

The needspace package

Author: Peter Wilson, Herries Press

Maintainer: Will Robertson

will dot robertson at latex-project dot org

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1 Documentation

This packages two commands, `\needspace` and `\Needspace`, for reserving space to keep a certain amount of material from being split over a page break. If there is not enough space, a `\newpage` is automatically inserted.

The `\needspace⟨length⟩` macro reserves an *approximate* amount of space `⟨length⟩` for the material following to be kept on the same page. The accuracy of its calculations depend on what penalties are in effect, but is efficient and normally adequate. A short page will be ragged bottom even if `\flushbottom` is in effect.

`\Needspace{⟨length⟩}` is less efficient but reserves the requested space `⟨length⟩` exactly. It should only be used between paragraphs. Short pages that are produced by `\Needspace` will be ragged bottom but short pages produced by `\Needspace*{⟨length⟩}` will be flush bottom if `\flushbottom` is in effect.

2 Examples

Here, we request that we need next five lines on a single page/column:

... previous text.

```
\needspace{5\baselineskip}
```

The next five lines ...

In this case, the space is reserved more accurately:

... previous text.

```
\Needspace*{4\baselineskip}
  The major principles are:
\begin{itemize}
\item ...
```

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¹<http://www.latex-project.org/lppl.txt>

3 *Implementation*

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{needspace}[2010/09/12 v1.3d reserve vertical space]

\newcommand{\needspace}[1]{%
  \begingroup
    \setlength{\dimen@}{#1}%
    \vskip\z@\@plus\dimen@
    \penalty -100\vskip\z@\@plus -\dimen@
    \vskip\dimen@
    \penalty 9999%
    \vskip -\dimen@
    \vskip\z@skip % hide the previous |\vskip| from |\addvspace|
  \endgroup
}

\newcommand{\Needspace}{\@ifstar{\@sneedspace}{\@needspace}}

\newcommand{\@sneedspace}[1]{\par \penalty-100\begingroup
  \setlength{\dimen@}{#1}%
  \dimen@ii\pagegoal \advance\dimen@ii-\pagetotal
  \ifdim \dimen@>\dimen@ii
    \break
  \fi\endgroup}

\newcommand{\@needspace}[1]{\par \penalty-100\begingroup
  \setlength{\dimen@}{#1}%
  \dimen@ii\pagegoal \advance\dimen@ii-\pagetotal
  \ifdim \dimen@>\dimen@ii
    \ifdim \dimen@ii>\z@
      \vfil
    \fi
    \break
  \fi\endgroup}
```