pfnote, fnpos and dblfnote Packages for Footnotes*

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Abstract

This file provides three style files; pfnote to enclose footnote numbering in a page; fnpos to control the vertical position of footnotes; dblfnote to make footnote double-columned.

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1 Introduction

LaTeX users often bother about fine points of footnote. How can I reset `footnote` counter when a page is produced in order to keep the counter from having too large, say 30, in a document with many footnotes? How can I place footnotes at more appropriate position? How can I make footnotes double-columned while main text is single-columned?

The style files distributed with this document will solve these problems. You will have the following three style files by processing yafoot.dtx[1] with docstrip.

pfnote **pfnote** provides a new version of `\footnote` to make footnote numbering enclosed in a page. That is, the counter `footnote` is reset whenever a page is produced and thus the first footnote in a page is numbered 1 no matter how it stands in the sequence of footnotes in a document. Since this document itself uses pfnote, you will see how footnotes are numbered.

fnpos **fnpos** provides following commands to control the vertical position of footnotes.

\makeFNbottom \makeFNmid
- `\makeFNbottom` makes footnotes always placed at the bottom of a `\ragged bottom` page, while `\makeFNmid` allows footnotes directly follow the main text of a page as standard LaTeX does.

\makeFNbelow \makeFNabove
- `\makeFNbelow` places footnotes below bottom floats (i.e. figures and tables), while `\makeFNabove` is to place footnotes above bottom floats as standard LaTeX does.

This document also uses fnpos to make footnotes *bottom* and *below*[2]. The first version of these commands are posted by the author to news groups `comp.text.tex` and `fj.comp.texhax` as the answers to the posts by Martin Boyer and Nobuaki Minematsu.

dblfnote **dblfnote** makes footnotes double-columned. It also provides a few commands to control column breaking. The first version of the style file is created for Tim Armstrong's post to `comp.text.tex`. Since this document uses fnpos, you will find that the footnotes[3] in this page are double-columned.

Note that these style files may be used either solely, or combined each other as done in this document.

2 Usage

2.1 Loading Style Files

All the three style files are usable to both LaTeX 2_ε and LaTeX-2.09 users with their standard package loading declaration. If you use LaTeX 2_ε and wish to load, for example, pfnote and fnpos, simply do the following.

```
\usepackage{pfnote}
\usepackage{fnpos}
```

If you still love LaTeX-2.09, the following is what you have to do.

[1] It stands for "Yet Another FOOTnote."

[2] But the effect will be hardly seen except in the right column of page 5 where we show the effect explicitly.

[3] This document has many footnotes, some of which are just to show how our footnote mechanisms work.

```
\documentstyle[..,pfnote,fnpos,...]{⟨main-style⟩}
```

Note that any combination of three styles are allowed and they are insensitive to their loading order.

2.2 pfnote: Enclose Footnote Numbers within a Page

`pfnote` Just loading pfnote is everything that you have to do to make footnote numbering enclosed in a page[1]. Only one thing you have to remember is that footnote numbers will be adjusted after you run LaTeX *twice*, as `\ref`-erences to `\label`-s are.

2.3 fnpos: Control Vertical Position of Footnotes

`fnpos` The following four commands are available to control the vertical position of footnotes.

`\makeFNbottom` `\makeFNbottom` makes footnotes always placed at the bottom of a `\raggedbottom` page, even if the page is too short to push the footnotes to its bottom because, for example, the page is broken just before a tall object such as a `tabular`. This is default.

`\maekFNmid` `\makeFNmid` cancels the effect of `\makeFNbottom` to allow footnotes directly follow the main text of a page as standard LaTeX does.

`\maekFNbelow` `\makeFNbelow` places footnotes *below* bottom floats (i.e. figures and tables). This is default.

`\maekFNabove` `\makeFNabove` cancels the effect of `\makeFNabove` to place footnotes *above* bottom floats as standard LaTeX does.

Note that if you are using pLaTeX, a Japanese version of LaTeX, it might be unnecessary to use pfnote because pLaTeX does what `\makeFNbottom` and `\makeFNbelow` do[2]. However, if you wish to follow the real LaTeX's standard, `\makeFNmid` and `\makeFNabove` will do for you.

The following two two-columned pages show the effects of the commands.

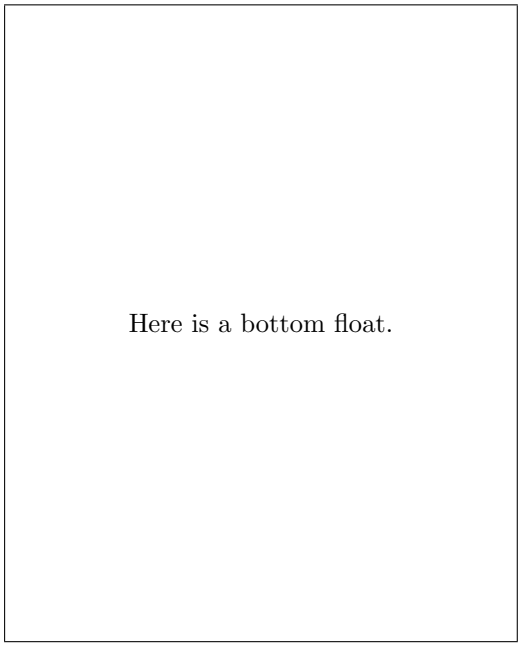
[1] Here you will find this fourth footnote is numbered one.

[2] Very strictly speaking, the mechanism of pLaTeX is slightly different from that of fnpos but the difference is hardly recognizable.

This column is typeset with `\makeFNmid` and `\makeFNabove`[1].

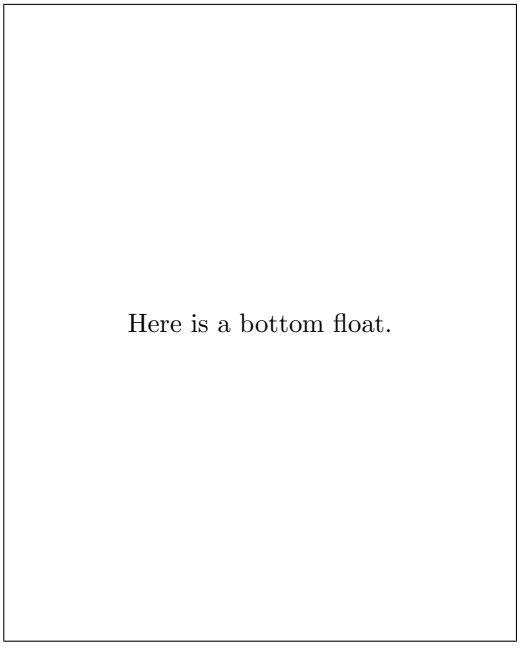
(Main text of this column is here.)

[1]Therefore, this footnote is *above* the bottom float leaving spaces at the bottom of this column.



This column is typeset with `\makeFNmid` and `\makeFNbelow`[2].

(Main text of this column is here.)

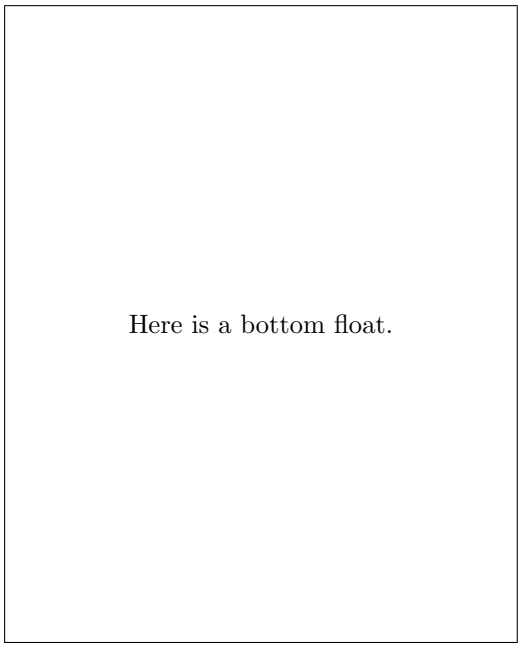


[2]Therefore, this footnote is *below* the bottom float still leaving spaces at the bottom of this column.

This column is typeset with `\makeFNbottom` and `\makeFNabove`[1].

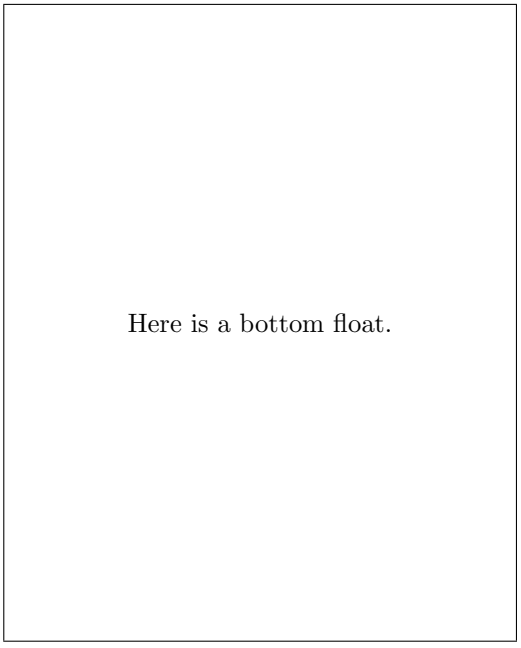
(Main text of this column is here.)

[1]Therefore, this footnote is *above* the bottom float that is pushed to the *bottom* of this column together with this footnote.



This column is typeset with `\makeFNbottom` and `\makeFNbelow`[2].

(Main text of this column is here.)



[2]Therefore, this footnote is *below* the bottom float, and at the *bottom* of this column alone.

2.4 dblfnote: Make Footnotes Double-Columned

`dblfnote` Simply loading dblfnote will make footnotes double-columned. For fine tuning of double-columning, however, you have a few style parameters and commands as follows.

`DFNsloppiness` `DFNsloppiness` defines how sloppy paragrahs in footnotes are typeset. Since lines of footnotes are narrow, you might wish to typeset footnotes in some `\sloppy` manner in order to avoid underfull. Setting `DFNsloppiness` to larger value up to 9999, footnote paragraphs will be sloppier. The default is 5000.

`\DFNcolumnsep` `\DFNcolumnsep` is the distance of footnote columns is specified by the value of `\DFNcolumnsep`. If you don't set this parameter explicitly[1], the value is that of `\columnsep`. For example, the author set `\DFNcolumnsep` to $1.5 \times$ `\columnsep` in this document.

`\DFNcolumnwidth` `\DFNcolumnwidth` is the width of a footnote column. If you don't set this parameter explicitly, as expected, it is automatically set to (`\textwidth` − `\DFNcolumnsep`)/2.

`\DFNallowcbreak` `\DFNinhibitcbreak` `\DFNallowcbreak` allows a footnote is broken into two columns, while `\DFNinhibitcbreak` inhibits it. In default, column breaking is allowed.

`\DFNtrysingle` `\DFNalwaysdouble` `\DFNtrysingle` places footnotes only in the left column if the page containing them has enough space as shown in pages 1, 3 and this page, while `\DFNalwaysdouble` makes them double-columned (almost) always. In default, single-columning is tried.

`\DFNruleleft` `\DFNruleboth` `\DFNruleleft` draws `\footnoterule` over footnotes in left column only, while `\DFNruleboth` draws in both columns. In default, the rule is drawn in left column only.

Note that dblfnote will do nothing if `\twocolumn` is in effect, as shown in pages 4 and 5. That is, footnotes are put as in usual double-coulumned document. If you change the page structure to `\onecolumn`, the mechanism of dblfnote is enabled again as shown in this page.

3 Known Problems

1. The style pfnote does not enlose the number of footnotes in `minipage` environment.
2. The style dblfnote may mistakingly produce a little bit too short pages if an extremely long paragraph has footnotes. More specifically, if a paragraph runs across three or more pages $p_1, \ldots, p_n$, and its first and last footnote appears in p_i $(i \leq n-2)$ and p_j $(j > i)$, pages p_{i+1} to p_j may be a little bit too short especially for those without footnotes.

Acknowledgments

The author thanks to Martin Boyer and Nobuaki Minematsu whose posts to news groups triggered writing very first version of macros in fnpos. He also thanks to Tim Armstrong whose post to `comp.text.tex` encouraged him to make the first version of dblfnote that requires considerable hack.

For the implementation of three style files, the author refers the base implementations of the macros for `\footnote` and for `\output` routine. These macros are written by Leslie Lamport as a part of LaTeX-2.09 and LaTeX 2ε (1997/12/01) to which Johannes Braams and other authors also contributed.

[1] Strictly speaking, unless you set a non-negative value in the document preamble.