

The footnoterange package

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Abstract

This L^AT_EX 2_ε package provides the environments `footnoterange` and `footnoterange*`. Multiple footnotes inside these environments are not referenced as e.g. “^{1 2 3}” but as “¹⁻³”, i. e. the range (from first to last referred footnote at that place) is given. Depending on loading of `hyperref` and use of its `hyperfootnotes`-option the references are hyperlinked. (References to footnotes in `footnoterange*` are never hyperlinked.)

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Save per page about 200 ml water, 2 g CO₂ and 2 g wood:
Therefore please print only if this is really necessary.

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1 Introduction

This L^AT_EX 2_ε package provides the environments `footnoterange` and `footnoterange*`. Multiple footnotes inside these environments are not referenced as e.g. “1 2 3” but as “1-3”, i.e. the range (from first to last referred footnote at that place) is given. Depending on loading of `hyperref` and use of its `hyperfootnotes`-option the references are hyperlinked. References to footnotes in `footnoterange*` are never hyperlinked.

2 Usage

Just load the package placing

```
\usepackage{footnoterange}
```

in the preamble of your L^AT_EX 2_ε source file. There are no options to be used. The package should be loaded after `hyperref` (if that package is used) and after any other package redefining footnotes. Usage of the `footnoterange` (or `footnoterange*`) environment is simple: Just encapsulate the footnotes, which shall be referred as range instead of referencing as single ones.

About hyperlinks:

Footnote-references in a `footnoterange*` environment are never hyperlinked.

Footnote-references in a `footnoterange` environment may be hyperlinked:

- When the `hyperref` package is not loaded, they are not hyperlinked (naturally).
- When the `hyperref` package is loaded, it depends on the `hyperfootnotes` option of the `hyperref` package:
 - With `hyperfootnotes=true`, the references are hyperlinked.
 - With `hyperfootnotes=false`, the references are not hyperlinked.

`\footnotes` inside of the `footnoterange/footnoterange*` environment can use the optional parameter, i. e. `\footnote[42]{text}` even if this is the third footnote. When giving ranges as reference, this does not seem to be such a good idea, if this is not done consistently (i. e. footnotes [42], [43], [44] resulting in 42–44 is OK, but [42] (original 2), unchanged 3, unchanged 4 resulting in 42–4 is confusing). A warning about these changed footnotemarks is written into the `.log`-file.

When there is only a single footnote in a `footnoterange` environment, this does not produce some reference like “^{7–7}”, but only one footnotemark is used automatically. Because it is strange to use a `footnoterange` environment without a range of footnotes, an info is written into the `.log`-file about this.

The usage of other footnote-number-representations (e. g. `\Roman`, `\roman`, `\Alph`, `\alph`, `\fnsymbol`) is also possible, but two things must be taken into account: The number of footnote references is restricted (for example with `\Alph` only references A to Z are possible), which can be fixed e. g. with the <http://ctan.org/pkg/alphalph> package (but not automatically), and references to footnote-symbol-ranges (`\fnsymbol`) are probably not very clear.

Options

The `footnoterange` package takes no options.

3 Alternatives

I do not know of any alternative package, but if you programmed or found another alternative, which is available at [CTAN:](#), please send an e-mail to me with the name, location at [CTAN:](#), and a short notice, and I will probably list it here.

4 Example

```
1 (*example)
2 \documentclass[british]{article}[2007/10/19]% v1.4h
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 \usepackage[
5 extension=pdf,%
6 plainpages=false,%
7 pdfpagelabels=true,%
8 hyperindex=false,%
9 pdflang={en},%
10 pdftitle={footnoterange package example},%
11 pdfauthor={H.-Martin Muench},%
12 pdfsubject={Example for the footnoterange package},%
13 pdfkeywords={LaTeX, footnoterange, H.-Martin Muench},%
14 pdfview=FitH,%
15 pdfstartview=FitH,%
16 pdfpagelayout=OneColumn,%
17 hyperfootnotes=true%
18 ]{hyperref}[2012/02/06]% v6.82o
19
20 \usepackage{footnoterange}[2012/02/17]% v1.0a
21
22 \gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
23 \listfiles
24 \begin{document}
25 \pagenumbering{arabic}
26 \section*{Example for footnoterange}
27
28 This example demonstrates the use of package\newline
29 \textsf{footnoterange}, v1.0a as of 2012/02/17 (HMM).\newline
30 The package does not use options.\newline
31
32 \noindent For more details please see the documentation!\newline
33
34 \noindent Save per page about $200\unit{ml}$ water,
35 $2\unit{g}$ CO$_{2}$ and $2\unit{g}$ wood:\newline
36 Therefore please print only if this is really necessary.\newline
37
38 This\footnote{Lorem} text bears a multiplicity of footnotes.
39 Because the \texttt{hyperref} package is used with option
40 \texttt{hyperfootnotes=true}, the footnotes%
41 \begin{footnoterange}%
42 \footnote{ipsum}%
43 \footnote{dolor}%
44 \footnote{sit}%
45 \footnote{amet,}%
46 \footnote{consectetur}%
47 \footnote{adipiscing}%
48 \footnote{elit,}%
49 \footnote{sed}%
50 \end{footnoterange}%
51 are hyperlinked.\footnote{do eiusmod\ldots} Using
52 \texttt{hyperfootnotes=false} or not using \texttt{hyperref}
53 will remove the hyperlinks to the footnotes.\newline
54
```

```

55 This text also bears a multiplicity of footnotes,
56 but due to the use of the starred%
57 \begin{footnoterange*}%
58 \footnote{Ut purus elit,}%
59 \footnote{vestibulum ut,}%
60 \footnote{placerat ac,}%
61 \footnote{adipiscing vitae,}%
62 \footnote{felis.}%
63 \footnote{Curabitur}%
64 \footnote{dictum}%
65 \footnote{gravida}%
66 \end{footnoterange*}%
67 form of the environment they are not
68 hyperlinked.\footnote{mauris\ldots}\newline
69
70 The use of the optional parameter for footnotes%
71 \begin{footnoterange}%
72 \footnote[101]{Nam arcu libero,}%
73 \footnote[102]{nonummy eget,}%
74 \footnote[103]{consectetuer id,}%
75 \footnote[104]{vulputate a,}%
76 \footnote[105]{magna.}
77 \end{footnoterange}%
78 is also possible, but should be used consistently.
79
80 \pagebreak
81
82 When there is only one footnote%
83 \begin{footnoterange}%
84 \footnote{a single footnote}%
85 \end{footnoterange}%
86 in the \texttt{footnoterange} environment, only one
87 footnotemark is used and an info is written into the
88 log-file.\newline
89
90 The usage of other footnote-number-representations
91 (e.\,g.\,~\verb|\Roman|, \verb|\roman|, \verb|\Alph|, \verb|\alph|,
92 \verb|\fnsymbol|) is also possible, but two things must be taken
93 into account: The number of footnote references is restricted (for
94 example with \verb|\Alph| only references A to Z are possible), which
95 can be fixed e.\,g.\, with the \texttt{alphalph} package, and references
96 to footnote-symbol-ranges (\verb|\fnsymbol|) are probably
97 not very clear.
98
99 \end{document}
100 </example>

```

5 The implementation

We start off by checking that we are loading into L^AT_EX 2_ε and announcing the name and version of this package.

```
101 (*package)
102 \NeedsTeXFormat{LaTeX2e}[2011/06/27]
103 \ProvidesPackage{footnoterange}[2012/02/17 v1.0a
104     References to ranges of footnotes (HMM)]

    A short description of the footnoterange package:

105 %% Provides the footnoterange and footnoterange* environment to
106 %% refer to ranges of footnotes.

    We need the ltxcmds and xspace packages:

107 \RequirePackage{ltxcmds}[2011/04/18]% v1.20; for "\ltx@ifpackageloaded"
108 \RequirePackage{xspace}[2009/10/20]% v1.13; for "@\xspace"
109
```

The `\fnr@rangefootnote` is the internal replacement for the original `\footnote` command inside of an `footnoterange` environment.

```
110 \newcommand{\fnr@rangefootnote}[2][\empty]{%
    #1 contains the optional argument, which is predefined as \empty.

111     \nolinebreak%
112     % no \footnotemark here
113     \addtocounter{footnote}{+1}%
114     \ltx@ifpackageloaded{hyperref}{% hyperref loaded
115         \ifHy@hyperfootnotes% option hyperfootnotes=true
116             \addtocounter{Hfootnote}{+1}%
117             % Code from the hyperref package
118             \global\let\Hy@saved@currentHref\@currentHref%
119             \hyper@makecurrent{Hfootnote}%
120             \global\let\Hy@footnote@currentHref\@currentHref%
121             \global\let\@currentHref\Hy@saved@currentHref%
122             % End of code form the hyperref package
123         \fi%
124     }{% hyperref not loaded, nothing to be done here
125     }%
126     \xdef\fnr@opt{#1}% contains the optional argument
127     \xdef\fnr@arabic{\arabic{footnote}}%
128     \edef\fnr@formatted{\thefootnote}%

```

The `\footnotemark` is not set (yet), but the `\footnotetext`, and it gets a label.

```
129     \ifx\fnr@opt\empty%
130         \footnotetext{\label{fnr:\fnr@arabic}#2}%
131     \else%
132         \PackageWarning{footnoterange}{%
133             Custom footnote-numbers used in a footnoterange\MessageBreak%
134             environment: Footnote with natural number\MessageBreak%
135             \ifx\fnr@formatted\fnr@arabic%
136                 \fnr@arabic \space %
137             \else%
138                 \space \fnr@arabic \space (\fnr@formatted)\MessageBreak%
139             \fi%
140             was renumbered to \fnr@opt %
141         }%

```

```

142 \ltx@ifpackageloaded{hyperref}{% hyperref loaded
143 \footnotetext[#1]{\phantomsection\label{fnr:\fnr@arabic}#2}%
144 }{% hyperref not loaded
145 \footnotetext[#1]{\label{fnr:\fnr@arabic}#2}%
146 }%
147 \fi%
148 }%
149

```

footnoterange The footnoterange environment remembers the next footnote number as `\fnr@first` and the current `\footnote` definition as `\fnr@origfn` and uses `\fnr@rangefootnote` instead.

```

150
151 \newenvironment{footnoterange}{%
152 % at begin of the footnoterange environment
153 \addtocounter{footnote}{+1}%
154 \xdef\fnr@first{\arabic{footnote}}%
155 \addtocounter{footnote}{-1}%
156 \let\fnr@origfn\footnote%
157 \let\footnote\fnr@rangefootnote%

```

At the end of the environment the previous definition of `\footnote` is restored

```

158 }{% at end of the footnoterange environment
159 \let\footnote\fnr@origfn%

```

and the references are placed:

```

160 \ifx\fnr@opt\empty%
161 \else%
162 \hspace{-0.85ex}%
163 \fi%
164 \ifx\fnr@first\fnr@arabic%
165 \PackageInfo{footnoterange}{%
166 Environment footnoterange used,\MessageBreak%
167 but only one footnote (number \fnr@first ) is contained%
168 \MessageBreak%
169 }%
170 \ltx@ifpackageloaded{hyperref}{% hyperref package loaded
171 \ifHy@hyperfootnotes% option hyperfootnotes=true
172 \hbox{\hyperref[fnr:\fnr@first]{%
173 \textsuperscript {\normalfont \ref*\fnr:\fnr@first}}}%
174 \else% option hyperfootnotes=false
175 \hbox {\textsuperscript {\normalfont \ref*\fnr:\fnr@first}}}%
176 \fi%
177 }{% hyperref package not loaded
178 \hbox {\textsuperscript {\normalfont \ref{fnr:\fnr@first}}}%
179 }%
180 \else%
181 \ltx@ifpackageloaded{hyperref}{% hyperref package loaded
182 \ifHy@hyperfootnotes% option hyperfootnotes=true
183 \hbox{\hyperref[fnr:\fnr@first]{%
184 \textsuperscript {\normalfont \ref*\fnr:\fnr@first}}}%
185 \textsuperscript {\normalfont --}%
186 \hyperref[fnr:\arabic{footnote}]{%
187 \textsuperscript {\normalfont \ref*{
188 \fnr:\arabic{footnote}}}}}%
189 \else% option hyperfootnotes=false
190 \hbox {\textsuperscript {\normalfont \ref*\fnr:\fnr@first}%
191 --\ref*\fnr:\arabic{footnote}}}%

```

```

192     \fi%
193   }{% hyperref package not loaded
194     \hbox {@textsuperscript {\normalfont \ref{fnr:\fnr@first}}%
195                                     --\ref{fnr:\arabic{footnote}}}}%
196   }%
197   \fi%
198 \@ \xspace%
199 }
200

```

footnoterange* The `footnoterange*` environment does the same as the `footnoterange` environment but suppresses all hyperlinks to footnotes inside.

```

201
202 \newenvironment{footnoterange*}{%
203   % at begin of the footnoterange* environment
204   \addtocounter{footnote}{+1}%
205   \xdef\fnr@first{\arabic{footnote}}%
206   \addtocounter{footnote}{-1}%
207   \let\fnr@origfn\footnote%
208   \let\footnote\fnr@rangefootnote%
209 }{% at end of the footnoterange* environment
210   \let\footnote\fnr@origfn%
211   \ifx\fnr@first\fnr@arabic%
212     \PackageInfo{footnoterange}{%
213       Environment footnoterange used,\MessageBreak%
214       but only one footnote (number \fnr@first ) is contained%
215     }%
216     \ltx@ifpackageloaded{hyperref}{% hyperref package loaded
217       \hbox {@textsuperscript {\normalfont \ref*{fnr:\fnr@first}}}%
218     }{% hyperref package not loaded
219       \hbox {@textsuperscript {\normalfont \ref{fnr:\fnr@first}}}%
220     }%
221   \else%
222     \ltx@ifpackageloaded{hyperref}{% hyperref package loaded
223       \hbox {@textsuperscript {\normalfont \ref*{fnr:\fnr@first}}%
224                                     --\ref*{fnr:\arabic{footnote}}}}%
225     }{% hyperref package not loaded
226       \hbox {@textsuperscript {\normalfont \ref{fnr:\fnr@first}}%
227                                     --\ref{fnr:\arabic{footnote}}}}%
228     }%
229   \fi%
230 \@ \xspace%
231 }

```

`\@ \xspace` will preserve the space behind the environment (if there is one).

```

232 </package>

```


6 Installation

6.1 Downloads

Everything should become available on CTAN: soon, <http://www.ctan.org/tex-archive/>, but may need additional packages themselves.

`footnoterange.dtx` For unpacking the `footnoterange.dtx` file and constructing the documentation it is required:

- T_EX Format L^AT_EX 2_ε, <http://www.CTAN.org/>
- document class `ltxdoc`, 2007/11/11, v2.0u, <http://ctan.org/pkg/ltxdoc>
- package `hltxdoc`, 2011/02/04, v0.21, <http://ctan.org/pkg/hltxdoc>

`footnoterange.sty` The `footnoterange.sty` for L^AT_EX 2_ε (i. e. each document using the `footnoterange` package) requires:

- T_EX Format L^AT_EX 2_ε, <http://www.CTAN.org/>
- package `ltxcmds`, 2011/04/18, v1.20, <http://ctan.org/pkg/ltxcmds>
- package `xspace`, 2009/10/20, v1.13, <http://ctan.org/pkg/xspace>

`footnoterange-example.tex` The `footnoterange-example.tex` requires the same files as all documents using the `footnoterange` package and additionally:

- class `article`, 2007/10/19, v1.4h, from `classes.dtx`:
[CTAN:macros/latex/base/classes.dtx](http://www.ctan.org/ctan:macros/latex/base/classes.dtx)
- package `footnoterange`, 2012/02/17, v1.0a,
<http://ctan.org/pkg/footnoterange>
(Well, it is the example file for this package, and because you are reading the documentation for the `footnoterange` package, it can be assumed that you already have some version of it – is it the current one?)
- package `hyperref`, 2012/02/06, v6.82o,
[CTAN:macros/latex/contrib/hyperref/hyperref.dtx](http://www.ctan.org/ctan:macros/latex/contrib/hyperref/hyperref.dtx)

`Oberdiek` All packages of HEIKO OBERDIEK's bundle 'oberdiek' (especially `hltxdoc`, `ltxcmds`, and `alphalph`) are also available in a TDS compliant ZIP archive:

`hltxdoc` [CTAN:install/macros/latex/contrib/oberdiek.tds.zip](http://www.ctan.org/ctan:install/macros/latex/contrib/oberdiek.tds.zip).

`ltxcmds` It is probably best to download and use this, because the packages in there are quite probably both recent and compatible among themselves.

`alphalph`

`hyperref` `hyperref` is not included in that bundle and needs to be downloaded separately, <http://mirror.ctan.org/install/macros/latex/contrib/hyperref.tds.zip>.

Münch A hyperlinked list of my (other) packages can be found at <http://www.Uni-Bonn.de/~uzs5pv/LaTeX.html>.

6.2 Package, unpacking TDS

Package. This package is available on [CTAN](#):

[CTAN:macros/latex/contrib/footnoterange/footnoterange.dtx](#)
The source file.

[CTAN:macros/latex/contrib/footnoterange/footnoterange.pdf](#)
The documentation.

[CTAN:macros/latex/contrib/footnoterange/footnoterange-example.pdf](#)
The compiled example file, as it should look like.

[CTAN:macros/latex/contrib/footnoterange/README](#)
The README file.

There is also a `footnoterange.tds.zip` available:

[CTAN:install/macros/latex/contrib/footnoterange.tds.zip](#)
Everything in TDS compliant, compiled format.

which additionally contains

<code>footnoterange.ins</code>	The installation file.
<code>footnoterange.drv</code>	The driver to generate the documentation.
<code>footnoterange.sty</code>	The <code>.sty</code> file.
<code>footnoterange-example.tex</code>	The example file.

For required other packages, please see the preceding subsection.

Unpacking. The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain $\text{T}_{\text{E}}\text{X}$:

```
tex footnoterange.dtx
```

About generating the documentation see paragraph 6.4 below.

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

<code>footnoterange.sty</code>	→ <code>tex/latex/footnoterange/footnoterange.sty</code>
<code>footnoterange.pdf</code>	→ <code>doc/latex/footnoterange/footnoterange.pdf</code>
<code>footnoterange-example.tex</code>	→ <code>doc/latex/footnoterange/footnoterange-example.tex</code>
<code>footnoterange-example.pdf</code>	→ <code>doc/latex/footnoterange/footnoterange-example.pdf</code>
<code>footnoterange.dtx</code>	→ <code>source/latex/footnoterange/footnoterange.dtx</code>

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

6.3 Refresh file name databases

If your $\text{T}_{\text{E}}\text{X}$ distribution (`te $\text{T}_{\text{E}}\text{X}$` , `mik $\text{T}_{\text{E}}\text{X}$` ,...) relies on file name databases, you must refresh these. For example, `te $\text{T}_{\text{E}}\text{X}$` users run `texhash` or `mktextlsr`.

6.4 Some details for the interested

Unpacking with L^AT_EX. The `.dtx` chooses its action depending on the format:

plain T_EX: Run `docstrip` and extract the files.

L^AT_EX: Generate the documentation.

If you insist on using L^AT_EX for `docstrip` (really, `docstrip` does not need L^AT_EX), then inform the `autodetect` routine about your intention:

```
latex \let\install=y\input{footnoterange.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by a configuration file `ltxdoc.cfg`. For instance, put the following line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL^AT_EX:

```
pdflatex footnoterange.dtx
makeindex -s gind.ist footnoterange.idx
pdflatex footnoterange.dtx
makeindex -s gind.ist footnoterange.idx
pdflatex footnoterange.dtx
```

6.5 Compiling the example

The example file, `footnoterange-example.tex`, can be compiled via `(pdf)latex footnoterange-example.tex`.

7 Acknowledgements

I would like to thank HEIKO OBERDIEK for providing a lot (!) of useful packages (from which I also got everything I know about creating a file in `.dtx` format, ok, say it: copying), and the `news:comp.text.tex` and `news:de.comp.text.tex` newsgroups for their help in all things T_EX. This package was created as response to question “Compressing consecutive footnote marks” by user001 (<http://tex.stackexchange.com/users/10127/user001>) on <http://tex.stackexchange.com/q/44165/6865>.

8 History

[2011/02/11 v0.1ff.]

- Some versions at <http://tex.stackexchange.com/q/44165/6865>.

[2012/02/17 v1.0a]

- Package created and uploaded to CTAN.

When you find a mistake or have a suggestion for an improvement of this package, please send an e-mail to the maintainer, thanks! (Please see BUG REPORTS in the README.)

9 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; plain numbers refer to the code lines where the entry is used.

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