The tocenter package*

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The package provides commands customizing the layout parameters of a documents.

1 User Interface

`\ToCenter` The `\ToCenter[`⟨*hfm*⟩`]{`⟨*text-width*⟩`}{`⟨*text-height*⟩`}` command calculates margins in such a way to center the specified text area together with header/footer/marginals areas on a sheet of paper. The optional ⟨*hfm*⟩ parameter specifies what additional areas take into account while centering. It is a combination of three letters `h` (headers), `f` (footers), and `m` (marginal notes). If this parameters is omitted, additional areas are ignored while calculations. For example, the following command

```
\ToCenter[h]{\textwidth}{\textheight}
```

centers the text+header area on the page. The text height and wight are not changed here. This command is useful in books without marginal notes.

`\FromMargins` The `\FromMargins[`⟨*hfm*⟩`]{`⟨*left*⟩`}{`⟨*right*⟩`}{`⟨*top*⟩`}{`⟨*bottom*⟩`}` command calculates the page layout parameters in the MS Word-like style. It sets page margins to the values specified in the last four parameters and calculates the width and height of the text area in such a way to satisfy the requirements. For example, the command

```
\FromMargins[hf]{20mm}{10mm}{25mm}{15mm}
```

calculates the text area dimensions and margins in such a way to provide 20 mm distance from the left edge of the page, 10 mm distance from the right edge, 25 mm distance from the top edge, and 15 mm distance from the bottom edge in assumption that header and footer are in use.

If twoside mode is turned on, the left and right margins specified in the `\FromMargins` command are considered for odd pages. For even pages, their values are swapped.

If `m`-letter is specified in the optional parameter, the margins are determined depending on two-side and two-column switches. In two-column mode, marginal

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notes are posed on both sides of paper, but in one-column mode the marginal notes are posed on the outer side of a page in two-side mode and to the right of the text area in one-side mode. All these specifics is taken into account while calculations of text margins. The reverse margin mode is also supported.

\ToCenter*
\FromMargins*

The star-forms of these commands

\ToCenter*{⟨*text-width*⟩}{⟨*text-height*⟩}
\FromMargins*{⟨*left*⟩}{⟨*right*⟩}{⟨*top*⟩}{⟨*bottom*⟩}

are intended for positioning of simple documents without headers, footers, marginal notes, cross-references, and table of contents. Additionally, the empty page style is set and the writing to aux-file is suppressed.

All mentioned commands are allowed in the preamble only.

2 The Implementation

\NCC@pos

The \NCC@pos{⟨*hfm*⟩} command parses the ⟨*hfm*⟩ parameter and prepares \NCC@h{⟨*register*⟩}, \NCC@f{⟨*register*⟩}, and \NCC@m{⟨*register*⟩} commands to adjust values of skip registers. The \NCC@pos command is also useful in the cropmark package.

```
⟨*package⟩
\def\NCC@pos#1{%
  \let\NCC@h\@gobble \let\NCC@f\@gobble \let\NCC@m\@gobble
  \@tfor\@tempa:=#1\do{%
```

If h-letter appears, the \NCC@h hook will adjust the value of register on the header height and separation:

```
    \if h\@tempa
      \def\NCC@h##1{\advance##1\headsep \advance##1\headheight}%
     \else
```

If f-letter appears, the \NCC@f hook will adjust the value of register on the footer skip distance:

```
      \if f\@tempa
        \def\NCC@f##1{\advance##1\footskip}%
       \else
```

If m-letter appears, the \NCC@m hook will adjust the value of register on the width and separation of marginal paragraphs:

```
        \if m\@tempa
          \def\NCC@m##1{\advance##1\marginparwidth
            \advance##1\marginparsep}%
        \fi
      \fi
    \fi
  }%
}
```

`\ToCenter` The star-form of this command differs in the omitted optional parameter, empty page style, and suppressed writing to external files:

```
\newcommand{\ToCenter}{%
  \@ifstar{\pagestyle{empty}\nofiles\NCC@center[]}{\NCC@center}%
}
\@onlypreamble\ToCenter
```

At the first, we parse the ⟨*hfm*⟩ parameter:

```
\newcommand*{\NCC@center}[3][]{\NCC@pos{#1}%
```

Start calculations from horizontal margins and width: set text width and calculate in `\@tempdima` the whole width of area to be centered.

```
  \setlength\textwidth{#2}%
  \@tempdima\textwidth \NCC@m\@tempdima
```

In two-column mode, margins appear on both sides of text. We must add the width of marginal area again to `\@tempdima`:

```
  \if@twocolumn
    \NCC@m\@tempdima
```

In two-column mode, we set the odd and even side margins to

```
\NCC@m{(\paperwidth-\@tempdima)/2}:
```

```
    \@tempdimb\paperwidth
    \advance\@tempdimb -\@tempdima
    \@tempdima .5\@tempdimb \NCC@m\@tempdima
    \oddsidemargin\@tempdima
    \evensidemargin\@tempdima
```

In one-column mode with reverse margins, we set

```
\evensidemargin:=(\paperwidth-\@tempdima)/2
\oddsidemargin:=\NCC@m{(\paperwidth-\@tempdima)/2}
```

and, with normal margins, we set

```
\oddsidemargin:=(\paperwidth-\@tempdima)/2
\evensidemargin:=\NCC@m{(\paperwidth-\@tempdima)/2}
```

```
  \else
    \@tempdimb\paperwidth
    \advance\@tempdimb -\@tempdima \@tempdima .5\@tempdimb
    \if@reversemargin
      \evensidemargin\@tempdima
      \NCC@m\@tempdima
      \oddsidemargin\@tempdima
    \else
      \oddsidemargin\@tempdima
      \NCC@m\@tempdima
      \evensidemargin\@tempdima
    \fi
  \fi
```

Now we calculate the vertical layout parameters. Again, in the `\@tempdima` we calculate the full height of useful areas and set the top margin to

```
(\paperwidth-\@tempdima)/2
```

if headers are in use.

```
  \setlength\textheight{#3}%
  \@tempdima\textheight \NCC@h\@tempdima \NCC@f\@tempdima
  \@tempdimb\paperheight
  \advance\@tempdimb -\@tempdima
  \topmargin .5\@tempdimb
```

Otherwise, we decrease the value of top margin on the height and separation of header:

```
  \ifx\NCC@h\@gobble
    \advance\topmargin -\headsep
    \advance\topmargin -\headheight
  \fi
```

Do final correction of all margins: decrease their values on 1 inch. This compensates the default adjustment applied by dvi drivers.

```
  \advance \oddsidemargin  -1in
  \advance \evensidemargin -1in
  \advance \topmargin      -1in
}
\@onlypreamble\NCC@center
```

`\FromMargins` Finally, we implement the `\FromMargins` command.

```
\newcommand{\FromMargins}{%
  \@ifstar{\pagestyle{empty}\nofiles\NCC@margin[]}{\NCC@margin}%
}
\@onlypreamble\FromMargins
```

Again, start from parsing the ⟨*hfm*⟩ parameter:

```
\newcommand*{\NCC@margin}[5][]{\NCC@pos{#1}%
```

Calculate horizontal parameters at first. In two-side mode, the left margin is equal to the `\oddsidemargin` and the right margin is equal to the `\evensidemargin`. In one-side mode, the `\oddsidemargin` is calculated in the same manner and the `\evensidemargin` is useless. So, we need not distinguish one-side and two-side modes here and do all things as for two-side mode.

```
  \setlength\oddsidemargin{#2}%
  \setlength\evensidemargin{#3}%
```

Calculate in `\@tempdima` the amount of space occupied by horizontal margins and marginal notes.

```
  \@tempdima\oddsidemargin \advance\@tempdima\evensidemargin
  \NCC@m\@tempdima
```

In two-column mode, marginal notes should be counted twice and the values of odd and even margins must be adjusted on the marginal width.

```
  \if@twocolumn
    \NCC@m\@tempdima
    \textwidth\paperwidth
    \advance\textwidth -\@tempdima
    \NCC@m\oddsidemargin \NCC@m\evensidemargin
```

In one-column mode, we must adjust only one margin depending on placement of marginal notes.

```
  \else
    \textwidth\paperwidth
    \advance\textwidth -\@tempdima
    \if@reversemargin
      \NCC@m\oddsidemargin
    \else
      \NCC@m\evensidemargin
    \fi
  \fi
```

Now we calculate the vertical layout parameters. We set the `\@tempdima` to the sum of top margin, bottom margin, header, and footer.

```
  \setlength\topmargin{#4}%
  \setlength\@tempdima{#5}\advance\@tempdima\topmargin
  \NCC@h\@tempdima \NCC@f\@tempdima
```

The rest of page is the text height:

```
  \textheight\paperheight
  \advance\textheight -\@tempdima
```

We must decrease the `\topmargin` on the header separation and height if headers are useless.

```
  \ifx\NCC@h\@gobble
    \advance\topmargin -\headsep
    \advance\topmargin -\headheight
  \fi
```

Do final correction of all margins:

```
  \advance \oddsidemargin  -1in
  \advance \evensidemargin -1in
  \advance \topmargin      -1in
}
\@onlypreamble\NCC@margin
⟨/package⟩
```