The *cloze* package*

Josef Friedrich
josef@friedrich.rocks
github.com/Josef-Friedrich/cloze

v1.8.1 from 2025/06/17

*Many thanks to Robert-Michael Huber for his advice and to Paul Isambert for his article *"Three things you can do with LuaTEX that would be extremely painful otherwise"* in TUGboat, Volume 31 (2010), No. 3. This article helped a lot to write this package.

Contents

1 Introduction **4**

2 Usage **4**

2.1 Interfaces . . . 4
2.1.1 The plain TEX interface . . . 4
2.1.2 The LATEX interface . . . 4
2.2 The commands and environments . . . 5
2.2.1 \cloze . . . 5
2.2.2 \clozesetfont . . . 5
2.2.3 \clozefix . . . 6
2.2.4 \clozenol . . . 6
2.2.5 \clozefil . . . 7
2.2.6 \clozeextend . . . 7
2.2.7 clozepar . . . 8
2.2.8 \clozeparplain . . . 8
2.2.9 \clozeparcapture . . . 8
2.2.10 clozebox . . . 9
2.2.11 clozespace . . . 10
2.2.12 \clozeline . . . 10
2.2.13 \clozelinefil . . . 11
2.2.14 \clozestrike . . . 11
2.3 The options . . . 11
2.3.1 Overview over all options . . . 11
2.3.2 Local and global options . . . 12
2.3.3 \clozesetoption . . . 13
2.3.4 \clozeset . . . 13
2.3.5 \clozereset . . . 13
2.3.6 \clozeshow and \clozehide . . . 14
2.3.7 align . . . 14
2.3.8 boxheight . . . 14
2.3.9 boxrule . . . 14
2.3.10 boxwidth . . . 15
2.3.11 distance . . . 15
2.3.12 hide and show . . . 15
2.3.13 linecolor and textcolor . . . 15
2.3.14 log . . . 16
2.3.15 margin . . . 16
2.3.16 minlines . . . 18
2.3.17 spacing . . . 18
2.3.18 spread . . . 19
2.3.19 thickness . . . 19
2.3.20 width . . . 19
2.4 Handwriting fonts from CTAN and TEX Live . . . 19
2.5 Handwriting fonts from Google Fonts . . . 21
2.6 Special application areas . . . 22
2.6.1 The math mode . . . 22
2.6.2 The tabbing environment . . . 23

2.6.3 The `picture` environment 24
2.6.4 The `tabular` environment 24
2.6.5 The package `forest` 25
2.6.6 The package `tikz` 26
2.6.6.1 Example Multiline alignment in TikZ 26
2.6.6.2 Example Timeline 27
2.6.6.3 Number pyramid 27

1 Introduction

cloze is a plain TEX or a LATEX package to generate cloze texts. It uses the capabilities of the modern TEX engine *LuaTEX*. Therefore, you must use LuaTEX or LuaLATEX 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` (→ 2.3.12) options.

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 `\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

The main difference between the plain TEX and the LATEX interface is option handling. In LATEX options can be set by using key-value pairs. In plain TEX the only possibility to set options is to use the macro `\clozesetoption` (→ 2.3.3).

2.1.1 The plain TEX interface

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

2.1.2 The LATEX 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` (→ 2.3.15).

> 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* *Oberkommisarin* auch *Fillialleiterin* 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 `textcolor` instead (→ 2.3.13).

`\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 concering the width `2cm`.

Lorem ipsum dolor sit amet:
1. *consectetur*
2. *adipisicing*
3. *elit*

sed do eiusmod.

Gaps with a fixed width are much harder to solve.

Lorem ipsum dolor *sit* amet, *consectetur* adipisicing 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
Joseph Haydn	*1723-1809*
Wolfgang Amadeus Mozart	*1756-1791*
Ludwig van Beethoven	*1770-1827*

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[textcolor=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 TEX*.
I am someone who hate *to write cloze worksheets in MS Word*.
I am someone who can *write cloze worksheets in TEX*.
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 `minlines` (→ 2.3.16), if you want to extend some cloze paragraphs.

Corresponding options:

extension_count : The number of extension units.

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

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

```
\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[20]}
\item \clozefil{quis nostrud \clozeextend[20]}
\end{itemize}
```

- *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*

2.2.7 clozepar

clozepar (*env.*) \begin{clozepar}[⟨*options*⟩] …*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 adipisicing 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:

\clozeparcapture 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 `boxheight` (→ 2.3.8) and `boxwidth` (→ 2.3.10) 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 adipisicing elit, sed do eiusmod
tempor incididunt ut labore et dolore magna aliqua.
\end{clozebox}
```

`\clozehide`:

`\clozeshow`:

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

2.2.11 clozespace

clozespace (*env.*) `\begin{clozespace}[`⟨*options*⟩`]` …*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:

```
\clozesetfont{\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` (→ 2.3.17).

```
\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[`⟨*options*⟩`]`: 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}.
```

Salzburg
Wolfgang Amadeus Mozart was born in ~~Vienn~~a.

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

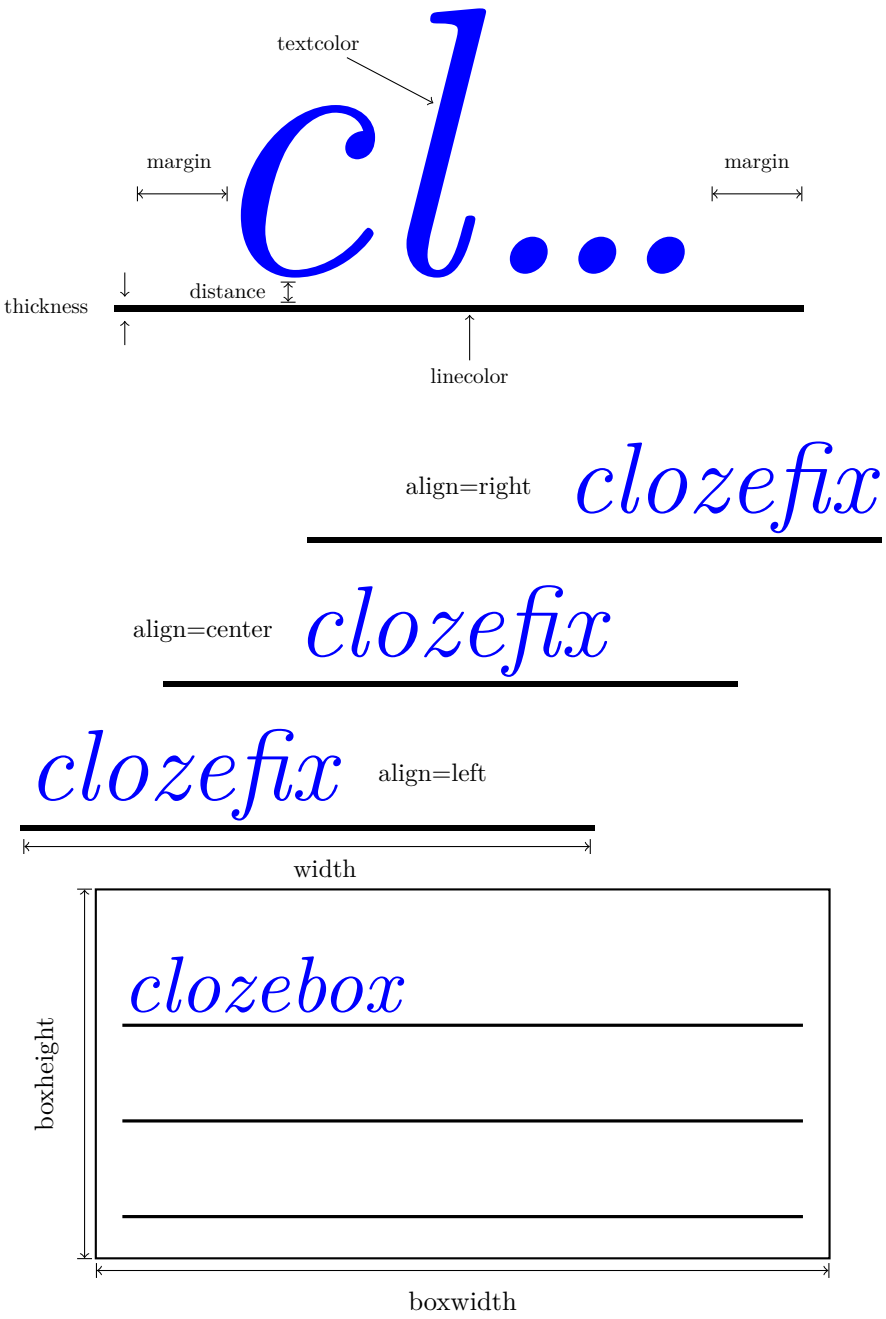
```
Mozart's father was called
\clozestrike[textcolor=red]{Ludwig}{Leopold} Mozart.
```

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

2.3 The options

2.3.1 Overview over all options

Option	Description	Reference
`align`	Align the text of a fixed size cloze (`\clozefix`) .	(→ 2.3.7)
`boxheight`	The height of a cloze box (`clozebox`).	(→ 2.3.8)
`boxrule`	The thickness of the rule around a `clozebox`.	(→ 2.3.9)
`boxwidth`	The width of a cloze box (`clozebox`).	(→ 2.3.10)
`distance`	The distance between the cloze text and the cloze line.	(→ 2.3.11)
`hide`	Hide the cloze text.	(→ 2.3.12)
`linecolor`	A color name to colorize the cloze line.	(→ 2.3.13)
`log`	Set the log level.	(→ 2.3.14)
`margin`	Additional margin between the normal and the cloze text.	(→ 2.3.15)
`minlines`	The minimum of lines a `clozepar` environment must have.	(→ 2.3.16)
`show`	Show the cloze text.	(→ 2.3.12)
`spacing`	The distance of the lines in the environment `clozespace`.	(→ 2.3.17)
`spread`	Enlarge or spread a gap by a certain factor.	(→ 2.3.18)
`textcolor`	A color name to colorize the cloze text.	(→ 2.3.13)
`thickness`	The thickness of a line.	(→ 2.3.19)
`width`	The width of a fixed size cloze (`\clozefix`).	(→ 2.3.12)



2.3.2 Local and global options

The *cloze* package distinguishs between *local* and *global* options. Besides the possiblity 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 `\clozesetoption`

`\clozesetoption` `\clozesetoption{`⟨*key*⟩`}{`⟨*value*⟩`}`: Set a single option. In plain TEX the command sets the options only in the global option space.

2.3.4 `\clozeset`

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

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

Lorem _ipsum_ dolor Lorem _ipsum_ dolor

2.3.5 `\clozereset`

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

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

Very _silly_ global _options_

```
\clozereset
```

Relax! We can reset _those_ options.

2.3.6 `\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 *adipisicing* elit.

2.3.7 `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.

Lorem ipsum (`left`)
Lorem ipsum (`center`)
Lorem ipsum (`right`)

2.3.8 `boxheight`

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

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

boxwidth: 2.5cm; Lorem ipsum dolor sit amet …

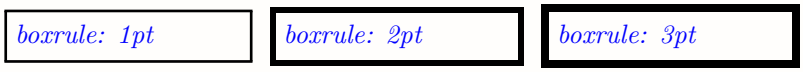
boxwidth: 3cm; Lorem ipsum dolor sit amet …

boxwidth: 4cm; Lorem ipsum dolor sit amet …

2.3.9 `boxrule`

`[boxrule=`⟨*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}[boxrule=2pt]
```



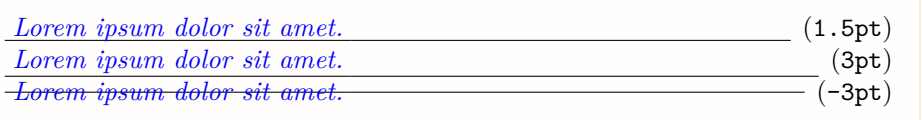
2.3.10 `boxwidth`

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

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

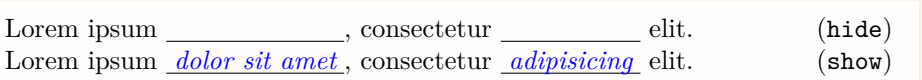
2.3.11 `distance`

`[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`.



2.3.12 `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.



2.3.13 `linecolor` and `textcolor`

`[linecolor=`⟨*color name*⟩`]` and `[textcolor=`⟨*color name*⟩`]`: Values for both color options are color names used by the xcolor package. To define your own color use the following command:

```
\definecolor{myclozecolor}{rgb}{0.1,0.4,0.6}
\cloze[textcolor=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)

2.3.14 log

The log option defines the log level for the Lua code. The following log levels can be set.

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

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

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

2.3.16 `minlines`

`[minlines=`⟨*integer*⟩`]`: `minlines` stands for "**min**imum **lines**". With the option `minlines` 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 `minlines`, the option has no effect at all. The option `minlines` 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{minlines=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

2.3.17 `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).

2.3.18 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 *ipsum dolor sit* amet. (-0.5)
Lorem *ipsum dolor sit* amet. (0)
Lorem *ipsum dolor sit* amet. (0.5)
Lorem *ipsum dolor sit* amet. (1)
Lorem *ipsum dolor sit* 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 *sit* amet. (0.5)
Lorem ipsum *dolor sit* amet. (0.5)
Lorem *ipsum dolor sit* amet. (0.5)
Lorem ipsum dolor sit amet. (0.5)
Lorem ipsum dolor sit amet. (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.

2.3.19 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 *ipsum dolor sit* amet. (0.01pt)
Lorem *ipsum dolor sit* amet. (1pt)
Lorem *ipsum dolor sit* amet. (2pt)

2.3.20 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 *dolor* amet. (3cm)
Lorem *dolor* amet. (5cm)
Lorem *dolor* amet. (7cm)

2.4 Handwriting fonts from CTAN and TEX 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 TEX Live. The fonts are listed in alphabetical order:

QT Brush Stroke

CTAN: qualitype
TEX Live: `tlmgr install qualitype`
Font selection: `\clozesetfont{\fontspec{QT Brush Stroke}}`

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 Florencia

CTAN: qualitype
TEX Live: `tlmgr install qualitype`
Font selection: `\clozesetfont{\fontspec{QT Florencia}}`

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 Linostroke

CTAN: qualitype
TEX Live: `tlmgr install qualitype`
Font selection: `\clozesetfont{\fontspec{QT Linostroke}}`

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 Merry Script

CTAN: qualitype
TEX 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
TEX 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 respository.

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

$$1 + 1 = 2$$

`\[\]` should be used instead.

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

$$123 + 456 = 579$$

A cloze inside a display math environment should work fine:

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

$$2^{2} = 4$$

The inline math mode works too:

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

$$\sqrt[3]{\_8\_} = 2 \text{ and } \sqrt[\_3\_]{\_8\_} = 2$$

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

$$e^{\pi i} + 1 = \_0\_ \tag{1}$$

The amsmath `multline` environment:

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

$$p(x) = \_590\_ x^4y^2 + \_19\_ x^3y^3 - 12x^2y^4 - \_12\_ xy^5$$

`\clozehide`:

Missing Subtraction Facts to 12

a) $8 - 6 =$ _____

b) $10 - 4 =$ _____

c) $7 -$ _____ $= 5$

d) $6 -$ _____ $= 5$

e) _____ $- 3 = 3$

f) _____ $- 2 = 8$

`\clozeshow`:

Missing Subtraction Facts to 12

a) $8 - 6 =$ 2

b) $10 - 4 =$ 6

c) $7 -$ 2 $= 5$

d) $6 -$ 1 $= 5$

e) 6 $- 3 = 3$

f) 10 $- 2 = 8$

2.6.2 The `tabbing` environment

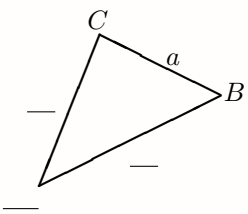
```
\begin{tabbing}
col1 \hspace{1cm} \= col2 \hspace{1cm} \= col3 \hspace{1cm} \= col4 \\
\cloze{col1} \> \> \clozefix{col3} \\
\end{tabbing}
```

col1	col2	col3	col4
col1		*col3*	

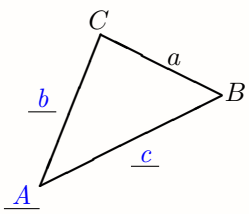
2.6.3 The picture environment

```
\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){$B$} \put(1.8,3.1){$C$}

\put(3.1,2.5){$a$} \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

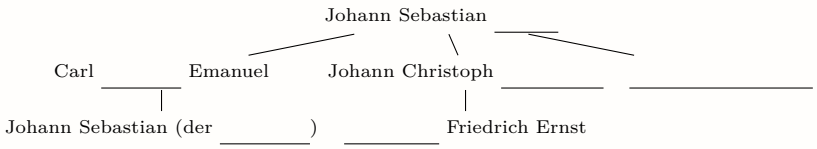
\clozeshow:

englisch	**deutsch**
book	*Buch*
scissors	Schere
pen	*Füller*
pencil	Bleistift

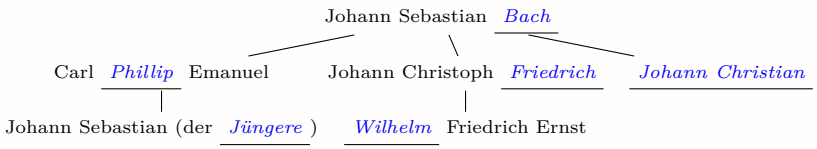
2.6.5 The package `forest`

```
\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`:



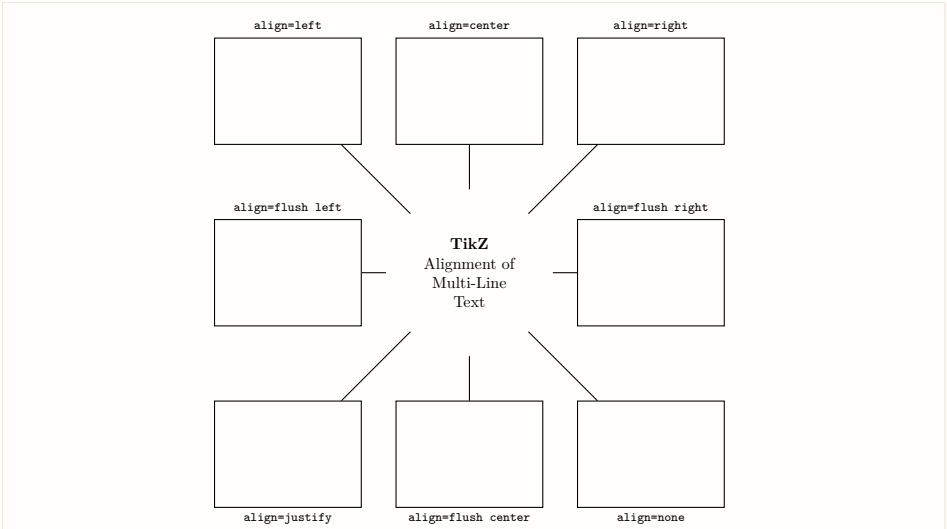
`\clozeshow`:



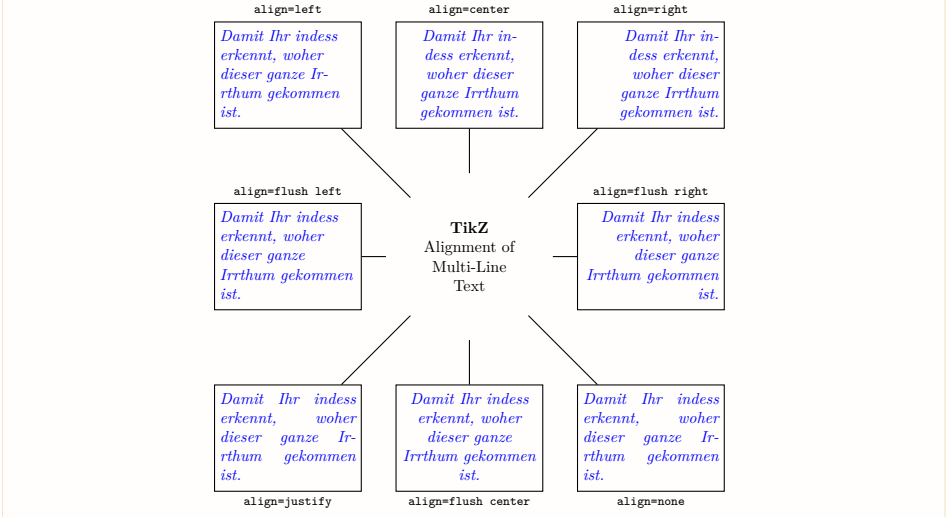
2.6.6 The package `tikz`

2.6.6.1 Example Multiline alignment in TikZ

`\clozehide`:

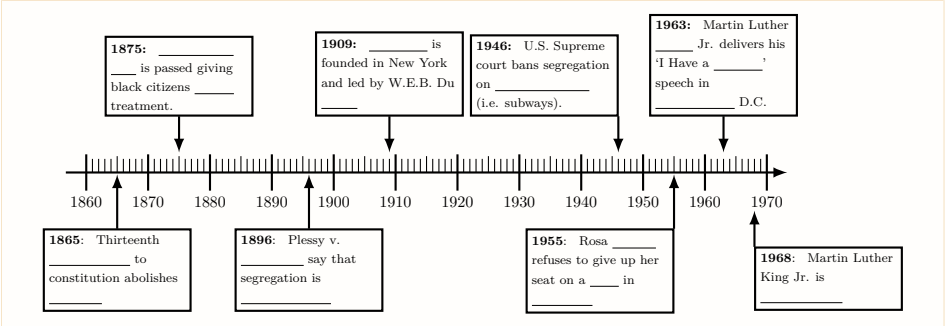


`\clozeshow`:

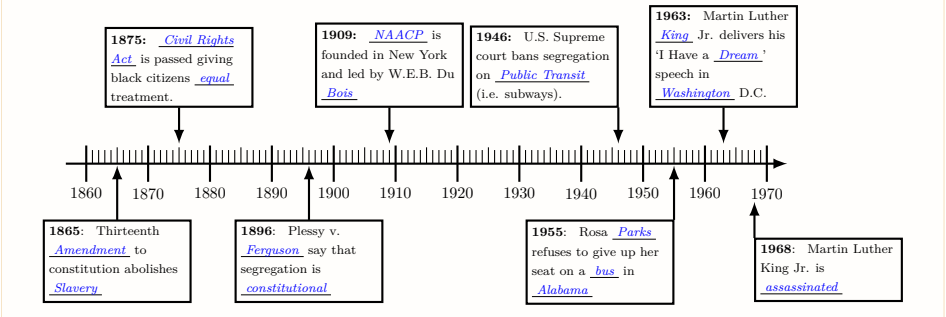


2.6.6.2 Example Timeline

`\clozehide`:

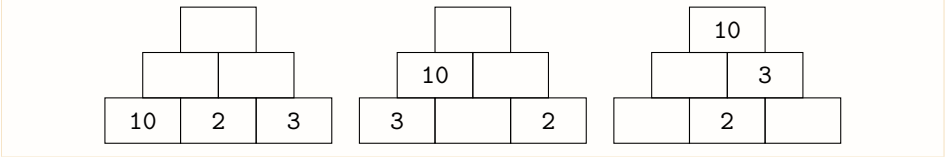
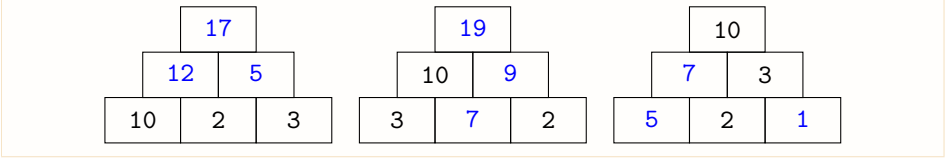


`\clozeshow`:



2.6.6.3 Number pyramid

`\clozehide`:



`\clozeshow`: