The gridlock package

Grid typesetting in Typst

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github.com/ssotoen/gridlock

Contents

About

gridlock provides a way to do grid typesetting in Typst. It does this by setting a line height for running text and using this as an invisible grid. Blocks that don't fit into a line, like headings and figures, are aligned so that the running text after them sits on the grid again. Check out the examples on pages 6 and 7.

Quick start

```
#import "@preview/gridlock:0.1.0": *

#show: gridlock.with(
  paper: "a4",
  margin: (y: 76.445pt),
  font-size: 11pt,
  line-height: 13pt
)

#lock[= This is a heading]

#lorem(30)

#figure(
  placement: auto,
  caption: [a caption],
  rect()
)

#lorem(30)
```

The `gridlock()` function sets up the base line height that for the grid. The parameters shown in the example are the default values. If you're happy with them, you don't need to pass anything to the function: just do `#show: gridlock.with()`.
If you want to change the line height, make sure to set the margin so that the text area is an exact multiple of the new line height.

Now you can use the `lock()` function to align any block to the text grid, like the heading shown in the example. Some elements—like the floating figure above—are aligned automatically and do **not** need to be used with `lock()`. You can find a complete list in the function's description in the next chapter.

Functions

- gridlock()
- lock()
- float-adjustment()

gridlock

Sets up the basic layout of the document. If you want to change the line height, you need to adjust the vertical margins so that the text area is an exact multiple of the line height. This is necessary because otherwise, floating figures won't line up with the first/last line on the page.

To change an element's line height, use its `top-edge` property:

```
#show heading: set text(top-edge: 18pt).
```

Note that inline math is wrapped in a `box()` to ensure a consistent line height. As a side effect, these formulas cannot be broken across lines.

Parameters

```
gridlock(
  paper: string,
  margin: dictionary,
  font-size: length,
  line-height: length,
  body
) -> content
```

paper `string`

The paper size.

Default: `"a4"`

margin `dictionary`

The margins. To calculate the correct margins, find out how many lines fit on the page and multiply them with the line height. That's the height of the text area. Subtract this from the page height (default: 841.89 pt) and you get the total height of the vertical margins. Split this up between top and bottom as you like.

Example for Typst's default settings (A4 paper, margins 2.5/21 × the page's shorter edge) with a 13 pt line height:

$$\begin{aligned}\text{lines per page} &= \frac{\text{page height} - 2 \times \text{vertical margin}}{\text{line height}} \\ &= \frac{841.89 - 2 \times 595.28 \times 2.5 \,/\, 21}{13} \\ &= 53.85\ldots \text{ pt}\end{aligned}$$

$$\begin{aligned}\text{new vertical margin} &= \text{page height} - \text{lines per page} \times \text{line height} \\ &= 841.89 - 53 \times 13 \\ &= 152.89 \text{ pt}\end{aligned}$$

For even margins, simply divide by 2 and you get 76.445 pt (the package's default setting). You could also, for example, make the bottom margin twice as high as the top margin by setting `(bottom: 101.89pt, top: 51pt)`.

Default: `(y: 76.445pt)`

font-size `length`

The font size of the body text.

Default: `11pt`

line-height `length`

The distance between lines of body text.

Default: `13pt`

lock

This function aligns blocks to the grid. It measures the size of its argument, calculates the appropriate spacing, and applies it using the `pad()` function.

Some elements are aligned automatically and do **not** need to be wrapped in `lock()`:

block quotes These have their spacing set to the line height. If you want to change the spacing, do `#show quote.where(block: true): set block(spacing: 26pt)`.

lists (numbered, bulleted, term) These simply have their spacing set to 0 pt. If you want to change their spacing, use a show rule like with block quotes.

figures with the `placement` argument (floating figures) These are handled automatically with a show rule. Note that you **do** need to wrap non-floating figures in `lock()`.

Parameters

`lock(body: content) -> content`

body `content`

The bock to be aligned.

float-adjustment

This function deals with the floating figures in your document. You don't need to call it manually.

Unfortunately we can't use `layout()` here since that messes with the floating. This means that figures wider than the line width are measured before they are shrunk down to fit, which results in inaccurate measurements. To solve this problem, the compiler will remind you to manually set the width of these figures.

Parameters

`float-adjustment(it: content) -> content`

it `content`

The figure.

Example

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift—not at all! A blind text like this gives you information about the selected font, how the letters are written, and an impression of the look. This text should contain all letters of the alphabet and it should be written in the original language. There is no need for special content, but the length of the words should match the language.

This is the second paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really?

This is a long heading spanning multiple lines

Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift—not at all! A blind text like this gives you information about the selected font, how the letters are written, and an impression of the look. This text should contain all letters of the alphabet and it should be written in the original language. There is no need for special content, but the length of the words should match the language.[1]

> This is a block quote. And after the second paragraph follows the third paragraph.

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1. And here we have a footnote. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information.

Figure 1: *The Great Wave off Kanagawa* by Katsushika Hokusai

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$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

After this fourth paragraph, we start a new paragraph sequence. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information.

- A bulleted list
  1. Indented
- Really?

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Example with grid lines

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This is the second paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really?

This is a long heading spanning multiple lines

Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift—not at all! A blind text like this gives you information about the selected font, how the letters are written, and an impression of the look. This text should contain all letters of the alphabet and it should be written in the original language. There is no need for special content, but the length of the words should match the language.[2]

> This is a block quote. And after the second paragraph follows the third paragraph.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between

2. And here we have a footnote. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information.

Figure 2: *The Great Wave off Kanagawa* by Katsushika Hokusai

this text and some nonsense like “Huardest gefburn”? Kjift—not at all! A blind text like this gives you information about the selected font, how the letters are written, and an impression of the look. This text should contain all letters of the alphabet and it should be written in the original language. There is no need for special content, but the length of the words should match the language.

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