

# Sample document

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## 1 LAlignAnd

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

## 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 LLColonEqq

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

## 5 LLColonForMapping

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

— We detect all of : in the following —

Here are examples of colons we detect.

- $X : Y \rightarrow Z$ ,
- $X : Y \mapsto Z$ ,
- $X : \mathbb{R}^{n^2+2n+1} \rightarrow \mathbb{R}$

and

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

— We do NOT detect any of  $:$  in the following —

Here are examples of ‘ $:$ ’ we do not detect.

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

## 6 LLCref

**Theorem 1.** *This is a sample theorem.*

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

## 7 LLDoubleQuotes

Use “XXX” instead of “XXX” or ”XXX”.

## 8 LLENDash

- 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

## 9 LLEqnarray

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

$$x = y \tag{2}$$

$$a = b \tag{3}$$

## 10 LLLlGg

$n \ll m$      $n \ll m$     ok  
 $n << m$      $n << m$     ng

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

## 11 LLRefEq

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

## 12 LLSharp

$\#$      $\#A$     ok  
 $\sharp$      $\sharp A$     ng

## 13 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.)

## 14 LLSI

Example: 10 KB, 3.5MiB, 500 GB.

Some Awesome Command.This is not ExaByte..

This 1EB is one ExaByte.

## 15 LLT

$X^T$      $X^\top$      $X^\top$

## 16 LLTitle

### 16.1 The quick brown fox jumps over the lazy dog

#### 16.1.1 This Is a Correct Title

SubParagraph: Test With Ref 1

## 17 LLUserDefined

You can define your own rule, such as prohibiting the use of a f<sup>a</sup>.

$$f^a(X) \quad f^a(X)$$