The LATEX keyfloat Package

v2.09 — 2024/01/12

© 2016–2024 Brian Dunn
https://github.com/bdtc/keyfloat

Provides a key/value interface for generating floats.

Abstract

The keyfloat package provides a key/value user interface for quickly creating figures with a single image each, figures with arbitrary contents, tables, subfloats, rows of floats, floats located [H]ere, floats in the [M]argin, and floats with text [W]rapped around them.

Key/value combinations may specify a caption and label, a width proportional to \linewidth, a fixed width and/or height, rotation, scaling, a tight or loose frame, an \arraystretch, a continued float, additional supplemental text, and an artist/author's name with automatic index entry. When used with the tocdata package, the name also appears in the List of Figures.

Floats may be moved into or rearranged inside a multi-row environment or subfloats, and are typeset to fit within the given number of columns, continuing to additional rows as necessary. Nested sub-rows may be used to generate layouts such as two small figures placed vertically next to one larger figure.

As an example, a typical command to include a figure with a framed image of half \linewidth could be:

    \keyfig*[hbp]{f,lw=.5,c={A caption},l={fig:label}}{image}

keyfloat uses the caption, subcaption, newfloat or float, and wrapfig packages, and cannot be used with the subfig, subfigure, subfloat, floatrow, or floatflt packages.

See the General Index for an index of topics and troubleshooting.

For the latest updates, see Updates.

⚠ incompatible packages

⚠ Need help?
What's new?

Contents

List of Examples

List of Figures

List of Tables

1   Introduction

The keyfloat package simplifies the creation of LaTeX floats, while still allowing a large number of useful features.

1.1   A problem with floats

When including a figure with a graphics image into a document, the user typically enters something such as:

```
\begin{figure}
\centering
\includegraphics[width=3in]{filename}
\caption{A Figure}
\label{fig:somelabel}
\end{figure}
```

When doing that often enough, it makes sense to factor the common code:

```
\onefigure[3in]{filename}{A Figure}{fig:somelabel}
```

Expanding the capability of \onefigure via xparse can lead to the general case of:

```
\onefigure*[loc](width){filename}(add'l text)[shortcap]{caption}*[label]
```

Attempting to add additional features such as frames and continued floats hits the limit of nine parameters for a TeX macro, requiring that new features use some kind of change-state macros instead. Attempting to support rows of floats or subfloats only makes things more complicated still.

A key/value system solves the problem of adding more features, does not require much additional typing, is a more self-documenting syntax, and allows a shared syntax with subfloats and groups of floats as well. Thus, the keyfloat package.

1.2   The keyfloat package

Using keyfloat, the previous example becomes:

```
\keyfig{w=3in,c=A figure,l=fig:somelabel}{filename}
```

The \onefigure general case becomes:

```
\keyfig*[loc]{w=width,t={add'l text},sc=shortcap,cstar=caption,
    l=label}{filename}
```

1.3   Features

The macros and environments provided by keyfloat include:

\keyfig: A figure with an image.

\keytab: A table.

\keyflt: An arbitrary float type macro.

\keyfigbox: A figure with arbitrary contents.

\keyparbox: A "figure" without a caption, useful to place uncaptioned text inside a group,

keyfigure: A figure environment.

keytable: A table environment.

keyfloat: An arbitrary float type environment.

keyfloats: A group of rows and columns of floats.

keysubfigs: A figure containing a group of rows and columns of subfigures.

keysubtabs: A table containing a group of rows and columns of subtables.

keysubfloats: A float of arbitrary type containing a group of rows and columns of subfloats.

keywrap: Wraps a keyfloat around an environment of text. Usable inside a list.

marginfigure: A figure environment placed into the margin.[1]

margintable: A table environment placed in the margin.

Additional features include:

- Rows and columns of floats may be generated by placing them inside a keyfloats environment.

- Subfloats may be generated by placing them inside a keysubfigs or keysubtabs environment.

- Dynamic layout: The number of columns is specified. Extra floats are placed onto additional rows as needed, with the final row adjusted to compensate for leftovers.

- Floats may be placed [H]ere.

- Floats may be placed in the [M]argin.

- Floats may be placed with text [W]rapped around them.

---

[1] marginfigure and margintable: The environments provided by the tufte-book class are used if loaded, otherwise keyfloat provides its own versions.

- Floats may be starred to span two columns.

- Continued floats may be used to repeat the previous float number.

- A figure may contain an image, with additional sizing, rotation, and a frame.

- Tables may be stretched. (`\arraystretch`)

- Boxes of arbitrary contents may be assigned a width and framed.

- Floats may be moved into and out of the grouping environments as needed.

- An artist/author's name may be added to a figure and the index.

- If the tocdata package is loaded (use v0.12+), the name is also added to the LOF.

- Additional descriptive text may be added as well.

- Frames may be customized.

examples A large number of examples are provided, each showing LaTeX source and the resulting float.

index A customized index is included at the back of the documentation, including troubleshooting issues.

margin tags Blue margin tags are used to help quickly find information, and often indicate the destination of index entries.

⚠ **warnings** Several warnings are noted in the text. Watch out for these special cases.

1.4   Updates

Recent changes include the following:

v2.06: Added shared keys for groups of floats or subfloats. Added the kar key to keep the aspect ratio of an image. Removed : for an empty caption. Warns if an image is too wide to fit.

v2.02, v2.04: Added keys for wrapped floats.

1.5   Other float-related packages

Several other LaTeX packages related to floats include:

caption and subcaption: Improved control over captions.

floatrow: A macro-based package for creating floats; including captions, footnotes, and rows of floats.

hvfloat: A key / value system allowing the easy rotation of captions and floats.

nccfloats: Macros for minipage floats and side-by-side floats.

newfloat: Macros for the creationg of float environments.

rotfloat: Environments for rotated floats.

subfig: Macros to add subfloats inside a float.

2   Using the **keyfloat** package

2.1   Loading **keyfloat** and related packages

keyfloat is loaded with the usual command:

```
\usepackage{keyfloat}
```

tocdata (*Pkg*) If you wish to have artists' names appear in the list of figures,   as provided by the
tocloft (*Pkg*) tocdata package, load tocdata, optionally followed by either tocloft or titletoc, then
titletoc (*Pkg*) keyfloat:

```
\usepackage{tocdata}
\usepackage{titletoc}% or titletoc, or neither
\usepackage{keyfloat}
```

float (*Pkg*) To use custom float types with the float package:

```
\usepackage{float}
\newfloat{diagram}{htb}{lod}
```

newfloat (*Pkg*) To use custom float types with the newfloat package:

```
\usepackage{newfloat}
\DeclareFloatingEnvironment[
    fileext={lod},
    listname={List of Diagrams},
    name={Diagram},
]{diagram}
```

caption (*Pkg*) For the caption package, to have table captions appear above the tables, and to use
custom float types:

```
\usepackage[tableposition=top]{caption}
\captionsetup[diagram]{
    style=default, justification=centering,
    margin=0pt, parskip=0pt, skip=1ex,
    labelfont={small,bf},textfont={small,bf}
}
```

cleveref (*Pkg*) To use custom float and subfloat types with cleveref:

```
\usepackage{cleveref}
\crefname{diagram}{diagram}{diagrams}
\crefname{subdiagram}{subdiagram}{subdiagrams}
```

2.2   Macros and environments

\keyfig   *[⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*image filename*⟩}
A macro to generate a figure with an image from a file.

\keytab   *[⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*tabular contents*⟩}
A macro to generate a table with tabular contents. Usually use the keytable environment instead.

\keyflt   *[⟨*loc*⟩] {⟨*float type*⟩} {⟨*keys/values*⟩} {⟨*contents*⟩}
A macro to generate an arbitrary float type with its contents.

\keyfigbox   *[⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*box contents*⟩}
A macro to generate a figure with arbitrary paragraph contents. See example 2.

\keyparbox   *[⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*box contents*⟩}
A macro to generate a figure with arbitrary paragraph contents, but no number or caption. This is equal to a \keyfigbox with cstar={}. Mostly useful to add supplemental information inside a row of floats or subfloats. See example 14.

keyfigure (*env.*)   *[⟨*loc*⟩] {⟨*keys/values*⟩}
An environment to generate a figure with arbitrary contents. Useful for multi-paragraph contents. See example 3.

keytable (*env.*)   *[⟨*loc*⟩] {⟨*keys/values*⟩}
An environment to generate a table with arbitrary contents. Useful for larger tables. See example 5.

keyfloat (*env.*)   *[⟨*loc*⟩] {⟨*float type*⟩} {⟨*keys/values*⟩}
An environment to generate an arbitrary float type with its contents. Useful for multi-paragraph contents.

The above macros and environments may be used by themselves, or inside the following keyfloats, keysubfigs, or keysubtabs environments.

---

keyfloats (*env.*)   *[⟨*loc*⟩] {⟨*num columns*⟩} [⟨*shared keys/values*⟩]
A group of figures or tables typeset in rows. May be nested, [H], [W], or [M]. The optional shared keys / values are passed to each object within. See example 15.

keysubfigs (*env.*)   *[⟨*loc*⟩] {⟨*numcols*⟩} {⟨*keys*⟩} [⟨*shared keys/values*⟩]
A group of subfigures typeset in rows. May *not* be nested. May be [H], [W], or [M]. The optional shared keys / values are passed to each object within. See example 16.

keysubtabs (*env.*)   *[⟨*loc*⟩] {⟨*numcols*⟩} {⟨*keys*⟩} [⟨*shared keys/values*⟩]
A group of subtables typeset in rows. May *not* be nested. May be [H], [W], or [M]. The optional shared keys / values are passed to each object within. See example 17.

keysubfloats (*env.*)   *[⟨*loc*⟩] {⟨*float type*⟩} {⟨*numcols*⟩} {⟨*keys*⟩} [⟨*shared keys/values*⟩]
A group of subfloats typeset in rows. May *not* be nested. May be [H], [W], or [M]. The optional shared keys / values are passed to each object within.

keywrap (*env.*)   {⟨*width of keyfloat*⟩} {⟨*keyfloat*⟩}
Displays a keyfloat next to an environment of text. Two minipages are used side-by-side, which allows its use inside a list item where [W] will not work, but extra
⚠ empty space   empty vertical space will appear if the keyfloat and the text are of unequal vertical size. ⟨*keyfloat*⟩ may be any of \keyfig, keyfigure, keyfloats, keysubfigs, etc., each with its proper arguments. See example 27.

marginfigure (*env.*)   [⟨*offset*⟩]
A figure placed into the margin, with an optional vertical offset. \keyfloat uses the version provided by the tufte-book class if available, or provides its own version otherwise. See example 20.

margintable (*env.*)   [⟨*offset*⟩]
A table placed into the margin, with an optional vertical offset. \keyfloat uses the version provided by the tufte-book class if available, or provides its own version otherwise. See example 21.

---

*(Arg)   The star option create floats which span both columns in a two-column document.

{[H]} (*Arg*)   The [H] location forces a figure to be "Here", in the form of a minipage instead of a float. A caption, label, etc. may still be assigned.

{[M]} (*Arg*)   The [M] location places the float into the margin. When the tufte-book class is used, its marginfigure and margintable environments are used, otherwise keyfloat provides and uses its own versions of the same environments. See examples 22 and 23.

{[W]} (*Arg*)   The [W] location wraps text around the float. Use this just before the start of a
wrapfig (*Pkg*)   paragraph with contents large enough to wrap around the float. Do not use this inside a list environment. Select placement with the wp key; see the wrapfig package documentation for more information. Use w or lw to set the width of the item / image contained inside the wrap area. By default the caption will also be contained in this width. To use a larger width for the overall container and caption, set w or lw for the size of the image, and also use ww or wlw for a larger size for the caption. Watch the log
⚠ wrapfig warnings   for warnings from wrapfig.

{[loc]} (*Arg*)   The star and [loc] options are ignored for floats inside a keyfloats, keysubfigs, or keysubtabs environment. Note that these container environments may have their own star and [loc] options.

2.3 Keys and values

Table 1 shows the key/value combinations which are allowed. In most cases these may be used in any order and any combination, except for the following:

subfloat keys The keys labeled "Sub"may be used for the `keysubfigs` and `keysubtabs` environments, which group a number of subfloats together under one master float. The master float has its own caption, label, and text, and each subfloat inside the group likewise has its own set of keys.

keyfloats keys `keyfloats` does not accept any keys at all.

The "artist" keys `ap`, `af`, `al`, and `as` are only used by figures.

The `stretch` key increases space between tabular elements.

The rest of the macros and environments accept all of the keys, as they each create an individual float or subfloat, and each may have its own assigned dimensions and frame.

short/long caption combinations Table 2 shows the combinations of the caption-related keys `c`, `cstar`, and `sc`, and how they control the caption numbering and entries in the LOF/LOT.

wrapped float placement Table 3 shows the wrapped-float placement options for the `wp` key for floats placed [W].

Table 1: Keys and values — part I

Key	Sub[a]	Description	Example
c	●	An unstarred caption. If empty, creates a figure with a number but no caption.	c={A caption}
cstar	●	A starred caption. Creates a float without a number. If empty, creates a figure with no number or caption.	cstar={No Num}
sc	●	The short caption for the LOF/LOT, even if cstar.	sc={Short cap}
cont	●	Continued float?	cont
l	●	The label. Enclose in braces if a comma is included. Ignored in unnumbered floats.	l=fig:alabel
ap, aup	●	Artist/author's prefix, such as "Mr." [b]	ap=Mr.
af, auf	●	Artist/author's first name.[b]	af=First
al, aul	●	Artist/author's last name.[b]	al=Last
as, aus	●	Artist/author's suffix, such as ~III.[b]	al=~III
t	●	Additional text. May include paragraphs. Enclose in braces if a comma is included. May need \protect before macro calls. Fully-justified alignment.	t={Paragraphs}
tc	●	Additional text, aligned to the center.	tc={Paragraphs}
tl	●	Additional text, aligned to the left.	tl={Paragraphs}
tr	●	Additional text, aligned to the right.	tr={Paragraphs}

[a]: All the keys in Part I may be used with the main keys of the keysubfigs, keysubtabs, and keysubfloats environments.

[b]: Artist / author keys: al is an artist's last name, aul is an author's last name, etc. Artists names are printed centered, authors are flush right. A fixed-width non-breakable space is placed between parts of names, except that the optional suffix is connected directly to the last name, allowing "as={, Title}", for example.

Table 1: Keys and values — part II

Key	Sub[c]	Description	Example
lw	—	Set the width to a fraction of \linewidth. Cancels w. If a non-image float, sets the width of the text box. For wrapped objects, may be used with wlw for a smaller item with a larger caption.	lw=.5
w	—	Set the actual width. Cancels lw. If a non-image float, sets the width of the text box. For wrapped objects, may be used with ww for a smaller item with a larger caption.	w=2in
h	—	Set the actual height. Images only.	w=2in
kar	—	Keep aspect ratio: Use with w or lw, along with h, to fit an image into a given area. Images only.	kar
s	—	Set the image scale. Images only.	s=3
r	—	Set the rotation angle; counter-clockwise degrees.	r=90
f	—	Selects a loose frame with the current \fboxsep. Only rotated with \keyfig.	f
ft	—	Selects a tight frame with no \fboxsep. Useful for photographs, or diagrams which already have some margin built in.	ft
stretch	—	Sets \arraystretch inside the float.	stretch=1.5
mo	—	Sets the vertical offset for a margin float.	mo=-1.2ex
wn	—	Sets the number of lines for a wrapped float.	wn=2
wp	—	Sets the wrap placement for a wrapped float. The default is O, which places the wrapped float at the outside edge of the text. See table 3.	wp=I
wo	—	Sets the wrap overhang for a wrapped float.	wo=8em
wlw	—	Sets the total width of the wrapped item to a fraction of \linewidth. May be more than the w or lw width.	wlw=.6
ww	—	Sets the total width of the wrapped item. May be more than the w or lw width.	ww=2in
va	—	Sets the vertical alignment of the outermost minipage container for the keyfloat. Defaults to 'c'. Ignored by subfigure, subtable.	va=t

[c:] None of the keys in Part II are used in the main keys of the keysubfigs, keysubtabs, or keysubfloats environments, but may be used in the optional shared keys to be passed to each object within.

Table 2: Caption-related key combinations

Keys in Use			Type of	
c	cstar	sc	**Caption**[a]	**LOF/LOT**[b]
●	—	—	Numbered	Caption
●	—	●	Numbered	Short Caption
—	●	—	Unnumbered	None
—	●	●	Unnumbered	Short Caption
—	cstar={}	Ignored	None	None

[a]: Caption: Shows whether the float will be numbered, unnumbered, or have no caption.

[b]: LOF / LOT: Shows whether the regular or short caption will appear in the List of Figures or List of Tables, or if there will be no listing.

Table 3: Key wp: Wrapped float placement options

Key		Location
r	R	to the right of the text body
l	L	to the left of the text body
i	I	to the inside margin
o	O	to the outside margin

The un-capitalized key attempts to place the float "here", and the capitalized key allows LaTeX to try to find the best location. The default is O.

2.4 Other settings

\KFLTtightframe   {⟨*contents*⟩} Frames the contents without separation.

\KFLTlooseframe   {⟨*contents*⟩} Frames the contents with separation.

These may be used to re-define how contents are framed. The default is a simple \fbox.

\KFLTtightframewidth (*Len*)   Combined width of the frame and separation for each of tight and loose frames. These settings should be adjusted when changing the frame width and/or separation. The \KFLTlooseframewidth (*Len*)   value should be equivalent to \fboxwidth plus \fboxsep.

\KFLTimageboxwidth (*Len*)   The computed width of the image. Useful to enclose an mdframed environment to restrict its width. See example 29.

An image.

Figure 1: A \keyfig with an image

2.5 Examples

2.5.1 Single floats

Example 1: Figure with an image from a file

Code:

```
\keyfig{c=A \cs{keyfig} with an image,l=fig:simple}{image}
```

Result:
Figure 1

---

natural size   This float (fig. 1) is shown at its natural size because no width or height modifiers were specified. When used alone like this, a regular float is created.

Example 2: Figure with arbitrary contents

Code:

```
\keyfigbox{f,c={A \cs{keyfigbox}},l=fig:figbox}
    {Some text.  More text. \par  Another paragraph.}
```

Result:
Figure 2

---

default width   The \keyfigbox creates a figure with a box of arbitrary contents, instead of an image from a file. Its default width is the full \linewidth,unless w or lw keys are used.

The keyfigure environment is preferred over the \keyfigbox macro when multiple lines of contents are to be included.

Do not try to use tables which overflow the page.

For anything other than a simple table, use the keytable environment. See example 5.

large tables   For large tables, use the longtable or supertabular packages.

The keytable environment is preferred over the \keytab macro since most tables are multi-line creations.

\keytab centers the table, but keytable does not. Add \centering if desired.

Some text. More text.

Another paragraph.

Figure 2: A `\keyfigbox`

Example 3: Figure environment with arbitrary contents

Code:

```
\begin{keyfigure}{f,c={A \env{keyfigure} environment},
    l=fig:environment}
Arbitrary contents may go here.

Including multiple paragraphs.
\end{keyfigure}
```

Result:
Figure 3

Arbitrary contents may go here.

Including multiple paragraphs.

Figure 3: A keyfigure environment

Example 4: Table macro

Code:

```
\keytab{c=A \cs{keytab} table,l=tab:simpletable}{\testtable}
```

Result:
Table 4

Table 4: A `\keytab` table

A	B
C	D

Example 5: Table environment with arbitrary contents

Code:

```
\begin{keytable}{f,c={A \env{keytable} environment},
    l=tab:environment}
Arbitrary contents may go here.\footnote{A footnote.}

\testtable
\end{keytable}
```

Result:
Table 5

Table 5: A `keytable` environment

Arbitrary contents may go here.[a]

A	B
C	D

[a]A footnote.

Additional text. Multiple paragraphs may be used. The entire text is enclosed in braces because a comma is included. Alignment may be set by using tags tc, tl, or tr instead of t

Figure 4: A figure with many options

Example 6: Figure with many options selected

Code:

```
\keyfig{
    w=2in,ft,r=15,
    c=A figure with many options,
    sc=A figure with options,
    t={Additional text.  Multiple paragraphs may be used.
    The entire text is enclosed in braces because a comma
    is included. Alignment may be set by using
    tags \optn{tc}, \optn{tl}, or \optn{tr}
    instead of \optn{t}},
    l=fig:options
}{image}
```

Result:
Figure 4

Width is fixed at 2 in, a tight frame is specified (\fboxsep of 0 pt), a short caption appears in the List of Figures, and the additional text is using the default fully-justified alignment.

Since fig. 4 is a float, it may appear on the following page.

An image.

Figure 5: Half of \linewidth

Example 7: Using \linewidth

Code:

```
\keyfig{lw=.5,c=Half of \cs{linewidth},l=fig:linewidth}{image}
```

Result:
Figure 5

\linewidth Figure 5 is half of \linewidth in size. When the lw key is used inside a keyfloats or keysubfigs environment, the \linewidth will be proportional to the sub-box for each element. When used alone, such as here, the \linewidth is the full width of the text on this page.

lw and w are not used at the same time. If both lw and w are specified, the last one cancels any previous ones.

Example 8: Using frames

Code:

```
\begin{keyfloats}[hbp]{4}
\keyfig{f,c=Loosely-framed figure,l=fig:looseframe}{image}
\keyfig{ft,c=Tightly-framed figure,l=fig:tightframe}{image}
\keytab{f,c=Loosely-framed table,l=tab:looseframe}{\testtable}
\keytab{ft,c=Tightly-framed table,l=tab:tightframe}{\testtable}
\end{keyfloats}
```

Result:

Figures 6 and 7 and tables 6 and 7

Figure 6:
Loosely-framed
figure

Figure 7:
Tightly-framed
figure

Table 6:
Loosely-framed
table

A	B
C	D

Table 7:
Tightly-framed
table

A	B
C	D

The f key adds a loose frame with the current \fboxsep. This is desirable in most cases.

The tf key adds a tight frame with no separation. This is useful for framing a photograph, or a diagram which already has a margin.

Framing tables is seldom recommended. In the case of the tight frame, table 7, note that the external frame almost overwrites the table's natural horizontal rules.

custom frames   Also see section 2.6.1 for customizing frames.

Table 8: Table, rotated

(Framed to show box width.)

Example 9: Using rotation with boxes

Code:

```
\keytab{f,w=.8in,c={Table, rotated},
    r=70,l=tab:rotated,
    tc=(Framed to show box width.)}
    {\testwidetable}
```

Result:
Table 8

---

rotated whitespace   Unless a width is given, a box is the full \linewidth. When rotated, this extra horizontal space is rotated into extra vertical space. To avoid this extra space, set a w or lw to be

⚠   box width   wide enough for the table or other contents, but not much wider. When this box is rotated, it will not take much more vertical space than necessary.

frame rotation   Unlike an image, the frame of a box does not rotate with its contents.

Example 10: Located [H]ere

Code:

```
\keytab[H]{c={A table [H]},l=tab:here}{\testtable}
\keyfig[H]{f,w=1in,c={A keyfig [H]},l=fig:here}{image}
```

Result:
Table 9, Figure 8

Table 9: A table [H]

A	B
C	D
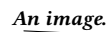
Figure 8: A keyfig [H]

⚠ Out of sequence   Table 9 and Figure 8 are to be placed "[H]ere", and therefore may appear out-of-sequence with surrounding figures. Place a \clearpage before or after to re-sync, if necessary.

An image.

Starred caption with a short caption.
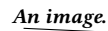
Example 11: Unnumbered float

Code:

```
\keyfig[H]{f,cstar={A starred caption}}{image}
```

Result:
See fig: "A starred caption".

An image.

A starred caption

A starred caption creates a float without a number, and without an entry in the List of Figures unless there is a non-empty short caption. (See the next example.)

⚠ No label Labels cannot be used when there is no number for a float.

Example 12: Unnumbered float with a LOF entry

Code:

```
\keyfig{
    f,cstar={Starred caption with a short caption.},
    sc={Starred short caption}
}{image}
```

Result:
See fig: "Starred caption with a short caption".

A starred caption with a non-empty short caption creates an unnumbered entry in the List of Figures.

Example 13: An unnumbered in-text image

Code:

```
\keyfig[H]{f,cstar={},
    tc={Optional text which is not a caption.}
}{image2}
```

Result:

See fig: "Optional text which is not a caption."

Optional text which is not a caption.

By using [H] and `cstar={}`, the image is placed inline without a number or LOF entry.

Also see example 14.

Some contents.

An image.

A \keyparbox with no number or label.

Figure 9: Next to a \keyparbox

Example 14: A box without a caption.

Code:

```
\begin{keyfloats}{2}
\keyparbox{
    f,lw=.5,
    tc={A \cs{keyparbox} with no number or label.}
}{Some contents.}
\keyfig{c=Next to a \cs{keyparbox},l=fig:nexttoparbox}{image}
\end{keyfloats}
\keyparbox[H]{f,lw=.5}{A \cs{keyparbox} [H], outside the keyfloats.}
```

Result:

Figure 9, and the box to its left.

A \keyparbox [H], outside the keyfloats.

A \keyparbox is a \keyfigbox with cstar={}, and is mostly useful as an information box inside a row or a set of subfloats.

2.5.2   Groups of floats, shared keys, keep aspect ratio

Example 15: Groups of figures — keyfloats environment

Code:

```
\begin{keyfloats}{2}
\keyfig{lw=1,c={First in a group},
    l=fig:firstinrow,tl={\cs{raggedright} text}
    }{image}
\keyparbox{}{\centering A \cs{keyparbox} describing something.
    \par With several paragraphs.}
\begin{keyfloats}{2}[f,lw=1,h=3em,kar,va=t]
      \keyfig{lw=1,c={Third in a group},
          l=fig:thirdinarow}{image}
      \keyfig{lw=1,c={Fourth in a group, with a longer caption}}{image2}
      \keyfig{lw=1,c={Fifth in a group}}{image}
      \keyfig{lw=1,c={Sixth in a group},
          l=fig:sixthinarow}{image2}
\end{keyfloats}
\keytab{c={Seventh in a group},l=tab:seventhinrow}{\testwidetable}
\end{keyfloats}
```

Result:

Figure 10 to Table 10

---

automatic layout

shared keys

The keyfloats environment takes an argument for the number of columns. Additional floats are automatically placed on following rows. Changing the number of columns will cause the floats to automatically readjust as necessary. Leftovers will be centered on the last row. An optional argument may contain keys and values which are passed to each object inside the group.

nested groups

Figure 10 to table 10 are in a keyfloats environment. Furthermore, Figures 11 to 14 are in an additional nested keyfloats environment, forming a small box of floats inside the larger group. In this subgroup, shared keys are set so that each image is framed and keeps its aspect ratio while being resized to fit a fixed width and height.

⚠ \linewidth

Note that \linewidth is adjusted for each row and nested row, so the lw key may need to be changed if a float is moved to a different nesting level.

⚠ image too large

Fixed-width or fixed-height floats may be too large to fit if they are moved into a group. A warning is issued if so. It is the user's responsibility to adjust w, h, or lw as necessary. To allow images to automatically adjust, use lw=1 or less, which adjusts to the \linewidth.

location

Keyfloats may be located [H], [M], or located [W] set with half the line width:
        \begin{keyfloats}[H]{2}...

two columns

Keyfloats may be starred to span both columns in a two-column format:
        \begin{keyfloats}*{2}...

An image.

A \keyparbox describing something.

With several paragraphs.

\raggedright text

Figure 10: First in a group

An image.

Another image

Figure 11: Third in a group

Figure 12: Fourth in a group, with a longer caption

Table 10: Seventh in a group

A	B	C
D	E	F

An image.

Another image

Figure 13: Fifth in a group

Figure 14: Sixth in a group

grid of images   As shown in the sub group above, to display a group of images of varying shape inside a grid, use the shared option to select a maximum size, keep aspect ratio, and align at the top so that captions of varying length may wrap below each image:

```
\begin{keyfloats}{2}[lw=1,h=3em,kar,va=t]
...
\end{keyfloats}
```

2.5.3 Subfloats

Example 16: Subfigures — keysubfigs environment

Code:

```
\begin{keysubfigs}{3}{c=Subfigures,l=fig:subfigs}
\keyfig{lw=1,f,c={First subfigure},
    l=fig:firstsubfig,t=Some text}{image}
\keyfig{lw=1,f,r=90,c={Second subfigure},
    l=fig:secondsubfig,
    t=Lots of lots of lots of lots of text.}
    {image2}
\begin{keyfloats}{1}
    \keyfig{lw=1,f,c={Third subfigure},l=fig:thirdsubfig}{image}
    \keytab{c={Fourth subfigure},l=fig:fourthsubfig}{\testtable}
    \keyfig{lw=.5,f,c={Fifth subfigure},l=fig:fifthsubfig}{image}
\end{keyfloats}
\end{keysubfigs}
```

Result:
Figure 15

Figures 15a to 15e are in the fig. 15 keysubfigs environment. The keysubtabs environment is similar. Mixed types have the type of their container, as shown with fig. 15d.

Subfloats are associated floats (a, b, …) collected together into one common float (the enclosing keysubfigs or keysubtabs environment). The enclosing float can have its own caption (call "Sub-Figures" in the example), which appears in the LOF/LOT, and also a label. Each subfloat can have its own caption and label as well, but the subcaption does not appear in the LOF/LOT.

⚠ mixed subfloats   All subfloats are forced to have the same type as its containing float.A table inside a figure will be labeled as a figure, for example. This avoids miss-labeling as each subfloat must clearly be identified as a child of its containing float.

⚠ nested subfloats   keysubfigs and keysubtabs may not be used insidethe keyfloats environment, and cannot be nested inside each other. (No subfloat 12aa, 12ab, 12ba, etc.)

nested keyfloats   The keyfloats environment may be used inside keysubfigs or keysubtabs to gather subfloats together, such as the three right-most figures in fig. 15.

location   Subfloats may be located [H], [M], or located [W] set with half the line width:
    \begin{keysubfigs}[H]{3}{key/vals…}

two columns   Subfloats may be starred to span both columns in a two-column format:
    \begin{keysubfigs}*{2}{key/vals…}

shared keys   A group of subfloats may have an optional argument for shared keys and values, which are then passed to each subfloat within.

Some text

a: First subfigure

Lots of lots of lots of lots of text.

b: Second subfigure

c: Third subfigure

A	B
C	D

d: Fourth subfigure

e: Fifth subfigure

Figure 15: Subfigures

⚠ va The vertical alignment option va does not work with subfloats.

Example 17: Subtables [H] — keysubtabs environment

Code:

```
\begin{keysubtabs}[H]{2}{c=Subtables [H],l=tab:subtabs}
\keytab{c={First subtable},l=fig:firstsubtab}{\testtable}
\keytab{c={Second subtable},l=fig:secondsubtab}{\testwidetable}
\end{keysubtabs}
```

Result:
Table 11

Table 11: Subtables [H]

a: First subtable

A	B
C	D

b: Second subtable

A	B	C
D	E	F

An image.

Figure 16: Figure to be continued

Another image

Figure 16: ...continued

2.5.4 Continued floats

The cont key may be used to generate a "continued" float. The continued float receives the same number as the previous float, and it is assumed that they are the same float, except that they are separated for some reason such as size on the page.

The label may be placed in a continued float, and will still receive the same float number as the prior non-continued float.

Example 18: Continued figure

Code:

```
\begin{keyfloats}{2}
\keyfig{,c=Figure to be continued}{image}
\keyfig{c={\dots continued},cont,l=fig:firstcontinued}{image2}
\end{keyfloats}
```

Result:

Figure 16

An image.

a: First of a set   b: Second of a set

Figure 17: A set of figures

Another image   Another image

c: Third of a set   d: Fourth of a set

Figure 17: . . . continued

2.5.5   Continued subfloats

The keysubfigs and keysubtabs environments may also be given the cont key. The containing environment's float receives the same number as the previous float (presumably another subfloat container).

Example 19: Continued subfloats

Code:

```
\begin{keysubfigs}{2}{c={A set of figures},l=fig:continuedfigures}
\keyfig{c={First of a set},l=fig:contfirst}{image}
\keyfig{c={Second of a set},l=fig:contsecond}{image}
\end{keysubfigs}
\begin{keysubfigs}{2}{c={\dots continued},cont}
\keyfig{c={Third of a set},l=fig:contthird}{image2}
\keyfig{c={Fourth of a set},l=fig:contfourth}{image2}
\end{keysubfigs}
```

Result:

Figure 17

2.5.6   Margin floats

When a keyfloat is located [M], it will be placed in the margin.

tufte-book (*Cls*)   When the `tufte-book` class is used, its `marginfigure` or `margintable` environments will be used, otherwise keyfloat provides environments of the same name and uses those instead.

Example 20: The `marginfigure` environment

Code:

```
\begin{marginfigure}
\centering
\includegraphics[width=.75\linewidth]{image}

Some text added by hand.
\caption{A \env{marginfigure}}
\label{fig:marginfigure}
\end{marginfigure}
```

Result:
Figure 18

An image.

Some text added by hand.

Figure 18: A `marginfigure`

Example 21: The `margintable` environment

Code:

```
\begin{margintable}
\centering
\testwidetable
\caption{A \env{margintable}}
\label{fig:margintable}
\end{margintable}
```

Result:
Table 12

A	B	C
D	E	F

Table 12: A `margintable`

Example 22: Using \keyfig[M]

Code:

```
\keyfig[M]{c={A \cs{keyfig}\optn{[M]}},l=fig:keyfigm,ft,
    t=Additional text.
    Text text text text text text.

    More paragraphs.
}{image2}
```

Result:

Figure 19

Another
image

Additional text. Text text text text text
text.

More paragraphs.

Figure 19: A \keyfig[M]

Table 13: A keytable[M]

A	B	C
D	E	F

Example 23: Using keytable[M] and an offset

Code:

```
\begin{keytable}[M]{c={A \env{keytable}\optn{[M]}},
    l=tab:keytablem,mo=-.9in}
\centering
\testwidetable
\end{keytable}
```

Result:
Table 13

margin float offset   A negative offset was used to shift the table upwards to the top of the example.

distance between floats   To set the minimum-allowed distance between \marginpars and margin floats:

```
\setlength{\marginparpush}{3ex}
```

2.5.7   Wrapped floats

Note: If you see the warning:

```
Package wrapfig Warning: Collision between wrapping environments
```

then wrapfig was not able to wrap the paragraph correctly. Try adding \clearpage or \newpage before the wrapped object, or see the needspace package to automatically insert a \newpage if necessary.

Example 24: Using \keyfig[W] and \keytab[W]

Code:

```
\keyfig[W]{c={A \cs{keyfig}\optn{[W]}},
    l=fig:keyfigw,ft,lw=.4,wp=I, wo=8em, wn=12,
    t={.4\cs{linewidth} wide, placed \optn{I}.}
}{image2}
\blindtext

\keytab[W]{c={A \cs{keytab}\optn{[W]}},l=tab:keytabw,w=.75in,
}{\testtable}
\blindtext
```

Result:

Figure 20 and table 14
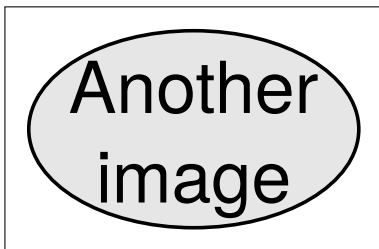
.4\linewidth wide, placed I.

Figure 20: A \keyfig[W]

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus

Table 14: A \keytab[W]

A	B
C	D

tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Example 25: Using \keyfigbox[W] and \keyparbox[W]

Code:

```
\keyfigbox[W]{
  c={A \cs{keyfigbox}\optn{[W]}},
    l=fig:keyfigboxw,f,lw=.25,wp=I, wn=7,
    t=Text text text text text text text text text
}{The contents.}
\blindtext

\keyparbox[W]{w=1in}{
  A \cs{keyparbox}[W] and some text.
  No caption or numbering.
}
\blindtext
```

Result:

Figure 21 and the \keyparbox.

The contents.

Text text text text text text text text text

Figure 21: A
\keyfigbox[W]

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis

A \keyparbox[W] and some text. No caption or numbering.

fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Example 26: Using \keyfigure[W] and \keytable[W]

Code:

```
\begin{keyfigure}[W]{c={A \cs{keyfigure}\optn{[W]}},
    l=fig:keyfigurew,f,w=1.5in, wo=4em,wn=5}
This is a keyfigure.
\end{keyfigure}
\blindtext

\begin{keytable}[W]{c={A \env{keytable}\optn{[W]}},
    l=tab:keytablew,w=2in,wp=L,
  tc=Placed \optn{L} and 2in wide.}
\centering
\testwidetable
\end{keytable}
\blindtext
```

Result:

Figure 22 and table 15

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

This is a keyfigure.

Figure 22: A \keyfigure[W]

Table 15: A keytable[W]

A	B	C
D	E	F

Placed L and 2in wide.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

Example 27: Using keywrap with a \keyfig

Code:

```
\begin{itemize}
\item First item.
    Several lines of text text text text text
    text text text text text text text text.
\item \begin{keywrap}{.3\linewidth}{\keyfig{%
        lw=1,c={Keywrap with \cs{keyfig}},l=fig:keywrapfig%
    }{image}}
        Second item.

        These paragraphs are inside the \texttt{keywrap}.
        A vertical gap appears below if the text is not enough to
        fill the space next to the \cs{keyfig}.
    \end{keywrap}
    Now outside the \env{keywrap},\margintag{notes}\
    but still in the second item.
    There is no elegant way to place only part of a paragraph
    inside a \env{keywrap}.
\item Third item.
\end{itemize}
```

Result:
Figure 23

- First item. Several lines of text text text text text text text text text text text text text.

- Second item.

  These paragraphs are inside the keywrap. A vertical gap appears below if the text is not enough to fill the space next to the \keyfig.

An image.

Figure 23: Keywrap with \keyfig

notes   Now outside the keywrap, but still in the second item. There is no elegant way to place only part of a paragraph inside a keywrap.

- Third item.

Example 28: Using wrap width `ww` and `wlw`

Code:

```
\keyfig[W]{c={A \cs{keyfig}\optn{[W] with \optn{wlw}}},
  l=fig:keyfigwlw,ft,lw=.15,wlw=.4,wp=I,
  t={.15\cs{linewidth} wide, in a .4\cs{linewidth} box.}
}{image2}
\blindtext[1]

\keyfig[W]{c={A \cs{keyfig}\optn{[W] with \optn{ww}}},
  l=fig:keyfigww,ft,w=1cm,ww=3cm,wp=I,
  t={1cm wide, in a 3cm box.}
}{image2}
\blindtext[1]
```

Result:

Figures 24 and 25

.15\linewidth wide, in a .4\linewidth box.

Figure 24: A \keyfig[W] with wlw

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

1cm wide, in a 3cm box.

Figure 25: A \keyfig[W] with ww

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

An image.

Figure 26: Custom-framed image

A loosely-framed box.

Figure 27: Custom loosely-framed box

2.5.8   Custom frames

Example 29: Custom frames with mdframed

Code:

```
\renewcommand{\KFLTtightframe}[1]{%
\begin{minipage}{\KFLTimageboxwidth}
\begin{mdtightframe}%
#1
\end{mdtightframe}%
\end{minipage}
}
\setlength{\KFLTtightframewidth}{1pt}

\renewcommand{\KFLTlooseframe}[1]{%
\begin{mdlooseframe}[leftmargin=.5in,rightmargin=.5in]%
#1
\end{mdlooseframe}%
}
\setlength{\KFLTlooseframewidth}{4pt}

\keyfig{ft,c=Custom-framed image,l=fig:customframe,r=90}{image}
\keyfigbox{f,c=Custom loosely-framed box,
  l=fig:customlooseframe}{A loosely-framed box.}
```

Result:
Figures 26 and 27

---

mdframed (*Pkg*)

⚠   mdframed width

Example 29 shows custom frames created with the mdframed package along with tikz. Note that mdframed uses the full \linewidth even if the left/right margins are explicitly set, which causes extra vertical space when rotated. Because of this, the framed object is enclosed inside a minipage whose width is precomputed based on the object itself, then set in \KFLTimageboxwidth. Any shadow may fall outside this box.

See section 2.6.1 for more details.

Example 30: Custom shadows with fancybox

Code:
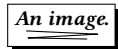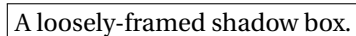
```
\renewcommand{\KFLTtightframe}[1]{%
\setlength{\fboxrule}{.4pt}
\setlength{\fboxsep}{0pt}
\setlength{\shadowsize}{2pt}
\shadowbox{#1}%
}
\setlength{\KFLTtightframewidth}{0.4pt}

\renewcommand{\KFLTlooseframe}[1]{%
\setlength{\fboxrule}{.4pt}
\setlength{\fboxsep}{3pt}
\setlength{\shadowsize}{2pt}
\shadowbox{#1}%
}
\setlength{\KFLTlooseframewidth}{3.4pt}

\keyfig{ft,c=Custom shadow,l=fig:customshadow}{image}
\keyfigbox{f,c=Custom loosely-framed shadow,lw=.5,
    l=fig:customlooseshadow}{A loosely-framed shadow box.}
```
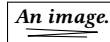
Result:

Figures 28 and 29

An image.

Figure 28: Custom shadow

A loosely-framed shadow box.

Figure 29: Custom loosely-framed shadow

fancybox (*Pkg*)   Example 30 shows custom shadow frames created with the fancybox package. This combination respects lw and w.

See section 2.6.1 for more details.

M R. F IRST L AST III

About the illustration.

Figure 30: Artist's name — image

2.5.9 Artist's name

Example 31: Artist's name — image

Code:

```
\keyfig{ft,ap=Mr.,af=First,al=Last,as={~III},
tc={\textit{About the illustration.}},
c=Artist's name — image,l=fig:artist}{image}
```

Result:
Figure 30

Example 32: Artist's name — arbitrary contents

Code:

```
\tdartistright
\begin{keyfigure}{f,ap=Mr.,al=Last,
c=Artist's name — arbitrary contents,l=fig:artistpar}
\centering Some text, a quotation, a TikZ\ diagram —
anything not an image file.
\end{keyfigure}
\tdartistcenter
```

Result:
Figure 31

The artist's name and optional prefix/suffix are printed below the figure, and an index entry is made for the name in (Last, First) format, or (Last) if there is no first name. If the tocdata package is loaded, the artist's name is also added to the List of Figures, and the tocdata \tdname… macros may be used to align the name.

A group of figures may be placed into a subfloat container, which may have its own artist keys and additional text. Furthermore, each subfloat inside the collection may also have its own artist tags and additional text.

Some text, a quotation, a TikZ diagram — anything not an image file.

Mr. Last

Figure 31: Artist's name — arbitrary contents

Example 33: Subfloats with an artist

Code:

```
\begin{keysubfigs}{2}{
    c=Artist's collection, l=fig:artistcollection,
    t={Some fully-justified text just for illustrative purposes,
    in case you have use for long explanations.
    This text may be the full \cs{linewidth} in size. \par
    Multiple paragraphs of text are allowed.},
    ap=Prefix,af=First,al=Last,as={, Suffix}
}
    \keyfig{c=Artist's First Work}{image}
    \keyfig{c=Artist's Second Work,
        tc={Commentary about the work.}}{image2}
\end{keysubfigs}
```

Result:

Figure 32

An image.

Another image

Commentary about the work.

a: Artist's First Work

b: Artist's Second Work

Prefix First Last, Suffix

Some fully-justified text just for illustrative purposes, in case you have use for long explanations. This text may be the full `\linewidth` in size.

Multiple paragraphs of text are allowed.

Figure 32: Artist's collection

2.6 Customization

2.6.1 Custom frames

There are two user-redefinable framing macros:
    \KFLTtightframe and \KFLTlooseframe

A float's contents are placed into a box, which is passed to either of these two macros depending on the key f or tf.

Each macro takes one argument and frames it.

Each macro has a associated LATEX lengths:
    \KFLTtightframewidth and \KFLTlooseframewidth

These lengths must be redefined to the expected total frame width, equal to the frame thickness plus separation.

The default definitions are:

```
\newcommand{\KFLTtightframe}[1]{%
  \setlength{\fboxsep}{0pt}%
  \setlength{\fboxrule}{.4pt}%
  \fbox{#1}%
}
\setlength{\KFLTtightframewidth}{.4pt}

\newcommand{\KFLTlooseframe}[1]{%
  \setlength{\fboxsep}{3pt}%
  \setlength{\fboxrule}{.4pt}%
  \fbox{#1}%
}
\setlength{\KFLTlooseframewidth}{3.4pt}
```

See example 29 for an example created with the mdframed package, and example 30 for an example created with the fancybox package.

2.6.2 Distance between floats and rows

rows too close/far To spread out the distance between floats and/or rows of floats on a busy page, the following settings may be changed. The settings used in this documentation are:

```
\setlength{\floatsep}{5ex plus 1ex minus 1ex}
\setlength{\dblfloatsep}{5ex plus 1ex minus 1ex}
```

2.6.3 Formatting the captions

To modify the typesetting of the captions, see the caption package. The settings used in this documentation are:

```
% default applied to margin floats:
\captionsetup{labelfont={small,bf},textfont={small,bf}}

\captionsetup[figure]{
    style=default, justification=centering,
    margin=0pt, parskip=0pt, skip=2ex,
    labelfont={small,bf},textfont={small,bf}
}

\captionsetup[table]{
    style=default, justification=centering,
    margin=0pt, parskip=0pt, skip=1ex,
    labelfont={small,bf},textfont={small,bf}
}

\captionsetup[subfigure]{
    style=default, justification=centering,
    margin=0pt, parskip=0pt, skip=2ex,
    labelfont={small},textfont={small}
}

\captionsetup[subtable]{
    style=default, justification=centering,
    margin=0pt, parskip=0pt, skip=1ex,
    labelfont={small},textfont={small}
}
```

3 Code

3.1 Older packages

Ensure that tocdata, if loaded, is new enough:

```
1 \@ifpackageloaded{tocdata}{
2    \@ifpackagelater{tocdata}{2019/03/21}{}{
3        \PackageError{keyfloat}
4        {%
5            The tocdata package is out of date.\MessageBreak
6            Update to tocdata v2.02 2019/03/21 or later\MessageBreak
7            to use use this version of keyfloat%
8        }
9        {%
10           Please update the tocdata package.  It's worth it!%
11       }
12   }
13 }{}
```

3.2 Prohibited packages

Prohibits the use of a certain other packages.

\KFLT@@prohibitpackage {⟨*packagename*⟩}

```
14 \newcommand*{\KFLT@@prohibitpackage}[2]{%
15 \@ifpackageloaded{#1}
16 {
17     \PackageError{keyfloat}
18     {%
19         The keyfloat package conflicts with the #1\MessageBreak
20         package. Remove #1 to use keyfloat.\MessageBreak
21         Alternative(s):\MessageBreak
22         \space\space#2%
23     }
24     {%
25         Keyfloat uses the caption, subcaption, newfloat, and wrapfig packages.%
26     }
27 }{}
28 }
```

\KFLT@prohibitpackage {⟨*packagename*⟩}

Prohibits the use of another package, both now and also \AtBeginDocument.

```
29 \newcommand*{\KFLT@prohibitpackage}[2]{
30     \KFLT@@prohibitpackage{#1}{#2}
31     \AtBeginDocument{\KFLT@@prohibitpackage{#1}{#2}}
```

```
32 }
```

The list of prohibited packages:

```
33 \KFLT@prohibitpackage{floatrow}{caption and subcaption}
34 \KFLT@prohibitpackage{subfig}{subcaption}
35 \KFLT@prohibitpackage{subfigure}{subcaption}
36 \KFLT@prohibitpackage{subfloat}{subcaption}
37 \KFLT@prohibitpackage{floatflt}{wrapfig}
```

3.3 Required packages

etoolbox (*Pkg*) v2.6 or later for \BeforeBeginEnvironment, \AfterEndEnvironment

```
38 \RequirePackage{etoolbox}[2011/01/03]%
```

xparse (*Pkg*) Argument processing:

```
39 \RequirePackage{xparse}
```

keyval (*Pkg*) Key processing:

```
40 \RequirePackage{xkeyval}
```

graphicx (*Pkg*) For \includegraphics and rotating:

```
41 \RequirePackage{graphicx}
```

caption (*Pkg*) Handles all caption-related functions:

```
42 \RequirePackage{caption}[2010/10/31]% v3.2 to support \phantomcaption
```

subcaption (*Pkg*) Derived from caption, used to handle subfloats:

```
43 \RequirePackage{subcaption}
```

calc (*Pkg*) Used to compute box width minus frame sep and width.

```
44 \RequirePackage{calc}
```

rotating (*Pkg*) Provides rotation via the turn environment:

```
45 \RequirePackage{rotating}
```

placeins (*Pkg*) Provides

to process existing floats before adding new ones.

```
46 \RequirePackage{placeins}
```

wrapfig (*Pkg*)   Provides figure wrapping code.

```
47 \RequirePackage{wrapfig}
```

gettitlestring (*Pkg*)   Used by hyperref and nameref.

Expand names used in titles:

```
48 \PassOptionsToPackage{expand}{gettitlestring}
```

Rows of floats are created by a simple minipage environment, instead of relying on a preexisting package. This proved to be advantageous when support was added for multiple rows in one environment.

3.4   In-line figures and tables

These macros are commonly used by others.

tablehere (*env.*)   Place a table exactly [H].

```
┌─────────────────────────────────────────────┐
│ tablehere                                    │
│   ┌───────────────────────────────────────┐  │
│   │ minipage                              │  │
│   │   Contents                            │  │
│   └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

```
49 \ProvideDocumentEnvironment{tablehere}{}
50 {%
51     \vskip\intextsep\noindent%
52     \minipage{\linewidth}%
53     \def\@captype{table}%
54     \normalcolor\reset@font\normalsize%
55 }%
56 {\endminipage\vskip\intextsep}%
```

figurehere (*env.*)   Place a figure exactly [H].

```
┌─────────────────────────────────────────────┐
│ figurehere                                   │
│   ┌───────────────────────────────────────┐  │
│   │ minipage                              │  │
│   │   Contents                            │  │
│   └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

```
57 \ProvideDocumentEnvironment{figurehere}{}
58 {%
59     \vskip\intextsep\noindent%
60     \minipage{\linewidth}%
61     \def\@captype{figure}%
62     \normalcolor\reset@font\normalsize%
63 }%
64 {\endminipage\vskip\intextsep}%
```

3.5 Row counting and control

Used to count position and wrap at end of each row.

KFLT@numcols (*Ctr*)   Columns per row.

```
65 \newcounter{KFLT@numcols}
```

KFLT@thiscol (*Ctr*)   Column currently processing. 0 if not yet in a keyfloats or subfloat.

```
66 \newcounter{KFLT@thiscol}
```

\KFLT@rowboxwidth (*Len*)   How wide is each box in the row.

```
67 \newlength{\KFLT@rowboxwidth}
```

3.6 Float key handling

KFLT@cont (*bool*)   Continued float?

```
68 \newboolean{KFLT@cont}
```

cont (*Key*) [main]   Continued float?

```
69 \define@key{KFLT@keys}{cont}[true]{\setboolean{KFLT@cont}{#1}}
```

\KFLT@c   Caption storage

```
70 \newcommand{\KFLT@c}{}
```

KFLT@cstar (*bool*)   Starred caption?

```
71 \newboolean{KFLT@cstar}
```

c (*Key*) [main]   Caption

```
72 \define@key{KFLT@keys}{c}{%
73     \renewcommand{\KFLT@c}{#1}\setboolean{KFLT@cstar}{false}%
74 }
```

cstar (*Key*) [main]   Caption starred?

```
75 \define@key{KFLT@keys}{cstar}{%
76     \renewcommand{\KFLT@c}{#1}\setboolean{KFLT@cstar}{true}%
77 }
```

sc (*Key*) [main]   Short caption

```
78 \define@key{KFLT@keys}{sc}{%
79     \renewcommand{\KFLT@sc}{#1}%
80     \setboolean{KFLT@scgiven}{true}%
81 }
```

\KFLT@sc Short caption storage

```
82 \newcommand{\KFLT@sc}{}
```

KFLT@scgiven (*bool*)   Was a short caption given?

```
83 \newboolean{KFLT@scgiven}
```

\KFLT@type Float type: "figure", "table"

```
84 \newcommand*{\KFLT@type}{}
```

l (*Key*) [main]   Label

```
85 \define@key{KFLT@keys}{l}{\renewcommand{\KFLT@l}{#1}}
```

\KFLT@l Label storage

```
86 \newcommand*{\KFLT@l}{}
```

For the artist/author keys:

ap (*Key*) [main]   Artist prefix

```
87 \define@key{KFLT@keys}{ap}{\renewcommand{\KFLT@ap}{#1}}
```

\KFLT@ap Storage for artist prefix

```
88 \newcommand*{\KFLT@ap}{}
```

af (*Key*) [main]   Artist first name

```
89 \define@key{KFLT@keys}{af}{\renewcommand{\KFLT@af}{#1}}
```

\KFLT@af Storage for artist first name

```
90 \newcommand*{\KFLT@af}{}
```

al (*Key*) [main]   Artist last name

```
91 \define@key{KFLT@keys}{al}{\renewcommand{\KFLT@al}{#1}}
```

\KFLT@al   Storage for artist last name

92 `\newcommand*{\KFLT@al}{}`

as (*Key*) [main]   Artist suffix

93 `\define@key{KFLT@keys}{as}{\renewcommand{\KFLT@as}{#1}}`

\KFLT@as   Storage for artist suffix

94 `\newcommand*{\KFLT@as}{}`

aup (*Key*) [main]   Author prefix

95 `\define@key{KFLT@keys}{aup}{\renewcommand{\KFLT@aup}{#1}}`

\KFLT@aup   Storage for author prefix

96 `\newcommand*{\KFLT@aup}{}`

auf (*Key*) [main]   Author first name

97 `\define@key{KFLT@keys}{auf}{\renewcommand{\KFLT@auf}{#1}}`

\KFLT@auf   Storage for author first name

98 `\newcommand*{\KFLT@auf}{}`

aul (*Key*) [main]   Author last name

99 `\define@key{KFLT@keys}{aul}{\renewcommand{\KFLT@aul}{#1}}`

\KFLT@al   Storage for author last name

100 `\newcommand*{\KFLT@aul}{}`

aus (*Key*) [main]   Author suffix

101 `\define@key{KFLT@keys}{aus}{\renewcommand{\KFLT@aus}{#1}}`

\KFLT@aus   Storage for author suffix

102 `\newcommand*{\KFLT@aus}{}`

\KFLT@textalign Storage for text alignment.

Used for the additional text in the float.

```
103 \newcommand*{\KFLT@textalign}{}
```

\KFLT@t Additional text storage

Used for the additional text in the float.

```
104 \newcommand{\KFLT@t}{}
```

Create replacement macros in case tocdata is not loaded:

```
105 \providecommand{\tdartisttextjustify}{}
106 \providecommand{\tdartisttextcenter}{}
107 \providecommand{\tdartisttextleft}{}
108 \providecommand{\tdartisttextright}{}
109 \providecommand{\tdauthortextjustify}{}
110 \providecommand{\tdauthortextcenter}{}
111 \providecommand{\tdauthortextleft}{}
112 \providecommand{\tdauthortextright}{}
113 \providecommand{\tdartistjustify}{}
114 \providecommand{\tdartistcenter}{}
115 \providecommand{\tdartistleft}{}
116 \providecommand{\tdartistright}{}
117 \providecommand{\tdauthorjustify}{}
118 \providecommand{\tdauthorcenter}{}
119 \providecommand{\tdauthorleft}{}
120 \providecommand{\tdauthorright}{}
```

t (*Key*) [main] Additional text, justified alignment.

```
121 \define@key{KFLT@keys}{t}{%
122     \renewcommand{\KFLT@t}{#1}%
123     \renewcommand{\KFLT@textalign}{}%
124 }
```

tc (*Key*) [main] Additional text, centered alignment.

```
125 \define@key{KFLT@keys}{tc}{%
126     \renewcommand{\KFLT@t}{#1}%
127     \renewcommand{\KFLT@textalign}{\centering}%
128 }
```

tr (*Key*) [main] Additional text, aligned to the right.

```
129 \define@key{KFLT@keys}{tr}{%
130     \renewcommand{\KFLT@t}{#1}%
131     \renewcommand{\KFLT@textalign}{\raggedleft}%
132 }
```

tl (*Key*) [main]   Additional text, aligned to the left.

```
133 \define@key{KFLT@keys}{tl}{%
134     \renewcommand{\KFLT@t}{#1}%
135     \renewcommand{\KFLT@textalign}{\raggedright}%
136 }
```

lw (*Key*) [main]   Fraction of \linewidth

```
137 \define@key{KFLT@keys}{lw}{%
138     \renewcommand{\KFLT@lw}{#1}%
139     \setlength{\KFLT@w}{0pt}%
140 }
```

\KFLT@lw Fraction of linewidth storage: ".5"

```
141 \newcommand*{\KFLT@lw}{}
```

w (*Key*) [main]   Fixed width

```
142 \define@key{KFLT@keys}{w}{%
143     \setlength{\KFLT@w}{#1}%
144     \renewcommand{\KFLT@lw}{}%
145 }
```

\KFLT@w Width storage: "3cm"

```
146 \newlength{\KFLT@w}
```

h (*Key*) [main]   Fixed height

```
147 \define@key{KFLT@keys}{h}{\setlength{\KFLT@h}{#1}}
```

\KFLT@h Height storage: "2in"

```
148 \newlength{\KFLT@h}
```

kar (*Key*) [main]   Keep aspect ratio

```
149 \define@key{KFLT@keys}{kar}[false]{%
150     \renewcommand{\KFLT@keepaspectratio}{keepaspectratio}%
151 }
```

\KFLT@keepaspectratio Stores "keepaspectratio" if set.

```
152 \newcommand{\KFLT@keepaspectratio}{}
```

s (*Key*) [main]   Scale

```
153 \define@key{KFLT@keys}{s}{\renewcommand{\KFLT@s}{#1}}
```

\KFLT@s   Scale storage: "3"

```
154 \newcommand*{\KFLT@s}{1}
```

r (*Key*) [main]   Angle. 90 is counter-clockwise 90 degrees.

```
155 \define@key{KFLT@keys}{r}{\renewcommand{\KFLT@r}{#1}}
```

\KFLT@r   Angle storage: "90"

```
156 \newcommand*{\KFLT@r}{0}
```

f (*Key*) [main]   Frame the image with \KFLTlooseframe.

```
157 \define@key{KFLT@keys}{f}[true]{\setboolean{KFLT@f}{#1}}
```

KFLT@f (*bool*)   Frame the image?

```
158 \newboolean{KFLT@f}
```

ft (*Key*) [main]   Tightly frame the image using \KFLTtightframe. This is useful for photographs, or diagrams which already have built-in margins.

```
159 \define@key{KFLT@keys}{ft}[true]{\setboolean{KFLT@ft}{#1}}
```

KFLT@ft (*bool*)   Tightly frame the image?

```
160 \newboolean{KFLT@ft}
```

stretch (*Key*) [main]   Set \arraystretch inside the table environment.

```
161 \define@key{KFLT@keys}{stretch}{\renewcommand{\KFLT@stretch}{#1}}
```

\KFLT@stretch   Storage for \arraystretch.

```
162 \newcommand*{\KFLT@stretch}{1}
```

mo (*Key*) [main]   Set vertical offset for a margin float.

```
163 \define@key{KFLT@keys}{mo}{\setlength{\KFLT@mo}{#1}}
```

\KFLT@mo   Storage for the vertical margin offset.

```
164 \newlength{\KFLT@mo}
```

wn (*Key*) [main]   Set wrap number of narrow lines for a wrapped float.

```
165 \define@key{KFLT@keys}{wn}{\renewcommand{\KFLT@wn}{#1}}
```

\KFLT@wn Storage for the wrap placement.

```
166 \newcommand{\KFLT@wn}{}
```

wp (*Key*) [main]   Set wrap placement for a wrapped float.

See table 3 on page 16.

```
167 \define@key{KFLT@keys}{wp}{\renewcommand{\KFLT@wp}{#1}}
```

\KFLT@wp Storage for the wrap placement.

```
168 \newcommand{\KFLT@wp}{O}
```

wo (*Key*) [main]   Set wrap overhang for a wrapped float.

```
169 \define@key{KFLT@keys}{wo}{\renewcommand{\KFLT@wo}{#1}}
```

\KFLT@wo Storage for the wrap placement.

```
170 \newcommand{\KFLT@wo}{\wrapoverhang}
```

wlw (*Key*) [main]   Wrapped figure, fraction of \linewidth

```
171 \define@key{KFLT@keys}{wlw}{%
172     \renewcommand{\KFLT@wlw}{#1}%
173     \setlength{\KFLT@ww}{0pt}%
174 }
```

\KFLT@wlw Wrapped figure, fraction of linewidth storage: ".5"

```
175 \newcommand*{\KFLT@wlw}{}
```

ww (*Key*) [main]   Wrapped figure, fixed width

```
176 \define@key{KFLT@keys}{ww}{%
177     \setlength{\KFLT@ww}{#1}%
178     \renewcommand{\KFLT@wlw}{}%
179 }
```

\KFLT@ww Wrapped figure, width storage: "3cm"

```
180 \newlength{\KFLT@ww}
```

va (*Key*) [main]   Set vertical alignment of the outermost minipage container.

```
181 \define@key{KFLT@keys}{va}{\renewcommand{\KFLT@va}{#1}}
```

\KFLT@va Storage for the vertical alignment.

```
182 \newcommand{\KFLT@va}{c}
```

3.7   Nesting control

KFLT@keyfloatdepth (*Ctr*)   Depth inside a keyfigs environment

```
183 \newcounter{KFLT@keyfloatdepth}
184 \setcounter{KFLT@keyfloatdepth}{0}
```

KFLT@inkeysubfloats (*bool*)   Inside a keysubfigs environment?

```
185 \newboolean{KFLT@inkeysubfloats}
186 \setboolean{KFLT@inkeysubfloats}{false}
```

3.8   Subfloat key handling

These keys are for the container holding a collection of subfigures.

KFLT@subgrpcont (*bool*)   Continued float?

```
187 \newboolean{KFLT@subgrpcont}{}
```

cont (*Key*) [subfloat container]   Continued float

```
188 \define@key{KFLT@subgrpkeys}{cont}[true]{%
189     \setboolean{KFLT@subgrpcont}{#1}%
190 }
```

\KFLT@subgrpc Sub-caption storage

```
191 \newcommand{\KFLT@subgrpc}{}
```

KFLT@subgrpcstart (*bool*)   Sub-caption starred?

```
192 \newboolean{KFLT@subgrpcstar}
```

c (*Key*) [subfloat container]   Caption

```
193 \define@key{KFLT@subgrpkeys}{c}{%
194     \renewcommand{\KFLT@subgrpc}{#1}\setboolean{KFLT@subgrpcstar}{false}%
195 }
```

cstar (*Key*) [subfloat container] Starred caption?

```
196 \define@key{KFLT@subgrpkeys}{cstar}{%
197     \renewcommand{\KFLT@subgrpc}{#1}\setboolean{KFLT@subgrpcstar}{true}%
198 }
```

sc (*Key*) [subfloat container] Short caption

```
199 \define@key{KFLT@subgrpkeys}{sc}{%
200     \renewcommand{\KFLT@subgrpsc}{#1}%
201     \setboolean{KFLT@subgrpscgiven}{true}%
202 }
```

\KFLT@subgrpsc Sub-shortcaption storage

```
203 \newcommand{\KFLT@subgrpsc}{}
```

KFLT@subgrpscgiven (*bool*) Sub-shortcaption was given?

```
204 \newboolean{KFLT@subgrpscgiven}
```

\KFLT@subgrptype Subfloats collection type storage: "figure", "table"

```
205 \newcommand*{\KFLT@subgrptype}{}
```

l (*Key*) [subfloat container] Label

```
206 \define@key{KFLT@subgrpkeys}{l}{\renewcommand{\KFLT@subgrpl}{#1}}
207 \newcommand*{\KFLT@subgrpl}{}
```

\KFLT@subgrptextalign Storage for text alignment.

Used for the additional text in the float.

```
208 \newcommand*{\KFLT@subgrptextalign}{}
```

\KFLT@subgrpt Additional text storage

Used for the additional text in the float.

```
209 \newcommand{\KFLT@subgrpt}{}
```

t (*Key*) [subfloat container] Additional text — full justification

```
210 \define@key{KFLT@subgrpkeys}{t}{%
211     \renewcommand{\KFLT@subgrpt}{#1}%
212     \renewcommand{\KFLT@subgrptextalign}{}%
213 }
```

t (*Key*) [subfloat container]   Additional text — center justification

```
214 \define@key{KFLT@subgrpkeys}{tc}{%
215     \renewcommand{\KFLT@subgrpt}{#1}%
216     \renewcommand{\KFLT@subgrptextalign}{\centering}%
217 }
```

t (*Key*) [subfloat container]   Additional text — aligned left

```
218 \define@key{KFLT@subgrpkeys}{tl}{%
219     \renewcommand{\KFLT@subgrpt}{#1}%
220     \renewcommand{\KFLT@subgrptextalign}{\raggedright}%
221 }
```

t (*Key*) [subfloat container]   Additional text — aligned right

```
222 \define@key{KFLT@subgrpkeys}{tr}{%
223     \renewcommand{\KFLT@subgrpt}{#1}%
224     \renewcommand{\KFLT@subgrptextalign}{\raggedleft}%
225 }
```

For the tocdata package:

ap (*Key*) [subfloat container]   Artist prefix

```
226 \define@key{KFLT@subgrpkeys}{ap}{\renewcommand{\KFLT@subgrpap}{#1}}
```

\KFLT@subgrpap Storage for artist prefix

```
227 \newcommand*{\KFLT@subgrpap}{}
```

af (*Key*) [subfloat container]   Artist first name

```
228 \define@key{KFLT@subgrpkeys}{af}{\renewcommand{\KFLT@subgrpaf}{#1}}
```

\KFLT@subgrpaf Storage for artist first name

```
229 \newcommand*{\KFLT@subgrpaf}{}
```

al (*Key*) [subfloat container]   Artist last name

```
230 \define@key{KFLT@subgrpkeys}{al}{\renewcommand{\KFLT@subgrpal}{#1}}
```

\KFLT@subgrpal Storage for artist last name

```
231 \newcommand*{\KFLT@subgrpal}{}
```

as (*Key*) [subfloat container]   Artist suffix

```
232 \define@key{KFLT@subgrpkeys}{as}{\renewcommand{\KFLT@subgrpas}{#1}}
```

\KFLT@subgrpas Storage for artist suffix

233 `\newcommand*{\KFLT@subgrpas}{}`

aup (*Key*) [subfloat container] Author prefix

234 `\define@key{KFLT@subgrpkeys}{aup}{\renewcommand{\KFLT@subgrpaup}{#1}}`

\KFLT@subgrpaup Storage for author prefix

235 `\newcommand*{\KFLT@subgrpaup}{}`

auf (*Key*) [subfloat container] Author first name

236 `\define@key{KFLT@subgrpkeys}{auf}{\renewcommand{\KFLT@subgrpauf}{#1}}`

\KFLT@subgrpauf Storage for author first name

237 `\newcommand*{\KFLT@subgrpauf}{}`

aul (*Key*) [subfloat container] Author last name

238 `\define@key{KFLT@subgrpkeys}{aul}{\renewcommand{\KFLT@subgrpaul}{#1}}`

\KFLT@subgrpaul Storage for author last name

239 `\newcommand*{\KFLT@subgrpaul}{}`

aus (*Key*) [subfloat container] Author suffix

240 `\define@key{KFLT@subgrpkeys}{aus}{\renewcommand{\KFLT@subgrpaus}{#1}}`

\KFLT@subgrpaus Storage for author suffix

241 `\newcommand*{\KFLT@subgrpaus}{}`

3.9 Computing image width

\KFLT@imagewidth (*Len*) Computed width of the image

242 `\newlength{\KFLT@imagewidth}`

\KFLT@boxwidth (*Len*) Computed width of the container box

243 `\newlength{\KFLT@boxwidth}`

\KFLT@wrapwidth (*Len*)   Computed width of the wrapped figure

244 \newlength{\KFLT@wrapwidth}

\KFLT@findwidths Figure out how wide to make an image and its container

245 \newcommand*{\KFLT@findwidths}{%

Default to a box of full \linewidth minus the potential frame:

```
246     \ifbool{KFLT@ft}% tight frame?
247         {\setlength{\KFLT@boxwidth}{\linewidth - 2\KFLTtightframewidth}}%
248         {% not tight frame
249             \ifbool{KFLT@f}% loose frame?
250               {\setlength{\KFLT@boxwidth}{\linewidth - 2\KFLTlooseframewidth}}%
251                 {\setlength{\KFLT@boxwidth}{\linewidth}}% no frame
252         }% not tight frame
```

Several width options exist. First see if width was given:

```
253     \ifdimgreater{\KFLT@w}{0pt}%
```

Width was given:

```
254         {\setlength{\KFLT@imagewidth}{\KFLT@w}}%
255         {% width not given
```

Use full \linewidth or only a fraction:

```
256             \ifcsempty{KFLT@lw}%
257                 {\setlength{\KFLT@imagewidth}{\KFLT@boxwidth}}%
258                 {\setlength{\KFLT@imagewidth}{\KFLT@lw\KFLT@boxwidth}}%
259         }% width not given
```

The wrap width is the same as the image width, unless specified:

```
260     \ifdimgreater{\KFLT@ww}{0pt}%
```

Width was given:

```
261         {%
262             \setlength{\KFLT@wrapwidth}{\KFLT@ww}}%
263         {% width not given
```

If wlw, use a fraction of line width, else if none given use the same as the image width.

```
264             \ifcsempty{KFLT@wlw}%
265                 {%
266                     \setlength{\KFLT@wrapwidth}{\KFLT@imagewidth}}%
267                 {%
268                     \setlength{\KFLT@wrapwidth}{\KFLT@wlw\KFLT@boxwidth}}%
269         }% width not given
270 }
```

3.10   Framing and rotation

A user-redefinable macro and length to tightly frame the contents.

\KFLTtightframe: Redefine to a macro which frames its contents.

\KFLTtightframewidth: Redefine to the total width of the new. frame and its separation.

\KFLTlooseframe: Redefine to a macro which frames its contents.

\KFLTlooseframewidth: Redefine to the total width of the new frame and its separation.

\KFLTtightframe {⟨*contents*⟩}

```
271 \newcommand{\KFLTtightframe}[1]{%
272     \setlength{\fboxsep}{0pt}%
273     \setlength{\fboxrule}{.4pt}%
274     \fbox{#1}%
275 }
276
```

\KFLTtightframewidth (*Len*)   Must be set to the combined width of the tight frame and separation used by \KFLTtightframe.

```
277 \newlength{\KFLTtightframewidth}
278 \setlength{\KFLTtightframewidth}{.4pt}
```

\KFLTlooseframe {⟨*contents*⟩}

A user-redefinable macro and length to loosely frame the contents.

```
279 \newcommand{\KFLTlooseframe}[1]{%
280     \setlength{\fboxsep}{3pt}%
281     \setlength{\fboxrule}{.4pt}%
282     \fbox{#1}%
283 }
```

\KFLTlooseframewidth (*Len*)   Must be set to the combined width of the loose frame and separation used by \KFLTlooseframe.

```
284 \newlength{\KFLTlooseframewidth}
285 \setlength{\KFLTlooseframewidth}{3.4pt}
```

\KFLT@frame {⟨*contents*⟩}

Frames the contents according to the f key. To be nested for further processing.

```
286 \newcommand{\KFLT@frame}[1]
287 {%
288     \ifbool{KFLT@ft}%
289         {%
290             {%
291                 \hfuzz=\linewidth%
292                 \KFLTtightframe{#1}%
293             }%
294         }%
295         {% not tightframe
296             \ifbool{KFLT@f}%
297                 {%
298                     {%
299                         \hfuzz=\linewidth%
300                         \KFLTlooseframe{#1}%
301                     }%
302                 }%
303                 {#1}% no frame
304         }% not looseframe
305 }
```

KFLT@findenvboxwidth Figures the width of the contents of \KFLT@envbox plus the frame:

```
306 \newcommand{\KFLT@findenvboxwidth}{%
307     \settowidth{\KFLTimageboxwidth}{\usebox{\KFLT@envbox}}%
308     \ifbool{KFLT@ft}%
309         {\addtolength{\KFLTimageboxwidth}{2\KFLTtightframewidth}}%
310         {% not tightframe
311             \ifbool{KFLT@f}%
312                 {\addtolength{\KFLTimageboxwidth}{2\KFLTlooseframewidth}}%
313                 {}% no frame
314         }% not looseframe
315 }
```

3.11 A graphics image from a file

\KFLT@testwidth (*Len*)   Used to find the width of a graphics image.

```
316 \newlength{\KFLT@testwidth}
```

\KFLT@includegraphics [⟨*keys*⟩] {⟨*file name*⟩}

Issue a warning if the image will be too wide, then display the image.

```
317 \newcommand*{\KFLT@includegraphics}[2][]{%
```

Find the width of the image:

```
318     \settowidth{\KFLT@testwidth}{\includegraphics[#1]{#2}}%
```

Avoid rounding errors when using the lw option, and also avoid the exact line width in case images are side-by-side.

If close to \linewidth, use slightly less than the \linewidth:

```
319    \ifboolexpr{%
320        test {\ifdimgreater{\KFLT@testwidth}{\linewidth-.01pt}} and
321        test {\ifdimless{\KFLT@testwidth}{\linewidth+1pt}}
322    }%
323        {\setlength{\KFLT@testwidth}{\linewidth-.01pt}}%
324        {}%
```

Issue a warning if wider than the \linewidth:

```
325    \ifdimgreater{\KFLT@testwidth}{\linewidth}{%
326        \PackageWarning{keyfloat}{The image is wider than the line width}%
327    }{}%
```

Display the image:

```
328    \includegraphics[#1]{#2}%
329 }
```

\KFLT@onefigureimage {⟨*filename*⟩}

Create an image with size, frame, and turn.

```
┌─────────────────────────────────────────────────────────┐
│ \KFLT@onefigureimage                                    │
│  ┌────────────────────────────────────────────────────┐ │
│  │ turn                                               │ │
│  │  ┌─────────────────────────────────────────────┐   │ │
│  │  │ \KFLT@frame → \fbox                         │   │ │
│  │  │    \KFLT@includegraphics                    │   │ │
│  │  └─────────────────────────────────────────────┘   │ │
│  └────────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────┘
```
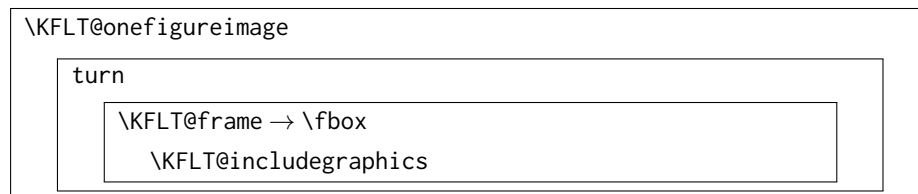
```
330 \NewDocumentCommand{\KFLT@onefigureimage}{m}%
331 {%
```

Several possible combinations of linewidth, width, and height are available, and each is treated separately. Scaling and width/height are done first, then framing, then rotation.

```
332    \begin{lrbox}{\KFLT@envbox}%
```

Handle the lw key. If lw is used, width and height are ignored.

```
333    \ifdefempty{\KFLT@lw}%
334    {% not linewidth
```

Handle the w key, which may be used along with the h key:

```
335        \ifdimgreater{\KFLT@w}{0pt}%
```

```
336          {% width is given
337              \ifdimgreater{\KFLT@h}{0pt}%
```

Width and height are both given:

```
338              {% w and h
339                  \KFLT@includegraphics[%
340                      scale=\KFLT@s,%
341                      width=\KFLT@imagewidth,%
342                      height=\KFLT@h,%
343                      \KFLT@keepaspectratio,%
344                  ]{#1}%
345              }% w and h
```

Only width:

```
346              {% only w
347                  \KFLT@includegraphics[%
348                      scale=\KFLT@s,%
349                      width=\KFLT@imagewidth,%
350                      \KFLT@keepaspectratio,%
351                  ]{#1}%
352              }% only w
353          }% width is given
```

Width was not given, so maybe handle h alone:

```
354          {% width is not given
355              \ifdimgreater{\KFLT@h}{0pt}%
```

h was given:

```
356              {%
357                  \KFLT@includegraphics[%
358                      scale=\KFLT@s,%
359                      height=\KFLT@h,%
360                      \KFLT@keepaspectratio,%
361                  ]{#1}%
362              }%
```

If none were given, use the image's natural size:

```
363              {%
364                  \KFLT@includegraphics[%
365                      scale=\KFLT@s,%
366                      \KFLT@keepaspectratio,%
367                  ]{#1}%
368              }%
369          }% width is not given
370      }% not linewidth
371      {% linewidth given
```

```
372        \ifdimgreater{\KFLT@h}{0pt}%
373        {% lw and h given
374            \KFLT@includegraphics[%
375                scale=\KFLT@s,%
376                width=\KFLT@imagewidth,%
377                height=\KFLT@h,%
378                \KFLT@keepaspectratio,%
379            ]{#1}%
380        }%
381        {% lw w/o h
382            \KFLT@includegraphics[%
383                scale=\KFLT@s,%
384                width=\KFLT@imagewidth,%
385                \KFLT@keepaspectratio,%
386            ]{#1}%
387        }%
388    }%
389    \end{lrbox}%
390    \unskip%
391    \KFLT@findenvboxwidth%
392    \begin{turn}{\KFLT@r}%
393    \KFLT@frame{\usebox{\KFLT@envbox}}%
394    \unskip%
395    \end{turn}%
396 }
```

3.12   Printing the caption

\KFLT@dosimplecaption {⟨*star?*⟩} {⟨*short cap or* -NO VALUE-⟩} {⟨*caption*⟩}

Calls \caption depending on several combinations of star and short captions being given.

```
397 \NewDocumentCommand{\KFLT@dosimplecaption}{m m m}
398 {%
399     \unskip%
400     \IfBooleanTF{#1}% star?
401         {\IfValueTF{#2}{\caption*[#2]{#3}}{\caption*{#3}}}%
402         {\IfValueTF{#2}{\caption[#2]{#3}}{\caption{#3}}}%
403 }
```

There are two versions of \KFLT@docaption, depending on whether tocdata is loaded.

```
404 \@ifpackageloaded{tocdata}
405 {% tocdata loaded
```

\KFLT@@docaption 1: artist/author {⟨*2: empty or* ”u”⟩} {⟨*3: star?*⟩} {⟨*4: short caption*⟩} {⟨*5: caption*⟩} {⟨*6: empty or* "subgrp"⟩}

```
406 \newcommand*{\KFLT@@docaption}[6]{%
```

(tocdata does not expand its text argument before checking for empty.)

```
407 \addvspace{\smallskipamount}%
408 \ifcsempty{KFLT@#6t}{%
409     \IfBooleanTF{#3}%
410     {%
411         \csuse{caption#1}*[#4]{#5}%
412             []%
413             [\csuse{KFLT@#6a#2p}]%
414             {\csuse{KFLT@#6a#2f}}%
415             {\csuse{KFLT@#6a#2l}}%
416             [\csuse{KFLT@#6a#2s}]%
417     }{%
418         \csuse{caption#1}[#4]{#5}%
419             []%
420             [\csuse{KFLT@#6a#2p}]%
421             {\csuse{KFLT@#6a#2f}}%
422             {\csuse{KFLT@#6a#2l}}%
423             [\csuse{KFLT@#6a#2s}]%
424     }%
425 }{%
426     \ifcsstring{KFLT@#6textalign}{}{\csuse{td#1textjustify}}{}%
427     \ifcsstring{KFLT@#6textalign}{\centering}{\csuse{td#1textcenter}}{}%
428     \ifcsstring{KFLT@#6textalign}{\raggedleft}{\csuse{td#1textright}}{}%
429     \ifcsstring{KFLT@#6textalign}{\raggedright}{\csuse{td#1textleft}}{}%
430     \IfBooleanTF{#3}%
431     {%
432         \csuse{caption#1}*[#4]{#5}%
433             [\csuse{KFLT@#6t}]%
434             [\csuse{KFLT@#6a#2p}]%
435             {\csuse{KFLT@#6a#2f}}%
436             {\csuse{KFLT@#6a#2l}}%
437             [\csuse{KFLT@#6a#2s}]%
438     }{%
439         \csuse{caption#1}[#4]{#5}%
440             [\csuse{KFLT@#6t}]%
441             [\csuse{KFLT@#6a#2p}]%
442             {\csuse{KFLT@#6a#2f}}%
443             {\csuse{KFLT@#6a#2l}}%
444             [\csuse{KFLT@#6a#2s}]%
445     }%
446 }%
447 }
```

\KFLT@docaption * [⟨*2:short caption*⟩] {⟨*3:caption*⟩} {⟨*4: empty or* "subgrp"⟩}

Depending on whether the tocdata package is present, and an artist is specified, use either \caption or \captionartist.

The fourth argument is {} if a regular float, or subgrp if keysubfigs or keysubtabs.

See Table 2 for the possible combinations of the caption-related keys: c, cstar, and sc.

With tocdata:

```
448 \NewDocumentCommand{\KFLT@docaption}{s o m m}
449 {%
```

Is the last name empty? Assume no artist if so.

```
450     \ifcsempty{KFLT@#4al}%
451     {% figure w/o artist
452         \ifcsempty{KFLT@#4aul}%
453         {% figure w/o artist or author
```

A figure without an artist or author uses the simple caption.

```
454             \KFLT@dosimplecaption{#1}{#2}{#3}%
455         }% figure w/o artist or author
```

A figure with an author uses the tocdata \captionauthor macro, which also creates an index entry.

```
456         {% figure w/ author
457             \KFLT@@docaption{author}{u}{#1}{#2}{#3}{#4}%
458         }% figure w/ author
459     }% figure w/o artist
460     {% figure with an artist
```

A figure with an artist uses the tocdata \captionartist macro, which also creates an index entry.

```
461         \KFLT@@docaption{artist}{}{#1}{#2}{#3}{#4}%
462     }% figure with an artist
463 }% KFLT@tocdata
464 }% tocdata loaded
465 {% no tocdata
```

Without tocdata:

\KFLT@docaption *[⟨*2:short caption*⟩] {⟨*3:caption*⟩} {⟨*4: empty or* "subgrp"⟩}

```
466 \NewDocumentCommand{\KFLT@docaption}{s o m m}
467 {%
```

If tocdata is not loaded, use a simple caption.

```
468     \KFLT@dosimplecaption{#1}{#2}{#3}%
```

Create an index entry depending on whether there is a last, first name:

```
469     \ifcsempty{KFLT@#4al}%
470     {%
```

```
471         \ifcsempty{KFLT@#4aul}%
472         {}%
473         {% yes author
474             \ifcsempty{KFLT@#4auf}%
475                 {\index{\csuse{KFLT@#4aul}}}%
476                 {\index{\csuse{KFLT@#4aul}, \csuse{KFLT@#4auf}}}%
477         }% yes author
478     }% no artist
479     {% yes artist
480         \ifcsempty{KFLT@#4af}%
481             {\index{\csuse{KFLT@#4al}}}%
482             {\index{\csuse{KFLT@#4al}, \csuse{KFLT@#4af}}}%
483     }% yes artist
484 }% KFLT@docaption
485 }% no tocdata
```

\KFLT@caption {⟨*empty or* "subgrp"⟩}

Caption-creation logic.

The argument is {} if a regular float, or subgrp if keysubfigs or keysubtabs.

See Table 2 for the possible combinations of the caption-related keys: c, cstar, and sc.

```
486 \newcommand{\KFLT@caption}[1]{%
```

A starred caption is printed but not numbered.

```
487     \ifbool{KFLT@#1cstar}% starred caption?
```

This is a starred caption:

```
488     {%starred caption
```

A key given as cstar={} yields a float with no caption at all.

```
489         \ifcsempty{KFLT@#1c}% cstar={}?
490         {}%
```

Non-empty starred caption might have a LOF entry if it has a short caption sc key:

```
491         {% non-empty starred caption
492             \ifcsempty{KFLT@#1sc}%
```

No sc short caption, but there is a cstar, so no LOF entry:

```
493             {}%
```

Both cstar and sc were given, so add a LOF entry:

```
494             {% non-empty cstar and sc:
```

```
495              \edef\KFLT@listtype{\csuse{KFLT@#1type}}%
496              \addcontentsline{\csuse{ext@\KFLT@listtype}}%
497                  {\csuse{KFLT@#1type}}{\KFLT@sc}%
498          }% non-empty cstar and sc
```

In the following, the test for an empty caption is because the caption package does not detect an empty caption if it is given as a macro.

cstar was given, so create an unnumbered caption:

```
499          \ifcsempty{KFLT@#1c}%
500              {\KFLT@docaption*{}{#1}}%
501              {\KFLT@docaption*{\csuse{KFLT@#1c}}{#1}}%
502      }%
503  }% starred caption
```

Unstarred caption c was given, so number this float:

```
504  {% unstarred caption
505      \ifcsempty{KFLT@#1sc}%
506      {% no short cap
507          \ifcsempty{KFLT@#1c}%
508              {\KFLT@docaption{}{#1}}%
509              {\KFLT@docaption{\csuse{KFLT@#1c}}{#1}}%
510      }% no short cap
511      {% short cap
512          \ifcsempty{KFLT@#1c}%
513              {\KFLT@docaption[\csuse{KFLT@#1sc}]{}{#1}}%
514              {\KFLT@docaption[\csuse{KFLT@#1sc}]{\csuse{KFLT@#1c}}{#1}}%
515      }% short cap
```

Optional label:

```
516      \ifcsempty{KFLT@#1l}%
517      {}%
518      {\label{\csuse{KFLT@#1l}}}%
519  }% unstarred caption
520 }
```

3.13   Defaults for a new float

\KFLT@defaults Defaults all settings before reading the keys.

```
521 \newcommand*{\KFLT@defaults}{%
522     \setboolean{KFLT@cont}{false}%
523     \renewcommand{\KFLT@c}{}%
524     \setboolean{KFLT@cstar}{false}%
525     \renewcommand{\KFLT@sc}{}%
526     \setboolean{KFLT@scgiven}{false}%
527     \renewcommand{\KFLT@type}{figure}%
528     \renewcommand{\KFLT@l}{}%
```

```
529    \renewcommand{\KFLT@ap}{}%
530    \renewcommand{\KFLT@af}{}%
531    \renewcommand{\KFLT@al}{}%
532    \renewcommand{\KFLT@as}{}%
533    \renewcommand{\KFLT@aup}{}%
534    \renewcommand{\KFLT@auf}{}%
535    \renewcommand{\KFLT@aul}{}%
536    \renewcommand{\KFLT@aus}{}%
537    \renewcommand{\KFLT@t}{}%
538    \renewcommand{\KFLT@textalign}{}%
539    \renewcommand{\KFLT@lw}{}%
540    \setlength{\KFLT@w}{0pt}%
541    \setlength{\KFLT@h}{0pt}%
542    \renewcommand{\KFLT@keepaspectratio}{}%
543    \renewcommand{\KFLT@s}{1}%
544    \renewcommand{\KFLT@r}{0}%
545    \setboolean{KFLT@f}{false}%
546    \setboolean{KFLT@ft}{false}%
547    \renewcommand{\KFLT@stretch}{1}%
548    \setlength{\KFLT@mo}{-1.2ex}%
549    \renewcommand{\KFLT@wn}{}%
550    \renewcommand{\KFLT@wp}{O}%
551    \renewcommand{\KFLT@wo}{\wrapoverhang}%
552    \renewcommand{\KFLT@wlw}{}%
553    \setlength{\KFLT@ww}{0pt}%
554    \renewcommand{\KFLT@va}{c}%
555 }
```

3.14   Row start/end processing

\KFLT@maybestartfloatrow Counts rows

After ending a preexisting row, move to the next row. The use of \defcounter makes this counter change local.

```
556 \newcommand*{\KFLT@maybestartfloatrow}{%
557    \KFLT@maybeendfloatrow%
558    \defcounter{KFLT@thiscol}{\value{KFLT@thiscol}+1}%
559 }
```

\KFLT@maybeendfloatrow Counts rows

Adds vertical space then resets to allow the start of a new row. The use of \defcounter makes this counter change local.

```
560 \newcommand*{\KFLT@maybeendfloatrow}{%
561    \ifnumless{\value{KFLT@thiscol}}{\value{KFLT@numcols}}%
562    {}% thiscol < numcols
563    {% >=
564       \par%
565       \addvspace{.75\floatsep}%
```

```
566        \defcounter{KFLT@thiscol}{0}%
567    }%
568 }%
```

3.15   Key environment helper macros

\KFLT@trackrows Tracks and spaces rows and columns.

```
569 \newcommand{\KFLT@trackrows}%
570 {%
```

If are nested inside a keyfloats or a subfloat:

```
571    \ifboolexpr{%
572        test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{0}} or%
573        bool{KFLT@inkeysubfloats}%
574    }%
575    {% nested
```

Tracks row start and end:

```
576        \KFLT@maybestartfloatrow%
```

Possibly fill space between columns:

```
577        \ifnumgreater{\value{KFLT@thiscol}}{1}%
578            {\hfill}%
579            {}%
580    }% nested
581    {}% not nested
582 }
```

\KFLT@addtext {⟨*empty or* "subgrp"⟩}

Adds optional additional text.

The argument is {} if a regular float, or subgrp if keysubfigs or keysubtabs.

```
583 \newcommand{\KFLT@addtext}[1]
584 {%
```

Is there text to add?

```
585    \ifcsempty{KFLT@#1t}%
586    {}% no text
587    {% text to add
588        {% local
```

Add some space, then create a full-width minipage to contain the text:

```
589          \addvspace{\smallskipamount}%
590          \begin{minipage}{\linewidth}%
```

Inside this minipage, temporarily prevent underfull \hbox warnings:

```
591          \hbadness=10000\relax%
```

Set the alignment and some text parameters:

```
592          \csuse{KFLT@#1textalign}%
593          \footnotesize%
594          \setlength{\parskip}{1.5ex}%
595          \setlength{\parindent}{0em}%
```

Typeset the actual text:

```
596          \csuse{KFLT@#1t}%
```

Close it all out with a little more space:

```
597          \end{minipage}%
598          \par\addvspace{2ex}%
599          }% local
600      }% text to add
601 }
```

\KFLT@optionalname {⟨*name*⟩}

Adds optional artist's name and the following space.

```
602 \newcommand{\KFLT@optionalname}[1]
603 {%
604      \ifblank{#1}%
605          {}%
606          {#1~}%
607 }
```

\KFLT@addartisttext {⟨*empty or* "subgrp"⟩}

Adds optional additional text.

The argument is {} if a regular float, or subgrp if keysubfigs or keysubtabs.

One of two versions is used, depending on whether the tocdata package is available.

If tocdata is loaded and this float has an artist or author, then the float's artist's information and optional text will be printed elsewhere by \KFLT@caption. Otherwise, the text is printed here.

Two versions, depending on whether tocdata is loaded:

```
608 \@ifpackageloaded{tocdata}
609 {% tocdata loaded
```

If tocdata is loaded:

```
610 \newcommand{\KFLT@addartisttext}[1]
611 {%
```

Only add text if is a figure without an artist or author name. If an artist or author is given, the name and text will be added by tocdata.

```
612     \ifcsempty{KFLT@#1al}% artist last name
613         {%
614             \ifcsempty{KFLT@#1aul}% author last name
615                 {\KFLT@addtext{#1}}
616                 {}%
617         }%
618         {}% fig w/ artist: text will be added by \captionartist in \KFLT@caption
619 }% KFLT@addartisttext
620 }% tocdata loaded
```

If tocdata is not loaded, the name and text are added here:

```
621 {% tocdata not loaded
```

Factored from \KFLT@addartisttext

```
622 \newcommand*{\KFLT@@addartisttext}[3]{%
```

Add space and create the name inside a full-width minipage:

```
623         \addvspace{\medskipamount}%
624     \begin{minipage}{\linewidth}%
```

Inside this minipage, temporarily prevent underfull \hbox warnings:

```
625     \hbadness=10000\relax%
```

Text alignment is #3, and depends on artist or author:

```
626     #3%
```

#1 is empty or 'subgrp'
#2 is empty for artist, 'u' for author:

```
627     \footnotesize\textsc{%
628         \KFLT@optionalname{\csuse{KFLT@#1a#2p}}%
629         \KFLT@optionalname{\csuse{KFLT@#1a#2f}}%
630         \csuse{KFLT@#1a#2l}%
631         \csuse{KFLT@#1a#2s}%
632     }%
633     \end{minipage}%
```

```
634     \par\addvspace{2ex}%
635 }
636
637 \newcommand{\KFLT@addartisttext}[1]
638 {%
```

Only use the artist information if a last name is given:

```
639     \ifcsempty{KFLT@#1al}%
640     {% artist last name not given
641         \ifcsempty{KFLT@#1aul}%
642         {}% author last name not given
643         {% author last name given
644             \KFLT@@addartisttext{#1}{u}{\raggedleft}%
645         }% author last name given
646     }% artist last name not given
647     {% artist last name given
648         \KFLT@@addartisttext{#1}{}{\centering}%
649     }%
```

Any additional text follows the artist's name:

```
650     \KFLT@addtext{#1}%
651 }% KFLT@addartisttext
652 }% tocdata not loaded
```

\KFLTimageboxwidth (*Len*)   The computed width of the object.

This may be used as the width parameter of a minipage to encase the object.

```
653 \newlength{\KFLTimageboxwidth}
```

KFLT@boxinner (*env.*) Typeset the contents in a width which depends on the keys.

```
┌─────────────────────────────────────────────────────────┐
│ KFLT@boxinner                                            │
│   ┌───────────────────────────────────────────────────┐ │
│   │ \KFLT@frame → \fbox                                │ │
│   │   ┌───────────────────────────────────────────┐   │ │
│   │   │ turn                                       │   │ │
│   │   │   ┌───────────────────────────────────┐   │   │ │
│   │   │   │ minipage                          │   │   │ │
│   │   │   │   Contents                        │   │   │ │
│   │   │   └───────────────────────────────────┘   │   │ │
│   │   └───────────────────────────────────────────┘   │ │
│   └───────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────┘
```
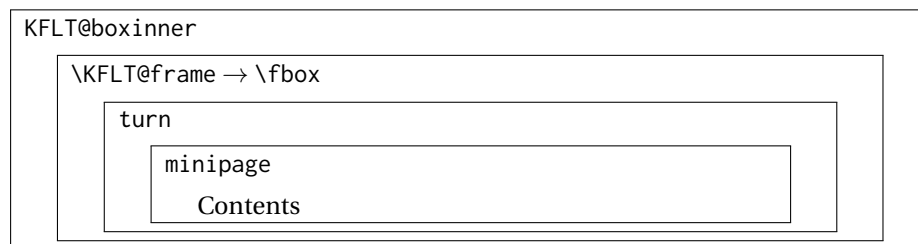
```
654 \newsavebox{\KFLT@envbox}
655
656 \NewDocumentEnvironment{KFLT@boxinner}{}
657 {% keyboxinner
```

(Possibly) frame the contents of an lrbox:

```
658     \begin{lrbox}{\KFLT@envbox}%
```

Rotate the contents:

```
659     \turn{\KFLT@r}%
```

Box the contents in the width computed by \KFLT@findwidths:

```
660     \minipage{\KFLT@imagewidth}%
```

Spacing inside the box. Also default to regular justified text alignment.

```
661     \setlength{\parskip}{2ex}%
662     \renewcommand{\arraystretch}{\KFLT@stretch}%
663 }% keyboxinner
```

End of the environment:

```
664 {% endkeyboxinner
665     \endminipage%
```

End the rotated box:

```
666     \endturn%
```

Possibly frame:

```
667     \end{lrbox}%
668     \KFLT@frame{\usebox{\KFLT@envbox}}%
669     \par%
670 }% endkeyboxinner
```

\KFLT@sharedkeys Key/values to apply to each object in this group, such as a keyfloats or keysubfigs.

```
671 \newcommand*{\KFLT@sharedkeys}{}
```

\KFLT@boxkeys {⟨*keys*⟩} {⟨*float type*⟩}

Default the options, adjust for a table, then parse the keys:

```
672 \NewDocumentCommand{\KFLT@boxkeys}{+m m}
673 {%
```

Set the key defaults:

```
674     \KFLT@defaults%
```

Remember the float type:

```
675     \ifbool{KFLT@inkeysubfloats}%
676         {\renewcommand{\KFLT@type}{\@captype}}%
677         {\renewcommand{\KFLT@type}{#2}}%
```

Set the shared keys. Expansion seems to be required for xkeyval.

```
678    \edef\next{\noexpand\setkeys{KFLT@keys}{\KFLT@sharedkeys}}%
679    \next%
```

Set the float-specific keys, which might overright the group's keys:

```
680    \setkeys{KFLT@keys}{#1}%
681 }
```

KFLT@captionistop (*bool*) Saves the value of \caption@position, which may become unreliable if using Ko-mascript and

```
\captionsetup[table]{position=above}
```

```
682 \newbool{KFLT@captionistop}
```

\KFLT@LWR@hook@boxouter Used by lwarp.

```
683 \newcommand*{\KFLT@LWR@hook@boxouter}{}%
```

KFLT@boxouter (*env.*) $\{\langle star?\rangle\}$ $\{\langle loc\rangle\}$

Boxes the contents of figures and floats.

Not used by subfigures.

```
684 \NewDocumentEnvironment{KFLT@boxouter}{m m}
685 {% boxouter
```

The keyfigure and keytable environments handle the contents in one of three possible ways, depending on whether it is called alone, inside a keyfloats environment, or inside a keysubfigs or keysubtabs environment.

Start the new subfigure or subtable, of the given width:

```
686    \ifbool{KFLT@inkeysubfloats}%
687    {\csuse{sub\KFLT@type}{\KFLT@rowboxwidth}}% subfloat
```

If keyfloats, place the contents inside a minipage:

```
688    {% not subfloat:
689      \ifnumgreater{\value{KFLT@keyfloatdepth}}{0}%
690      {% keyfloats
691        \ifbool{KFLT@keywrap}%
692          {\minipage[t]{\KFLT@rowboxwidth}}%
693          {\minipage[\KFLT@va]{\KFLT@rowboxwidth}}%
694        \captionsetup*{type=\KFLT@type}%
695      }% keyfloats
696      {% not keyfloats
```

A hook for lwarp to set \linewidth, etc.

697   \KFLT@LWR@hook@boxouter%

Not a subfloat or keyfloats, so create a single float.

See if inside a keywrap. If so, force [H] and vertical align top.

698   \ifbool{KFLT@keywrap}%
699   {%
700   \par\addvspace{\baselineskip}%
701   \noindent%
702   \minipage[t]{\linewidth}%
703   \captionsetup{type=\KFLT@type}%
704   }%
705   {% not a keywrap

See if the float should [W]rap:

706   \ifstrequal{#2}{W}%

Place [W], so create a wrapfloat using the wrapfig package:

707   {% [W]

Temporarily figure out \KFLT@imagewidth, and make the wrapped figure environment as wide as the desired image size plus frame:

708   \KFLT@findwidths%

Expand the arguments for wrapfig:

709   \edef\next{%
710   \noexpand\wrapfloat%
711   {\KFLT@type}[\KFLT@wn]{\KFLT@wp}[\KFLT@wo]%
712   {\KFLT@wrapwidth+2\KFLTlooseframewidth}%
713   }%
714   \next%

715   \minipage{\KFLT@wrapwidth+2\KFLTlooseframewidth}%

Inside this minipage, temporarily prevent underfull \hbox warnings:

716   \hbadness=10000\relax%

717   \normalcolor\reset@font\normalsize%

Change the interior image to the discovered fixed width.

718   \renewcommand{\KFLT@lw}{}%
719   \renewcommand{\KFLT@w}{\KFLT@imagewidth}%

```
720                        \renewcommand{\KFLT@wlw}{}%
721                        \renewcommand{\KFLT@ww}{0pt}%
722                  }% [W]
723                  {% not [W]
```

See if the float should be positioned in the [M]argin:

```
724                  \ifstrequal{#2}{M}%
```

Place [M], so create a marginfloat:

```
725                  {% [M]
726                      \KFLT@marginfloat[\KFLT@mo]{\KFLT@type}%
727                  }% [M]
728                  {% not [M]
```

See if the float should be positioned [H]ere:

```
729                  \ifstrequal{#2}{H}%
```

Place [H], so create an inline minipage:

```
730                      {% [H]
731                          \vskip\intextsep%
732                          \noindent\minipage[\KFLT@va]{\linewidth}%
733                          \normalcolor\reset@font\normalsize%
734                          \captionsetup{type=\KFLT@type}%
735                      }% [H]
```

Not [H], so create a float: For a starred float, make a two-column table in a two-col format.

```
736                      {% not [H]
737                          \IfBooleanTF{#1}%
738                              {\csuse{\KFLT@type*}[#2]}%
739                              {\csuse{\KFLT@type}[#2]}%
740                      }% not [H]
741                  }% not [M]
742              }% not [W]
743          }% not keywrap
744      }% not keyfloats
745  }% not subfloat
```

Handle a continued float. Ignored if in a subfloat.

```
746  \ifbool{KFLT@cont}{\ContinuedFloat}{}%
```

Figure out image and parbox widths for the contents:

```
747  \KFLT@findwidths%
```

Place the caption above the contents depending on caption position option:

```
748     \caption@iftop%
749         {\booltrue{KFLT@captionistop}}%
750         {\boolfalse{KFLT@captionistop}}%
751     \ifbool{KFLT@captionistop}{\KFLT@caption{}}{}%
```

Typeset the contents:

```
752     \center\unskip%
753 }% boxouter
```

End of the KFLT@boxouter environment:

```
754 {% endboxouter
755     \endcenter\unskip%
756     \addvspace{\smallskipamount}%
```

Optionally print artist's name and additional text:

```
757     \KFLT@addartisttext{}%
```

Place the caption below the contents depending on caption position option:

```
758     \ifbool{KFLT@captionistop}{}{\KFLT@caption{}}%
```

If are inside keysubtabs, end the subtable:

```
759     \ifbool{KFLT@inkeysubfloats}%
760     {%
761         \csuse{endsub\KFLT@type}%
762     }% subfloat
763     {% not subfloat
764         \ifnumgreater{\value{KFLT@keyfloatdepth}}{0}% keyfloats?
765         {%

766             \endminipage%
767         }% keyfloats
768         {% not keyfloats
```

Not subfloat or keyfloats, so is an individual float.

Close the minipage or float:

See if in a keywrap:

```
769             \ifbool{KFLT@keywrap}{%
770                 \endminipage%
771                 \par\addvspace{\baselineskip}%
772             }%
773             {% not keywrap
```

See if the float should [W]rap:

```
774                    \ifstrequal{#2}{W}%
```

Place [W], so close the wrap float:

```
775                    {% [W]
776                        \endminipage%
777                        \endwrapfloat%
778                    }% [W]
779                    {% not[W]
```

See if the float should be positioned in the [M]argin:

```
780                    \ifstrequal{#2}{M}%
```

[M], so close the marginfloat:

```
781                    {% [M]
782                        \endKFLT@marginfloat%
783                    }% [M]
```

[H] or float:

```
784                    {% not [M]
785                        \ifstrequal{#2}{H}%
786                        {%
787                            \endminipage% [H]
788                            \vskip\intextsep%
789                        }%
790                        {% not [H]
791                            \IfBooleanTF{#1}% starred float?
792                                {\csuse{end\KFLT@type*}}%
793                                {\csuse{end\KFLT@type}}%
794                        }% not [H]
795                    }% not [M]
796                }% not [W]
797            }% not keywrap
798        }% not keyfloats
799    }% not subfloat
800 }% endkeyboxouter
```

\KFLT@@ignorespaces {⟨*commandname*⟩} Only do command if not nested inside something.

```
801 \newcommand*{\KFLT@@ignorespaces}[1]{%
802    \ifboolexpr{%
803        test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{0}} or%
804        bool{KFLT@inkeysubfloats}%
805    }{}{\csuse{#1}}%
806 }
```

\KFLT@ignorespaces Only \ignorespaces if not nested inside something.

```
807 \newcommand*{\KFLT@ignorespaces}{%
808     \KFLT@@ignorespaces{ignorespaces}%
809 }
```

\KFLT@envignorespaces Only \ignorespaces if not nested inside something.

```
810 \newcommand*{\KFLT@envignorespaces}{%
811     \KFLT@@ignorespaces{ignorespacesafterend}%
812 }
```

3.16   The `\KFLT@keyflt` macro

\KFLT@keyflt {⟨*1:star*⟩} {⟨*2:loc*⟩} {⟨*3:type*⟩} {⟨*4:keys/values*⟩} {⟨*5:contents*⟩}

A lower-level macro to generate a float with its contents. This is used by \keyfig and \keyflt.
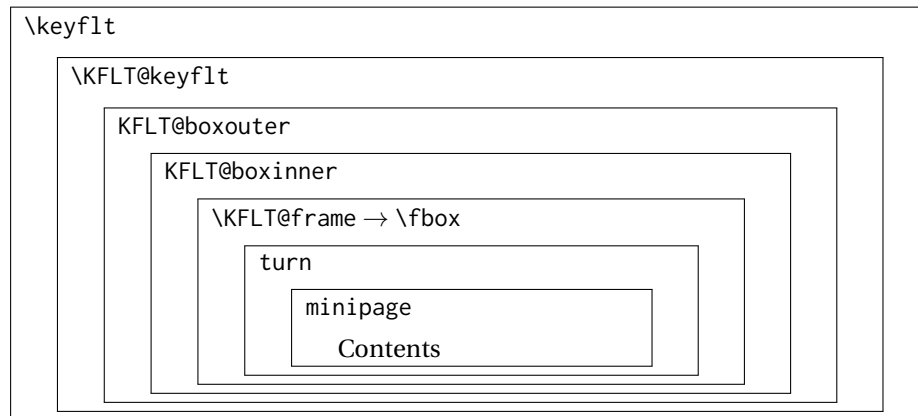
```
813 \NewDocumentCommand{\KFLT@keyflt}{m m m +m +m}
814 {%

815     \ifcsdef{ftype@#3}{}{%
816         \PackageError{keyfloat}%
817         {%
818             \protect\keyflt: Invalid float type.\MessageBreak%
819             \protect\keyflt*[loc]{type}{keys/values}{contents}\MessageBreak%
820             Also, \protect\keyflt\space is not an environment
821         }%
822         {%
823             Check argument order and float type.
824         }%
825     }%

826     \KFLT@ignorespaces%
827     \KFLT@trackrows%
828     \KFLT@boxkeys{#4}{#3}%
829     \begingroup%
830     \KFLT@boxouter{#1}{#2}%
831     #5%
832     \endKFLT@boxouter%
833     \endgroup%
834     \KFLT@ignorespaces%
835 }
```

3.17   The `\keyflt` macro

\keyflt *[⟨*loc*⟩] {⟨*type*⟩} {⟨*keys/values*⟩} {⟨*contents*⟩}

A user-level macro to generate a float with its contents centered inside an inner box. This may be used by itself, or inside a keyfloats or keysubtabs environment.

```
\keyflt
    \KFLT@keyflt
        KFLT@boxouter
            KFLT@boxinner
                \KFLT@frame → \fbox
                    turn
                        minipage
                            Contents
```

```
836 \NewDocumentCommand{\keyflt}{s O{tbp} m +m +m}
837 {%
838     \KFLT@keyflt{#1}{#2}{#3}{#4}{%
839         \KFLT@boxinner%
840         \centering%
841         #5%
842         \endKFLT@boxinner%
843     }%
844 }
```

\endkeyflt Generates an error in case the user tried to use \keyflt as an environment.

```
845 \def\endkeyflt{%
846     \PackageError{keyfloat}
847     {%
848         \protect\end{keyflt}:\MessageBreak
849         \protect\keyflt\space is a macro, not an environment.\MessageBreak
850         Perhaps you want the keyfloat environment instead%
851     }
852     {%
853         Use \protect\begin{keyflat} ... \protect\end{keyfloat}.
854     }
855 }
```

3.18   The keyfloat environment

\KFLT@keyfloatstart {⟨*star?*⟩} {⟨*loc*⟩} {⟨*float type*⟩} {⟨*keys/values*⟩}
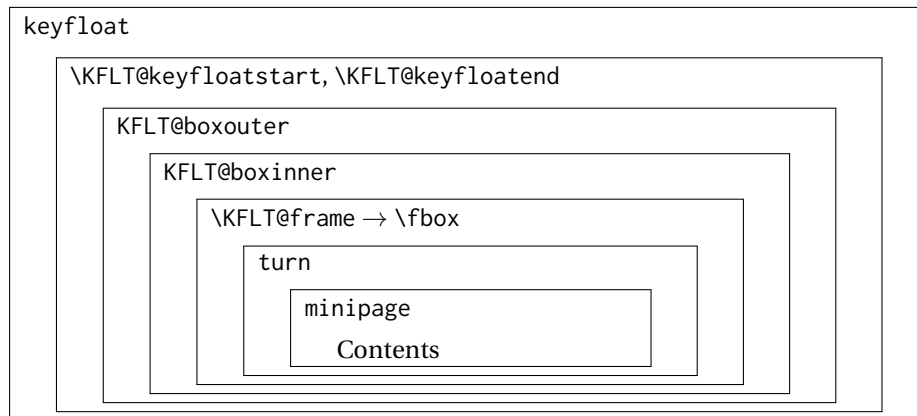
```
856 \newcommand{\KFLT@keyfloatstart}[4]{%
857     \KFLT@envignorespaces%
858     \KFLT@boxkeys{#4}{#3}%
859     \KFLT@boxouter{#1}{#2}%
860     \KFLT@boxinner%
861 }
```

\KFLT@keyfloatend

```
862 \newcommand{\KFLT@keyfloatend}{%
863     \endKFLT@boxinner%
864     \endKFLT@boxouter%
865     \KFLT@envignorespaces%
866 }
```

keyfloat (*env.*) * [⟨*loc*⟩] {⟨*float type*⟩} {⟨*keys/values*⟩}

```
keyfloat
    \KFLT@keyfloatstart, \KFLT@keyfloatend
        KFLT@boxouter
            KFLT@boxinner
                \KFLT@frame → \fbox
                    turn
                        minipage
                            Contents
```

```
867 \NewDocumentEnvironment{keyfloat}{s O{tbp} m +m}
868 {%
869     \KFLT@keyfloatstart{#1}{#2}{#3}{#4}%
870 }%
871 {%
872     \KFLT@keyfloatend%
873 }
```

Before \env {keyfloat} Extra code to track rows outside of the keyfloat environment, before it starts. This is done to allow nesting without losing track of the prior level.

```
874 \BeforeBeginEnvironment{keyfloat}{%
875     \KFLT@trackrows%
876 }
```

3.19 The keyfigure environment

keyfigure (*env.*) * [⟨*loc*⟩] {⟨*keys/values*⟩}

```
┌─────────────────────────────────────────────────────────────────┐
│ keyfigure                                                         │
│   ┌───────────────────────────────────────────────────────────┐  │
│   │ \KFLT@keyfloatstart, \KFLT@keyfloatend                     │  │
│   │   ┌───────────────────────────────────────────────────┐    │  │
│   │   │ KFLT@boxouter                                       │    │  │
│   │   │   ┌───────────────────────────────────────────┐     │    │  │
│   │   │   │ KFLT@boxinner                               │     │    │  │
│   │   │   │   ┌───────────────────────────────────┐     │     │    │  │
│   │   │   │   │ \KFLT@frame → \fbox               │     │     │    │  │
│   │   │   │   │   ┌───────────────────────────┐    │     │     │    │  │
│   │   │   │   │   │ turn                        │    │     │     │    │  │
│   │   │   │   │   │   ┌───────────────────┐     │    │     │     │    │  │
│   │   │   │   │   │   │ minipage           │     │    │     │     │    │  │
│   │   │   │   │   │   │    Contents        │     │    │     │     │    │  │
│   │   │   │   │   │   └───────────────────┘     │    │     │     │    │  │
│   │   │   │   │   └───────────────────────────┘    │     │     │    │  │
│   │   │   │   └───────────────────────────────────┘     │     │    │  │
│   │   │   └───────────────────────────────────────────┘     │    │  │
│   │   └───────────────────────────────────────────────────┘    │  │
│   └───────────────────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────────────────┘
```
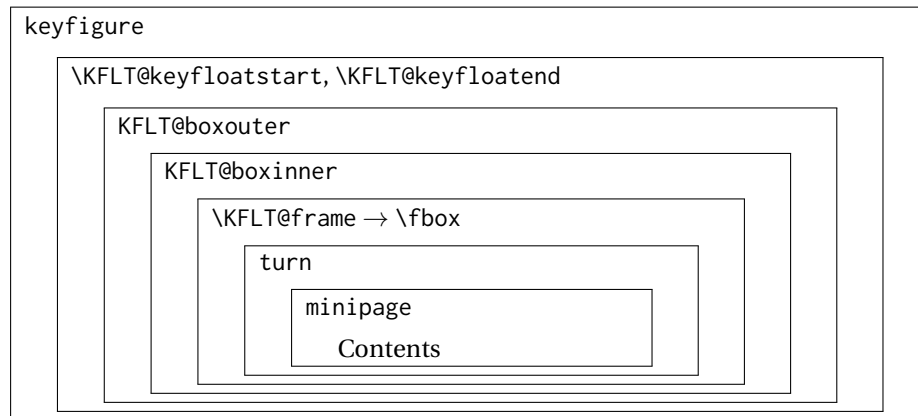
```
877 \NewDocumentEnvironment{keyfigure}{s O{tbp} +m}
878 {%
879     \KFLT@keyfloatstart{#1}{#2}{figure}{#3}%
880 }%
881 {%
882     \KFLT@keyfloatend%
883 }
```

Before \env {keyfigure} Extra code to track rows outside of the keyfigure environment, before it starts. This is done to allow nesting without losing track of the prior level.

```
884 \BeforeBeginEnvironment{keyfigure}{%
885     \KFLT@trackrows%
886 }
```
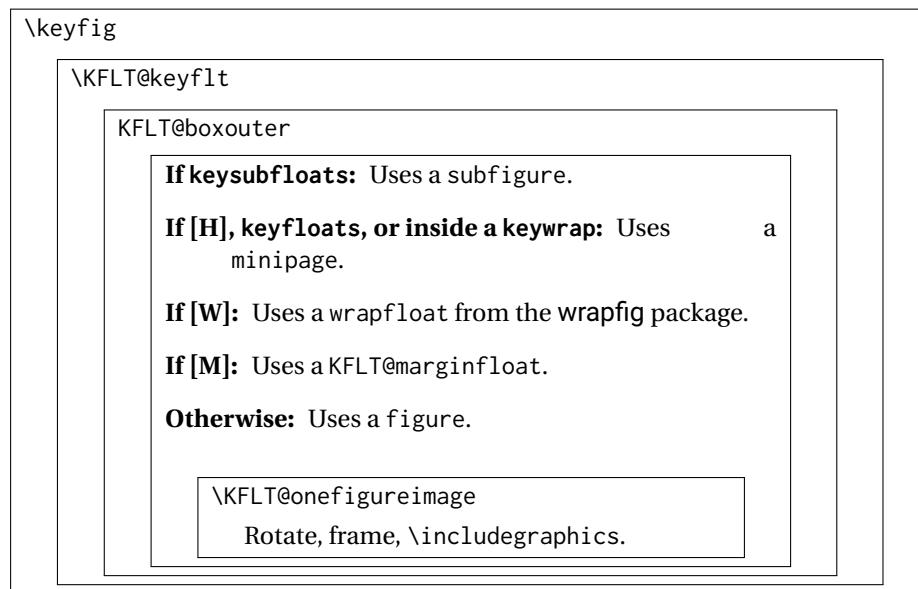
3.20 The \keyfig macro

\keyfig * [⟨*2:loc*⟩] {⟨*3:keys/values*⟩} {⟨*4:image filename*⟩}

A user-level macro to generate a figure with an image. This may be used by itself, or inside a keyfloats or keysubfigs environment.

```
┌─────────────────────────────────────────────────────────────────┐
│ \keyfig                                                           │
│   ┌───────────────────────────────────────────────────────────┐  │
│   │ \KFLT@keyflt                                               │  │
│   │   ┌─────────────────────────────────────────────────────┐ │  │
│   │   │ KFLT@boxouter                                        │ │  │
│   │   │   ┌───────────────────────────────────────────────┐ │ │  │
│   │   │   │ If keysubfloats: Uses a subfigure.            │ │ │  │
│   │   │   │                                               │ │ │  │
│   │   │   │ If [H], keyfloats, or inside a keywrap: Uses a│ │ │  │
│   │   │   │     minipage.                                 │ │ │  │
│   │   │   │                                               │ │ │  │
│   │   │   │ If [W]: Uses a wrapfloat from the wrapfig     │ │ │  │
│   │   │   │   package.                                    │ │ │  │
│   │   │   │                                               │ │ │  │
│   │   │   │ If [M]: Uses a KFLT@marginfloat.              │ │ │  │
│   │   │   │                                               │ │ │  │
│   │   │   │ Otherwise: Uses a figure.                     │ │ │  │
│   │   │   │                                               │ │ │  │
│   │   │   │   ┌─────────────────────────────────────────┐ │ │ │  │
│   │   │   │   │ \KFLT@onefigureimage                    │ │ │ │  │
│   │   │   │   │   Rotate, frame, \includegraphics.      │ │ │ │  │
│   │   │   │   └─────────────────────────────────────────┘ │ │ │  │
│   │   │   └───────────────────────────────────────────────┘ │ │  │
│   │   └─────────────────────────────────────────────────────┘ │  │
│   └───────────────────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────────────────┘
```
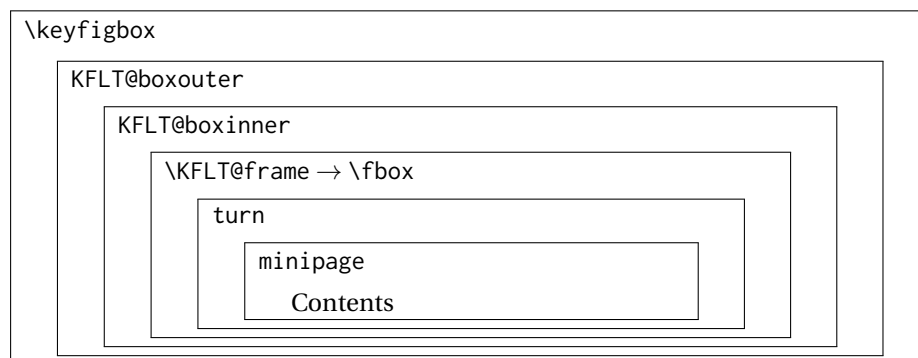
```
887 \NewDocumentCommand{\keyfig}{s O{tbp} +m m}
888 {%
889     \KFLT@keyflt{#1}{#2}{figure}{#3}{%
890         \KFLT@onefigureimage{#4}%
891     }%
892 }
```

3.21 The \keyfigbox macro

\keyfigbox * [⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*box contents*⟩}

A user-level macro to generate a figure with arbitrary paragraph contents. This may be used by itself, or inside a keyfloats or keysubtabs environment.

```
┌─────────────────────────────────────────────────────────────────┐
│ \keyfigbox                                                        │
│   ┌───────────────────────────────────────────────────────────┐  │
│   │ KFLT@boxouter                                              │  │
│   │   ┌─────────────────────────────────────────────────────┐ │  │
│   │   │ KFLT@boxinner                                        │ │  │
│   │   │   ┌───────────────────────────────────────────────┐ │ │  │
│   │   │   │ \KFLT@frame → \fbox                            │ │ │  │
│   │   │   │   ┌─────────────────────────────────────────┐ │ │ │  │
│   │   │   │   │ turn                                    │ │ │ │  │
│   │   │   │   │   ┌───────────────────────────────────┐ │ │ │ │  │
│   │   │   │   │   │ minipage                          │ │ │ │ │  │
│   │   │   │   │   │   Contents                        │ │ │ │ │  │
│   │   │   │   │   └───────────────────────────────────┘ │ │ │ │  │
│   │   │   │   └─────────────────────────────────────────┘ │ │ │  │
│   │   │   └───────────────────────────────────────────────┘ │ │  │
│   │   └─────────────────────────────────────────────────────┘ │  │
│   └───────────────────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────────────────┘
```

```
893 \NewDocumentCommand{\keyfigbox}{s O{tbp} +m +m}
894 {%
895     \KFLT@ignorespaces%
896     \KFLT@trackrows%
```

```
897    \KFLT@boxkeys{#3}{figure}%
898    \begingroup%
899    \KFLT@boxouter{#1}{#2}%
900    \KFLT@boxinner%
901    #4%
902    \endKFLT@boxinner%
903    \endKFLT@boxouter%
904    \endgroup%
905    \KFLT@ignorespaces%
906 }
```
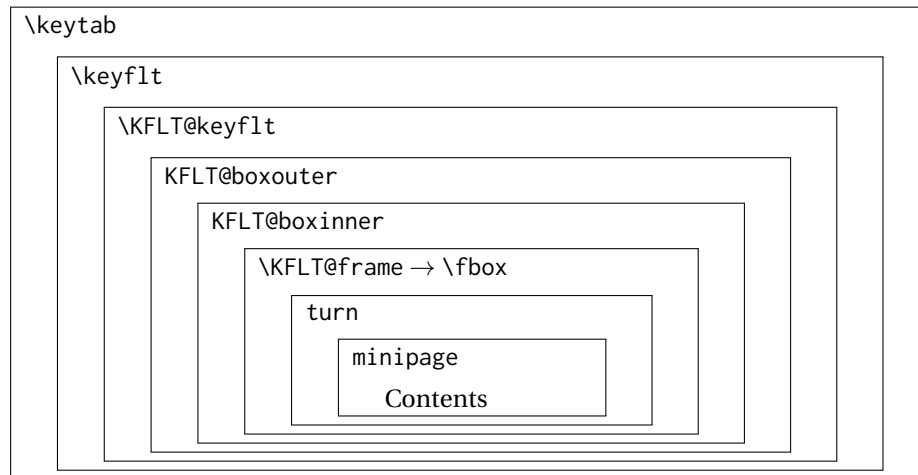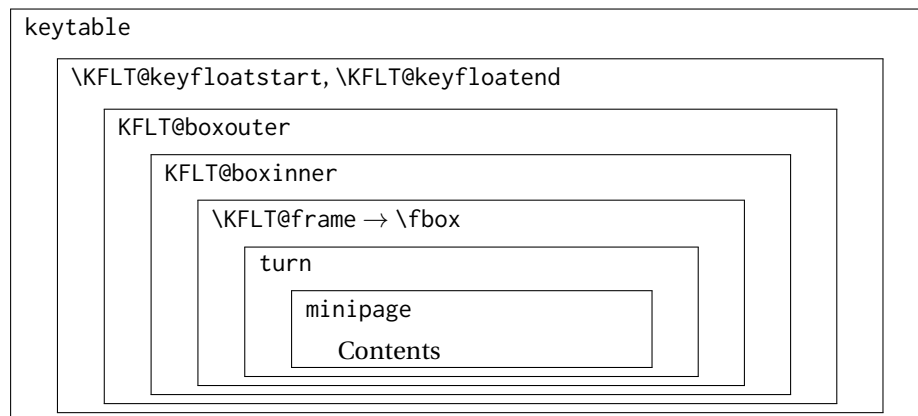
3.22 The \keyparbox macro

\keyparbox * [⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*box contents*⟩}

A user-level macro to generate a figure with arbitrary paragraph contents, but no number or caption. This is equal to a \keyfigbox with cstar={}. This may be used by itself, or inside a keyfloats or keysubtabs environment.

```
907 \NewDocumentCommand{\keyparbox}{s O{tbp} +m +m}
908 {%
909    \KFLT@ignorespaces%
910    \KFLT@trackrows%
911    \KFLT@boxkeys{#3}{figure}%
```

Force cstar={}:

```
912    \renewcommand{\KFLT@c}{}%
913    \setboolean{KFLT@cstar}{true}%
```

Continue like \figbox:

```
914    \begingroup%
915    \KFLT@boxouter{#1}{#2}%
916    \KFLT@boxinner%
917    #4%
918    \endKFLT@boxinner%
919    \endKFLT@boxouter%
920    \endgroup%
921    \KFLT@ignorespaces%
922 }
```

3.23 The \keytab macro

\keytab * [⟨*loc*⟩] {⟨*keys/values*⟩} {⟨*tabular contents*⟩}

A user-level macro to generate a table with tabular contents. This may be used by itself, or inside a keyfloats or keysubtabs environment.

```
┌─────────────────────────────────────────────────────────────────┐
│ \keytab                                                           │
│   ┌─────────────────────────────────────────────────────────┐   │
│   │ \keyflt                                                   │   │
│   │   ┌───────────────────────────────────────────────────┐ │   │
│   │   │ \KFLT@keyflt                                        │ │   │
│   │   │   ┌─────────────────────────────────────────────┐ │ │   │
│   │   │   │ KFLT@boxouter                                │ │ │   │
│   │   │   │   ┌───────────────────────────────────────┐ │ │ │   │
│   │   │   │   │ KFLT@boxinner                          │ │ │ │   │
│   │   │   │   │   ┌─────────────────────────────────┐ │ │ │ │   │
│   │   │   │   │   │ \KFLT@frame → \fbox              │ │ │ │ │   │
│   │   │   │   │   │   ┌───────────────────────────┐ │ │ │ │ │   │
│   │   │   │   │   │   │ turn                       │ │ │ │ │ │   │
│   │   │   │   │   │   │   ┌─────────────────────┐ │ │ │ │ │ │   │
│   │   │   │   │   │   │   │ minipage            │ │ │ │ │ │ │   │
│   │   │   │   │   │   │   │     Contents        │ │ │ │ │ │ │   │
│   │   │   │   │   │   │   └─────────────────────┘ │ │ │ │ │ │   │
│   │   │   │   │   │   └───────────────────────────┘ │ │ │ │ │   │
│   │   │   │   │   └─────────────────────────────────┘ │ │ │ │   │
│   │   │   │   └───────────────────────────────────────┘ │ │ │   │
│   │   │   └─────────────────────────────────────────────┘ │ │   │
│   │   └───────────────────────────────────────────────────┘ │   │
│   └─────────────────────────────────────────────────────────┘   │
└─────────────────────────────────────────────────────────────────┘
```

```
923 \NewDocumentCommand{\keytab}{s O{tbp} +m +m}
924 {%
925     \IfBooleanTF{#1}{%
926         \keyflt*[#2]{table}{#3}{#4}%
927     }{%
928         \keyflt[#2]{table}{#3}{#4}%
929     }%
930 }
```

3.24   The keytable environment

keytable (*env.*) * [⟨*loc*⟩] {⟨*keys/values*⟩}

```
┌─────────────────────────────────────────────────────────────────┐
│ keytable                                                          │
│   ┌─────────────────────────────────────────────────────────┐   │
│   │ \KFLT@keyfloatstart, \KFLT@keyfloatend                    │   │
│   │   ┌───────────────────────────────────────────────────┐ │   │
│   │   │ KFLT@boxouter                                       │ │   │
│   │   │   ┌─────────────────────────────────────────────┐ │ │   │
│   │   │   │ KFLT@boxinner                                │ │ │   │
│   │   │   │   ┌───────────────────────────────────────┐ │ │ │   │
│   │   │   │   │ \KFLT@frame → \fbox                    │ │ │ │   │
│   │   │   │   │   ┌─────────────────────────────────┐ │ │ │ │   │
│   │   │   │   │   │ turn                             │ │ │ │ │   │
│   │   │   │   │   │   ┌───────────────────────────┐ │ │ │ │ │   │
│   │   │   │   │   │   │ minipage                   │ │ │ │ │ │   │
│   │   │   │   │   │   │     Contents               │ │ │ │ │ │   │
│   │   │   │   │   │   └───────────────────────────┘ │ │ │ │ │   │
│   │   │   │   │   └─────────────────────────────────┘ │ │ │ │   │
│   │   │   │   └───────────────────────────────────────┘ │ │ │   │
│   │   │   └─────────────────────────────────────────────┘ │ │   │
│   │   └───────────────────────────────────────────────────┘ │   │
│   └─────────────────────────────────────────────────────────┘   │
└─────────────────────────────────────────────────────────────────┘
```

```
931 \NewDocumentEnvironment{keytable}{s O{tbp} +m}
932 {%
933     \KFLT@keyfloatstart{#1}{#2}{table}{#3}%
934 }%
935 {%
936     \KFLT@keyfloatend%
937 }
```

Before \env {keytable} Extra code to track rows outside of the keytable environment, before it starts. This is
                        done to allow nesting without losing track of the prior level.

```
938 \BeforeBeginEnvironment{keytable}{%
939     \KFLT@trackrows%
940 }
```

3.25   A row of floats

\KFLT@nonest Error message if tried to nest subfloats.

```
941 \newcommand*{\KFLT@nonest}{%
942     \ifboolexpr{%
943         test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{0}} or
944         bool {KFLT@inkeysubfloats}%
945     }%
946     {%
947         \PackageError{keyfloat}%
948         {%
949             Cannot nest keysubfigs or keysubtabs.\MessageBreak%
950             (Not in outer par mode.)%
951         }%
952         {%
953             The subcaption package do not support nested environments,%
954                 \MessageBreak
955             so the keyfloat package cannot place a\MessageBreak
956             keysubfigs or keysubtabs environment inside another,%
957                 \MessageBreak
958             or inside a keyfloats.%
959         }%
960     }%
961     {}%
962 }
```

\KFLT@LWR@hook@keyfloats Used by lwarp.

```
963 \newcommand*{\KFLT@LWR@hook@keyfloats}{}%
```

LWR@hook@keyfloatsminipage (*env.*) {⟨*contents*⟩}

Modified by lwarp.

```
964 \newenvironment*{KFLT@LWR@hook@keyfloatsminipage}[1]
965     {\noindent\minipage[\KFLT@va]{#1}}
966     {\endminipage}
```

keyfloats (*env.*) * [⟨*loc*⟩] {⟨*num columns*⟩} [⟨*shared keys/values*⟩]

User-level macro to create rows of figures/tables. Wrapping occurs after the number
of specified columns. keyfloats environments may be nested to create a vertical set
of figures next to a single larger figure, for example.

Place \keyfig, \keyfigbox, and \keytab commands inside the keyfloats environment.

Note that lw linewidth keys may need to be adjusted inside a keyfloats, keysubfigs, or keysubtabs, since \linewidth changes depending on the number of columns. Likewise, manually-selected w width and h tags may need to be adjusted to prevent overflow.

---

keyfloats

> **If [H], nested, subfloats, or keywrap:** Uses a minipage.
>
> **If [W]:** Uses a wrapfloat.
>
> **If [M]:** Uses \KFLT@marginfloat.
>
> **Otherwise:** Uses a figure.
>
>   Contents
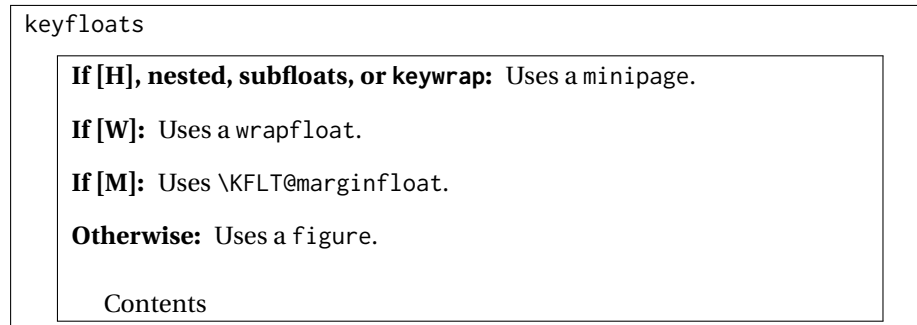
```
967 \NewDocumentEnvironment{keyfloats}{s O{tbp} m O{}}
968 {%
969     \KFLT@envignorespaces%
```

A hook for lwarp to set \linewidth, etc.

```
970     \KFLT@LWR@hook@keyfloats%
```

Track the depth:

```
971     \addtocounter{KFLT@keyfloatdepth}{1}%
```

Nest the group's keys.

```
972     \edef\KFLT@outersharedkeys{\KFLT@sharedkeys}%
973     \edef\KFLT@sharedkeys{\KFLT@sharedkeys,#4}%
```

If [H], nested, subfloats, or keywrap, use a minipage instead of a float:

```
974     \ifboolexpr{%
975         test {\ifstrequal{#2}{H}} or
976         test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{1}} or
977         bool {KFLT@inkeysubfloats} or
978         bool {KFLT@keywrap}%
979     }%
```

Create an inline minipage:

```
980     {% [H] or nested
```

If nested, use different spacing as was computed in the outer nesting level:

```
981         \ifboolexpr{%
982             test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{1}} or
983             bool {KFLT@inkeysubfloats}
984         }%
985         {%
```

Use the keys from the outer container. Expansion required for xkeyval.

```
986             \edef\next{\noexpand\setkeys{KFLT@keys}{\KFLT@outersharedkeys}}%
987             \next%
```

Create the containing minipage:

```
988             \KFLT@LWR@hook@keyfloatsminipage{\KFLT@rowboxwidth}%
989         }%
990         {%
991             \vskip\intextsep%
992             \KFLT@LWR@hook@keyfloatsminipage{\linewidth}%
993         }%
```

Reset font and color:

```
994         \normalcolor\reset@font\normalsize%
```

If inside subfloats, generate subfigures by default:

```
995         \ifbool{KFLT@inkeysubfloats}%
996             {}%
997             {\captionsetup*{type=figure}}%
998     }% [H] or nested
```

Isn't [H] or nested

```
999     {% See if [W]:
1000        \ifstrequal{#2}{W}
1001        {% [W]:
```

[W]:

```
1002            \wrapfloat{figure}{O}{.5\linewidth}%
1003            \minipage{\linewidth}%
```

Inside this minipage, temporarily prevent underfull \hbox warnings:

```
1004            \hbadness=10000\relax%
```

```
1005            \normalcolor\reset@font\normalsize%
1006        }%
1007        {% not [H]:
1008            \ifstrequal{#2}{M}%
1009            {% [M]:
```

[M]:

```
1010              \KFLT@marginfloat{figure}%
1011          }%
```

A normal figure:

```
1012          {% figure
1013          \IfBooleanTF{#1}% starred figure, two-col figure in a two-col format
1014                  {\begin{figure*}[#2]}%
1015                  {\begin{figure}[#2]}%
1016          }% figure
1017      }% not [H]
1018  }%
```

Compute the width of each entry:

```
1019  \ifboolexpr{%
1020      test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{1}} or
1021      bool {KFLT@inkeysubfloats}
1022  }%
```

Nested or subfloats:

```
1023      {\setlength{\KFLT@rowboxwidth}{.9\KFLT@rowboxwidth/\real{#3}}}%
```

Keyfloats:

```
1024      {\setlength{\KFLT@rowboxwidth}{.9\linewidth/\real{#3}}}%
```

Center the contents:

```
1025  \centering%
```

Count columns using \defcounter for a local effect:

```
1026  \defcounter{KFLT@numcols}{#3}%
1027  \defcounter{KFLT@thiscol}{0}%
1028 }% starting keyfloats environment
```

When ending a keyfloats environment:

```
1029 {% ending keyfloats environment
```

[H] or rows/subfigs? Close a minipage:

```
1030  \ifboolexpr{%
1031      test {\ifstrequal{#2}{H}} or
1032      test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{1}} or
1033      bool {KFLT@inkeysubfloats} or
1034      bool {KFLT@keywrap}
1035  }%
```

```
1036      {% was [H], etc.
1037          \endKFLT@LWR@hook@keyfloatsminipage%
1038 %          \end{minipage}%
```

Spacing if nested or not:

```
1039          \ifboolexpr{
1040              test {\ifnumgreater{\value{KFLT@keyfloatdepth}}{0}} or
1041              bool {KFLT@keywrap}
1042          }%
1043          {}{% not nested
1044              \vskip\intextsep%
1045          }%
1046      }% was [H], etc.
```

Not [H]:

```
1047      {% not [H], etc.
1048          \ifstrequal{#2}{W}%
1049          {% [W]:
```

[W]:

```
1050              \endminipage%
1051              \endwrapfloat%
1052          }%
1053          {%
1054              \ifstrequal{#2}{M}%
1055              {% [M]:
```

[M]:

```
1056                  \endKFLT@marginfloat%
1057              }%
1058              {% figure
```

A figure:

```
1059                  \IfBooleanTF{#1}% starred figure?
1060                      {\end{figure*}}{\end{figure}}%
1061              }%
1062          }%
1063      }% not [H], etc.
```

Unnest the environment:

```
1064      \addtocounter{KFLT@keyfloatdepth}{-1}%
1065      \KFLT@envignorespaces%
1066 }
```

Before \env {keyfloats} Extra code to track rows outside of the keyfloats environment, before it starts. This

is done to allow nesting without losing track of the prior level.

```
1067 \BeforeBeginEnvironment{keyfloats}{%
1068     \KFLT@trackrows%
1069 }
```

3.26   Subfloats

\KFLT@subgrpdefaults Sets defaults before reading the keys.

```
1070 \newcommand*{\KFLT@subgrpdefaults}{%
1071     \setboolean{KFLT@subgrpcont}{false}%
1072     \renewcommand{\KFLT@subgrpc}{}%
1073     \setboolean{KFLT@subgrpcstar}{false}%
1074     \renewcommand{\KFLT@subgrpsc}{}%
1075     \setboolean{KFLT@subgrpscgiven}{false}%
1076     \renewcommand{\KFLT@subgrptype}{figure}%
1077     \renewcommand{\KFLT@subgrpl}{}%
1078     \renewcommand{\KFLT@subgrpap}{}%
1079     \renewcommand{\KFLT@subgrpaf}{}%
1080     \renewcommand{\KFLT@subgrpal}{}%
1081     \renewcommand{\KFLT@subgrpas}{}%
1082     \renewcommand{\KFLT@subgrpaup}{}%
1083     \renewcommand{\KFLT@subgrpauf}{}%
1084     \renewcommand{\KFLT@subgrpaul}{}%
1085     \renewcommand{\KFLT@subgrpaus}{}%
1086     \renewcommand{\KFLT@subgrpt}{}%
1087     \renewcommand{\KFLT@subgrptextalign}{}%
1088 }
```

KFLT@subcaptionistop (*bool*)   Saves the value of \caption@position, which may become unreliable if using Komascript and

$$\texttt{\textbackslash captionsetup[table]\{position=above\}}$$

```
1089 \newbool{KFLT@subcaptionistop}
```

\KFLT@subfloats {⟨*starred?*⟩} {⟨*loc*⟩} {⟨*cols*⟩} {⟨*keys/values*⟩}

> \KFLT@subfloats, \KTLT@endsubfloats
>
> > **If [H] or keywrap:** Uses a minipage.
> >
> > **If [W]:** Uses a wrapfloat and a minipage.
> >
> > **If [M]:** Uses \KFLT@marginfloat.
> >
> > **Otherwise:** Uses a subfigure, etc.
> >
> > Contents

Start a subfloat environment

```
1090 \NewDocumentCommand{\KFLT@subfloats}{m m m +m}
1091 {%
1092     \KFLT@envignorespaces%
```

Parse the key-value combinations:

```
1093     \setkeys{KFLT@subgrpkeys}{#4}%
```

Nest the environment:

```
1094     \setboolean{KFLT@inkeysubfloats}{true}%
```

Figure out the width of each subfloat. If starred, use the full-page `\textwidth`, else use `\linewidth`. .9 is used to leave a little room between columns.

```
1095     \IfBooleanTF{#1}%
1096         {\setlength{\KFLT@rowboxwidth}{.9\textwidth/\real{#3}}}%
1097         {\setlength{\KFLT@rowboxwidth}{.9\linewidth/\real{#3}}}%
```

If [H], or in a `keywrap`, create an inline minipage:

```
1098     \ifboolexpr{%
1099         test {\ifstrequal{#2}{H}} or
1100         bool {KFLT@keywrap}
1101     }%
1102     {%
1103         \vskip\intextsep\noindent\begin{minipage}{\linewidth}%
1104         \normalcolor\reset@font\normalsize%
1105     }%
```

Not [H]:

```
1106     {%
1107         \ifstrequal{#2}{W}%
1108         {% [W]
```

[W]:

```
1109             \wrapfloat{\KFLT@subgrptype}{O}{.5\linewidth}%
1110             \setlength{\KFLT@rowboxwidth}{.5\KFLT@rowboxwidth}%
1111             \minipage{\linewidth}%
```

Inside this minipage, temporarily prevent underfull `\hbox` warnings:

```
1112             \hbadness=10000\relax%

1113             \normalcolor\reset@font\normalsize%
1114         }%
1115         {% not [H]:
1116             \ifstrequal{#2}{M}%
1117             {% [M]:
```

[M]:

```
1118                    \KFLT@marginfloat{\KFLT@subgrptype}%
1119                    \setlength{\KFLT@rowboxwidth}{.9\marginparwidth/\real{#3}}%
1120                }% [M]
1121                {% subfloat
```

A subfloat:

```
1122                    \IfBooleanTF{#1}%
1123                        {\begin{\KFLT@subgrptype*}[#2]}%
1124                        {\begin{\KFLT@subgrptype}[#2]}%
1125                }%
1126            }% not [H]
1127        }%
```

Set the caption type:

```
1128        \captionsetup*{type=\KFLT@subgrptype}%
```

Process continued floats:

```
1129        \ifbool{KFLT@subgrpcont}%
1130            {\ContinuedFloat}%
1131            {}%
```

Center the contents:

```
1132        \center\unskip%
```

Place the caption above the contents depending on caption position option:

```
1133        \caption@iftop%
1134            {\booltrue{KFLT@subcaptionistop}}%
1135            {\boolfalse{KFLT@subcaptionistop}}%
1136        \ifbool{KFLT@subcaptionistop}{\KFLT@caption{subgrp}}{}%
```

Not yet started a row of subfloats. The use of \defcounter makes these changes local.

```
1137        \defcounter{KFLT@numcols}{#3}%
1138        \defcounter{KFLT@thiscol}{0}%
```

Creat a group for the subfloats. Necessary in case they change \tdartisttextcenter, etc.

```
1139        \begingroup%
1140 }
```

\KFLT@endsubfloats {⟨*starred?*⟩} {⟨*loc*⟩}

Ends a subfloat environment.

```
1141 \newcommand*{\KFLT@endsubfloats}[2]{%
```

End the group containing the subfloats:

```
1142     \endgroup%
1143     \unskip%
1144     \endcenter%
```

A little extra space at the bottom:

```
1145     \par\addvspace{\bigskipamount}%
```

Optionally print artist's name and additional text:

```
1146     \KFLT@addartisttext{subgrp}%
```

Place the caption below the contents depending on caption position option:

```
1147     \ifbool{KFLT@subcaptionistop}{}{\KFLT@caption{subgrp}}%
```

End the float or minipage:

```
1148     \ifboolexpr{%
1149         test {\ifstrequal{#2}{H}} or
1150         bool{KFLT@keywrap}
1151     }%
1152         {\end{minipage}\vskip\intextsep}% was [H]
1153         {% not [H]:
1154             \ifstrequal{#2}{W}%
1155             {% [W]

1156                 \endminipage%
1157                 \endwrapfloat%
1158             }%
1159             {% not [W]:
1160                 \ifstrequal{#2}{M}%
1161                 {% [M]:

1162                     \endKFLT@marginfloat%
1163                 }% [M]
1164                 {% subfloat
1165                     \IfBooleanTF{#1}% starred?
1166                         {\end{\KFLT@subgrptype*}}%
1167                         {\end{\KFLT@subgrptype}}%
1168                 }%
1169             }% not [W]
1170         }% not [H]
```

Unnest the environment:

```
1171     \setboolean{KFLT@inkeysubfloats}{false}%
```

```
1172    \KFLT@envignorespaces%
1173 }
```

\KFLT@LWR@hook@keysubfloats Used by lwarp.

```
1174 \newcommand*{\KFLT@LWR@hook@keysubfloats}{}
```

KFLT@keysubfloats (*env.*) {⟨*1: star?*⟩} {⟨*2: loc*⟩} {⟨*3: float type*⟩} {⟨*4: numcols*⟩} {⟨*5: keys/values*⟩} {⟨*6: shared keys/values*⟩}

A group of subfigures typeset in rows.

```
┌─────────────────────────────────────────────────────────────────┐
│ KFLT@keysubfloats                                                 │
│  ┌──────────────────────────────────────────────────────────┐    │
│  │ \KFLT@subfloats, \KFLT@endsubfloats                       │    │
│  │   ┌──────────────────────────────────────────────────┐    │    │
│  │   │ If [H] or keywrap: Uses a minipage.               │    │    │
│  │   │                                                    │    │    │
│  │   │ If [W]: Uses a wrapfloat and a minipage.          │    │    │
│  │   │                                                    │    │    │
│  │   │ If [M]: Uses \KFLT@marginfloat.                    │    │    │
│  │   │                                                    │    │    │
│  │   │ Otherwise: Uses a subfigure, etc.                  │    │    │
│  │   │                                                    │    │    │
│  │   │   Contents                                         │    │    │
│  │   └──────────────────────────────────────────────────┘    │    │
│  └──────────────────────────────────────────────────────────┘    │
└─────────────────────────────────────────────────────────────────┘
```
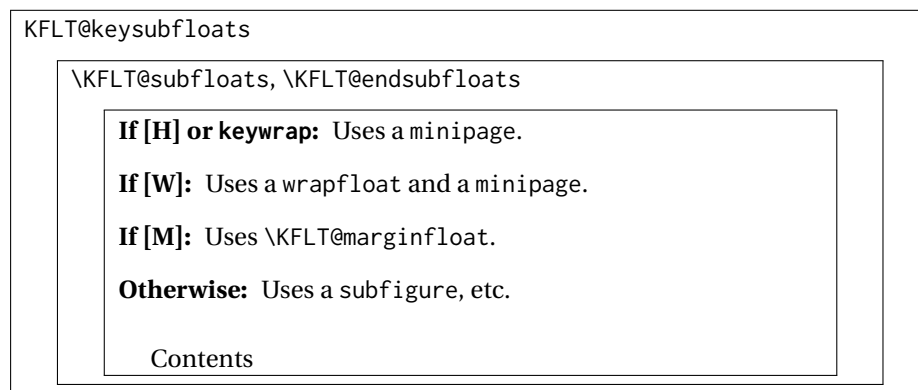
```
1175 \NewDocumentEnvironment{KFLT@keysubfloats}{m m m m +m m}
1176 {%
```

Error if trying to nest environments:

```
1177    \KFLT@nonest%
```

A hook for lwarp to set \linewidth, etc.

```
1178    \KFLT@LWR@hook@keysubfloats%
```

Default the options:

```
1179    \KFLT@subgrpdefaults%
```

Nest the group's keys:

```
1180    \edef\KFLT@sharedkeys{\KFLT@sharedkeys,#6}%
```

Default to figure float type:

```
1181    \renewcommand{\KFLT@subgrptype}{#3}%
```

Start of the environment:

```
1182    \KFLT@subfloats{#1}{#2}{#4}{#5}%
1183 }% the start of the environment
```

end of the environment:

```
1184 {%
1185    \KFLT@endsubfloats{#1}{#2}%
1186 }
```

keysubfloats (*env.*) * [⟨*2: loc*⟩] {⟨*3: float type*⟩} {⟨*4: numcols*⟩} {⟨*5: keys/values*⟩} [⟨*6: shared keys/ values*⟩]

A group of subfloats typeset in rows.

```
┌─────────────────────────────────────────────────────────────┐
│ keysubfloats, keysubfigs, or keysubtabs                      │
│  ┌────────────────────────────────────────────────────────┐ │
│  │ KFLT@keysubfloats                                       │ │
│  │  ┌─────────────────────────────────────────────────┐   │ │
│  │  │ \KFLT@subfloats, \KFLT@endsubfloats             │   │ │
│  │  │  ┌──────────────────────────────────────────┐   │   │ │
│  │  │  │ If [H] or keywrap: Uses a minipage.      │   │   │ │
│  │  │  │ If [W]: Uses a wrapfloat and a minipage. │   │   │ │
│  │  │  │ If [M]: Uses \KFLT@marginfloat.          │   │   │ │
│  │  │  │ Otherwise: Uses a subfigure, etc.        │   │   │ │
│  │  │  │   Contents                               │   │   │ │
│  │  │  └──────────────────────────────────────────┘   │   │ │
│  │  └─────────────────────────────────────────────────┘   │ │
│  └────────────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────────┘
```
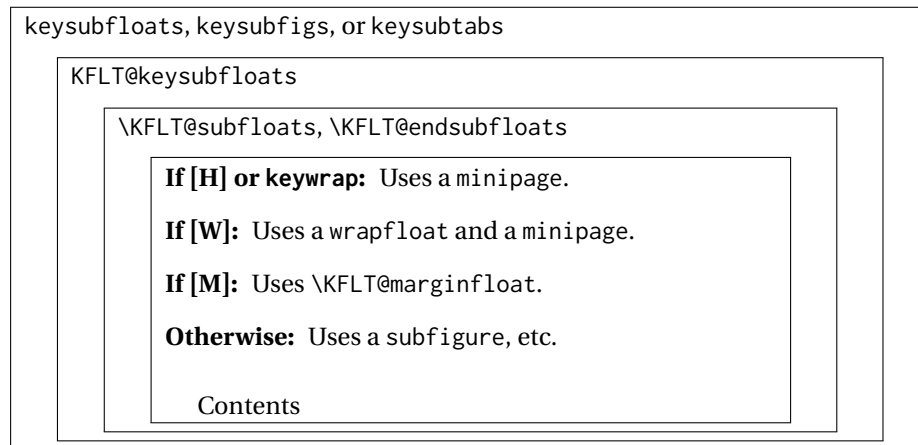
```
1187 \NewDocumentEnvironment{keysubfloats}{s O{tbp} m m +m O{}}
1188    {\KFLT@keysubfloats{#1}{#2}{#3}{#4}{#5}{#6}}
1189    {\endKFLT@keysubfloats}
```

keysubfigs (*env.*) * [⟨*2: loc*⟩] {⟨*3: numcols*⟩} {⟨*4: keys/values*⟩} [⟨*5: shared keys/values*⟩]

A group of subfigures typeset in rows.

```
1190 \NewDocumentEnvironment{keysubfigs}{s O{tbp} m +m O{}}
1191    {\KFLT@keysubfloats{#1}{#2}{figure}{#3}{#4}{#5}}
1192    {\endKFLT@keysubfloats}
```

keysubtabs (*env.*) * [⟨*2: loc*⟩] {⟨*3: numcols*⟩} {⟨*4: keys/values*⟩} [⟨*5: shared keys/values*⟩]

A group of subtables typeset in rows.

```
1193 \NewDocumentEnvironment{keysubtabs}{s O{tbp} m +m O{}}
1194    {\KFLT@keysubfloats{#1}{#2}{table}{#3}{#4}{#5}}
1195    {\endKFLT@keysubfloats}
```

3.27 Margin floats

KFLT@marginfloat (*env.*) [⟨*offset*⟩] {⟨*type*⟩}

```
┌─────────────────────────────────────────────────────────┐
│ KFLT@marginfloat                                        │
│   ┌───────────────────────────────────────────────────┐ │
│   │ \marginpar                                        │ │
│   │   ┌─────────────────────────────────────────────┐ │ │
│   │   │ minipage                                    │ │ │
│   │   │   Contents                                  │ │ │
│   │   └─────────────────────────────────────────────┘ │ │
│   └───────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────┘
```
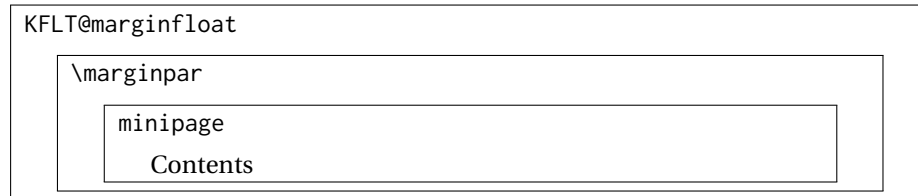
```
1196 \newsavebox{\KFLT@marginfloatbox}
1197
1198 \NewDocumentEnvironment{KFLT@marginfloat}{O{-1.2ex} m}
1199 {% start
1200     \FloatBarrier% keep floats in order
1201     \KFLT@envignorespaces%
1202     \begin{lrbox}{\KFLT@marginfloatbox}%
1203     \begin{minipage}{\marginparwidth}%
1204     \captionsetup{type=#2}%
1205     \hbox{}\vspace*{#1}%
1206     \noindent%
1207     \normalcolor\reset@font\normalsize%
1208 }% start
1209 {% end
1210     \end{minipage}%
1211     \end{lrbox}%
1212     \marginpar{\usebox{\KFLT@marginfloatbox}}%
1213     \KFLT@envignorespaces%
1214 }% end
```

Provided in case tufte-book is not loaded:

marginfigure (*env.*) [⟨*offset*⟩]

```
┌─────────────────────────────────────────────────────────┐
│ marginfigure                                            │
│   ┌───────────────────────────────────────────────────┐ │
│   │ KFLT@marginfloat                                  │ │
│   │   ┌─────────────────────────────────────────────┐ │ │
│   │   │ \marginpar                                  │ │ │
│   │   │   ┌───────────────────────────────────────┐ │ │ │
│   │   │   │ minipage                              │ │ │ │
│   │   │   │   Contents                            │ │ │ │
│   │   │   └───────────────────────────────────────┘ │ │ │
│   │   └─────────────────────────────────────────────┘ │ │
│   └───────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────┘
```
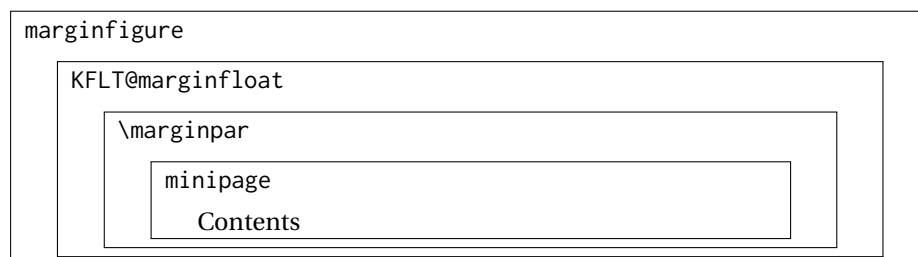
```
1215 \ProvideDocumentEnvironment{marginfigure}{O{-1.2ex}}
1216   {\begin{KFLT@marginfloat}[#1]{figure}}
1217   {\end{KFLT@marginfloat}}
```

margintable (*env.*) [⟨*offset*⟩]

```
1218 \ProvideDocumentEnvironment{margintable}{O{-1.2ex}}
1219   {\begin{KFLT@marginfloat}[#1]{table}}
1220   {\end{KFLT@marginfloat}}
```

3.28 Wrapped floats

KFL@keywrap (*bool*)   Tells the next keyfloat to wrap around some text.

```
1221 \newboolean{KFLT@keywrap}
1222 \boolfalse{KFLT@keywrap}
```

\KFLT@keywrapwidth (*Len*)   The width of the object to be wrapped beside the text.

```
1223 \newlength{\KFLT@keywrapwidth}
```

\KFLT@keywrapparskip (*Len*)   The \parskip outside of the keywrap.

```
1224 \newlength{\KFLT@keywrapparskip}
```

\KFLT@keywrapparindent (*Len*)   The \parindent outside of the keywrap.

```
1225 \newlength{\KFLT@keywrapparindent}
```

keywrap (*env.*) {⟨*width*⟩} {⟨*wrapped content*⟩}

The main text is placed in a minipage to the left, and the wrapped content is later placed in another minipage to the right.
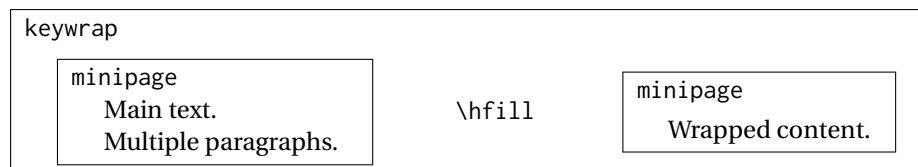

```
1226 \DeclareDocumentEnvironment{keywrap}{m +m}%
1227 {%
1228     \par\noindent%
1229     \setlength{\KFLT@keywrapwidth}{\linewidth}%
1230     \addtolength{\KFLT@keywrapwidth}{-#1}%
1231     \addtolength{\KFLT@keywrapwidth}{-2em}%
1232     \minipage[t]{\KFLT@keywrapwidth}%
1233 %
1234     \setlength{\parskip}{\KFLT@keywrapparskip}%
1235     \setlength{\parindent}{\KFLT@keywrapparindent}%
1236     \booltrue{KFLT@keywrap}%
1237 }
1238 {%
1239     \par%
1240     \endminipage%
1241     \hfill%
```

```
1242      \begin{minipage}[t]{#1}%
1243      \booltrue{KFLT@keywrap}%
1244      \normalcolor\reset@font\normalsize%
```

Inside this minipage, temporarily prevent underfull \hbox warnings:

```
1245      \hbadness=10000\relax%
```

```
1246      #2%
1247      \par%
1248      \unskip\vspace{\smallskipamount}%
1249      \end{minipage}%
1250      \par%
1251 }
1252
1253 \BeforeBeginEnvironment{keywrap}{%
1254      \setlength{\KFLT@keywrapparskip}{\parskip}%
1255      \setlength{\KFLT@keywrapparindent}{\parindent}%
1256 }
```

4   **keyfloat** package maintenance

To compile `keyfloat.sty` and `\keyfloat.pdf` from `keyfloat.dtx` and `keyfloat.ins`:

```
pdflatex keyfloat.ins
pdflatex keyfloat.dtx
pdflatex keyfloat.dtx
pdflatex keyfloat.dtx
makeindex -s gglo.ist -o keyfloat.gls keyfloat.glo
splitindex keyfloat.idx -- -s gind.ist
pdflatex keyfloat.dtx
pdflatex keyfloat.dtx
```

Change History

For the most recent changes, see page .

Index of Objects

This is an index of macros, environments, booleans, counters, lengths, packages, classes, options, keys, files, and various other programming objects. Each is listed by itself, and also by category. In some cases, they are further subdivided by [class].

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition.

113

General Index

This is a general index, including how-to and troubleshooting.

Index of Indexes