Using tabular figures with LaTeX

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Abstract

The tabfigures package is a collection of patches for using tabular figures in some LaTeX environments where numbers should line up vertically such as the table of contents and enumerations.

1 Introduction

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Traditionally, there has been no distinction between proportional figures (0123456789) and tabular figures (0123456789) in LaTeX. Effectively, the fonts commonly in use with LaTeX only include figures of uniform width. This is why, with fonts like Minion Pro, which use proportional figures by default, you have to specifically adapt your document class or even the LaTeX kernel to employ tabular figures in the right places: the table of contents, enumerations and other material where numbers should line up vertically. The tabfigures package tries to assist you in the most common situations. Throughout this document, tabular figures are colored green.

2 Usage

The current version of this package requires ε-TeX and the etoolbox package (version 2.0a or later). You can load this package by putting

```
\usepackage[⟨options⟩]{tabfigures}
```

in the preamble of your document. The options, which are described in the next sections, control in which parts of your document tabular figures are used. (If no options are specified, the package has no effect.)

To have any effect, this package relies on the existence of a command `\tbfigures` to switch to tabular figures. For instance, the MinionPro package defines this command. (More precisely, the fontaxes package, which is included by MinionPro, defines this command). However, this package can also be used as a companion to the fontspec package: if fontspec is loaded (and `\tbfigures` is not defined), this package defines `\tbfigures` as an alias for `\addfontfeatures{Numbers=Monospaced}`. In this way, tabfigures can also be used with XeTeX and LuaTeX (provided a suitable OpenType font is loaded with fontspec).

3 Options

`toc` The `toc` option controls whether tabular figures are used for the numbering and page numbers in the table of contents, the list of tables/figures, and similar lists.

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`eqno` The `eqno` option enables tabular figures in equation numbers.

$$x = y \qquad X = Y \qquad a = b + c \tag{19}$$
$$x' = y' \qquad X' = Y' \qquad a' = b \tag{20}$$
$$x + x' = y + y' \qquad X + X' = Y + Y' \qquad a'b = c'b \tag{21}$$

`enum` The `enum` option turns on tabular figures in enumerations.

39. The world's fastest supercomputer will have its speed measured in "petaflops", which represent 1,000 trillion calculations per second.

40. The medical name for the part of the brain associated with teenage sulking is "superior temporal sulcus".

41. Some Royal Mail stamps, which of course carry the Queen's image, are printed in Holland.

`bib` The `bib` option activates tabular figures for the labels in the bibliography.

[19] Leslie Lamport. LaTeX: A Document Preparation System. Addison-Wesley, Reading, MA, 2nd Edition, 1994.

[20] American Mathematical Society. User's Guide for the amsmath Package (Version 2.0). Revised, 2002.

[21] BBC News. 100 Things We Didn't Know Last Year. 28 December 2006.

(The previous examples have been taken from these sources.)

`lineno` The `lineno` option enables tabular figures for line numbers in conjunction with the doc, hypdoc, listings or fancyvrb package.

```
\DeclareOption{eqno}{%
  \AtBeginDocument{%
    \@ifpackageloaded{amsmath}{%
```

4 Compatibility

This package has been designed to work with the default settings of the standard document classes article, report and book, their KOMA-Script counterparts, the memoir class, the amsmath package, and the standard bibliographic styles numeric and alphabetic of biblatex v0.6a.

5 Implementation

Ease patching of commands. We store the original meaning of `\cmd` in a safe place and access it later (in the redefinition) with `\tabfig@\cmd`.

```
⟨*package⟩
\RequirePackage{etoolbox}
\newcommand*\tabfig@warning[1]{%
  \PackageWarningNoLine{tabfigures}{Command \string#1 could not be patched}}
```

Debugging.

```
\newif\iftabfig@debug\tabfig@debugfalse
\DeclareOption{debug}{\tabfig@debugtrue}
```

5.1 Equation numbers

We distinguish between the two most frequent cases: amsmath and standard LaTeX. All of the following patches work by injecting `\tabfig@tbf` in the right place. They try to do this as robustly as possible by reusing the original definition.

```
\DeclareOption{eqno}{%
  \AtBeginDocument{%
    \@ifpackageloaded{amsmath}{%
      \let\tabfig@maketag@@@\maketag@@@
      \def\maketag@@@#1{\tabfig@maketag@@@{\tabfig@ttbf{#1}}}%
    }{%
      \expandafter\def\expandafter\tabfig@eqnnum\@eqnnum
      \patchcmd{\tabfig@eqnnum}%
        {\theequation}{\tabfig@ttbf{\theequation}}%
        {\def\@eqnnum{{\tabfig@eqnnum}}%
        {\tabfig@warning{\@eqnnum}}%
    }%
  }%
}
```

5.2 Table of contents

And similar lists such as list of figures and list of tables.

```
\DeclareOption{toc}{%
  \AtBeginDocument{%
```

Generic. First two command that are used in formatting the lists by default.

```
    \let\tabfig@@dottedtocline\@dottedtocline
    \def\@dottedtocline#1#2#3#4#5{%
      \tabfig@@dottedtocline{#1}{#2}{#3}{#4}{\tabfig@ttbf{#5}}%
    }%
    \let\tabfig@numberline\numberline
    \def\numberline#1{\tabfig@numberline{\tabfig@ttbf{#1}}}%
```

Then a bunch of `\l@`⟨*level*⟩ commands for usually available entry types, which might not use the commands from above.

```
    \let\tabfig@l@part\l@part
    \def\l@part#1#2{\tabfig@l@part{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@chapter\l@chapter
    \def\l@chapter#1#2{\tabfig@l@chapter{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@section\l@section
    \def\l@section#1#2{\tabfig@l@section{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@subsection\l@subsection
    \def\l@subsection#1#2{\tabfig@l@subsection{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@subsubsection\l@subsubsection
    \def\l@subsubsection#1#2{\tabfig@l@subsubsection{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@paragraph\l@paragraph
    \def\l@paragraph#1#2{\tabfig@l@paragraph{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@subparagraph\l@subparagraph
    \def\l@subparagraph#1#2{\tabfig@l@subparagraph{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@figure\l@figure
    \def\l@figure#1#2{\tabfig@l@figure{#1}{\tabfig@ttbf{#2}}}
    \let\tabfig@l@table\l@table
    \def\l@table#1#2{\tabfig@l@table{#1}{\tabfig@ttbf{#2}}}
```

Special support for parts and chapters in memoir.

```
    \@ifclassloaded{memoir}{%
      \apptocmd{\cftpartpresnum}%
        {\tabfig@tbf}{}{\tabfig@warning{\cftpartpresnum}}%
      \apptocmd{\cftchapterpresnum}%
        {\tabfig@tbf}{}{\tabfig@warning{\cftchapterpresnum}}%
    }{}%
  }%
}
```

5.3 Enumerations

Labels in enumerations.

```
\DeclareOption{enum}{%
  \AtBeginDocument{%
    \patchcmd{\labelenumi}%
      {\theenumi}{\tabfig@ttbf{\theenumi}}%
      {}{\tabfig@warning{\labelenumi}}%
    \patchcmd{\labelenumii}%
      {\theenumii}{\tabfig@ttbf{\theenumii}}%
      {}{\tabfig@warning{\labelenumii}}%
    \patchcmd{\labelenumiii}%
      {\theenumiii}{\tabfig@ttbf{\theenumiii}}%
      {}{\tabfig@warning{\labelenumiii}}%
    \patchcmd{\labelenumiv}%
      {\theenumiv}{\tabfig@ttbf{\theenumiv}}%
      {}{\tabfig@warning{\labelenumiv}}%
  }%
}
```

5.4 Bibliography

Labels in the bibliography.

```
\DeclareOption{bib}{%
  \AtBeginDocument{%
    \let\tabfig@@biblabel\@biblabel
    \def\@biblabel#1{\tabfig@@biblabel{\tabfig@ttbf{#1}}}%
    \@ifpackageloaded{biblatex}{%
      \DeclareFieldFormat{labelnumberwidth}{\mkbibbrackets{\tabfig@ttbf{#1}}}%
      \DeclareFieldFormat{labelalphawidth}{\mkbibbrackets{\tabfig@ttbf{#1}}}%
    }{}%
  }%
}
```

5.5 Line numbers

```
\DeclareOption{lineno}{%
  \AtBeginDocument{%
```

Support for the doc and hypdoc packages.

```
    \@ifpackageloaded{hypdoc}{%
      \ifpatchable{\theCodelineNo}{\HDorg@theCodelineNo}{%
        \patchcmd{\HDorg@theCodelineNo}%
          {\arabic{CodelineNo}}%
          {\tabfig@ttbf{\arabic{CodelineNo}}}%
          {}{\tabfig@warning{\HDorg@theCodelineNo}}%
      }{%
        \patchcmd{\theCodelineNo}%
          {\arabic{CodelineNo}}%
          {\tabfig@ttbf{\arabic{CodelineNo}}}%
          {}{\tabfig@warning{\theCodelineNo}}%
      }%
    }{%
      \@ifpackageloaded{doc}{%
        \patchcmd{\theCodelineNo}%
          {\arabic{CodelineNo}}%
          {\tabfig@ttbf{\arabic{CodelineNo}}}%
          {}{\tabfig@warning{\theCodelineNo}}%
      }{}%
    }%
```

Support for the listings package.

```
    \@ifpackageloaded{listings}{%
      \apptocmd{\lst@numberstyle}{\tabfig@tbf}%
        {}{\tabfig@warning{\lst@numberstyle}}%
    }{}%
```

Support for the fancyvrb package.

```
    \@ifpackageloaded{fancyvrb}{%
      \patchcmd{\theFancyVerbLine}%
        {\arabic{FancyVerbLine}}%
```

```
        {\tabfig@ttbf{\arabic{FancyVerbLine}}}%
        {}{\tabfig@warning{\theFancyVerbLine}}%
    }{}
  }%
}
\ProcessOptions\relax
```

5.6 Auxiliary macros

These commands are used for switching to tabular figures. This can be redefined to allow debugging, disabling, etc.

```
\newcommand*\tabfig@tbf{\tbfigures}
\DeclareTextFontCommand{\tabfig@ttbf}{\tabfig@tbf}
```

Visual debugging: Set tabular figures (produced by this package) in green.

```
\iftabfig@debug
  \RequirePackage{xcolor}%
  \colorlet{tabfig@debug}{green!50!black}%
  \renewcommand\tabfig@tbf{\tbfigures\color{tabfig@debug}}%
\fi
```

Check if figure versions are supported at all. If not, we cannot do anything useful.

```
\AtBeginDocument{%
  \@ifundefined{tbfigures}{%
    \@ifpackageloaded{fontspec}{%
      \def\tbfigures{\addfontfeatures{Numbers=Monospaced}}%
    }{%
      \PackageWarningNoLine{tabfigures}{There is no command
        \string\tbfigures\space to support tabular figures}%
      \let\tabfig@tbf\@empty
    }%
  }{}%
}
```

⟨/package⟩