Example and Documentation
of the `kaobook` class

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an Awesome Publisher

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The kaobook class

The harmony of the world is made manifest in Form and Number, and the heart and soul and all the poetry of Natural Philosophy are embodied in the concept of mathematical beauty.

– D'Arcy Wentworth Thompson

Preface

It is my opinion that every LaTeX geek, at least once during his life, feels the need to create its own class: this is what happened to me and here is the result, which, however, should be seen as a work still in progress. Actually, this class is not completely original, but it is a blend of all the best ideas that I have found in a number of guides, tutorials, blogs and tex.stackexchange.com posts. In particular, the main ideas come from two sources:

- ▶ Ken Arroyo Ohori's Doctoral Thesis, which served, with the author's permission, as a backbone for the implementation of this class;

- ▶ The Tufte-Latex Class, which was a model for the style.

I started writing this class as an experiment, and as such it should be regarded. Since it has always been indended for my personal use, it may not be perfect but I find it quite satisfactory for the use I want to make of it. I share this work in the hope that someone might find here the inspiration for writing his or her own class.

Federico Marotta

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1.1 The main ideas

Many modern printed textbooks have adopted a layout with prominent margins where small figures, tables, remarks and just about everything else can be displayed. Arguably, this layout helps to organise the discussion by separating the main text from the ancillary material, which at the same time is very close to the point in the text where it is referenced.

This text does not aim to be an apology of wide margins, for there are many better suited authors for this task; the purpose of all these words is just to fill the space so that the reader can see how a book written with the kaobook class looks like. Meanwhile, I shall also try to illustrate the features of the class.

The main ideas behind kaobook come from this blog post, and actually the name of the class is dedicated to the author of the post, Ken Arroyo Ohori, which has kindly allowed me to create a class based on his thesis. Therefore, if you want to know more reasons to prefer a 1.5-column layout for your books, you can read his blog post.

1.2 What this class does

The kaobook class focuses more about the document structure than about the style. Indeed, it is a well-known LaTeX printiple that structure and style should be separated as much as possible (see also Section *What this class does not* on the following page). This means that this class will only provide commands, environments and in general, the opportunity to do things, which the user may or may not exploit. Actually, some stylistic matters are embedded in the class, but the user is able to customise them with ease.

The main features are the following:

Page Headings They span the margins and, in twoside mode, display alternatively the chapter and the section name.

Matters The commands `\frontmatter`, `\mainmatter` and `\backmatter` have been redefined in order to have automatically wide margins in the main matter, and narrow margins in the front and back matters.

Margin text We provide commands `\sidenote` and `\marginnote` to put text in the margins[1].

1: Sidenotes (like this!) are numbered while marginnotes are not

Figure 1.1: The Mona Lisa.
`https://commons.wikimedia.`
`org/wiki/File:Mona_Lisa,_by_`
`Leonardo_da_Vinci,_from_C2RMF_`
`retouched.jpg`

Margin figs/tabs A couple of useful environments is `marginfigure` and `margintable`, which, not surprisingly, allow you to put figures and tables in the margins.

Margin toc Finally, since we have wide margins, why don't add a little table of contents in them? See `\margintoc` for that.

Hyperref `hyperref` is loaded and by default we try to add bookmarks in a sensible way; in particular, the bookmarks levels are automatically reset at `\appendix` and `backmatter`.

1.3 What this class does not

As anticipated, the styling is left to the user. Indeed, every book may have sidenotes, margin figures and so on, but each book will have its own fonts, toc style and so on. For this reason, we only provide sensible defaults. The github repository is organised as follows.

kaobook.cls The class file, which contains the definitions of the commands and the environments and loads the required packages.

packages.sty Loads other packages to improve the experience of the user (for instance, `ams*` packages are loaded here as they are not required in every book).

commands.sty Complements to the packages, *e.g.* the specifications of the `theorem` environments.

style.sty Page layout, formatting of the titles...

Moreover, there is a folder containing this very book as an example.

Part I

Class Options, Commands and Environments

Figure 1.2: https://commons.wikimedia.org/wiki/File:Puzzle-4.svg
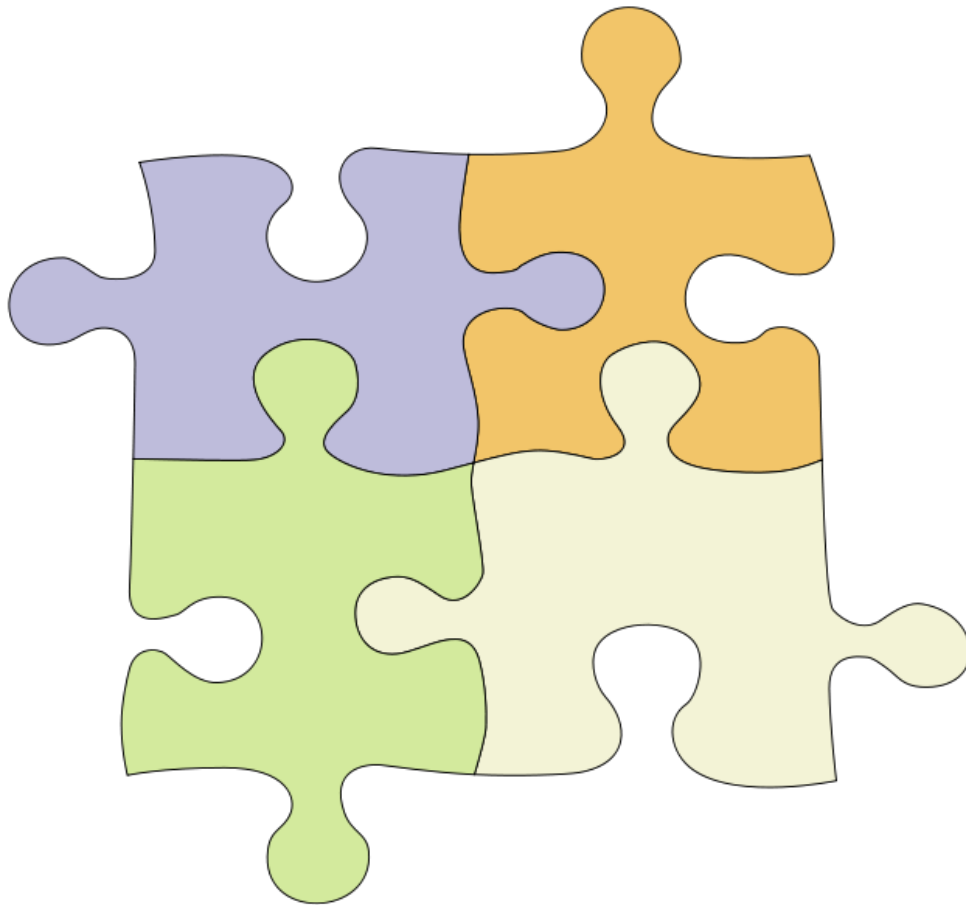
Class Options

2

2.1 TODO

Describe the most common options used, both the ones inherited from scrbook and the kao-specific ones.

2.2 KOMA options

2.3 kao options

Sidenotes and Marginnotes

3

3.1 Sidenotes

usage

implementation

3.2 Marginnotes

3.3 Footnotes

Footnotes force the reader to constantly move from one area of the page to the other. Arguably marginnotes solve this issue, so you should not use footnotes. Nevertheless, for completeness, we provide the standard command `\footnote`, just in case you want to put a footnote once in a while[*].

3.4 Margintoc

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[*] And this is how they look like.

Figures and Tables

4

4.1 Normal figures and tables

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Figure 4.2: It's Mona Lisa again. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives

you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

4.2 Margin figures and tables

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.
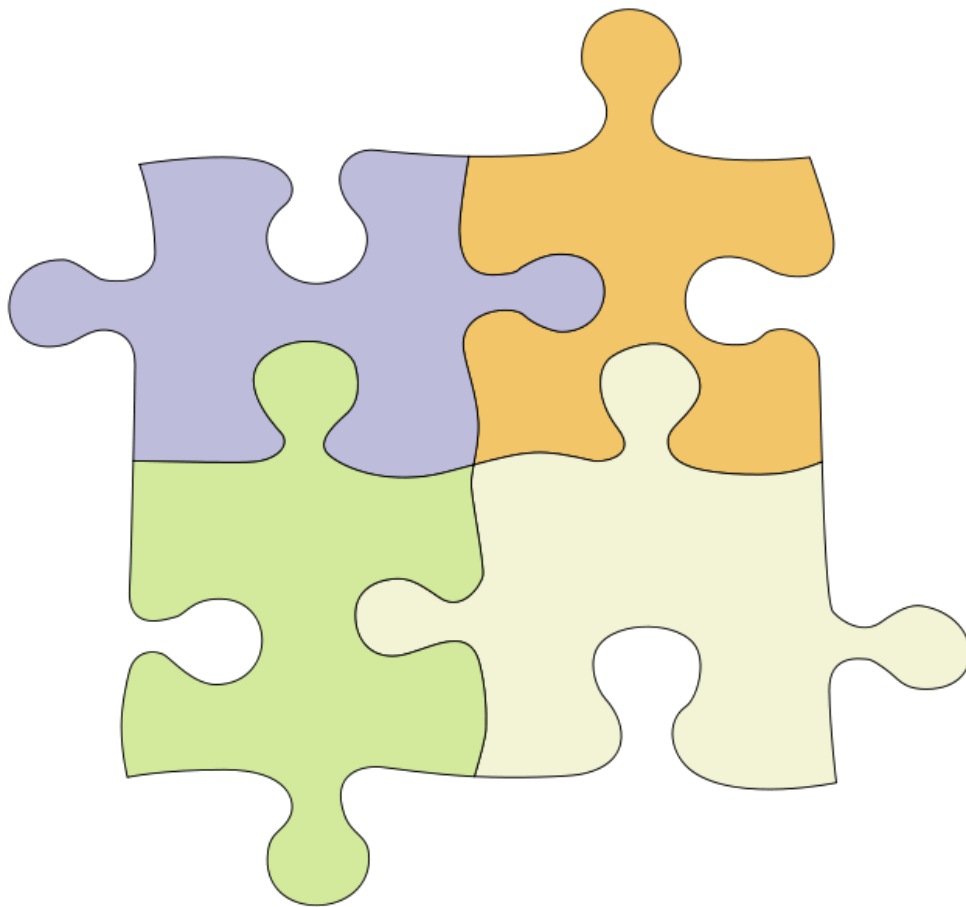
4.3 Wide figures and tables

col1	col2	col3
Multiple row	cell2	cell3
	cell5	cell6
	cell8	cell9

Table 4.1: A useless table.

Part II

Style

5

Heading on Level 0 (chapter)   *A*

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

A.1 Heading on Level 1 (section)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Heading on Level 2 (subsection)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Heading on Level 3 (subsubsection)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Heading on Level 4 (paragraph)   Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

A.2 Lists

Example for list (itemize)

- First item in a list
- Second item in a list
- Third item in a list
- Fourth item in a list
- Fifth item in a list

Example for list (4*itemize)

- First item in a list
  - First item in a list
    - First item in a list
      - First item in a list
      - Second item in a list
    - Second item in a list
  - Second item in a list
- Second item in a list

Example for list (enumerate)

1. First item in a list
2. Second item in a list
3. Third item in a list
4. Fourth item in a list
5. Fifth item in a list

Example for list (4*enumerate)

1. First item in a list
   a) First item in a list
      i. First item in a list
         A. First item in a list
         B. Second item in a list
      ii. Second item in a list
   b) Second item in a list
2. Second item in a list

Example for list (description)

First item in a list

Second item in a list

Third item in a list

Fourth item in a list

Fifth item in a list

Example for list (4*description)

First item in a list

    First item in a list

        First item in a list

            First item in a list

            Second item in a list

        Second item in a list

    Second item in a list

Second item in a list

Bibliography

[1] Peter M Visscher, William G Hill, and Naomi R Wray. 'Heritability in the genomics era–concepts and misconceptions.' In: *Nat. Rev. Genet.* 9.4 (2008), pp. 255–266. DOI: 10.1038/nrg2322.