

# The [cloze](#) package\*

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# 1 Introduction

*cloze* is a plain T<sub>E</sub>X or a L<sup>A</sup>T<sub>E</sub>X package to generate cloze texts. It uses the capabilities of the modern T<sub>E</sub>X engine *LuaT<sub>E</sub>X*. Therefore, you must use *LuaT<sub>E</sub>X* or *LuaL<sup>A</sup>T<sub>E</sub>X* to create documents containing gaps.

```
lualatex cloze-text.tex
```

 or 

```
luatex cloze-text.tex
```

The main feature of the package is that the formatting doesn't change when using the `hide` and `show` (→ 2.3.16) options.

Lorem ipsum *dolor sit* amet, consectetur *adipiscing* elit, sed do eiusmod tempor incididunt ut labore et *dolore magna* aliqua. Ut enim ad minim veniam, quis nostrud *exercitation* ullamco laboris nisi ut *aliquip* ex ea commodo consequat.

The command `\clozeset{hide}` only shows gaps. When you put both texts on top of each other you will see that they perfectly match.

Lorem ipsum \_\_\_\_\_ amet, consectetur \_\_\_\_\_ elit, sed do eiusmod tempor incididunt ut labore et \_\_\_\_\_ aliqua. Ut enim ad minim veniam, quis nostrud \_\_\_\_\_ ullamco laboris nisi ut \_\_\_\_\_ ex ea commodo consequat.

## 2 Usage

### 2.1 Interfaces

#### 2.1.1 The plain (Lua)T<sub>E</sub>X interface

Thanks to `lparse`, most commands should work in plain *LuaT<sub>E</sub>X* just like in *LuaL<sup>A</sup>T<sub>E</sub>X*. However, there are no environments in *LuaT<sub>E</sub>X*.

```
\input cloze.tex
\clozeset{margin=1cm}
\clozeshow
Lorem \cloze{ipsum} dolor.
\bye
```

#### 2.1.2 The (Lua)L<sup>A</sup>T<sub>E</sub>X interface

```
\documentclass{article}
\usepackage[show,margin=1cm]{cloze}
\begin{document}
Lorem \cloze{ipsum} dolor.
\end{document}
```

### 2.2 The commands and environments

There are the commands `\cloze`, `\clozefix`, `\clozefil`, `\clozenol`, `\clozeparcapture`, `\clozestrike` and the environments `clozepar` and `clozebox` to generate cloze texts.

### 2.2.1 `\cloze`

`\cloze` `\cloze[{options}]{{some text}}`: The command `\cloze` is similar to a command that offers the possibility to underline the texts. `\cloze` does not prevent line breaks. The width of a gap depends on the number of letters and the font used. The only option which affects the widths of a gap is the option `margin` (→ 2.3.18).

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

It is possible to convert a complete paragraph into a ‘gap’. But don’t forget: There is a special environment for this: `clozepar` (→ 2.2.7).

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

The command `\cloze` doesn’t (better shouldn’t) change the behavior of the hyphenation. Let’s try some long German words (Known issue: Sometimes you have to insert manual hyphenation points (`\-`). I don’t know why. Solutions and suggestions are very welcome.):

es Telekommunikationsüberwachung geht Unternehmenssteuerfortentwicklungsgesetz Abteilungsleiterin Oberkommissarin auch Filialleiterin kurz.

### 2.2.2 `\clozesetfont`

`\clozesetfont` The gap font can be changed by using the command `\clozesetfont`. `\clozesetfont` redefines the command `\clozefont` which contains the font definition. Thus, the command `\clozesetfont{\Large}` has the same effect as `\def\clozefont{\Large}`.

Excepteur sint occaecat cupidatat non proident.

Please do not put any color definitions in `\clozesetfont`, as it won’t work. Use the option `text_color` instead (→ 2.3.17).

`\clozesetfont{\ttfamily\normalsize}` changes the gap text for example into a normal sized typewriter font.

Excepteur sint occaecat cupidatat non proident.

If you use clozes in math mode you have to overwrite the default cloze font (`\clozesetfont{\itshape}`) of the package, because `\itshape` is not available in math mode. `\clozesetfont{}` will do the trick.

### 2.2.3 `\clozefix`

`\clozefix` `\clozefix[<options>]{<some text>}`: The command `\clozefix` creates gaps with a fixed width. The clozes are default concerning the width 2cm.

Lorem ipsum dolor sit amet:  
1. *consectetur*  
2. *adipiscing*  
3. *elit*  
sed do eiusmod.

Gaps with a fixed width are much harder to solve.

Lorem ipsum dolor *sit* amet, *consectetur* adipiscing  
elit, sed do eiusmod tempor incididunt *ut* labore et dolore  
magna aliqua.

Using the option `align` you can make nice tabulars like this:

Composer	Life span
<u><i>Joseph Haydn</i></u>	<u><i>1723-1809</i></u>
<u><i>Wolfgang Amadeus Mozart</i></u>	<u><i>1756-1791</i></u>
<u><i>Ludwig van Beethoven</i></u>	<u><i>1770-1827</i></u>

### 2.2.4 `\clozenol`

`\clozenol` `\clozenol[<options>]{<some text>}`: The macro name `clozenol` stands for “*cloze no line*”. As the the name suggests this macro typesets cloze texts without a line. `\clozenol` is a convenient abbreviation for `\cloze[thickness=0pt]{text}`.

Lorem `\clozenol{ipsum dolor}` sit amet.

Lorem *ipsum dolor* sit amet.

Lorem `\clozenol[text_color=green]{ipsum dolor}` sit amet.

Lorem *ipsum dolor* sit amet.

The next examples are showing that `\clozenol` behaves exactly as `\clozenol` with the option `thickness=0pt` (`\cloze[thickness=0pt]`) set: The text layout doesn't change if we are hiding the gaps and the hidden text is not really hidden. It is removed. It can not be copied.

Lorem ipsum *dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua* sit amet.

Now hide the text

Lorem ipsum  
sit amet.

### 2.2.5 `\clozefil`

`\clozefil` `\clozefil[<options>]{<some text>}`: The name of the command is inspired by `\hfil`, `\hfill`, and `\hfilll`. `\clozefil` fills out all available horizontal space with a line. The macros `\clozefill` and `\clozefilll` doesn't exist, only `\clozefil` (with one l) does.

`\clozehide`:

Complete the sentences below to share more about yourself:

I am someone who love \_\_\_\_\_.

I am someone who hate \_\_\_\_\_.

I am someone who can \_\_\_\_\_.

I am someone who can't \_\_\_\_\_.

`\clozeshow`:

Complete the sentences below to share more about yourself:

I am someone who love *to write cloze worksheets in T<sub>E</sub>X* \_\_\_\_\_.

I am someone who hate *to write cloze worksheets in MS Word* \_\_\_\_\_.

I am someone who can *write cloze worksheets in T<sub>E</sub>X* \_\_\_\_\_.

I am someone who can't *write cloze worksheets in MS Word* \_\_\_\_\_.

### 2.2.6 `\clozeextend`

`\clozeextend` `\clozeextend[<spaces>]`: The command `\clozeextend` adds some invisible placeholders to extend some cloze texts with blank space. Keep in mind that there is the option `min_lines` (→ 2.3.19), if you want to extend some cloze paragraphs. The associated options are:

`extension_count` : The number of extension units (→ 2.3.13).

`extension_height` : The height of one extension unit (default: 2ex) (→ 2.3.14).

`extension_width` : The width of one extension unit (default: 1em) (→ 2.3.15).

```
\begin{itemize}
\item \clozefil{Lorem ipsum dolor sit amet, consectetur adipisicing
elit, sed do eiusmod tempor incididunt ut labore et dolore magna
aliqua.}
\item \clozefil{Ut enim ad minim veniam \clozeextend[30]}
\item \clozefil{quis nostrud \clozeextend[40]}
\end{itemize}
```

- *Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.*
- *Ut enim ad minim veniam*
- *quis nostrud*

### 2.2.7 clozepar

`clozepar` (*env.*) `\begin{clozepar}[\langle options \rangle] ...some text ...\end{clozepar}`: The environment `clozepar` transforms a complete paragraph into a cloze text. The options `align`, `margin` and `width` have no effect on this environment.

Lorem ipsum dolor sit amet, consectetur adipiscing elit ullamco laboris nisi.  
*Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum.*  
 Excepteur sint occaecat cupidatat non proident.

### 2.2.8 \clozeparplain

`\clozeparplain` `\clozeparplain`: The command `\clozeparplain` is the macro version of the environment `clozepar` (→ 2.2.7). It is intended to provide cloze support on full paragraphs in plain LuaTeX.

### 2.2.9 \clozeparcapture

`\clozeparcapture` `\clozeparcapture`: The command is defined to capture all text until the next paragraph (`\par`): `\def\clozeparcapture#1\par{...}`. In some cases (see example below) you have to set the paragraph end manually by inserting a `\par`.

```
\begin{enumerate}
\item Solid state drives (SSD) ...

\clozeparcapture
They do not need to get up to speed to work properly / No latency;
...
\par
\end{enumerate}
```

1. Solid state drives (SSD) are replacing hard disc drives (HDD) in some computers. Give some reasons why this is happening.  
*They do not need to get up to speed to work properly / No latency; Less power consumption / More energy efficient; Run cooler; Run quieter; Data access is faster; Occupies less physical space - more compact; Lighter, so suitable for portable computer / laptop; No moving parts so more reliable / durable in a portable computer / laptop.*

It is often sufficient to insert an empty line.



Explain three ways that RAM is different to ROM.

1:

```
\cloze{capture} RAM is Volatile, ROM is non-volatile
```

2:

Explain three ways that RAM is different to ROM.

1:

*RAM is Volatile, ROM is non-volatile*

---

2:

*RAM is temporary, ROM is (semi) permanent*

---

3:

*RAM normally has a larger capacity than ROM*

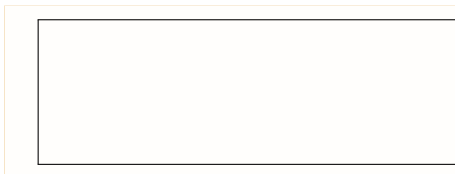
---

### 2.2.10 clozebox

`clozebox` (*env.*) `\begin{clozebox}*` [*options*] ...*some text* ...`\end{clozebox}`: The environment `clozebox` surrounds a text with a box. The starred version omits the line around the box. Use the options `box_height` (→ 2.3.7) and `box_width` (→ 2.3.9) to specify the dimensions of the box. By default the width of the box is `\linewidth`. The height of the box is determined by the amount of text. This environment is realized by a combination of the `minipage` environment surrounded by a `\fbox`. For the cloze text the macro `\clozenol` is reused. New paragraphs are not allowed inside a cloze box. Use two backslashes multiple times `\\` instead.

```
\begin{clozebox}
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod
tempor incididunt ut labore et dolore magna aliqua.
\end{clozebox}
```

`\clozehide`:



`\clozeshow`:

*Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.*

Like with all cloze macros and environments the hidden text vanishes from the rendered file. The starred version omits the line around the box:

```
\begin{clozebox}*
Lorem ...
\end{clozebox}
```

*Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.*

### 2.2.11 clozespace

`clozespace` (*env.*) `\begin{clozespace}[\langle options \rangle] ...some text ...\end{clozespace}`: If you are using a bigger font for the cloze text as for the normal text, you are getting irregular distances between the lines:

```
\clozersetfont{\Huge\fontspec{Kalam}}
Today in the Discovery ...
```

Today in the Discovery Lab we learned about three types of spacecraft that are helping us explore Mars. The spacecraft are on Mrs. Bratt's Principal's Reading Challenge board. One type of spacecraft is the orbiter.

With the environment `clozespace` you are able to restore the regular balanced line spacing. The default value for the option `spacing` is 1.6. Also take a look in the section about the option `spacing` (→ 2.3.20).

```
\begin{clozespace}[spacing=2]
...
\end{clozespace}
```

Today in the Discovery Lab we learned about three types of spacecraft that are helping us explore Mars. The spacecraft are on Mrs. Bratt's Principal's Reading Challenge board. One type of spacecraft is the orbiter.

The environment `clozespace` uses the package `setspace` in the background for setting the spacing between the lines.

### 2.2.12 \clozeline

`\clozeline` `\clozeline[\langle options \rangle]`: To create a cloze line of a certain width, use the command `\clozeline`. The default width of the line is 2cm. In combination with the other cloze commands you can create for example an irregular alignment of the cloze text.

```
Ut enim ad
\clozeline[width=1cm]\cloze{minim}\clozeline[width=3cm]
minim veniam
```

Ut enim ad minim minim veniam,

### 2.2.13 `\clozelinefil`

`\clozelinefil` `\clozelinefil[(options)]`: This command `\clozelinefil` fills the complete available horizontal space with a line. Moreover, `\clozelinefil` was used to create `\clozefil`.

```
Lorem_____
```

### 2.2.14 `\clozestrike`

`\clozestrike` `\clozestrike[(options)]{(wrong text)}{(correct text)}`: This macro can be useful for worksheets that contain intentionally errors. The pupils have to find and cross out the mistakes and write the right solution on top of the errors.

```
Wolfgang Amadeus Mozart was born in \clozestrike{Vienna}{Salzburg}.
```

```
Wolfgang Amadeus Mozart was born in Salzburg  
Vienna.
```

The option `line_color` has no effect on the lines produced by the macro `\clozestrike`. The line color and the text color are both the same, because the pupils have to draw the lines.

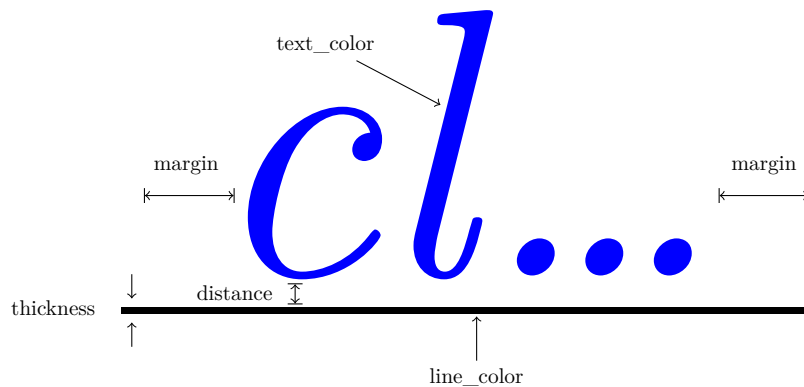
```
Mozart's father was called  
\clozestrike[text_color=red]{Ludwig}{Leopold} Mozart.
```

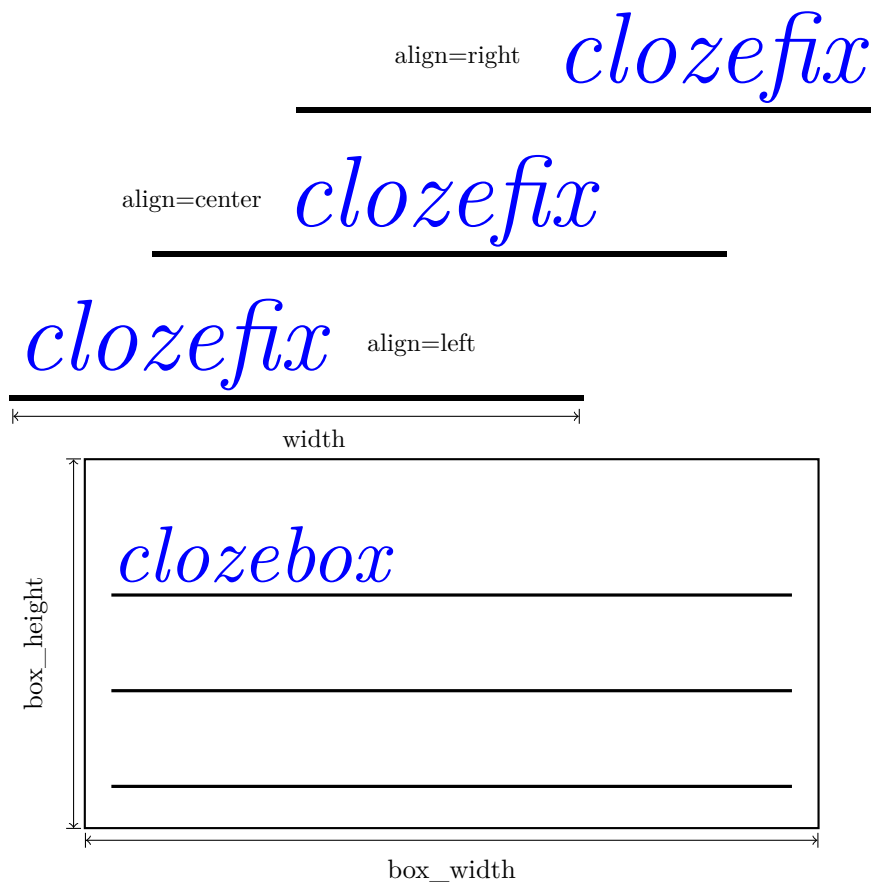
```
Mozart's father was called Leopold  
Ludwig Mozart.
```

## 2.3 The options

### 2.3.1 Overview over all options

Option	Description	Reference
<code>align</code>	The alignment of a fixed-size cloze text ( <code>\clozefix</code> ).	(→ 2.3.6)
<code>box_height</code>	The height of a cloze box ( <code>clozebox</code> ).	(→ 2.3.7)
<code>box_rule</code>	The thickness of the line around a <code>clozebox</code> .	(→ 2.3.8)
<code>box_width</code>	The width of a cloze box ( <code>clozebox</code> ).	(→ 2.3.9)
<code>debug</code>	The debug or log level.	(→ 2.3.10)
<code>distance</code>	The distance between the cloze text and the cloze line.	(→ 2.3.11)
<code>extend_count</code>	The number of extension units ( <code>\clozeextend</code> ).	(→ 2.3.13)
<code>extend_height</code>	The height of one extension unit ( <code>\clozeextend</code> ).	(→ 2.3.14)
<code>extend_width</code>	The width of one extension unit ( <code>\clozeextend</code> ).	(→ 2.3.15)
<code>hide</code>	Hide the cloze text.	(→ 2.3.16)
<code>font</code>	The font of the cloze text.	(→ 2.3.12)
<code>line_color</code>	The color name to colorize the cloze line.	(→ 2.3.17)
<code>margin</code>	The additional margin between the normal and the cloze text.	(→ 2.3.18)
<code>min_lines</code>	The minimum number of lines a <code>clozepar</code> environment must have.	(→ 2.3.19)
<code>show</code>	Show the cloze text.	(→ 2.3.16)
<code>spacing</code>	The spacing of the lines in the environment <code>clozespace</code> .	(→ 2.3.20)
<code>spread</code>	The magnification or spreading factor of a gap.	(→ 2.3.21)
<code>text_color</code>	The color name to colorize the cloze text.	(→ 2.3.17)
<code>thickness</code>	The thickness of a line.	(→ 2.3.22)
<code>width</code>	The width of a fixed size cloze ( <code>\clozefix</code> ).	(→ 2.3.16)
<code>visibility</code>	The visibility of the cloze text.	(→ 2.3.24)





### 2.3.2 Local and global options

The *cloze* package distinguishes between *local* and *global* options. Besides the possibility to set *global* options in the `\usepackage[global options]{cloze}` declaration, the *cloze* package offers a special command to set *global* options: `\clozeset{global options}`

### 2.3.3 `\clozeset`

`\clozeset` `\clozeset{global options}`: The command can set *global* options for each paragraph.

```
\clozeset{text_color=red} Lorem \cloze{ipsum} dolor \par
\clozeset{text_color=green} Lorem \cloze{ipsum} dolor
```

```
Lorem ipsum dolor
  Lorem ipsum dolor
```

`\clozeset` does not change the options within a paragraph. As you can see in the example below the last `\clozeset` applies the color green for both gaps.

```
\clozeset{text_color=red} Lorem \cloze{ipsum} dolor
\clozeset{text_color=green} Lorem \cloze{ipsum} dolor
```

Lorem ipsum dolor Lorem ipsum dolor

### 2.3.4 \clozereset

`\clozereset` `\clozereset`: The command resets all *global* options to the default values. It has no effect on the *local* options.

```
\clozeset{
  thickness=3mm,
  line_color=yellow,
  text_color=magenta,
  margin=-2pt
}
```

Very silly global options

```
\clozereset
```

Relax! We can reset those options.

### 2.3.5 \clozeshow and \clozehide

`\clozeshow` `\clozeshow` and `\clozehide`: This commands are shortcuts for `\clozeset{<show>}` `\clozehide` and `\clozeset{<hide>}`.

```
\clozehide
```

Lorem \_\_\_\_\_ amet, consectetur \_\_\_\_\_ elit.

```
\clozeshow
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

### 2.3.6 align

[`align=<left/center/right>`]: Only the macro `\clozefix` (→ 2.2.3) takes the option `align` into account. Possible values are `left`, `center` and `right`. This option only makes sense, if the width of the line is larger than the width of the text.

<i> Lorem ipsum </i>	(left)
<i> Lorem ipsum </i>	(center)
<i> Lorem ipsum </i>	(right)

**2.3.7 box\_height**

[*box\_height*=<dimen>]: specifies the height of a cloze box. This option has only an effect on the environment `clozebox` (→ 2.2.10).

```
\begin{clozebox}[box_height=5cm]
```

**2.3.8 box\_rule**

[*box\_rule*=<dimen>]: specifies the thickness of the rule around a cloze box. This option has only an effect on the environment `clozebox` (→ 2.2.10).

```
\begin{clozebox}[box_rule=2pt]
```

**2.3.9 box\_width**

[*box\_width*=<dimen>]: specifies the width of a cloze box. This option has only an effect on the environment `clozebox` (→ 2.2.10).

```
\begin{clozebox}[box_width=3cm]
```

### 2.3.10 debug

The `debug` option sets the log level. The following debug levels can be set. There are a few places in the Lua code where print statements are built in, which output debug messages to the console if required. The default value is 0.

- 1 (error)
- 2 (warn)
- 3 (info)
- 4 (verbose)
- 5 (debug)

### 2.3.11 distance

[`distance=<dimen>`]: The option `distance` specifies the spacing between the baseline of the text and the gap line. The larger the dimension of the option `distance`, the more moves the line down. Negative values cause the line to appear above the baseline. The default value is 1.5pt.

```
 Lorem ipsum dolor sit amet.  (1.5pt)  
 Lorem ipsum dolor sit amet.  (3pt)  
 Lorem ipsum dolor sit amet.  (-3pt)
```

### 2.3.12 font

[`font=<cmd>`]: The option `font` is an alternative to the commands `\clozefont` or `\clozesetfont`. If this option is used `\clozefont` or `\clozesetfont` have no effect. The option can be used as a local or global option, but not as a package option.

```
 Lorem \cloze[font=\Huge]{ipsum} dolor.
```

```
 Lorem ipsum dolor.
```

### 2.3.13 extend\_count

[`extend_count=<integer>`]: If specified as a local option within the `\clozeextend` command, the option can be abbreviated and the prefix `extend_` omitted.

```
 \cloze{Lorem ipsum dolor sit amet. \clozeextend[count=5]}
```



<u> Lorem ipsum dolor sit amet. </u>	(5)
<u> Lorem ipsum dolor sit amet. </u>	(10)
<u> Lorem ipsum dolor sit amet. </u>	(15)

The option can be shortened even further, namely as a single number. All three examples set the `extend_count` option to 5.

```
\clozeextend[5]
\clozeextend[count=5]
\clozeextend[extend_count=5]
```

This option only has an effect on the command `\clozeextend` (→ 2.2.6).

### 2.3.14 extend\_height

`[extend_height=(dim)]`: If specified as a local option within the `\clozeextend` command, the option can be abbreviated and the prefix `extend_` omitted.

```
\cloze{Lorem ipsum dolor sit amet. \clozeextend[height=2ex]}
```

<u> Lorem ipsum dolor sit amet. </u>	(2ex)
<u> Lorem ipsum dolor sit amet. </u>	(3ex)
<u> Lorem ipsum dolor sit amet. </u>	(4ex)

This option only has an effect on the command `\clozeextend` (→ 2.2.6).

### 2.3.15 extend\_width

`[extend_width=(dim)]`: If specified as a local option within the `\clozeextend` command, the option can be abbreviated and the prefix `extend_` omitted.

```
\cloze{Lorem ipsum dolor sit amet. \clozeextend[width=1em]}
```

<u> Lorem ipsum dolor sit amet. </u>	(1em)
<u> Lorem ipsum dolor sit amet. </u>	(2em)
<u> Lorem ipsum dolor sit amet. </u>	(3em)

This option only has an effect on the command `\clozeextend` (→ 2.2.6).

### 2.3.16 hide and show

`[hide]` and `[show]`: By default the cloze text is displayed. Use the option `hide` to remove the cloze text from the output.

Lorem ipsum _____, consectetur _____ elit.	(hide)
Lorem ipsum <u>dolor sit amet</u> , consectetur <u>adipiscing</u> elit.	(show)

### 2.3.17 line\_color and text\_color

[line\_color=<color name>] and [text\_color=<color name>]: Values for both color options are color names. To define your own color use the following command:

```
\definecolor{myclozecolor}{rgb}{0.1,0.4,0.6}
\cloze[text_color=myclozecolor]{Lorem ipsum}
```

Lorem ipsum dolor sit amet, consectetur  (myclozecolor)  
 Lorem ipsum dolor sit amet, consectetur  (red)  
 Lorem ipsum dolor sit amet, consectetur  (green)

You can use the same color names to colorize the cloze lines.

Lorem ipsum dolor sit amet, consectetur  (myclozecolor)  
 Lorem ipsum dolor sit amet, consectetur  (red)  
 Lorem ipsum dolor sit amet, consectetur  (green)

And now hide the clozes:

(myclozecolor)  
  (red)  
  (green)

### 2.3.18 margin

[margin=<dimen>]: The option margin indicates how far the line sticks up from the text. The option can be used with the commands \cloze, \clozefix and \clozefil. The default value of the option is 3pt.

Lorem ipsum dolor sit amet. (0pt)  
 Lorem ipsum dolor sit amet. (5mm)  
 Lorem ipsum dolor sit amet. (1cm)  
 Lorem ipsum dolor sit amet. (6em)  
 Lorem ipsum dolor sit amet. (-4pt)

Is a punctuation mark placed directly after a gap, then the line breaks after this punctuation mark. Even the most large value of margin does not affect this behavior.

Lorem , ipsum . dolor ; sit : amet , consectetur . adipiscing ;   
 elit : sed , do . eiusmod ; tempor .

### 2.3.19 min\_lines

[`min_lines=<integer>`]: `min_lines` stands for “**minimum lines**”. With the option `min_lines` you can set how many lines a `clozepar` at least must have. If the text to be typeset results in fewer lines, empty lines are appended to the end. If the text of a `clozepar` produces more lines as specified in `min_lines`, the option has no effect at all. The option `min_lines` only affects the behavior of the environment `clozepar` (→ 2.2.7) and the macro versions `\clozeparplain` (→ 2.2.8) and `\clozeparcapture` (→ 2.2.9).

```
\clozeset{min_lines=4}
\begin{enumerate}
\item Battlements

\begin{clozepar}
Higher ...
```

`\clozehide:`

#### Defending a Castle

Here is a list of features on castle in the Middle Ages that would help to defend it.

1. Battlements

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Embrasures

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Portcullis

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

`\clozeshow:`

#### Defending a Castle

Here is a list of features on castle in the Middle Ages that would help to defend it.

1. Battlements

*Higher than the walls and jutting out from them to allow defenders to fire at people who had reached the walls*

2. Embrasures

*Heavily protected entrance*

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Portcullis

*Arrow slits with a round hole for firing musket guns*

\_\_\_\_\_  
\_\_\_\_\_

### 2.3.20 spacing

[`spacing=<number>`]: This option provides support for setting the spacing between lines. A larger font used for the cloze texts needs more line space to avoid unsteady line distances. This option only affects the environment `clozespace` (→ 2.2.11).

### 2.3.21 spread

[`spread=<number>`]: The option `spread` enlarges or spreads a gap by a certain factor. 0.5, for example, enlarges the gap by half of its original size. A spread factor of 0 does not insert a space. A negative spread factor can also be applied. This may cause the text characters to overlap. This option can only be used in combination with the commands `\cloze` (→ 2.2.1) and `\clozenol` (→ 2.2.4).

Lorem <u>ipsum dolor sit</u> amet.	(-0.5)
Lorem <u>ipsum dolor sit</u> amet.	(0)
Lorem <u>ipsum dolor sit</u> amet.	(0.5)
Lorem <u>ipsum dolor sit</u> amet.	(1)
Lorem <u>ipsum dolor sit</u> amet.	(2)

The `spread` option inserts a space at the beginning and end of a gap that depends on the width of the text in the gap.

Lorem ipsum dolor <u>sit</u> amet.	(0.5)
Lorem ipsum <u>dolor sit</u> amet.	(0.5)
Lorem <u>ipsum dolor sit</u> amet.	(0.5)
<u>Lorem ipsum dolor sit</u> amet.	(0.5)
<u>Lorem ipsum dolor sit amet</u> .	(0.5)

In addition to the `spread` option, the `margin` option can also be used, which inserts a distance that is independent of the width of the gap.

### 2.3.22 thickness

[`thickness=<dimen>`]: The option `thickness` indicates how thick the line is. The option `distance` (→ 2.3.11) is not affected by this option, because the bottom of the line moves down. The default value of this option is 0.4pt.

Lorem <u>ipsum dolor sit</u> amet.	(0.01pt)
Lorem <u>ipsum dolor sit</u> amet.	(1pt)
Lorem <u>ipsum dolor sit</u> amet.	(2pt)

### 2.3.23 width

[`width=<dimen>`]: The only command which can be changed by the option `width` is `\clozefix` (→ 2.2.3). The default value of the option is 2cm.

Lorem <u>dolor</u> amet.	(3cm)
Lorem <u>dolor</u> amet.	(5cm)
Lorem <u>dolor</u> amet.	(7cm)

### 2.3.24 visibility

[`visibility=<boolean>`]: Instead of the opposite naked `show` and `hide` keys, you can use the `visibility` option and set it to a boolean value.

```

Lorem \cloze[visibility=false]{ipsum} dolor.
Lorem \cloze[visibility=true]{ipsum} dolor.
Lorem \cloze[visibility=false]{ipsum} dolor.

```

Lorem _____ dolor.	(false)
Lorem <i>ipsum</i> dolor.	(true)
Lorem _____ dolor.	(false)

## 2.4 Handwriting fonts from CTAN and T<sub>E</sub>X Live

If you want to imitate a hand-filled worksheet, then some handwriting fonts are suitable for this purpose. This section is intended to provide an overview of handwriting fonts available on CTAN and T<sub>E</sub>X Live. The fonts are listed in alphabetical order:

### QT Brush Stroke

CTAN: [qualitype](#)  
T<sub>E</sub>X Live: `tlmgr install qualitype`  
Font selection: `\clozesetfont{\fontspec{QT Brush Stroke}}`

Lorem *ipsum* dolor sit amet, consetetur *sadipscing elit, sed diam nonummy eirmod tempor* invidunt ut *labore et dolore magna aliquyam erat*, sed *diam* voluptua.

### QT Florencia

CTAN: [qualitype](#)  
T<sub>E</sub>X Live: `tlmgr install qualitype`  
Font selection: `\clozesetfont{\fontspec{QT Florencia}}`

Lorem *ipsum* dolor sit amet, consetetur *sadipscing elit, sed diam nonummy eirmod tempor* invidunt ut *labore et dolore magna aliquyam erat*, sed *diam* voluptua.

### QT Linostroke

CTAN: [qualitype](#)  
T<sub>E</sub>X Live: `tlmgr install qualitype`  
Font selection: `\clozesetfont{\fontspec{QT Linostroke}}`

Lorem *ipsum* dolor sit amet, consetetur *sadipscing elit, sed diam nonummy eirmod tempor* invidunt ut *labore et dolore magna aliquyam erat*, sed *diam* voluptua.

---

## QT Merry Script

CTAN: [qualitype](#)  
T<sub>E</sub>X Live: `tlmgr install qualitype`  
Font selection: `\clozesetfont{\fontspec{QT Merry Script}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

## QT Slogantype

CTAN: [qualitype](#)  
T<sub>E</sub>X Live: `tlmgr install qualitype`  
Font selection: `\clozesetfont{\fontspec{QT Slogantype}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

## 2.5 Handwriting fonts from Google Fonts

You can get many more free handwriting fonts from Google Fonts. This section shows only a selection. I personally use the font named *Kalam* for my worksheets. All Google Fonts are available in a [Git repository](#).

```
git clone https://github.com/google/fonts.git
```

The fonts are listed in alphabetical order:

### Coming Soon

URL: <https://fonts.google.com/specimen/Coming+Soon>  
Font selection: `\clozesetfont{\fontspec{Coming Soon}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

### Gluten

URL: <https://fonts.google.com/specimen/Gluten>  
Font selection: `\clozesetfont{\fontspec{Gluten}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elit, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

## Kalam

URL: <https://fonts.google.com/specimen/Kalam>  
Font selection: `\clozesetfont{\fontspec{Kalam}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elit, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

## Mali

URL: <https://fonts.google.com/specimen/Mali>  
Font selection: `\clozesetfont{\fontspec{Mali}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elit, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

## Oregano

URL: <https://fonts.google.com/specimen/Oregano>  
Font selection: `\clozesetfont{\fontspec{Oregano}}`

Lorem ipsum dolor sit amet, consetetur sadipscing elit, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

## 2.6 Special application areas

This section lists examples that didn't work in older versions of the cloze package and required special treatment to work as expected.

### 2.6.1 The math mode

By default the package uses `\itshape` to format the cloze text. In math mode you have to reset the cloze text format by calling `\clozesetfont{}`. A known bug is: You can't show and hide a single display math formula. Only the last `\clozeshow` or `\clozehide` takes effect on the whole document. Side note: The usage of the TeX primitive syntax `$$ $$` is not recommended.

```
\clozesetfont{}
$$i + 1 = \cloze{2}$$
\clozesetfont{\itshape}
```

$$1 + 1 = \underline{2}$$

`\[\]` should be used instead.

```
\[123 + 456 = \cloze{579}\]
```

$$123 + 456 = \underline{579}$$

A cloze inside a display math environment should work fine:

```
\begin{displaymath}
2^{\cloze{2}} = 4
\end{displaymath}
```

$$2^{\underline{2}} = 4$$

The inline math mode works too:

```
$$\sqrt[3]{\cloze{8}} = 2$ and $\sqrt[\cloze{3}]{\cloze{8}} = 2$
```

$$\sqrt[3]{\underline{8}} = 2 \text{ and } \sqrt[\underline{3}]{\underline{8}} = 2$$

```
\begin{equation}
e^{\pi i} + 1 = \cloze{0}
\end{equation}
```

$$e^{\pi i} + 1 = \underline{0} \quad (1)$$

The amsmath multline environment:

```
\begin{multline*}
p(x) = \cloze{590}x^4y^2 +
\leftrightarrow \cloze{19}x^3y^3\backslash
- 12x^2y^4 - \cloze{12}xy^5
\end{multline*}
```

$$p(x) = \underline{590}x^4y^2 + \underline{19}x^3y^3 \\ - 12x^2y^4 - \underline{12}xy^5$$

`\clozehide:`

Missing Subtraction Facts to 12

- a)  $8 - 6 = \underline{\quad}$
- b)  $10 - 4 = \underline{\quad}$
- c)  $7 - \underline{\quad} = 5$
- d)  $6 - \underline{\quad} = 5$
- e)  $\underline{\quad} - 3 = 3$
- f)  $\underline{\quad} - 2 = 8$



\clozeshow:

Missing Subtraction Facts to 12

a)  $8 - 6 = \underline{2}$

b)  $10 - 4 = \underline{6}$

c)  $7 - \underline{2} = 5$

$$\text{d) } 6 - \underline{1} = 5$$

$$\text{e) } \underline{6} - 3 = 3$$

$$\text{f) } \underline{10} - 2 = 8$$

### 2.6.2 The tabbing environment

```
\begin{tabbing}
col1 \hspace{1cm} \= col2 \hspace{1cm} \= col3 \hspace{1cm} \= col4 \\
\cloze{col1} \> \> \clozefix{col3} \\
\end{tabbing}
```

col1	col2	col3	col4
<u>col1</u>		<u>col3</u>	

### 2.6.3 The picture environment

```

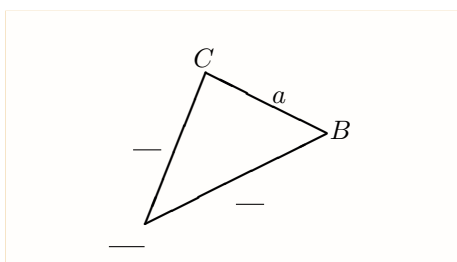
\setlength{\unitlength}{0.8cm}
\begin{picture}(4.8,3.8)
\thicklines
\put(1,0.5){\line(2,1){3}} \put(4,2){\line(-2,1){2}}
↪ \put(2,3){\line(-2,-5){1}}

\put(0.4,0.2){\cloze{A}} \put(4.05,1.9){\mathbb{B}} \put(1.8,3.1){\mathbb{C}}

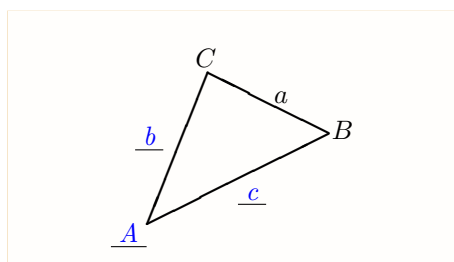
\put(3.1,2.5){\mathbb{A}} \put(0.8,1.8){\cloze{b}} \put(2.5,0.9){\cloze{c}}
\end{picture}

```

\clozehide:



\clozeshow:



### 2.6.4 The tabular environment

```

\begin{tabular}{l|l}
\textbf{englisch} & \textbf{deutsch} \\ \hline
book & \clozefil{Buch} \\
\clozefil{scissors} & Schere \\
pen & \clozefil{Füller} \\
\clozefil{pencil} & Bleistift \\
\end{tabular}

```

\clozehide:

englisch	deutsch
book	_____
_____	Schere
pen	_____
_____	Bleistift

\clozeshow:

englisch	deutsch
book	<u>Buch</u>
<u>scissors</u>	Schere
pen	<u>Füller</u>
<u>pencil</u>	Bleistift

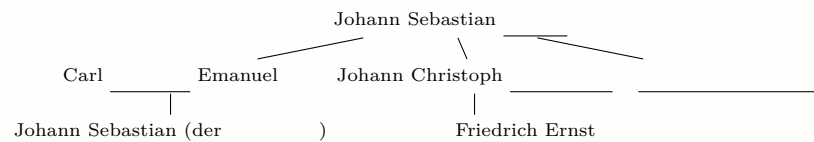
## 2.6.5 The package forest

```

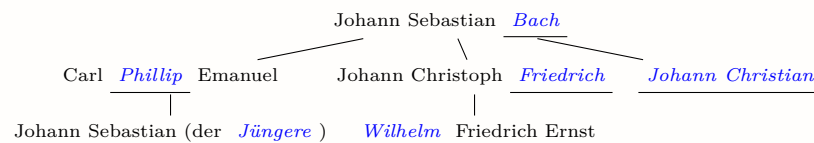
\begin{forest}
[Johann Sebastian \cloze{Bach}
 [Carl \cloze{Phillip} Emanuel
 [Johann Sebastian (der \cloze{Jüngere})]
 ]
 [Johann Christoph \cloze{Friedrich}
 [\cloze{Wilhelm} Friedrich Ernst]
 ]
 [\cloze{Johann Christian}]
]
\end{forest}

```

\clozehide:



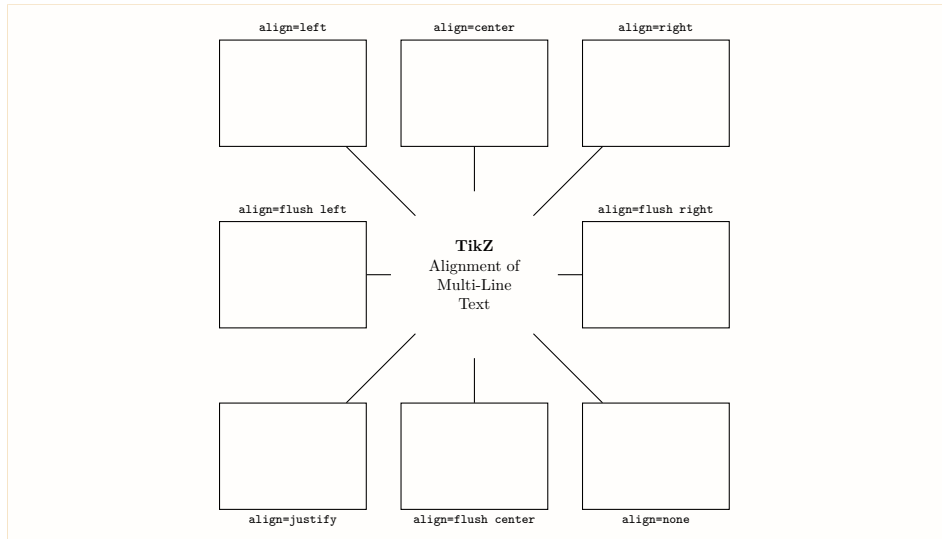
\clozeshow:



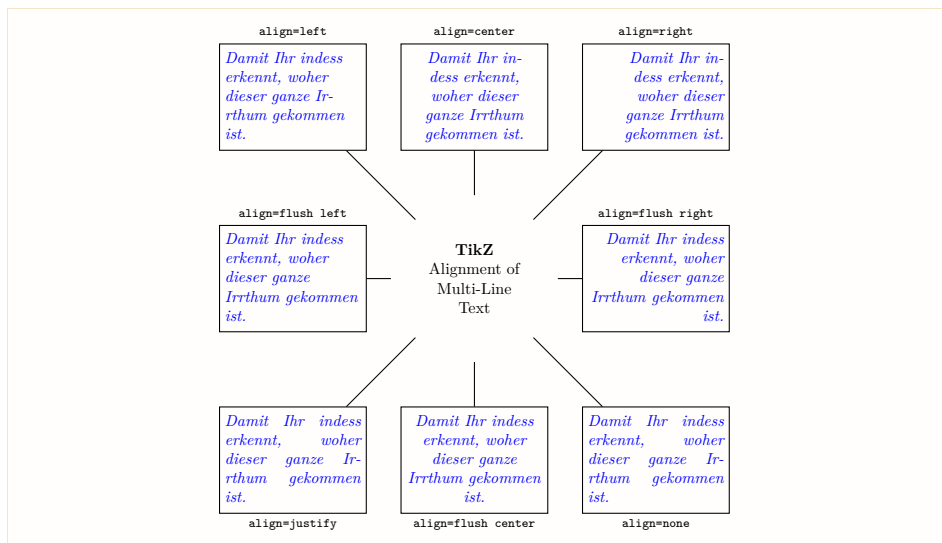
## 2.6.6 The package tikz

### 2.6.6.1 Example Multiline alignment in TikZ

\clozehide:

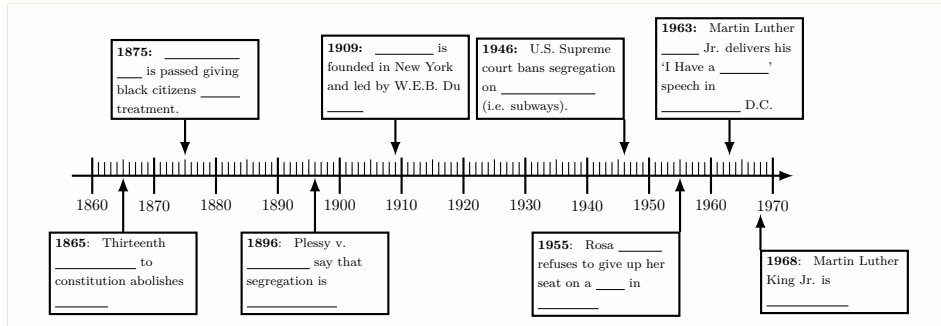


\clozeshow:

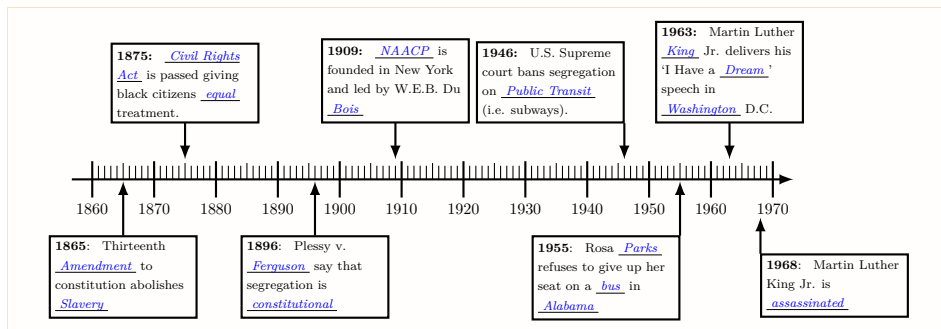


### 2.6.6.2 Example Timeline

\clozehide:

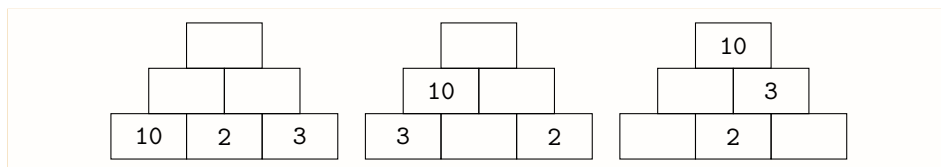


\clozeshow:

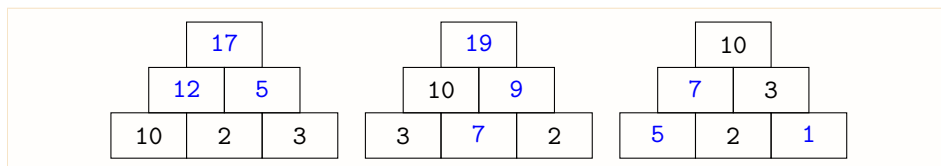


### 2.6.6.3 Number pyramid

\clozehide:



\clozeshow:



## 3 Implementation

The source code is hosted on [Github](#). The following links will take you to the individual files:

- [cloze.lua](#)

- `cloze.tex`
- `cloze.sty`