Contents

1 Introduction

This package provides a way to make beautiful register diagrams using the CeTZ package. It can be used to document Assembly instructions or binary registers

This is a port of the homonymous Python script for Typst. For more information on the schema format, please check out the original project's format.md

2 Usage

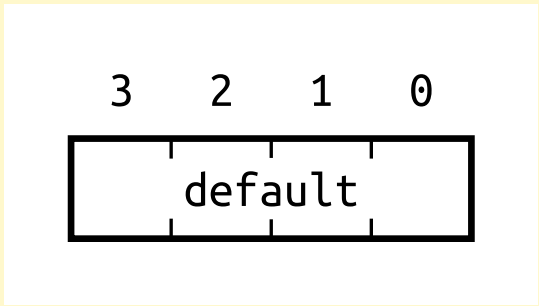
Simply import `schema` from src/lib.typ and call `schema.load` to parse a schema description. Then use `schema.render` to render it, et voilà !

```
#import "src/lib.typ": schema
#let doc = schema.load("path/to/schema.yaml")
#schema.render(doc)
```

3 Config presets

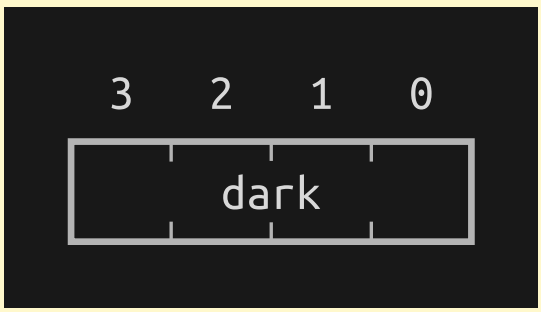
Aside from the default config, some example presets are also provided:

- config.config(): the default theme, black on white



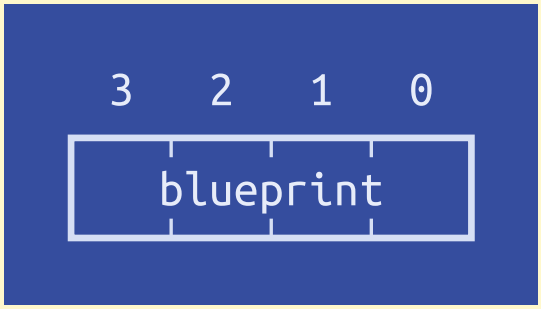

```
let ex = schema.load(```yaml
structures:
  main:
    bits: 4
    ranges:
      3-0:
        name: default
```)
schema.render(ex, config:
config.config())
```

- config.dark(): a dark theme, with white text and lines on a black background




```
let ex = schema.load(```yaml
structures:
  main:
    bits: 4
    ranges:
      3-0:
        name: dark
```)
schema.render(ex, config:
config.dark())
```

- config.blueprint(): a blueprint theme, with white text and lines on a blue background




```
let ex = schema.load(```yaml
structures:
  main:
    bits: 4
    ranges:
      3-0:
        name: blueprint
```)
schema.render(ex, config:
config.blueprint())
```
```

4 Reference

4.1 config

4.1.1 config

Creates a dictionary of all configuration parameters

Parameters

```
config(
  default-font-family: str,
  default-font-size,
  italic-font-family: str,
  italic-font-size: length,
  background: color,
  text-color: color,
  link-color: color,
  bit-i-color: color,
  border-color: color,
  bit-width: float,
  bit-height: float,
  description-margin: float,
  dash-length: float,
  dash-space: float,
  arrow-size: float,
  margins,
  arrow-margin: float,
  values-gap: float,
  arrow-label-distance: float,
  force-descs-on-side: bool,
  left-labels: bool,
  width: float,
  height: float,
  full-page: bool,
  all-bit-i: bool
) -> dictionary
```

default-font-family `str`

The default font family
- default font-size (length): The absolute default font size

Default: `"Ubuntu Mono"`

italic-font-family `str`

The italic font family (for value descriptions)

Default: `"Ubuntu Mono"`

italic-font-size `length`

The absolute italic font size

Default: `12pt`

background `color`

The diagram background color

Default: `white`

text-color `color`

The default color used to display text

Default: `black`

link-color `color`

The color used to display links and arrows

Default: `black`

bit-i-color `color`

The color used to display bit indices

Default: `black`

border-color `color`

The color used to display borders

Default: `black`

bit-width `float`

The width of a bit

Default: `30`

bit-height `float`

The height of a bit

Default: `30`

description-margin `float`

The margin between descriptions

Default: `10`

dash-length `float`

The length of individual dashes (for dashed lines)

Default: `6`

dash-space `float`

The space between two dashes (for dashed lines)

Default: `4`

arrow-size `float`

The size of arrow heads
- margins (tuple[float]): TODO -> remove

Default: `10`

arrow-margin `float`

The margin between arrows and the structures they link

Default: `4`

values-gap `float`

The gap between individual values

Default: `5`

arrow-label-distance `float`

The distance between arrows and their labels

Default: `5`

force-descs-on-side `bool`

If true, descriptions are placed on the side of the structure, otherwise, they are placed as close as possible to the bit

Default: `false`

left-labels `bool`

If true, descriptions are put on the left, otherwise, they default to the right hand side

Default: `false`

width `float`

TODO -> remove

Default: `1200`

height `float`

TODO -> remove

Default: `800`

full-page `bool`

If true, the page will be resized to fit the diagram and take the background color

Default: `false`

all-bit-i `bool`

If true, all bit indices will be rendered, otherwise, only the ends of each range will be displayed

Default: `true`

4.1.2 dark

Dark theme config

Parameters

`dark(..args: any)`

..args `any`

see config()

4.1.3 blueprint

Blueprint theme config

Parameters

`blueprint(..args: any)`

..args `any`

see config()

4.2 schema

4.2.1 load

Loads a schema from a file or a raw block. This function returns a dictionary of structures

Supported formats: `.yaml`, `.json`, `.xml`

Parameters

```
load(path-or-schema: str raw) -> dictionary
```

path-or-schema `str` or `raw`

If it is a string, defines the path to load.
If it is a raw block, its content is directly parsed (the block's language will define the format to use)

4.2.2 render

Renders the given schema This functions

Parameters

```
render(
  structures: dictionary,
  config: auto dictionary,
  width: ratio length
)
```

structures `dictionary`

A schema dictionary, as returned by load()

config `auto` or `dictionary`

The configuration parameters, as returned by config()

Default: `auto`

width `ratio` or `length`

The width of the generated figure

Default: `100%`