

# anti-matter

v0.0.2

2023-10-09

<https://github.com/tingerrr/typst-anti-matter>

**tinger**

## **ABSTRACT**

This packages allows you to simply mark the end and start of your front matter and back matter respectively to change style and value of your page number without manually setting and keeping track of inner and outer page counters. Books and theses often number front and back matter in a different style than the actual content.

## CONTENTS

Contents .....	1
I Introduction .....	2
II How it works & caveats .....	3
III API-Reference .....	5
Future work .....	9

# I INTRODUCTION

A document like this:

```
#import "@preview/anti-matter:0.0.2": anti-matter, anti-front-end, anti-inner-end

#set page("a4", height: auto)
#show heading.where(level: 1): it => pagebreak(weak: true) + it

// add a title page and reset the counter
#[
  #set page(numbering: none)
  #counter(page).update(0)
]

#show: anti-matter

#include "front-matter.typ"
#anti-front-end()

#include "chapters.typ"
#anti-inner-end()

#include "back-matter.typ"
```

Would generate an outline like this:

## Contents

Contents .....	I
Figures .....	II
Tables .....	III
Listings .....	IV
1. Chapter .....	1
1.1. Section .....	1
1.1.1. Subsection .....	1
2. Chapter .....	2
2.1. Another Section .....	2
3. Chapter .....	3
Glossary .....	V
Appendix .....	VI
Acknowledgement .....	VII

I

The front matter (in this case the outlines) are numbered using "I", the content starts new at "1" and the back matter (glossary, acknowledgement, etc) are numbered "I" again, continuing from where the front matter left off.

## II How it works & caveats

anti-matter keeps track of its own inner and outer counter, which are updated in the header of a page. Numbering at a given location is resolved by inspecting where this location is between the given markers and applying a spec to it. This means that setting a custom page header or changing `outline.entry` with a show rule can break your setup.

### The specification

Most anti-matter functions require a spec, which is a dictionary detailing how numbering across the document should be done. It is a dictionary with three required keys, `front`, `inner`, and `back`. Valid numberings are the same as parameters to various numbering parameters, as well as `none` to display nothing.

```
#let spec = (  
  front: "I",  
  inner: none,  
  back: (..args) => numbering("I", ..args) + [ --- ]  
)
```

The default spec is anti-thesis, which is equal to:

```
#let spec = (front: "I", inner: "1", back: "I")
```

### The markers

The markers `anti-front-end` and `anti-inner-end` must be placed on the last page of their respective matter, a leading pagebreak before a marker will result in an incorrect marker position. While the marker and numbering location could be compared relative to their page too, this would fail to work for page numbering in the header as it would logically in front of the marker.

### Customizing your page header

The convenience function `anti-header` is provided for this:

```
#import "@preview/anti-matter:0.0.2": anti-matter, anti-header //, ...  
#let spec = anti-thesis()  
#show: anti-matter.with(spec: spec)  
  
// render your own header while retaining the correct counter updates  
#set page(header: anti-header(spec)[...])  
  
// ...
```

### Customizing your outline entries

Similarly, when a page should displayed with anti-matter styling, `anti-page-at` is used. This can be used to customize `outline.entry` and other elements which display the page of a query (like):

```
#import "@preview/anti-matter:0.0.2": anti-matter, anti-page-at //, ...  
#let spec = anti-thesis()  
#show: anti-matter.with(spec: spec)  
  
// render your own outline style while retaining the correct page numbering for queried elements  
#show outline.entry: it => {  
  it.body
```

```
box(width: 1fr, it.fill)
anti-page-at(spec, it.element.location())
}

// ...
```

In general the previously mentioned show and set rules are the only thing to consider when customizing your document whiel using anti-matter. The anti-matter template function simply passes the spec passed to those functions and applies these rules for convenience. Setting the spec may become more convenient in the future with support for [custom elements](#).

### III API-REFERENCE

- `anti-active-counter-at()`
- `anti-front-end()`
- `anti-header()`
- `anti-inner-counter()`
- `anti-inner-end()`
- `anti-matter()`
- `anti-outer-counter()`
- `anti-page()`
- `anti-page-at()`
- `anti-thesis()`

#### **anti-active-counter-at**

Returns the active counter at the given location. This can be used to set the page counter at a certain position.

#### **Parameters**

```
anti-active-counter-at(  
  spec: dictionary,  
  loc: location  
) -> counter
```

**spec**    dictionary

the spec of the document, see `anti-matter()`

**loc**    location

the location to get the active counter for

#### **anti-front-end**

Mark the end of the front matter of your document, place this on the last page of your front matter. Make sure to put this before trailing pagebreaks.

-> content

#### **Parameters**

```
anti-front-end()
```

#### **anti-header**

Render a page header while maintaining anti-matter counter stepping.

#### **Parameters**

```
anti-header(  
  spec: dictionary,  
  header: content  
) -> content
```

**spec**    dictionary

the spec describing the document numbering, see `anti-matter()`

**header**    content

the header to render

### **anti-inner-counter**

Returns the counter for the main content of your document.

-> counter

#### **Parameters**

`anti-inner-counter()`

### **anti-inner-end**

Mark the end of the inner matter of your document, place this on the last page of your inner matter. Make sure to put this before trailing pagebreaks.

-> content

#### **Parameters**

`anti-inner-end()`

### **anti-matter**

A template function that applies the page numbering and a show rule for `outline.entry` to fix its page numbering. If you need more granular control over outline entries and page headers see the library documentation. This can be used for a show rule. The parameters are validated.

#### **Parameters**

```
anti-matter(  
  spec: dictionary,  
  debug: bool,  
  body: content  
) -> content
```

**spec**    dictionary

the spec describing the document numbering, see `anti-matter()`

Default: `anti-thesis()`

**debug**    `bool`

display the current matter and associated info in the page header

Default: `false`

**body**    `content`

the content to render with anti-matter numbering

### **anti-outer-counter**

Returns the counter for the front and back matter of your document.

-> counter

#### **Parameters**

`anti-outer-counter()`

### **anti-page**

Returns the formatted page number at the given location with the required adjustments and numbering given by the spec.

#### **Parameters**

`anti-page(spec: dictionary) -> content`

**spec**    `dictionary`

the spec describing the document numbering, see `anti-matter()`

### **anti-page-at**

Returns the page numbering at the given location with the required adjustments and numbering given by the spec.

#### **Parameters**

`anti-page-at(  
  spec: dictionary,  
  loc: location  
) -> content`

**spec**    `dictionary`

the spec of the document, see `anti-matter()`



**loc**    location

the location at which to evaluate the numbering

### **anti-thesis**

Use the default spec with shared outer numbering and counter.

The dictionary that is returned is simply the numbering for the front, inner and back keys.

### **Parameters**

```
anti-thesis(  
  outer: string function,  
  inner: string function  
) -> dictionary
```

**outer**    string or function

the numbering used for front and back matter

Default: "I"

**inner**    string or function

the numbering used for the document's main content

Default: "1"

## **FUTURE WORK**

The aim of this package is to be obsolete for a more powerful counter system in typst. Unfortunately this seems far away currently. In the mean time this should do for the most common case of alternating page numbering. Bug reports are appreciated, this package was only tested with 2 documents.