# PACKAGE DELIMSEASY 

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#### Abstract

Provides commands to give consistent, easy-to-remember, easy to edit way to control the size and blackness of delimiters: append 1-4 " b "s to command for larger sizes; prepend "B" for boldface. These commands reduce the likelihood of incomplete delimeter pairs and typically use fewer characters than the $\mathrm{LA}_{\mathrm{E}} \mathrm{T}_{\mathrm{E}} \mathrm{X}$ default.


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## 1. Installation and the basic delimiters

Put delimseasy.sty in a convenient folder and add age\{delimseasy\}toyourpreamble.If$\mathrm{IA}_{\mathrm{E}X}$can'tfindthestyfile,moveittothefolderofyourtexfileoraddaPATHtothe\usepackageparameter,soyouhave(forexample)\usepackage\{C:/user/YOU/Documents/WHEREYOUPUTIT/delimseasy\}.undefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefinedundefined

Here are the basic macros:

| the macro | typesets like | common name |
| :---: | :---: | :---: |
| \prn[1] | (\#1) | round parens |
| \sqpr [1] | [\#1] | square braces |
| \crl[1] | \{\#1\} | curly braces |
| \ceil[1] | \lceil \#1\rceil | ceiling |
| $\backslash f l r[1]$ | $\backslash \mathrm{lfloor} \mathrm{\# 1} \mathrm{\ rfloor}$ | floor |
| $\backslash \mathrm{ngl}$ [1] | $\backslash$ langle \#1\rangle | langle/rangle |
| $\backslash \mathrm{abs}$ [1] | \vert \#1\vert | absolute value |
| \nrm[1] | \Vert \#1\Vert | norm |
| \stgt[1] | < \#1> | lessthan greaterthan |

1.1. Adding "b"s to change the size. Add one to four "b"s to the end of a macro; each "b" raises size by one step. Example: $\backslash \operatorname{prnb}\left\{x^{\wedge} 2-1\right\}$ gives $\left(x^{2}-1\right)$.
1.2. Adding " l " or " r " for one-sided delimiters. Prepend "l" (ell) or "r" to the front of the macro (after the backslash) for the single sided (left or right). These macros take no parameter. Example: \lprnb gives (.
1.3. Prepending a "B" for boldface. Prepend a capital " $B$ " to the front of the macro for boldface (poor man's bold); if the macro is already a left or right, the "B" must preceed the " 1 " or " r ". Needs a parameter if the non-bolded macro does. Example: \Blprnb gives (
1.4. Warnings about paired delimeters. The paired delimeter macros take as a single parameter the expression to be inside of the pair. Curley brackets around the expression will be essential here, as always in $\mathrm{EAT}_{\mathrm{E}} \mathrm{X}$. See the examples below.

Paired delimiters cause an error if the alignment ampersand \& is used between them. The same issue arises with \left ( --- \& -- \right), as you may have discovered. There may be other formatting characters which break paired delimeters; please let me know if you encounter an instance.
1.4.1. Workarounds to the $\mathcal{J}$ problem.
(1) Rewrite. If you don't like the looks of

$$
\begin{aligned}
\int \text { A very very very very long expression } & \leq \text { a shorter one } \\
& \leq \text { another short one } \\
& =\text { the final expression }
\end{aligned}
$$

perhaps you can break up the computations into smaller pieces so that you end with something like, " putting (3.12)-(3.36) together we see that

$$
\int \text { A very very very very long expression } \leq \text { the final expression." }
$$

(2) Use the left-right versions of the delimiters. They do not have the ampersand problem that the two-sided versions and \left. . \} \backslash right do.
(3) Use $\backslash$ phantom

```
&\int \text{A very very very very long expression }
    \le \text{ a shorter one}\\
&\phantom{\int \text{A very }}\le\text{the final expression}
```

to get
$\int$ A very very very very long expression $\leq$ a shorter one
$\leq$ the final expression

## 2. Examples

(1) Here are two versions of the same display. The first uses \left } \backslash right; the second \sqprbbb. I prefer the second one for being smaller, neater and using less typing. It's also much easier to change the size of the second (add or remove a b) than the first (replace \left[...\right] with \bigg[... \bigg]).

$$
\left[\sum_{n} \frac{x_{n}}{y_{n}}\right]^{1 / 2} \quad\left[\sum_{n} \frac{x_{n}}{y_{n}}\right]^{1 / 2}
$$

(2) Bold vs. default:

$$
\left(\frac{x}{x^{2}+1}\right) \quad\left(\frac{x}{x^{2}+1}\right) \quad\left\{\frac{x}{x^{2}+1}\right\} \quad\left\{\frac{x}{x^{2}+1}\right\}
$$

(3) \sqprbbb $\left\{\backslash i n t \_a^{\wedge} b \backslash p r n b b\left\{\backslash f r a c\{x+1\}\left\{x^{\wedge} 2+5\right\}\right\}^{\wedge} p d x\right\} \wedge\{1 / p\}$
\text\{,\ \}\nrmbbbb\{\crlbbb\{\crlbb\{\crlb\{\crl\{x-y\}\}\}\}\}\text\{ and \} givescrlbbbb\lsqprbbb\labsbb\lprnb \lngl

$$
\left[\int_{a}^{b}\left(\frac{x+1}{x^{2}+5}\right)^{p} d x\right]^{1 / p},\|\{\{\{\{x-y\}\}\}\}\| \text { and }\{[\mid(\langle
$$

The tex source for this PDF contains more examples, commented out.

## 3. Further comments

3.1. An alternate package, delim. The package delim by Stefan Majewsky does things this one does, in a somewhat different way, and may be preferred by many $\mathrm{T}_{\mathrm{E}} \mathrm{X}$ users. You can find this package by browsing CTAN under "D".
3.2. Reversed parens. At one time one saw open intervals expressed as

$$
) a, b(\quad \text { or } \quad] c, d[.
$$

This package provides paired delimeters at the 5 sizes, with and without bold face, for those two situations. The macros are $\backslash \mathrm{nrp}$ and $\backslash \mathrm{rpqs}$, followed by one to four "b"s for larger sizes and prepended by an optional "B" for the bold face versions. No single sided reversed macros are given.
3.3. Adding other delimiters. Just copy the model here. In making the $\backslash$ B... versions I have used $\backslash \mathrm{pmb}$ (poor man's bold) throughout because $\backslash$ boldsymbol, though recommended (e.g., by Grätzer) for many situations, does not work for all delimiters, while poor man's bold does.
3.4. Easy to remember sizers. delimseasy includes versions of $\mathrm{IA}_{\mathrm{E}}{ }^{\mathrm{X}}$ 's builtins:

| New | LATEX built-in $^{\text {l }}$ |
| :---: | :---: |
|  | $\backslash$ big |
| \bigb | $\backslash$ Big |
| \bigbb | $\backslash$ bigg |
| $\backslash$ bigbbb | $\backslash$ Bigg |

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