Welcome To Presentate!

Tools for creating slides.

By @pacaunt

Contents

1 Introduction

1.1 What is Presentate?

It is a simple, minimal tool created in pure Typst for creating slides.

It packed with simple animation like `pause` and `meanwhile`, to complex `only` and `uncover`.

You may try `#pause` to find out that this section comes later.

1.1 What is Presentate?

It is a simple, minimal tool created in pure Typst for creating slides.

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I came later!

1.2 Motivation

I am an average undergraduate student that has an impression to create a presentation in Typst. However, the existing package does not suit my needs, as I wish more flexibility to customize the cover functions (animations) and page configurations. So I write some code with some hacks to create this package.

Big thanks to `Touying` and `Polylux` creators that inspired me this package, some parts of this code even came from them.

One big flaw of this package is that, it requires very long compilation time. So, choose the one that suits your needs!

1.3 Usage

Just import the module,

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

#slide[
  = Hello World!
]
```

and begin your journey.

2 Features

2.1 Simple Animations

`#pause` is used to show the content incrementally. Like this:

```
#meanwhile Meanwhile, #pause #meanwhile is used to show the content #pause
_parallel_ to #pause.
```

Meanwhile,

2.1 Simple Animations

#pause is used to show the content incrementally. Like this:

```
- First #pause

- Second #pause

- Third #pause
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2.2 Mathematical Equation Animation

`#pause` and `#meanwhile` also can be used with `#math.equation`:

```
$
  f(x) &= (x + 1)^2 pause \
       &= (x + 1)(x + 1) pause \
       &= x^2 + 2x + 1
$
```

Results:

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\begin{aligned}
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$$

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2.3 Cover Functions

We have `#uncover` and `only` for show the content in some specific subslides. `#only` does not reserve space, but `#uncover` reserves space.

```
Hello #only(1, 3, text(fill: red)[
  Only at subslide 2!
]) There!

Uncover #uncover(from: 2,
  text(fill: green)[
    from subslide 2
  ]) and then on. #pause See?
```

Results:

Hello Only at subslide 1, 3! There!

Uncover   and then on.

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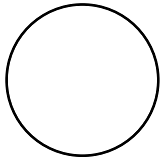
Uncover from subslide 2 and then on. See?

2.4 CeTZ Support

```
#import "@preview/cetz:0.3.4": canvas, draw
#let cz = animate(
  cover: draw.hide.with(bounds: true),
  marker: draw.content.with(()),
  clear: draw.hide,
)

#context canvas({
  import draw: *
  circle((0, 0))
  content((), pause)
  circle((1, 0))
  (cz.uncover)(3, rect((2, -1), (4, 1)))
})
```

`#pause` and `#meanwhile` are natively usable with CeTZ. You can use `#animate` constructor to create functions that suit for CeTZ environment. Note the `#context {}`. Results:



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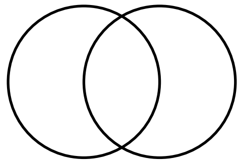

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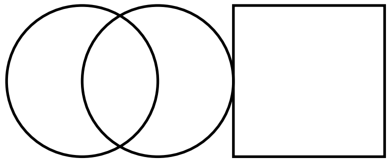

2.5 Works with Pinit

Pythagorean theorem:

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larger than a^2 and b^2

a^2 and b^2 : squares of triangle legs

c^2 : square of hypotenuse

The source code is

```
#import "@preview/pinit:0.2.2": *
Pythagorean theorem:
$ #pin(1)a^2#pin(2) + #pin(3)b^2#pin(4) = #pin(5)c^2#pin(6) $
  #pause
$a^2$ and $b^2$ : squares of triangle legs
#only(2, {
  pinit-highlight(1,2)
  pinit-highlight(3,4)
})
  #pause

$c^2$ : square of hypotenuse
#pinit-highlight(5,6, fill: green.transparentize(80%))
#pinit-point-from(6)[larger than $a^2$ and $b^2$]
```

2.6 Fletcher Support

```
#import "@preview/fletcher:0.5.8" as
fletcher: diagram, node, edge

#let new-diagram = reducer.with(cover:
fletcher.hide, func: diagram)
#let ft = animate(cover: fletcher.hide,
combine: (it, mark) => (it, mark))

#context new-diagram(
  node((0, 0), [Start]),
  pause,
  edge("d", "->"),
  node((0, 1), [End]),
  ..(ft.uncover)(2, edge("d", "->")),
  pause,
  node((0, 2), [Longer End.]),
)
```

Start

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```

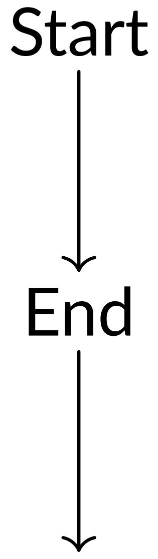

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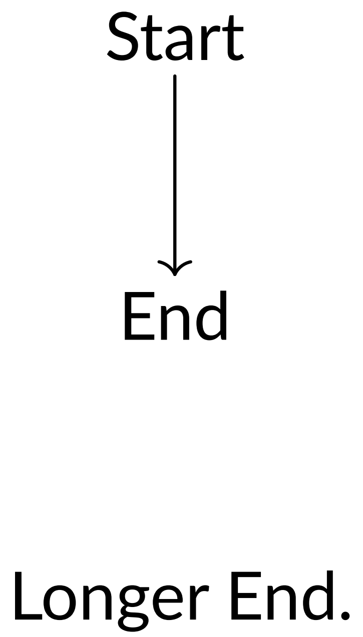

2.7 Fake Frozen Counters

As you can see from our slides. It has correct page number and heading number.

By default `#heading`, `#figure`, `#quote`, `#table` and `#math.equation` counters are frozen.

However, we done this by calculation and placing `#alias-counter` to rewind the counter. Therefore, if you have manual updates, Presentate will **not** see it.

2.8 Handout and Drafted Modes

You can set options of your presentation by `#set-options(..)`.

The available options are:

1. `handout`: (bool) disabling all animations.
2. `drafted`: (bool) placing subslide number on the slides.
3. `freeze-counter` (bool) freezing the counters.

2.9 Pdfpc Support

You can use Polylux's `polylux2pdfpc` in command line to generate a `.pdfpc` file of this presentation.

Then, `Pdfpc` will recognize the `.pdfpc` file and the overlays will be supported.

Currently, only overlays in pdfpc are supported.

3 Internals

Presentate uses some counters and states along with many complex show rules. Thus, each `#pause` and `#meanwhile` are costly, as they require multiple compilations.

State variables in Presentate are stored in `store.typ`, you can access by `#store.subslides.get()` to retrieve current subslide, and `#store.dynamics.get()` to retrieve the number of `#pause` and update maximal number of subslides created as `store.dynamics` stores a dictionary `(pause: int, steps: int)` where `pause` key is current number of pause, and `steps` is maximum subslides needed.

Frozen Counters are able to do because Presentate creates an `#alias-counter` to count the presence of respective elements in the first subslide, and update the *real* counter by subtracting it.

Therefore, if you wish to have your own frozen-counters with id: `"id"`, you can add it via

```
#set-options(
  frozen-counters: ("id": (real: .., cover: ..))
)
```

and each time the counter step, you must put `#alias-counter("id").step(..)` or other updates so that it can correctly *rewind* your real counter.

4 List of Available Functions

4.1 `Presentate` Module

This is imported by default.

1. `#slide -> content` accepts:
   - `steps: auto` the number of subslides.
   - `body` the content.

2. `#set-options -> state-update` accepts:
   - `handout: false` handout mode, diabling the animations.
   - `drafted: false` drafted mode, placing the current subslide number on your slides.
   - `freeze-counter: true` whether to freeze the counters.

4.2 `Animation` Module

This is imported by defalut.

1. `#pause -> content` pause marker.
2. `#meanwhile -> content` reset the pause marker.
3. `#only -> content` accepts:
   - `..number` the subslide to show the content.
   - `body` the content
   - `hider: it => none` default cover function to hide the content.

4. `#uncover -> content` accepts the same arguments as `#only` but with default cover function being typst's `hide` function.

5. `#animate -> dictionary` accepts:
   - `cover: hide` the cover function used by `#uncover`.
   - `clear: it => none` the cover function used by `#only`.
   - `marker: it => it` a wrapper function that accepts a state update key (content type) and return it to the document.
   - `combine: (it, mark) => it + mark` another wrapper function that wraps the output of the cover functions (`it`)

    and the marker (`mark`). This is useful when dealing with special input environment like `CeTZ` and `Fletcher`.

  returns a dictinary containing `only` and `uncover` functions. **They are contextual**, so `#context {}` is needed when calling them.

6. `#reducer -> content` accepts:
   - `cover: hide` the cover function to be used.
   - `func: (..args) => none` the function to be reduced (i.e. its arguments being parsed).

4.3 `Themes` Module

Use with `themes` prefix, or import to your document. The `demo.typ` you are reading is created with `default` theme. Use it with

```
#import themes.default: *
#show: template.with(
  aspect-ratio: "16-9"
)
// your content goes here.
```

4.4 `Store` Module

Use with `store.` prefix.

- `#store.subslides -> state` stores the current subslide number.
- `#store.dynamcis -> state` stores a dictionary containing
  - `pause: int` current number of pauses.
  - `steps: int` current minimum number of subslides needed to render all of the animations.

You can use this module to create your own animation functions, by get the subslide from `store.subslides` and update the new number of required steps to `store.dynamics`.