CPU-Scheduling

What a waiting in line at the supermarket and your computer has in common

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Abstract

Scientific documents often use LaTeX for typesetting. While numerous packages and templates exist, it makes sense to create a new one. Just because.

Contents

Part I

A good part

You can also use parts in order to partition your great work into larger 'chunks'. This involves some manual adjustments in terms of the layout, though.

1   Introduction

In which the reasons for creating this package are laid bare for the whole world to see and we encounter some usage guidelines.

This package contains a minimal, modern template for writing your thesis. While originally meant to be used for a Ph. D. thesis, you can equally well use it for your honour thesis, bachelor thesis, and so on—some adjustments may be necessary, though.

1.1   Why?

I was not satisfied with the available templates for LaTeX and wanted to heed the style advice given by people such as Robert Bringhurst [?] or Edward R. Tufte [?, ?]. While there *are* some packages out there that attempt to emulate these styles, I found them to be either too bloated, too playful, or too constraining. This template attempts to produce a beautiful look without having to resort to any sort of hacks. I hope you like it.

1.2   How?

The package tries to be easy to use. If you are satisfied with the default settings, just add

```
\documentclass{mimosis}
```

at the beginning of your document. This is sufficient to use the class. It is possible to build your document using either LaTeX|, XeLaTeX, or LuaLaTeX. I personally prefer one of the latter two because they make it easier to select proper fonts.

1.3   Making this template *yours*

Prior to using this template, the first thing you want to do is probably a little bit of customisation. You can achieve quick changes in look and feel by picking your own fonts. With the `fontspec` package loaded and XeLaTeXor LuaLaTeXas your compiler, this is pretty simple:

```
\setmainfont{Your main font}
\setsansfont{Your sans-serif font}
\setmonofont{Your monospaced font}
```

Package	Purpose
amsmath	Basic mathematical typography
amsthm	Basic mathematical environments for proofs etc.
babel	Language settings
booktabs	Typographically light rules for tables
bookmarks	Bookmarks in the resulting PDF
csquotes	Language-specific quotation marks
dsfont	Double-stroke font for mathematical concepts
graphicx	Graphics
hyperref	Hyperlinks
multirow	Permits table content to span multiple rows or columns
paralist	Paragraph ('in-line') lists and compact enumerations
scrlayer-scrpage	Page headings
setspace	Line spacing
siunitx	Proper typesetting of units
subcaption	Proper sub-captions for figures

Table 1.1: A list of the most relevant packages required (and automatically imported) by this template.

Make sure to select nice combinations of that are pleasing to *your* eyes—this is your document and it should reflect your own style. Make sure to specify font names as they are provided by your system. For instance, you might want to use the following combination:

```
\setmainfont{Libre Baskerville}
\setsansfont[Scale=MatchLowercase]{IBM Plex Sans}
\setmonofont[Scale=MatchLowercase]{IBM Plex Mono}
```

X⫫LATEXand LuaLATEXalso offer you a way to change the font that is used for mathematical equations. If installed, the garamond-math package permits you to choose from different stylistic sets that slightly change how certain mathematical symbols look. For instance, the following command changes 'Fraktur' symbols:

```
\setmathfont{Garamond-Math.otf}[StylisticSet={6}]
```

1.4 Features

The template automatically imports numerous convenience packages that aid in your typesetting process. Table 1.1 lists the most important ones. Let's briefly discuss some examples below. Please refer to the source code for more demonstrations.

1.4.1 TYPESETTING MATHEMATICS

This template uses `amsmath` and `amssymb`, which are the de-facto standard for typesetting mathematics. Use numbered equations using the `equation` environment. If you want to show multiple equations and align them, use the `align` environment:

$$V := \{1, 2, \dots\} \tag{1.1}$$
$$E := \big\{(u, v) \mid \operatorname{dist}(p_u, p_v) \leq \epsilon\big\} \tag{1.2}$$

Define new mathematical operators using `\DeclareMathOperator`. Some operators are already predefined by the template, such as the distance between two objects. Please see the template for some examples. Moreover, this template contains a correct differential operator. Use `\diff` to typeset the differential of integrals:

$$f(u) := \int_{v \in \mathbb{D}} \operatorname{dist}(u, v) \, \mathrm{d}v \tag{1.3}$$

You can see that, as a courtesy towards most mathematicians, this template gives you the possibility to refer to the real numbers $\mathbb{R}$ and the domain $\mathbb{D}$ of some function. Take a look at the source for more examples. By the way, the template comes with spacing fixes for the automated placement of brackets.

1.4.2 TYPESETTING TEXT

Along with the standard environments, this template offers `paralist` for lists within paragraphs. Here's a quick example: The American constitution speaks, among others, of (i) life (ii) liberty (iii) the pursuit of happiness. These should be added in equal measure to your own conduct. To typeset units correctly, use the `siunitx` package. For example, you might want to restrict your daily intake of liberty to 750 mg.

Likewise, as a small pet peeve of mine, I offer specific operators for *ordinals*. Use `\th` to typeset things like July 4$^{\text{th}}$ correctly. Or, if you are referring to the 2$^{\text{nd}}$ edition of a book, please use `\nd`. Likewise, if you came in 3$^{\text{rd}}$ in a marathon, use `\rd`. This is my 1$^{\text{st}}$ rule.

If you want to write a text in German and use German hyphenation rules, set the language of your text to german using `\selectlanguage{ngerman}`, or add

```
\PassOptionsToPackage{spanish}{babel}
```

before the `\documentclass` command to load a specific language. The languages `ngerman`, `french`, and `english` are loaded by default, with `english` being selected.

Quotation marks can be typeset using the `\enquote{...}` command from the `csquotes` package, which is preloaded by `latex-mimosis`. Depending on the currently selected language, quotes will look like "this", „this", or « this ». One must never use "ASCII" quotation marks or even 'apostrophe' symbols.

1.5 CHANGING THINGS

Since this class heavily relies on the scrbook class, you can use *their* styling commands in order to change the look of things. For example, if you want to change the text in sections to **bold** you can just use

```
\setkomafont{sectioning}{\normalfont\bfseries}
```

at the end of the document preamble—you don't have to modify the class file for this. Please consult the source code for more information.