

JOHN WILEY & SONS PUBLISHERS

Author's Guide to Typesetting

Wiley Books

Using L^AT_EX

Monograph Book

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T_EXnology Inc.

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Using the Wiley L^AT_EX Monograph Book Style

Welcome to the use of Wiley L^AT_EX macro set for producing a monograph book!

You will find that most of the commands found in standard L^AT_EX will work exactly the same when you use them with these style files. The few new commands specifically for this style will be explained here.

CURRENT VERSION

Please make sure that you have the current version of the macro files and the documentation. If you have not downloaded the macro set rather recently, you might want to download it at the time that you are ready to use it for your book.

TECHNICAL SUPPORT

If you find that you are having a problem **after you have read this documentation carefully**, help may be had by sending email to Wiley LaTeX Support: Amy Hendrickson, amyh@texnology.com. If possible, please send a small file demonstrating the problem.

Some customization is also available. Please consult your editor for permission.

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THE FILES IN THE MONOGRAPH BOOK MACRO SET

Basic Macro Files

wileySix.cls Wiley LaTeX macro file, for 6x9 size used `\documentclass{wileySix}`
wileySev.cls Wiley LaTeX macro file, for 7x10 size used `\documentclass{wileySev}`

w-bookps.sty PostScript font file. You will probably need to edit this file to enter the PS font names found on your system

m-times.sty MathTime font file. (use only if you have MathTimes fonts)

Template and Sample files

w-bktml.tex Template file, for authors to use in making their own book.

w-bksamp.tex Sample file, showing different title page styles and other commands unique to this package.

w-bksamp.ind Sample index file to use with default LaTeX index

w-bksamp.srt Sample file index file with Wiley index system

w-bksamp.att Sample file to produce author index

Inserting .eps files

graphics.zip Graphics files, including graphicx.sty, used for including .eps files.

figsamp.eps Figure sample file, showing the use of the graphicx.sty commands for inserting .eps files, landscape tables and figures, in a single column and in a full page.

wiley.ps File to produce Wiley logo on titlepage of book.

Documentation

w-bkdocs.tex Documentation in LaTeX form. You may run LaTeX on this file and print it on your printer, or see it with your LaTeX preview program.

w-bkdocs.pdf Documentation in PDF form. Use Acrobat Reader to view it.

Bibliography

w-bksamp.bbl Sample bibliography file

sampbib.bib Sample bibliography database file

Solutions Answers

answers.sty Optional .sty file to allow authors with problem sets or exercises to type in the answer to the problem or exercise in the problem or exercise section but have the answers print at the end of the book.

QUICK START:

Brief Summary of Commands and Tips

Read this First!

This material is also found in `readme.txt`.

USE RIGHT SIZE CLS FILE!

Your book will either be 6x9 or 7x10 size, ask your editor if you are not sure which size should be used.

For, for 6 x 9 trim size: `\documentclass{wileySix}`

Or, for 7 x 10 size: `\documentclass{wileySev}`

Commands in both styles are identical, only the page size is different.

Using PostScript fonts

`\usepackage{w-bookps}` will bring in the PostScript font file. If `w-bookps` is not used the fonts used will be Computer Modern. For a finished appearance for your book, you are Strongly Recommended to use `w-bookps`.

You may need to edit `w-bookps.sty` so that the font names match those on your system. Check the top of `w-bookps.sty` for instructions.

Tip: When making your own commands, avoiding error message

If you want to make your own command, for "example", for instance, and you find that "example" has already been defined, you can type

```
\let\example\relax
and you can now enter
\newtheorem{example}{Example}[chapter]
without getting an error message.
```

Book Title

Set up the title and author information, to be used when you type in `\halftitlepage` and `\titlepage`

```
\booktitle{Enter book Title Here}
\subtitle{Optional, enter subtitle here}
\authors{First Author\
\affil{first author affil}
Second Author\
\affil{second author affil}
}
\halftitlepage
\titlepage
```

Halftitle and Titlepage, If changing font is necessary

If your title is too wide for the titlepage you can make the font for that page smaller by copying the following into your .tex file, after `\usepackage{w-bookps}`

```
\font\halftitlefont=\helveticabold at 20pt
and adjusting the font size a point or two smaller until the title will fit.
```

The same process can be followed if there is a problem on the titlepage.

```
\font\titlefont=\helveticabold at 27pt
```

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Offprintinfo

`\offprintinfo{}{}` Puts copyright info at the bottom of selected pages automatically. You must enter the command with the needed text before `\begin{document}`

Use `\offprintinfo{title, edition}{author}`

Can break lines if the title and edition text should break over lines:

```
\offprintinfo{Survey Methodology, \\ Second Edition}{Robert M. Groves}
```

Draft Version

Draft version: enter `\draft` before `\begin{document}` You'll get double spaced version, with draft footline.

Contents in Brief

If you want to start your book with a Contents in Brief, use `\contentsinbrief`

You will get only the chapter titles in this version of the contents.

Table of Contents Advice:

■ *Line breaks in Chapter or Section but NOT in TOC*

If you break lines in a chapter or section head, you probably will not want the same breaks to appear in the table of contents.

If you use `\\` in `\chapter{first line\\ second line}`, then add the optional square bracket argument:

```
\chapter[first line second line]{first line\\ second line}.
```

Follow the same sequence for breaking lines in section heads,

```
\section[first line second line]{first line\\ second line}.
```

■ *Line breaks in the TOC*

If you want line breaks in the TOC, you can add them in the square bracket argument and not in the actual chapter title or in other places in the chapter title:

```
\chapter[first line\\ second line]{first line second\\ line}
```

■ *Start a new page in the TOC, \newpage and \eject*

If you want to start a chapter heading on a new page in the TOC, you can type this in your .tex file, before `\chapter{}`

```
\addtocontents{toc}{\string\newpage}  
\chapter{This Chapter Title}
```

The command `\newpage` will start a new page in the TOC and fill in the bottom of the previous page with white space.

If you want the entries on that page to spread out vertically and the entries fill to the bottom of the page, use `\eject` instead:

```
\addtocontents{toc}{\string\eject}  
\chapter{This Chapter Title}
```

Preface, and Preface to First Edition

If you are doing a new edition of your book and want to include the original preface as well as a preface to the current edition, you can use `\begin{prefacefirst}... \end{prefacefirst}` for the original preface, and then the normal preface command for the current one:

```
\begin{prefacefirst}
Here is the preface to the first edition.
\prefaceauthor{R. K. Watts}
\where{Madison, Wisconsin\
September, 2001}
\end{prefacefirst}
```

```
\begin{preface}
here is a preface to the current edition
\prefaceauthor{R. K. Watts}
\where{Durham, North Carolina\
September, 2007}
\end{preface}
```

Chapter Headings

Short chapter title for running head
`\chapter{long title}`
`\markboth{short version}{short version}`

Short section running head:
`\section{Long version}`
`\markright{short version}`

Short version for Table of Contents and Running Heads:
`\chapter[Short Version]{long version}`
`\section[Short Version]{long version}`

When using `\` to break lines in chapter title, enter the title in square brackets without the `\`

```
\chapter[First line Second line]
{First line\ Second line}
```

`\thanks{}`

For footnote in chapter title, use `\thanks{}`
`\chapter{Chapter Title\thanks{Funded by NASA}}`

Bold Math

There are two ways to use the bold math fonts

1. `\mathbf{}` For example: $\mathbf{abc\alpha\beta\epsilon}$

But, you'll find that only `abc` gets bolded

2. `\doboold{}` For example: $\mathbf{abc}\doboold{\alpha\beta\epsilon}$,
will bold the math terms that don't ordinarily get bold, but they will also be italicized.

(Bold italic is the font that is available for these characters).

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Insert PostScript Illustrations, (.eps files preferred)

Use the graphicx package:

```
\usepackage[<your driver program>]{graphicx}
```

For <your driver program> you have these choices:

```
[dvips], [xdvi], [dvi pdf], [dvipsone], [dviwindo], [emtex], [dviwin],  
[pctexps], [pctexwin], [pctexhp], [pctex32], [truettex], [tcidvi],  
[oztex], [textures]
```

ie. `\usepackage[dvips]{graphicx}`

If you don't know the name of the driver program (the program that translates the .dvi file to a .ps file), choose dvips.

Rotate Tables or Figures

You must use

```
\usepackage[dvips]{graphicx} (Choose the right term in square brackets from the list above)
```

For Table (table caption always typed above table):

```
\begin{rotatetable}  
\caption{Here is caption}  
\centerline{\begin{tabular}... \end{tabular}}  
\end{rotatetable}
```

For Figure (figure caption always typed below figure):

```
\begin{rotatefigure}  
\centerline{\includegraphics[width=3in]{figsamp}}  
\caption{Here is a caption}  
\end{rotatefigure}
```

Centering Multiline Captions

This technique will work for either figure or table caption, and may be especially useful for multiline captions for rotated tables or figures.

To center a multiply lined caption over a centered table, for instance, you can type

```
\begin{table}  
\caption{\vtop{\hbox{first line of caption}  
\hbox{Second line of caption}{Third line of caption}  
}%end \vtop{  
}%end \caption{  
  
\centering  
\begin{tabular}  
...  
\end{tabular}  
  
\end{table}
```

Results will be

```
Table 1.1 First Line of caption
        Second line of caption
        Third line of caption
```

and the caption will be centered over the table

Examples

```
\begin{example}
Example text...
\end{example}
```

will produce an environment which starts with a large black square, and it is numbered, to call attention to the example.

Theorems etc. are not predefined in the Wiley macros

You can get any of these type of environments by using `newtheorem` and two arguments; the first for the name you will type in to use the new theorem. The second is the name as it will appear in the text.

For instance:

```
\newtheorem{theorem}{Theorem}
\newtheorem{lemma}{Lemma}
\newtheorem{corollary}{Corollary}
```

If you want chapter numbers as well as theorem numbers, you can add `[chapter]` at the end of each, ie,
`\newtheorem{theorem}{Theorem}[chapter]`

The command `\qed` may be used to get a small square to appear at the end of a proof.

More Tips

Words breaking over lines:

To keep a word from breaking over lines you can put it in an `hbox`: `\hbox{Dictionary}` will keep ‘Dictionary’ breaking over lines.

Hyphenation/nonhyphenation:

You can also keep a word from breaking over lines anywhere in the document by adding it to the `\hyphenation{}` list. This command can be used before `\begin{document}` and words can be entered without hyphenation, which will prevent them from breaking no matter where they are found.

You can also hyphenate words, that would not otherwise hyphenate correctly:

```
\hyphenation{dictionary, sym-bi-o-tic}
You can add as many words as you want.
```

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To keep text on one page:

You can use `\vtop{}` to keep text on one page:

```
\vtop{\begin{example} example text \end{example}}
```

Let text go down into bottom margin

Sometimes it might be helpful to have an extra line or two on your current page. You can use

```
\vtop to 0pt{text... \vss}\newpage
```

which will allow the text to continue down below the normal bottom margin.

Skips before section heads

Some LaTeX commands have the capability built in that they will get rid of the previous vertical skip.

You will see this if before a particular section head you type `\vskip-14pt\section{Here is section}` and be surprised that the spacing doesn't change. This is because an `\unskip` command is built into the definition of `\section{}`. To get around this, supply a very small skip and then the skip you want. The `\section` command will eat the small skip, and the skip you want will now work:

```
\vskip-14pt
\vskip1sp
\section{Here is the section head}
```

INDEXING Commands

You can use either the Wiley indexing commands or the default LaTeX indexing commands.

When to use Wiley index commands; when to use default LaTeX index commands?

If you use symbols in index, and want to use verbatim, ie. `\index{&@$}`, use default LaTeX index system.

Otherwise, use the Wiley indexing commands

Quick Summary of Wiley Index Commands

For terms to be indexed, use `\inxx{term}`

For subterm

```
\inxx{term,second term}
```

For subsubterm

```
\inxx{term,second term,third term}
```

To produce the index

1) Run Latex on file,

2) Run sort routine on file (ie. 'sort filename.inx > filename.srt' on DOS, other commands on other systems), to produce a filename.srt file.

IMPORTANT: Edit the .srt file to make sure ~ is at the End of the file.

3) Enter `\printindex` at end of book. This command will input `filename.srt` and print the index.

The index will be in two columns, sequences of page numbers for the same entry will automatically have a dash between them, and subheadings will fall underneath their major headings.

You can enter index commands in a figure or table caption, but please precede it with `\protect`, ie, `\caption{Text... \protect\inxx{engine}}`

Quick Summary of Default LaTeX Index Commands

Unlike the usual way of starting the index, do NOT write `\usepackage{makeidx}` after `\documentclass`. If you do you will get an error message.

You must write `\makeindex` before `\begin{document}` to open the file where the index information will be entered.

In the body of your document, write in `\index{term}` to have `term` appear in the index. For a subentry, write the primary entry followed by an exclamation mark, i.e., `\index{trees!pointy}`. For a subsub entry, follow a similar sequence: `\index{trees!pointy!green}`

When you run LaTeX on the file it will produce an `.idx` file. If you run each chapter separately you will have to combine all the separate `.idx` files into one file.

To alphabetize the index, you use the separate program, `makeindx`, entered on the command line.

```
makeindx filename
```

This will produce `filename.ind`

Now you may write `\latexprintindex` in your file, which will bring in the new `filename.ind`, formatted in two columns. Note: `\latexprintindex` is used with the Wiley `.cls` files, not `\printindex`.

END OF QUICK START

More complete information about making your index and other topics are found in the following sections.

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The Sample File

w-bksamp.tex is a sample file which shows examples of the commands that may be used in your article. You may run L^AT_EX on this file to compare the results with the mark-up code within the file. This alone should indicate how to format your article in most cases.

The Template File

A template file, w-bktmpl.tex is provided to make it easier to enter the the initial article commands in the correct order. It should be self-explanatory. You are strongly urged to use this file as the basis of your formatted article. To do this you should:

- Copy w-bktmpl.tex to <yourfile>.tex.
- Enter your text.

Starting Your Book: Setting Options

Below is the beginning of the w-bktmpl.tex file, which shows some options that you can set. Each of these items will be described a bit more in the following sections.

NOTE: Choose Book Page Size – Important!

For book style with pages that are 7 x 10 inches,

```
\documentclass{wileySev} %% for 7 x 10 inch book
```

For book style with pages that are 6 x 9 inches,

```
\documentclass{wileySix} %% for 6 x 9 inch book
```

! Ask your Wiley Editor if you are not sure which size you should use !

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%  
%% 1. Class File
```

```
%% For 7 x 10 trim size:  
\documentclass{wileySev}
```

```
%% Or
```

```
%% For 6 x 9 trim size  
\documentclass{wileySix}
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%  
%% 2. Post Script Font File(s)
```

```
% For TimesRoman Math (You must have MathTimes and MathTimes Plus  
% font sets, order fonts from www.yandy.com)  
\usepackage[mtbold,noTS1]{m-times}
```

```
% For PostScript text  
\usepackage{w-bookps}
```

(Continued on next page)

```

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% 3. Graphicx.sty for Including PostScript .eps files

%% If you don't have graphicx.sty available, unzip the graphics.zip
%% file included in this package.

% Choose one of these options, based on the system that you are using.
% If none look like your system, use dvips
% [dvips], [xdvi], [dviptdf], [dvipsone], [dviwindo], [emtex], [dviwin],
% [pctexps], [pctexwin], [pctexhp], [pctex32], [truetetex], [tcidvi],
% [loztex], [textures]

\usepackage[dvipsone]{graphicx}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% 4. Change options here if you want:
%%
%% How many levels of section head would you like numbered?
%% 0= no section numbers, 1= section, 2= subsection, 3= subsubsection
%%==>>
\setcounter{secnumdepth}{3}

%% How many levels of section head would you like to appear in the
%% Table of Contents?
%% 0= chapter titles, 1= section titles, 2= subsection titles,
%% 3= subsubsection titles.
%%==>>
\setcounter{tocdepth}{2}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%% 5. DRAFT
%
% Uncomment to get double spacing between lines, current date and time
% printed at bottom of page.
% \draft
% (If you want to keep tables from becoming double spaced also uncomment
% this):
% \renewcommand{\arraystretch}{0.6}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

PostScript Font Info

COMPUTER MODERN VS. POSTSCRIPT TEXT AND MATHTIMES FONTS

Authors can choose to use either Computer Modern or PostScript fonts, but for final production, the results will be much more handsome with PostScript. You may want to initially use WileySix.cls or WileySev.cls without the PS font files, and then add the PS fonts when you are finishing the typesetting of your book.

To use Computer Modern fonts:

```
\documentclass{wileySix} or \documentclass{wileySev}
```

To use the PostScript font files:

```
\documentclass{WileySix} or \documentclass{WileySev}
\usepackage{w-bookps} %% for PostScript text fonts
```

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FINAL PRODUCTION

In final production your book should be printed using PostScript text fonts and, optionally, MathTimes fonts for math. You may use Computer Modern fonts for text and math, but your book will have a more professional appearance if you use PostScript fonts.

You will probably need to edit the `w-bookps.sty` file, to customize it to use the font names that are on your system, as seen in the next section.

You can use PostScript text fonts by including the `w-bookps.sty` file,

```
\documentclass{WileySix} or \documentclass{WileySev}
\usepackage{w-bookps}
```

CUSTOMIZING THE FONT FILES

Most authors have at least some PostScript fonts on their system. The problem is that there are differing conventions for naming these fonts depending on your implementation of TeX. This means that we cannot provide one uniform PS font file for all authors.

To get around this problem, both the file `w-bookps.sty` and `m-times.sty` (below) are customizable.

These files are distributed with the Berry PostScript font names, as they are probably in the most widespread use at this time.

If you do need to change the font names, you only need to change the names for the Times and Helvetica fonts.

Please look at the top of the file, where you will see the lines you need to modify to have the PS font calls use the PS names found on your system. As soon as you have discovered what PS names are on your system you can make the appropriate substitutions.

You can find font names in the TeXtures menu, or, on other systems, by looking into the directory where the `.tfm` fonts are found and making your best guess as to what Times Roman, for example, is called.

In each case, the changes should be confined to the top part of the file. The lower part of the file will use the definitions you've written, and the rest of the style will be automatically customised to match the names of the fonts found on your system.

```
%% Change these definitions, if necessary =====>
%% Times-Roman
%-----
% (Berry font names)
\def\timesroman{ptmr}
\def\timesbold{ptmb}
\def\timesitalic{ptmri}
\def\timesbolditalic{ptmbi}

% (Y & Y font names)
%\def\timesroman{tir}
%\def\timesbold{tib}
%\def\timesitalic{tii}etc...
%% <==== End of changes needed. Do not make changes below this point.
%% !!!!!!!!!!!
```

MATHTIMES FONT SET

```
\usepackage{m-times}
```

Using MathTimes is optional, since not many authors have these fonts. Google for information about where to purchase these fonts if you want them. If you do buy Math Time fonts, you are strongly advised to also get Math Time Plus package, so that you can use the `mtbold` option: `\usepackage[mtbold]{m-times}`. If `mtbold` is **not** used, bold math will print as non-bold.

The `m-times.sty` file is also distributed with the Berry font names, so you may need to customize it as well. The changes that may be made are very similar to those which may be made to the `w-bookps.sty` file, and you should not have any problem with this. Information is found near the top of the `m-times.sty` file.

This style file will only produce TimeRoman math if you have both the Math Time and, for bold math, Math Time Plus font sets.

```
\documentclass{WileySix} or \documentclass{WileySev}
\usepackage[mtbold]{m-times}
\usepackage{w-bookps}
```

You may use the `noTS1` option, if you get an error message indicating that there are missing TS1 fonts: `\usepackage[mtbold,noTS1]{m-times}`

A description of the other optional arguments (taken from the file `mtoptions.txt`) is found at the end of the `m-times.sty`, after `\endinput`.

Graphicx.sty for Inserting PostScript Illustrations

If you would like to include `.eps` files you should use `graphicx.sty`, and the command `\includegraphics[options]{filename.eps}`

If you don't already have `graphicx.sty`, unzip `graphics.zip`, a file that is part of the Wiley L^AT_EX package. and you will have `graphicx.sty` available. You can also get `graphics.zip` by going to <http://www.ctan.org>, and searching for `graphics.zip`.

You should tune the `graphicx` package by selecting the driver program that is on your system and using that name as the optional argument:

```
\usepackage[<your driver program>]{graphicx} %i.e.,
% \usepackage[dvipsone]{graphicx}
```

Please choose the name that matches your program. If you don't see the name listed here, try `dvips`.

```
[dvips], [xdvi], [dvipdf], [dvipsone], [dviwindo], [emtex], [dviwin],
[pctexps], [pctexwin], [pctexhp], [pctex32], [truettex], [tcidvi],
[oztex], [textures]
```

For information on options when using the `graphicx.sty` command, `\includegraphics`, please see `grfguide.dvi`, which is included in the `graphics.zip` package.

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More Options

Near the top of the w-bktml file you will see the following text and commands. You may use these commands to change the format if you or your editor want these changes made:

```
%% How many levels of section head would you like numbered?
%% 0= no section numbers, 1= section, 2= subsection, 3= subsubsection
%%==>>
\setcounter{secnumdepth}{3}

%% How many levels of section head would you like to appear in the
%% Table of Contents?
%% 0= chapter titles, 1= section titles, 2= subsection titles,
%% 3= subsubsection titles.
%%==>>
\setcounter{tocdepth}{1}
```

DRAFT VERSION

You may use the command `\draft` immediately after the `\documentclass` command. This will provide ‘double spacing’ between lines for easy editing of your copy.

The draft command will also cause a line to appear at the bottom of each page containing the words ‘Draft’ with the current date and time that the file was \LaTeX ed.

(If you want to keep tables from becoming double spaced also uncomment this):

```
\renewcommand{\arraystretch}{0.6}
```

Making the Title Pages for Your Book

You can do the Title Page by following the commands found in the template file, w-bktempl.tex.

```

%% Title Pages

%% Setting up title pages:
\booktitle{}
\subtitle{}

\author{}
or
\authors{}

%% \\ will start a new line.
%% You may add \affil{} for affiliation, ie,
%\authors{Robert M. Groves\\
%\affil{Universitat de les Illes Balears}
%\Floyd J. Fowler, Jr.\\
%\affil{University of New Mexico}}

%% Print Half Title and Title Page:
\halftitlepage
\titlepage

%% Off Print Info

%% Add your info here:
\offprintinfor{title, edition}{author}

%% Can use \\ if title, and edition are too wide, ie,
%% \offprintinfo{Survey Methodology,\\ Second Edition}{Robert M. Groves}

%% Copyright Page

\begin{copyrightpage}{year}
Title, etc
\end{copyrightpage}

% Note, you must use \ to start indented lines, ie,
%
% \begin{copyrightpage}{2007}
% Survey Methodology / Robert M. Groves . . . [et al.].
% \p. cm.---(Wiley series in survey methodology)
% \ "Wiley-Interscience."
% ...
% \end{copyrightpage}

```

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Frontmatter

Notice the order of the frontmatter. Only the Dedication (optional) should be entered before the table of contents. You can see these commands in use by running \LaTeX on w-bksamp.tex and looking at the resulting w-bksamp.dvi file.

All these environments are optional, except for `\tableofcontents`

```
\dedication{}
\contentsinbrief %optional
\tableofcontents
\listoffigures %optional
\listoftables %optional

\begin{foreword}
text
\end{foreword}

\begin{preface}
text
\prefaceauthor{}
\where{place\
date}
\end{preface}

\acknowledgments
acknowledgment text
\authorinitials{} % ie, I. R. S.

\acronyms
\markboth{Acronyms}{Acronyms}
\acro{acronym}{meaning}
...

\introduction
```

Beginning Body of the Book

USING OPTIONAL SQUARE BRACKETS

`\title[]{}`, `\part[]{}`, `\chapter[]{}`, `\section[]{}` and `\subsection[]{}` all allow you to enter the title in square brackets in the way you'd like it to appear in the Table of Contents, and in curly brackets in the way that you want the title to appear on the page in the body of the article. You can use `\` to break lines in any of these commands within the curly brackets, and without `\` within square brackets. This means that you can break lines easily in the body of the article without causing confusion in the Table of Contents.

CHAPTER HEAD AND PROLOGUE

The chapter head is made as you would expect. Please note that you should supply whatever version of the chapter head you'd like to appear on the running head in square brackets, if it is different from the chapter head, especially if you have used `\`.

```
\chapter[The Submicrometer Silicon MOSFET]
{The Submicrometer\ Silicon MOSFET}
PROLOGUE
```

The prologue is an entirely optional addition to the title page. If you should choose to use a prologue, here is the command to use:

```
\prologue{This is a sample prologue}{Author Attribution}
```

Here is a sample beginning for a chapter:

```
\chapter[The Submicrometer Silicon MOSFET]
{The Submicrometer\ Silicon MOSFET}

\prologue{The sheer volumn of answers can often stifile insight...The purpose
of computing\inx{computing,the purpose} is insight, not numbers.}
{Hamming \cite{hamming}}
```

Here is the beginning of the chapter...

.....

CHAPTER 1

The Submicrometer Silicon MOSFET

The sheer volumn of answers can often stifile insight...The purpose of computing is insight, not numbers.

—Hamming [12]

Here is the beginning of the chapter...

Making Sections

Making section heads with the Wiley macros is just the same as normal \LaTeX :

```
\section{Sample Section Head}
Here is some normal text. Here is some normal text.
Here is some normal text. Here is some normal text.
Here is some normal text. Here is some normal text.
```

```
\subsection{This Is the Subsection}
Here is some normal text. Here is some normal text.
Here is some normal text. Here is some normal text.
```

```
\subsubsection{This Is the Subsubsection}
Here is some normal text. Here is some normal text.
Here is some normal text.
```

```
\paragraph{This Is a Paragraph}
Here is some normal text. Here is some normal text.
Here is some normal text.
```

.....

1.1 SAMPLE SECTION HEAD

Here is some normal text. Here is some normal text. Here is some normal text. Here is some normal text. Here is some normal text. Here is some normal text.

1.1.1 This is the subsection

Here is some normal text. Here is some normal text. Here is some normal text. Here is some normal text.

1.1.1.1 This is the subsubsection Here is some normal text. Here is some normal text. Here is some normal text.

This is a paragraph. Here is some normal text. Here is some normal text. Here is some normal text.

Tips On Special Section Heads

Here are some things you can do for special section heads.

You can use `\\` to start a new line in the `\section` and `\subsection`. When you use the `\\`, remember to also supply a name without `\\` within square brackets to send a section title to the Table of Contents without `\\` in it.

```
\section[This Version of Section Head will be sent Contents]
{Break Long Section heads\\ with double backslash}
Here is some normal text.
Here is some normal text.
Here is some normal text.
```

```
\section[This show how to explicitly break lines
\string\hfill\string\break\space in Table of Contents]
{Here is a Section Title}
See the code for this section head for information on
how to explicitly break lines in table of contents.
```

```
\section{How to get \lowercase{lower case} in section head:
\lowercase{$p$}$H$}
Here is some normal text.
Here is some normal text.
Here is some normal text.
```

.....

1.2 BREAK LONG SECTION HEADS WITH DOUBLE BACKSLASH

Here is some normal text. Here is some normal text. Here is some normal text.

1.3 HERE IS A SECTION TITLE

See the code for this section head for information on how to explicitly break lines in table of contents.

1.4 HOW TO GET lower case IN SECTION HEAD: *pH*

Here is some normal text. Here is some normal text. Here is some normal text.

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HOW TO MAKE A SECTION HEAD CONTAINING A MACRO WITH UPPER AND LOWER CASES

```
%% (This is entered before \begin{document})
%% To get a macro to expand correctly in a section head, with upper and
%% lower case math, put the definition and set the box
%% before \begin{document}, so that the table of contents will also
%% work:
\newcommand{\VT}[1]{\ensuremath{\{V_{T#1}\}}}
%% use a box to expand the macro before we put it into the section head:
\newbox\sectsavebox
\setbox\sectsavebox=\hbox{\boldmath\VT{xyz}}
```

...

```
\section{How to use a macro that has both upper and lower case parts:
\copy\sectsavebox}
The definition and box need to be set before the \verb+\tableofcontents+
command for the Contents to format correctly.
```

```
%% Sending different version of section to running head,
%% so that the size of math is correct in running head:
\markright{Sample macro \VT{\lowercase{xyz}} sent to running head}
```

.....

1.5 HOW TO USE A MACRO THAT HAS BOTH UPPER AND LOWER CASE

PARTS: V_{Txyz}

The definition and box need to be set before the `\tableofcontents` command for the Contents to format correctly.

Indented Text and Lists

The Wiley Monograph Book style uses standard \LaTeX methods to produce indented text and lists. Following are some examples of the results in this style.

TO INDENT TEXT:

If an example satisfies the seed of a clause, then it satisfies the clause as well. In addition, seeds have the following property:

```
\inxx{listing,itemize}
```

```
\begin{itemize}
```

```
\item[]
```

```
If a seed of clause  $c_T$ , and example  $\{\mathbf{x}\}$  satisfies  $c_T$  but not  $c$ , then  $\{\mathbf{x}\}$  has at least one attribute in  $c_T$  that is not in  $c$ .\hfill( $\{\tt*\}$ )
```

```
\end{itemize}
```

The procedure below...

.....

If an example satisfies the seed of a clause, then it satisfies the clause as well. In addition, seeds have the following property:

If a seed of clause c_T , and example \mathbf{x} satisfies c_T but not c , then \mathbf{x} has at least one attribute in c_T that is not in c . (*)

The procedure below...

BULLETED LIST

Here is an example of a bulleted list:

```
\begin{itemize}
```

```
\item
```

```
for every  $x \in A$  and for...
```

```
\item
```

```
for every  $x_1, x_2$  and for every...
```

```
\end{itemize}
```

-
- for every $x \in A$ and for...
 - for every x_1, x_2 and for every...
-

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NUMBERED LIST

Here is an example of a numbered list:

```
\begin{enumerate}
\item
If  $n/n_1=2$  then the Second multiplier Theorem holds without the
assumption, provided that one of the following conditions holds:

\begin{enumerate}
\item
The first situation.

\item
The second situation.
\end{enumerate}

\item
If  $n/n_1=3$  then in the majority of cases the assumption may be removed.
\end{enumerate}
```

-
1. If $n/n_1 = 2$ then the Second multiplier Theorem holds without the assumption, provided that one of the following conditions holds:
 - (a) The first situation.
 - (b) The second situation.
 2. If $n/n_1 = 3$ then in the majority of cases the assumption may be removed.
-

Captions

The commands for making table or figure captions are the same in this macro set as they are in normal L^AT_EX:

```
\begin{figure}
(optional space left here)
\caption{Here is the figure caption.}
\end{figure}
```

or,

```
\begin{table}
\caption{Here is the table caption.}
\begin{tabular}...
\end{tabular}
\end{table}
```

SIDE BY SIDE CAPTIONS

With this macro set there is an additional command that allows you to position a number of captions side by side in a single table or figure environment. In general terms, the macro is used like this:

```
\begin{figure or table} \sidebyside{}{} \end{figure or table}
```

Put a caption into each set of curly brackets and the captions will print next to each other:

```
\begin{figure}[ht]
\sidebyside{Space for figure...
\caption{This caption will go on the left side of
the page. It is the initial caption of two side-by-side captions.}}
{Space for second figure...
\caption{This caption will go on the right side of
the page. It is the second of two side-by-side captions.}}
\end{figure}
```

.....

Space for figure...

Space for second figure...

Figure 1.1 This caption will go on the left side of the page. It is the initial caption of two side-by-side captions.

Figure 1.2 This caption will go on the right side of the page. It is the second of two side-by-side captions.

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The command `\sidebyside{}{}` works similarly for tables:

```
\begin{table}
\sidebyside{\caption{Table Caption} first table}
{\caption{table caption} second table}
\end{table}
```

Table 1.1 Table Caption
first table

Table 1.2 Table Caption
second table

CAUTION WHEN CROSS REFERENCING

When using `\sidebyside`, one must use the cross referencing command `\label{}{}` after and *outside* of `\caption{}{}`:

```
\begin{table}
\sidebyside{
\caption{table caption}
\label{tab1}
first table
}
{
\caption{table caption}
\label{tab2}
second table
}
\end{table}
```

or,

```
\begin{figure}
\sidebyside{
\vskip<dimen>
\caption{fig caption}
\label{fig1}
}
{\vskip<dimen>
\caption{fig caption}
\label{fig2}
}
\end{figure}
```

Centering multiline captions

This will work for either figure or table caption, but if you want to center a multiply lined caption over a centered table, for instance, you can type

```
\begin{table}
\caption{\vtop{\hbox{first line of caption}
\hbox{Second line of caption}{Third line of caption}
}%end \vtop{
}%end \caption{

\centering
\begin{tabular}
...
\end{tabular}

\end{table}
```

Results will be

```
Table 1.1 First Line of caption
        Second line of caption
        Third line of caption
```

and the caption will be centered over the table

Making Tables

There are two aspects of making tables with this macro package that need to be mentioned.

First, you need to enter commands as you see in the section ‘Normal Tables’ below, in order to have the table have the correct appearance.

Second, since these table macros are made to make it easy to make tables with the correct appearance for this style, you must go to some extra effort if you want to make a table with vertical lines in it.

NORMAL TABLES

In order to make your table conform to the Wiley Monograph Book specification you must follow several steps.

- Use `\hline` underneath the column headers.
- You are discouraged from using vertical lines in tables, but if you must include vertical lines, you must also use `\savehline` instead of `\hline` or there will be a gap between the vertical and horizontal lines. (`\hline` has been redefined to add some vertical space above and below it.)
- Make your table span the full page width if possible.

The following example shows these steps being followed and the form of the table preamble that will cause the table to spread out to the width of the page:

```
\begin{table}[h]
\caption{This Is an Example Table Caption}
\begin{tabular*}{\hsize}{@{\extracolsep{\fill}}lcr}
$\alpha\beta\Gamma\Delta$ One&Two&Three\cr
\hline
one&two&three\cr
one&two&three\cr
\end{tabular*}
\end{table}
```

.....

Table 1.3 This Is an Example Table Caption

$\alpha\beta\Gamma\Delta$ One	Two	Three
one	two	three
one	two	three

MAKING TABLE NOTES

Table notes are made by entering the symbol that you want to use in math mode in a superscript. At the end of the table, please enter the command `\begin{tablenotes}` and enter the notes, as seen below.

```

\begin{table}[t]
\caption{Effects of the Two Types of Scaling Proposed by \protect\inx{Dennard}
and Co-Workers.{a,b}}
\begin{tabular*}{\textwidth}{@{\extracolsep{\fill}}lcc}
\hline
Parameter &  $\kappa$  Scaling &  $\kappa$ ,  $\lambda$  Scaling\cr
\hline
Dimension &  $\kappa^{-1}$  &  $\lambda^{-1}$ \cr
Voltage &  $\kappa^{-1}$  &  $\kappa^{-1}$ \cr
Current &  $\kappa^{-1}$  &  $\lambda/\kappa^2$ \cr
Dopant Concentration &  $\kappa$  &  $\lambda^2/\kappa$ \cr
\hline
\end{tabular*}
\begin{tablenotes}
aRefs. 19 and 20.

b $\kappa, \lambda > 1$ .
\end{tablenotes}
\end{table}

```

Table 1.4 Effects of the Two Types of Scaling Proposed by Dennard and Co-Workers.^{a,b}

Parameter	κ Scaling	κ, λ Scaling
Dimension	κ^{-1}	λ^{-1}
Voltage	κ^{-1}	κ^{-1}
Current	κ^{-1}	λ/κ^2
Dopant Concentration	κ	λ^2/κ

^aRefs. 19 and 20.

^b $\kappa, \lambda > 1$.

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TABLES WITH VERTICAL LINES

If at all possible to make your meaning clear without vertical lines, please leave them out.

However, if you really must use vertical lines, you must use `\savehline` instead of `\hline`. Here is the previous example, redone, using vertical lines. (Notice that we use `{tabular}` instead of `{tabular*}`)

```
\begin{tabular}{||l||c|c||}
\savehline
Parameter& $\kappa$ Scaling & $\kappa$, $\lambda$ Scaling\cr
\savehline
Dimension& $\kappa^{-1}$& $\lambda^{-1}$\cr
Voltage& $\kappa^{-1}$& $\kappa^{-1}$\cr
Currant& $\kappa^{-1}$& $\lambda/\kappa^2$\cr
Dopant Concentration& $\kappa$& $\lambda^2/\kappa$\cr
\savehline
\end{tabular}
```

Parameter	κ Scaling	κ, λ Scaling
Dimension	κ^{-1}	λ^{-1}
Voltage	κ^{-1}	κ^{-1}
Currant	κ^{-1}	λ/κ^2
Dopant Concentration	κ	λ^2/κ

But that looks pretty ugly, so we fix it by adding an extra letter to the end of the preamble, calling for a column that we never use, and that makes the vertical and horizontal lines meet correctly:

```
\begin{tabular}{||l||c|c||c}
\savehline
Parameter& $\kappa$ Scaling & $\kappa$, $\lambda$ Scaling\cr
\savehline
Dimension& $\kappa^{-1}$& $\lambda^{-1}$\cr
Voltage& $\kappa^{-1}$& $\kappa^{-1}$\cr
Currant& $\kappa^{-1}$& $\lambda/\kappa^2$\cr
Dopant Concentration& $\kappa$& $\lambda^2/\kappa$\cr
\savehline
\end{tabular}
```

Parameter	κ Scaling	κ, λ Scaling
Dimension	κ^{-1}	λ^{-1}
Voltage	κ^{-1}	κ^{-1}
Currant	κ^{-1}	λ/κ^2
Dopant Concentration	κ	λ^2/κ

The table on the previous page looks almost acceptable, but we can certainly improve it by adding more space above and below the lines in each column. We do this by adding this `@{\vrule height 11pt depth4pt width0pt\hskip\arraycolsep}`, to the preamble, which produces a vertical line with no width and some horizontal space in each line in the table:

```
\begin{tabular}
{||l@{\vrule height 11pt depth4pt width0pt\hskip\arraycolsep}||c|c|c}
\savehline
Parameter& $\kappa$ Scaling & $\kappa$, $\lambda$ Scaling\cr
\savehline
Dimension& $\kappa^{-1}$& $\lambda^{-1}$\cr
Voltage& $\kappa^{-1}$& $\kappa^{-1}$\cr
Currant& $\kappa^{-1}$& $\lambda/\kappa^2$\cr
Dopant Concentration& $\kappa$& $\lambda^2/\kappa$\cr
\savehline
\end{tabular}
```

Parameter	κ Scaling	κ, λ Scaling
Dimension	κ^{-1}	λ^{-1}
Voltage	κ^{-1}	κ^{-1}
Currant	κ^{-1}	λ/κ^2
Dopant Concentration	κ	λ^2/κ

Voila!

To Illustrate an Algorithm

The `\begin{algorithm}... \end{algorithm}` may be used to illustrate an algorithm.

- Spaces and blank lines will be preserved. Math and font changes may be used.
- Line beginnings may be positioned with a `\`, which may be used as many times as you need. A backslash followed by a space will provide a space a bit wider than the width of 2 ‘M’s.
- If you want to break lines on the screen but not break the line in the results, use ‘%’ at the end of line, as you see in the fifth line in this example.
- The command `\bit` will produce bold italics if you are using PostScript fonts, boldface in Computer Modern.
- `\note{}` will position the note on the right margin.

```

\begin{algorithm}
{\bit Evaluate-Single-FOE} ({\bf x}_f$, I$_{0}$, I$_{1}$}):
\ {\bf I}^+ := {\bf I}$$_{1}$;
\ ($\phi$, $\theta$) := (0,0);
\ {\it repeat}\note{/*usually only 1 interation required*/}
\ \ (s$_{opt}$){\bf E}$$_{\eta}$) := {\bit Optimal-Shift}%
  ({\bf I}$$_{0}$, I$^+$, I$_{0}$, x$_f$});
\ \ ($\phi^+$, $\theta^+$) := {\bit Equivalent-Rotation} ({\bf s}$$_{opt}$);
\ \ ($\phi$, $\theta$) := ($\phi$, $\theta$) + ($\phi^+$, $\theta^+$);
\ \ {\bf I}$^+ := {\bit Derotate-Image} ({\bf I}$$_{1}$, $\phi$, $\theta$);
\ \ {\it until} ($|\phi^+| \le \phi_{max}$ \& $|\theta^+| \le \theta_{max}$);
\ {\it return} ({\bf I}$^+, $\phi$, $\theta$, E$_{\eta}$).
End pseudo-code.
\end{algorithm}

```

Algorithm 1.1

```

Evaluate-Single-FOE (xf, I0, I1):
  I+ := I1;
  (φ, θ) := (0,0);
  repeat                                     /*usually only 1 interation required*/
    (sopt Eη) := Optimal-Shift (I0, I+, I0, xf);
    (φ+, θ+) := Equivalent-Rotation (sopt);
    (φ, θ) := (φ, θ) + (φ+, θ+);
    I+ := Derotate-Image (I1, φ, θ);
    until (|φ+| ≤ φmax & |θ+| ≤ θmax);
  return (I+, φ, θ, Eη).
End pseudo-code.

```

Problem Sets

The commands need to make problem sets are: `\begin{problems}... \end{problems}`, `\prob` and `\subprob`. You may make side-by-side problems using the command `\sidebysideprob{}{}` with two arguments; and side-by-side sub problems using the command `\sidebysidesubprob{}{}`.

Here is an example:

```

\begin{problems}
\prob
For Hooker's data, Problem 1.2, use the Box and Cox and Atkinson procedures
to determine a appropriate transformation of PRES
in the regression of PRES on TEMP. find  $\hat{\lambda}$ ,  $\tilde{\lambda}$ ,
the score test, and the added variable plot for the score.
Summarize the results.

\prob
The following data were collected in a study of the effect of dissolved sulfur
on the surface tension of liquid copper (Baes and Killogg, 1953).

{\centering\vskip6pt
\begin{tabular}{rlcc}
\hline
&&\multicolumn{2}{ $\$Y\$ = Decrease in Surface Tension\}$ \\
\multicolumn{2}{ $\$x\$ = Weight \% sulfur\}$ 
&&\multicolumn{2}{(dynes/cm), two Replicates}\\
\hline
0.&034&301&316\\
0.&093&430&422\\
0.&30&593&586\\
\hline
\end{tabular}\vskip6pt
}

\subprob
Find the transformations of  $X$  and  $Y$  sot that in the transformed scale
the regression is linear.

\subprob
Assuming that  $X$  is transformed to  $\ln(X)$ , which choice of  $Y$  gives
better results,
 $Y$  or  $\ln(Y)$ ? (Sclove, 1972).

\sidebysidesubprob{In the case of  $\alpha_1$ ?}{In the case of  $\alpha_2$ ?}

\prob
Examine the Longley data, Problem 3.3, for applicability of assumptions of the
linear model.

\sidebysideprob{In the case of  $\Gamma_1$ ?}{In the case of  $\Gamma_2$ ?}
\end{problems}

```

.....

PROBLEMS

1.1 For Hooker's data, Problem 1.2, use the Box and Cox and Atkinson procedures to determine a appropriate transformation of PRES in the regression of PRES on TEMP. find $\hat{\lambda}$, $\tilde{\lambda}$, the score test, and the added variable plot for the score. Summarize the results.

1.2 The following data were collected in a study of the effect of dissolved sulfur on the surface tension of liquid copper (Baes and Killogg, 1953).

$x =$ Weight % sulfur	$Y =$ Decrease in Surface Tension (dynes/cm), two Replicates
0. 034	301 316
0. 093	430 422
0. 30	593 586

- a) Find the transformations of X and Y sot that in the transformed scale the regression is linear.
- b) Assuming that X is transformed to $\ln(X)$, which choice of Y gives better results, Y or $\ln(Y)$? (Sclove, 1972).
- c) In the case of α_1 ?
- d) In the case of α_2 ?

1.3 Examine the Longley data, Problem 3.3, for applicability of assumptions of the linear model.

- 1.4** In the case of Γ_1 ?
 - 1.5** In the case of Γ_2 ?
-

Exercise Sets

The commands need to make exercise sets are: `\begin{exercises}... \end{exercises}`, `\exer` and `\subexer`. You may make side-by-side exercises using the command `\sidebysideexer{}{}` with two arguments; and side-by-side sub exercises using the command `\sidebysidesubexer{}{}`; as you can see in the example below. Resulting text is on the following page.

```

\begin{exercises}
\exer
For Hooker's data, Exercise 1.2, use the Box and Cox and Atkinson procedures
to determine a appropriate transformation of PRES
in the regression of PRES on TEMP. find  $\hat{\lambda}$ ,  $\tilde{\lambda}$ ,
the score test, and the added variable plot for the score.
Summarize the results.

\exer
The following data were collected in a study of the effect of dissolved sulfur
on the surface tension of liquid copper (Baes and Killogg, 1953).

{\centering\vskip6pt
\begin{tabular}{rlcc}
\hline
&&\multicolumn{2}{ $Y$ = Decrease in Surface Tension}\\
\multicolumn{2}{ $x$  = Weight \% sulfur}
&\multicolumn{2}{(dynes/cm), two Replicates}\\
\hline
0.034&301&316\\
0.093&430&422\\
0.30&593&586\\
\hline
\end{tabular}\vskip6pt
}

\subexer
Find the transformations of  $X$  and  $Y$  so that in the transformed scale
the regression is linear.

\subexer
Assuming that  $X$  is transformed to  $\ln(X)$ , which choice of  $Y$  gives
better results,
 $Y$  or  $\ln(Y)$ ? (Sclove, 1972).

\sidebysidesubexer{In the case of  $\Delta_1$ ?}{In the case of  $\Delta_2$ ?}

\exer
Examine the Longley data, Problem 3.3, for applicability of assumptions of the
linear model.

\sidebysideexer{In the case of  $\Gamma_1$ ?}{In the case of  $\Gamma_2$ ?}
\end{exercises}

```


Entering Solutions, and Solution section

For a solution section at the end of your book, and the ability to enter Solutions within the Problem or Exercise sections, enter

```
\usepackage{answers}
before \begin{document}
```

Then either in the Problems or the Exercises environment, enter the solution to each or selected problems, or exercise, after either the `\prob` command and problem text, or after the `\exer` command and exercise text:

```
\begin{sol}
Solution text
\end{sol}
```

For example:

```
\begin{problems}
\prob
First exercise
```

```
\begin{sol}
Here is the first solution
\end{sol}
```

```
\prob
Here is the second problem.
```

```
\begin{sol}
Here is the second solution
\end{sol}
```

```
\end{problems}
```

The problems, or exercises, will be numbered sequentially throughout each chapter.

Printing the Solutions

At the end of the book type in

```
\solutions
```

and `\solutionchap{}` or `\solutionappendix{}` with the chapter number or appendix letter, for each chapter or appendix where solutions were written, ie,

```
\solutions
\solutionchap{1}
\solutionchap{2}
\solutionappendix{A}
\solutionappendix{B}
```

Ending the Chapter, Ending the Book: References

There are several commands that can be used at the end of a chapter or at the end of the book. To distinguish between them we have `\chapreferences` and `\references` and `\chapappendix` and `\appendix`. The commands are used in the same way but are formatted differently when they appear in the body of the chapter as opposed to the end of the book.

In addition we have the Glossary and Index commands to use at the end of the book, which we will see in examples in following sections.

Chapter References

References are done as in most \LaTeX styles, written in a reference section with each reference preceded by `\bibitem{<biblabe>}`. The `\cite{<biblabe>}` command should be used to reference the bibliography labels. Here is an example using `\chapreferences`:

As seen in reference `\cite{beren}`, we can definitely conclude.

```
\begin{chapreferences}
\bibitem{kilby}J. S. Kilby,
‘‘Invention of the Integrated Circuit,’’ {\it IEEE Trans. Electron Devices,}
{\bf ED-23,} 648 (1976).

\bibitem{hamming}R. W. Hamming, {\it Numerical Methods for Scientists and
Engineers}, Chapter N-1, McGraw-Hill, New York, 1962.

\bibitem{beren}A. Berenbaum, B. W. Colbry, D.R. Ditzel, R. D Freeman, and
K.J. O’Connor, ‘‘A Pipelined 32b Microprocessor with 13 kb of Cache Memory,’’
{\it Int. Solid State Circuit Conf., Dig. Tech. Pap.,} p. 34 (1987).
\end{chapreferences}
```

.....

As seen in reference [3], we can definitely conclude.

REFERENCES

1. J. S. Kilby, ‘‘Invention of the Integrated Circuit,’’ *IEEE Trans. Electron Devices*, **ED-23**, 648 (1976).
 2. R. W. Hamming, *Numerical Methods for Scientists and Engineers*, Chapter N-1, McGraw-Hill, New York, 1962.
 3. A. Berenbaum, B. W. Colbry, D.R. Ditzel, R. D Freeman, and K.J. O’Connor, ‘‘A Pipelined 32b Microprocessor with 13 kb of Cache Memory,’’ *Int. Solid State Circuit Conf., Dig. Tech. Pap.*, p. 34 (1987).
-

ALTERNATE REFERENCE FORM: CHAPTER NAMED REFERENCES

To use the name-and-year form of reference, follow this example. Notice that you supply the widest bib term in curly brackets after {namedchapreferences}.

Sample named chapter reference citation: [kil76], [ham62].

```
\begin{namedchapreferences}{kill}
\bibitem[kill]{kilby}J. S. Kilby,
‘‘Invention of the Integrated Circuit,’’ {\it IEEE Trans. Electron Devices,}
{\bf ED-23,} 648 (1976).

\bibitem[ham]{hamming}R. W. Hamming,
        {\it Numerical Methods for Scientists and
        Engineers}, Chapter N-1, McGraw-Hill,
        New York, 1962.

\bibitem[hum]{Hu}J. Lee, K. Mayaram, and C. Hu, ‘‘A Theoretical
        Study of Gate/Drain Offset in LDD MOSFETs’’
        {\it IEEE Electron Device Lett.,} {\bf EDL-7}(3). 152
        (1986).
\end{namedchapreferences}
```

.....

Sample named chapter reference citation: [kil76], [ham62].

REFERENCES

[kil76] J. S. Kilby, ‘‘Invention of the Integrated Circuit,’’ *IEEE Trans. Electron Devices*, **ED-23**, 648 (1976).

[ham62] R. W. Hamming, *Numerical Methods for Scientists and Engineers*, Chapter N-1, McGraw-Hill, New York, 1962.

[hum86] J. Lee, K. Mayaram, and C. Hu, ‘‘A Theoretical Study of Gate/Drain Offset in LDD MOS-FETs’’ *IEEE Electron Device Lett.*, **EDL-7**(3). 152 (1986).

Using BibTeX for your Chapter References

Using BibTeX is a bit more effort, but the major advantage is that you can build a database of your references that you can reuse for other books or articles. To use BibTeX in an edited book you must use two new commands: `\chapbblfile` and `\chapbibliography`, explained below. Follow these steps:

Make a .bib file

If you do not already have one or more .bib files, make a `xxx.bib` file, with 'xxx' being any file name you choose. The .bib file or files are a database of references. Please see Leslie Lamport's *L^AT_EX A Document Preparation System* for information on the form of entries in the .bib file.

Supply a Bibliography style

```
\bibliographystyle{plain}
```

Make sure that `plain.bst` in the same directory where you are working, or in a directory where BibTeX can find it when it is running.

Supply a .bbl file name

Write `\chapbblfile{<name of your bbl file>}` with the name of your bbl file being the name of the file you are writing, i.e, if you are working in a file named `chap1.tex`, the name you should supply is

```
\chapbblname{chap1}
```

Run BibTeX on your file to produce a .bbl file

Write either `\cite{<label>}` or `\nocite{<label>}` for each reference that you want to appear in the bibliography. Each citation will make a matching entry appear in the bibliography.

`\cite` will produce a printed citation, `\nocite` will not print, but in either case the citation will appear in the finished bibliography.

Next you must write `\chapbibliography{xxx}`, with 'xxx' being the name of the .bib database file that you have written. You can also use more than one .bib file, in which case you must separate the filenames with a comma: `\chapbibliography{xxx,yyy}`.

For example:

```
Here are some more citations
\cite{dms80}, \cite{gm91}, \cite{hzm77}, \cite{hb85},
\cite{kt78}. \nocite{kl94}
```

```
\bibliographystyle{plain}
\chapbblname{chap1}
\chapbibliography{bkbib}
```

Run BibTeX on the file. If the file is named `chap1.tex` you will produce a file named `chap1.bbl`.

Run L^AT_EX on your file to print your references

The next time you Run L^AT_EX on your file your references will appear.

! Be sure to send the .bbl file to Wiley at the same time you send your .tex file. !

References in End Matter

To make a reference section at the end of the book, you use the either usual \LaTeX commands, or `\begin{namedreferences}... \end{namedreferences}`

```

\begin{references}
\bibitem{kilby}J. S. Kilby,
‘‘Invention of the Integrated Circuit,’’ {\it IEEE Trans. Electron Devices,}
{\bf ED-23,} 648 (1976).

\bibitem{hamming}R. W. Hamming,
        {\it Numerical Methods for Scientists and
        Engineers}, Chapter N-1, McGraw-Hill,
        New York, 1962.

\bibitem{Hu}J. Lee, K. Mayaram, and C. Hu, ‘‘A Theoretical
        Study of Gate/Drain Offset in LDD MOSFETs’’
        {\it IEEE Electron Device Lett.,} {\bf EDL-7} (3). 152
        (1986).

\bibitem{beren}A. Berenbaum,
B. W. Colbry, D.R. Ditzel, R. D Freeman, and
K.J. O’Connor, ‘‘A Pipelined 32b Microprocessor with 13 kb of Cache Memory,’’
{\it Int. Solid State Circuit Conf., Dig. Tech. Pap.,} p. 34 (1987).
\end{references}

```

.....

References

1. J. S. Kilby, ‘‘Invention of the Integrated Circuit,’’ *IEEE Trans. Electron Devices*, **ED-23**, 648 (1976).
 2. R. W. Hamming, *Numerical Methods for Scientists and Engineers*, Chapter N-1, McGraw-Hill, New York, 1962.
 3. J. Lee, K. Mayaram, and C. Hu, ‘‘A Theoretical Study of Gate/Drain Offset in LDD MOSFETs’’ *IEEE Electron Device Lett.*, **EDL-7**(3). 152 (1986).
 4. A. Berenbaum, B. W. Colbry, D.R. Ditzel, R. D Freeman, and K.J. O’Connor, ‘‘A Pipelined 32b Microprocessor with 13 kb of Cache Memory,’’ *Int. Solid State Circuit Conf., Dig. Tech. Pap.*, p. 34 (1987).
-

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ALTERNATIVE REFERENCE FORM: END OF BOOK NAMED REFERENCES

To use the name-and-year form of references at the end of the book, follow this example. Notice that you supply the widest bib term in curly brackets after `{namedchapreferences}`.

Sample named reference citation: [kil76], [ham62].

```
\begin{namedreferences}{hum86}
\bibitem[kil76]{xkilby}J. S. Kilby,
‘‘Invention of the Integrated Circuit,’’ {\it IEEE Trans. Electron Devices,}
{\bf ED-23,} 648 (1976).

\bibitem[ham62]{xhamming}R. W. Hamming,
    {\it Numerical Methods for Scientists and
    Engineers}, Chapter N-1, McGraw-Hill,
    New York, 1962.

\bibitem[hum86]{xHu}J. Lee, K. Mayaram, and C. Hu, ‘‘A Theoretical
    Study of Gate/Drain Offset in LDD MOSFETs’’
    {\it IEEE Electron Device Lett.,} {\bf EDL-7}(3). 152
    (1986).
\end{namedreferences}
```

.....

Sample named reference citation: [kil76], [ham62].

References

- [kil76] J. S. Kilby, ‘‘Invention of the Integrated Circuit,’’ *IEEE Trans. Electron Devices*, **ED-23**, 648 (1976).
- [ham62] R. W. Hamming, *Numerical Methods for Scientists and Engineers*, Chapter N-1, McGraw-Hill, New York, 1962.
- [hum86] J. Lee, K. Mayaram, and C. Hu, ‘‘A Theoretical Study of Gate/Drain Offset in LDD MOSFETs’’ *IEEE Electron Device Lett.*, **EDL-7**(3). 152 (1986).
-

USING BIBTEX FOR YOUR REFERENCES AT THE END OF THE BOOK

BibTeX is a separate program which can be used with L^AT_EX to produce a database file and build a bibliography.

To use BibTeX for references at the end of the book follow these steps:

1. Make a xxx.bib file, with 'xxx' being any file name you choose. This is the database file including all the references. The form that these entries should take is described in the L^AT_EX book.
2. In your .tex file enter `\bibliographystyle{plain}`.
 Next you must write `\bibliography{xxx}`, with 'xxx' being the name of the .bib database file that you have written. You can also use more than one .bib file, in which case you must separate the filenames with a comma: `\bibliography{xxx,yyy}`.
3. Write either `\cite{<label>}` or `\nocite{<label>}` for each reference that you want to appear in the bibliography. `\cite` will produce a printed citation, `\nocite` will not print, but in either case the citation will appear in the finished bibliography.
4. Run Latex on the .tex document, producing the usual .aux file.
5. Run BibTeX on the .tex document, producing a .bbl file,
6. And, finally, run LaTeX on the .tex file, and Voila! your bibliography will appear where you have written `\bibliography{<mybibfile>}`,

Citations made with `\cite` or `\nocite` are necessary to get entries into the filename.bbl when BibTeX is run on your file. Here are some sample citations, followed by a sample bibliography.

A citation will look like this, `\cite{jst81,bm84}`.

Here are some more citations;

`\cite{dms80}; \cite{gm91}; \cite{hhmz77}; \cite{hb85}; \cite{kt78};`
 and `\cite{jb:spectral}`.

Here are sample 'nocites': `\nocite{bhw:blproof}`

`\nocite{jb:uncert}\nocite{cw:cardspline}\nocite{id:signal}`
`\nocite{wh:frames}\nocite{vn:mfqm}`. You see that nothing printed
 where they were written.

Each citation will make a matching entry appear in the bibliography.

A citation will look like this, Jameson et al., 1981, Barrett and Morton, 1984. Here are some more citations; Doolan et al., 1980, Garcia-Archilla and Mackenzie, 1991, Heinrich et al., 1977, Hughes and Brooks, 1985, Kellog and Tsau, 1978, and Benedetto, 1975.

Here are sample 'nocites':. You see that nothing printed where they were written.

Each citation will make a matching entry appear in the bibliography.

Here is the sample bibliography that results:

```
\bibliographystyle{plain}
\bibliography{bkbib}
```

.....

References

1. Barrett, J. W. and Morton, K. W. (1984). Approximate symmetrization and Petrov-Galerkin methods for diffusion-convection problems. *Comput. Methods Appl. Mech. Engrg.*, 45:97–122.
 2. Benedetto, J. (1975). *Spectral Synthesis*. Academic Press, New York.
 3. Daubechies, I. (1990). The wavelet transform, time-frequency localization and signal analysis. *IEEE Trans. Inform. Theory*, 36:961–1005.
 4. Doolan, E. P., Miller, J. J. H., and Schilders, W. H. A. (1980). *Uniform Numerical Methods for Problems with Initial and Boundary Layers*. Boole Press, Dublin.
 5. García-Archilla, B. and Mackenzie, J. A. (1991). Analysis of a supraconvergent cell vertex finite volume method for one-dimensional convection-diffusion problems. Technical Report NA91/13, Oxford University Computing Laboratory, 11 Keble Road, Oxford, OX1 3QD. submitted for publication.
 6. Hughes, T. J. R. and Brooks, A. N. (1985). A multi-dimensional upwind scheme with no crosswind diffusion. In Hughes, T. J. R., editor, *Finite Element Methods for Convection Dominated Flows*, pages 19–35. ASME, New York.
 7. Jameson, A., Schmidt, W., and Turkel, E. (1981). Numerical solutions of the Euler equations by finite volume methods using Runge-Kutta time stepping. AIAA Paper No. 81-1259.
 8. Kellogg, R. B. and Tsan, A. (1978). Analysis of some difference approximations for a singular perturbation problem without turning points. *Math. Comp.*, 32:1025–1039.
 9. von Neumann, J. (1932, 1949, and 1955). *Mathematical Foundations of Quantum Mechanics*. Princeton University Press.
-

Appendices

END OF CHAPTER APPENDICES

For an appendix at the end of the chapter we have `\chapappendix{}`.

Here are some possibilities using `\chapappendix{}`.

```

\chapappendix{}
This is a chapter appendix.
\begin{equation}\sum_k P(k) \sum_i \sum_y f_i(y|k)^2\end{equation}

\chapappendix{Pspace $\supseteq$ PCP(log n)}
....

```

.....

Appendix

This is a chapter appendix.

$$\sum_k P(k) \sum_i \sum_y f_i(y|k)^2 \tag{A.1}$$

Appendix: Pspace \supseteq PCP(log n)

This is an appendix.

$$\sum_k P(k) \sum_i \sum_y f_i(y|k)^2 \tag{B.1}$$

Appendix at the end of the book

Make your appendix with the command `\appendix{}`, as seen below. If you want only one appendix, follow `\appendix` with facing curly brackets: `\appendix{}`.

Section numbers, equation numbers, and captions will all use the appendix letter ‘A’ as well as their number.

```

\appendix{This Is the Appendix Title}
This is an appendix with a title.
\begin{equation}
\alpha\beta\Gamma\Delta
\end{equation}\inxx{Appendix,Title}

\begin{figure}[h]
\caption{This is an appendix figure caption.}
\end{figure}

\begin{table}[h]
\caption{This Is an Appendix Table Caption}
\centering
\begin{tabular}{ccc}
...
\end{tabular}
\end{table}

```

Appendix A

This Is the Appendix Title

This is an appendix with a title.

$$\alpha\beta\Gamma\Delta \tag{A.1}$$

Figure A.1 This is an appendix figure caption.

Table A.1 This Is an Appendix Table Caption

one	two	three
C	D	E

`\appendix{}`

This is an appendix without a title.

Here is a math test to show the difference between using Computer Modern math fonts and MathTimes math fonts. When MathTimes math fonts are used the letters in an equation will match TimesRoman italic in the text (`{\it g, i, y, x, P, F, n, f}` etc.). Caligraphic fonts, used for `ABC` below, will stay the same in either case.

```
\begin{equation}
g_i(y|f)=\sum_x P(x|F_n)f_i(y|x){\cal ABC}
\end{equation}
```

where $g_i(y|F_n)$ is the function specifying the probability an object will display a value y on a dimension i given F_n the observed feature structure of all the objects.

.....

Appendix B

This is an appendix without a title.

Here is a math test to show the difference between using Computer Modern math fonts and MathTimes math fonts. When MathTimes math fonts are used the letters in an equation will match TimesRoman italic in the text. (*g, i, y, x, P, F, n, f, etc.*) Caligraphic fonts, used for *ABC* below, will stay the same in either case.

$$g_i(y|f) = \sum_x P(x|F_n)f_i(y|x)ABC \tag{B.1}$$

where $g_i(y|F_n)$ is the function specifying the probability an object will display a value y on a dimension i given F_n the observed feature structure of all the objects.

Glossary

An optional glossary section is available. Its commands are very straightforward:

```
\begin{glossary}
\term{xxx}Text...
\term{yyy}Text...
\end{glossary}
```

Here is an example:

```
\begin{glossary}
\term{GaAs}Gallium Arsinide. For similar device sizes GaAs transistors
have three to
five times greater transconductance than those of of silicon bipolar
and MOS transistors.

\term{VLSI}Very Large Scale Integration. Since the mid-1970s
VLSI technology has been successfully used in many areas, but its effect on
computers of all shapes and sizes has been the most dramatic. Some of the
application areas got boosts in performance while others became
feasible.

\end{glossary}
```

.....

Glossary

GaAs Gallium Arsinide. For similar device sizes GaAs transistors have three to five times greater transconductance than those of of silicon bipolar and MOS transistors.

VLSI Very Large Scale Integration. Since the mid-1970s VLSI technology has been successfully used in many areas, but its effect on computers of all shapes and sizes has been the most dramatic. Some of the application areas got boosts in performance while others became feasible.

Making Your Index

There are four steps needed to make an index:

- Marking the words to be indexed in the text,
- Running \LaTeX on the file,
- Sorting the .inx file, and
- Printing the formatted index.

Each step will be explained briefly here, and in more detail in the following sections.

MARKING THE TEXT

There are two kinds of index entries in the text:

`\inx{word or words}`, and
`\inxx{word or words}`.

The first form will print the term between curly brackets on the page and will also send it to an .inx file along with the current page number.

The second, called a ‘silent’ entry, will not print on the page but will send the material between curly brackets to the .inx file along with the current page number.

CAREFUL: Do not leave an empty space between the silent index entry and the word preceding it. An extra space will appear in your text if there is a space both before and after the `\inxx` command. Your input should look like this:

```
...some words\inxx{index entry}...
```

Not

```
...some words \inxx{index entry}...
```

Remember that starting a new line in your editor will also generate an empty space, so do not do this either:

```
...some words
\inxx{index entry}...
```

SUBHEADINGS IN THE INDEX

To form an index entry as a subheading of another index entry, repeat the first entry and follow it with the new entry.

For example:

After you have typed `\inx{trees}` or `\inxx{trees}`,

you may type `\inxx{trees,green}` to cause ‘green’ and its associated page number to be placed in the index under the entry for ‘trees.’

A third level of subheading is produced in the same way:

`\inxx{trees,green,pointy}`. This will format ‘pointy’ underneath the entry for ‘green’.

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L^AT_EXING THE FILE

When you L^AT_EX `filename.tex` containing the marked entries you will produce a `filename.inx`.

SORTING THE `.inx` FILE

You can sort the `filename.inx` file with a sorting routine on your system.

The MS-DOS command is `sort < filename.inx > filename.srt`.

The UNIX command is `sort -f filename.inx > filename.srt`.

There are public domain Macintosh sorting packages available.

IMPORTANT: Edit the `.srt` file to make sure ~ is at the End of the file.

MARKING THE `.srt` FILE

If you want to make additions to the index entries such as “See Also Douglas Firs” or to change the fonts of certain entries or to add a large letter and a ruled line before each new alphabetical group, you can do this in `filename.srt`. However, you do not need to even look at this file if you do not wish to make changes to the index.

For more information see “Making typeface changes to index entries” and “Adding material to your sorted file” below.

PRINTING THE INDEX

The command: `\printindex` will print the index. This command will input the `filename.srt` file to generate your index, formed in double columns, with a dash between sequential page numbers and with subsidiary entries formatted below their major entry.

More information on each step follows.

ENTERING WORDS TO BE INDEXED IN THE TEXT

As described earlier, entries are to be marked either

```
\inx{(entry)}
```

or

```
\inxx{(entry)}
```

CAREFUL: When you mark an index entry with `\inx` the word or words will print in the text as well as in the auxiliary file.

However, don't try to use this method of marking a word or phrase if it is in the argument of another macro.

To index a word or words that are inside a macro argument, use the second method: rewrite the word or words outside the macro and precede it with `\inxx`. If in doubt follow the second method which may be slightly more effort, but whose results will be more predictable.

TO CALL ATTENTION TO A PARTICULAR PAGE NUMBER IN THE INDEX:

You may mark index entries with one or two asterisks.

`\inx{index entry*}` or `\inxx{index entry*}` will cause the page number to be underlined.

`\inx{index entry**}` or `\inxx{index entry**}` will cause the page number to appear in boldface. You may want to use this as a method of calling attention to the definition of a term (underlined) or an example of the term in use (boldface).

EXAMPLES OF FIRST, SECOND OR THIRD LEVEL INDEX ENTRIES

As mentioned above, second level entries are produced by writing the primary term, then a comma, then the word you are indexing. For example, index entries written on a page 33:

`\inx{First level}` (or `\inxx{First level}`)

`\inxx{First level,second level}`

will yield the index entries

First level, 33

second level, 33

with the page numbers produced automatically.

The third level is produced similarly:

`\inx{First level}` (or `\inx{First level}`)

`\inxx{First level,second level}`

`\inxx{First level,second level,third level}`

Results in:

First level, 33

second level, 33

third level, 101

CAREFUL:

Spaces: Notice that there are no spaces after the comma in the index entry. It is important to keep spaces from appearing between entry levels for the index formatter to work correctly.

Consistency: Capital and small letters will not be distinguished by the index formatter but will be sorted differently. Therefore you must be careful to be consistent in capitalization.

Commas: Since commas are used to separate arguments in the index entries, you must write `\,` when you actually want a comma to appear in the formatted index. For example:

`\inxx{Nixon\, Richard Milhous}`

will print in the index as:

Nixon, Richard Milhous, 72

If you forgot to put the backslash in front of the comma after 'Nixon' as in the following:

`\inxx{Nixon, Richard Milhous}`

The results will be

Nixon

Richard Milhous, 72

HOW TO MAKE A FIRST OR SECOND LEVEL ENTRY *Without* PAGE NUMBERS

You may occasionally want to have a major or secondary index entry that doesn't have a page number associated with it, but is used as a heading for the following entries.

To do this, type the second or third level entries as you would do ordinarily, but do not make an index entry for the first level term by itself.

For example, if these `\inxx` entries have been used in the text:

```
\inxx{Cows,Holstein-Friesen}
```

```
\inxx{Cows,Jersey}
```

```
\inxx{Cows,holy}
```

The index will look like this:

```
Cows
  Holstein-Friesen, 33
  holy, 23
  Jersey, 43
```

The same sequence follows for second and third level entries; when the third level is being looked at by the index formatter it will check to see if the second level has been printed. If it hasn't the formatter will supply the second level entry without a page number.

The second level without a page number is produced like this:

```
\inxx{Cows,four-legged,black and white}
```

```
\inxx{Cows,four-legged,gentle brown}
```

```
\inxx{Cows,four-legged,invisible}
```

Results in:

```
Cows
  four-legged
    black and white, 101
    gentle brown, 201
    invisible, 32
```

INDEX ERROR CONTROL

You might have inadvertently neglected to supply a first level entry and asked for second or third level entries that were to appear under the first level entry. In this case the index formatter will supply the first level entry without a page number, just as if that was your intention. Similarly, if third level entries have been called for without the preceding second level entry ever being asked for by itself, the second level entry will print without a page number, as if that was your intention.

Thus, you have a method of index error control, that will let you know if you neglected to enter a term with `\inxx` that you intended. Scan your completed index to see if there are entries without page numbers. If this was not your intention, either edit your original file to supply the appropriate `\inxx` term, or edit the `.srt` file to supply the term and page number.

OK, THE INDEX ENTRIES ARE MARKED, NOW WHAT?

The first thing to do is \LaTeX the file that contains the marked index entries.

You will automatically produce an auxiliary file named `filename.inx` with ‘filename’ being the name of the file you \LaTeX ed and the `.inx` extension being added automatically.

HOW TO SORT THE `.inx` FILE

The next step is to sort the contents of the file.

The UNIX command is `sort -f filename.inx > filename.srt`.

The MS-DOS command is `sort <filename.inx > filename.srt`.

If you are using another system, you must find the sorting command for that system.

IMPORTANT: Edit the `.srt` file to make sure `~` is at the End of the file.

LOOKING AT THE `.srt` FILE

You can look at the sorted file in your editor. Notice that the page numbers that are less than 10 will be preceded with two zeros, and those that are more than 10 but less than 100 will be preceded with one zero. These ‘leading zeros’ will not print but are necessary for the sort algorithm to work correctly.

SPECIAL USE CHARACTERS: `>` AND `~`

There is a ‘`>`’ at the top of the `.srt` file and a ‘`~`’ at the end of the file. These are commands to make the index formatter work correctly. `>` must immediately precede the index entries and `~` must immediately follow them, so do not change their position.

If you have use math in your index, you will notice that the math will end up at the top of the `.srt` file. You may move the math to whatever part of the file you want, but be sure that the `>` is at the top of the `.srt` file.

In other words, change this

```

 $\Gamma(z)$ , definition |{223}
 $\Gamma(z)$ , recursion formula |{223}
 $\Gamma(z)$ , reflection formula |{223}
>

```

to this:

```

>
 $\Gamma(z)$ , definition |{223}
 $\Gamma(z)$ , recursion formula |{223}
 $\Gamma(z)$ , reflection formula |{223}

```

and you might also move the gammas to the G section of the index.

You can use `~` as you would normally, except you **may not** use `~` at the beginning of an index entry (and I can think of no reason that you would want to) except as an accent (`\~ . . .`).

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MAKING CHANGES IN THE .srt FILE

You can make typeface changes, add or delete index entries, add comments to the index with the `\addtoindex` command, and separate the index into alphabetical sections with the use of the `\ltr` command. However, remember: These changes will disappear the next time you sort the `.inx` file to produce a new `.srt` file.

MAKING TYPEFACE CHANGES TO INDEX ENTRIES

If you want to change the typeface of an index entry, you can do this in your sorted file with these commands:

```
\indexit{index entry} |1{003}
\indexbf{index entry} |1{003}
\indextt{index entry} |1{003}
\indexsl{index entry} |1{003}
```

As you may have guessed, `\indexit` will produce *italics*, `\indexbf` will produce **bold face**, `\indextt` will produce typewriter font, and `\indexsl` will produce *slanted typeface*.

Assuming that you will be using this command on first level index entries, each of these commands will cause the first letter to be capitalized. If you want the first letter to be lowercase use this form:

```
\lcindexit{index entry} |1{003}
\lcindexbf{index entry} |1{003}
\lcindextt{index entry} |1{003}
\lcindexsl{index entry} |1{003}
```

If you change the typeface on any index entry, remember to do the same thing for every entry of the term on the same level. The reason that this is important is that the index formatter will not recognize two entries as being the same if one is `\indexbf{index entry}`

and the next is `index entry`. If the formatter sees the entries as different, the second entry would print on its own line.

USING `\addtoindex`

If you want to add a comment to your index you can enter the commands `\addtoindex... \endadd`. These commands will temporarily interrupt the index formatter and allow you to enter text or extra vertical space at any point in the index. See examples of this in 'Indexing Examples' following.

If you want a horizontal line or lines to appear, write `\hrule`. You will probably want to include extra vertical space if you use `\hrules` since there is no interline space added by default for `hrules`.

You must end `\addtoindex` with `\endadd`. Here is a complete example;

```
Grass |1{001}
\addtoindex
\seealso{Blue-green grass.}
\endadd
```

MAKING A PAGE RANGE TO USE WITH FF

If you want to direct your reader to a page range in which he/she will find information on a particular topic, you can use `\addtoindex`:

```
\addtoindex
Grass, 51--65 {\it ff}
\endadd
```

or

```
\addtoindex
\seealso{Grass, 51--65 {\it ff}}
\endadd
```

SEPARATING INDEX INTO ALPHABETICAL SECTIONS

The command `\ltr{Letter }` makes it easy to format the index into separate alphabetical areas. Before the first entry for each new letter, use

```
\addtoindex, \ltr{Letter}, \endadd.
```

For instance, before the B's:

```
\addtoindex
\ltr{B}
\endadd
```

Compare the code in the example at the end of this section with the resulting index to see this macro at work.

OTHER EDITING CHANGES IN THE .srt FILE

You can also edit the `.srt` file in other ways, if you'd like. You can add or delete entries, or change the page number to appear underlined or bold by adding `\global\spcount =1` or `\global\spcount =2` within the curly brackets that surround the page number.

FORMATTING THE INDEX

Once you have made any desired changes to your `.srt` file you can format the index in the originating file by writing this command where you want the index to appear:

```
\printindex
```

CHANGING THE FORMAT OF THE INDEX

AUTOMATIC CAPITALIZATION OF THE FIRST LETTER

Your index will be formatted automatically with the first letter of each first level index term being capitalized. The second and third level index terms will not print in uppercase unless they were typed that way with the `\inxx` command. If for any reason you do not like this, you can read the instructions at the end of the macro file where you see this:

```
%% CHANGE INDEX FORMAT HERE ====>
```

```
%% If you DO NOT want the first letter of each first level index
%% entry to be capitalized, delete the % in front of the
%% following line, and put % in front of the next line:
```

```
%\let\capthis\relax
```

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```
\def\capthis#1{\uppercase{#1}}%

\indexindent=8pt %% indentation for index subentries
\indexwrap=24pt %% indentation when term is too wide for column,
                %% continues on following lines indented this much.
```

These commands can be changed to meet your requirements.

INDEXING EXAMPLES

SAMPLE OF TEXT MARKED FOR INDEXING

```
Here is \inx{Edward Bear*}, coming downstairs, bump, bump,bump,
on the back of his head, behind \inx{Christopher Robin}. It is,
as far as he knows, the only way of \inx{coming downstairs}, but
sometimes he feels\inxx{coming downstairs,bumping}\inxx{coming
downstairs,stop bumping} that there really is another way, if
only he could stop bumping for a moment and think of it.
\newpage
```

```
And then he feels that perhaps there isn't. Anyhow, here he is
at the bottom, and ready to be introduced to you\inxx{coming
downstairs,stop bumping,at the bottom}. \inx{Winnie-the-Pooh**}.
```

```
\subsection{One Day}
One day when he was out walking, he came to an open place in the
middle of the forest, and in the middle of this place was a
large \inx{oak-tree}, and, from the top of the tree, there came a
loud buzzing-noise.\inxx{oak-tree,large}\inxx{oak-tree,large,top}
\inxx{buzzing}\inxx{buzzing-noise}
```

```
Winnie-the-Pooh sat down at the foot of the tree, put his head
between his paws and began to think.\inxx{oak-tree,large,foot}
\inxx{trees,oak}\inxx{trees,maple}\inxx{trees,pine}
```

SAMPLE .INX FILE

> When T_EX is run on the preceding text an .inx file will be made. It will look like this:

```
~
Edward Bear |{001\global \spcount =1}
Christopher Robin |{001}
coming downstairs |{001}
coming downstairs,bumping |{001}
coming downstairs,stop bumping |{001}
coming downstairs,stop bumping,at the bottom |{002}
Winnie-the-Pooh |{002\global \spcount =2}
oak-tree |{003}
oak-tree,large |{003}
oak-tree,large,top |{003}
...
```

SAMPLE .SRT FILE

The .inx file must be sorted to produce a .srt file. That file will look like the following example. Notice the leading zeros which are needed for the sorting algorithm to work correctly.

```
>
buzzing |{003}
buzzing-noise |{003}
coming downstairs |{001}
coming downstairs,bumping |{001}
coming downstairs,stop bumping |{001}
coming downstairs,stop bumping,at the bottom |{002}
Christopher Robin |{001}
Edward Bear |{001\global\spcount =1}
oak-tree |{003}
oak-tree,large |{003}
oak-tree,large,foot |{004}
oak-tree,large,top |{003}
...
```

SAMPLE FORMATTED INDEX

The command \printindex will cause the .srt file to be input into the original file. Notice ‘trees’ which was never a first level entry, but is used as the first part of several second level entries, and so is formatted as an entry without a page number. The index will be formatted and look like this:

```
buzzing, 3
buzzing-noise, 3
coming downstairs, 1
    bumping, 1
    stop bumping, 1
    at the bottom, 2
Christopher Robin, 1
Edward Bear, 1
oak-tree, 3
    large, 3
    foot, 4
    top, 3
trees
    maple, 4
    oak, 4
    pine, 4
Winnie-the-Pooh, 2
```

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MAKING CHANGES OR ADDITIONS TO THE .srt FILE

Here is the same .srt file with some comments added with `\addtoindex`, and Winnie-the-Pooh changed to boldface:

```
>
buzzing |{003}
buzzing-noise |{003}
\addtoindex
\seealso{oak-tree}
\endadd
coming downstairs |{001}
coming downstairs,bumping |{001}
coming downstairs,stop bumping |{001}
coming downstairs,stop bumping,at the bottom |{002}
Christopher Robin |{001}
\addtoindex
Christopher Robin's relationship to animals, 1--99 {\it ff}
\endadd
Edward Bear |{001\global\spcount =1}
oak-tree |{003}
oak-tree,large |{003}
oak-tree,large,foot |{004}
oak-tree,large,top |{003}
trees,maple |{004}
trees,oak |{004}
trees,pine |{004}
\indexbf{Winnie-the-Pooh} |{002\global\spcount =2}
~
```

Which will produce the index on the following page:

buzzing, 3
buzzing-noise, 3
 See also oak-tree
coming downstairs, 1
 bumping, 1
 stop bumping, 1
 at the bottom, 2
Christopher Robin, 1
Christopher Robin's relationship to ani-
 mals, 1–99 *ff*
Edward Bear, 1
oak-tree, 3
 large, 3
 foot, 4
 top, 3
trees
 maple, 4
 oak, 4
 pine, 4
Winnie-the-Pooh, 2

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Here is an example of using `\ltr` to separate the entries by their first letter and the results:

```
>
\addtoindex
\ltr{B}
\endadd
buzzing |{003}
\addtoindex
\seealso{Bees}
\endadd
buzzing-noise |{003}
\addtoindex
\ltr{C}
\endadd
\indexit{Christopher Robin} |{001}
coming downstairs |{001}
coming downstairs,bumping |{001}
coming downstairs,stop bumping |{001}
coming downstairs,stop bumping,at the bottom |{002}
\addtoindex
\ltr{E}
\endadd
Edward Bear |{001\global\spcount =1}
\addtoindex
\ltr{O}
\endadd
oak-tree |{003}
oak-tree,large |{003}
oak-tree,large,foot |{004}
oak-tree,large,top |{003}
\addtoindex
\ltr{W}
\endadd
Winnie-the-Pooh |{002\global\spcount =2}
~
```

Which when formatted, will look like this:

B

buzzing, 3
 See also Bees
buzzing-noise, 3

C

Christopher Robin, 1
coming downstairs, 1
 bumping, 1
 stop bumping, 1
 at the bottom, 2

E

Edward Bear, 1

O

oak-tree, 3
 large, 3
 foot, 4
 top, 3

W

Winnie-the-Pooh, **2**

Author Index

You can make an author index in a way very similar to that of making the subject index.

There are four steps needed to make an author index:

- Type `\anx{Author Name}` or `\anxx{Author Name}` in your document. If you want the author name to also appear in the text as well as in the author index use `\anx{}`; if you want the term to only appear in the index, type `\anxx{}`.
- Run LaTeX on the file. This will produce a `filename.aut` file.
- Do sort `filename.aut > filename.att` so that you now have a `filename.att`. **IMPORTANT: Edit the .srt file to make sure ~ is at the End of the file.**
- Type `\printauthorindex` where you want the author index to print.

If you want to do multiple levels of author index, you can get them by typing `\anxx{Author One,topic}` which will produce something like

Author One	21
topic	22

The information on using index commands found in the previous sections will work in a similar way for the author index.

TOPIC INDEX AND AUTHOR INDEX

If you use an author index, the title produced with the `\printindex` command will be ‘Topic Index’ to distinguish it from the author index.

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Enjoy!