The **caesar** package*

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Abstract

This package allows the typesetting of rich content in the margin. It includes text, but also figures and tables, which is common in science textbooks such as Feynman's *Lectures on Physics*.

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1 Usage

\sidenote The macro is very similar to the footnote macro and tries to emulate its behavior. It just puts the notes in the margin instead of the bottom of the page, therefore the name *sidenote*. It has the same parameters as footnote: `\sidenote[number]{text}`. All the sidenotes are subsequently numbered and float in the margin to avoid overlap. The optional parameter will manually change the numbering to the given value.

\sidenotemark Sidenote tries to mimic the footnote behavior and, consequently, provides the same solutions. Sometimes, it is not possible to directly call a sidenote macro, e.g. inside of a figure caption. Then, you can use the `\sidenotemark[number]` and `\sidenotetext[number]{text}` macros. `\sidenotemark` puts a mark at the current position. Afterwards, outside of the environment that causes the trouble, \sidenotetext it is possible the call `\sidenotetext[number]{text}` to provide the text and typeset the sidenote. The optional parameter is similar to the sidenote macro and will change the numbering.

marginfigure   The marginfigure environment puts a figure and its caption in the margin. Instead of `\begin{figure}[htbp]` use `\begin{marginfigure}`. The marginfigure has its own caption style named *marginfigure*. Please refer to the *caption* package for styles and their definitions.

margintable   The margintable environment works similar to marginfigure, but with table environments. Use `\begin{margintable}` instead of `\begin{table}[htbp]`, its caption style is named *margintable*.

figure*   The `figure*` environment is used to position figures across the full page, i.e. the text width plus the margin. The algorithm has to distinguish between recto and verso (left and right) pages and might need up to three LaTeX runs to provide

table*   the desired result. The corresponding caption style is called *widefigure*. The sister environment for tables is `table*`. Use *widetable* to change its caption style.

2   Technical note

When writing the package, we tried to provide a *minimum* extension to standard LaTeX for typesetting rich content in the margin. This means, that there are no sensible default values for most things such as page geometry, fonts and font sizes. However, the *caesar_book*-class accompanies this package as an example implementation as well as a template we use for our theses.

Also, this package has less feature than its sister package *sidenotes*. It was stripped by the offset functionality and the associated marginnote package completely. The caesar style files are meant to generate different output files from the same input file, which does not allow for manual intervention. In some sense, caesar tries to completely separate presentation and content.

In addition, we tried to keep compatibility with packages the user might want to use later. However, the following packages are needed by *caesar* and might introduce side effects with other packages.

3   Required packages

caption allows easier formatting of captions. Please refer to the *caption* manual for details on styles.

xparse is used to take advantage of the improved LaTeX3 syntax. All macros and environments are defined using this package.

l3keys2e provides a key/value mechanism

changepage is used to correctly shift figure* and table*. It has to use the option [strict] to work properly. This might lead to an option clash, if the same package is loaded without this option.

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*This document corresponds to `caesar` v0.20, dated 2020/04/05.

4   Implementation

Process the package options: onside

```
1 \ExplSyntaxOn
2 %
3 \keys_define:nn { caesar }
4   {
5     oneside .bool_set:N = \caesar_oneside
6   }
7 \ProcessKeysOptions { caesar }
```

We need a counter similar to the footnote counter.

```
8 \newcounter{sidenote} % make a counter
9 \setcounter{sidenote}{1} % init the counter

10 \DeclareExpandableDocumentCommand{\IfNoValueOrEmptyTF}{ m m m }
11 {
12 \IfNoValueTF{#1}
13   {#2}
14   {\tl_if_empty:nTF {#1} {#2} {#3}}
15 }
```

Put a marker in the horizontal list to detect subsequent sidenotemarks.

```
16 \NewDocumentCommand \@caesar@thesidenotemark { m }
17 {
18     \leavevmode
19     \ifhmode
20         \edef \@x@sf {\the \spacefactor }
21         \nobreak
22     \fi
23     \hbox {\@textsuperscript {\normalfont #1 }}
24     \ifhmode
25         \spacefactor \@x@sf
26     \fi
27     \relax
28 }
29 %
30 \NewDocumentCommand \@caesar@multisign { } {3sp}
31 %
32 \NewDocumentCommand \@caesar@multimarker { }
33 {
34   \kern-\@caesar@multisign
35   \kern\@caesar@multisign\relax
36 }
37 %
38 \NewDocumentCommand \@caesar@multichecker { }
39 {
40   \dim_compare:nNnTF \lastkern = \@caesar@multisign
41   {\@caesar@thesidenotemark{,}}
42   {}
```

```
43 }
44 %
```

Introduce an internal macro to place the marginal text.

```
45 \NewDocumentCommand \@caesar@placemarginal { m }
46 {
47     \marginpar{#1}
48 }
49 %
```

\sidenote Introduce the \sidenote macro with an optional argument.

```
50 \NewDocumentCommand \sidenote { o +m }
51 {
52   \sidenotemark[#1]
53   \sidenotetext[#1]{#2}
54   \@caesar@multimarker
55 }
```

\sidenotemark Sidenotemark is supposed to work similarly to footnotemark.

```
56 \NewDocumentCommand \sidenotemark { o }
57 {
58   \@caesar@multichecker
59   \IfNoValueOrEmptyTF{#1}
60     {\@caesar@thesidenotemark{\thesidenote}}
61     {\@caesar@thesidenotemark{#1}}
62   \@caesar@multimarker
63 }
```

\sidenotetext Sidenotetext is supposed to work similarly to footnotetext.

```
64 \NewDocumentCommand \sidenotetext { o +m }
65 {
66   \IfNoValueOrEmptyTF{#1}
67     {
68       \@caesar@placemarginal{\textsuperscript{\thesidenote}{}~#2}
69   \refstepcounter{sidenote}
70 }
71     {\@caesar@placemarginal{\textsuperscript{#1}~#2}}
72 }
```

marginfigure The marginfigure environment is similar to the figure environment. But the figure is put in the margin.

```
73 \newsavebox{\@caesar@marginfigurebox}
74 \DeclareCaptionStyle{marginfigure}{font=footnotesize}
75 \NewDocumentEnvironment{marginfigure} { }
76 {
77 \begin{lrbox}{\@caesar@marginfigurebox}
78   \begin{minipage}{\marginparwidth}
79     \captionsetup{type=figure,style=marginfigure}
```

```
80 }
81 {
82     \end{minipage}%
83   \end{lrbox}%
84   \@caesar@placemarginal{\usebox{\@caesar@marginfigurebox}}
85 }
```

margintable The margintable is similar to the table environment. But the table is put in the margin.

```
86 \newsavebox{\@caesar@margintablebox}
87 \DeclareCaptionStyle{margintable}{font=footnotesize}
88 \NewDocumentEnvironment{margintable} { }
89 {
90   \begin{lrbox}{\@caesar@margintablebox}
91     \begin{minipage}{\marginparwidth}
92       \captionsetup{type=table,style=margintable}
93 }
94 {
95     \end{minipage}
96   \end{lrbox}
97   \@caesar@placemarginal{\usebox{\@caesar@margintablebox}}
98 }
```

figure* The figure* environment provides a figure environment for figures that span across the full page (text plus margin width).

```
 99 \AtBeginDocument{%
100 \newlength{\@caesar@extrawidth}
101 \setlength{\@caesar@extrawidth}{\marginparwidth}
102 \addtolength{\@caesar@extrawidth}{\marginparsep}}
103 %
104 \NewDocumentEnvironment{autoadjustwidth}{ m m }%
105 {
106     \bool_if:NTF \caesar_oneside
107     {
108         \begin{adjustwidth}{#1}{#2}
109     }
110     {
111         \begin{adjustwidth*}{#1}{#2}
112     }
113 }
114 {
115     \bool_if:NTF \caesar_oneside
116     {
117         \end{adjustwidth}
118     }
119     {
120         \end{adjustwidth*}
121     }
122 }
```

```
123 %
124 \DeclareCaptionStyle{widefigure}{font=footnotesize}
125 \RenewDocumentEnvironment{figure*}{ O{htbp} }
126 {
127     \begin{figure}[#1]
128         \begin{autoadjustwidth}{}{-\@caesar@extrawidth}
129         \captionsetup{style=widefigure}
130 }
131 {
132         \end{autoadjustwidth}
133     \end{figure}
134 }
```

table* The table* environment provides a table environment for figures across text and margin width.

```
135 \DeclareCaptionStyle{widetable}{font=footnotesize}
136 \RenewDocumentEnvironment{table*}{ O{htbp} }
137 {
138     \begin{table}[#1]
139         \begin{autoadjustwidth}{}{-\@caesar@extrawidth}
140         \captionsetup{style=widetable}
141 }
142 {
143         \end{autoadjustwidth}
144     \end{table}
145 }
146 \ExplSyntaxOff
```

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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.

Change History