

# Markdown to $\text{\LaTeX}$ or $\text{\XeTeX}$ Test Document

Git Cordier  
admin@gcordier.eu

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# Contents

# 1 Introduction: Why I do this, by Kevin Yao

I love  $\LaTeX$  for its pretty typesetting, but not like its verbose syntax very much. 95% of the time, I only use a very small subset of  $\LaTeX$  and really miss the simplicity of markdown every time I have to type in plain  $\LaTeX$ .

I also use **TeXmacs**. Its a great tool and I love it. However, the source code of TeXmacs documents, with an XML-like structure, is not human-readable. It's not good for source control, either.

So, my conclusion is that, since what I mostly use in  $\LaTeX$  can be mapped to markdown, why not write document in markdown and convert it to  $\LaTeX$ ? I find **Pandoc** but it's too cryptic to use[[note1](#)].

And an idea bubbles up in my head: why not write my own converter from markdown to  $\LaTeX$ ?

I have a great start point: **mistune**. It's a fast, clean implementation of markdown with a killer feature - footnote. I tend to use footnote much in  $\LaTeX$ .

## 1.a Plan

My current plan of the converter includes:

- title and author (with meta header)
- sections (headers in markdown)
- lists (ordered with `enumerate` and unordered with `itemize` package)
- emphasize, strong and monospace styles
- hyperlink
- footnote
- math<sup>1</sup>

Now let's see how much we can do...

Test quote:

Steve Jobs: stay foolish, stay hungry.

Test code:

```
int main()
printf("Hello world!");
```

## 2 Why I do this

## 3 What is mapped (and what is not)

what is mapped

TODO

summary as a table

not mapped = color/ font of a given piece of characters (see title!)

By the very definition of what md is, i don't see any complete mapping

workaround: defining commands = language extensions, like what we do with inputmd

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<sup>1</sup>since there's no inline math in markdown, it is translated as is.

## 4 comment

note that comment may start with

### 4.a $X\LaTeX$ or $\LaTeX$ ?

From the  $X\TeX$  wikipedia page:

$X\TeX$  is a  $\TeX$  typesetting engine using Unicode and supporting modern font technologies [...].

It was originally written by Jonathan Kew and is distributed under the X11 free software license.

It natively supports Unicode and the input file is assumed to be in UTF-8 encoding by default.

**XeTeX can use any fonts installed in the operating system without configuring TeX font metrics[...].**

## 5 General policy

Either you don't say it, either you say it clearly

it's true iff it is explicitly stated that it is true

no = false, yes = true

no =  $\emptyset$ , False, false

## 6 naming conventions

### 6.a paths

### 6.b keys

key	syntax ( $\in$ )	meaning	optional
documentclass	Dict	document class	yes
packages	ASCII*	path of packages	<b>no</b>
fonts	Dict	set the fonts	yes
colors	Dict	set extra colors	yes
language	Dict	default language and language-dependent settings.	<b>no</b>
fancy	ASCII*	page foot settings.	yes
custom.	ASCII*	section, subsection	yes
foreword	ASCII*	foreword	yes
toc	ASCII*	toc	yes
annex	ASCII*	including annex	yes

$$\log z = \int_1^z \frac{z-1}{w} d\omega$$

### 6.b.1 Y/N

### 6.c files

#### 6.c.1 md to \*tex

#### 6.c.2 log

#### 6.c.3 script

## 7 The structure of a md2latex

### 7.a Root

#### 7.a.1 `${name}.run.sh`

@optional

#### 7.a.2 `${name}.preferences.json`

@!optional

### 7.b src

@!optional

#### 7.b.1 content/

@optional

#### 7.b.2 documentclass

@optional

@standard

#### 7.b.3 img

@optional

### 7.c dst

@!optional

## 8 Next

## 9 The implementation

### 9.a The parser

#### 9.a.1 Case HTML comments

### 9.b The writer

### 9.c Utilities

#### 9.c.1 HTML Comments