

Quick floats in LaTeX

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Abstract

The `trivfloat` package provides a quick method for defining new float types in LaTeX. A single command sets up a new float in the same style as the LaTeX kernel `figure` and `table` float types.

1 Introduction

The LaTeX kernel provides the `figure` and `table` floating environment, but does not provide an easy method for defining new float types. This problem is addressed by the `float` package, which provides an array of commands to create new float types. However, the one command missing is a quick-and-dirty one to set up a new float type with no customisation. This is addressed by the `trivfloat` package.

2 Usage

<code>\trivfloat</code> <code>\listoffloat-names</code>	The package provides a single command to produce the new float type, <code>\trivfloat</code> . This takes a single argument <code>{\float-name}</code> , which will be the name of the new floating environment. The new environment can be used as normal; the new floats should behave exactly the same as <code>figure</code> and <code>table</code> environments. The command <code>\listof\float-name</code> s is also provided.
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3 Implementation

3.1 Setup code

The first part of the package is concerned with basic identification and loading support packages.

```
1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{trivfloat}
3 [2007/06/09 v1.0 Quick floats in LaTeX]
4 \RequirePackage{float}
```

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3.2 Internal macros

`\tfl@floatcount` A new counter is needed to track how many floats have been generated by `trivfloat`.

```
5 \newcount\tfl@floatcount%
```

`\tfl@genext` Each float type needs a list to store entries when generating a contents listing.
`\tfl@ext@i` Rather than try complex things with the initial characters of the float name, an arbitrary file extension is used. Note that `lof`, `log` and `lot` are taken by default, so we don't use them. Also notice that if people try to make too many new float types, then extension `xxx` will be used. This is very unlikely, but odd things might happen so we warn them.

```
6 \def\tfl@genext{%
7   \expandafter\def\csname tfl@ext@\romannumeral\tfl@floatcount%
8     \expandafter\endcsname{%
9     \ifcase\tfl@floatcount%
10      \PackageError{trivfloat}%
11        {Something's wrong here --- Contact the package author!}%
12      \@eha%
13      \or % 1
14        loa%
15      \or % 2
16        lob%
17      \or % 3
18        loc%
19      \or % 4
20        lod%
21      \or % 5
22        loe%
23      \or % 6
24        loh%
25      \or % 7
26        loi%
27      \or % 8
28        loj%
29      \or % 9
30        lok%
31      \or % 10
32        lol%
33      \or % 11
34        lom%
35      \or % 12
36        lon%
37      \or % 13
38        loo%
39      \or % 15
40        loq%
41      \or % 16
42        lor%
```

```

43    \or % 17
44        los%
45    \or % 18
46        lou%
47    \or % 19
48        lov%
49    \or % 20
50        low%
51    \or % 21
52        lox%
53    \or % 22
54        loy%
55    \or % 23
56        loz%
57    \else % 24 or more
58        \PackageWarning{trivfloat}%
59            {I've run out of extensions \MessageBreak%
60                I'm using \jobname.xxx to list all future floats}%
61        xxx%
62    \fi%
63 }%
64}%

```

`\tfl@gennam` The conversion of the supplied float name to a form suitable for using as a title is
`\tfl@gennam` achieved here. We strip off the first letter, convert to uppercase, then convert the
`\tfl@name@i` rest to lowercase. Thanks to Martin Heller for the method to strip the first letter
off.

```

65\def\tfl@gennam#1#2\end{%
66    \expandafter\def\csname tfl@name@\romannumeral\tfl@floatcount%
67        \expandafter\endcsname{%
68        \MakeUppercase{#1}%
69        \MakeLowercase{#2}%
70    }%
71}%
72\def\tfl@gennam#1{%
73    \tfl@gennam#1\end%
74}%

```

`\tfl@list` An auxiliary function is needed to define the `\listof\emph{float-name}s`
`\listoffloat-names` macros. This is to ensure that expansion occurs properly.

```

75\def\tfl@list#1#2#3{%
76    \newcommand*{#1}{\listof{#2}{#3}}%
77}%

```

3.3 User space macros

`\trivfloat` The only user-facing macro we need is `\trivfloat`. This does the work of setting
up the new float type. Thanks to Heiko Oberdiek for the method to expand ar-
guments correctly. Notice that a single command for the extension would work.

However, the float name does need different commands for each float. So for consistency, both have numerals appended.

```

78 \newcommand*{\trivfloat}[1]{%
79   \advance\tfl@floatcount\@ne%
80   \tfl@genext%
81   \tfl@genname{#1}%
82   \PackageInfo{trivfloat}%
83   {Listing all floats of type #1 in \jobname.%
84     \csname tfl@ext@\romannumeral\tfl@floatcount\endcsname}%
85   \begingroup%
86     \edef\x{\endgroup%
87       \noexpand\newfloat{#1}{tbp}{%
88         \csname tfl@ext@\romannumeral\tfl@floatcount\endcsname%
89       }%
90       \noexpand\floatname{#1}{%
91         \expandafter\noexpand%
92         \csname tfl@name@\romannumeral\tfl@floatcount\endcsname%
93       }%
94       \noexpand\tfl@list{\csname listof#1s\endcsname}{#1}{%
95         List of \expandafter\noexpand%
96         \csname tfl@name@\romannumeral\tfl@floatcount\endcsname s%
97       }%
98     }%
99   \x%
100}%

```

Change History

v1.0
 General: Initial public release 1

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

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