Although Qt is particularly associated with the KDE desktop environment, it has a long history as a cross-platform application framework, and underlies a number of major applications (both free and commercial) on Windows and Mac OS X as well as Linux/X11.

TeXworks features

1. Simple GUI text editor
   - Unicode support using standard OpenType fonts
   - multi-level undo/redo
   - search & replace, with (optional) regex support
   - comment/uncomment lines, etc.
   - TeX/LaTeX syntax coloring
   - auto-completion for easy insertion of common commands
   - templates to provide a starting point for common document types

TEXworks features

2. Tools to execute TEX and related programs to create PDF
    - extensible set of TEX commands (with common commands such as pdftex, pdflatex, xelatex, context, etc. being preconfigured)
    - also support running BibTEX, Makeindex, etc.
    - any terminal output appears in a “console” panel of the document window; automatically hidden if no errors occur
    - “root document” metadata so “Typeset” works from an `\included` file

TeXworks features

3. Preview window to view the output
   - anti-aliased PDF display
   - automatically opens when TeX finishes
   - auto-refresh when re-typesetting (stay at same page/view)
   - TeXShop-like “magnifying glass” feature to examine detail in the preview
   - one-click re-typesetting from either source or preview
   - source $\leftrightarrow$ preview synchronization based on Jérôme Laurens’ SyncTeX technology

TeXworks features

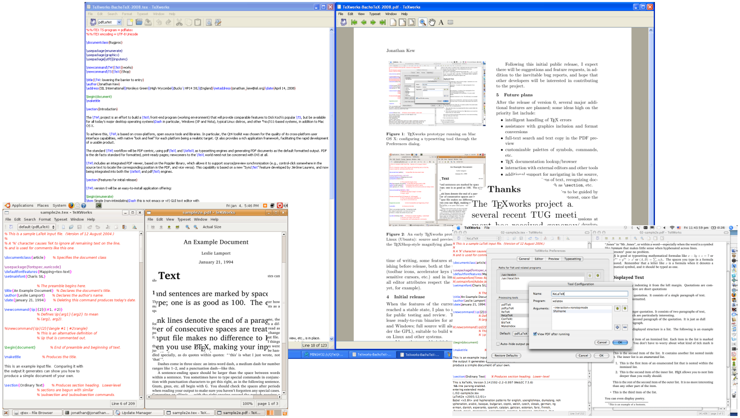
1. Simple GUI text editor
2. Tools to execute TeX and related programs
3. Preview window to view the output

TEXworks features

1. Simple GUI text editor
2. Tools to execute TEX and related programs
3. Preview window to view the output
4. Additional “power user” features
    - advanced editor features such as code folding
    - interaction with external editors and viewers
    - customizable toolbars, palettes, etc.
    - *but only if they can be added without cluttering or complicating the interface and the initial user experience*

Demo

Current pre-alpha TEXworks application



```
%%!TEX TS-program = pdflatex
%%!TEX encoding = UTF-8 Unicode

\documentclass{ltugproc}

\usepackage{enumerate}
\usepackage{graphicx}
\usepackage[utf8]{inputenc}

\newcommand{\TW}{\TeX{}works}
\newcommand{\TS}{\TeX{}Shop}

\title{\TW: lowering the barrier to entry}
\author{Jonathan Kew}
\address{SIL International\\Horsleys Green\\High Wycombe\\Bucks \ HP14 3XL\\England}\netaddress{jonathan_kew@sil.org}\date{April 14, 2008}

\begin{document}
\maketitle

\section{Introduction}

The \TW\ project is an effort to build a \TeX\ front-end program (working environment) that will provide comparable features to Dick Koch's popular \TS, but be available for all today's major desktop operating systems\Dash in particular, Windows (XP and Vista), typical Linux distros, and other *nix/X11-based systems, in addition to Mac OS X.

To achieve this, \TW\ is based on cross-platform, open source tools and libraries. In particular, the Qt4 toolkit was chosen for the quality of its cross-platform user interface capabilities, with native "look and feel" for each platform being a realistic target. Qt also provides a rich application framework, facilitating the rapid development of a usable product.

The standard \TW\ workflow will be PDF-centric, using pdf\TeX\ and \XeTeX\ as typesetting engines and generating PDF documents as the default formatted output. PDF is the de facto standard for formatted, print-ready pages; newcomers to the \TeX\ world need not be concerned with DVI at all.

\TW\ includes an integrated PDF viewer, based on the Poppler library, which allows it to support source/preview synchronization (e.g., control-click somewhere in the source text to locate the corresponding position in the PDF, and vice versa). This capability is based on a new "Sync\TeX" feature developed by Jérôme Laurens, and now being integrated into both the \XeTeX\ and pdf\TeX\ engines.

\section{Features for initial release}

\TW\ version 0 will be an easy-to-install application offering:

\begin{enumerate}
\item Simple (non-intimidating\Dash this is not emacs or vi!) GUI text editor with
```

Jonathan Kew

Figure 1: TEXworks prototype running on Mac OS X: configuring a typesetting tool through the Preferences dialog.

Figure 2: An early TEXworks prot… Linux (Ubuntu): source and previe… the TEXShop-style magnifying glass…

time of writing, some features st… ishing before release, both at the … (toolbar icons, accelerator keys i… sensitive cursors, etc.) and in im… all editor attributes respect the … yet, for example).

4 Initial release

When the features of the curre… reached a stable state, I plan to … for public testing and review. T… lease ready-to-run binaries for a… and Windows; full source will als… der the GPL), suitable to build w… on Linux and other systems.

Following this initial public release, I expect there will be suggestions and feature requests, in addition to the inevitable bug reports, and hope that other developers will be interested in contributing to the project.

5 Future plans

After the release of version 0, several major additional features are planned; some ideas high on the priority list include:

- intelligent handling of TEX errors
- assistance with graphics inclusion and format conversions
- full-text search and text copy in the PDF preview
- customizable palettes of symbols, commands, etc.
- TEX documentation lookup/browser
- interaction with external editors and other tools
- additional support for navigating in the source, …ns of text, recognizing doc… …h as \section, etc.

…es to be guided by …terest, once the …ussions at

Thanks

The TEXworks project a… several recent TUG meeti…

```
% This is a sample LaTeX input file.  (Version of 12 August 2004.)
%
% A '%' character causes TeX to ignore all remaining text on the line,
% and is used for comments like this one.

\documentclass{article}      % Specifies the document class

\usepackage{fontspec,xunicode}
\defaultfontfeatures{Mapping=tex-text}
\setmainfont{Charis SIL}

                             % The preamble begins here.
\title{An Example Document}  % Declares the document's title.
\author{Leslie Lamport}      % Declares the author's name.
\date{January 21, 1994}      % Deleting this command produces today's date.

\newcommand{\ip}[2]{(#1, #2)}
                             % Defines \ip{arg1}{arg2} to mean
                             % (arg1, arg2).

%\newcommand{\ip}[2]{\langle #1 | #2\rangle}
                             % This is an alternative definition of
                             % \ip that is commented out.

\begin{document}             % End of preamble and beginning of text.

\maketitle                   % Produces the title.

This is an example input file.  Comparing it with
the output it generates can show you how to
produce a simple document of your own.

\section{Ordinary Text}      % Produces section heading.  Lower-level
                             % sections are begun with similar
                             % \subsection and \subsubsection commands.
```

An Example Document

Leslie Lamport

January 21, 1994

Text

…nd sentences are marked by space …ype; one is as good as 100. The e…

…nk lines denote the end of a parag… …er of consecutive spaces are treat… …put file makes no difference to I… …en you use LATEX, making your inp… …dled specially, as do quotes within quotes: "'this' is what I just wrote, not 'that'".

Dashes come in three sizes: an intra-word dash, a medium dash for number ranges like 1–2, and a punctuation dash—like this.

A sentence-ending space should be larger than the space between words within a sentence. You sometimes have to type special commands in conjunction with punctuation characters to get this right, as in the following sentence. Gnats, gnus, etc. all begin with G. You should check the spaces after periods when reading your output to make sure you haven't forgotten any special cases.

Invitation

TEXworks is a free and open source software project, and you are invited to participate.

- use the prototype for some real work, and give feedback on what's good, what's bad, what's broken
    - if there's a current binary download available for your platform, try that
    - get the code and try building it on your platform; provide bug reports (and fixes!) for whatever problems show up
- dig in to the code, and submit patches to implement your favorite missing features

Invitation

TEXworks is a free and open source software project, and you are invited to participate.

- write documentation and tutorials for newcomers to TEXworks and TEX; both standalone documentation and pages suitable for on-line help are welcome
- review and enhance the command completion lists available for the integrated editor
- provide well-commented templates for various types of document
- design icons for the toolbars, etc.; TEXworks has some nice icons from Qt and the Tango project, but others are merely rough placeholders

Invitation

TeXworks is a free and open source software project, and you are invited to participate.

- use the Qt Linguist tool to localize the user interface for your language
- package TeXworks appropriately for your favorite GNU/Linux or BSD distribution, or create and maintain a proper installer for the Windows or Mac OS X platform

For more information

- TEXworks home page on tug.org:
  `http://tug.org/texworks/`
  - should include links to everything else
- development is hosted at Google Code:
  `http://code.google.com/p/texworks/`
  - source code repository
  - downloads of binary packages
  - issue tracker
  - wiki for developer notes