

# The dtnfootnotes package

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## Introduction

The default formatting of footnotes in L<sup>A</sup>T<sub>E</sub>X is painfully ugly with footnotes indented and footnote marks superscripted and directly adjoining the footnote text.

This package changes the footnote format to:

- flush left
- display the mark in normal (non-superscripted) font
- add space between the footnote mark and text.

The package can also optionally:

- add a blank line between footnotes
- adjust the space between the footnote mark and text
- adjust the footnote font size.

## Usage

The package is loaded with the command:

```
\usepackage[sep][margin][size]{dtnfootnotes}
```

The package options are:

- |               |  |
|---------------|--|
| <b>sep</b>    | This is a boolean that determines whether footnotes are separated by a blank line. It defaults to <b>false</b> . The option value is stored in the T <sub>E</sub> X switch <code>@dtn@opt@sep</code> .   |
| <b>margin</b> | This accepts a length used to set <code>\footnotemargin</code> , which determines the space between the footnote mark and text. It defaults to <code>1.10em</code> . If an invalid length is provided the package displays a warning and reverts <b>margin</b> to its default value. The option value is stored in the <code>\dtn@opt@margin</code> macro. |

`size` This is a font size used to set `\footnotesize`, which is one of the standard L<sup>A</sup>T<sub>E</sub>X predefined commands: `\tiny`, `\scriptsize`, `\footnotesize`, `\small`, `\normalsize`, `\large`, `\Large`, `\LARGE`, `\huge`, and `\Huge`. Use the option value to reduce the footnote size by one step, and to increase it by one step. The option value is stored in the `\dtn@opt@size` macro.

Here is an example in which all options are used in loading the package:

```
\usepackage[sep=true][margin=1.6em][size=\small]{dtnfootnotes}
```

## Implementation

```

1 \DeclareCurrentRelease{v0.1}{2023-07-10}
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{dtnfootnotes}
4     [2023-07-10 v0.1 Improve footnote formatting]

@dtn@opt@sep Process the package options.
\dtn@opt@margin
\dtn@opt@size
5 \DeclareKeys{
6     sep.if = @dtn@opt@sep,      sep.usage = preamble,
7     margin.store = \dtn@opt@margin, margin.usage = preamble,
8     size.store = \dtn@opt@size,  size.usage = preamble
9 }
10 \SetKeys{
11     sep = false,
12     margin = 1.10em,
13     size = \empty
14 }
15 \ProcessKeyOptions

```

Processing the `margin` option value requires checking the validity of a length value. This is done by setting up a command that checks length validity. The command definition is taken from <https://tex.stackexchange.com/a/499223>. It, in turn, credits <https://stackoverflow.com/a/23872060/923955> for the regex it contains.

To ensure that any commands containing lengths, such as `\small`, are expanded the newly defined command needs to be invoked with `\expandafter` preceding and following the command name.

```

16 \ExplSyntaxOn
17 \NewDocumentCommand{\iflengthTF}{mmm}{%
18     \regex_match:nnTF
19     { \A [+|-]? ((\d+(\.\d*))?)|(\.\d+) ) \s*
20     (pt|pc|in|bp|cm|mm|dd|cc|sp|ex|em) \Z } % regex
21     { #1 } % test string
22     { #2 } % true text

```

```

23 { #3 } % false text
24 }
25 \ExplSyntaxOff

```

If the `margin` is not a valid length then warn the user and reset `margin` to the default value.

```

26 \expandafter\iflengthTF\expandafter{\dtn@opt@margin}{}{%
27   \PackageWarning{dtnfootnotes}{margin value is not a valid length
28                                     \MessageBreak
29                                     using default value of 1.10em instead}
30   \renewcommand{\dtn@opt@margin}{1.10em}
31 }

```

Uses `footmisc` to shift the footnotes flush left and use hanging indent. The `ifthen` package is used for logical branching. The purpose served by the `setspace` is truly mysterious.

```

32 \RequirePackage[hang,flushmargin,splitrule,multiple,abovefloats]{footmisc}
33 \RequirePackage{etoolbox}
34 \RequirePackage{ifthen}
35 \RequirePackage{setspace}

```

Change the footnote font size if a `size` option value was provided.

```

36 \ifthenelse{\equal{\dtn@opt@size}{\empty}}{}{%
37   \renewcommand{\footnotesize}{\small}
38 }%

```

Make the footnote mark normal font size. This technique is taken from <https://tex.stackexchange.com/a/306278>.

```

39 \patchcmd{\@makefnmark}{%
40 \ifFN@hangfoot
41 \bgroup}%
42 {%
43 \ifFN@hangfoot
44 \bgroup\def\@makefnmark{\rlap{\normalfont\@thefnmark.}}}{\}%
45 \patchcmd{\@makefnmark}{%
46 \ifdim\footnotemargin>\z@
47 \hb@xt@ \footnotemargin{\hss\@makefnmark}}}%
48 {%
49 \ifdim\footnotemargin>\z@
50 \hb@xt@ \footnotemargin{\@makefnmark\hss}}{}{}%

```

Set distance between main text and note rule.

```

51 \setlength{\skip\footins}{1\baselineskip}

```

Set distance between footnote mark and text, using the `margin` option value if provided.

```
52 \expandafter\setlength\expandafter{\footnotemargin}{\dtn@opt@margin}
```

Add a blank line between footnotes if requested with the `sep` option. This is implemented by setting `\footnotesep` to a non-zero length. This vertical space is inserted before each footnote.

```
53 \ifthenelse{\boolean{@dtn@opt@sep}}{%  
54   \setlength{\footnotesep}{\skip\footins} % Between footnotes [= previous]  
55 }{%  
56 \renewcommand{\hangfootparskip}{0pt}  
57 \renewcommand{\hangfootparindent}{1em}
```