The `bartabs` package

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Abstract

This package provides support for generating small, horizontal bar data graphics, in the spirit of the data graphics discussed from Edward Tufte's "The Visual Display of Quantitative Information". 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.

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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 ▬▬▬▬———— 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 \mbarerrlr{50}{0.5}{0.25} ipsum.
```
Lorem ▆▬ ipsum.
```
Lorem \mbarerrlr{100}{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.