

# Cuti Demo & Doc

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## Introduction

Cuti is a package designed for simulating fake bold / fake italic.

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## Demo

### Part 1: font: ("Times New Roman", "SimSun")

Regular: 你说得对，但是《Cuti》是一个用于伪粗体和伪斜体的包。  
Bold(Font Only): 你说得对，但是《**Cuti**》是一个用于伪粗体和伪斜体的包。  
Bold(Fake Only): 你说得对，但是《**Cuti**》是一个用于伪粗体和伪斜体的包。  
Bold(Fake+Font): 你说得对，但是《**Cuti**》是一个用于伪粗体和伪斜体的包。  
Italic(Font Only): 你说得对，但是《*Cuti*》是一个用于伪粗体和伪斜体的包。  
Italic(Fake Only): 你说得对，但是《*Cuti*》是一个用于伪粗体和伪斜体的包。  
Italic(Fake+Font): 你说得对，但是《*Cuti*》是一个用于伪粗体和伪斜体的包。

### Part 2: font: "Source Han Serif SC"

Regular: 前面忘了。同时，逐步发掘「Typst」的奥妙。  
Bold(Font Only): 前面忘了。同时，逐步发掘「**Typst**」的奥妙。  
Bold(Fake Only): 前面忘了。同时，逐步发掘「**Typst**」的奥妙。  
Bold(Fake+Font): 前面忘了。同时，逐步发掘「**Typst**」的奥妙。

## Fake Bold

Cuti simulates fake bold by utilizing the stroke attribute of text. This package is typically used on fonts that do not have a bold weight, such as “SimSun”. This package uses 0.02857em as the parameter for stroke. In Microsoft Office software, enabling fake bold will apply a border of about 0.02857em to characters. This is where the value of 0.02857em is derived from. (In fact, the exact value may be  $\frac{1}{35}$ .)

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### fakebold

#fakebold[] with no parameter will apply the **fakebold** effect to characters.

```
1 - Fakebold: #fakebold[#lorem(5)]
2 - Bold: #text(weight: "bold", lorem(5))
3 - Bold + Fakebold: #fakebold[#text(weight: "bold", lorem(5))]
```

- Fakebold:  **Lorem ipsum dolor sit amet.**
- Bold:  **Lorem ipsum dolor sit amet.**
- Bold + Fakebold:  **Lorem ipsum dolor sit amet.**

#fakebold[] can accept the same parameters as #text. In particular, if the weight parameter is specified, it can be used to outline based on a certain font weight. If weight is not specified, the baseline font weight will be inherited from the context. Specifying the stroke parameter will be ignored.

```
1 - Bold + Fakebold: #fakebold(weight: "bold")[#lorem(5)]
2 - Bold + Fakebold: #set text(weight: "bold"); #fakebold[#lorem(5)]
```

- Bold + Fakebold:  **Lorem ipsum dolor sit amet.**
- Bold + Fakebold:  **Lorem ipsum dolor sit amet.**

**Note:** The base-weight parameter used by cuti:0.2.0 is still retained to ensure compatibility.

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### regex-fakebold

The #regex-fakebold is designed to be used in multilingual and multi-font scenarios. It allows the use of a RegExp string as the reg-exp parameter to match characters that will have the fake bold effect applied. It can also accept the same parameters as #text.

```
1 + RegExp `[a-o]`: #regex-fakebold(reg-exp: "[a-o]")[#lorem(5)]
2 + RegExp `\p{script=Han}`: #regex-fakebold(reg-exp: "\p{script=Han}")[衬衫的价格是 9 磅 15 便士。]
3 + RegExp `\p{script=Han}`: #set text(weight: "bold"); #regex-fakebold(reg-exp: "\p{script=Han}")[衬衫的价格是 9 磅 15 便士。]
```

1. RegExp [a-o]:  **Lorem ipsum dolor sit amet.**
2. RegExp \p{script=Han}:  **衬衫的价格是 9 磅 15 便士。**
3. RegExp \p{script=Han}:  **衬衫的价格是 9 磅 15 便士。**

In Example #3, 9 and 15 are the real bold characters from the font file, while the other characters are simulated as “fake bold” based on the regular weight.

If the fill parameter of #text is set to a specific color or gradient, the fake bold outline will also change to the corresponding color.

```
1 - Blue + Fakebold: #fakebold(fill: blue)[花生瓜子八宝粥，啤酒饮料矿泉水。#lorem(5)]
2 - Gradient + Fakebold: #set text(fill: gradient.conic(..color.map.rainbow));
  #fakebold[花生瓜子八宝粥，啤酒饮料矿泉水。#lorem(5)]
```

- Blue + Fakebold: 花生瓜子八宝粥，啤酒饮料矿泉水。Lorem ipsum dolor sit amet.
- Gradient + Fakebold: 花生瓜子八宝粥，啤酒饮料矿泉水。Lorem ipsum dolor sit amet.

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## show-fakebold

In multilingual and multi-font scenarios, different languages often utilize their own fonts, but not all fonts contain the bold weight. It can be inconvenient to use #fakebold or #regex-fakebold each time we require strong or bold effects. Therefore, the #show-fakebold function is introduced for show rule.

The show-fakebold function shares the same parameters as regex-fakebold. By default, show-fakebold will apply the RegExp ".", which means all characters with the strong or weight: "bold" property will be fakebolded if the corresponding show rule has been set.

```
1 #show: show-fakebold
2 - Regular: #lorem(10)
3 - Bold: #text(weight: "bold")[#lorem(10)]
```

- Regular: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do.
- Bold: **Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do.**

Typically, the combination of bold + fakebold is not the desired effect. It is usually necessary to specify the RegExp to indicate which characters should utilize the fakebold effect.

```
1 #show: show-fakebold.with(reg-exp: "\p{script=Han}")
2 - Regular: 我正在使用 Typst 排版。
3 - Strong: *我正在使用 Typst 排版。*
```

- Regular: 我正在使用 Typst 排版。
- Strong: 我正在使用 **Typst** 排版。

It can also accept the same parameters as #text.

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## cn-fakebold & show-cn-fakebold

cn-fakebold( `content` )

show-cn-fakebold( `content` )

cn-fakebold and show-cn-fakebold are encapsulations of the above regex-fakebold and show-fakebold, pre-configured for use with Chinese text. Please refer to the Chinese documentation for detailed usage instructions.

## Fake Italic

The skew function used in cuti is from typst issue 2749 (<https://github.com/typst/typst/issues/2749>) by Enivex.

Cuti simulates fake italic by utilizing rotate and scale. This package uses  $-0.32175$  as the default angle. In Microsoft Office software, enabling fake italic will apply a  $\arctan(\frac{1}{3})$  skew effect to characters. Please note that due to different English fonts having varying skew angles, you may need to find a suitable angle on your own. If using Times New Roman alongside SimSun, the default angle is relatively appropriate.

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### fakeitalic

```
fakeitalic(  
  ang: angle default: -0.32175,  
  content  
)
```

#fakeitalic[] will apply the *fakeitalic* effect to characters.

```
1 - Regular: #lorem(5)  
2 - Italic: #text(style: "italic", lorem(5))  
3 - Fakeitalic: #fakeitalic[#lorem(5)]  
4 - Fakeitalic + Fakebold: #fakeitalic[#fakebold[#lorem(5)]]
```

- Regular: Lorem ipsum dolor sit amet.
- Italic: *Lorem ipsum dolor sit amet.*
- Fakeitalic: *Lorem ipsum dolor sit amet.*
- Fakeitalic + Fakebold: ***Lorem ipsum dolor sit amet.***

The angle of skew can be adjusted through the ang parameter.

```
1 - -10deg: #fakeitalic(ang: -10deg)[#lorem(5)]  
2 - -20deg: #fakeitalic(ang: -20deg)[#lorem(5)]  
3 - +20deg: #fakeitalic(ang: 20deg)[#lorem(5)]
```

- -10deg: *Lorem ipsum dolor sit amet.*
- -20deg: *Lorem ipsum dolor sit amet.*
- +20deg: *Lorem ipsum dolor sit amet.*

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### regex-fakeitalic

```
regex-fakeitalic(  
  reg-exp: str default: "[^ ]",  
  ang: angle ,  
  spacing: relative none default: none ,  
  content  
)
```

The #regex-fakeitalic is designed to be used in multilingual and multi-font scenarios. It allows the use of a RegEx string as the reg-exp parameter to match characters that will have the fake bold effect applied. It also accepts the ang parameter.

```
1 + RegExp `[a-o]`: #regex-fakeitalic(reg-exp: "[a-o]")[#lorem(5)]
2 + RegExp `p{script=Han}`: #regex-fakeitalic(reg-exp: "p{script=Han}")[衬衫的价格是
  9 磅 15 便士。]
3 + RegExp `p{script=Han}`: #set text(style: "italic"); #regex-fakeitalic(reg-exp:
  "p{script=Han}", ang: -10deg)[衬衫的价格是 9 磅 15 便士。]
```

1. RegExp [a-o]: *Lorem ipsum dolor sit amet.*
2. RegExp p{script=Han}: 衬衫的价格是 9 磅 15 便士。
3. RegExp p{script=Han}: 衬衫的价格是 9 磅 15 便士。

In Example #3, 9 and 15 are the real italic characters from the font file, while the other characters are simulated as “fake italic”.

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## Issues at hand

The current implementation of faux italics disrupts spacing, particularly the spacing between symbols and characters. This is especially evident in the demo.