



Ivan Valbusa

The
fontsize
package

v0.6 – 2021/02/06

Legalese

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Feedback

If you have any questions, feedback or requests please email me at `ivan dot valbusa at gmail dot com`. If you need specific features not already implemented, remember to attach the example files.

User's guide to fontsize

A small package to change the font size

v0.6 – 2021/02/06

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Abstract

The fontsize package allows you to set arbitrary sizes for the main font of the document and to adjust the line spacing accordingly. It also provides new font sizing commands and lets you generate your own .clo file for better tuning.

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Credits

The code is an excerpt of the scrextend and scrfontsizes packages (Neukam et al. 2020), with few minor changes to make it completely independent of the KOMA-script bundle and with a couple of new features. The package is updated to version 3390 2019-11-18 17:09:35Z of the scrkernel-fonts.dtx file.

Caveat

Although effective with any value of the font size (as long as the font is scalable), the package is meant for small font size changes. For truly optimal results you should (re)define your own .clo file. In fact note that the file generated with \generateclofile, as well as the macros redefined via \changefontsize, are a subset of the standard .clo files.

1 Usage

The package can be loaded, as usual, with:

```
\usepackage[<options>]{fontsize}
```

1.1 Options

fontsize = $\langle\text{fontsize}\rangle$ default: 10pt

Sets the normal size to $\langle\text{fontsize}\rangle$ and the normal line spacing to $1.2\langle\text{fontsize}\rangle$. The other sizes (`\tiny`, `\scriptsize`, `\small`, ecc.) and line spacings are set proportionally. You can use any unit recognized by T_EX and you can omit the unit as well (in which case it defaults to pt). If a file named $\langle\text{name}\rangle\langle\text{fontsize}\rangle$.clo exists, it is used to setup the font sizes. This file can be generated through the `\generateclopedia` command (see below).

cloname = $\langle\text{name}\rangle$ default: fontsize

Sets to $\langle\text{name}\rangle$ the name prefix of the .clo file generated by `\generateclopedia` (see below).

1.2 Commands

\changefontsize[$\langle\text{baselineskip}\rangle$][$\langle\text{fontsize}\rangle$] iff $\langle\text{baselineskip}\rangle \geq \langle\text{fontsize}\rangle$

Sets the normal size to $\langle\text{fontsize}\rangle$ and the normal line spacing to $\langle\text{baselineskip}\rangle$. The other sizes (`\tiny`, `\scriptsize`, `\small`, ecc.) and line spacings are set proportionally. If the first optional argument is omitted, the command has the same effect of the `fontsize` option. You can use any unit recognized by T_EX and you can omit the unit as well (in which case it defaults to pt). For example:

```
\changefontsize[13.5pt]{11.5pt}
```

\generateclopedia{ $\langle\text{name}\rangle$ }[$\langle\text{baselineskip}\rangle$][$\langle\text{fontsize}\rangle$] iff $\langle\text{baselineskip}\rangle \geq \langle\text{fontsize}\rangle$

Generates a file named $\langle\text{name}\rangle\langle\text{fontsize}\rangle$.clo in which the normal size is $\langle\text{fontsize}\rangle$ and the normal line spacing is $\langle\text{baselineskip}\rangle$. The other sizes (`\tiny`, `\scriptsize`, `\small`, ecc.) and line spacings are set proportionally. You can use any unit recognized by T_EX and you can omit the unit as well (in which case it defaults to pt). If `cloname= $\langle\text{name}\rangle$` and `fontsize= $\langle\text{fontsize}\rangle$` , the generated file will be automatically used to setup the main sizes.



In fact the .clo file is only needed if you intend to modify it. In this case remember to comment the command, otherwise the edited file will be overwritten.

```
\usepackage[cloname=fs,fontsize=11.5]{fontsize} % loads fs11.5.clo
\generateclopedia{fs}[13.5][11.5] % creates fs11.5.clo
```

\printsamples{ $\langle\text{baselineskip}\rangle$ }[$\langle\text{fontsize}\rangle$][$\langle\text{sizes}\rangle$] iff $\langle\text{baselineskip}\rangle \geq \langle\text{fontsize}\rangle$

A command thought to test the `fontsize` settings. It prints a text sample for every size given in the third optional argument. If this argument is omitted, it prints a sample for each available size.

```
\printsamples{13pt}{11pt}[normalsizer,normalsizerr,normalsizerrr]
\printsamples{13.5pt}{12pt}
```

2 New font sizing commands

The package provides three additional font sizing commands for each standard size:

<code>\tiny</code>	Lipsum	<code>\large</code>	Lipsum
<code>\tinyr</code>	Lipsum	<code>\larger</code>	Lipsum
<code>\tinyrr</code>	Lipsum	<code>\largerr</code>	Lipsum
<code>\tinyrrr</code>	Lipsum	<code>\largerrr</code>	Lipsum
<code>\scriptsize</code>	Lipsum	<code>\Large</code>	Lipsum
<code>\scriptsize r</code>	Lipsum	<code>\Larger</code>	Lipsum
<code>\scriptsize rr</code>	Lipsum	<code>\Largerr</code>	Lipsum
<code>\scriptsize rrr</code>	Lipsum	<code>\Largerrr</code>	Lipsum
<code>\footnotesize</code>	Lipsum	<code>\LARGE</code>	Lipsum
<code>\footnotesize r</code>	Lipsum	<code>\LARGER</code>	Lipsum
<code>\footnotesize rr</code>	Lipsum	<code>\LARGE r</code>	Lipsum
<code>\footnotesize rrr</code>	Lipsum	<code>\LARGE rr</code>	Lipsum
<code>\small</code>	Lipsum	<code>\huge</code>	Lipsum
<code>\small r</code>	Lipsum	<code>\huger</code>	Lipsum
<code>\small rr</code>	Lipsum	<code>\huger</code>	Lipsum
<code>\small rrr</code>	Lipsum	<code>\huger</code>	Lipsum
<code>\normalsize</code>	Lipsum	<code>\Huge</code>	Lipsum
<code>\normalsize r</code>	Lipsum	<code>\Huger</code>	Lipsum
<code>\normalsize rr</code>	Lipsum	<code>\Hugerr</code>	Lipsum
<code>\normalsize rrr</code>	Lipsum	<code>\Hugerr</code>	Lipsum



If you want these commands to work as expected, the font must be smoothly scalable. This is the case of many Type 1 and Open Type fonts. Anyway, if the font has optical sizes, unusual things can happen: some larger sizes may appear smaller. For example, with the Latin Modern 12 pt typeface a similar situation can be encountered:

<code>\largerr</code>	15.84 pt	Hello world
<code>\larger</code>	15.12 pt	Hello world
<code>\large</code>	14.40 pt	Hello world



In fact the font used for the `\larger` ‘Hello world’ is bigger than that used for the `\large` one. This optical effect is due to the minor thickness of the stems, which makes the words appear shorter and clearer, but not less high (as you can see in the figure on the right which shows the letter H appropriately scaled to see the differences better).

3 Some text samples

Text samples for 11pt on 13pt

\normalsizerr: 12.1pt 14.3pt. As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogsms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena.

\normalsizerrr: 12.6pt 14.9pt. As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogsms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena.

\large: 13.2pt 15.6pt. As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogsms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena.

Text samples for 11.7pt on 13.4pt

\normalsizerr: 12.9pt 14.8pt. As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogsms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena.

\normalsizerrr: 13.5pt 15.5pt. As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogsms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena.

4 The Code



The parts added to the basic structure of `scrxextend` and `scrfontsizes` are highlighted in blue.

All the options of the package are defined via `xkeyval`, while `etoolbox` is required to execute `\AtEndOfPackage`. It is probably not necessary but for the moment I prefer to take advantage of it. Only a new package option called `cloname` is defined.

```
1 \ifpackageloaded{xkeyval}{\RequirePackage{xkeyval}}
2 \ifpackageloaded{etoolbox}{\RequirePackage{etoolbox}}
3 \DeclareOptionX{cloname}[fontsize]{\def\@fontsizefilebase{#1}}
```

Excerpt from `scrxextend.sty` Here the `scrxextend` code begins. Only a few names have been changed. The value of `\@fontsizefilebase` is set to `fontsize` instead of `scrszsize`.

```
4 \DeclareOptionX{fontsize}[10]{%
5   \expandafter\@defaultunits\expandafter\@tempdima#1 pt\relax\@nnil
6   \edef\@tempa{#1}%
7   \setlength{\@tempdimb}{\@tempdima}%
8   \edef\@tempb{\strip@pt\@tempdimb}%
9   \addtolength{\@tempdimb}{-10\p@}%
10  \edef\@ptsize{\strip@pt\@tempdimb}%
11  \edef\@tempa{%
12    \noexpand\makeatletter
13    \noexpand\InputIfFileExists{\@fontsizefilebase\@tempa.clo}{%
14      \noexpand\PackageInfo{fontsize}{%
15        File '@@fontsizefilebase\@tempa.clo' used to setup font sizes}%
16      }{%
17        \noexpand\InputIfFileExists{\@fontsizefilebase\@tempb pt.clo}{%
18          \noexpand\PackageInfo{fontsize}{%
19            File '@@fontsizefilebase\@tempb pt.clo' used instead of%
20            \noexpand\MessageBreak
21            file '@@fontsizefilebase\@tempa.clo' to setup font sizes}%
22          }{%
23            \noexpand\changefontsize{#1}%
24          }%
25        }%
26        \noexpand\catcode'\noexpand@=\the\catcode'\@
27      }%
28      \expandafter\AtEndOfPackage\expandafter{\@tempa}%
29 }
```

Now we can execute and process the new options defined above. As `cloname` is responsible for defining `\@fontsizefilebase` it must precede `fontsize` which uses this command. The `\ctm@setlength` and `\changefontsize` commands are simply new names, respectively, for `\scr@setlength` and `\changefontsizes` used in `scrxextend.sty`.

```
30 \ExecuteOptionsX{cloname,fontsize}
31 \ProcessOptionsX*\relax
```

```

32 \newcommand*\ctm@setlength[4]{%
33   \ifdim #2<\ifdim #2=\z@ \z@ \else \p@\fi
34   \ifdim #3<\ifdim #3=\z@ \z@ \else \p@\fi
35   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
36   \setlength{#1}{\p@ \@plus\p@ \@minus\p@}%
37   \else
38   \setlength{#1}{\p@ \@plus\p@ \@minus#4}%
39   \fi
40   \else
41   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
42   \setlength{#1}{\p@ \@plus#3 \@minus\p@}%
43   \else
44   \setlength{#1}{\p@ \@plus#3 \@minus#4}%
45   \fi
46   \fi
47   \else
48   \ifdim #3<\ifdim #3=\z@ \z@ \else \p@\fi
49   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
50   \setlength{#1}{#2 \@plus\p@ \@minus\p@}%
51   \else
52   \setlength{#1}{#2 \@plus\p@ \@minus#4}%
53   \fi
54   \else
55   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
56   \setlength{#1}{#2 \@plus#3 \@minus\p@}%
57   \else
58   \setlength{#1}{#2 \@plus#3 \@minus#4}%
59   \fi
60   \fi
61   \fi
62 }
63 \providecommand*\@changefontsize[2][1.2\@tempdima]{%
64   \@defaultunits\@tempdima#2pt\relax\@nnil
65   \setlength{\@tempdimc}{\@tempdima}%
66   \addtolength{\@tempdimc}{-10\p@}%
67   \edef\@ptsize{\strip@pt\@tempdimc}%
68   \@defaultunits\@tempdimb#1pt\relax\@nnil
69   \setlength{\@tempdimc}{\dimexpr (100\@tempdimb / \@tempdima * \p@)}%
70   \edef\@tempb{\the\@tempdimc}%
71   \setlength{\@tempdimc}{\@tempdima}%
72   \def\@tempa##1##2##3##4##5\@nnil{\def##1{##2.##3##4}}%
73   \expandafter\@tempa\expandafter\@tempb\@tempb\@nnil%
74   \ctm@setlength{\abovedisplayskip}%
75   {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
76   \ctm@setlength{\abovedisplayskip}{\z@}{.25\@tempdimb}{\z@}%
77   \ctm@setlength{\belowdisplayskip}%
78   {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
79   \setlength{\belowdisplayskip}{\abovedisplayskip}%
80   \edef\normalsize{%
81     \noexpand\setfontsize\noexpand\normalsize
82     {\the\@tempdima}{\the\@tempdimb}%

```



```

83 \abovedisplayskip \the\abovedisplayskip
84 \abovedisplayshortskip \the\abovedisplayshortskip
85 \belowdisplayskip \the\belowdisplayskip
86 \belowdisplayshortskip \the\belowdisplayshortskip
87 \let\noexpand\@listi\noexpand\@listI
88 }%
89 \setlength{\@tempdima}{0.9125\@tempdimc}%
90 \setlength{\@tempdimb}{\@tempb\@tempdima}%
91 \ctm@setlength{\abovedisplayskip}%
92 {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
93 \ctm@setlength{\abovedisplayshortskip}{\z@}{.25\@tempdimb}{\z@}%
94 \ctm@setlength{\belowdisplayshortskip}%
95 {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
96 \setlength{\belowdisplayskip}{\abovedisplayskip}%
97 \edef\small{%
98 \noexpand\@setfontsize\noexpand\small
99 {\the\@tempdima}{\the\@tempdimb}%
100 \abovedisplayskip \the\abovedisplayskip
101 \abovedisplayshortskip \the\abovedisplayshortskip
102 \belowdisplayskip \the\belowdisplayskip
103 \belowdisplayshortskip \the\belowdisplayshortskip
104 \let\noexpand\@listi\noexpand\@listi@small
105 }%
106 \setlength{\@tempdima}{.83334\@tempdimc}%
107 \setlength{\@tempdimb}{\@tempb\@tempdima}%
108 \ctm@setlength{\abovedisplayskip}%
109 {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
110 \ctm@setlength{\abovedisplayshortskip}{\z@}{.25\@tempdimb}{\z@}%
111 \ctm@setlength{\belowdisplayshortskip}%
112 {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
113 \setlength{\belowdisplayskip}{\abovedisplayskip}%
114 \edef\footnotesize{%
115 \noexpand\@setfontsize\noexpand\footnotesize
116 {\the\@tempdima}{\the\@tempdimb}%
117 \abovedisplayskip \the\abovedisplayskip
118 \abovedisplayshortskip \the\abovedisplayshortskip
119 \belowdisplayskip \the\belowdisplayskip
120 \belowdisplayshortskip \the\belowdisplayshortskip
121 \let\noexpand\@listi\noexpand\@listi@footnotesize
122 }%
123 \setlength{\@tempdima}{.66667\@tempdimc}%
124 \setlength{\@tempdimb}{\@tempb\@tempdima}%
125 \edef\scriptsize{%
126 \noexpand\@setfontsize\noexpand\scriptsize
127 {\the\@tempdima}{\the\@tempdimb}%
128 }%
129 \setlength{\@tempdima}{.5\@tempdimc}%
130 \setlength{\@tempdimb}{\@tempb\@tempdima}%
131 \edef\tiny{%
132 \noexpand\@setfontsize\noexpand\tiny
133 {\the\@tempdima}{\the\@tempdimb}%

```

```

134 }%
135 \setlength{\@tempdima}{1.2\@tempdimc}%
136 \setlength{\@tempdimb}{\@tempb\@tempdima}%
137 \edef\large{%
138   \noexpand\@setfontsize\noexpand\large
139   {\the\@tempdima}{\the\@tempdimb}%
140 }%
141 \setlength{\@tempdima}{1.44\@tempdimc}%
142 \setlength{\@tempdimb}{\@tempb\@tempdima}%
143 \edef\Large{%
144   \noexpand\@setfontsize\noexpand\Large
145   {\the\@tempdima}{\the\@tempdimb}%
146 }%
147 \setlength{\@tempdima}{1.728\@tempdimc}%
148 \setlength{\@tempdimb}{\@tempb\@tempdima}%
149 \edef\LARGE{%
150   \noexpand\@setfontsize\noexpand\LARGE
151   {\the\@tempdima}{\the\@tempdimb}%
152 }%
153 \setlength{\@tempdima}{2.074\@tempdimc}%
154 \setlength{\@tempdimb}{\@tempb\@tempdima}%
155 \edef\huge{%
156   \noexpand\@setfontsize\noexpand\huge
157   {\the\@tempdima}{\the\@tempdimb}%
158 }%
159 \setlength{\@tempdima}{2.488\@tempdimc}%
160 \setlength{\@tempdimb}{\@tempb\@tempdima}%
161 \edef\Huge{%
162   \noexpand\@setfontsize\noexpand\Huge
163   {\the\@tempdima}{\the\@tempdimb}%
164 }%

```

We will now define some new font sizing commands. There are three variants for each standard command: $\langle cmd \rangle r$ > $\langle cmd \rangle rr$ > $\langle cmd \rangle rrr$. Every level is scaled proportionally in order to preserve the default value of the corresponding standard command.

```

165 \def\fontsize@pre{%
166   \ctm@setlength{\abovedisplayskip}%
167   {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
168   \ctm@setlength{\abovedisplayskip}{\z@}{.25\@tempdimb}{\z@}%
169   \ctm@setlength{\belowdisplayskip}%
170   {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
171   \setlength{\belowdisplayskip}{\abovedisplayskip}%
172 }
173 \def\fontsize@app{%
174   \abovedisplayskip \the\abovedisplayskip
175   \abovedisplayshortskip \the\abovedisplayshortskip
176   \belowdisplayskip \the\belowdisplayskip
177   \belowdisplayshortskip \the\belowdisplayshortskip
178 }

```

Definition of \smallr, \smallrr, \smallrrr. Scale factor: 0,021875.

```
179 \setlength{\@tempdima}{0.934375\@tempdimc}%
180 \setlength{\@tempdimb}{\@tempb\@tempdima}%
181 \fontsize@pre
182 \edef\smallr{%
183   \noexpand\@setfontsize\noexpand\smallr
184   {\the\@tempdima}{\the\@tempdimb}%
185   \fontsize@app
186   \let\noexpand\@listi\noexpand\@listi@small
187 }%
188 \setlength{\@tempdima}{0.95625\@tempdimc}%
189 \setlength{\@tempdimb}{\@tempb\@tempdima}%
190 \fontsize@pre
191 \edef\smallrr{%
192   \noexpand\@setfontsize\noexpand\smallrr
193   {\the\@tempdima}{\the\@tempdimb}%
194   \fontsize@app
195   \let\noexpand\@listi\noexpand\@listi@small
196 }%
197 \setlength{\@tempdima}{0.978125\@tempdimc}%
198 \setlength{\@tempdimb}{\@tempb\@tempdima}%
199 \fontsize@pre
200 \edef\smallrrr{%
201   \noexpand\@setfontsize\noexpand\smallrrr
202   {\the\@tempdima}{\the\@tempdimb}%
203   \fontsize@app
204   \let\noexpand\@listi\noexpand\@listi@small
205 }%
```

Definition of \footnotesizer, \footnotesizerr, \footnotesizerrr. Scale factor: 0.01979.

```
206 \setlength{\@tempdima}{0.85313\@tempdimc}%
207 \setlength{\@tempdimb}{\@tempb\@tempdima}%
208 \fontsize@pre
209 \edef\footnotesizer{%
210   \noexpand\@setfontsize\noexpand\footnotesizer
211   {\the\@tempdima}{\the\@tempdimb}%
212   \fontsize@app
213   \let\noexpand\@listi\noexpand\@listi@footnotesize
214 }%
215 \setlength{\@tempdima}{0.87292\@tempdimc}%
216 \setlength{\@tempdimb}{\@tempb\@tempdima}%
217 \fontsize@pre
218 \edef\footnotesizerr{%
219   \noexpand\@setfontsize\noexpand\footnotesizerr
220   {\the\@tempdima}{\the\@tempdimb}%
221   \fontsize@app
222   \let\noexpand\@listi\noexpand\@listi@footnotesize
223 }%
224 \setlength{\@tempdima}{0.89271\@tempdimc}%
```

```

225 \setlength{\@tempdimb}{\@tempb\@tempdima}%
226 \fontsize@pre
227 \edef\footnotesizerrr{%
228   \noexpand\@setfontsize\noexpand\footnotesizerrr
229   {\the\@tempdima}{\the\@tempdimb}%
230   \fontsize@app
231   \let\noexpand\@listi\noexpand\@listi@footnotesize
232 }%

```

Definition of \scriptsize, \scriptsizeerr, \scriptsizeerrr. Scale factor: 0,0416675.

```

233 \setlength{\@tempdima}{0.7083375\@tempdimc}%
234 \setlength{\@tempdimb}{\@tempb\@tempdima}%
235 \edef\scriptsize{%
236   \noexpand\@setfontsize\noexpand\scriptsize
237   {\the\@tempdima}{\the\@tempdimb}%
238 }%
239 \setlength{\@tempdima}{0.750005\@tempdimc}%
240 \setlength{\@tempdimb}{\@tempb\@tempdima}%
241 \edef\scriptsizeerr{%
242   \noexpand\@setfontsize\noexpand\scriptsizeerr
243   {\the\@tempdima}{\the\@tempdimb}%
244 }%
245 \setlength{\@tempdima}{0.7916725\@tempdimc}%
246 \setlength{\@tempdimb}{\@tempb\@tempdima}%
247 \edef\scriptsizeerrr{%
248   \noexpand\@setfontsize\noexpand\scriptsizeerrr
249   {\the\@tempdima}{\the\@tempdimb}%
250 }%

```

Definition of \tiny, \tinyrr, \tinyrrr. Scale factor: 0.0416675.

```

251 \setlength{\@tempdima}{0.5416675\@tempdimc}%
252 \setlength{\@tempdimb}{\@tempb\@tempdima}%
253 \edef\tiny{%
254   \noexpand\@setfontsize\noexpand\tiny
255   {\the\@tempdima}{\the\@tempdimb}%
256 }%
257 \setlength{\@tempdima}{0.583335\@tempdimc}%
258 \setlength{\@tempdimb}{\@tempb\@tempdima}%
259 \edef\tinyrr{%
260   \noexpand\@setfontsize\noexpand\tinyrr
261   {\the\@tempdima}{\the\@tempdimb}%
262 }%
263 \setlength{\@tempdima}{0.6250025\@tempdimc}%
264 \setlength{\@tempdimb}{\@tempb\@tempdima}%
265 \edef\tinyrrr{%
266   \noexpand\@setfontsize\noexpand\tinyrrr
267   {\the\@tempdima}{\the\@tempdimb}%
268 }%

```

Definition of \normalsizer, \normalsizerr, \normalsizerrr. Scale factor: 0.05.

```

269 \setlength{\@tempdima}{1.05\@tempdimc}%
270 \setlength{\@tempdimb}{\@tempb\@tempdima}%
271 \fontsize@pre
272 \edef\normalsizer{%
273   \noexpand\@setfontsize\noexpand\normalsizer
274   {\the\@tempdima}{\the\@tempdimb}%
275   \fontsize@app
276   \let\noexpand\@listi\noexpand\@listI
277 }%
278 \setlength{\@tempdima}{1.1\@tempdimc}%
279 \setlength{\@tempdimb}{\@tempb\@tempdima}%
280 \fontsize@pre
281 \edef\normalsizerr{%
282   \noexpand\@setfontsize\noexpand\normalsizerr
283   {\the\@tempdima}{\the\@tempdimb}%
284   \fontsize@app
285   \let\noexpand\@listi\noexpand\@listI
286 }%
287 \setlength{\@tempdima}{1.15\@tempdimc}%
288 \setlength{\@tempdimb}{\@tempb\@tempdima}%
289 \edef\normalsizerrr{%
290   \fontsize@pre
291   \noexpand\@setfontsize\noexpand\normalsizerrr
292   {\the\@tempdima}{\the\@tempdimb}%
293   \fontsize@app
294   \let\noexpand\@listi\noexpand\@listI
295 }%

```

Definition of \larger, \largerr, \largerrr. Scale factor: 0,06.

```

296 \setlength{\@tempdima}{1.26\@tempdimc}%
297 \setlength{\@tempdimb}{\@tempb\@tempdima}%
298 \edef\larger{%
299   \noexpand\@setfontsize\noexpand\larger
300   {\the\@tempdima}{\the\@tempdimb}%
301 }%
302 \setlength{\@tempdima}{1.32\@tempdimc}%
303 \setlength{\@tempdimb}{\@tempb\@tempdima}%
304 \edef\largerr{%
305   \noexpand\@setfontsize\noexpand\largerr
306   {\the\@tempdima}{\the\@tempdimb}%
307 }%
308 \setlength{\@tempdima}{1.38\@tempdimc}%
309 \setlength{\@tempdimb}{\@tempb\@tempdima}%
310 \edef\largerrr{%
311   \noexpand\@setfontsize\noexpand\largerrr
312   {\the\@tempdima}{\the\@tempdimb}%
313 }%

```

Definition of \Larger, \Largerr, \Largerrr. Scale factor: 0,072.

```
314 \setlength{\@tempdima}{1.512\@tempdimc}%
315 \setlength{\@tempdimb}{\@tempb\@tempdima}%
316 \edef\Larger{%
317   \noexpand\@setfontsize\noexpand\Larger
318   {\the\@tempdima}{\the\@tempdimb}%
319 }%
320 \setlength{\@tempdima}{1.584\@tempdimc}%
321 \setlength{\@tempdimb}{\@tempb\@tempdima}%
322 \edef\Largerr{%
323   \noexpand\@setfontsize\noexpand\Largerr
324   {\the\@tempdima}{\the\@tempdimb}%
325 }%
326 \setlength{\@tempdima}{1.656\@tempdimc}%
327 \setlength{\@tempdimb}{\@tempb\@tempdima}%
328 \edef\Largerrr{%
329   \noexpand\@setfontsize\noexpand\Largerrr
330   {\the\@tempdima}{\the\@tempdimb}%
331 }%
```

Definition of \LARGE r, \LARGE rr, \LARGE rrr. Scale factor: 0,0865.

```
332 \setlength{\@tempdima}{1.8145\@tempdimc}%
333 \setlength{\@tempdimb}{\@tempb\@tempdima}%
334 \edef\LARGE r{%
335   \noexpand\@setfontsize\noexpand\LARGE r
336   {\the\@tempdima}{\the\@tempdimb}%
337 }%
338 \setlength{\@tempdima}{1.901\@tempdimc}%
339 \setlength{\@tempdimb}{\@tempb\@tempdima}%
340 \edef\LARGE rr{%
341   \noexpand\@setfontsize\noexpand\LARGE rr
342   {\the\@tempdima}{\the\@tempdimb}%
343 }%
344 \setlength{\@tempdima}{1.9875\@tempdimc}%
345 \setlength{\@tempdimb}{\@tempb\@tempdima}%
346 \edef\LARGE rrr{%
347   \noexpand\@setfontsize\noexpand\LARGE rrr
348   {\the\@tempdima}{\the\@tempdimb}%
349 }%
```

Definition of \huger, \hugerr, \hugerrr. Scale factor: 0,1035.

```
350 \setlength{\@tempdima}{2.1775\@tempdimc}%
351 \setlength{\@tempdimb}{\@tempb\@tempdima}%
352 \edef\huger{%
353   \noexpand\@setfontsize\noexpand\huger
354   {\the\@tempdima}{\the\@tempdimb}%
355 }%
356 \setlength{\@tempdima}{2.281\@tempdimc}%
357 \setlength{\@tempdimb}{\@tempb\@tempdima}%

```

```

358 \edef\hugerr{%
359   \noexpand\setfontsize\noexpand\hugerr
360   {\the\@tempdima}{\the\@tempdimb}%
361 }%
362 \setlength{\@tempdima}{2.3845\@tempdimc}%
363 \setlength{\@tempdimb}{\@tempb\@tempdima}%
364 \edef\hugerrr{%
365   \noexpand\setfontsize\noexpand\hugerrr
366   {\the\@tempdima}{\the\@tempdimb}%
367 }%

```

Definition of \Huger, \Hugerr, \Hugerrr. Scale factor: 0.123.

```

368 \setlength{\@tempdima}{2.611\@tempdimc}%
369 \setlength{\@tempdimb}{\@tempb\@tempdima}%
370 \edef\Huger{%
371   \noexpand\setfontsize\noexpand\Huger
372   {\the\@tempdima}{\the\@tempdimb}%
373 }%
374 \setlength{\@tempdima}{2.734\@tempdimc}%
375 \setlength{\@tempdimb}{\@tempb\@tempdima}%
376 \edef\Hugerr{%
377   \noexpand\setfontsize\noexpand\Hugerr
378   {\the\@tempdima}{\the\@tempdimb}%
379 }%
380 \setlength{\@tempdima}{2.857\@tempdimc}%
381 \setlength{\@tempdimb}{\@tempb\@tempdima}%
382 \edef\Hugerrr{%
383   \noexpand\setfontsize\noexpand\Hugerrr
384   {\the\@tempdima}{\the\@tempdimb}%
385 }%

```

```

386 \normalsize%

```

The KOMA files do not define \parindent and other lengths related to the page dimensions (\textheight, \headheight, \headsep, etc.) Anyway, I think that some of these lengths are strictly linked to the font rather than to the dimensions of the page and the text, particularly \headheight, whose value may cause a well known warning if fancyhdr is loaded. So we define the following new lengths:

```

387 \setlength\parindent{\@tempdimb}%
388 \setlength\headheight{\dimexpr(\@tempdimb+2pt)}%

```

For the following lengths, all values are calculated proportionally to the main font. I took the bk11.clo file as a reference point. Note that the differences of these lengths in the files bk10.clo bk11.clo and bk12.clo only affect \headsep, \topskip and \footskip, which are not redefined here.

```

389 \setlength\smallskipamount{\dimexpr((\@tempdimb+1pt)/4) \@plus 1\p@ \@minus 1\p@}%
390 \setlength\medskipamount{\dimexpr((\@tempdimb+1pt)/2) \@plus 2\p@ \@minus 2\p@}%
391 \setlength\bigskipamount{\dimexpr(\@tempdimb+1pt) \@plus 4\p@ \@minus 4\p@}%

```

The following table shows the values of some specific lengths defined by the package, in relation to some significant settings of the main font and line spacing. The values are expressed in pt and rounded to the second decimal place.

Normal size	10	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11
Line spacing	12	12.12	12.24	12.36	12.48	12.6	12.72	12.84	12.96	13.08	13.2
<code>\headheight</code>	12	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	13
<code>\parindent</code>	10	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11
<code>\bigskipamount ±4pt</code>	11	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12
<code>\medskipamount ±2pt</code>	5.5	5.55	5.6	5.65	5.7	5.75	5.8	5.85	5.9	5.95	6
<code>\smallskipamount ±1pt</code>	2.75	2.78	2.8	2.82	2.85	2.88	2.9	2.93	2.95	2.98	3

```

392 \setlength{\@tempdimb}{\f@baselineskip}%
393 \ctm@setlength{\parsep}%
394 {.3333\@tempdimb}{.1667\@tempdimb}{.0833\@tempdimb}%
395 \ctm@setlength{\topsep}%
396 {.6667\@tempdimb}{.1667\@tempdimb}{.3333\@tempdimb}%
397 \@tempswafalse
398 \begingroup
399 \def\@list@extra{\aftergroup\@tempswatrue}%
400 \csname @listi\endcsname
401 \endgroup
402 \edef\@listi{\leftmargin\leftmarginI
403   \topsep \the\topsep
404   \parsep \the\parsep
405   \itemsep \parsep
406   \if@tempswa\noexpand\@list@extra\fi
407 }%
408 \let\@listI\@listi
409 \ctm@setlength{\parsep}%
410 {.1667\@tempdimb}{.0833\@tempdimb}{.0833\@tempdimb}%
411 \ctm@setlength{\topsep}%
412 {.3333\@tempdimb}{.1667\@tempdimb}{.1667\@tempdimb}%
413 \@tempswafalse
414 \begingroup
415 \def\@list@extra{\aftergroup\@tempswatrue}%
416 \csname @listi\endcsname
417 \endgroup
418 \edef\@listi@small{\leftmargin\leftmarginI
419   \topsep \the\topsep
420   \parsep \the\parsep
421   \itemsep \parsep
422   \if@tempswa\noexpand\@list@extra\fi
423 }%
424 \ctm@setlength{\parsep}%
425 {.125\@tempdimb}{.0625\@tempdimb}{.0625\@tempdimb}%
426 \ctm@setlength{\topsep}%
427 {.25\@tempdimb}{.125\@tempdimb}{.125\@tempdimb}%
428 \@tempswafalse
429 \begingroup
430 \def\@list@extra{\aftergroup\@tempswatrue}%

```



```

431 \csname @listi\endcsname
432 \endgroup
433 \edef\@listi@footnotesize{\leftmargin\leftmargini
434   \topsep \the\topsep
435   \parsep \the\parsep
436   \itemsep \parsep
437   \if@tempswa\noexpand\@list@extra\fi
438 }%
439 \ctm@setlength{\parsep}%
440 {.1667\@tempdimb}{.0833\@tempdimb}{.0833\@tempdimb}%
441 \ctm@setlength{\topsep}%
442 {.3333\@tempdimb}{.1667\@tempdimb}{.0833\@tempdimb}%
443 \@tempswafalse
444 \begingroup
445 \def\@list@extra{\aftergroup\@tempswatrue}%
446 \csname @listii\endcsname
447 \endgroup
448 \edef\@listii{\leftmargin\leftmarginii
449   \labelwidth=\dimexpr \leftmargin-\labelsep
450   \topsep \the\topsep
451   \parsep \the\parsep
452   \itemsep \parsep
453   \if@tempswa\noexpand\@list@extra\fi
454 }%
455 \ctm@setlength{\topsep}%
456 {.1667\@tempdimb}{.0833\@tempdimb}{.0833\@tempdimb}%
457 \setlength{\partopsep}{\z@ \@plus\z@ \@minus\p}%
458 \@tempswafalse
459 \begingroup
460 \def\@list@extra{\aftergroup\@tempswatrue}%
461 \csname @listiii\endcsname
462 \endgroup
463 \edef\@listiii{\leftmargin\leftmarginiii
464   \labelwidth=\dimexpr \leftmargin-\labelsep
465   \topsep \the\topsep
466   \parsep \z@
467   \partopsep \the\partopsep
468   \itemsep \topsep
469   \if@tempswa\noexpand\@list@extra\fi
470 }%
471 \@tempswafalse
472 \begingroup
473 \def\@list@extra{\aftergroup\@tempswatrue}%
474 \csname @listiv\endcsname
475 \endgroup
476 \edef\@listiv{\leftmargin\leftmarginiv
477   \labelwidth=\dimexpr \leftmargin-\labelsep\relax
478   \if@tempswa\noexpand\@list@extra\fi
479 }%
480 \@tempswafalse
481 \begingroup

```

```

482 \def\@list@extra{\aftergroup\@tempswatrue}%
483 \csname @listv\endcsname
484 \endgroup
485 \edef\@listv{\leftmargin\leftmarginv
486   \labelwidth=\dimexpr \leftmargin-\labelsep\relax
487   \if@tempswa\noexpand\@list@extra\fi
488 }%
489 \@tempswafalse
490 \begingroup
491 \def\@list@extra{\aftergroup\@tempswatrue}%
492 \csname @listvi\endcsname
493 \endgroup
494 \edef\@listvi{\leftmargin\leftmarginvi
495   \labelwidth=\dimexpr \leftmargin-\labelsep\relax
496   \if@tempswa\noexpand\@list@extra\fi
497 }%
498 \@listi
499 \setlength{\@tempdimb}{\f@baselineskip}%
500 \setlength{\footnotesep}{.555\@tempdimb}%
501 \ctm@setlength{\skip\footins}%
502 {.75\@tempdimb}{.3333\@tempdimb}{.1667\@tempdimb}%
503 \ctm@setlength{\floatsep}%
504 {\@tempdimb}{.1667\@tempdimb}{.1667\@tempdimb}%
505 \ctm@setlength{\textfloatsep}%
506 {1.6667\@tempdimb}{.1667\@tempdimb}{.3333\@tempdimb}%
507 \setlength{\intextsep}{\floatsep}%
508 \setlength{\dblfloatsep}{\floatsep}%
509 \setlength{\dbltextfloatsep}{\textfloatsep}%
510 \setlength{\@fptop}{\z@ \@plus 1fil}%
511 \setlength{\@fpsep}{.6667\@tempdimb \@plus 2fil}%
512 \setlength{\@fpbot}{\@fptop}%
513 \setlength{\@dblfpbot}{\@fptop}%
514 \setlength{\@dblfpsep}{\@fpsep}%
515 \setlength{\@dblfpbot}{\@fptop}%
516 \ctm@setlength{\partopsep}{.2\@tempdimb}{.1\@tempdimb}{.1\@tempdimb}%
517 }

```

Excerpt from scrfontsizes.sty Here is a portion of the scrfontsizes package. It simply provides the `\generateclofile` command, without the KOMA-related definitions. There are no reserved names for the `.clo` files. The command name is a new name for the KOMA `\generatefontfile`. In fact what the command generates is a `.clo` file.

```

518 \newcommand*\generateclofile[1]{%
519 \kernel@ifnextchar [{\@generatefontfile{#1}}{\@generatefontfile{#1}}}%
520 }
521 \newcommand*\@generatefontfile{}
522 \def\@generatefontfile#1[#2]#3{%
523 \begingroup

```

At least starting from version 3.31 of scrfontsizes, the code of the `\@generatefontfile` and `\@generatefontfile` commands sets the `\parskip` value to 0pt. We also use `[#2]`

in place of [{#2}] for the optional argument of \changefontsize used immediately below.

```

524 \setlength{\parskip}{0pt}%
525 \changefontsize[#2]{#3}%
526 \generate@fontfile{#1}{#3}%
527 \endgroup
528 }
529 \newcommand\@generatefontfile[2]{%
530 \begingroup
531 \setlength{\parskip}{0pt}%
532 \changefontsize{#2}%
533 \generate@fontfile{#1}{#2}%
534 \endgroup
535 }
536 \newcommand*\@@generatefontfile[2][{}]{
537 \newcommand*\@fontfile{}
538 \let\@fontfile\@mainaux
539 \newcommand*\@generatefontfile[2]{%
540 \def\@ind{\space\space}%
541 \immediate\openout\@fontfile #1#2.clo
542 \immediate\write\@fontfile{\@percentchar^^J%
543 \@percentchar\space This is file '#1#2.clo', generated with^^J%

```

In the next three lines we only replace 'scrfontsizes' with 'fontsize' and 'Markus Kohm' with 'Ivan Valbusa', in order to get the correct information in the .log file.

```

544 \@percentchar\space fontsize
545 \csname ver@fontsize.\@pkgextension\endcsname,^^J%
546 \@percentchar\space Copyright (c) Ivan Valbusa.^^J%
547 \@percentchar^^J%
548 \string\ProvidesFile{#1#2.clo}%
549 \the\year/\ifnum\month<10 0\fi\the\month/\ifnum\day<10 0\fi\the\day%
550 \space generated font size class option (#2)]}%
551 \immediate\write\@fontfile{%
552 \string\def\string\normalsize{\@percentchar^^J%
553 \@ind\string\@setfontsize\string\normalsize{\f@size}{\f@baselineskip}%
554 \@percentchar^^J%
555 \@ind\string\abovedisplayskip\space \the\abovedisplayskip^^J%
556 \@ind\string\abovedisplayshortskip\space \the\abovedisplayshortskip^^J%
557 \@ind\string\belowdisplayskip\space \the\belowdisplayskip^^J%
558 \@ind\string\belowdisplayshortskip\space \the\belowdisplayshortskip^^J%
559 \@ind\string\let\string\@listi\string\@listI^^J%
560 }\@percentchar%
561 }%
562 \begingroup\small\@listi
563 \immediate\write\@fontfile{%
564 \string\def\string\small{\@percentchar^^J%
565 \@ind\string\@setfontsize\string\small{\f@size}{\f@baselineskip}%
566 \@percentchar^^J%
567 \@ind\string\abovedisplayskip\space \the\abovedisplayskip^^J%
568 \@ind\string\abovedisplayshortskip\space \the\abovedisplayshortskip^^J%
569 \@ind\string\belowdisplayskip\space \the\belowdisplayskip^^J%

```

```

570 \@ind\string\belowdisplayshortskip\space \the\belowdisplayshortskip^^J%
571 \@ind\string\def\string\@listi{\@percentchar^^J%
572 \@ind\@ind\string\leftmargin\string\leftmarginii^^J%
573 \@ind\@ind\string\topsep \the\topsep^^J%
574 \@ind\@ind\string\parsep \the\parsep^^J%
575 \@ind\@ind\string\itemsep \string\parsep^^J%
576 \@ind}\@percentchar^^J%
577 }\@percentchar%
578 }%
579 \endgroup
580 \begingroup\footnotesize\@listi
581 \immediate\write\@fontfile{%
582 \string\def\string\footnotesize{\@percentchar^^J%
583 \@ind\string\@setfontsize\string\footnotesize{\f@size}{\f@baselineskip}%
584 \@percentchar^^J%
585 \@ind\string\abovedisplayskip\space \the\abovedisplayskip^^J%
586 \@ind\string\abovedisplayshortskip\space \the\abovedisplayshortskip^^J%
587 \@ind\string\belowdisplayskip\space \the\belowdisplayskip^^J%
588 \@ind\string\belowdisplayshortskip\space \the\belowdisplayshortskip^^J%
589 \@ind\string\def\string\@listi{\@percentchar^^J%
590 \@ind\@ind\string\leftmargin\string\leftmarginii^^J%
591 \@ind\@ind\string\topsep \the\topsep^^J%
592 \@ind\@ind\string\parsep \the\parsep^^J%
593 \@ind\@ind\string\itemsep \string\parsep^^J%
594 \@ind}\@percentchar^^J%
595 }\@percentchar%
596 }%
597 \endgroup
598 \begingroup\scriptsize
599 \immediate\write\@fontfile{%
600 \string\def\string\scriptsize{%
601 \string\@setfontsize\string\scriptsize{\f@size}{\f@baselineskip}%
602 }\@percentchar%
603 }%
604 \endgroup
605 \begingroup\tiny
606 \immediate\write\@fontfile{%
607 \string\def\string\tiny{%
608 \string\@setfontsize\string\tiny{\f@size}{\f@baselineskip}%
609 }\@percentchar%
610 }%
611 \endgroup
612 \begingroup\large
613 \immediate\write\@fontfile{%
614 \string\def\string\large{%
615 \string\@setfontsize\string\large{\f@size}{\f@baselineskip}%
616 }\@percentchar%
617 }%
618 \endgroup
619 \begingroup\Large
620 \immediate\write\@fontfile{%

```

```

621 \string\def\string\Large{%
622   \string\@setfontsize\string\Large{\f@size}{\f@baselineskip}%
623   }\@percentchar%
624 }%
625 \endgroup
626 \begingroup\LARGE
627 \immediate\write\@fontfile{%
628   \string\def\string\LARGE{%
629     \string\@setfontsize\string\LARGE{\f@size}{\f@baselineskip}%
630     }\@percentchar%
631   }%
632 \endgroup
633 \begingroup\huge
634 \immediate\write\@fontfile{%
635   \string\def\string\huge{%
636     \string\@setfontsize\string\huge{\f@size}{\f@baselineskip}%
637     }\@percentchar%
638   }%
639 \endgroup
640 \begingroup\Huge
641 \immediate\write\@fontfile{%
642   \string\def\string\Huge{%
643     \string\@setfontsize\string\Huge{\f@size}{\f@baselineskip}%
644     }\@percentchar%
645   }%
646 \endgroup

```

The new sizing commands previously defined are recalled here and written in the .clo file if the \generateclfile command is used.

```

647 \begingroup\tinyr
648 \immediate\write\@fontfile{%
649   \string\def\string\tinyr{%
650     \string\@setfontsize\string\tinyr{\f@size}{\f@baselineskip}%
651     }\@percentchar%
652   }%
653 \endgroup
654 \begingroup\tinyrr
655 \immediate\write\@fontfile{%
656   \string\def\string\tinyrr{%
657     \string\@setfontsize\string\tinyrr{\f@size}{\f@baselineskip}%
658     }\@percentchar%
659   }%
660 \endgroup
661 \begingroup\tinyrrr
662 \immediate\write\@fontfile{%
663   \string\def\string\tinyrrr{%
664     \string\@setfontsize\string\tinyrrr{\f@size}{\f@baselineskip}%
665     }\@percentchar%
666   }%
667 \endgroup

```

```

668 \begingroup\scriptsize
669 \immediate\write\@fontfile{%
670   \string\def\string\scriptsize{%
671     \string\@setfontsize\string\scriptsize{\f@size}{\f@baselineskip}%
672   }\@percentchar%
673 }%
674 \endgroup
675 \begingroup\scriptsizeerr
676 \immediate\write\@fontfile{%
677   \string\def\string\scriptsizeerr{%
678     \string\@setfontsize\string\scriptsizeerr{\f@size}{\f@baselineskip}%
679   }\@percentchar%
680 }%
681 \endgroup
682 \begingroup\scriptsizeerrr
683 \immediate\write\@fontfile{%
684   \string\def\string\scriptsizeerrr{%
685     \string\@setfontsize\string\scriptsizeerrr{\f@size}{\f@baselineskip}%
686   }\@percentchar%
687 }%
688 \endgroup

689 \def\fs@apppnormal{
690   \@percentchar^^J%
691   \@ind\string\abovedisplayskip\space \the\abovedisplayskip^^J%
692   \@ind\string\abovedisplayshortskip\space \the\abovedisplayshortskip^^J%
693   \@ind\string\belowdisplayskip\space \the\belowdisplayskip^^J%
694   \@ind\string\belowdisplayshortskip\space \the\belowdisplayshortskip^^J%
695   \@ind\string\let\string\@listi\string\@listI^^J%
696 }
697 \def\fs@appsmall{%
698   \@percentchar^^J%
699   \@ind\string\abovedisplayskip\space \the\abovedisplayskip^^J%
700   \@ind\string\abovedisplayshortskip\space \the\abovedisplayshortskip^^J%
701   \@ind\string\belowdisplayskip\space \the\belowdisplayskip^^J%
702   \@ind\string\belowdisplayshortskip\space \the\belowdisplayshortskip^^J%
703   \@ind\string\def\string\@listi{\@percentchar^^J%
704     \@ind\@ind\string\leftmargin\string\leftmarginI^^J%
705     \@ind\@ind\string\topsep \the\topsep^^J%
706     \@ind\@ind\string\parsep \the\parsep^^J%
707     \@ind\@ind\string\itemsep \string\parsep^^J%
708     \@ind}\@percentchar^^J%
709 }
710 \begingroup\smallr\@listi
711 \immediate\write\@fontfile{%
712   \string\def\string\smallr{\@percentchar^^J%
713     \@ind\string\@setfontsize\string\smallr{\f@size}{\f@baselineskip}%
714     \fs@appsmall%
715   }\@percentchar%
716 }%
717 \endgroup

```

```

718 \begingroup\smallrr\@listi
719 \immediate\write\@fontfile{%
720 \string\def\string\smallrr{\@percentchar^^J%
721 \@ind\string\@setfontsize\string\smallrr{\f@size}{\f@baselineskip}%
722 \fs@appsml%
723 }\@percentchar%
724 }%
725 \endgroup
726 \begingroup\smallrrr\@listi
727 \immediate\write\@fontfile{%
728 \string\def\string\smallrrr{\@percentchar^^J%
729 \@ind\string\@setfontsize\string\smallrrr{\f@size}{\f@baselineskip}%
730 \fs@appsml%
731 }\@percentchar%
732 }%
733 \endgroup
734 \begingroup\footnotesizer\@listi
735 \immediate\write\@fontfile{%
736 \string\def\string\footnotesizer{\@percentchar^^J%
737 \@ind\string\@setfontsize\string\footnotesizer{\f@size}{\f@baselineskip}%
738 \fs@appsml%
739 }\@percentchar%
740 }%
741 \endgroup
742 \begingroup\footnotesizerr\@listi
743 \immediate\write\@fontfile{%
744 \string\def\string\footnotesizerr{\@percentchar^^J%
745 \@ind\string\@setfontsize\string\footnotesizerr{\f@size}{\f@baselineskip}%
746 \fs@appsml%
747 }\@percentchar%
748 }%
749 \endgroup
750 \begingroup\footnotesizerrr\@listi
751 \immediate\write\@fontfile{%
752 \string\def\string\footnotesizerrr{\@percentchar^^J%
753 \@ind\string\@setfontsize\string\footnotesizerrr{\f@size}{\f@baselineskip}%
754 \fs@appsml%
755 }\@percentchar%
756 }%
757 \endgroup
758 \begingroup\normalsizer
759 \immediate\write\@fontfile{%
760 \string\def\string\normalsizer{\@percentchar^^J%
761 \@ind\string\@setfontsize\string\normalsizer{\f@size}{\f@baselineskip}%
762 \fs@appnormal%
763 }\@percentchar%
764 }%
765 \endgroup
766 \begingroup\normalsizerr
767 \immediate\write\@fontfile{%
768 \string\def\string\normalsizerr{\@percentchar^^J%

```

```

769 \@ind\string\@setfontsize\string\normalsizerr{\f@size}{\f@baselineskip}%
770 \fs@appnormal%
771 }\@percentchar%
772 }%
773 \endgroup
774 \begingroup\normalsizerrr
775 \immediate\write\@fontfile{%
776 \string\def\string\normalsizerrr{\@percentchar^^J%
777 \@ind\string\@setfontsize\string\normalsizerrr{\f@size}{\f@baselineskip}%
778 \fs@appnormal%
779 }\@percentchar%
780 }%
781 \endgroup
782 \begingroup\larger
783 \immediate\write\@fontfile{%
784 \string\def\string\larger{%
785 \string\@setfontsize\string\larger{\f@size}{\f@baselineskip}%
786 }\@percentchar%
787 }%
788 \endgroup
789 \begingroup\largerr
790 \immediate\write\@fontfile{%
791 \string\def\string\largerr{%
792 \string\@setfontsize\string\largerr{\f@size}{\f@baselineskip}%
793 }\@percentchar%
794 }%
795 \endgroup
796 \begingroup\largerrr
797 \immediate\write\@fontfile{%
798 \string\def\string\largerrr{%
799 \string\@setfontsize\string\largerrr{\f@size}{\f@baselineskip}%
800 }\@percentchar%
801 }%
802 \endgroup
803 \begingroup\Large
804 \immediate\write\@fontfile{%
805 \string\def\string\Large{%
806 \string\@setfontsize\string\Large{\f@size}{\f@baselineskip}%
807 }\@percentchar%
808 }%
809 \endgroup
810 \begingroup\Larger
811 \immediate\write\@fontfile{%
812 \string\def\string\Larger{%
813 \string\@setfontsize\string\Larger{\f@size}{\f@baselineskip}%
814 }\@percentchar%
815 }%
816 \endgroup
817 \begingroup\Largerr
818 \immediate\write\@fontfile{%
819 \string\def\string\Largerr{%

```



```

820     \string\@setfontsize\string\Largerr{\f@size}{\f@baselineskip}%
821   }\@percentchar%
822 }%
823 \endgroup
824 \begingroup\Largerrr
825 \immediate\write\@fontfile{%
826   \string\def\string\Largerrr{%
827     \string\@setfontsize\string\Largerrr{\f@size}{\f@baselineskip}%
828   }\@percentchar%
829 }%
830 \endgroup
831 \begingroup\LARGE
832 \immediate\write\@fontfile{%
833   \string\def\string\LARGE{%
834     \string\@setfontsize\string\LARGE{\f@size}{\f@baselineskip}%
835   }\@percentchar%
836 }%
837 \endgroup
838 \begingroup\LARGEerr
839 \immediate\write\@fontfile{%
840   \string\def\string\LARGEerr{%
841     \string\@setfontsize\string\LARGEerr{\f@size}{\f@baselineskip}%
842   }\@percentchar%
843 }%
844 \endgroup
845 \begingroup\LARGEerrr
846 \immediate\write\@fontfile{%
847   \string\def\string\LARGEerrr{%
848     \string\@setfontsize\string\LARGEerrr{\f@size}{\f@baselineskip}%
849   }\@percentchar%
850 }%
851 \endgroup
852 \begingroup\huger
853 \immediate\write\@fontfile{%
854   \string\def\string\huger{%
855     \string\@setfontsize\string\huger{\f@size}{\f@baselineskip}%
856   }\@percentchar%
857 }%
858 \endgroup
859 \begingroup\hugerr
860 \immediate\write\@fontfile{%
861   \string\def\string\hugerr{%
862     \string\@setfontsize\string\hugerr{\f@size}{\f@baselineskip}%
863   }\@percentchar%
864 }%
865 \endgroup
866 \begingroup\hugerrr
867 \immediate\write\@fontfile{%
868   \string\def\string\hugerrr{%
869     \string\@setfontsize\string\hugerrr{\f@size}{\f@baselineskip}%
870   }\@percentchar%

```

```

871 }%
872 \endgroup
873 \begingroup\Huger
874 \immediate\write\@fontfile{%
875   \string\def\string\Huger{%
876     \string\@setfontsize\string\Huger{\f@size}{\f@baselineskip}%
877   }\@percentchar%
878 }%
879 \endgroup
880 \begingroup\Hugerr
881 \immediate\write\@fontfile{%
882   \string\def\string\Hugerr{%
883     \string\@setfontsize\string\Hugerr{\f@size}{\f@baselineskip}%
884   }\@percentchar%
885 }%
886 \endgroup
887 \begingroup\Hugerrr
888 \immediate\write\@fontfile{%
889   \string\def\string\Hugerrr{%
890     \string\@setfontsize\string\Hugerrr{\f@size}{\f@baselineskip}%
891   }\@percentchar%
892 }%
893 \endgroup

```

```

894 \immediate\write\@fontfile{\string\normalsize}%

```

The new lengths previously defined are recalled here and written in the .clo file if the \generateclfile command is used.

```

895 \begingroup
896 \immediate\write\@fontfile{%
897   \string\setlength{\string\parindent}{\the\parindent}^^J%
898   \string\setlength{\string\headheight}{\the\headheight}^^J%
899   \string\setlength{\string\smallskipamount}{\the\smallskipamount}^^J%
900   \string\setlength{\string\medskipamount}{\the\medskipamount}^^J%
901   \string\setlength{\string\bigskipamount}{\the\bigskipamount}^^J%
902 }%
903 \endgroup

904 \immediate\write\@fontfile{%
905   \string\setlength{\string\footnotesep}{\the\footnotesep}\@percentchar
906 }%
907 \immediate\write\@fontfile{%
908   \string\setlength{\string\skip\string\footins}{\the\skip\footins}\@percentchar
909 }%
910 \immediate\write\@fontfile{%
911   \string\setlength{\string\floatsep}{\the\floatsep}\@percentchar
912 }%
913 \immediate\write\@fontfile{%
914   \string\setlength{\string\textfloatsep}{\the\textfloatsep}\@percentchar
915 }%

```

```

916 \immediate\write\@fontfile{%
917   \string\setlength{\string\intextsep}{\the\intextsep}\@percentchar
918 }%
919 \immediate\write\@fontfile{%
920   \string\setlength{\string\dblfloatsep}{\the\dblfloatsep}\@percentchar
921 }%
922 \immediate\write\@fontfile{%
923   \string\setlength{\string\dbltextfloatsep}{\the\dbltextfloatsep}\@percentchar
924 }%
925 \immediate\write\@fontfile{%
926   \string\setlength{\string\@fptop}{\the\@fptop}\@percentchar
927 }%
928 \immediate\write\@fontfile{%
929   \string\setlength{\string\@fpsep}{\the\@fpsep}\@percentchar
930 }%
931 \immediate\write\@fontfile{%
932   \string\setlength{\string\@fpbot}{\the\@fpbot}\@percentchar
933 }%
934 \immediate\write\@fontfile{%
935   \string\setlength{\string\@dblfpbot}{\the\@dblfpbot}\@percentchar
936 }%
937 \immediate\write\@fontfile{%
938   \string\setlength{\string\@dblpsep}{\the\@dblpsep}\@percentchar
939 }%
940 \immediate\write\@fontfile{%
941   \string\setlength{\string\@dblpbot}{\the\@dblpbot}\@percentchar
942 }%
943 \immediate\write\@fontfile{%
944   \string\setlength{\string\partopsep}{\the\partopsep}\@percentchar
945 }%
946 \begingroup
947 \@listi
948 \immediate\write\@fontfile{%
949   \string\def\string\@listi{\@percentchar^^J%
950     \@indstring\leftmargin\string\leftmarginii^^J%
951     \@indstring\topsep \the\topsep^^J%
952     \@indstring\parsep \the\parsep^^J%
953     \@indstring\itemsep \string\parsep^^J%
954   }\@percentchar
955 }%
956 \endgroup
957 \immediate\write\@fontfile{%
958   \string\let\string\@listI\string\@listi
959 }%
960 \begingroup
961 \@listii
962 \immediate\write\@fontfile{%
963   \string\def\string\@listii{\@percentchar^^J%
964     \@indstring\leftmargin\string\leftmarginiii^^J%
965     \@indstring\labelwidth\string\leftmarginiii^^J%
966     \@indstring\advance\string\labelwidth-\string\labelsep^^J%

```

```

967 \@ind\string\topsep \the\topsep^^J%
968 \@ind\string\parsep \the\parsep^^J%
969 \@ind\string\itemsep \string\parsep^^J%
970 }\@percentchar
971 }%
972 \endgroup
973 \begingroup
974 \@listiii
975 \immediate\write\@fontfile{%
976 \string\def\string\@listiii{\@percentchar^^J%
977 \@ind\string\leftmargin\string\leftmarginiii^^J%
978 \@ind\string\labelwidth\string\leftmarginiii^^J%
979 \@ind\string\advance\string\labelwidth-\string\labelsep^^J%
980 \@ind\string\topsep \the\topsep^^J%
981 \@ind\string\parsep \the\parsep^^J%
982 \@ind\string\partopsep \the\partopsep^^J%
983 \@ind\string\itemsep \string\topsep^^J%
984 }\@percentchar
985 }%
986 \endgroup
987 \begingroup
988 \@listiv
989 \immediate\write\@fontfile{%
990 \string\def\string\@listiv{\@percentchar^^J%
991 \@ind\string\leftmargin\string\leftmarginiv^^J%
992 \@ind\string\labelwidth\string\leftmarginiv^^J%
993 \@ind\string\advance\string\labelwidth-\string\labelsep^^J%
994 }\@percentchar
995 }%
996 \endgroup
997 \begingroup
998 \@listv
999 \immediate\write\@fontfile{%
1000 \string\def\string\@listv{\@percentchar^^J%
1001 \@ind\string\leftmargin\string\leftmarginv^^J%
1002 \@ind\string\labelwidth\string\leftmarginv^^J%
1003 \@ind\string\advance\string\labelwidth-\string\labelsep^^J%
1004 }\@percentchar
1005 }%
1006 \endgroup
1007 \begingroup
1008 \@listvi
1009 \immediate\write\@fontfile{%
1010 \string\def\string\@listvi{\@percentchar^^J%
1011 \@ind\string\leftmargin\string\leftmarginvi^^J%
1012 \@ind\string\labelwidth\string\leftmarginvi^^J%
1013 \@ind\string\advance\string\labelwidth-\string\labelsep^^J%
1014 }\@percentchar
1015 }%
1016 \endgroup
1017 \immediate\write\@fontfile{%

```

```

1018 \string\ifundefined{@list@extra}{\}%{\@percentchar^^J%
1019 \string\expandafter\string\ifnum\string\scr@v@is@ge{3.17}%
1020 \string\par@update@relative\string\fi^^J%
1021 \@ind\string\l@addto@macro{\string\@listi}{\string\@list@extra}%
1022 \@percentchar^^J%
1023 \@ind\string\l@addto@macro{\string\@listI=\string\@listi^^J%
1024 \@ind\string\l@addto@macro{\string\@listii}{\string\@list@extra}%
1025 \@percentchar^^J%
1026 \@ind\string\l@addto@macro{\string\@listiii}{\string\@list@extra}%
1027 \@percentchar^^J%
1028 \@ind\string\l@addto@macro{\string\footnotesize}{\string\protect
1029 \string\add@extra@listi{ftns}}\@percentchar^^J%
1030 \@ind\string\l@addto@macro{\string\small}{\string\protect
1031 \string\add@extra@listi{sml}}\@percentchar^^J%
1032 }\@percentchar^^J%
1033 \string\@listi^^J%
1034 \string\endinput^^J%
1035 \@percentchar^^J%
1036 \@percentchar\space End of file '#1#2.clo'.
1037 }
1038 \immediate\closeout\@fontfile
1039 }
1040 \onlypreamble\generateclofile

```

We will now define some internal commands to test the package functions. Since version 0.6 I have been using the \TeX 3 solution provided by Enrico Gregorio in place of the previous macros based on etoolbox.

```

1041 \ExplSyntaxOn
1042
1043 \NewDocumentCommand{\printsamples}
1044 {
1045   m
1046   m
1047   O{tiny, tinyr, tinyrr, tinyrrr,
1048     scriptsize, scriptsize, scriptsize, scriptsize,
1049     footnotesize, footnotesize, footnotesize, footnotesize,
1050     small, smallr, smallrr, smallrrr,
1051     normalsize, normalsize, normalsize, normalsize,
1052     large, large, large, large,
1053     Large, Large, Large, Large,
1054     LARGE, LARGE, LARGE, LARGE,
1055     huge, huge, huge, huge,
1056     Huge, Huge, Huge, Huge}
1057 }
1058 {
1059   \fontsize_printsamples:nnn { #1 } { #2 } { #3 }
1060 }
1061
1062 % helper function to print the rounded sizes
1063 \cs_new:Nn \__fontsize_round_f:n

```

```

1064 {
1065 \fp_eval:n { round(\use:c{f@#1},1) } pt
1066 }
1067
1068 % the main function
1069 \cs_new_protected:Nn \fontsize_printsamples:nnn
1070 {
1071 % group to bound the font changes
1072 \group_begin:
1073 % set the size
1074 \changefontsize[#1]{#2}\selectfont
1075 % header
1076 \subsubsection*{Text~samples~for~#2~on~#1}
1077 % map through the desired sizes
1078 \clist_map_inline:nn { #3 }
1079 {
1080 \use:c{##1} % set the font size
1081 \noindent\texttt{\symbol{92}##1}:~ % print the font size command
1082 \__fontsize_round_f:n {size}~ % print the size in points
1083 \__fontsize_round_f:n {baselineskip}.~ % print the baseline skip in points
1084 \kant[1][1-3] % sample text
1085 \par\addvspace{\medskipamount} % finish up
1086 }
1087 % close the group
1088 \group_end:
1089 }
1090 \ExplSyntaxOff

```

References

- Adriaens, Hendri (2014), *The xkeyval package. Extension of the keyval package*, version 2.7a, <http://www.ctan.org/pkg/xkeyval> (visited on 07/05/2020).
- Lehman, Philipp and Joseph Wright (2019), *The etoolbox Package. An e-TeX Toolbox for Class and Package Authors*, version 2.5h, <http://www.ctan.org/pkg/etoolbox> (visited on 07/05/2020).
- Neukam, Frank, Markus Kohm, and Axel Kielhorn (2020), *KOMA – Script. A versatile L^AT_EX 2_ε bundle*, version 3.30, <http://www.ctan.org/pkg/koma-script> (visited on 07/05/2020).

Change History

v0.1		lengths omitted from KOMA-script files: \smallskiamount, \medskiamount, \bigskiamount.
General: First public release	1	
v0.2		Redefined \parindent and \headheight.
General: Updated documentation and code comments.	1	
v0.3		
General: Added definitions of some		
	v0.4	General: Maintenance release. Updated

documentation. 1	Updated documentation. 1
v0.5	v0.6
General: New font sizing commands	General: New font sizing commands
from \normal size up. New	from \small down. Updated
command \print samples.	documentation. 1

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