

The Mantys Package

MANuals for TYPst

v0.0.2

2023-07-31

A Typst template to create consistens and readable manuals for packages and templates.

Jonas NEUGEBAUER <github@neugebauer.cc>

<https://github.com/jneug/typst-mantys>

MANTYS is a Typst template to help package and template authors to write manuals. It provides functionality for consistent formatting of commands, variables, options and source code examples. The template automatically creates a table of contents and a commanc index for easy reference and navigation.

The main idea and design was inspired by the L^AT_EX package **CNLT_X** by Clemens NIEDERBERGER.

Table of contents

I. About

II. Usage

II.1. Using Mantys	3
II.1.1. Loading as a package	3
II.1.2. Loading as a module	3
II.1.3. Initialising the template	3
II.2. Available commands	4
II.2.1. Describing arguments and val- ues	4
II.2.2. Describing commands	6
II.2.3. Source code and examples	7
II.2.4. Other commands	11
II.2.5. Templating	11
II.2.6. Utilities	12
II.2.6.1. Argument filters	14

III. Index

Part I.

About

MANTYS is a Typst package to help package and template authors to write consistently formatted manuals. The idea is that, as many Typst users are switching over from T_EX, they are used to the way packages provide a PDF manual for reference. Though in a modern ecosystem there are other ways to write documentation (like mdBook¹ or AsciiDoc²), having a manual in PDF format might still be beneficial, since many users of Typst will generate PDFs as their main output.

The design and functionality of **MANTYS** was inspired by the fantastic L^AT_EX package **CNLTX**³ by Clemens NIEDERBERGER⁴.

Note that this manual is currently out of date with the newest version of **MANTYS** and will be updated soon.



This manual is supposed to be a complete reference of **MANTYS**, but might be out of date for the most recent additions and changes. On the other hand, the source file of this document is a great example of the things **MANTYS** can do. Other than that, refer to the README file in the GitHub repository and the source code for **MANTYS**.

MANTYS is in active development and its functionality is subject to change. Until version **0.1.0** is reached, the command signatures and manual layout may change and break previous versions. Keep that in mind while using **MANTYS**.

Contributions to the package are very welcome!



¹<https://rust-lang.github.io/mdBook/>

²<https://asciidoc.org>

³<https://ctan.org/pkg/cnltx>

⁴clemens@cnltx.de

Part II.

Usage

II.1. Using Mantys

II.1.1. Loading as a package

Currently the package needs to be installed into the local package repository.

Either download the current release from GitHub⁵ and unpack the archive into your system dependent local repository folder⁶ or clone it directly:

```
git clone https://github.com/jneug/typst-mantys.git mantys-0.0.2
```

After installing the package just import it inside your `typ` file:

```
#import "@local/mantys:0.0.2": *
```

II.1.2. Loading as a module

To load **MANTYS** into a single project as a module download the necessary files and place them inside the project directory. The required files are `mantys.typ` and `mtyp.typ`.

Import the module into your manual file:

```
#import "mantys.typ": *
```

II.1.3. Initialising the template

After importing **MANTYS** the template is initialized by applying a `show` rule with the `#mantys()` command passing the necessary options using `with`:

```
#show: mantys.with(  
  ...  
)
```

```
#mantys(name: none,  
  title: none,  
  subtitle: none,  
  info: none,
```

⁵<https://github.com/jneug/typst-typopts/releases/latest>

⁶<https://github.com/typst/packages#local-packages>

```

authors: (),
url: none,
version: none,
date: none,
abstract: sequence(children: ()),
titlepage: titlepage,
example-imports: (:),
..args)[body]

```

— Argument —

```
titlepage: titlepage
```

function

A function of nine arguments to render a titlepage for the manual. Refer to command `#titlepage()` on page 11 for details.

— Argument —

```
example-imports: (:)
```

dictionary

Default imports for code examples. Each entry should have the full package identifier as a key and the imports as a value. If the package should be imported as a whole, the value should be "".

```

example-imports: (
  "@local/mantys:0.0.2": "*",
  "@preview/tablex:0.0.1": "",
  "@preview/cetz:0.0.1": "canvas"
)

```

For further details refer to command `#example()` on page 8.

All other arguments will be passed to `#titlepage()`.

All uppercase occurrences of `name` will be highlighted as a package name. For example MANTYS will appear as *MANTYS*.

II.2. Available commands

II.2.1. Describing arguments and values

#meta(name) -> content

Used to highlight argument names. `#meta[variable] → variable`

#value(variable) -> content

Used to display the value of a variable. The command will highlight the value depending on the type.

- `#value[name] → [name]`
- `#value("name") → "name"`
- `#value((name: "value")) → (name: "value")`
- `#value(range(4)) → (0, 1, 2, 3)`

#arg(name) -> content

2.2.1 Available commands

Renders an argument, either positional or named. The argument name is highlighted with `#meta()` and the value with `#value()`.

- `#arg[name] → name`
- `#arg("name") → name`
- `#arg(name: "value") → name: "value"`

`#sarg(name) -> array`

Renders an argument sink. `#sarg[args] → ..args`

`#barg(name) -> content`

Renders a body argument. `#barg[body] → [body]`

Body arguments are positional arguments that can be given as a separat content block at the end of a command.

`#args(..args) -> content`

Creates an array of all its arguments rendered either by `#arg()` or `#barg()`. All values of type `content` will be passed to `#barg()` and everything else to `#arg()`.

This command is intendend to be unpacked as the arguments to one of `#cmd()` or `#command()`.

```
1 #cmd("my-command", ..args("arg1", arg2: false, [body]))  
  
#my-command(arg1, arg2: false)[body]
```

`#dtype(t, fnote: false, parse-type: false) -> string`

Shows the (data-)type of `t` and a link to the Typst documentation of that type.

`fnote: true` will show the reference link in a footnote (useful for print versions of the manual).

The type is determined by passing `t` to `type`. If `t` is a string however, it is assumed to already be a type name. For example `"fraction"` will give the type `fraction`. Setting `parse-type: true` will prevent this and always call `type` on `t`.

- `#dtype(false) → boolean`
- `#dtype(1%) → ratio`
- `#dtype(left) → alignment`
- `#dtype([some content], fnote:true) → content7`
- `#dtype("dictionary") → dictionary`
- `#dtype("dictionary", parse-type:true) → string`

`#dtypes(..types, sep: box(inset: (left: 1pt, right: 1pt), body: [])) -> content`

Will produce a list of types from the provided arguments. Each value is passed to `#dtype()` and the results joined by `sep`.

⁷<https://typst.app/docs/reference/types/content>

2.2.1 Available commands

- `#dtypes(false, lcm, "array", [world])` → `boolean` | `length` | `array` | `content`
- `#dtypes(false, lcm, "array", [world], sep: " or ")` → `boolean` or `length` or `array` or `content`

#choices(default: "__none__", ..values)

Creates a list of possible values for an argument.

If `default` is set to something else than `"__none__"`, the value is highlighted as the default choice. If `default` is already given in `values`, the value is highlighted at its current position. Otherwise `default` is added as the first choice in the list.

- `#choices(..range(5))` → `0` | `1` | `2` | `3` | `4`
- `#choices(..range(5), default:3)` → `0` | `1` | `2` | `3` | `4`
- `#choices(..range(5), default:5)` → `5` | `0` | `1` | `2` | `3` | `4`

#opt(name, ..args)[body]

Renders the option name and adds an entry to the index.

- `#opt[example-imports]` → `example-imports`

#opt-(name, ..args)[body]

Same as `#opt()` but does not create an index entry.

II.2.2. Describing commands

#cmd(name, ..args)[body]

Renders the command `name` with arguments and creates an entry in the command index.

`args` is a collection of positional arguments created with `#arg()`, `#barg()` and `#sarg()`.

All positional arguments will be rendered first, then named arguments and all body arguments will be added after the closing parenthesis.

- `#cmd("cmd", arg[name], sarg[args], barg[body])` → `#cmd(name, ..args)[body]`
- `#cmd("cmd", ..args("name", [body]), sarg[args])` → `#cmd(name, ..args)[body]`

#cmd-(name, ..args)[body]

Same as `#cmd()` but does not create an index entry.

#var(name, default: none)

#var-(name, default: none)

#command(name, ..args)[body]

Shows

#argument(name, type)

#variable(name, ..args)[body]

II.2.3. Source code and examples

MANTYS provides several commands to handle source code snippets and show examples of functionality. The usual `raw` command still works, but these commands allow you to highlight code in different ways or add line numbers.

Typst code examples can be set with the `#example()` command. Simply give it a fenced code block with the example code and **MANTYS** will render the code as highlighted Typst code and show the result underneath.

```
1 #example[
2   ``
3   This will render as *content*.
4
5   Use any #emph[Typst] code here.
6   ``
7 ]
```

```
1 This will render as *content*.
2
3 Use any #emph[Typst] code here.
```

This will render as **content**.

Use any *Typst* code here.

The result will be generated using `eval` and thus is subject to its limitations. Each `eval` call is run in a local scope and does not have access to previously imported commands. To use your packages commands, you have to import it as a package:

```
1 #example[``
2 #import "@local/mantys:0.0.2": dtype
3
4 #dtype(false)
5 ``]
```

```
1 #import "@local/mantys:0.0.2": dtype
2
3 #dtype(false)
```

`boolean`



2.2.3 Available commands

You can only import packages and not local files.

To automatically add imports to every example code, you can set the option `example-imports` at the initial call to `#mantys()`. For example this manual was compiled with `example-imports: ("@local/mantys:0.0.2": "*")`. This imports the `MANTYS` commands into all example code, without explicitly importing it in the code.

```
1 #example[``
2 #mtty.value(false)
3 ``]
```

```
1 #mtty.value(false)
```

```
false
```

See below for how to use the `#example()` command.

To use fenced code blocks in your example, add an extra backtick to the example code:

```
1 #example[````
2 ```rust
3 fn main() {
4     println!("Hello World!");
5 }
6 ```
7 ````]
```

```
1 ```rust
2 fn main() {
3     println!("Hello World!");
4 }
5 ```
```

```
fn main() {
    println!("Hello World!");
}
```

`#example(side-by-side: false, imports: (:))[example-code][result]`

Argument

example-code

content

2.2.3 Available commands

A block of raw code representing the example Typst code.

Argument

`side-by-side: false`

boolean

Usually, the `example-code` is set above the `result` separated by a line. Setting this to `true` will set the code on the left side and the result on the right.

Argument

`imports: (:)`

dictionary

A dictionary of package imports that should be added to the evaluated code.

Argument

`result`

content

The result of the example code. Usually the same code as `example-code` but without the raw markup.

`result` is optional and will be omitted in most cases!

Sets `[example-code]` as a raw block with `lang: "typ"` and the result of the code beneath. `[example-code]` need to be raw code itself.

```
1 #example[``
2 *Some lorem ipsum:*
3 #lorem(40)
4 ``]
```

```
1 *Some lorem ipsum:*
2 #lorem(40)
```

Some lorem ipsum:

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad dolore magna animo, cum corpore dolemus, fieri tamen permagna accessio potest, si aliquod aeternum et infinitum impendere.

Setting `side-by-side: true` will set the example on the left side and the result on the right and is useful for short code examples. The command `#side-by-side()` exists as a shortcut.

```

1 #example(side-by-side: true)[``
2 *Some lorem ipsum:*\\
3 #lorem(20)
4 ``]

```

```

1 *Some lorem ipsum:*\\
2 #lorem(20)

```

Some lorem ipsum:

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magnam aliquam quaerat.

[example-code] is passed to `#mtty.sourcecode()` for processing.

If the example-code needs to be different than the code generating the result, `#example()` accepts an optional second positional argument [result]. If provided, [example-code] is not evaluated and [result] is used instead.

```

1 #example[``
2 #value(range(4))
3 ``][
4 The value is: #mtty.value(range(4))
5 ]

```

```
1 #value(range(4))
```

The value is: (0, 1, 2, 3)

#side-by-side()[example-code][result]

Shortcut for `#example(side-by-side: true)`.

#sourcecode(code)

If provided, the title and file argument are set as a titlebar above the content.

Argument

code

content

A `#raw()` block, that will be set inside a bordered block. The raw content is not modified and keeps its lang attribute, if set.

Argument

title: none

content

A title to show above the code in a titlebar.

Argument

file: none

content

A filename to show above the code in a titlebar.

`#sourcecode()` will render a raw block with linenumbers and proper tab indentions using `CODELST` and put it inside a `#mty.frame()`.

If provided, the `title` and `file` argument are set as a titlebar above the content.

```
1 #sourcecode(title:"Some Rust code", file:"world.r")[`rust
2   fn main() {
3     println!("Hello World!");
4   }
5 `]
```

Some Rust code

 world.r

```
1 fn main() {
2   println!("Hello World!");
3 }
```

II.2.4. Other commands

`#package()`

Shows a package name:

```
1 #package[tablex]          TABLEX
2
3 #mty.package[tablex]      TABLEX
```

II.2.5. Templating

`#titlepage(name,`
`title,`
`subtitle,`
`info,`
`authors,`
`url,`
`version,`
`date,`
`abstract)`

II.2.6. Utilities

Most of **MANTYS** functionality is located in a module named **mty**. Only the main commands are exposed at a top level to keep the namespace pollution as minimal as possible to prevent name collisions with commands belonging to the package / module to be documented.

The commands provide some helpful low-level functionality, that might be useful in some cases.

#colors

dictionary

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua quaerat voluptatem. Ut enim aequi doleamus animo, cum corpore dolemus, fieri.

mty » **#type(variable) -> string**

Alias for the builtin type command.

mty » **#kv(key, value) -> dictionary**

— Argument —

key

none

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do.

Creates a **dictionary** containing the given key/value-pair. Useful for using map on the pairs of a dictionary:

```
#let dict = (a: 1, b: 2, c: 3)
dict.pairs().map(p => kv(..p)).map( ... )
```

mty » **#txt(variable) -> string**

Extracts the text content of **variable** as a **string**. The command attempts to extract as much text as possible by looking at possible children of a content element.

mty » **#rawi(lang: none) [code] -> content**

Inline raw content with an optional language for highlighting.

mty » **#rawc(color) [code] -> content**

Colored inline raw content. This supports no language argument, since **code** will have a uniform color.

mty » **#primary()**

mty » **#secondary()**

mty » **#cblock(width: 90%, ..block-args) [body] -> content**

Sets **body** inside a centered block with the given **width**. Any further arguments will be passed to the block command.

```
#box(header: none,
      footer: none,
      invert-headers: true,
      stroke-color: rgb("#239dad"),
```

```
bg-color: rgb("#ffffff"),
width: 100%,
padding: 8pt,
radius: 4pt)[body] -> content
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua quaerat voluptatem. Ut enim aequae doleamus animo, cum corpore dolemus, fieri tamen permagna accessio potest, si aliquod aeternum et infinitum impendere malum nobis opinemur. Quod idem licet transferre in voluptatem, ut postea variari voluptas distinguere possit, augeri amplificarique non possit. At etiam Athenis, ut e patre audiebam facete et urbane Stoicos irridente, statua est in quo a nobis philosophia defensa et collaudata est, cum id, quod maxime placeat, facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem quibusdam et.

```
mtty >> #alert(color: rgb("#0074d9"),
icon: none,
title: none,
width: 90%,
size: 0.9em)[body] -> content
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua quaerat voluptatem. Ut enim aequae doleamus animo, cum corpore dolemus, fieri tamen permagna accessio potest, si aliquod aeternum et infinitum impendere malum nobis opinemur. Quod idem licet transferre in voluptatem, ut.

```
mtty >> #marginnote(pos: left, margin: 0.5em, dy: 0pt)[body] -> content
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua quaerat voluptatem. Ut enim aequae doleamus animo, cum corpore dolemus, fieri.

```
mtty >> #sourcecode(fill: rgb("#ffffff"),
border: none,
tab-indent: 4,
gobble: auto,
linenos: true,
gutter: 10pt)[body] -> content
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua quaerat voluptatem. Ut enim aequae doleamus animo, cum corpore dolemus, fieri.

```
mtty >> #ver(major, minor, patch) -> content
```

1 #mtty.ver(0, 0, 1)	0.0.1
----------------------	-------

```
mtty >> #name(name, last: none) -> content
```

- #mtty.name("Jonas Neugebauer")
- #mtty.name("Jonas van Neugebauer")
- #mtty.name("Jonas van", last:"Neugebauer")
- #mtty.name("Jonas", last:"van Neugebauer")

```
mtty >> #author(info) -> content
```

```
- #mty.author("Jonas Neugebauer")
- #mty.author(
  (name: "Jonas van Neugebauer")
)
- #mty.author((
  name: "Jonas van Neugebauer",
  email: "jonas@neugebauer.cc"
))
```

mty » #date(d) -> content

1 - #mty.date("2023-07-15")	• 2023-07-15
2 - #mty.date(datetime(year:2023, month:7, day:15))	• 2023-07-15
	• 2023-07-31
3 - #mty.date(datetime.today())	• 31.07.2023
4 - #mty.date(datetime.today(), format:"[day].[month].[year]")	

mty » #package(name) -> content

```
- #mty.package("Mantys")
- #mty.package("typopts")
```

mty » #module(name) -> content

1 - #mty.module("mty")	• mty
2 - #mty.module("emoji")	• emoji

mty » #value(variable) -> content

Returns the value of variable as content.

1 - #mty.value("string")	• "string"
2 - #mty.value([string])	• [string]
3 - #mty.value(true)	• true
4 - #mty.value(1.0)	• 1.0
5 - #mty.value(3em)	• 3em
6 - #mty.value(50%)	• 50%
7 - #mty.value(left)	• left
8 - #mty.value((a: 1, b: 2))	• (a: 1, b: 2)

mty » #default(value) -> content

Highlights the default value of a set of #choices(). By default the value is underlined.

1 - #mty.default("default-value")	• <u>"default-value"</u>
2 - #mty.default(true)	• <u>true</u>
3 - #choices(1, 2, 3, 4, default: 3)	• 1 2 <u>3</u> 4

II.2.6.1. Argument filters

mty » **#is-string(value)**

Checks if value is a **string**.

mty » **#is-content(value)**

Checks if value is **content**.

mty » **#is-choices(value)**

Checks if value is a choices value created with **#choices()**.

mty » **#is-body(value)**

Checks if value is a body argument created with **#barg()**.

mty » **#not-is-body(value)**

Negation of **#is-body()**.

mty » **#not-is-choices(value)**

Negation of **#is-choices()**.

Part III.

Index

A

#alert 13
 #arg 4, 6
 #args 5
 #argument 6
 #author 13

B

#barg 5, 6, 15
 #box 12

C

#cblock 12
 #choices 6, 14, 15
 #cmd 6
 #cmd- 6
 #command 6

D

#date 14
 #default 14
 #dtype 5
 #dtypes 5

E

#example 4, 7, 8, 10
 example-imports 6, 8

I

#is-body 15
 #is-choices 15
 #is-content 15
 #is-string 15

K

#kv 12

M

#mantys 3
 #marginnote 13
 #meta 4

#module 14
 #my-command 5

N

#name 13
 #not-is-body 15
 #not-is-choices 15

O

#opt 6
 #opt- 6

P

#package 11, 14
 #primary 12

R

#raw 10
 #rawc 12
 #rawi 12

S

#sarg 5, 6
 #secondary 12
 #side-by-side 10
 #sourcecode 10, 13

T

#titlepage 4, 11
 #txt 12
 #type 12

V

#value 4, 14
 #var 6
 #var- 6
 #variable 6
 #ver 13