The **textarea** package*

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The package allows expand the text area of a document on other areas: footer, header, and margin. There are two ways for such expansion — temporary expansion of a current page on the header using a special negative vertical skip, or global change of page layout parameters with possibility of later restoration them to the original values. All these actions should be applied at the beginning of page.

1   User Interface

\StartFromTextArea   Applied at the beginning of page, it allows using the non-starred form of the \vspace command after it. The introduced command provides exact vertical skips at the beginning of page. Unlike it, the standard LaTeX's \vspace* command skips more space at the beginning of page than it is required in its parameter. So, using the \StartFromTextArea command prevents incorrect spacing at the beginning of page.

\StartFromHeaderArea   Applied at the beginning of page, it adjusts the beginning of text area to the header area by inserting a negative vertical skip. The header of this page should be empty. Otherwise, the consequent text will overprint the header.

\ExpandTextArea[⟨hfm⟩]   Expands the text area on other areas of page by changing page layout parameters. It can be used in one-column mode only. The letters in optional argument mean the following: h (header), f (footer), and m (margins). If an optional argument is omitted or equals to [*], the temporary expansion to the header is applied with the \StartFromHeaderArea command. Anyway, you can use the non-starred form of the \vspace command after expansion of the text area.

When a text area is expanded (non-temporary), the repeated call of this command is disallowed.

\RestoreTextArea   Restores page layout parameters to their previous values. After that, the \ExpandTextArea command can be applied again.

\NCC@restoretextarea   This hook can be used to provide an automatic restoration of the text area. In **ncc** class, we use it as follows: set it empty at the beginning of titlepage environment and call this command at the end of titlepage environment. So, if the text area will be expanded within the titlepage environment, it will be automatically restored at the end of it.

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2 The Implementation

\StartFromTextArea
\StartFromHeaderArea Both these commands are defined in two packages: in this and in **nccsect**. To be sure that the commands are specified in these packages only, we mutually test packages to be loaded.

```
1 ⟨∗package⟩
2 \@ifpackageloaded{nccsect}{}{%
3   \newcommand\StartFromTextArea{\par
4     {\parskip\z@ \strut\par}\vskip -\baselineskip
5   }
6   \newcommand\StartFromHeaderArea{%
7     \StartFromTextArea
8     \vskip -\headsep \vskip -\ht\strutbox
9   }
10 }
```

\RestoreTextArea This command is usually empty. But it is globally redefined when the layout of page is modified by the \ExpandTextArea command.

```
11 \newcommand*\RestoreTextArea{}
```

\ExpandTextArea This command should be applied at the beginning of page in one-column mode only.

```
12 \newcommand*\ExpandTextArea[1][*]{%
13   \if@twocolumn
14     \PackageError{textarea}%
15                 {The \string\ExpandTextArea\space command\MessageBreak
16                  cannot work in two-column mode}{}%
```

Test for temporary expansion mode and do it.

```
17   \else
18     \def\@tempa{*}\edef\@tempb{#1}%
19     \ifx\@tempa\@tempb
20       \StartFromHeaderArea
```

Otherwise, apply the permanent expansion but in the only case if it was not already applied.

```
21     \else
22       \ifx\RestoreTextArea\@empty
```

$\NCC@\langle x\rangle$ hooks will be applied right here to modify the layout and $\NCC@resore@\langle x\rangle$ hooks will applied later when the original layout will be restored.

```
23       \let\NCC@h\@empty \global\let\NCC@restore@h\@empty
24       \let\NCC@f\@empty \global\let\NCC@restore@f\@empty
25       \let\NCC@m\@empty \global\let\NCC@restore@m\@empty
```

Analyze letters in the optional parameter and prepare the respective hooks. The first parameter in all adjustment commands is a sign of adjustment: the empty value means adjust and the minus sign means restore.

```
26       \expandafter\@tfor\expandafter\@tempa\expandafter:\expandafter=#1\do{%
27         \if h\@tempa
```

```
28        \def\NCC@h{\NCC@adjusttoheader{}}%
29        \gdef\NCC@restore@h{\NCC@adjusttoheader-}%
30      \else
31       \if f\@tempa
32        \def\NCC@f{\NCC@adjusttofooter{}}%
33        \gdef\NCC@restore@f{\NCC@adjusttofooter-}%
34       \else
35        \if m\@tempa
36         \if@reversemargin \@tempcnta\@ne \else \@tempcnta\tw@ \fi
37         \edef\NCC@m{\noexpand\NCC@adjusttomargin{}{\the\@tempcnta}}%
38         \xdef\NCC@restore@m{\noexpand\NCC@adjusttomargin-{\the\@tempcnta}}%
39        \fi
40       \fi
41      \fi
42     }%
```

Modify the layout, apply the **\StartFromTextArea** command, and prepare the **\RestoreTextArea** command and the auto-restoration hook.

```
43     \NCC@h\NCC@f\NCC@m
44     \StartFromTextArea
45     \gdef\RestoreTextArea{%
46       \NCC@restore@h\NCC@restore@f\NCC@restore@m
47       \global\let\RestoreTextArea\@empty
48     }%
49     \def\NCC@restoretextarea{\RestoreTextArea}%
50    \fi
51   \fi
52  \fi
53 }
```

Adjust text height parameters and **\topmargin**.

```
54 \def\NCC@adjusttoheader#1{%
55   \@tempdima #1\headheight
56   \advance\@tempdima #1\headsep
57   \global\advance\textheight\@tempdima
58   \global\advance\topmargin-\@tempdima
59   \global\@colht\textheight
60   \global\@colroom\textheight
61   \global\vsize\textheight
62 }
```

\NCC@adjusttofooter Adjust text height parameters.

```
63 \def\NCC@adjusttofooter#1{%
64   \global\advance\textheight#1\footskip
65   \global\@colht\textheight
66   \global\@colroom\textheight
67   \global\vsize\textheight
68 }
```

\NCC@adjusttomargin Adjust text width parameters, \oddsidemargin or \evensidemargin. The second parameter specifies the mode of marginal notes: reverse (1) or normal (2) margins.

```
69 \def\NCC@adjusttomargin#1#2{%
70   \@tempdima #1\marginparwidth
71   \advance\@tempdima #1\marginparsep
72   \@tempcnta#2%
73   \ifodd\@tempcnta
74     \global\advance\oddsidemargin -\@tempdima
75   \else
76     \global\advance\evensidemargin -\@tempdima
77   \fi
78   \global\advance\textwidth\@tempdima
79   \global\columnwidth\textwidth
80   \global\linewidth\textwidth
81   \global\hsize\textwidth
82 }
```

\NCC@restoretextarea Text area auto-restoration hook.

```
83 \let\NCC@restoretextarea\@empty
84 ⟨/package⟩
```

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