subpar

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Create sub figures easily.

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SUBPAR provides easy to use sub figures with sensible default numbering and an easy-to-use no-setup API.

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Part I

Manifest

SUBPAR aims to be:

- simple to use
  - importing a function and using it should be all that is needed
  - setup required to make the package work should be avoided
- unsurprising
  - parameters should have sensible names and behave as one would expect
  - deviations from this must be documented and easily accesible to Typst novices
- interoperable
  - SUBPAR should be easy to use with other packages by default or provide sufficient configuration to allow this in other ways
- minimal
  - it should only provide features which are specifically used for sub figures

If you think its behvior is surprising, you believe you found a bug or think its defaults or parameters are not sufficient for your use case, please open an issue at GitHub:tingerrr/subpar. Contributions are also welcome!

Part II
Guide

II.1 Labeling

Currently to refer to a super figure the label must be explicitly passed to `super` using `label: <...>`.

II.2 Grid Layout

The default `super` function provides only the style rules to make sub figures correctly behave with respect to numbering. To arrange them in a specific layout, you can use any other Typst function, a common choice would be `grid`.

```
#subpar.super(
  grid(
    [#figure([a], caption: [An image]) <fig1a>],
    [#figure([b], caption: [Another image]) <fig1b>],
    figure([c], caption: [A third unlabeled image]),
    columns: (1fr,) * 3,
  ),
  caption: [A figure composed of three sub figures.],
  label: <fig1>,
)

We can refer to @fig1, @fig1a and @fig1b.
```

---

a b c

(a) An image (b) Another image (c) A third unlabeled image

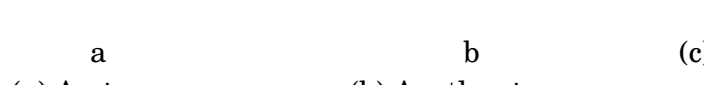
Figure 1: A figure composed of three sub figures.

We can refer to , and .

Because this quickly gets cumbersome, SUBPAR provides a default grid layout wrapper called `grid`. It provides good defaults like `gutter: 1em` and hides options which are undesireable for sub figure layouts like `fill` and `stroke`. To label sub figures simply add a label after a figure like below.

```
#subpar.grid(
  figure([a], caption: [An image]), <fig2a>,
  figure([b], caption: [Another image]), <fig2b>,
  figure([c], caption: [A third unlabeled image]),
  columns: (1fr,) * 3,
  caption: [A figure composed of three sub figures.],
  label: <fig2>,
)

We can refer to @fig2, @fig2a and @fig2b.
```



a (a) An image b (b) Another image c (c) A third unlabeled image

Figure 2: A figure composed of three sub figures.

We can refer to , and .

II.3 Numbering

`subpar` and `grid` take three different numberings:

`numbering` The numbering used for the sub figures when displayed or referenced.

`numbering-sub` The numbering used for the sub figures when displayed.

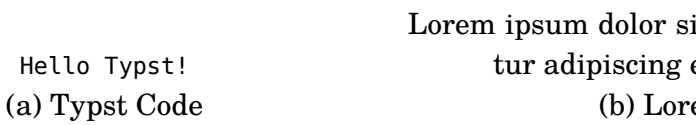
`numbering-sub-ref` The numbering used for the sub figures when referenced.

Similarly to a normal figure, these can be functions or string patterns. The `numbering-sub` and `numbering-sub-ref` patterns will receive both the super figure an sub figure number.

II.4 Supplements

Currently, supplements for super figures propagate down to super figures, this ensures that the supplement in a reference will not confuse a reader, but it will cause reference issues in multilingual documents (see subpar#4).

```
#subpar.grid(
  figure(```typst Hello Typst!```, caption: [Typst Code]), <sup-ex-code1>,
  figure(lorem(10), caption: [Lorem]),
  columns: (1fr, 1fr),
  caption: [A figure containing two super figures.],
  label: <sup-ex-super1>,
)
```



(a) Typst Code (b) Lorem

Figure 3: A figure containing two super figures.

When refering the the super figure we see “”, when refering to the sub figure of a different kind, we still see the same supplement “”.

To turn this behavior off, set `propagate-supplement` to `false`, this will also resolve the issues from subpar#4.

```
#subpar.grid(
  figure(```typst Hello Typst!```, caption: [Typst Code]), <sup-ex-code2>,
  figure(lorem(10), caption: [Lorem]),
  columns: (1fr, 1fr),
  propagate-supplement: false,
  caption: [A figure containing two super figures.],
  label: <sup-ex-super2>,
)
```

(a) Typst Code (b) Lorem

Figure 4: A figure containing two super figures.

Now when refering the the super figure we see still see “”, but when refering to the sub figure of a different kind, we the inferred supplement “”.

II.5 Appearance

The `super` and `grid` functions come with a few arguments to control how super or sub figures are rendered. These work similar to show rules, i.e. they receive the element they apply to and display them.

`show-sub` Apply a show rule to all sub figures.

`show-sub-caption` Apply a show rule to all sub figures’ captions.

```
#subpar.grid(
  figure(lorem(2), caption: [An Image of ...]),
  figure(lorem(2), caption: [Another Image of ...]),
  numbering-sub: "1a",
  show-sub-caption: (num, it) => {
    it.supplement
    [ ]
    num
    [: ]
    it.body
  },
  columns: 2,
  caption: [Two Figures],
)
```

Figure 5a: An Image of … Figure 5b: Another Image of …

Figure 5: Two Figures

Unfortunately, to change how a super figure is shown without changing how a sub figure is shown you must use a regular show rule and reconstruct the normal appearance in the sub figures using `show-sub`. Subpar provides a default implementation for this: `subpar.default.show-figure`, it can be passed directly to `show-sub`.

Part III
Reference

III.1 Subpar

The package entry point.

```
#grid                    #super
```

```
#grid(
  (kind): image,
  (numbering): "1",
  (numbering-sub): "(a)",
  (numbering-sub-ref): "1a",
  (supplement): auto,
  (propagate-supplement): true,
  (outlined-sub): false,
  (label): none,
  (show-sub): auto,
  (show-sub-caption): auto,
  (figure-overrides): figure-overrides,
  (grid-overrides): grid-overrides,
  (grid-styles): auto,
  ..(args)
) → content
```

Provides a convenient wrapper around `#super` which puts sub figures in a grid.

Argument

`(kind): image` — `str` | `function`

The image kind which should be used, this is mainly relevant for introspection and defaults to `image`.

Argument

`(numbering): "1"` — `str` | `function`

This is the numbering used for this super figure.

Signature: `(int)→content`

Argument

`(numbering-sub): "(a)"` — `str` | `function`

This is the numbering used for the sub figures.

Signature: `(int)→content`

Argument

`⟨numbering-sub-ref⟩: "1a"` `str` | `function`

This is the numbering used for *references* to the sub figures. If this is a function, it receives both the super and sub figure numbering respectively.

Signature: `(int, int)→content`

Argument

`⟨supplement⟩: auto` `content` | `auto`

The super figure's supplement.

Argument

`⟨propagate-supplement⟩: true` `bool`

Whether the super figure's supplement should propagate down to its sub figures.

Argument

`⟨outlined-sub⟩: false` `bool`

Whether the sub figures should appear in an outline of figures.

Argument

`⟨label⟩: none` `label` | `none`

The label to attach to this super figure.

Argument

`⟨show-sub⟩: auto` `function` | `auto`

A show rule override for sub figures. Receives the sub figure.

Signature: `(content)→content`

Argument

`⟨show-sub-caption⟩: auto` `function` | `auto`

A show rule override for sub figure's captions. Receives the realized numbering and caption element. The numbering can be used directly without any further formatting.

Signature: `(content, content)→content`

Argument

`⟨figure-overrides⟩: figure-overrides` `dictionary`

The names of named arguments to pass through to the figure directly.

Argument

`(grid-overrides): grid-overrides` `dictionary`

The names of named arguments to pass through to the grid directly.

Argument

`(grid-styles): auto` `function` | `auto` | `none`

A template function which applies grid set rules. By default this applies a gutter of `1em`. These will be overriden by explicitly passing grid arguments, but will take precedence over the style chain, disabling them allows using the style chain.

Signature: `(content)→content`

Argument

`..(args)` `any`

Named arguments to pass to figure and grid verbatim, these are selected using `#grid.figure-overrides` and `#grid.grid-overrides` respectively.

```
#super(
  (kind): image,
  (numbering): "1",
  (numbering-sub): "(a)",
  (numbering-sub-ref): "1a",
  (supplement): auto,
  (propagate-supplement): true,
  (outlined-sub): false,
  (label): none,
  (show-sub): auto,
  (show-sub-caption): auto,
  (overrides): figure-overrides,
  ..(args),
  (body)
) → content
```

Creates a figure which may contain other figures, a *super*figure.

This function makes no assumptions about the layout of its sub figures, it simply applies the necessary show and set rules such that all figures within its body get the appropriate numbering.

See `#grid` for a function which places its sub figures in a grid.

Argument

`(kind): image` `str` | `function`

The image kind which should be used, this is mainly relevant for introspection and defaults to `image`.

Must be one of:
- `image`
- `table`
- `raw`

Argument

`⟨numbering⟩: "1"` `str` | `function`

This is the numbering used for this super figure.

Signature: `(int)→content`

Argument

`⟨numbering-sub⟩: "(a)"` `str` | `function`

This is the numbering used for the sub figures.

Signature: `(int)→content`

Argument

`⟨numbering-sub-ref⟩: "1a"` `str` | `function`

This is the numbering used for *references* to the sub figures. If this is a function, it receives both the super and sub figure numbering respectively.

Signature: `(int, int)→content`

Argument

`⟨supplement⟩: auto` `content` | `auto`

The super figure's supplement.

Argument

`⟨propagate-supplement⟩: true` `bool`

Whether the super figure's supplement should propagate down to its sub figures.

Argument

`⟨outlined-sub⟩: false` `bool`

Whether the sub figures should appear in an outline of figures.

Argument

`⟨label⟩: none` `label` | `none`

The label to attach to this super figure.

Argument

`⟨show-sub⟩: auto` `function` | `auto`

A show rule override for sub figures. Receives the sub figure.

Signature: `(content)→content`

Argument

`⟨show-sub-caption⟩: auto` `function` | `auto`

A show rule override for sub figure's captions. Receives the realized numbering and caption element. The numbering can be used directly without any further formatting.

Signature: `(content, content)→content`

Argument

`⟨overrides⟩: figure-overrides` `dictionary`

The names of named arguments to pass through to the figure directly.

Argument

`..⟨args⟩` `any`

Named arguments to pass to figure verbatim, these are selected using `#super.overrides`.

Argument

`⟨body⟩`

The figure body, this may contain other figures which will be numbered appropriately.

`#figure-overrides` **`dictionary`**

The default overrides to use for figures, these are used to pass arguments through to the elements directly.

`#grid-overrides` **`dictionary`**

The default overrides to use for figures, these are used to pass arguments through to the elements directly.

`#sub-figure-counter` **`counter`**

The counter used for sub figures. This is automatically counted within and reset after for each super figure.

III.2 Default

Contains default implementations for show rules to easily reverse show rules in a scope.

```
#show-figure
```

context

#show-figure[it] → content

The default figure show rule. This can be used to display a figure the same way as typst does by default.

Argument

⟨it⟩ content

The figure to show using the default show rule.

Part IV

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