The centernot package

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Abstract

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

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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	`\not`	`\centernot`	
`=`	$\not=$	$\centernot=$	*(definition)*
`\parallel`	$\not\parallel$	$\centernot\parallel$	
`\longrightarrow`	$\not\longrightarrow$	$\centernot\longrightarrow$	

But do not forget that most negated symbols are already available, e.g.:

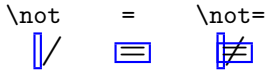
case	package	code	result
`\parallel`:	centernot	`$A \centernot\parallel B$`	$A \centernot\parallel B$
	amssymb	`$A \nparallel B$`	$A \nparallel B$
`\mid`:	centernot	`$A \centernot\mid B$`	$A \centernot\mid B$
	amssymb	`$A \nmid B$`	$A \nmid B$
	mathabx	`$A \notdivides B$`	$A \notdivides B$
`\rightarrow`:	centernot	`$A \centernot\rightarrow B$`	$A \centernot\rightarrow B$
	amssymb	`$A \nrightarrow B$`	$A \nrightarrow B$
	mathabx	`$A \nrightarrow B$`	$A \nrightarrow B$

2 Implementation

```
⟨*package⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{centernot}
  [2007/05/31 v1.1 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:



`\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.

```
\newcommand*{\centernot}{%
  \mathpalette\@centernot
}
\def\@centernot#1#2{%
  \mathrel{%
    \rlap{%
      \settowidth\dimen@{$\m@th#1{#2}$}%
      \kern.5\dimen@
      \settowidth\dimen@{$\m@th#1=$}%
      \kern-.5\dimen@
      $\m@th#1\not$%
    }%
    {#2}%
  }%
}
\makeatother

⟨/package⟩
```

3 Installation

3.1 Download

Package. This package is available on CTAN[1]:

`CTAN:macros/latex/contrib/oberdiek/centernot.dtx` The source file.

`CTAN:macros/latex/contrib/oberdiek/centernot.pdf` Documentation.

Bundle. All the packages of the bundle 'oberdiek' are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

`CTAN:install/macros/latex/contrib/oberdiek.tds.zip`

TDS refers to the standard "A Directory Structure for TEX Files" (`CTAN:tds/tds.pdf`). Directories with `texmf` in their name are usually organized this way.

[1] `ftp://ftp.ctan.org/tex-archive/`

3.2 Bundle installation

Unpacking. Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

Script installation. Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package attachfile2 comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

3.3 Package installation

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.

3.4 Refresh file name databases

If your TEX distribution (teTEX, mikTEX, ...) relies on file name databases, you must refresh these. For example, teTEX users run `texhash` or `mktexlsr`.

3.5 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 .
```

Unpacking with LATEX. The `.dtx` chooses its action depending on the format:

plain-TEX: Run docstrip and extract the files.

LATEX: Generate the documentation.

If you insist on using LATEX for docstrip (really, docstrip does not need LATEX), 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 pdfLaTeX:

```
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.

[2007/05/31 v1.1]

- Real symbols added in documentation part.

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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

\@centernot 6, 8

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