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## 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

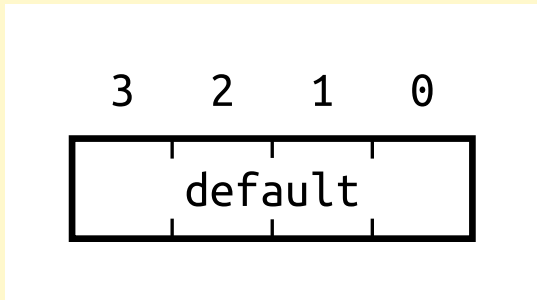
Simply import schema from `src/lib.typ` and call `schema.load` to parse a schema description. Then use `schema.render` to render it, et voilà !

```
#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:

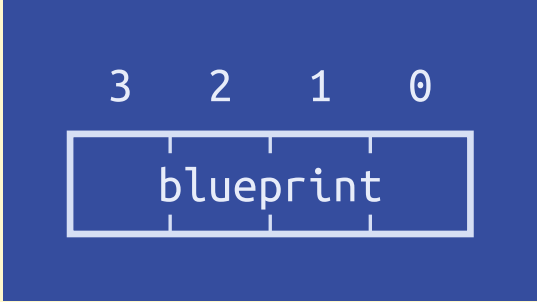
- `config.config()`: the default theme, black on white

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

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

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

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



The diagram shows a blue rectangular area with a white border. Inside, the word "blueprint" is written in white lowercase letters. Above the word, the numbers 3, 2, 1, and 0 are positioned above the four characters 'b', 'l', 'u', and 'e' respectively. Vertical lines connect each number to the top of the corresponding character in the word.

```
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

- [config\(\)](#)
- [dark\(\)](#)
- [blueprint\(\)](#)

#### 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 -&gt; remove

Default: `1200`**height** `float`

TODO -&gt; 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

- [load\(\)](#)
- [render\(\)](#)

### 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) -> dictionary
```

**path-or-schema** `str` or `raw` or `dictionary`

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)

If it is a dictionary, it directly defines the schema structure

### 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%`