

Sample document

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1 LAlignAnd

$$\begin{array}{ll} \&= & \begin{array}{l} a = b \\ c = d \end{array} \quad \text{ok} \\ \\ =\& & \begin{array}{l} a = b \\ c = d \end{array} \quad \text{ng} \\ \\ =\{\}\& & \begin{array}{l} a = b \\ c = d \end{array} \quad \text{ok} \end{array}$$

2 LAlignEnd

The following ends with a line break.

$$\begin{array}{l} f(x) = ax^2 + bx + c \\ g(x) = dx^2 + ex + f \end{array}$$

The following does not end with a line break.

$$\begin{array}{l} f(x) = ax^2 + bx + c \\ g(x) = dx^2 + ex + f \end{array}$$

Here is the next line after the align environment.

3 LAlignSingleLine

Long line before display (same result)

Lorem ipsum.

$$f(x) = ax^2 + bx + c$$

This is an **equation** environment.

Lorem ipsum.

$$f(x) = ax^2 + bx + c$$

This is an **align** environment.

Short line before display (different result)

Lrm:

$$f(x) = ax^2 + bx + c$$

This is an [equation](#) environment.

Lrm:

$$f(x) = ax^2 + bx + c$$

This is an [align](#) environment.

Single-line alignat environment is also detected.

$$f(x) = ax^2 + bx + c$$

Multi-line alignat environment is not detected.

$$f(x) = ax^2 + bx + c$$

$$g(x) = dx^2 + ex + f$$

4 LLBig

This is a sample text. This is a sample text. This is a sample text.

Both bigcup $\cup_{x \in B} O_x$ and cup $\cup_{x \in B} O_x$ do not spoil the line spacing.

This is a sample text. This is a sample text. This is a sample text.

$$\begin{array}{cccccccccccc} X_1 \cap X_2 & X_1 \cup X_2 & X_1 \odot X_2 & X_1 \oplus X_2 & X_1 \otimes X_2 & & & & & & & \\ X_1 \sqcup X_2 & X_1 \uplus X_2 & X_1 \vee X_2 & X_1 \wedge X_2 & \text{ok} & & & & & & & \\ \bigcap_{i=1}^{\infty} X_i & \bigcup_{i=1}^{\infty} X_i & \bigodot_{i=1}^{\infty} X_i & \bigoplus_{i=1}^{\infty} X_i & \bigotimes_{i=1}^{\infty} X_i & \bigsqcup_{i=1}^{\infty} X_i & \biguplus_{i=1}^{\infty} X_i & \bigvee_{i=1}^{\infty} X_i & \bigwedge_{i=1}^{\infty} X_i & \text{ok} & & \\ \cap_{i=1}^{\infty} X_i & \cup_{i=1}^{\infty} X_i & \odot_{i=1}^{\infty} X_i & \oplus_{i=1}^{\infty} X_i & \otimes_{i=1}^{\infty} X_i & & & & & & & \\ \sqcup_{i=1}^{\infty} X_i & \uplus_{i=1}^{\infty} X_i & \vee_{i=1}^{\infty} X_i & \wedge_{i=1}^{\infty} X_i & \text{ng} & & & & & & & \end{array}$$

5 LLBracketCurly

$$\begin{array}{lll} \backslash\max(\mathbf{a},\mathbf{b}) & \max(a,b) & \text{ok} \\ \backslash\max\{\mathbf{a},\mathbf{b}\} & \max a,b & \text{ng} \\ \backslash\max \{\mathbf{a},\mathbf{b}\} & \max a,b & \text{ok?} \end{array}$$

We cannot fully determine whether the use of curly brackets is wrong or not. It is not detected if some spaces are inserted between the command name and the curly brackets.

$\min(a,b)$ and $\min a,b$ are also checked.

6 LLBracketRound

$$\begin{array}{lll} \backslash\sqrt{\mathbf{a}} & \sqrt{a} & \text{ok} \\ \backslash\sqrt{\mathbf{a}} & \sqrt{(a)} & \text{ng} \end{array}$$

$a^{(1)}$ and $a_{(1)}$ are also checked.

7 LLColonEqq

<code>\coloneqq</code>	$x := y$	ok
<code>\Coloneqq</code>	$x ::= y$	ok
<code>:=</code>	$x := y$	ng
<code>::=</code>	$x ::= y$	ng

The difference is quite subtle, but the vertical position of the colon is different.

8 LLColonForMapping

<code>A:B</code>	$A : B$	ok
<code>A\colon B</code>	$A : B$	ng
<code>f:</code>	$f : \mathbb{R} \rightarrow \mathbb{R}$	ng
<code>f\colon</code>	$f : \mathbb{R} \rightarrow \mathbb{R}$	ok

We detect all of `:` in the following

Here are examples of colons we detect.

- $f : X \rightarrow Y$
- $g : X \mapsto Y$
- $h : \mathbb{R}^{n^2+2n+1} \rightarrow \mathbb{R}$

and

$$f : (X \text{ at new line in tex file}) \rightarrow (Y \text{ at new line in tex file}). \quad (1)$$

We do NOT detect any of `:` in the following

Here are examples of `:` we do not detect.

- $f : X \rightarrow Y$, the correct use of `\colon`.
- $A : B : C = 1 : 2 : 3$, the colon for ratio.
- $A : B = 1 : 2$ and $X \rightarrow Y$, separated by dollar sign.
- $g : (\text{some very very very very very long long long long words}) \rightarrow \mathbb{R}$, the false negative.

9 LLCref

Theorem 1. *This is a sample theorem.*

Use Thm. 1 with `cref` instead of `Theorem 1` with `ref` to avoid mistakes.

10 LLDoubleQuotes

Use “XXX” instead of “XXX” or ”XXX”.

11 LLENDash

hyphen (-)	A-B
en-dash (--)	A–B
em-dash (---)	A—B

- Erdos-Renyi (random graph, Erdős–Rényi)
- Einstein-Podolsky-Rosen (quantum physics, Einstein–Podolsky–Rosen)
- Fruchterman-Reingold (graph drawing, Fruchterman–Reingold)
- Gauss-Legendre (numerical integration, Gauss–Legendre)
- Gibbs-Helmholtz (thermodynamics, Gibbs–Helmholtz)
- Karush-Kuhn-Tucker (optimization, Karush–Kuhn–Tucker)

Exception: Fritz-John (optimization, name of a person)

False Positive: Wrong-Example

12 LLEqnarray

We should not use eqnarray. It has some spacing issues.

$$\begin{array}{rcl} x & = & y \\ a & = & b \end{array}$$

13 LLLlGg

<code>\ll</code>	$n \ll m$	ok
<code><<</code>	$n << m$	ng

I like human <<< cat <<<<<<< dog.

14 LLRefEq

To refer to the equation, use (1) with eqref instead of (1) with ref.
You can avoid the mistake of forgetting to add parentheses.

15 LLSharp

<code>\#</code>	<code>#A</code>	ok
<code>\sharp</code>	<code>‡A</code>	ng

If you really want to use ‡, you can disable this rule.

16 LLNonASCII

The following line contains non-ASCII characters.

! " # \$ % & ' () * + , - . /

日本語の文章は、upLaTeX でフツウに書けます。

(You can write Japanese sentences as usual with upLaTeX.)

17 LLSI

<code>\SI{1}{\kilo\byte}</code>	1 kB	ok
<code>1kB</code>	1kB	ng

Example: 10 KB, 3.5MiB, 500 GB.

Some Awesome Command. This is not ExaByte.

This 1EB is one ExaByte.

18 LLT

<code>^{\top}</code>	X^{\top}	ok
<code>^{\mathsf{T}}</code>	X^{\top}	ok
<code>^T</code>	X^T	ng

If you really want to use X^T , you can disable this rule.

19 LLTitle

19.1 The quick brown fox jumps over the lazy dog

19.1.1 This Is a Correct Title

SubParagraph: Test With Ref 1

20 LLUserDefined

You can define your own rule, such as prohibiting the use of a f^a .

$$f^a(X) \quad f^{\mathfrak{a}}(X)$$

Appendix A LLSetBar

Detecting inappropriate use of the vertical bar $|$ is very difficult. We are currently trying to detect the following, although not implemented yet.

<code>\lvert -1 \rvert</code>	$ -1 $	ok
<code>\abs{-1}</code>	$ -1 $	ok
<code>\vert -1 \vert</code>	$ -1 $	ng
<code> -1 </code>	$ -1 $	ng

<code>\lVert -x \rVert</code>	$\ -x\ $	ok
<code>\norm{-x}</code>	$\ -x\ $	ok
<code>\Vert -x \Vert</code>	$\ -x\ $	ng
<code> -x </code>	$\ -x\ $	ng

<code>\relmiddle </code> (macro)	$\left\{a \mid a > \frac{1}{2}\right\}$	ok
<code>\mid</code>	$\{a \mid a > \frac{1}{2}\}$	ok?
<code> </code>	$\{a \mid a > \frac{1}{2}\}$	ng

<code>\divides</code> (MnSymbol)	$+2 \mid +4$	ok
<code>\mid</code>	$+2 \mid +4$	ok?
<code>\mathrel </code>	$+2 \mid +4$	ok?
<code>\vert</code>	$+2 \mid +4$	ng
<code> </code>	$+2 \mid +4$	ng

<code>f(y x)</code>	$f(y x)$	ok?
<code>f(y \mid x)</code>	$f(y \mid x)$	ok?
<code>f(\,y\mid x\,)</code>	$f(y \mid x)$	ok?
<code>\left. \mathrm{d}v{t} \right _{t=0} f(t)</code>	$\left. \frac{\mathrm{d}}{\mathrm{d}t} \right _{t=0} f(t)$	ok?