The \texttt{flabels} package\footnote{This file has version number v1.0, dated 1999/05/19.}

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Abstract

This package provides macros for typesetting pretty labels (optionally colored) for the back of files or binders. So far they are only applicable for the special format of the (for a4 paper) widely used “Leitz-Ordner” (ring binder). We use 2 macros, the first one for a number of empty labels (for handwriting) while the second contains a text field.

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1 Introduction

Thanks to photo-copiers a lot of paper is produced that has to be kept somewhere and (perhaps) even in some order. If you want to keep an overview over it you will punch it and put it into a file/binder (otherwise one or more stacks will do). This package have been invented to make life with this binders a little bit nicer, prettier and more colored.
The *flabels* (‘filelabels’) package provides two macros for producing labels for the back of a binder in the wide-spread format (for a4 paper!) \(28.3 \times 31.8\text{ cm}\) (\(11.1 \times 12.5\text{ inch}\)) with the back height \(31.8\text{ cm}\) (\(12.5\text{ inch}\)) and different available widths.

I hope that further versions of the *flabels* package will support more than one binder format. (But this will depend on You, the friendly reader who want to contribute to *flabels* by adding support for Your favourite binder :-).

2 Using the *flabels* package

Invoke the *flabels* package by requesting it in the preamble (Note that this package requires \LaTeX{}2e):

```
\usepackage{flabels}
```

2.1 Quick start

- Use option `a4paper` if you need it.
- Check the format of the binder you have: If the label should be 37mm wide choose option `narrow`; the default width is 60mm.
- Decide if you want large labels (full height of the binder back). If you do include option `fullheight` in the `usepackage` command.
- Use option `color` if you have a color printer or if your printer at least can translate colors into greyscale-‘colors’.
- Neither call any package that sets page layout parameters (like `\textheight`) after *flabels* nor set them by yourself.
- If you are using colors: Create a file `color.cfg` including the line `\ExecuteOptions{<driver>}`, where `<driver>` stands for your color graphics driver, e.g. `dvips` or `xdvi` (see description of the `color` package).
- If you are using colors: Set the fore- and background colors for the “company label” and the whole label using `\setbgcompany`, `\setfgcompany`, `\setbglabel`, `\setfglabel`, each one of this accepts a color name as argument.
- Choose the text for the “company label” (the command for getting the default would be `\company{\huge LEITZ}`).
- In the document:
  - If you want to create 4 “empty” labels for handwriting use command `emptylabel{4}`
  - If you want to print a label with text use the macro `\labeltext{text}`.
  - Avoid empty lines (paragraphs) between the label because this may lead to a wrong vertical and horizontal placement of the labels.
- Check for overfull `\hboxes` and (if necessary for the printer) shift the labels on the page up- or downwards using the macro `\extratopmargin<dim>`.
2.2 Options

The package recognizes the following options: leitz, fullheight, narrow, color, a4paper, nice and nohole.

leitz This option is more-or-less a “dummy option” since leitz is the default and, even more, the user has no other choice. Nevertheless it is an option because this should change in the future. To cut a long story short: You can ignore this option for now!

fullheight See the pictures for the difference between fullheight and labels of normal height in sec. 2.4. You may switch from large labels to the smaller ones (and vice versa) whenever you want from inside the document using the macros \fullheight and \normalheight.

narrow Change the default width of the labels from 60mm to 37mm. You may also change the width from inside the document with the commands \narrowlabels and \widelabels.

color Use this option if you have a color printer\textsuperscript{1} to include the standard \LaTeX\textsuperscript{2e} package color. This package (see color-documentation grfguide.tex) needs to know the driver for which the color informations should be generated. So you have to create a file color.cfg including the line \ExecuteOptions{<driver>}, where <driver> stands for your color graphics driver, e.g. dvips or xdvi. The colors to be used may be set in the preamble or in the document (see sec. 2.3).

a4paper So far only “Leitz-Ordner” are supported by this package which are used for a4 paper. So normally you will include this option (or use the equivalent option for the document classes.

nice This option should be used only if you want to include labels in a normal document! Normally this package uses the whole page, changing nearly every layout parameter. Since this makes flabels very un-co-operative and forbids the use of this package inside a normal text document (unlikely that there is any need for this this but the documentation you read now uses the option nice). The option nice makes flabels nicer to other packages. Warning: If you use this option you have to take care for correct placement on the page for yourself!

nohole Do not include a marker for the hole in the back of a “Leitz-Ordner” (to be used for an exact alignment of the label).

2.3 User commands

It follows a complete list of all user accessible macros, lengths and counters.

2.3.1 Label properties

Some of these macros have been described before in the options section.

\narrowlabels • To switch to narrow labels use the macro \narrowlabels.
To switch to wide labels use the macro \widelabels.

\widelabels

To switch to large labels use the macro \fullheight.

\fullheight

To switch to small labels use the macro \normalheight.

\normalheight

To change the text of the “company label” use the macro \company{<name>}

\company

Change the number of auxiliary lines in \emptylabel this way: \setcounter{numberauxlines}{<number>} (default is 4). Usually you will also change the distance between the lines ...

\numberauxlines

... using the macro \auxlinedistance<dim> where <dim> can be any valid \TeX-dimension.

\auxlinedistance

You may also change the appearance of the “company label” via the re-definition of this three macros: \companylabelheight, \ylowercompany and \yuppercompany. Each of them are set to a number, that is a length measured in the unit mm. You can get the default height of the company label e.g. by \renewcommand{\companylabelheight}{17}, since –by default– this height is 17mm. The other two macros determine the y-coordinate of the bottom of the upper and the lower label. Their default (for leitz) are 160 resp. -68.

2.3.2 Changing colors

Set the fore- and background colors for the “company label” and the whole label using \setbgcompany, \setfgcompany, \setbglabel and \setfglabel (fg stands for ‘foreground’ and bg for ‘background’), e.g. \setfglabel{white}.

You have to use (predefined) color-names, like black or red. Which names are already defined depends on your graphics driver. You may define new colors following the \texttt{color}-package documentation \texttt{grfguide.tex}.

2.3.3 Layout parameters

As mentioned in the options section (see discussion of option nice, this package leaves only few layout parameters untouched to make the labels fit onto a page. Vertically there is no room for a user to adjust anything except the distance between the border of the paper and the labels. This is accessible via the macro \extratopmargin<dim>. The default for this length is 0mm – then the large labels will be vertically centered on the page. With a positive \extratopmargin the labels will be shifted down (negative values are allowed).

The horizontal layout is not that restricted, for example you can change the text width (as usual using the macro \textwidth) and all margins. The distance between two labels is generally handled by \TeX like any space between two words. (There must be space between the labels in order to give \TeX the chance to break “lines” of labels!) You may want to specify a minimum distance (default is 0mm) using \setlength{\hspaceinterlabel}{<dim>}.

The distance between the text box of \labeltext and the label border is controlled by the length \labeltextmargin. It is preset to 3mm. This value is at the same time top-, left- and right margin of the text (the lower boundary is free). It can be changed directly this way: \setlength{\labeltextmargin}{<dim>}. \footnote{You may also use colors if your printer can translate real colors into greyscale-‘colors’!}
2.3.4 Creating labels

To create labels you have the choice between 2 macros: \emptylabel{<number>}
and \labeltext{<text>}. Instead of a longish discussion look at the examples
in sec. 2.4. Note that the argument of \labeltext is typeset as plain text – there
is no predefined font change etc. The only special is the switch to the text color
\color@bel@fg (if option color is chosen). If you want all your labels to be
typeset in a special font perhaps with a title in a larger font size, you should
define a macro, e.g. like this:
\begin{verbatim}
\newcommand\mylabel[2]{\labeltext{\vspace{1ex}\sffamily\
begin{flushleft}\
\textbf{\huge #1}\\
\textsl{\Large\flushleft{\large #2}}\\
\end{flushleft}}}
\end{verbatim}

To get a good positioning of the labels may take a while. The best advice I can give
is: Avoid ‘paragraphs’ between the labels, perhaps you have to remove also any
’space’ by ending the lines with a %. Then insert pagebreaks, vspace and hspace
as needed. Having both large and small labels (\fullheight and \normalheight)
on one page results in a wrong vertical placement of the smaller labels (the bottoms
of the labels instead of their reference points are vertically aligned)\footnote{\text{The reason for that I currently do not understand, perhaps You do?!}}

2.4 Examples

The following labels are drawn with a \unitlength of 0.5mm instead of 1mm (that
is why they fit onto this page!). The vertical label position on the paper (pa-
per contour is drawn too) is the original one, while the horizontal positioning
shown here is very unusual (therefore you had to vary \textwidth, \oddsidemargin
and \evensidemargin).
The vertical positioning of the labels can be understood this way: The large labels are centered vertically on the page. The position of the small labels is fixed by the constraint that all labels should share the same reference point (0,0). (That is why the “company labels” are all aligned.)

The next picture is not an example, but gives a listing of nearly all dimensions used by this package and a description of ‘empty’ and text labels. Note that all variables containing an \@ are not directly accessible in the document (but some are via macros).
2.5 To do

- The package should support further binder formats!
- Perhaps the package should provide further special labels e.g. for a table of contents on the first page etc.
• Perhaps there should be an option for a landscape mode (using the \texttt{Lscape}
package)?

• Perhaps the package should care for horizontal spacing and should help to avoid \texttt{Overfull \hbox} warnings.

• Perhaps even more lengths should be user-accessible (most of the macro names contain an \texttt{@} so you cannot use them in a normal document).

• To be solved: Placing full- and normal-height labels on one page currently causes problems — I have no idea why.

If \texttt{You} have any problems, suggestions, critical remarks – or whatever according this package write to Volker Börchers (email-address see title).

3 The Macros

\texttt{Options} At the start of the package all Option\texttt{s} are declared but for most options the implied actions are executed later (controlled by a corresponding \texttt{\newif}).

\texttt{leitz} As mentioned in section 2.2 the option \texttt{leitz} is so far a “dummy option” since there is no alternative. If you want to add support for another label format you should make it choose-able as an option. The declarations below are only a part of the format-dependent settings (especially all widths are not set here). Some (not all!) other of these settings are in a \texttt{\ifl@itz \ldots \fi} construction (see macros \texttt{\f@lll@belheight} and \texttt{\n@rrow}).

\begin{verbatim}
1 \newif\ifl@itz \l@itztrue
2 \DeclareOption{leitz}{\l@itztrue
3 \newcount\cnt@auxlinedistance \cnt@auxlinedistance=30
4 \newcounter{numberauxlines}\setcounter{numberauxlines}{4}
5 \def\hole@diameter{29}
6 \def\hole@radius{14.5}
7 \def\y@center@hole{-26.5}
8 \def\yuppercompany{-68}
9 \def\ycompanylabelheight{17}
10 \def\fullheight{185}
11 \def\full\hole@diameter\hole@radius\y@center@hole\yuppercompany\ycompanylabelheight\fullheight}
12 \newif\iff@llheight \f@llheightfalse
13 \DeclareOption{fullheight}{\f@llheighttrue
14 \DeclareOption{fullheightfalse}{\f@llheightfalse
15 \DeclareOption{narrow}{\n@rrowtrue
16 \DeclareOption{narrowfalse}{\n@rrowfalse}
\end{verbatim}

\texttt{fullheight} If this option is chosen, the macro \texttt{\fullheight} (respectively \texttt{\f@lll@belheight}) is invoked later. The label will then extend (nearly) over the full height of the binder back (this is not the default).

\begin{verbatim}
13 \newif\iff@llheight \f@llheightfalse
14 \DeclareOption{fullheight}{\f@llheighttrue
15 \DeclareOption{fullheightfalse}{\f@llheightfalse
16 \DeclareOption{narrow}{\n@rrowtrue
17 \DeclareOption{narrowfalse}{\n@rrowfalse}
\end{verbatim}
Load the package \texttt{color} later. This is not the default because not everyone has a color printer.

\begin{verbatim}
17 \newif\ifcolor\belie\belie\false
18 \DeclareOption{color}{\belie\true}
\end{verbatim}

The same thing that the \texttt{documentclass} option \texttt{a4paper} does. Perhaps this option should imply further actions?.

\begin{verbatim}
19 \DeclareOption{a4paper}{\paperheight\ 297\text{mm}\ \paperwidth\ 210\text{mm}}
\end{verbatim}

This option turns off the special, extreme, page layout of package \texttt{flabels}.

\begin{verbatim}
20 \newif\ifbe\nice\bine\false
21 \DeclareOption{nice}{\bine\true}
\end{verbatim}

Do not include a marker for the hole in the back of a “Leitz-Ordner” (to be used for an exact alignment of the label). A new option for a binder that do not have such a hole should include the command \texttt{\ExecuteOptions{nohole}}.

\begin{verbatim}
22 \newif\ifno\hole\nome\false
23 \DeclareOption{nohole}{\nome\true}
\end{verbatim}

The end of the option section of the code: Produce an error message when unknown options (type mistakes...) are given; make \texttt{leitz} the default and force evaluation of the given option list.

\begin{verbatim}
24 \DeclareOption*{\PackageWarning{flabels}{%
25 Unknown option \CurrentOption\ (Known option:\MessageBreak
26 \texttt{'fullheight'}, \texttt{'narrow'}, \texttt{'color'}, \texttt{'nohole'}, \texttt{'a4paper'}, \texttt{'nice'})}}
27 \ExecuteOptions{leitz}
28 \ProcessOptions\relax
\end{verbatim}

The unitlength of the pictures used to create the labels is 1 millimeter. Since \TeX-dimensions are internally represented by integer variables (unit \texttt{sp}: scaled point) they are also ‘counters’. This macro converts \texttt{sp} into \texttt{mm} (code taken from \texttt{layout} package). \texttt{\cnt@paperheight} keeps the paper height in \texttt{mm} as a counter.

\begin{verbatim}
29 \setlength{\unitlength}{1\text{mm}}
30 \def\ConvertToCount#1#2{#1=#2 \divide #1 by 186468}
31 \newcount\cnt@paperheight
32 \ConvertToCount\cnt@paperheight\paperheight
\end{verbatim}

The counter \texttt{\cnt@pictvoffset} (to be computed later) is used to place the label vertically centered on the page. \texttt{\tmp@count} and \texttt{\tmp@dim} are used as temporary variables.

\begin{verbatim}
33 \newcount\cnt@pictvoffset
34 \newcount\tmp@count
35 \newdimen\tmp@dim
\end{verbatim}

Since the labels can be very large (compared to the paper height) we use the full page height if option \texttt{nice} is \textit{not} chosen. (This is not the same as the \texttt{fullpage} package does. Here we use really the whole page!) Horizontally this package leaves only a margin of 1\text{in} on the left side but leaves \texttt{textwidth} untouched.

On the other hand this makes \texttt{flabels} very sensible to the sequence of \texttt{\usepackage} commands. If one loads a package after \texttt{flabels} that overwrites this settings again (like \texttt{a4}) the layout will be wrong.
Definition of a dimension for extra vertical space at the top of a page and the macro \extratopmargin as an user interface to it. Note: A \topmargin of -1in means that the text/labels can start right at the top of the page. The way the macro is defined hides this offset of -1in from the user.

\newdimen\extratopmargin \extratopmargin=0mm
\def\extratopmargin#1{\extratopmargin=#1
\advance\extratopmargin by -1in
\topmargin\extratopmargin}

The counter \cntauxlinedistance contains the distance between two auxiliary lines (for emptylabels) in the unit 1mm. It is preset by the option leitz to the value 30. To allow the user to use other dimensions than mm the macro \auxlinedistance is used.

\def\auxlinedistance#1{\tmpdim=#1
\C@nvertToCount\cntauxlinedistance\tmpdim}

\labeltextmargin \labeltextwidth is the width of the text in the label text field – it is a computed value (see macro \labeltext) since the label width is variable. The user can set \labeltextmargin, the margin between text and label outline (left and right side, top) instead to adjust the text width. \hspaceinterlabel (also user-accessible) is the minimal horizontal space between two labels (it is more usually).

\newdimen\labeltextmargin \labeltextwidth=3mm
\newdimen\labeltextmargin
\newdimen\hspaceinterlabel \hspaceinterlabel=0mm

\label@textheight The text box extends from y=0 to the “company label”. We compute the text height in macro \labeltext as \label@textheight = \yuppercompany - \labeltextmargin. Note: making the box smaller moves the text down.

\newcount\label@textheight

Now the options fullheight, narrow and color have to be processed. (Till now only a corresponding \newif has been set.)

->fullheight The first of this three options is fullheight. Of course we have to set here a big part of the label dimensions. Firstly we define a macro for internal use (the user interface for it is provided by the macros \fullheight and \normalheight). (For the explanation of \labelheight and \labelwidth see figure on page 6.)
The small labels (normalheight) should have the same y-coordinate $y=0$ as the big labels on the page. We could achieve this by setting the y-offset (argument of the label picture environment!) to $\belbase$. Then the top of the big labels would start right the beginning of the paper.

If we additionally want the big labels (fullheight) be vertically centered on the whole page we have to divide the remaining vertical space between top and bottom (this ends the macro \fullheight):

\begin{verbatim}
cnt@pictvoffset=\paperheight
\advance\cnt@pictvoffset by -\belheight
\divide\cnt@pictvoffset by 2
\addvspace{\cnt@pictvoffset by \belbase}
\end{verbatim}

After having defined fullheight and normalheight now we can call \fullheight with the appropriate argument:

->narrow Now option narrow! Here all horizontal dimensions have to be set. As for fullheight we define a macro for internal use and call it then according to the chosen option.

\begin{verbatim}
\def\narrow#1{% 
  \ifllheightfalse 
    \ifnum #1=0 
      \narrowfalse 
      \def\belwidth{60} 
      \def\halfbelwidth{30} 
    \else 
      \narrowtrue 
      \def\belwidth{37} 
      \def\halfbelwidth{18.5} 
    \fi 
  \fi 
}\fi 
\fi 
\end{verbatim}

Process option narrow now:

\ifnarrow 
  \narrow1 
\else
\fi
The option color first loads the package color. — Note: The package color needs to know for which driver color informations have to be generated (dvips, xdvi, ...). While we can not select the driver here (as an option: \requirePackage{<driver>}{color}), we require the color macros now. So the user must specify the driver in the file color.cfg with an \ExecuteOptions{<driver>} command.

The colors of the labels will depend on 4 colors: \color{company@bg} (background of the “company label”), \color{company@fg} (foreground of the “company label”), \color{label@bg} (color of the labeltext), \color{label@fg} (background of the whole label). We define 4 macros as an user interface to these colors and use them to set the default colors.

\begin{verbatim}
\_requirePackage{color}
def setbgcompany#1{\def\color{company@bg}{#1}}
def setfgcompany#1{\def\color{company@fg}{#1}}
def setbglabel#1{\def\color{label@bg}{#1}}
def setfglabel#1{\def\color{label@fg}{#1}}
\end{verbatim}

\begin{verbatim}
\setbgcompany{black}
def setfgcompany{green}
def setbglabel{yellow}
def setfglabel{black}
\end{verbatim}

Small labels have a “company label” at the top of the label and large labels in addition another near the bottom. It is a small box that may contain the logo of the company or institute or perhaps the user’s name. We save it in the box \thebox{company@bel}. The macro \thebox{kecompany@bel} is used for each label by \thebox{empty@bel} and \thebox{label@text}.

The text in this box is kept in the macro \thebox{company} and is user-accessible with the macro \thebox{company} (defined below).

This is specific to the label format. A “Leitz-Ordner” has a hole in the back of the binder to make the large binder handier (diameter 29mm). Since TeX is not
capable to typeset circles larger than 15mm, we mark this hole with a cross. The reference point of this box is its center.

\begin{picture}(\hole@diameter,\hole@diameter)(\hole@radius,\hole@radius)
\linethickness{0.01pt}
\put(0,\hole@radius){\line(1,0){\hole@diameter}}
\put(\hole@radius,0){\line(0,1){\hole@diameter}}
\end{picture}

This macro draws the common label outline for text and empty labels. It has to be called from inside a picture environment. The background color of the label is realised by putting a box that is slightly larger than the label ($2 \times 0.5$mm more) on the appropriate place.

\def\l@beloutline{
\fboxsep0.5mm
\ifcolorl@bel
\put(-1,\l@belbase){% 
\colorbox{\c@lorl@bel@bg}{\makebox(\l@belwidth,\l@belheight){\relax}}}
\fi
\linethickness{0.01pt}
\multiput(0,\l@belbase)(\l@belwidth,0){2}{\line(0,1){\l@belheight}}
\multiput(0,\l@belbase)(0,\l@belheight){2}{\line(1,0){\l@belwidth}}
\thinlines
\put(0,\yuppercompany){\usebox{\c@mpanyl@bel}}
\iff@llheight
\ifno@hole\relax\else
\put(\halfl@belwidth,\y@center@hole){\usebox{\theh@le}}
\fi
\fi
\put(0,\ylowercompany){\usebox{\c@mpanyl@bel}}
\fi
}\end{picture}

\l@beloutline

To switch between fullheight/normalheight and narrow/wide from inside the document we have these macros:

\def\narrowlabels{\n@rrow1}
\def\widelabels{\n@rrow0}
\def\fullheight{\full@height1}
\def\normalheight{\full@height0}

To redefine the company name:
\def\company#1{\def\c@mpany{#1}}

\emptylabel

The first macro that actually creates label is \emptylabel. It has as argument the number of identical labels to draw. Every ‘empty’ label consists of the common label outline and a number (numberauxlines, user accessible) of auxiliary lines.

\def\emptylabel#1{%
\rem@kecompanyl@bel
\tmp@count=#1\loop
\begin{picture}(\l@belwidth,\l@belheight)(0,\cnt@pictvoffset)
Here the second macro for creating labels: \labeltext. Perhaps it would have
been nicer to declare this as an environment but this should do. The text-width
and -height is computed here.

Note that the text is plain text – there is no predefined font change etc. The
only special is the switch to the text color \c@lorl@bel@fg (if option
color is
chosen).

\def\labeltext#1{\rem@kecompanyl@bel
\l@beltextwidth=\l@belwidth mm
\advance\l@beltextwidth by -2\labeltextmargin
\C@nvertToCount{\l@bel@textheight}{-\labeltextmargin}
\advance\l@bel@textheight by \yuppercompany
\begin{picture}(\l@belwidth,\l@belheight)(0,\cnt@pictvoffset)
\l@beloutline
\put(0,0){\protect\makebox(\l@belwidth,\l@bel@textheight)[t]{\parbox{\l@beltextwidth}{\ifcolorl@bel\textcolor{\c@lorl@bel@fg}{#1}\else #1\fi}}}
\end{picture}
\hspace{\hspaceinterlabel}"

⟨/package⟩

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Numbers written in italic refer to the page where the corresponding entry is de-
scribed; numbers underlined refer to the code line of the definition; numbers in
roman refer to the code lines where the entry is used.