The \texttt{caption} package*

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Abstract
The \texttt{caption} package provides many ways to customise the captions in floating environments such as \texttt{figure} and \texttt{table}. The \texttt{rotcaption} command and the \texttt{sidewaysfigure} and \texttt{sidewaystable} environments provided by the \texttt{rotating} package from S. Rahtz and L. Barroca are also supported. The \texttt{caption} package also cooperates with the \texttt{float} package written by A. Lingnau and the \texttt{subfigure} package written by S.D. Cochran.

1 The user interface
To use this package just type

\begin{verbatim}
\usepackage[\langle options\rangle]{caption}
\end{verbatim}

in the preamble of your document, where the following options are supported:

- \texttt{normal} provides ‘normal’ captions, this is the default
- \texttt{hang} or \texttt{isu} provides captions with hanging indentation
- \texttt{center} provides captions where each line is centered
- \texttt{centerlast} provides captions where the last line of the paragraph is centered
- \texttt{nooneline} if a caption fits on one line on the page, it will be centered. If you don’t like this behaviour, just select this option.
- \texttt{scriptsize, \ldots, Large} sets the font size of the captions
- \texttt{up, it, sl, sc, md, bf, rm, sf, or tt} sets the font attribute of the caption labels.
- \texttt{ruled} supports ruled floats of the \texttt{float} package, see section 1.1 for details

\begin{verbatim}
\captionfont \captionlabelfont
\end{verbatim}

*This package has version number 1.4b, last revised 1995/04/05.
the commands \captionfont and \captionlabelfont to allow a more flexible way to customize the captions than the above options could do. \captionfont is called before each caption, \captionlabelfont is called just before the label of the caption, so the whole caption will be created as

\{\captionfont{\captionlabelfont (label): }{\captionfont{caption}}\}

Note that these commands are used by the options, e.g. the options small and sf are identical to

\renewcommand{\captionfont}{\small} and \renewcommand{\captionlabelfont}{\sffamily}.

Furthermore there is a new length \captionmargin to setup an extra left and right margin for the captions, e.g. the command

\setlength{\captionmargin}{10pt}

sets this margin to 10pt.

The lengths \abovecaptionskip and \belowcaptionskip contain the amount of white space to leave above and below the caption. \abovecaptionskip is preset (in the article, report and book document class) to 10pt, \belowcaptionskip to 0pt.

1.1 The rotating, float and subfigure package

If you want to use this package together with the rotating[1], float[2] and/or the subfigure package, you have to input this package after the other ones, like

\usepackage{float,rotating,subfigure}
\usepackage[centerlast,small,sc]{caption}

The caption package now redefines the sidewaysfigure and sidewaystable environments and the \rotcaption command provided by the rotating package from S. Rahtz and L. Barroca. Note that the \captionmargin does not affect the \rotcaption command.

It also redefines the captions of the plain and boxed styled floats provided by the float package from A. Lingnau. ruled floats are not supported by default, but you can change this via setting the option ruled. Note that the \captionmargin is not supported in ruled floats.

If the subfigure package from S.D. Cochran is detected, the options scriptsize, ..., large will redefine \subcaption in an adequate way. If you redefine \captionfont by yourself and use the subfigure package, you also have to redefine \subcaption by yourself. Also the commands \@thesubfigure and \@thesubtable will be redefined to use the \captionlabelfont command, please take this into consideration if you redefine \@thesubfigure or \@thesubtable by yourself. E.g. a adequate version of the second example in subfigure.sty will be:

\renewcommand{\thesubfigure}{\thefigure.arabic{subfigure}}
This package cooperates with the version 2.8 (1995/04/02) of the \texttt{rotating} package, version 1.2c (1995/03/29) of the \texttt{float} package and version 1.6 (1993/05/13) of the \texttt{subfigure} package, but will hopefully work with future versions, too.

## 2 Example

Here’s an example figure which was produced with the following code in the preamble of this document:

\begin{verbatim}
\usepackage[hang,small,bf]{caption}
\setlength{\captionmargin}{20pt}
\end{verbatim}

\begin{center}
\textbf{EXAMPLE FIGURE}
\end{center}

\textit{Figure 1:} This is an example caption with a small font and a sans serif label. The hang option was used. There is a left and right margin of 20pt.

## 3 The code

### 3.1 Identification

1 \texttt{\NeedsTeXFormat{LaTeX2e}[1994/06/01]}
2 \texttt{\ProvidesPackage{caption}[1995/04/05 v1.4b caption package (HS)]}
3 \texttt{\typeout{Package: caption v1.4b <1995/04/05> (Harald Sommerfeldt)}}

### 3.2 Initial code

\begin{verbatim}
\captionfont \captionsize is defined for backward compatibility with v1.3 of this package.
\newcommand{\captionsize}{}
\newcommand{\captionfont}{\captionsize}
\newcommand{\captionlabelfont}{}
\newcommand{\captionmargin}{}
\newlength{\captionmargin}
\end{verbatim}

Here are the different basic types of captions implemented:

\begin{verbatim}
\as@normalcaption The ‘normal’ caption
\newcommand{\as@normalcaption}[2]{% \#1 \#2\par}
\as@isucaption The ‘iso’ or ‘hang’ caption; this code was taken from \texttt{The \LaTeX\ Companion}[3, p155] and modified
\newcommand{\as@isucaption}[2]{% \sbox{\as@captionbox}{#1 \space}}
\end{verbatim}

3
The ‘center’ caption

The ‘centerlast’ caption: the idea how to do this was taken from Brüggemann-Klein[4], it is also mentioned in Kopka[5, p227]

Short captions are centered by default

3.3 Detection of the subfigure package

If the subfigure package is loaded, a little message will be typeout and \as@subcapsize – which sets the size of the subcaptions – will be defined. Also \thesubfigure and \thesubtable will be redefined here to support the \captionlabelfont in subcaptions, too (thanks to Kevin Ruland for this idea!). If you don’t like this behaviour, just load the caption package after the subfigure package (and eventually redefine the \subcapsize by yourself) or redefine \thesubfigure and \thesubtable after loading the caption package as shown in the documentation of the subfigure package.

3.4 Declaration of options

There are four different types of captions supported: normal, isu, center and centerlast. hang is exactly the same as isu.

If option nooneline is set, only-one-line captions will behave like normal ones.
There are options for six different font sizes available, they also redefine the \subcapsize provided by the subfigure package (if detected).

\DeclareOption{scriptsize}{% 
 \renewcommand{\captionsize}{\scriptsize} 
 \as@subcapsize{\scriptsize}}
\DeclareOption{footnotesize}{% 
 \renewcommand{\captionsize}{\footnotesize} 
 \as@subcapsize{\scriptsize}}
\DeclareOption{small}{% 
 \renewcommand{\captionsize}{\small} 
 \as@subcapsize{\footnotesize}}
\DeclareOption{normalsize}{% 
 \renewcommand{\captionsize}{\normalsize} 
 \as@subcapsize{\footnotesize}}
\DeclareOption{large}{% 
 \renewcommand{\captionsize}{\large} 
 \as@subcapsize{\normalsize}}
\DeclareOption{Large}{% 
 \renewcommand{\captionsize}{\Large} 
 \as@subcapsize{\large}}

There are nine options available to set the font attributes of the caption labels.

\DeclareOption{up}{\renewcommand{\captionlabelfont}{\upshape}}
\DeclareOption{it}{\renewcommand{\captionlabelfont}{\itshape}}
\DeclareOption{sl}{\renewcommand{\captionlabelfont}{\slshape}}
\DeclareOption{sc}{\renewcommand{\captionlabelfont}{\scshape}}
\DeclareOption{md}{\renewcommand{\captionlabelfont}{\mdseries}}
\DeclareOption{bf}{\renewcommand{\captionlabelfont}{\bfseries}}
\DeclareOption{rm}{\renewcommand{\captionlabelfont}{\rmfamily}}
\DeclareOption{sf}{\renewcommand{\captionlabelfont}{\sffamily}}
\DeclareOption{tt}{\renewcommand{\captionlabelfont}{\ttfamily}}

If the option ruled is set, the captions of ruled floats provided by the float package will also be supported.

\DeclareOption{ruled}{\newcommand{\as@ruled{}}}  

\section{Execution of options}

The ‘normal’ type of caption is preselected.

\ExecuteOptions{normal}
\ProcessOptions

\section{Main code}

And now ... it’s ... the new \@makecaption code!
\newsavebox{\as@captionbox}
\newlength{\as@captionwidth}
\newcommand{\as@makecaption}[2]{% 
\setlength{\leftskip}{\captionmargin}\% 
\setlength{\rightskip}{\captionmargin}\% 
\addtolength{\as@captionwidth}{-2\captionmargin}\% 
\captionfont\% 
\box{\as@captionbox}{{\captionlabelfont #1:} #2}\%
3.7 Support of the rotating package

If the \texttt{rotating} package is loaded, the command \texttt{@makercaption} (for support of \texttt{rotcaption}) will be redefined here. The code was taken from the rotating package \cite{rotating} itself and adapted.

\begin{verbatim}
\ifx@makercaptionundefined
\else
\typeout{\space\space\space\space\space\space\space\space\space
'rotating' package detected}
\let@makercaptionundefined
\renewcommand{\@makercaption}[2]{%
\captionfont%
\sbox{\as@captionbox}{{\captionlabelfont #1:} #2}%
\ifdim \wd\as@captionbox > .8\vsize
\rotatebox{90}{%
\setlength{\as@captionwidth}{.8\textheight}%
\begin{minipage}{\as@captionwidth}%
\as@caption{{\captionlabelfont #1:}}{#2}%
\end{minipage}}\par%
\else%
\rotatebox{90}{\usebox{\as@captionbox}}%
\fi
\hspace{12pt}}%
\fi
\end{verbatim}

3.8 Support of the float package

\begin{verbatim}
\ifx\floatc@plainundefined
\else
\typeout{\space\space\space\space\space\space\space\space\space
'float' package detected}
\renewcommand{\floatc@plain}[2]{%
\setlength{\as@captionwidth}{\linewidth}%
\as@makecaption{#1}{#2}%
\fi
\end{verbatim}

\begin{verbatim}
\ifx\floatc@ruledundefined
\else
\typeout{\space\space\space\space\space\space\space\space\space
'float' package detected}
\renewcommand{\floatc@ruled}[2]{%
\setlength{\as@captionwidth}{\linewidth}%
\captionfont%
\as@caption{{\captionlabelfont #1:}}{#2}%
\fi
\end{verbatim}
References

[1] Sebastian Rahtz and Leonor Barroca: A style option for rotated objects in \LaTeX, 1994/10/02


