

# L<sup>A</sup>T<sub>E</sub>X: Manual Spacing in One Page

W. Ethan Duckworth, Loyola University Maryland, 2014

Note that like most formatting commands, you should not be entering the following commands very often. You should rely on previously defined environments, or create your own new environments, with the spacing built in.

- Horizontal spacing

Input:

`a $\!$ $b`      `ab`      `a\,b`      `a\ b`      `a\quad b`      `a\qquad b`      `a\hspace{0.5in}b`

Output:

`ab`      `ab`      `a b`      `a b`      `a b`      `a b`      `a b`

Three things to note: (1) `\!` only works in math mode. (2) `\hspace` is continuous, you can plug in any length you want. (3) to make `\hspace` work at the beginning of a line you need to use `\hspace*`.

- Vertical spacing

Input:

`end.`      `end.`      `end.`      `end.`      `end.`  
`\smallskip`      `\medskip`      `\bigskip`      `\vspace{0.33in}`  
Begin      Begin      Begin      Begin      Begin

Output:

`end.`      `end.`      `end.`      `end.`      `end.`  
Begin      Begin      Begin      Begin      Begin

Four things to note: (1) “end” and “Begin” represent the end and beginning of paragraphs. The commands shown here need to appear in the gap between two paragraphs. (2) `\vspace` can take any length as it’s input. (3) To make `\vspace` work at the top of the page you need to use `\vspace*`.

- Flexible horizontal spacing: stretches to make equal spacing.

Input:

`(a) \hfill (b) \hfill (c) \hfill (d)\hfill \mbox{}`

Output:

`(a)`      `(b)`      `(c)`      `(d)`

To make `\hfill` work at the *end* of a line you need to put an invisible box after it.

- Flexible vertical spacing: stretches to make equal spacing.

Output:

Input:

`\mbox{}`  
`\vfill`

`(a)`  
`\vfill`

`(b)`  
`\vfill`

`(c)`  
`\vfill`

(a)

(b)

(c)

To make `\vfill` work at the *beginning* of the page you need to put an invisible box before it. One application of this command is to make a title page, using `\mbox{ }\vfill ***** \vfill` where `*****` would be replaced by your title.