

packages and classes container

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Part One

classes



Chapter One

aesthetic

1.1 QUICK FACTS

file `aesthetic.cls`

description a memoir based class for providing the quick style i prefer

dependencies none, can be fragile regarding styling/fonts/etc

requires ALEGREYA optional — see section 1.2 on the following page

ATBEGSHI allows for appendix command — see section 1.4 on page 3

ARRAY needed for the M column type¹

MICROTYPE no current way to pass options, and i don't intend on adding one. the point is to make documents look nice as painlessly as possible

PIFONT needed for fancy breaks

¹i believe this is called by memoir anyway, but i have no interesting breaking things/any dependencies

loads MEMOIR — options cannot be overridden and are

openany only has a super noticable effect if pagebreaks or partpages is called (section 1.2)

twoside this is designed for book like classes, and the headings will break if you call oneside

fullptlayout just helps typesetting, especially since we call MICROTYPE²

extrafontsizes so you can call all of the large text sizes you want

[**user options**] whatever you want. twocolumn is disabled (will break the page layout, and two column documents are plenty compact. this is to help with the tightness of one column documents, because presumably you want decent readability without using too much paper.)

example this file (using lowerhead, 12pt)

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1.2 CLASS OPTIONS

lowerhead formats head in small caps/lowercase, vs all caps. not recommended for part headings.³

numberedhead adds numbers to headings³

otherfont allows a font other than Alegreya to be called. if you call this, Alegreya just isn't loaded, so if you want to use Alegreya for headers/what have you, call the font and change it manually.

pagebreaks adds pagebreaks/supresses the commands which condense the document. this does *not* reformat part parges

partheadings changes headings from being labeled as chapter & section to part & chapter³

²i'm honestly not 100% sure this makes a difference, but i'm not turning it off

³there is currently no way to change this within the document. i have no plans of changing this.

partpages allows parts to be formatted on their own page, while maintaining the fancy breaks. if enabled with pagebreaks, will provide the package partpage formatting

shortnames turns off the automatic full part/chapter names in the header. unless numberedhead is called, this has no effect.

1.3 RELATED/RECOMMENDED

AFTERPAGE helps with float and table typesetting

BOOKTABS the aesthetics of this make heavy use of horizontal rules, so you'll probably want to have the nicer looking tables anyway

CSQUOTES i think either **BABEL** or **MEMOIR** calls this, and it'll make your life a bit easier

XCOLOR colors are nice, they jive well, and if you want to mess with some of the **MEMOIR** options, now you can.

XTAB helps with longer tables. you can use **LONGTABLE** if that's your preference, but if i ever write up some of my other common commands as classes/packages, i'll write them for **XTAB**

1.4 MACROS

\contents calls the standard set of contents (short contents, full contents, list of figures, list of tables). adds a part for contents, but does not enter or exist **\frontmatter** so you can add contents under. not very flexible.

M{<width>} a horizontally/vertically centered column.

\makeappendix prints out a formatted appendix. see the end of this document.

\makebackmatter [] prints out the command to enter backmatter without forcing a page break. optional argument typesets a file/text between the switch command and the transition spacer.

1.5 KNOWN ISSUES

afterpage breaking yeah this isn't really a class problem *however* i bring it up here because it does happen, where you get fucked over because AFTERPAGE doesn't know what it's doing. just make sure you've added lots of text.

calling footnotes in sections something about the formatting commands for the sections breaks footnotes⁴. you can't use `\protect\footnote{}` because it will incorrectly format the font of the footnote. instead, use `\protect\footnotemark\footnotetext{}`. this does not happen for chapters.

failure to break pages you may have used `\let\par\russianpar`. bad idea. it will mess with the commands used to control chapters. this doesn't always cause problems (especially if you have longer chapters), but i don't recommend messing with it.

weird looking tables explained in section 1.7. basically, you should not call flexible width tables in this, and instead, use M

1.6 POSSIBLE ADDITIONS/PLANS

footnote toggles turning where footnotes are numbered into an option, as well as adding easier per page symbolic footnotes.

upper/lower options so that for the ~aesthetic~ all lowercase documents can also have easy tables of contents, etc.

1.7 CLASS INFORMATION⁵

class options pretty much all of the class options just create conditionals in the form `\@option<boolean>` which can be used with `\makeatletter` and `\makeatother`⁶.

⁴because of the commands that format them, sections are actually pretty fragile. there isn't a consistent and easy workaround.

⁵not recommended, but i am a completionist in all things

⁶i'm not sure if this would actually work, however, because none of the class options have anything to do with the document once you've started the document, they're all called on start up. i guess this could change in the future?

headings we use a modified version of the ruled style which gives us some flexibility in the marks. this bit of the file is more verbose than needed, but if you want to mess with the headings, you can mess with the ruled style

parts and chapters basically just heavy use of `\renewcommand{\}{}` over breaks, skips, fonts, etc., to get it all consistent.

tabcolsep set to 0pt, so make sure you consider that. this is, as far as i'm concerned, a positive for typesetting tables because it lets you actually use textwidth based ratios for setting tables.

footnotes numbered consecutively though the whole document. could easily be changed in the preamble, but i don't recommend doing that unless you're using pagebreaks, because it can create weirdness like two footnotes of the same number on the same page in edge cases.

contents just calls the contents in the predictable/defined way.

appendix calls a few commands to add everything to the table of contents without being a pain

backmatter uses `ATBEGSHI` to turn `\@mainmatterfalse` on after the page finishes⁷, and then after the optional argument, adds a page separator

Chapter Two

notes

2.1 QUICK FACTS

file `notes.cls`

⁷for grouping reasons, `\afterpage` doesn't work here, and the work around basically becomes just using what `ATBEGSHI` does.

description an extension of `AESTHETIC.CLS` which provides a variety of tools for notes

dependencies • `AESTHETIC` class is required

- if using class option `cse` (section 2.2 on the facing page), `MINTED` must be configured. in order for this to work correctly, the color schemes for solarized, nord, etc., must be loaded in under the correct names. this is fully described under class options (section 2.2 on the next page).

requires general `XCOLOR` required to manage the themes, etc.

`TCOLORBOX` used in effectively every course type to provide functionality

`FLOAT` provides a variety of useful features

`CAPTION` allows for more flexible caption positioning/placement, necessary for various functions

`TIKZ` commonly used in notes, included here for ease. also, it's required in a variety of places, so requiring it early prevents dependency issues.

`HYPERREF`, `VARIOREF`, `CLEVEREF` provides effective referencing and linking. `hyperref` also allows link color to be set to match the document color scheme

anth `BIOCON` provides support for species names

chem `CHEMFIG` draws chemical figures

`MHCHEM` (version 4) better inline chemistry figures

`AMSMATH`, `AMSSYMB`, `AMSTHM` provides common math support, etc.

`THMTOOLS` provides tools for reaction mechanism environment

cse `MINTED` provides listing support. color themes are automatically loaded to match document theme.⁸

math `AMSMATH`, `AMSSYMB`, `AMSTHM` provide common/basic math support

`THMTOOLS` provides better theorem environments (necessary to provide boxed theorems)

⁸if using printed class option (section 2.2 on the facing page), `bw` is automatically loaded. color schemes without `minted` support (presently, `ashes`) have themes that are mostly matching chosen.

class options		
component	standard	change
font size	14pt	10pt
dark	changes document to dark	negated
page color	light/dark color	white
background color	darker/lighter color	white
MINTED scheme	matches color scheme	bw
links	colored (prints)	colored boxes (doesn't print)

Table 2.1: changes made in printable

`PHYSICS` provides helpful math commands

`JKMATH` provides similar functionality to `PHYSICS`⁹

ling `TIPA` basic ipa support

`TIPX` extended ipa support

`GB4E` glossing

`FOREST` a package for creating tikz trees easier/more effectively¹⁰

example not presently loaded

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2.2 CLASS OPTIONS

dark loads a dark version of a theme (or, in a black and white color scheme, simply provides white on black)

printable implements the changes listed in table 2.1

ashes, espresso, nord, solarized, tomorrow

⁹both are loaded because of document compatibility and because physics provides a few things that jkmath doesn't.

¹⁰the tikz library trees is also loaded, but forest provides better linguistics functionality and is generally much easier to use

scheme	text	page	back-ground	subtle text	accent	accent text	secondary accent	secondary accent text	tertiary accent	fourth
ashes (light)	dark	light	light	mid	a1	light	b2	dark	a0	b1
ashes (dark)	light	dark	dark	mid	a1	light	b2	dark	a0	b1
espresso (light)	dark0	light1	light0	dark1	a0	light1	b0	dark1	a4	
espresso (dark)	light0	dark0	dark1	light0	a0	dark0	b0	dark1	a4	
nord (light)	nord0	nord6	nord5	nord1	nord9	nord6	nord14	nord5	nord15	
nord (dark)	nord6	nord0	nord1		nord9	nord6	nord14	nord5	nord15	
solarized (light)	base03	base3	base2	base02	yellow	base3	blue	base2	red	
solarized (dark)	base3	base03	base02	base2	yellow	base03	blue	base02	red	
tomorrow (light)	dark0	light3			a0					
tomorrow (dark)	light3	dark0			a0					

Table 2.2: color schemes. note that most color schemes have 10 to 16 colors, but only 5 or so are used.

document color schemes. see table 2.2 on the facing page. note that these are mutually exclusive and will be ordered alphabetically (e.g., if you include both `solarized` and `nord`, `solarized` will be displayed, but if you include `espresso` and `nord`, `nord` will be displayed).

`anth`, `chem`, `cse`, `ling`, `math` course types. differences are discussed in relevant sections, but mostly pertains to which packages are loaded and which macros are created. these are not exclusive, but certain macros may behave unpredictably.

2.3 RELATED/RECOMMENDED

this strives to be relatively self-contained, so only packages required for personal needs must be loaded.

2.4 MACROS

2.4.1 GENERAL

`flashcard`¹¹ a way of maintaining blocks that may be desired for flashcards. should not be directly used.

`vocab` environment. takes one mandatory argument (vocabulary word), and the contents are placed in a box.

`startgen` prints a title page and contents. title information must be set in preamble. takes one optional argument, which will be placed at the end of the contents. always usable, but there are better content/title page options listed in sections 2.4.2 and 2.4.3 on the current page and on the following page.

2.4.2 CHEMISTRY

`mechanism` a float type with provides reaction mechanism support. not recommended for direct use.

¹¹not technically a macro

```
\tcbset{theorem/.style={boxtap, colframe=secondaryaccentcolor,
→ colbacktitle=secondaryaccentcolor}}
\declaretheorem[style=boxedtheorem]{theorem}
\NewDocumentEnvironment{boxthm}{m m +b}{
→ \begin{boxtap}{theorem}{\Cref{#2}}
→ (\nameref{#2})\begin{theorem}[name={#1},label=#2] #3
→ \end{theorem}\end{boxtap} }{ }
```

Listing 2.1: example implementation of boxtap. note that boxtap and boxedtheorem are created within the class, you can use these freely.

mech an environment which takes one argument (title) and boxes a reaction mechanism.

start chemistry's implementation of start adds a list of reaction mechanisms. it also takes an optional argument.

2.4.3 COMPUTER SCIENCE

code a listing template. takes one argument, the title of the box.

start computer science's implementation of start includes a list of flashcards and a list of listings.

2.4.4 MATH

theorem, axiom, definition theorem types defined. not recommended for direct usage because they're formatted very precisely to allow for the boxed variants to function in a predictable way.

boxtap an environment for theorems, axioms, and postulates¹². can be used directly, but not recommended. takes two arguments: the first identifies which box style to use, and the second is the title. if you need custom theorems, better to use this in another theorem definition than directly. see listing 2.1 for an example of how to do this.

boxthm, boxaxm, boxdef default variants of boxtap. all have unique colors. see listing 2.1 for most of boxthm's application.

¹²i just didn't like boxtad as an acronym

2.4.5 LINGUISTICS

start provides a contents line with a list of flashcards. does not include examples.

tree a document environment for syntax trees. takes one argument, the caption, and places body directly into a tree within a floating environment.

2.5 KNOWN ISSUES

bad flashcard handling for reasons that are somewhat difficult to explain concisely, flashcards can behave very unpredictably.

color scheme is broken as table 2.2 on page 8 shows, some color schemes lack certain colors. this is for a variety of reasons, most of them bad, but it is relevant to mention that in most cases, there should be a back up of either white or black.

2.6 POSSIBLE ADDITIONS/PLANS

return buttons on links obviously this will be rather imperfect, but being able to return from a vocab card to where it was mentioned in the main document would be nice.

improved example functionality at present, the example environment for linguistics is minimal at best. ideally, this could be improved to function as a full float.

better internal handling of flashcards flashcards are a mess of spaghetti code right now which really limits their power. cleaning this up would make most things dealing with flashcards significantly more effective.

key-value colors exactly what it says on the tin.

more flexible minted processing avoiding errors from missing minted options, possibly (?) loading a back-up package if minted can't be run

flashcard export ideally in a CSV file¹³

¹³ideal for anki support

2.7 CLASS INFORMATION

xparse loaded in very early on. could be loaded in earlier, but this provides support for future key-value work.

class options very similar to aesthetic, most are loaded in to create if statements in the general form `\if@dark`, etc. the options `partheadings`¹⁴ and `lowerhead`¹⁵ are explicitly ignored.

minted this is only loaded in the cse version, but the thematic handling is a series of nested if statements — listing 2.2 on the facing page

colors the code for the ashes scheme is shown in listing 2.3 on page 14 to provide an example of what the color scheme setting is. the other colors mostly follow the same pattern.

other color choices other color decisions are made based on the color names defined here (accent colors, etc.) which are available for use in the main document

¹⁴for notes headings to be helpful, they generally need to be more specific

¹⁵automatically loaded


```
\usemintedstyle{bw}
\if@printable
  \usemintedstyle{bw}
\else
  \if@ashes
    \if@dark
      \usemintedstyle{native}
    \else
      \usemintedstyle{colorful}
    \fi
  \fi

  \if@espresso
    \usemintedstyle{nord}
  \fi

  \if@nord
    \usemintedstyle{nord}
  \fi

  \if@solarized
    \if@dark
      \usemintedstyle{solarized-dark}
    \else
      \usemintedstyle{solarized-light}
    \fi
  \fi

  \if@tomorrow
    \if@dark
      \usemintedstyle{tomorrow-night}
    \else
      \usemintedstyle{tomorrow}
    \fi
  \fi
\fi
```

Listing 2.2: loading minted styles based on user choice

```
\definecolor{@dark}{HTML}{1c1e23}
\definecolor{@light}{HTML}{f3f3f5}
\definecolor{@mid}{HTML}{747a84}
\definecolor{@a0}{HTML}{c7ac95}
\definecolor{@a1}{HTML}{ac95c7}
\definecolor{@a2}{HTML}{c795ac}
\definecolor{@b0}{HTML}{95c7ac}
\definecolor{@b1}{HTML}{acc795}
\definecolor{@b2}{HTML}{95acc7}

\definecolor{subtletextcolor}{named}{@mid}
\definecolor{accentcolor}{named}{@a2}
\definecolor{accenttextcolor}{named}{@light}
\definecolor{secondaryaccentcolor}{named}{@b2}
\definecolor{secondaryaccenttextcolor}{named}{@dark}
\definecolor{tertiaryaccentcolor}{named}{@a0}
\definecolor{color4}{named}{@b1}

\if@dark
  \if@printable
    \definecolor{textcolor}{named}{@dark}
  \else
    \definecolor{textcolor}{named}{@light}
    \definecolor{pagecolor}{named}{@dark}
    \definecolor{backgroundcolor}{named}{@dark}
  \fi
\else
  \definecolor{textcolor}{named}{@dark}
  \definecolor{backgroundcolor}{named}{@light}

  \if@printable
  \else
    \definecolor{pagecolor}{named}{@light}
  \fi
\fi
```

Listing 2.3: ashes color scheme

Appendices

• • •

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