The `bartabs` package

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Abstract

This package provides support for generating small, horizontal bar data graphics, in the spirit of those discussed starting on p. 123 of Edward Tufte's *The Visual Display of Quantitative Information* (Cheshire, Connecticut, 2007). For example, here is a bar set at 50% of the default width with error bars set at 25%: ▬▬▬ .

1 Getting the package

The `bartabs` package is hosted in a repository on GitHub at `github.com/justinmeza/bartabs`. If you have `git` installed, you can check out your own copy with the command:

```
git clone git@github.com:justinmeza/bartabs.git
```

There, you will find the style file as well as this example document.

2 Using the package

Once you obtain the style file, you must declare that you are using it in your document by adding the following line before `\begin{document}`:

```
\usepackage{bartabs}
```

Doing so will let you use several commands to create bar data graphics, described next in examples.

Example 1
A solid bar of a percentage of the default width.

```
Lorem \mbar{50} ipsum.          Lorem ▬▬▬ ipsum.
Lorem \mbar{3.14159} ipsum.     Lorem ▌ ipsum.
```

Example 2

A solid bar of a normalized fraction of the default width.

```
Lorem \mbarnorm{50}{100} ipsum.       Lorem ▬▬▬      ipsum.
Lorem \mbarnorm{50}{75} ipsum.        Lorem ▬▬▬▬     ipsum.
```

Example 3

A solid bar of a percentage of the default width with left and right error lines of a fraction of that width.

```
Lorem \mbarerr{50}{0.5} ipsum.        Lorem ▬▬▬─     ipsum.
Lorem \mbarerr{100}{1.0} ipsum.       Lorem ▬▬▬▬▬──── ipsum.
```

Example 4

A solid bar of a normalized fraction of the default width with left and right error lines of a fraction of that width.

```
Lorem \mbarnormerr{50}{100}{0.5} ipsum.
                              Lorem ▬▬▬─    ipsum.
Lorem \mbarnormerr{50}{75}{0.618} ipsum.
                              Lorem ▬▬▬▬──  ipsum.
```

Example 5

The default width of the bars can be controlled with the **\mbarwidth** length.

```
\setlength{\mbarwidth}{8em}
Lorem \mbar{50} ipsum          Lorem ▬▬▬▬▬▬     ipsum.
Lorem \mbar{3.14159} ipsum.    Lorem ▮          ipsum.
```

Example 6

The default height of the bars can be controlled with the **\mbarheight** length.

```
\setlength{\mbarheight}{2.5em}
                                          ██
Lorem \mbar{50} ipsum.         Lorem      ██    ipsum.

Lorem \mbar{3.14159}} ipsum.   Lorem      |     ipsum.
```

Example 7

The default thickness of the error line can be controlled with the \mbarerrlinelen length.

```
\setlength{\mbarerrlinelen}{2pt}
Lorem \mbarerr{50}{0.5} ipsum.      Lorem �▬ ipsum.
Lorem \mbarerr{100}{1.0} ipsum.     Lorem ▬merror▬▬▬▬ ipsum.
```

Example 8

A solid bar of a normalized fraction of the default width with a left error line a fraction of that width.

```
Lorem \mbarerrl{50}{0.5} ipsum.      Lorem ▬▬▬ ipsum.
Lorem \mbarerrl{100}{0.95} ipsum.    Lorem ▬▬▬▬▬ ipsum.
```

Example 9

A solid bar of a normalized fraction of the default width with a right error line a fraction of that width.

```
Lorem \mbarerrr{50}{0.25} ipsum.     Lorem ▬▬▬ ipsum.
Lorem \mbarerrr{100}{0.05} ipsum.    Lorem ▬▬▬▬ ipsum.
```

Example 10

A solid bar of a percentage of the default width with right and left error lines separate fraction of that width.

```
Lorem \mbarerrlr{50}{0.5}{0.25} ipsum.
                                     Lorem ▬▬▬ ipsum.
Lorem \mbarerrlr{100}{0.95}{0.05} ipsum.
                                     Lorem ▬▬▬▬▬ ipsum.
```

Example 11

A solid bar of a normalized fraction of the default width with a left error line of a fraction of that width.

```
Lorem \mbarnormerrl{50}{100}{0.5} ipsum.
                                     Lorem ▬▬▬ ipsum.
Lorem \mbarnormerrl{50}{75}{0.618} ipsum.
                                     Lorem ▬▬▬ ipsum.
```

Example 12

A solid bar of a normalized fraction of the default width with a right error line
of a fraction of that width.

```
Lorem \mbarnormerrr{50}{100}{0.5} ipsum.
```
Lorem ▬▬— ipsum.
```
Lorem \mbarnormerrr{50}{75}{0.618} ipsum.
```
Lorem ▬▬— ipsum.

Example 13

A solid bar of a normalized fraction of the default width with right and left
error lines separate fraction of that width.

```
Lorem \mbarnormerrlr{50}{100}{0.5}{0.25} ipsum.
```
Lorem ▬▬— ipsum.
```
Lorem \mbarnormerrlr{50}{75}{0.95}{0.05} ipsum.
```
Lorem ▬▬▬ ipsum.

Example 14

Bars can be used to provide a simple illustration of scientific data in a table.

```
\begin{center}
  \begin{tabular}{lrl}
    \toprule
      Name & \multicolumn{2}{c}{Datum} \\
    \midrule
      Lorem & $10\pm0.1$ & \mbarerr{10}{0.1} \\
      Ipsum & $20\pm0.2$ & \mbarerr{20}{0.2} \\
      Dolor & $40\pm0.3$ & \mbarerr{40}{0.3} \\
      Sit   & $80\pm0.4$ & \mbarerr{80}{0.4} \\
    \bottomrule
    \end{tabular}
\end{center}
```

Name	Datum	
Lorem	10 ± 0.1	▮
Ipsum	20 ± 0.2	▬
Dolor	40 ± 0.3	▬—
Sit	80 ± 0.4	▬▬—

3   To Do

- Right now, the source code is incredibly ugly. It needs to be cleaned up and make more modular.

- Colored bars and error lines could be interesting to implement.