

The `rotfloat` package*

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Abstract

The `float` package [1] provides commands to define new floats of various styles (`plain`, `boxed`, `ruled`, and userdefined ones); the `rotating` package [2] provides new environments (`sidewaysfigure` and `sidewaystable`) which are rotated by 90° or 270° . But what about new rotated floats, e.g. a rotated ruled one? This package makes this possible; it builds a bridge between both packages and extend the commands from the `float` package to define rotated versions of the new floats, too.

1 The user interface

To use this package just type

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

in the preamble of your document. The options are exactly the same as for the `rotating` package, in fact this package hasn't got any own options at all.

`\newfloat` The commands `\newfloat` and `\restylefloat` from the `float` package (re)define
`\restylefloat` the float type *<type>* and now additionally a rotated one called *<sideways>**type*:

```
\newrotfloat{<type>}{<placement>}{<ext>}[<within>]  
\restylerotfloat{<type>}
```

E.g. the code

```
\floatstyle{ruled}  
\floatname{program}{Program}  
\newfloat{program}{tbp}{lop}[section]
```

defines the new floating environments `program`, `program*`, and `sidewaysprogram` which behave equivalent to `figure`, `figure*`, and `sidewaysfigure`.

The code

```
\floatstyle{boxed}  
\restylefloat{table}
```

will restyle the environments `table`, `table*`, and `sidewaystable`.

*This package has version number 1.0, last revised 1995/03/30.

Please take a look at the `float` package for a complete description of these commands. Additionally an example file is provided with this package.

2 A final note

This package was written and tested with the version 1.2 of the `float` package and version 2.6 of the `rotating` package. You should **not** use this package together with older versions of them!

Future versions of these packages may make some trouble, but I hope they will not.

3 The code

3.1 The identification part

```
1 \NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 \ProvidesPackage{rotfloat}[1995/03/30 v1.0 rotfloat package (AS)]
3 \typeout{Package: rotfloat v1.0 <1995/03/30> (Axel Sommerfeldt)}
```

3.2 The declaration and execution of options

The `rotfloat` package hasn't got any own options, so we just pass everything we get to the `rotating` package.

```
4 \DeclareOption*{\PassOptionsToPackage{\CurrentOption}{rotating}}
5 \ProcessOptions
```

3.3 The package loading part

Of course this package needs the `float` and the `rotating` package, so we load them here.

```
6 \RequirePackage{float}[1994/06/20]
7 \RequirePackage{rotating}%[1995/01/06]
```

3.4 Adaption of the float package

`\float@end` First of all one improvement of the `float` package: `\float@end` now calls `\end@float` from the $\text{\LaTeX} 2_\epsilon$ kernel. This code is more independent of what's really going on in the $\text{\LaTeX} 2_\epsilon$ macros `\float` and `\end@float` than the original code of the `float` package is.

```
8 \renewcommand*\float@end{%
9   \egroup%
10  \global\setbox\@currbox\vbox\bgroup%
11  \float@makebox\end@float\egroup}
```

`\@HHfloat` This patch has two functions: First of all, an error of the `float` package is fixed that causes floats with the placement specifier `[H]` to look differ from floats with other float placements. Additionally this patch is required to make the sideways floats work with the placement `[H]`.

```
12 \def\@HHfloat#1[H]{\@Hxfloat{#1}[\!ht]}
13 \let\float@endH\undefined
```

3.5 The main code part

If you really want to know what's exactly going on here, you have to study the code from the packages `float` and `rotating` first!

```
\rotfloat@restyle First, we save the old definition of \restylefloat because we need it later on.
14 \let\rotfloat@restyle\restylefloat

\restylefloat The new code for \restylefloat behaves quite like the old one, but it defines a
sideways float as well. What differs sideways floats from the 'normal' ones?

1. \columnwidth ist set to \textheight before calling \@float (\@float itself
set \hsize to \columnwidth).

2. \rotfloat@end is used instead of \float@end.

3. We define no *-form of the environment because a rotated float always fills
the whole page.

15 \renewcommand*\restylefloat[1]{%
16 \rotfloat@restyle{#1}%
17 \@namedef{sideways#1}{%
18 \bgroup\@nameuse{fst@#1}\columnwidth\textheight\@float{#1}}%
19 \expandafter\let\csname endsideways#1\endcsname\rotfloat@end}

\rotfloat@end This macro does all the stuff that \float@end does and of course more:
First of all, we finish the definition of \@currbox with \egroup. Then we set
\@currbox to the new contents:

1. \@rotfloat (but without the contents of \@float)

2. \float@makebox (which includes the contents of \@float = \@currbox)

3. \end@rotfloat (which includes \end@float)

Finally we finish the whole group (started in \@namedef{sideways#1} within
\restylefloat) with \egroup.

20 \newcommand*\rotfloat@end{%
21 \egroup%
22 \global\setbox\@currbox\ vbox\bgroup%
23 \def\@float##1[##2]{\let\@xfloat\@float\@rotfloat{}}%
24 \float@makebox\end@rotfloat\egroup}
```

References

- [1] Anselm Lingnau: *An Improved Environment for Floats*, 1994/06/20
- [2] Sebastian Rahtz and Leonor Barroca: *A style option for rotated objects in L^AT_EX*, 1994/08/26