

The centernot package

Heiko Oberdiek
<oberdiek@uni-freiburg.de>

2006/12/02 v1.0

Abstract

This package provides `\centernot` that prints the symbol `\not` on the following argument. Unlike `\not` the symbol is horizontally centered.

Contents

| | | |
|----------|---|----------|
| 1 | User interface | 1 |
| 2 | Implementation | 1 |
| 3 | Installation | 2 |
| 3.1 | Some details for the interested | 2 |
| 4 | History | 3 |
| | [2006/12/02 v1.0] | 3 |
| 5 | Index | 3 |

1 User interface

If a negotiated relational symbol is not available, `\not` can be used to create the negotiated variant of the relational symbol. The disadvantage of `\not` is that it is put at a fixed location regardless of the width of the relational symbol. Therefore `\centernot` takes an argument and measures its width to achieve a better placement of the symbol `\not`. Examples:

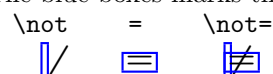
| Symbol | <code>\not</code> | <code>\centernot</code> | |
|------------------------------|-------------------|-------------------------|---------------------|
| <code>=</code> | \neq | \neq | <i>(definition)</i> |
| <code>\parallel</code> | \nparallel | \nparallel | |
| <code>\longrightarrow</code> | \nrightarrow | \nrightarrow | |

2 Implementation

```
1 \<package>
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{centernot}
4 [2006/12/02 v1.0 Centers the not symbol horizontally (HO)]
```

`\not` is a `\mathrel` atom with zero width. It prints itself outside its character box, similar to `\rlap`. The next `\mathrel` symbol is then print on top of it. `TeX` does not add space between two `\mathrel` atoms. The following implementation assumes that the math font is designed in such a way that the position of `\not` fits well on the equal symbol.

The blue boxes marks the character bounding boxes seen by `TeX`:

`\not` `=` `\not=`


```

\centernot \centernot is not a symbol but a macro that takes one argument. It measures the
width of the argument and places \not horizontally centered on that argument.
The result is a \mathrel atom.
5 \newcommand*\centernot}{%
6   \mathpalette\@centernot
7 }
8 \def\@centernot#1#2{%
9   \mathrel{%
10    \rlap{%
11      \settowidth\dimen@{${\m@th#1}{#2}$}%
12      \kern.5\dimen@
13      \settowidth\dimen@{${\m@th#1}=$}%
14      \kern-.5\dimen@
15      ${\m@th#1}\not$%
16    }%
17    {#2}%
18  }%
19 }
20 \makeatother
21 \</package>

```

3 Installation

CTAN. This package is available on CTAN¹:

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

[CTAN:macros/latex/contrib/oberdiek/centernot.pdf](#) Documentation.

Unpacking. The .dtx file is a self-extracting docstrip archive. The files are extracted by running the .dtx through plain-TeX:

```
tex centernot.dtx
```

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

```

centernot.sty → tex/latex/oberdiek/centernot.sty
centernot.pdf → doc/latex/oberdiek/centernot.pdf
centernot.dtx → source/latex/oberdiek/centernot.dtx

```

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.

Refresh file databases. If your TeX distribution (TeX, mikTeX, ...) rely on file databases, you must refresh these. For example, TeX users run `texhash` or `mktextlsr`.

3.1 Some details for the interested

Attached source. The PDF documentation on CTAN also includes the .dtx source file. It can be extracted by AcrobatReader 6 or higher. Another option is pdftk, e.g. unpack the file into the current directory:

```
pdftk centernot.pdf unpack_files output .
```

¹<http://ftp.ctan.org/tex-archive/>

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{centernot.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 the configuration file ltxdoc.cfg. For instance, put this 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 centernot.dtx
makeindex -s gind.ist centernot.idx
pdflatex centernot.dtx
makeindex -s gind.ist centernot.idx
pdflatex centernot.dtx
```

4 History

[2006/12/02 v1.0]

- First version.

5 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 | | \mathrel 9 |
| \@centernot 6, 8 | | |
| C | | N |
| \centernot <u>5</u> | | \NeedsTeXFormat 2 |
| | | \newcommand 5 |
| D | | \not 15 |
| \dimen@ 11, 12, 13, 14 | | |
| K | | P |
| \kern 12, 14 | | \ProvidesPackage 3 |
| M | | R |
| \m@th 11, 13, 15 | | \rlap 10 |
| \makeatother 20 | | S |
| \mathpalette 6 | | \settowidth 11, 13 |