LaTeX: Typesetting Text, Math, and Graphs

Lincoln D. Durey, Ph.D.,
Adriane S. Durey, MSEE
EmperorLinux, Inc.

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1 Introduction

TeX is the document markup language and typesetting engine developed by Don Knuth. LaTeX is a modern set of TeX macro packages that make the parent language much more versatile and easier to use. In essence, LaTeX (`latex`) takes source code in `.tex` format, and generates an intermediate `.dvi` file, which is then processed by `dvips` to produce printable `.ps`. In a nutshell, TeX generates output by gluing rectangles of typeset material together. Several letters are glued together to form a word; several of these units are glued together to form paragraphs; paragraph units are glued to figure units and tables units, all of which are just rectangles, and these form the output page.

To compile your `.tex` files on the command line (see the man pages for additional options for `dvips`):

```
latex file.tex
dvips -t letter file -o
```

Or in a Makefile:

```
%.dvi: %.tex
                latex $< >& foo
                - bibtex $*
%.ps: %.dvi
                dvips -t letter -o $@ -C$(NUM) -D$(DPI) $<
```

The intermediate `.dvi` file is a *device independent* file which means that it contains all of the typesetting information, but it is not ready to be sent to a rendering device (printer). You may view these intermediate files with `xdvi`. For actual output by a physical printing device, you will need to convert this using a tool designed to generate the output you want: `dvips` makes PostScript files, `dvipdf` makes Proprietary Data Formats, you get the point from the names. (It is also possible to convert from `.ps` to `.pdf`, using `ps2pdf`.)

In the following sections, we will cover how to typeset a report and a letter. We'll cover how to create the finest looking math you have ever seen (Section 3); how to include tables (Section 4), figures, and images (Section 5) in your work; and how to cite references (Section 6).

1.1 Basic LaTeX File

All basic LaTeX files have at a bare minimum a declaration of the *class* of the document to be rendered, which may have options, and begin and end document tags. If you LaTeX a document at this stage, you won't get any errors, but you won't get any output. The further addition of LaTeX commands or plain text will be compiled into your output code, as in this example, the (nearly) smallest LaTeX that will compile. You will get a free page number at the bottom.

```
\documentclass{report}
\begin{document}
Hello, World!
\end{document}
```

The class declaration determines what style the rendered document will take, one particular document with no content change at all is rendered significantly differently simply by changing its class from `report` to `article`. Options to the different classes include paper size and orientation, font size, and more. They are specified as in `\documentclass[12pt,landscape]{book}`. Optional arguments in LaTeX are indicated by [ ] pairs, and required arguments by { }.

LaTeX source code is basically marked up plain text, so type in your full text, LaTeX it, and then begin adding your special items of which there are

many examples in this handout. The first things to modify in your text are to signify a paragraph break with a double carriage return (a blank line). You may add comments to your source code with the % character anywhere in a line (the rest of the line is a comment.) To comment a block of code, you must comment every single line. There are certain specific command related characters which must be escaped using a backslash to be represented after processing by LaTeX (examples include: #, %, &, etc. which are coded as `\#`, `\%`, `\&`).

Certain useful macros are pre-defined by LaTeX. Macros available in most class files include nicely formatted titles (`\title{Title}`), author name (`\author{Your Name}`), and date (`\date{\today}`). These are defined before the begin document tag, they are invoked inside the document using `\maketitle`. You may divide your source code into more manageable pieces by simply chopping it into many `.tex` files and including them into a master `.tex` file using `\input{subfile.tex}`. (These files do not require begin and end document tags, in fact those will break the compilation process; input simply drops the block of text in place of the input macro.) Every logical piece of a document is typically made into a section (`\section{Section Title}`), we therefore like to put each section into its own LaTeX file, which you can see in the source code for this handout.

More than you ever wanted to know about all of the available LaTeX commands can be found in [2] and [3]. There are also LaTeX packages to do things like slides (for Powerpoint-like slides, check out `prosper` [1]), to format your work for journal submissions, for music typesetting (MuSiXTeX), chemistry (), and many other things [1].

2 A Letter to Mom

There aren't too many differences between a letter and a report in LaTeX. To begin with, you define `\documentclass{letter}` and give yourself begin and end document tags as before. Then you need to define your addressing information (`\address{}`), name (`\name{}`), and signature line (`\signature{}`) (also generally your name) outside of the document tags.

Inside the document tags, you can then define multiple letters using

```
\begin{letter}{Mom's address}
Hello, Mom!
\end{letter}
```

[1] http://sourceforge.net/projects/prosper/

The begin letter tag takes a second argument, the recipient's address. Then you supply an `\opening{Dear John:}`, the letter body, and a `\closing{Sincerely,}`. Enclosures (`\encl{}`) and carbon copies (`\cc{}`) can also be added. Then, end your letter. No matter how many letters you put in the document tags, all will get their information about *you* from the macros at the beginning of the file. Just run `latex` and `dvips` as before.

This letter also gives two examples of lists, an enumerated list and an itemized list (descriptive lists exist as well.)

3 IEEE Math

Mathematical equations are a specialty of LaTeX. There isn't any equation out there that isn't easily described in the LaTeX language. You can put equations like $e = mc^2$ in the text (using `$e=mc^2$`). The $ denotes the start and end of in-line math. Or you can do equations outside the text, and they can be numbered or not. The names of the math macros are generally quite logical as for `\lim` $= \lim$, `\sum` $= \sum$, and `\alpha` $= \alpha$.

4 Tables

Tables are a wonderful way to present certain types of information. In LaTeX we need to first distinguish between two closely related environments with bearing on their construction. The first is the obvious `table`. This environment wraps around a conceptual table, a block of processed text, but does not itself create any content. `tabular` is what actually sets blocks of text and line grids together to make a readable table. In the `tabular` options `r, l, c` == right, left, center column justifications, and the | (pipe) creates the vertical lines. `\hline` makes the horizontal lines, & separates the columns, and \\ ends rows. Go forth and tabulate!

Other things that apply globally and occur in this example include the `\newcommand{}` directive, allowing you to write your own macros, and the `\caption{}` directive, which is self-explanatory.

5 Figures

Figures are really quite simple, like the `table` environment, a `figure` is simply a wrapper which signifies the block of imagery. Also, like the `table` environment, it takes a `\caption{}`. The actual content of a figure can be anything (even a `tabular`), but it is usually an image. The easiest way to include an image is using the `graphicsx` pack-

age which you must include (using `\usepackage{}`), which you can then tell that you are using the `dvips` post-processor. So, we can simply code `\includegraphics[width=3in,height=6cm]{figure.eps}` and produce a picture (where width and height are optional).

6 Citing Sources

To include references to works that you have cited in you research, you need a helper of LaTeX called bibTeX. bibTeX bibliography entries are stored in a `.bib` file. The attached `.bib` file contains entries for all of the common reference types and many obscure ones. To include a bibliography file in your document, you need to say `\bibliography{filename}`. To cite the references within your document, you simply use the command `\cite{keyword}`. Then to actually compile the bibliography into typesettable citation references you run bibTeX as:

```
latex file
bibtex file
latex file
latex file
dvips -t letter file -o
```

We know this seems like of extra compilation. Because LaTeX can only typeset the text that is available at run-time, the first run of LaTeX will not generate any citations (or table, figure, or section references). Running bibTeX generates two files, `.bbl` and `.blg`, which contain the typesetting data we need. We must run LaTeX a second time (and sometimes a third) for the citation numbers to register in the text. If we fail, we will see [?].

References

[1] Michel Goossens, Sebastian Rahtz, and Frank Mittelbach. *The LaTeX Graphics Companion: Illustrating Documents with TeX and PostScript.* Addison-Wesley, Reading, MA, 1997.

[2] Helmut Kopka and Patrick W. Daly. *A Guide to LaTeX 2ε: Document Preparation for Beginners and Advanced Users.* Addison-Wesley Publishing Company, Wokingham, England, second edition, 1995.

[3] Leslie Lamport. *LaTeX: A Document Preparation System User's Guide and Reference Manual.* Addison-Wesley Publishing Company, Reading, MA, second edition, 1994.


```
%       Written by Lincoln Durey, EmperorLinux Research, Nov 2001.

\documentclass[%                LaTeX2e uses classes (*.cls)
        10pt,%                  [10,11,12]pt point default
        letterpaper,%           [letter,legal,executive,a4,a5,b5]paper size
        landscape,%             turn on landscape
        twocolumn,%             [one,two]column layout
        oneside,%               [one,two]side page numbering style
%       openright,%             open[right,any] book style chapt. openings
        notitlepage,%           [title,notitle]page
%       draft,%                 black-bar the line-break failures
%       makeidx,%               makeidx.sty
]{article}%                     report

\RequirePackage[dvips]{graphicx}        % or \usepackage
        \setkeys{Gin}{draft=false}

\RequirePackage{doublespace}            % adds package only if not yet in
        \setstretch{1.0}                % 1=norm, 1.7=TU, 2=ds

\def\lddincludedir{/home/emperor}
        \input{\lddincludedir/latex/latex.lincoln}

\newcommand{\srccodewidth}{1.0\columnwidth}
\newcommand{\resutlpswidth}{1.0\columnwidth}
\setlength{     \textheight     }{      6.9in   } % port=9.5, ls=6.5
\setlength{     \textwidth      }{      9.5in   } % port=6.5, ls=9.5
\setlength{     \hoffset        }{      -0.3in  }
\setlength{     \voffset        }{      -1.0in  }

%       \makeglossary
        \makeindex
        \usepackage{makeidx}

\title{                 \LaTeX: Typesetting Text, Math, and Graphs      }

\author{                Lincoln D. Durey, Ph.D.,        \\
                        Adriane S. Durey, MSEE          \\
                        \EmperorLinux, Inc.             }
%\date{\today}
\date{Nov 07,2001}
\begin{document}
\maketitle                                      % title page
% \tableofcontents                              % table of contents
        \section{Introduction}          \input{intro.tex}       \label{sec:int}
        \subsection{Basic \LaTeX\ File} \input{basics.tex}      \label{ssec:bas}
        \section{A Letter to Mom}       \input{let.tex}         \label{sec:let}
        \section{IEEE Math}             \input{math.tex}        \label{sec:math}
        \section{Tables}                \input{tab.tex}         \label{sec:tab}
        \section{Figures}               \input{fig.tex}         \label{sec:fig}
                                        \input{pic.tex}
        \section{Citing Sources}        \input{bib.tex}         \label{sec:bib}

\bibliographystyle{plain}
\bibliography{bibdata}
%    \indexpg                   % diss.ind required for index to work
%       \input{make.ind}

\end{document}
```

Figure 1: Source: main.tex

```
\documentclass[12pt]{letter}
\setlength{     \textwidth      }{      6.5in   }       % 5.5in (article)
\setlength{     \textheight     }{      9.0in   }       % 7.5in (article)
\setlength{     \topmargin      }{      -0.5in  }       %
\setlength{     \oddsidemargin  }{      0.0in   }       %
\address{A Dorm Room on Campus \\
         Georgia Institute of Technology \\
         Atlanta, Georgia 30332}
\name{Michael Imamura}
\signature{Michael Imamura}
\date{November 6, 2001}
\begin{document}
\begin{letter}{Linux Users Group at Georgia Tech \\
               lugatgt-list@cyberbuzz.gatech.edu}

\opening{Fellow LUGs:}
{\bf Meeting:}
Wed Nov 07 2001 - 7:00 PM \\
Student Center, Room 359 \\
{\tt http://www.lugatgt.org/} \\
{\bf Schedule:}
\begin{enumerate}
\item Presentation: The \LaTeX\ Document System by Lincoln Durey \\
      (Rescheduled to this week) \\
      Learn about how LaTeX can be used to produce readable, well-organized,
      and good-looking documents.
\item InstallFest 11 Planning
\item Linux Q \& A
\item Linux news and discussion
\end{enumerate}
{\bf Website Updates:}
\begin{itemize}
\item (The website is currently down.  We are working to bring it back
  up as soon as possible).
\item Posted: Minutes for the Wed Oct 31 2001 meeting.
\end{itemize}
\closing{See you Wednesday,}
\encl{Minutes for the Wed Oct 31 2001 meeting}
\cc{Sonny Rao}
\end{letter}
\end{document}
```

Figure 2: Source: letter.tex

A Dorm Room on Campus
Georgia Institute of Technology
Atlanta, Georgia 30332

November 6, 2001

Linux Users Group at Georgia Tech
lugatgt-list@cyberbuzz.gatech.edu

Fellow LUGs:

Meeting:

Wed Nov 07 2001 - 7:00 PM
Student Center, Room 359
http://www.lugatgt.org/

Schedule:

1. Presentation: The LaTeX Document System by Lincoln Durey
   (Rescheduled to this week)
   Learn about how LaTeX can be used to produce readable, well-organized, and good-looking documents.
2. InstallFest 11 Planning
3. Linux Q & A
4. Linux news and discussion

Website Updates:

- (The website is currently down. We are working to bring it back up as soon as possible).
- Posted: Minutes for the Wed Oct 31 2001 meeting.

See you Wednesday,

Michael Imamura

encl: Minutes for the Wed Oct 31 2001 meeting

cc: Sonny Rao

Figure 3: Result: letter.ps

```
\documentclass{article}
\title{Do You Want to Become an IEEE Author?}
\author{}
\date{}
\newcommand{\beq}{\begin{equation}}
\newcommand{\eeq}{\end{equation}}
\begin{document}
\maketitle
\thispagestyle{empty}
\noindent Suppose you want to publish something that is as simple as
\beq
1 + 1 = 2 \label{eqn:orig}
\eeq
\noindent This is not a very impressive.  If you want your article to be
accepted by IEEE reviewers, you have to be more abstract.  So, you could
complicate the left hand side of the expression by using
\[ 1 = \ln (e) \mbox{ and } 1 = \sin^2 x + \cos^2 x \]
\noindent The right hand side can be stated as
\[ 2 = \sum^{\infty}_{n=0} \frac{1}{2^n} \]
\noindent Therefore, Eq.~(\ref{eqn:orig}) can be expressed more
``scientifically'' as:
\beq
\ln (e) + (\sin^2 x + \cos^2 x) = \sum^{\infty}_{n=0} \frac{1}{x^n}
\label{eqn:mid}
\eeq
\noindent which is far more impressive.  However, you should not stop here.
The expression can be further complicated by using
\[ 1 = \cosh (y) \sqrt{1 - \tanh^2 (y)} \mbox{ and } e = \lim_{z \rightarrow
0} \left(1 + \frac{1}{z} \right)^z \]
\noindent Eq.~(\ref{eqn:mid}) may therefore be written as
\beq
\ln \left[ \lim_{z \rightarrow 0} \left(1 + \frac{1}{z} \right)^z \right] +
(\sin^2 x + \cos^2 x) = \sum^{\infty}_{n=0}
\frac{\cosh (y \sqrt{1 - \tanh^2 y} )}{2^n}
\eeq
\noindent Note:  Other methods of a similar nature could also be used to
enhance your prestige, once you grasp the underlying principles.
\end{document}
```

Figure 4: Source: math_ieee.tex

Do You Want to Become an IEEE Author?

Suppose you want to publish something that is as simple as

$$1 + 1 = 2 \tag{1}$$

This is not a very impressive. If you want your article to be accepted by IEEE reviewers, you have to be more abstract. So, you could complicate the left hand side of the expression by using

$$1 = \ln(e) \text{ and } 1 = \sin^2 x + \cos^2 x$$

The right hand side can be stated as

$$2 = \sum_{n=0}^{\infty} \frac{1}{2^n}$$

Therefore, Eq. (1) can be expressed more "scientifically" as:

$$\ln(e) + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{1}{x^n} \tag{2}$$

which is far more impressive. However, you should not stop here. The expression can be further complicated by using

$$1 = \cosh(y)\sqrt{1 - \tanh^2(y)} \text{ and } e = \lim_{z \to 0} \left(1 + \frac{1}{z}\right)^z$$

Eq. (2) may therefore be written as

$$\ln \left[\lim_{z \to 0} \left(1 + \frac{1}{z}\right)^z \right] + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{\cosh(y\sqrt{1 - \tanh^2 y})}{2^n} \tag{3}$$

Note: Other methods of a similar nature could also be used to enhance your prestige, once you grasp the underlying principles.

Figure 5: Result: math_ieee.ps

```
\documentclass{article}
\bibliographystyle{plain}
\newcommand{\degree}[1]{\ensuremath{#1^{\circ}}}
\begin{document}
\pagestyle{empty}
\begin{table}
\centerline{
\begin{tabular}{|r||c|c|c|l|} \hline
{\it Reprojection} & \multicolumn{3}{|c|}{\it Largest Reduction of Curvature}
  & {\it Average} \\ \cline{2-4}
{\it Method} & {\it Original} & {\it Reprojected} & {\it at} &
  {\it Reduction} \\
 & {\it Curvature} & {\it Curvature} & {\it Rotation} & {\it of Curvature} \\
  \hline \hline
ZEEL & 0.0358 & 0.0245 & $\degree{45}$ & 0.0050 \\ \hline
ZEEL ext.\ & 0.0358 & 0.0245 & $\degree{45}$ & 0.0059 \\ \hline
Regridding & 0.0428 & 0.0166 & $\degree{75}$ & 0.0159 \\ \hline
Block & 0.0358 & 0.0103 & $\degree{45}$ & 0.0163 \\ \hline
\end{tabular}}
\caption{Reduction of curvature by each reprojection method\label{tbl:kreduce}}
\end{table}
The preceding table (see Table~\ref{tbl:kreduce}) is an excerpt from Adriane
Swalm's Master's thesis~\cite{swalm}.
\bibliography{bibdata}
\end{document}
```

Figure 6: Source: table.tex

Reprojection Method	*Largest Reduction of Curvature*			*Average Reduction of Curvature*
	Original Curvature	*Reprojected Curvature*	*at Rotation*	
ZEEL	0.0358	0.0245	45°	0.0050
ZEEL ext.	0.0358	0.0245	45°	0.0059
Regridding	0.0428	0.0166	75°	0.0159
Block	0.0358	0.0103	45°	0.0163

Table 1: Reduction of curvature by each reprojection method

The preceding table (see Table 1) is an excerpt from Adriane Swalm's Master's thesis [1].

References

[1] Adriane Swalm. Object recognition by equal area reprojection. Unpublished Master's Thesis, April 1998.

Figure 7: Result: table.ps

```
\documentclass{article}
\usepackage[dvips]{graphicx}
\graphicspath{{.}{/home/elf/emperor/lug/latextalk/}}
\begin{document}
\pagestyle{empty}
\begin{figure}
\centerline{\includegraphics[width=\textwidth]{nasty_circuit.eps}}
\caption{Circuit for Problem 1\label{fig:circuit}}
\end{figure}
\section{A Circuit Problem:}
\label{sec:p1}
Given $V_1 = 5 \mbox{V}$ in Figure~\ref{fig:circuit}, solve for $V_2, V_3, R_1,
R_2, R_3, I_1, I_2, L_1, C_1,$ and $C_2$.\footnote{This circuit was generated
using {\tt xfig} and exported to {\tt .eps} format using that program as well.}
\section{A Non-Circuit Problem:}
\label{sec:p2}
Completely ignoring your answer from Section~\ref{sec:p1}, solve for:
\[ i^{\pi^2} \]
\end{document}
```

Figure 8: Source: figure.tex

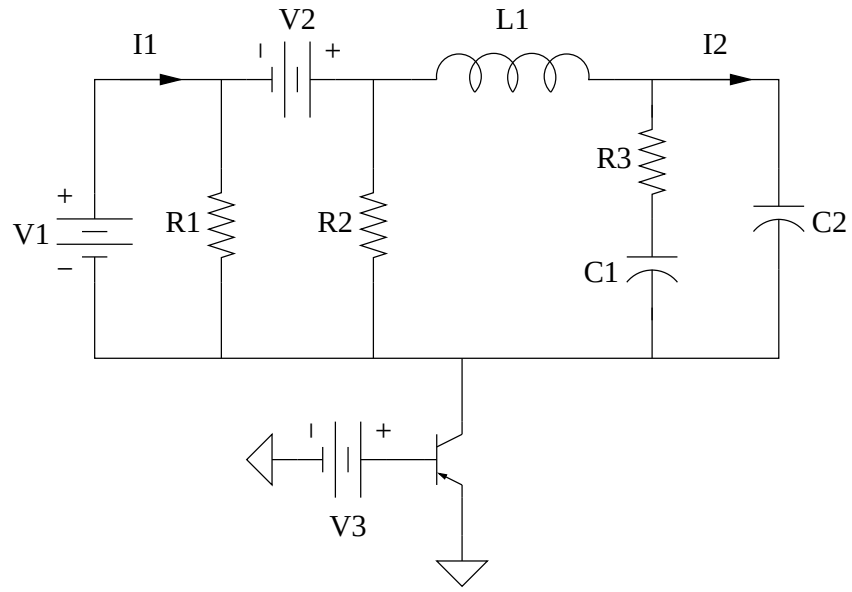


Figure 1: Circuit for Problem 1

1 A Circuit Problem:

Given $V_1 = 5\text{V}$ in Figure 1, solve for $V_2, V_3, R_1, R_2, R_3, I_1, I_2, L_1, C_1$, and C_2.[1]

2 A Non-Circuit Problem:

Completely ignoring your answer from Section 1, solve for:

$$i^{\pi^2}$$

[1] This circuit was generated using **xfig** and exported to **.eps** format using that program as well.

Figure 9: Result: figure.ps

```
\documentclass{article}
\usepackage[dvips]{graphicx}
\graphicspath{{.}{/home/elf/emperor/lug/latextalk/}}
\begin{document}
\pagestyle{empty}
\begin{figure}[t]
\centerline{\includegraphics{penguin_pix.eps}}
\caption{A Talented Emperor Penguin\label{fig:penguin}}
\end{figure}
This penguin (see Figure~\ref{fig:penguin}) knows The GIMP well enough to
create this self-portrait.  He saved it as a {\tt .tiff} file, then used
\begin{verbatim}
convert -density 300x300 penguin.tiff penguin.eps
\end{verbatim}
to create a \LaTeX\ friendly image.  He also knows Matlab well enough to
have generated the plots in Figures~\ref{fig:fig}~(a) and~(b).
\begin{figure}[bh]
\centerline{
\begin{tabular}{cc}
\includegraphics[width=0.45\textwidth]{waveform.ps} &
\includegraphics[width=0.45\textwidth]{specgram.ps} \\
(a) Original Waveform & (b) Spectrogram
\end{tabular}}
\caption{A couple of Matlab plots generated by our talented penguin.}
\label{fig:fig}
\end{figure}
\end{document}
```

Figure 10: Source: pictures.tex

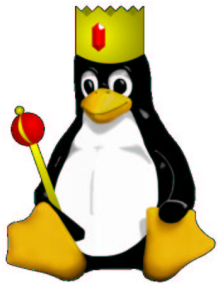
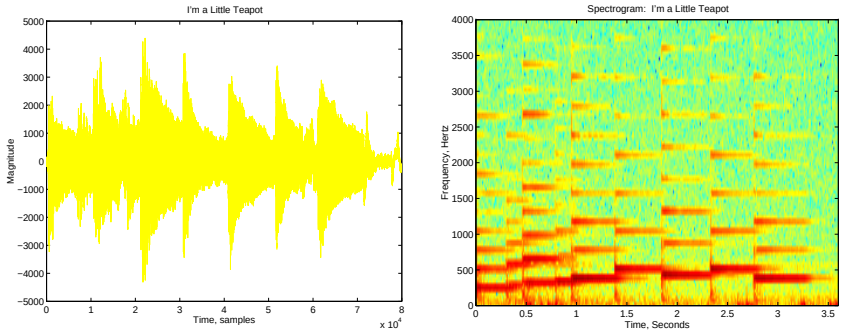


Figure 1: A Talented Emperor Penguin

This penguin (see Figure 1) knows The GIMP well enough to create this self-portrait. He saved it as a `.tiff` file, then used

```
convert -density 300x300 penguin.tiff penguin.eps
```

to create a LaTeX friendly image. He also knows Matlab well enough to have generated the plots in Figures 2 (a) and (b).



(a) Original Waveform (b) Spectrogram

Figure 2: A couple of Matlab plots generated by our talented penguin.

Figure 11: Result: pictures.ps

```
\documentclass{book}
\newcommand{\ptilde}{\symbol{126}}                    % b/c tildes don't print

\setlength{     \textwidth      }{      6.5in   }       % 5.5in (article)
\setlength{     \textheight     }{      9.0in   }       % 7.5in (article)
\setlength{     \topmargin      }{      -0.5in  }       %
\setlength{     \oddsidemargin  }{      0.0in   }       %
\bibliographystyle{plain}
%\bibliographystyle{abbrv}
\begin{document}
\pagestyle{empty}
%This is a citation of Lincoln's thesis~\cite{ddurey98}.
\nocite{*}
\bibliography{bibdata}
\end{document}
```

Figure 12: Source: viewbib.tex

Bibliography

[1] Isaac Asimov. The rocketing dutchmen. In Isaac Asimov, editor, *The Planet that Wasn't*, pages 172–184. Avon Books, New York, NY, 1976.

[2] Adriane Swalm Durey and Mark A. Clements. Melody spotting using hidden Markov models. In *Proceedings of the International Symposium on Music Information Retrieval*, pages 109–117, Bloomington, IN, October 2001.

[3] Lincoln Douglas Durey. *Plaid Data Model Fitting with Application to Hyperspectral Bathymetry*. Ph.D. dissertation, School of Electrical Engineering and Computer Science, Tulane University, April 1998.

[4] Tony Gale and Ian Main. GTK v1.2 tutorial. Available on the Internet: http://www.gtk.org/, February 2000.

[5] Michel Goossens, Sebastian Rahtz, and Frank Mittelbach. *The LaTeX Graphics Companion: Illustrating Documents with TeX and PostScript*. Addison-Wesley, Reading, MA, 1997.

[6] Helmut Kopka and Patrick W. Daly. *A Guide to LaTeX 2e: Document Preparation for Beginners and Advanced Users*. Addison-Wesley Publishing Company, Wokingham, England, second edition, 1995.

[7] Leslie Lamport. *LaTeX: A Document Preparation System User's Guide and Reference Manual*. Addison-Wesley Publishing Company, Reading, MA, second edition, 1994.

[8] Andrew Martinez. Personal correspondence on hyperspectral bathymetry, January 1998.

[9] MPEG Requirements Group. MPEG-7: Context, objectives and technical roadmap, v. 12. Technical Report N2861, International Organisation for Standardisation, July 1999. Available on the Internet: http://www.darmstadt.gmd.de/mobile/MPEG7/Documents/N2861.html.

[10] Steve Oualline. That's vimprovement! A better vi. *Linux Journal*, 82:140–146, February 2001.

[11] Adriane Swalm. Object recognition by equal area reprojection. Unpublished Master's Thesis, April 1998.

Figure 13: Result: viewbib.ps

```
%%%%%%%%%%%%%%%%% Articles %%%%%%%%%%%%%%%%%
@article{oualline,
        author = "Steve Oualline",
        title = "That's Vimprovement!  {A} Better {vi}",
        journal = "Linux Journal",
        year = "2001",
        volume = "82",
        pages = "140--146",
        month = "February"}
        % number = "",
%%%%%%%%%%%%%%%%% Books %%%%%%%%%%%%%%%%%
@book{goossens,
        author = "Michel Goossens and Sebastian Rahtz and Frank Mittelbach",
        title = "The {LaTeX} Graphics Companion:  Illustrating Documents with
        publisher = "Addison-Wesley",
        year = "1997",
        address = "Reading, MA"}
@book{kopka,
        author = "Helmut Kopka and Patrick W.\ Daly",
        title = "A Guide to \LaTeXe:\  Document Preparation for Beginners and
        publisher = "Addison-Wesley Publishing Company",
        year = "1995",
        address = "Wokingham, England"}
@book{lamport,
        author = "Leslie Lamport",
        title = "{LaTeX}: A Document Preparation System User's Guide and
        publisher = "Addison-Wesley Publishing Company",
        year = "1994",
        address = "Reading, MA"}
%%%%%%%%%%%%%%%%% Dissertations and Theses %%%%%%%%%%%%%%%%%
@phdthesis{ddurey98,
        author = "Lincoln Douglas Durey",
        title = "Bathymetric Data Model Fitting with Application to Hyperspectral
        school = "Indiana University",
        month = "April",
        year = "1998",
        type = "{Ph.D.}\ Dissertation"}
%%%%%%%%%%%%%%%%% In Collections %%%%%%%%%%%%%%%%%
@incollection{asimov,
        author = "Isaac Asimov",
        title = "The Rocketing Dutchmen",
        booktitle = "The Planet that Wasn't",
        publisher = "Avon Books",
        year = "1976",
        editor = "Isaac Asimov",
        address = "New York, NY",
        pages = "172--184"}
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Figure 14: Source: bibdata1.src.ps

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%%%%%%%%%%%%%%%%% Personal Correspondence %%%%%%%%%%%%%%%%%
@misc{martinez,
        author = "Andrew Martinez",
        title = "Personal correspondence on hyperspectral bathymetry",
        year = "1998",
        month = "January"}
%%%%%%%%%%%%%%%%% In Proceedings %%%%%%%%%%%%%%%%%
@inproceedings{adurey,
        author = "Adriane Swalm Durey and Mark A.\ Clements",
        title = "Melody Spotting Using Hidden {Markov} Models",
        booktitle = "Proceedings of the International Symposium on Music
        address = "Bloomington, IN",
        month = "October",
        year = "2001",
        pages = "109--117"}
        % volume = "",
%%%%%%%%%%%%%%%%% Technical Reports %%%%%%%%%%%%%%%%%
@techreport{mpeg,
        author = "{MPEG Requirements Group}",
        title = "{MPEG-7}:  Context, Objectives and Technical Roadmap, v.\ 12",
        institution = "International Organisation for Standardisation",
        year = "1999",
        number = "N2861",
        month = "July",
        note = "Available on the Internet:
          http://www.darmstadt.gmd.de/mobile/MPEG7/Documents/N2861.html"}
%%%%%%%%%%%%%%%%% Unpublished %%%%%%%%%%%%%%%%%
@unpublished{swalm,
        author = "Adriane Swalm",
        title = "Object Recognition by Equal Area Reprojection",
        note = "Unpublished Master's Thesis",
        month = "April",
        year = "1998"}
%%%%%%%%%%%%%%%%% On World Wide Web %%%%%%%%%%%%%%%%%
@misc{gale,
        author = "Tony Gale and Ian Main",
        title = "{GTK} v1.2 Tutorial",
        year = "2000",
        month = "February",
        howpublished = "Available on the Internet:  http://www.gtk.org/"}
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Figure 15: Source: bibdata2.src.ps