

The xltextra package

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I Introduction

This document describes the `xltextra` package. It implements some odds-and-ends features and improved functionality for broken or sub-standard \LaTeX methods when using the \XeTeX format.

I.1 Usage

Easy: `\usepackage{xltextra}`. This package automatically loads the following packages: `fixltx2e`, `etex`, `xunicode`, `fontspec`.

There are some package options to disable various functionality that could clash with other things:

`no-sscript` Swaps the definitions of `\textsubscript` and `\textsuperscript` with their respective starred versions, as described in section §2.1.

`no-emph` Disables the redefinition of `\emph` and `\em` described in section §2.2.

`no-logos` Disables the redefinition of `\TeX`, etc. described in section §2.5, but *does* still define the `\XeTeX` and `\XeLaTeX` logo commands.

`no-hyphen` Disables the redefinition of `\-` (probably harmless anyway) described in section §2.6.

no-verb Disables the redefinition of `\verb*` and `\begin{verbatim}`}, and the patching of various verbatim packages, as described in section §2.4.

2 Features

2.1 `\textsuperscript` and `\textsubscript`

These two macros have been redefined to take advantage, if possible, of actual superior or inferior glyphs in the main document font. This is very important for high-quality typesetting — compare this first example to the third; yes, they are the same font.

<code>\textsuperscript</code>	abcdefghijklmnopqrstuvwxyz1234567890
<code>\textsubscript</code>	abcdefghijklmnopqrstuvwxyz1234567890

But will fall back on ‘faked’ ones if they don’t exist: (this is Didot)

<code>\textsuperscript</code>	abcdefghijklmnopqrstuvwxyz1234567890
<code>\textsubscript</code>	abcdefghijklmnopqrstuvwxyz1234567890

The original definitions are available in starred versions of the commands:

<code>\textsuperscript*</code>	abcdefghijklmnopqrstuvwxyz1234567890
<code>\textsubscript*</code>	abcdefghijklmnopqrstuvwxyz1234567890

But beware fonts lacking the full repertoire: (this is Adobe Jenson Pro)

<code>\textsuperscript</code>	ab ^c def ^g h ⁱ j ^k lmno ^p q ^r st ^u v ^w x ^y z ¹²³⁴⁵⁶⁷⁸⁹⁰
<code>\textsubscript</code>	abcdefghijklmnopqrstuvwxyz ₁₂₃₄₅₆₇₈₉₀

The `[no-sscript]` package option will swap the definitions of the starred and non-starred versions of the commands described above if the new definitions are undesirable.

The macros `\realsubscript`, `\realsuperscript`, `\fakesubscript`, and `\fakesuperscript` may be used to access the ‘new’ and ‘old’ functionalities regardless of the `[no-sscript]` package option.

2.2 Inner emphasis

fixltx2e’s method for checking for “inner” emphasis is a little fragile in X_YTEX, because font slant information might be missing from the font. Therefore, we use L^AT_EX’s NFSS information, which is more likely to be correct.

	<code>\renewcommand\eminnershape{\scshape}</code>
	<code>\fontspec{Didot}</code>
Nested <i>emphasis</i> is now <i>fixed</i> .	Nested {\em emphasis is
	\emph{now} fixed.}

The [no-emph] package option will disable this redefinition.

2.3 Unicode footnote symbols

By default L^AT_EX defines symbolic footnote characters in terms of commands that don’t resolve well; better results can be achieved by using specific unicode characters or proper LICRs with the xunicode package.

This problem has been solved by loading the fixltx2e and xunicode packages in xltextra.

2.4 Verbatim

Many verbatim mechanisms assume the existence of a ‘visible space’ character that exists in the ASCII space slot of the typewriter font. This character is known in unicode as U+2434: BOX OPEN, which looks like this: ‘`□`’.

When a unicode typewriter font is used, L^AT_EX no longer prints visible spaces for the verbatim* environment and \verb* command. xltextra fixes this problem by using the correct unicode glyph, and patches the following packages to do the same: listings, fancyvrb, moreverb, and verbatim.

In the case that the typewriter font does not contain ‘`□`’, the Latin Modern Mono font is used as a fallback.

2.5 Logos

This part of the package essentially exists to define the `\XeTeX` and `\XeLaTeX` logos. Here're some examples. The default:

`TEX` `XETEX` `LATEX` `XELATEX` `\TeX` `\XeTeX` `\LaTeX` `\XeLaTeX`

Notice it's a bit tight compared to not using Computer Modern, for which the logos were designed:

`TEX` `XETEX` `LATEX` `XELATEX` `\usefont{OT1}{cmr}{m}{n}`
`\TeX` `\XeTeX` `\LaTeX` `\XeLaTeX`

Look in the implementation corresponding to this section to see how to customise the spacings in these logos, but be warned it's fairly crude and may change in the future.

The `[no-logos]` package option will not redefine `\TeX` or `\LaTeX` but will still define `\XeTeX` and `\XeLaTeX`. (The only advantage for not doing this is more consistency when customising the spacing, which isn't really recommended anyway...)

If the `hyperref` package is loaded, these logos will be set up to behave properly in PDF bookmarks and so on.

2.6 Discretionary hyphenation: `\-`

`LATEX` defines the macro `\-` to insert discretionary hyphenation points. However, it is hard-coded in `LATEX` to use the hyphen - character. Since `fontspec` makes it easy to change the hyphenation character on a per font basis, it would be nice if `\-` adjusted automatically — and now it does.

2.7 Vulgar fractions

The `\vfrac` command for setting 'vulgar' fractions based on AAT or OpenType font features. Not really recommended for many purposes,

depending on your text, but it's a good example of how to program such things using fontspec.

AAT: $\frac{123}{456}$	<code>\fontspec{Skia}</code>
ICU: $\frac{123}{456}$	<code>AAT: \vfrac{123}{456}\</code>
	<code>\fontspec{Warnock Pro}</code>
	<code>ICU: \vfrac{123}{456}</code>

(This can be achieved in regular L^AT_EX with the nicefrac package, but don't believe its name: these fractions aren't nice!)

Only use it when you know it will work; no warnings are given if the font doesn't support the necessary features.

2.8 Named glyphs

Along the way somewhere, X_YL^AT_EX added support for selecting glyphs from a TrueType-based OpenType font based on their internal glyph name. Jonathan Kew posted the following definition as a nice interface to it.

¥ [smile]	<code>\fontspec{Charis SIL}</code>
	<code>\namedglyph{yen}</code>
	<code>\namedglyph{smile}</code>

2.9 The \showhyphens command

The default definition doesn't work in X_YL^AT_EX. A new version, written by Jonathan Kew, is included in this package that *does* work. Minor differences with the original: the showing of hyphens in the console output will be marked with explanatory text. Also, multiple words, separated by commas, will end up in separate instances of 'showing hyphens'.

File I

The xltextra package

This is the package implementation.

```
1 \ProvidesPackage{xltextra}
2 [2008/07/29 v0.4 Improvements for the "XeLaTeX" format]
```

Change History

vo.1

\-: Implemented; from the L ^A T _E X 2 _ε sources.	12
\fakesuperscript: Implemented.	12
\realsubscript: Implemented.	13
\realsuperscript: Implemented.	14
\TeX@logo@spacing: Implemented.	10
\textsuperscript*: Implemented.	13
\vfrac: Implemented.	15

vo.2

\@makefnmark: Footnotes patched to use new \textsuperscript.	14
\emph: Migrated from fontspec.	11
\namedglyph: Implemented.	15
\TeX@logo@spacing: \TeX@logo@spacingmade “private” and added an arg for \XeLaTeX.	10
Added TFM font check.	10
\xxt@namedglyph@fallback: Implemented.	15

vo.3

\@makefnmark: Footnote symbol put in an mbox.	14
General: Added no- package options to restrict functionality.	6
Added proper documentation.	6
\fakesuperscript: Name change from \fakesubscript. Made robust.	12
\realsubscript: Fixes to catch up with fontspec. Name change.	13
\realsuperscript: Fixes to catch up with fontspec. Name change.	14
\showhyphens: Implemented.	16

\textsubscript: Adjusted, made robust (with friends ‘super’ and starred).	13
vo.3a	
\TeX@logo@spacing: Changed \setlength to \def. Silly me.	10
vo.3b	
General: Added hyperref logos. Thanks Ross.	11
vo.3c	
\realsubscript: Fixed crash when used with a TFM font.	13
\real superscript: Fixed crash when used with a TFM font.	14
vo.4	
General: Added support for verbatim & visible spaces.	6

Option processing

```

3 \newif\if@xxt@noscript@
4 \newif\if@xxt@nologos@
5 \newif\if@xxt@nohyphen@
6 \newif\if@xxt@noemph@
7 \newif\if@xxt@noverb@
8 \DeclareOption{no-sscript}{\@xxt@noscript@true}
9 \DeclareOption{no-logos}{\@xxt@nologos@true}
10 \DeclareOption{no-hyphen}{\@xxt@nohyphen@true}
11 \DeclareOption{no-emph}{\@xxt@noemph@true}
12 \DeclareOption{no-verb}{\@xxt@noverb@true}
13 \ProcessOptions*

```

Required packages

```

14 \RequirePackage{ifxetex}
15 \RequireXeTeX
16 \RequirePackage{graphicx}
17 \RequirePackage{fontspec}
18 \RequirePackage{xunicode}

```

3 Programmming bits and pieces

4 Logos

`\XeTeX` The `TeX`-related logos people insist upon using need to be tuned on a
`\XeLaTeX` per-font basis. This package will (might!) eventually allow this, but for
now, it's baby steps. The `X3TeX` and `X3LATeX` logos are provided.

The various `TeX`-like logos that extend outside the regular vertical alphabetic bounds of running text have the unfortunate side-effects in `X3TeX` of often overrunning the `\baselineskip`. Putting the logos in zero-height boxes prevents this problem. Actually, this problem doesn't happen anymore.

To do:

- adapt `\LaTeX` to use small caps if available...
- ...otherwise, need a scaling factor, and maybe a vertical nudge factor
- add other logos
- per-font parameters, with some defaults for common fonts
- add 'low contrast' small caps versions, et al.
- probably break out the whole thing into its own package, if it works

`\TeX@logo@spacing` #1: Kern between T & eX
#2: Kern between Te & X
#3: Lowering amount for E in TeX
#4: Kerning between L & aTeX
#5: Kerning between La & TeX
#6: Kerning between Xe & LaTeX

This macro defines new `\TeX` and `\XeTeX` logos. Parameters must be tuned on a per-font basis:

<code>TeX</code>	<code>X₃TeX</code>	<code>L^ATeX</code>	<code>X₃L^ATeX</code>	<code>\TeX@logo@spacing{-0.12em}{-0.12em}%</code>
				<code>{0.5ex}{-0.3em}{-0.12em}{-0.1em}</code>
<code>\TeX\</code>	<code>\XeTeX\</code>	<code>\LaTeX\</code>	<code>\XeLaTeX</code>	

Warning! This macro will **almost definitely** change in the future. If you care about backwards compatibility in your documents, copy+paste the definitions below rather than using `\TeX@logo@spacing`.

```

19 \newcommand*\TeX@logo@spacing[6]{%
20   \def\xxt@kern@Te{#1}%
21   \def\xxt@kern@eX{#2}%
22   \def\xxt@lower@e{#3}%
23   \def\xxt@kern@La{#4}%
24   \def\xxt@kern@aT{#5}%
25   \def\xxt@kern@eL{#6}%
26 }
27 \unless\if@xxt@nologos@
28 \DeclareRobustCommand\TeX{%
29   \leavevmode
30   \smash{%
31     T\kern\xxt@kern@Te
32     \lower\xxt@lower@e\hbox{E}\kern\xxt@kern@eX X}%
33   \spacefactor1000\relax}
34 \DeclareRobustCommand{\LaTeX}{%
35   \leavevmode
36   \smash{%
37     L\kern\xxt@kern@La
38     {\sbox\z@ T%
39       \vbox to\ht\z@{\hbox{\check@mathfonts
40         \fontsize\sf@size\z@
41         \math@fontsfalse\selectfont
42         A}%
43       \vss}%
44     }%
45     \kern\xxt@kern@aT
46     \TeX}}
47 \fi
48 \DeclareRobustCommand\XeTeX{%
49   \leavevmode
50   \smash{%
51     X\lower\xxt@lower@e
52     \hbox{\kern\xxt@kern@eX
53       \ifnum\XeTeXfonttype\font>0

```

```

54     \ifnum\XeTeXcharglyph"018E>0
55     \char"018E\relax
56 \else
57     \ifdim\fontdimen1\font=0pt
58     \reflectbox{E}%
59 \else
60     \XeTeXuseglyphmetrics=1%
61     \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0%
62     \raise\dimen0\hbox{\rotatebox{180}{\box0}}%
63 \fi
64 \fi
65 \else
66     \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0%
67     \raise\dimen0\hbox{\rotatebox{180}{\box0}}%
68 \fi
69 }\kern\xxt@kern@Te\TeX}}%
70 \DeclareRobustCommand\XeLaTeX{%
71 \leavevmode
72 \smash{%
73 X\lower\xxt@lower@e
74 \hbox{\kern\xxt@kern@eX
75 \ifnum\XeTeXfonttype\font>0\relax
76 \ifnum\XeTeXcharglyph"018E>0\relax
77 \char"018E\relax
78 \else
79 \ifdim\fontdimen1\font=0pt\relax
80 \reflectbox{E}%
81 \else
82 \XeTeXuseglyphmetrics=1\relax
83 \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0\relax
84 \raise\dimen0\hbox{\rotatebox{180}{\box0}}%
85 \fi
86 \fi
87 \else
88 \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0\relax
89 \raise\dimen0\hbox{\rotatebox{180}{\box0}}%
90 \fi}\kern\xxt@kern@eL\LaTeX}}
91 \TeX@logo@spacing{-0.15em}{-0.15em}{0.5ex}{-0.36em}{-0.15em}{-0.1em}

```

hyperref-safe versions of the logos:

```
92 \ifpackageloaded{hyperref}{%  
93   \pdfstringdefDisableCommands{%  
94     \def\TeX{\TeX}%  
95     \def\XeTeX{\XeTeX}%  
96     \def\LaTeX{\LaTeX}%  
97     \def\LaTeXe{\LaTeX2e}  
98     \def\XeLaTeX{\XeLaTeX}  
99   }}{}
```

5 ε -TeX functionality

Because it's just sensible, we load the package that actually allows L^AT_EX to access the extra registers, etc., provided by ε -TeX.

```
100 \RequirePackage{etex}
```

5.1 Unicode footnote symbols

```
101 \RequirePackage{fixltx2e}[2006/03/24]
```

5.2 Emph

```
102 \unless\if@xxt@noemph@
```

\backslash em Redefinition of $\{\backslash$ em ... $\}$ and \backslash emph{... $\}$ to use NFSS info to detect
 \backslash emph when the inner shape should be used.

```
103 \DeclareRobustCommand\em  
104   {\@nomath\em  
105     \edef\@tempa{\f@shape}%  
106     \edef\@tempb{\itdefault}%  
107     \ifx\@tempa\@tempb  
108       \eminnershape  
109     \else  
110       \emshape  
111     \fi}  
112 \DeclareTextFontCommand{\emph}{\em}  
113 \let\emshape\itshape  
114 \let\eminnershape\upshape
```

```
115 \fi
```

5.3 `\-`

```
116 \unless\if@xxt@nohyphen@
```

`\-` This macro is courtesy of Frank Mittelbach and the $\text{\LaTeX 2}_{\epsilon}$ source code.

```
117 \DeclareRobustCommand{\-}{%
118   \discretionary{%
119     \char\ifnum\hyphenchar\font<\z@
120       \xlx@defaultthyphenchar
121     \else
122       \hyphenchar\font
123     \fi}{\}{\}}
124 \def\xlx@defaultthyphenchar{\-}
```

```
125 \fi
```

5.4 Subscript and superscript

For OpenType fonts, the subscript feature (subs) is used, but if that doesn't exist then the scientific inferior feature (sinf) is used on the assumption that something's better than nothing. This matches current trends in OpenType font design.

Footnotes are patched to use this better `\textsuperscript`.

`\fakesubscript` The old ('fake') methods:

```
\fakesuperscript 126 \DeclareRobustCommand*\fakesubscript[1]{%
127   \@textsubscript{\selectfont#1}}
128 \DeclareRobustCommand*\fakesuperscript[1]{%
129   \@textsuperscript{\selectfont#1}}
```

`\textsubscript` These commands are either defined to create fake or real sub-/super-
`\textsubscript*` scripts if they are starred or not, respectively. This swaps if the [no-
`\textsuperscript` sscript] package option is in effect. Text subscripts:
`\textsuperscript*`

```
130 \if@xxt@noscript@
131 \DeclareRobustCommand*\textsubscript{%
```

```

132 \ifstar{\realsubscript}{\fakesubscript}}
133 \DeclareRobustCommand*\textsuperscript{%
134 \ifstar{\realsuperscript}{\fakesuperscript}}
135 \else
136 \DeclareRobustCommand*\textsubscript{%
137 \ifstar{\fakesubscript}{\realsubscript}}
138 \DeclareRobustCommand*\textsuperscript{%
139 \ifstar{\fakesuperscript}{\realsuperscript}}
140 \fi

```

\realsubscript

```

141 \DeclareRobustCommand*\realsubscript[1]{%
142 \begingroup
143 \ifcsname zf@family@fontdef\f@family\endcsname
144 \c@zf@script 1818326126\relax
145 \font\zf@basefont="\csname zf@family@fontdef\f@family\endcsname" at \f@size pt
146 \zf@set@font@type
147 \ifzf@icu
148 \zf@check@ot@feat{+subs}%
149 \if@tempswa
150 {\addfontfeature{VerticalPosition=Inferior}#1}%
151 \else
152 \zf@check@ot@feat{+sinf}%
153 \if@tempswa
154 {\addfontfeature{VerticalPosition=ScientificInferior}#1}%
155 \else
156 \fakesubscript{#1}%
157 \fi
158 \fi
159 \else\ifzf@atsui
160 \zf@make@aat@feature@string{10}{2}%
161 \unless\ifx\@tempa\@empty
162 {\addfontfeature{VerticalPosition=Inferior}#1}%
163 \else
164 \fakesubscript{#1}%
165 \fi
166 \fi\fi
167 \else

```

```

168     \fakesubscript{#1}%
169     \fi
170 \endgroup}

```

`\realsuperscript` Text superscripts:

```

171 \DeclareRobustCommand*\realsuperscript[1]{%
172   \begingroup
173     \ifcsname zf@family@fontdef\f@family\endcsname
174       \c@zf@script 1818326126\relax
175     \font\zf@basefont="\csname zf@family@fontdef\f@family\endcsname" at \f@size pt
176     \zf@set@font@type
177     \ifzf@icu
178       \zf@check@ot@feat{+sups}%
179       \if@tempswa
180         {\addfontfeature{VerticalPosition=Superior}#1}%
181       \else
182         \fakesuperscript{#1}%
183       \fi
184     \else\ifzf@atsui
185       \zf@make@aat@feature@string{10}{1}%
186       \unless\ifx\@tempa\@empty
187         {\addfontfeature{VerticalPosition=Superior}#1}%
188       \else
189         \fakesuperscript{#1}%
190       \fi
191     \fi\fi
192   \else
193     \fakesuperscript{#1}%
194   \fi
195 \endgroup}

```

Patching footnotes:

`\@makefnmark`

```

196 \def\@makefnmark{\mbox{\normalfont\textsuperscript{\@thefnmark}}}

```

`\vfrac` #1: Numerator

#2: Denominator

No error checking is done to ensure that the font actually has the

necessary features. Requires the xunicode package for `\textfraction-solidus`.

```

197 \newcommand*\vfrac[2]{%
198   \begingroup
199     \c@zf@script 1818326126\relax
200     \font\zf@basefont="\csname zf@family@fontdef\fontfamily\endcsname" at \f@size pt
201     \zf@set@font@type
202     \ifzf@icu
203       {\addfontfeature{VerticalPosition=Numerator}#1}%
204       \textfractionsolidus
205       {\addfontfeature{VerticalPosition=Denominator}#2}%
206     \else\ifzf@atsui
207       {\addfontfeature{VerticalPosition=Superior}#1}%
208       \textfractionsolidus
209       {\addfontfeature{VerticalPosition=Inferior}#2}%
210     \fi\fi
211   \endgroup}

```

`\namedglyph` #1: Name of the font glyph to be typeset

```

212 \newcommand\namedglyph[1]{%
213   \@tempcnta=\XeTeXglyphindex "#1"\relax
214   \ifnum\@tempcnta>0
215     \XeTeXglyph\@tempcnta
216   \else
217     \xxt@namedglyph@fallback{#1}%
218   \fi}

```

`\xxt@namedglyph@fallback` Redefine this macro to change how glyph names that aren't found get typeset.

```

219 \newcommand\xxt@namedglyph@fallback[1]{[#1]}

```

`\showhyphens` This macro is entirely due to Jonathan Kew. I wish I knew how to write these sorts of things.

```

220 \newbox\xxt@tempbox
221 \def\showhyphens#1{%
222   \typeout{^^]*****}
223   \string\showhyphens:

```

```

224         *****}%
225 \@for\@ii:=#1\do{\xxt@showhyphens{\@ii}}%
226 \typeout{^^J*****%
227         *****%
228         *****^^J}}
229 \def\xxt@showhyphens#1{%
230   \setbox\@tempboxa=\vbox{%
231     \hsize1sp \hbadness10000 \hfuzz\maxdimen
232     \everypar={} \leftskip\z@ \rightskip\leftskip
233     \pretolerance\m@ne \noindent \hskip\z@ #1\par
234     \global\setbox\xxt@tempbox=\hbox{}\xxt@sh@cat}%
235   \setbox\@tempboxa=\hbox to \maxdimen{\unhbox\xxt@tempbox}}
236 \def\xxt@sh@cat{\unskip\unpenalty
237   \setbox\@tempboxa=\lastbox
238   \unless\ifvoid\@tempboxa
239     \global\setbox\xxt@tempbox=\hbox{%
240       \unhbox\@tempboxa
241       \unskip\unskip
242       \unhbox\xxt@tempbox}%
243   \expandafter\xxt@sh@cat
244   \fi}

```

5.5 Verbatims

Many thanks to Apostolos Syropoulos for discovering this problem and writing the redefinition of L^AT_EX's verbatim environment and `\verb*` command.

```

245 \unless\if\xxt@noverb@

```

`\xxt@visiblespace` Print U+2434: OPEN BOX, which is used to visibly display a space character.

```

246 \def\xxt@visiblespace{%
247   \iffontchar\font"2423
248   \expandafter\textvisiblespace
249   \else
250   \expandafter\xxt@visiblespace@fallback
251   \fi}

```


`\xt@visiblespace@fallback` If the current font doesn't have u2434, use Latin Modern Mono instead.

```
252 \def\xt@visiblespace@fallback{%
253   \usefont{EU1}{lmtt}{f@series}{f@shape}%
254   \textvisiblespace}}
```

`\xt@vprintspaces` Helper macro to turn spaces active and print visible space instead.

```
255 \begingroup
256   \catcode`\ =\active%
257   \gdef\xt@vprintspaces{\catcode`\ \active\let \xt@visiblespace}%
258 \endgroup
```

`\verb` Redefine `\verb` to use `\xt@vprintspaces`.

```
\verb* 259 \def\verb{\relax\ifmmode\hbox\else\leavevmode\null\fi
260   \bgroup
261     \verb@eol@error \let\do\@makeother \dospecials
262     \verbatim@font\@noligs
263     \@ifstar\@sverb\@verb}
264 \def\@sverb{\xt@vprintspaces\@sverb}
```

It's better to put small things into `\AtBeginDocument`, so here we go:

```
265 \AtBeginDocument{%
266   \xt@patch@verbatim
267   \xt@patch@moreverb
268   \xt@patch@fancyvrb
269   \xt@patch@listings}
```

`verbatim*`

```
270 \def\xt@patch@verbatim{%
271   \ifpackageloaded{verbatim}{%
272     \@namedef{verbatim*}{\begingroup\@verbatim\xt@vprintspaces\verbatim@start}%
273   }{%
```

This is for vanilla LaTeX.

```
274     \@namedef{verbatim*}{\@verbatim\xt@vprintspaces\@sxverbatim}%
275   }}
```

This is for moreverb.

```
276 \def\xt@patch@moreverb{%
277   \ifpackageloaded{moreverb}{%
```

```

278 \namedef{listingcont*}{%
279 \def\verbatim@processline{%
280 \thelisting@line \global\advance\listing@line1
281 \the\verbatim@line\par}%
282 \@verbatim\xxt@vprintspaces\verbatim@start}%
283 }}}}

284 \def\xxt@patch@fancyvrb{%
285 \@ifpackageloaded{fancyvrb}{%
286 \let\FancyVerbSpace\xxt@visibleSPACE
287 }}}}

288 \def\xxt@patch@listings{%
289 \@ifpackageloaded{listings}{%
290 \let\lst@visibleSPACE\xxt@visibleSPACE
291 }}}}

Finish verbatim features:

292 \fi

```

Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols

\-	<u>117</u>	_	256, 257
\@@sverb	263, 264	A	
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