zLaTeX 用户手册

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CONTENTS NEW

1 基本介绍

\zLaTeX

Updated: 2024-11-05

\zLaTeX

用于输出本宏集对应的 logo，使用示例如下:

```
Hello \zLaTeX{}；你好 \zLaTeX{}.
```

Hello zLATEX；你好 zLATEX.

zLATEX 文档类默认基于 article 文档类，但是你仍然可以在加载本文档类时选择加载其他的文档类，通过设置选项 ⟨*class*⟩ 的值为 article 或者是 ctexbook 即可. 通过更换默认的文档类，从而满足使用者的不同需求，目前本模板可以用于以下场景:

- 撰写书籍或者笔记

- 讨论班的 Slide 制作

zLATEX 的制作初衷: 让使用者可以方便进行书籍和笔记的撰写以及日常汇报 slide 的无缝切换. zLATEX 全部由 LATEX3 进行编写，采用 ⟨*key-value*⟩ 的方式进行选项和命令的配置，对于作者来说: 方便后续的模板拓展和维护；对于用户来说: 使用键值对可以减轻用户记忆命令参数这一负担，方便用户使用命令. 如果使用者熟悉 LATEX，那么花费不到 10min 的时间，你便可以轻松使用本文档类完成如上任务，减少不必要的工作.

2 宏包机制

zslide-last-page

Updated: 2024-11-05

\pageref{zslide-last-page}

引用当前文档的最后一页，用于 slide 制作时的页码引用.

zLATEX 文档类会根据用户指定的选项自动处理和加载对应的宏包，所以 zLATEX 文档类在不同的导言区选项声明下加载的宏包和命令是不同的. 后文详细地介绍了不同导言区配置以及不同编译引擎下的宏包加载情况. zLATEX 始终秉持着最少依赖的原则，能够自己实现的功能，尽量不引入宏包. 如部分用户会用到的 lastpage 宏包提供的\pageref{LastPage} 已实现为:\pageref{zslide-last-page} (需在 ⟨*slide*⟩=true 时使用).

2.1 基本宏包

zLATEX 会加载一系列的基本宏包，意味着无论用户的导言区如何配置，这部分宏包均会被加载. 具体的宏包加载情况如下:

l3keys2e	geometry	fancyhdr	graphicx
amsmath	amsfonts	esint	framed
graphicx	xcolor	cleveref	sidenotes
titlesec	titletoc		

表 1: zLATEX 文档类基本宏包

　　zLATEX 默认只加载很少的一部分基础宏包，用户如果想要实现更加个性化的功能还请自行引入相关宏包；在默认情况下本模板即可呈现一个比较好的效果，不熟悉 LATEX 的用户不用担心本模板配置选项过于复杂. 想要马上开始体验？请参见 "小节 3.3" 的最小写作示例.

3 安装使用

3.1 在线使用

　　为了让部分用户可以直接体验到 zLATEX，免去 "繁杂" 的环境配置. 我已将本模板部署在 Overleaf 上，地址为: TeXPgae zLATEX Project，直接打开此地址即可体验. Github 上的项目内容包含本手册以及 zTikZ 文档的源码与文档. 由于部分的技术原因，zTikZ 请在本地体验.

3.2 本地安装

　　目前本文档类 zLATEX 还没有登陆 CTAN，未来可能也没有这个打算，本模板还没有完全开发完成. 由于本文档类使用的部分 LATEX3 命令在老版本下并不存在，所以如果你的 TEXLive 过于老旧，则可能出现无法编译的情况. 目前已知 zLATEX 文档类在各平台的兼容情况为:

Windows ：TEXLive 最低版本 2022

Linux ：TEXLive 最低版本 2022

MacOS ：兼容 MacTEX2024(老版也应兼容)

ztool

Updated: 2024-12-05

`\usepackage{ztool}`

本宏集以独立实现了一个 ztool 宏包，此模块中包含原来已被废弃的 l3sys-shell 中的所有命令. ztool 实现了 box 以及 文件 IO 操作相关的函数. 在 ztool 的协助下，zLATEX 能够避免或减少-shell-escape 相关的调用. ztool 宏包手册请参见 节 9.

　　由于 zLATEX 还没有传入 CTAN(未来可能会考虑)，所以想要使用此文档类，可以有如下的两种方法:

- 把此文档类 – zlatex 目录中的所有内容放入当前项目文件夹下

- 在命令行运行命令: kpsewhich -var-value=TEXMFHOME, 在 Windows 上一般是: C:/Users/\meta{name}/texmf/, 在 Linux 下一般是~/texmf/; 具体路径以自己的实际情况为准. 在此路径下新建文件夹 tex/latex/zlatex, 此文件夹对应的路径记为 ⟨zTEX⟩; 然后把 zlatex 目录中的所有内容放入 ⟨zTEX⟩ 下.

在本手册后续，我们使用 ⟨zTEX⟩ 表示本宏集的根目录.

3.3 最小工作示例

zLATEX 的最小工作示例如下 [1]. 首先是中文写作示例，默认加载 article 文档类，如果喜欢使用 book 文档类，可以在加载文档类时指定 class=book.

```
% compile engine: xelatex
\documentclass[lang=cn]{zlatex}

\begin{document}
% some preface
% \tableofcontents


% wrting your document here ...
\end{document}
```

其次是英文写作示例 (此时为 book 文档类), 你需要修改的地方只有两处; 首先就是把语言选项改为 lang=en，其次便是把编译方式改为 pdfLATEX.

```
% compile engine: pdflatex
\documentclass[class=book]{zlatex}

\title{⟨title⟩}
\author{⟨author⟩}
\date{⟨date⟩}
\begin{document}
\maketitle
\frontmatter
% some preface
% \tableofcontents
% some claim etc.
\mainmatter


% wrting your document here ...
\end{document}
```

---

[1] 导言区的配置可能需要根据自己的实际情况加以调整，详细配置请参见后文

在使用 book 文档类时, 如果不加载 \frontmatter 和 \mainmatter 两命令, 那么可能会导致整个文档的页眉, 页脚格式不正确.

4 zLᴬTᴇX 配置

4.1 导言区

\zlatexSetup

Updated: 2024-11-05

\zlatexSetup{⟨*key-value*⟩}

zLᴬTᴇX 接受一系列的键值对进行配置, 部分的配置尽可以在加载文档类时指定. 为区分二者, 我们约定:

- 名字后带有 ☆ 号的选项, 只能作为宏包/文档类选项, 需要在引入宏包/文档类的时候指定;

- 名字后带有 ⋆ 号的选项, 只能通过 zLᴬTᴇX 宏集提供的用户接口 \zlatexSetup 来设定

- 名字后不带有特殊符号的选项, 既可以作为宏包/文档类选项, 也可以通过 \zlatexSetup 来设定。

\zlatexOptions

Updated: 2024-11-05

\zlatexOptions

zLᴬTᴇX 内置命令, 用于打印此时文档类 zLᴬTᴇX 接收到的选项, 可以在调试模板时使用. 使用样例:

```
\zlatexOptions
```

Class Options: cn - oneside - 12pt

zLᴬTᴇX 的配置选项可以在文档类加载时指定, 也可以通过命令 \zlatexSetup 进行指定. zLᴬTᴇX 的 ⟨*key-value*⟩ 被划分为两个层级, 第一层的 ⟨*key*⟩ 为: ⟨*layout*⟩, ⟨*mathSpec*⟩, ⟨*font*⟩, ⟨*bib_index*⟩, ⟨*toc*⟩, ⟨*packageOption*⟩, ⟨*classOption*⟩, ⟨*section*⟩, ⟨*lang*⟩, ⟨*toc*⟩. 其中前 7 个键 ⟨*key*⟩ 均具有自己的独立子键 ⟨*sub-key*⟩; 后两者不具有自己的子键, 直接指定即可. 关于各层 ⟨*key-value*⟩ 的关系请见图 1.

总体而言, zLᴬTᴇX 的文档类选项是比较复杂的, 对于刚接触本文档类的用户, 不必知晓所有的选项配置, 因为在默认的选项配置下, zLᴬTᴇX 已经能够得到一个效果较佳的文档了. 下面我们将详细介绍各个 ⟨*key*⟩ 的指定方式及其具体含义.
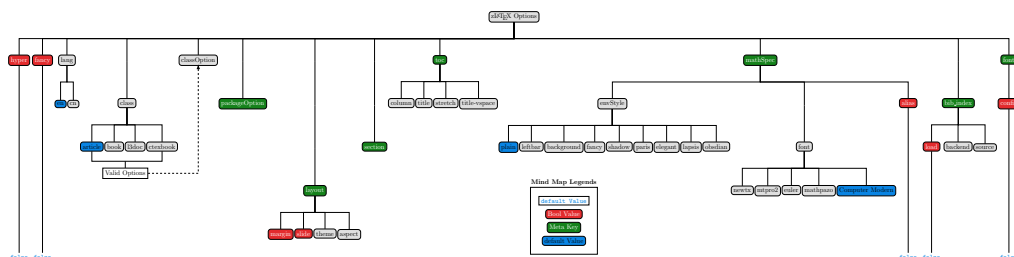
图 1: zLATEX 文档类选项示意图

\zlatexloadmodule

\zlatexloadlibrary

Updated: 2024-11-05

`\zlatexloadmodule{⟨module name⟩}`

`\zlatexloadlibrary{⟨library name⟩}`

可以使用这两个命令用于加载 zLATEX 的模块和库, 所有的 module 默认全部加载, library 默认全部不加载, 由用户指定加载. 目前已有的 module 和 library 列表如下:

module 列表:

- `zlatex.module.fontcfg.tex`

- `zlatex.module.indexref.tex`

- `zlatex.module.layout.tex`

- `zlatex.module.pageinfo.tex`

- `zlatex.module.theme.tex`

- `zlatex.module.thm.tex`

- `zlatex.module.titlesec.tex`

- `zlatex.module.toc.tex`

library 列表:

- `zlatex.library.fancy.tex`

- `zlatex.library.mathalias.tex`

- `zlatex.library.slide.tex`

- `zlatex.library.theme.tex`

各个 module 和 library 的加载方式请参见如下示例:

```
% \documentclass{zlatex}
\zlatexloadlibrary{fancy}
\zlatexloadlibrary{mathalias}
\zlatexloadlibrary{slide}
\zlatexloadlibrary{theme}
```

你当然可以编写一个你自己的 module, 不妨假设其名称为 ⟨*moduleA*⟩; 将此文件命名为 `zlatex.module.`⟨*moduleA*⟩`.tex`, 然后将其放入路径 ⟨*zTEX*⟩`/module/` 下, 最后使用如下命令加载此 module:

```
\zlatexloadmodule{⟨moduleA⟩}
```

lang ☆

Updated: 2024-11-05

lang=⟨*cn*, ***en***⟩

zLᴬTᴇX 目前仅对中英文做了适配, 对于法语仅有部分支持. 根据不同的文档类语言, zLᴬTᴇX 会加载不同的和语言相关的宏包, 不同 ⟨*lang*⟩ 设置下, 宏包的加载情况为:

lang=en	inputenc(pdftex)	fontenc	babel	microtype
lang=cn	fontspec	ctex		

表 2: zLᴬTᴇX 文档类语言宏包

hyper ☆

Updated: 2024-11-05

hyper=⟨*true*, ***false***⟩

是否开启文档内部的超链接以及 PDF 书签, 默认为 false. 建议在最后的成稿中启用此选项, 在草稿阶段置为 false 可以加快文档的编译速度.

fancy ☆

Updated: 2024-11-05

fancy=⟨*true*, ***false***⟩

此选项用于控制文档的外观, 包括章节样式, 定理类环境样式, 默认为 false.

class ☆

Updated: 2024-11-05

class=⟨***article***, *book*, *ctexbook*⟩

此选项用于指定加载的基文档类, 默认为 article. 在加载 ctexbook 文档类后可以使用此文档类提供的 \ctexset{} 命令进行相关选项的配置.

classOption ☆

Updated: 2024-11-05

classOption=⟨*class options*⟩

此选项接受一个键值对, 用于传递基文档类选项, 针对默认的 article 文档类, 此项为 oneside, 12pt. 一个简单的设置样例:

```
\documentclass[
  class=article,
  classOption={10pt, leqno, a4paper},
]{zlatex}
```

packageOption ☆

Updated: 2024-11-20

packageOption=⟨*key-value*⟩

此选项接受一个键值对, 用于给不同宏包传递选项, 使用样例:

```
\documentclass[
  packageOption={
    fontspec=quiet,
    ctex={scheme=plain, punct=quanjiao},
  },
]{zlatex}
```

toc

Updated: 2024-12-25

`toc=⟨key-value⟩`

此选项用于设置目录的样式，所有可选配置项如下:

```
\zlatexSetup{
  toc={
    column=⟨int:1⟩,
    title=⟨tl:Contents⟩,
    title-vspace=⟨dim:-2em⟩,
    stretch=⟨float:1⟩
  }
}
```

若上述的 ⟨column⟩ ≥ 2, 那么 zLATEX 会自动加载 multicol 宏包. 注意: 由于在 LATEX 中，文档类选项不能含有控制序列，所以如果上述的 ⟨toc⟩ 的某一个子项中含有控制序列，那么务必通过命令 \zlatexSetup 进行设置, 示例如下:

```
\zlatexSetup{
  toc={
    title=\hfill\large\normalfont CONTENTS {\sffamily\small NEW}\hfill
  }
}
```

font ☆

Updated: 2024-12-06

`font = ⟨true, false⟩`

此选项目前在实验性阶段，主要用于字体配置，默认为 false. 在启用此选项后，zLATEX 会自动加载 fontspec 宏包，此时需更换引擎为 XƎLATEX 或者 LuaLATEX.

layout ☆

Updated: 2024-11-05

`layout=⟨key-value⟩`

设置文档布局，所有可选配置项如下:

```
\documentclass[
  layout={
    margin=⟨bool:false⟩,
    slide=⟨bool:false⟩,
    aspect=⟨float|float:12|9⟩,
    theme=⟨str:AnnArborDefault⟩
  },
]{zlatex}
```

在加载 slide library 后，如果设置 ⟨slide=true⟩，那么此时即可把文档转为 slide 模式。

bib_index

Updated: 2024-12-05

bib_index=⟨*key-value*⟩

此选项用于控制文档是否生成索引和参考文献，所有可用的选项为:

```
\zlatexSetup{

  bib_index={

    load=⟨bool:false⟩,

    source=⟨str:ref.bib⟩,

    backend=⟨str:biber⟩

  }

}
```

⟨*load*⟩ 用于控制是否加载 biblatex 宏包, 默认为 false; ⟨*source*⟩ 用于指定参考文献源文件, 默认文件名为:ref.bib; ⟨*backend*⟩ 用于指定参考文献的后端，默认为 biber.

mathSpec

Updated: 2024-11-05

mathSpec=⟨*key-value*⟩

此键用于配置数学排版相关选项. 所有可用的选项为:

```
\zlatexSetup{
  mathSpec={
    alias=⟨bool:false⟩,
    envStyle=⟨tl:plain⟩,
    font=⟨choice:ncmrm⟩
  }
}
```

⟨*alias*⟩ 默认为 false, 当置为 true 时，zLATEX 会加载 mathalias 库, 其中包含一系列命令的简写声明, 如 \ZZ 代替 \mathbb{Z}; ⟨*envStyle*⟩ 用于指定数学环境的样式, 默认为 plain, 为了编译速度考虑, zLATEX 在预定了一系列环境的同时，也在 theme 库中声明了其它样式. 样式列表如下:

thm module 定义样式:

- plain

- background

- leftbar

- fancy

theme library 定义样式:

- shadow

- paris

- elegant

- obsidian

- lapsis

⟨*font*⟩ 用于指定数学公式字体，预定义的字体有:`newtx`, `euler`, `mtpro2`, `mathpazo`. 其中 `mtpro2` 为付费字体，需用户手动安装.

5 杂项

本小节会列举部分在 zlatex 源文件中定义的命令, 这部分命令未迁移到任何的
module 或者是 library 中.

\zlatexVerb

Updated: 2024-11-05

\zlatexVerb[⟨*format*⟩]{⟨*item*⟩}

此命令和 LaTeX 2_ε 中的 \verb 类似, 用于输出控制序列名称. 和后者类似, 此命令
也不能作为任何控制序列的参数. ⟨*format*⟩ 用于指定控制序列的打印格式, 默认为
\texttt. 一个使用样例如下:

```
\zlatexVerb{\alpha + \beta}\par
\zlatexVerb[\textsf]{\alpha + \beta}
--------------------------------------------------------------
\alpha + \beta
\alpha + \beta
```

\zlatexCounterWith

Updated: 2024-11-05

\zlatexCounterWith{⟨*child*⟩}{⟨*parent*⟩}

此命令用于给一个计数器添加一个父计数器, 当 ⟨*parent*⟩ 计数器增加时, ⟨*child*⟩
计数器会自动重置. 本命令为 \@addtoreset 的封装.

\zlatexFramed

Updated: 2024-11-05

\zlatexFramed[⟨*color*⟩]{⟨*name*⟩}

此命令用于创建一个类似 MarkDown 中引用环境, ⟨*color*⟩ 表示环境 ⟨*name*⟩ 的默
认颜色, 在使用环境 ⟨*name*⟩ 时可以更改 ⟨*color*⟩ 这一默认的可选参数. 一个使用样
例如下:

```
\zlatexFramed[red]{ref}
\begin{ref}This is a simple ref env.\end{ref}
\begin{ref}[green]This is a simple ref env.\end{ref}
--------------------------------------------------------------
This is a simple ref env.


This is a simple ref env.
```

_zlatex_quad_dim

Updated: 2024-12-05

_zlatex_quad_dim

此命令表示当前文档中一个空格的宽度.

6 状态检测

因 zLATEX 的选项配置比较庞大，其中涉及到诸多的宏包和命令的加载，所以在文档编译时，我们需要对文档的各种状态进行检测，zLATEX 提供了一系列的命令用于检测文档中各个变量状态的命令.

\zlatexHyperTF
\zlatexFancyTF
\zlatexMarginTF
\zlatexSlideTF
\zlatexFontConfigTF
\zlatexMathAliasTF
\zlatexBibIndexLoadTF

New: 2025-01-15

\zlatexHyperTF{⟨*true code*⟩}{⟨*false code*⟩}

此命令用于检测当前文档中是否开启了超链接功能，如果开启了，那么执行 ⟨*true code*⟩，否则执行 ⟨*false code*⟩，其余命令的使用方法同理. 一个使用样例如下:

```
\zlatexHyperTF{Hyperref is loaded.}{Hyperref is not loaded.}\par
\zlatexFancyTF{Fancy is loaded.}{Fancy is not loaded.}\par
\zlatexMarginTF{Margin does set.}{Margin does NOT set.}\par
\zlatexSlideTF{Slide is loaded.}{Slide is not loaded.}\par
\zlatexFontConfigTF{Font config is loaded.}{Font config is not loaded.}\par
\zlatexMathAliasTF{Math alias is loaded.}{Math alias is not loaded.}\par
\zlatexBibIndexLoadTF{Bib index is loaded.}{Bib index is not loaded.}
```

Hyperref is loaded.

Fancy is not loaded.

Margin does NOT set.

Slide is not loaded.

Font config is not loaded.

Math alias is not loaded.

Bib index is not loaded.

7   Modules

本节对应的所有 module 默认自动加载, 用户仍可以通过命令 \zlatexloadmodule 调用自己编写的 module.

7.1   fontcfg

本模块主要用于配置 zLATEX 的字体, 尽管 fontspec 和 unicode-math 已经在很大程度上简化了字体的配置, 但是对于一些用户来说, 仍然会感到困扰. 本模块的目的就是为了简化字体的配置, 让普通的 LATEX 用户也能够方便的配置字体, 用上自己喜欢的字体.

\Cinzel

Updated: 2024-12-05

\Cinzel

本命令用于临时切换 Cinzel 字体 (此时需使用 XꟼLATEX 或 LuaLATEX), 本字体在 ⟨*fancy*⟩=true 时, 会自动应用于 chapter 页的字体.

\blacktriangleright

Updated: 2024-12-05

\blacktriangleright

本命令 (符号) 来自 AMSb 字体, ⟨*slot*⟩="49. 主要用于在 ⟨*slide*⟩=true 时对此符号进行 Patch.

7.2   indexref

本模块主要用于给文档增加索引, 参考文献以及超链接支持, 通过本模块, 用户可以方便的添加索引, 参考文献以及超链接.

\hyper@anchor

New: 2024-12-05

\hyper@anchor{⟨*destination name*⟩}

此命令用于创建一个超链接锚点, ⟨*destination name*⟩ 作为后续超链接命令的跳转目标.

\hyper@link

New: 2024-12-05

\hyper@link{⟨*context*⟩}{⟨*destination name*⟩}{⟨*link text*⟩}

此命令用于创建一个超链接, ⟨*link text*⟩ 本身作为一个超链接对象, 点击 ⟨*link text*⟩ 即可跳转到对应的 ⟨*destination name*⟩. ⟨*context*⟩ 表示此链接所属的类型, 默认有: link, url, cite 三种类型.

\hyper@linkstart

New: 2024-12-05

\hyper@linkstart{⟨*context*⟩}{⟨*destination name*⟩}

此命令用于开启一个超链接**域**, 在此**域**中可以是任意的文本或其它图片对象. 此命令需结合后续的\hyper@linkend 命令使用, 此二命令可以和上述的 \hyper@link 命令基本等效.

\hyper@linkend

New: 2024-12-05

\hyper@linkend

用于结束由 \hyper@linkstart 开启的**域**.

\MakeLinkTarget
\MakeLinkTarget*

New: 2024-12-05

\MakeLinkTarget[⟨*prefix*⟩]{⟨*counter*⟩}
\MakeLinkTarget*{⟨*target*⟩}

此二命令用于在用户层面创建超链接跳转目标, 其中 ⟨*prefix*⟩ 和 ⟨*counter*⟩ 可以作为命令\hyper@link 的参数使用. ⟨*counter*⟩ 可以为 chapter, section, subsection 等. 针对 \MakeLinkTarget*, 其中 ⟨*target*⟩ 可以为任意的 Unicode 文本 (但为了兼容性考虑, 请尽量使用 ASCII 字符).

\LinkTargetOn
\LinkTargetOff

New: 2024-12-05

\LinkTargetOn
\LinkTargetOff

此命令常在一个局部中用于取消由 \MakeLinkTarget 或 \refstepcounter 创建的超链接. 在使用\LinkTargetOff 后, 你仍然可以在一个局部里重新启用超链接然后创建对应的 Target, 示例如下:

```
\LinkTargetOff  % suppress anchor in internal refstepcounter
...
\refstepcounter{...}
...
{\LinkTargetOn\MakeLinkTarget*{mytarget}} % create manual anchor for
future reference
```

```
...
\LinkTargetOn
```

\NextLinkTarget

New: 2024-12-05

\NextLinkTarget{⟨*target*⟩}

此命令设置下一个由 \MakeLinkTarget 或 \refstepcounter 创建的 target. 此命令的作用和\hypersetup 中的 next-anchor 类似.

\SetLinkTargetFilter

New: 2024-12-05

\SetLinkTargetFilter{⟨*filter*⟩}

此命令用于给当前文档中所有的 Link Target 添加一个前缀，此命令在合并多个不同的 PDF 时是十分有用的.

7.3   layout

本模块主要用于设置文章布局，包括纸张大小，页边距等.

7.4   pageinfo

本模块主要包含与页面生成以及页面标注相关(页眉页脚)的命令, 如 \maketitle,-\zlatexPageMask; 通过本模块, 用户可以方便的制作自己的独特页面样式以及添加水印.

\orimaketitle

Updated: 2024-11-05

\orimaketitle

\maketitle 的原始形式.

\maketitle

Updated: 2024-11-05

\maketitle

zLATEX 对原始的 \maketitle 进行了重定义, 以适应不同的文档类和页面布局.

\Maketitle

New: 2024-12-05

\Maketitle[⟨*margin:**1in**⟩*]

此命令会忽略所有的文档类选项或者是页面布局, 在新的页面布局中插入 \maketitle 的原始定义, ⟨*margin*⟩ 表示新的页面布局的 margin, 默认为 1in. 此命令的实现为:

```
\newcommand\Maketitle[1][1in]{
  \newgeometry{margin=#1}
  \orimaketitle
  \restoregeometry
}
```

\frontmatter
\mainmatter

Updated: 2024-11-05

\frontmatter
\mainmatter

此二命令用于设置文档的前言和正文部分, 在 zLATEX 中这两个命令已经被重定义, 当加载的 ⟨*class*⟩ 为 book 或 ctexbook 时, 这两个命令会自动处理页眉页脚相关设置.

__zlatex_page_annotate:nnnnn

Updated: 2024-12-05

__zlatex_page_annotate:nnnnn {⟨*fore/background*⟩}
{⟨*position*⟩}{⟨*anchor*⟩}
{⟨*object*⟩}{⟨*hook range*⟩}

此命令为 \zlatexPageMask 的底层命令, 用户可以依据此命令创建更加具有针对性的水印命令.

\zlatexPageMask
\zlatexPageMask*

Updated: 2024-12-05

\zlatexPageMask[⟨*key-value*⟩]{⟨*item*⟩}

命令 \zlatexPageMask 用于给当前页面添加水印, \zlatexPageMask* 用于给当前页面及其之后的所有页面添加水印. ⟨*item*⟩ 可以为一段文字, 也可以为一系列的图片 (需要使用\includegraphics 进行导入). ⟨*key-value*⟩ 所有可用的选项为:

```
\zlatexPageMask[
  layer=⟨tl:background, foreground⟩,
  position=⟨tl:(dim1, dim2)⟩,
  label=⟨tl:DEFAULT⟩,
  anchor=⟨tl:c, tl, tc, tr, bl, bc, br, etc⟩
]{⟨item⟩}
```
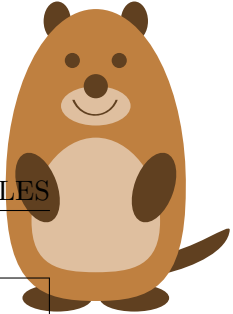
其中 ⟨*position*⟩ 以页面的左下角为原点, 向上向右为正方向. ⟨*anchor*⟩ 为两个字符: 一个为水平位置, 另一个为垂直位置。水平位置包括: 左 (l)、中 (c)、右 (r)、内侧 (i)、外侧 (o); 垂直位置包括: 顶部 (t)、中部 (m)、底部 (b).

注意: transparent 宏包仅可以在 pdfLaTeX 和 LuaLaTeX 下正常工作. 一个简单的示例, 给当前页面添加一个水印:

```
% \usepackage{tikzlings}
\zlatexPageMask{
  \transparent{.5}\includegraphics{latex-logo.pdf}
}
\zlatexPageMask[anchor=tr, position={(\zpw, \zph)}]{
  \begin{tikzpicture}[scale=2]
    \marmot
  \end{tikzpicture}
}
```

上述的 \zpw, \zph 分别表示当前纸张的宽和高.

| \zpw | \zpw |
| \zph | \zph |

此二命令表示当前纸张的宽和高, 命令原型为 \paperwidth 和 \paperheight.

| \zlatexPageMaskRemove | \zlatexPageMaskRemove{⟨*foreground/backgroud*⟩}{⟨*label*⟩} |

此命令用于移除由 \zlatexPageMask 命令添加的页面水印, ⟨*label*⟩ 即为 \zlatexPageMask 可选参数 ⟨*key-value*⟩ 中 ⟨*label*⟩ 对应的 value. 如果 ⟨*label*⟩ 对应的水印并不存在, zLaTeX 会抛出警告.

7.5 theme

本模块主要用于文档装饰，在本模块中定义了一系列的颜色主题，这系列主题可以应用于文章中的各个元素，包括但不限于章节标题, 定理环境, 超链接跳转, (子)目录样式.

\zlatexColorSetup

Updated: 2024-11-05

\zlatexColorSetup{⟨*key-value*⟩}

当 ⟨*hype*⟩=true 时，此命令可以用于设置文档中各种元素的色彩，但仅可在导言区使用. zL*A*TEX 把文档中的元素分为如下的 3 类:

- 章节标题类: chapter, chapter-rule

- 超链接类: link, cite, url

- 数学环境类: axiom, definition, theorem, proposition, lemma, corollary, proof, example, solution

在颜色指定上，zL*A*TEX 实现了一套自己的颜色指定方式，在指定色彩时可以不必要提前定义. 参见如下使用案例:

```
\zlatexColorSetup{
  chapter = red,
  link = {HTML}{d9d9d9},
  theorem = {RGB}{136, 63, 214}
}
```

zL*A*TEX 的默认配色 [2] 如下:

Struct	chapter	chap-rule	link	url	cite	chap-theme	slide-theme
Color	■	■	■	■	■	■	■
MathEnv	axiom	definition	theorem	lemma	corollary	proposition	remark
Color	■	■	■	■	■	■	■

表 3: zL*A*TEX 文档类默认配色

定理类环境的色彩保存于变量 zlatex@color@⟨*name*⟩ 中，其中 ⟨*name*⟩ 为对应环境的名称. 不推荐用户 使用命令 \definecolor, \colorlet 直接对这类色彩变量进行重定义, zL*A*TEX 鼓励用户通过 \zlatexColorSetup 命令进行色彩的重定义.

---

[2]zchapColor 还未整理, 目前只能单独重定义

__zlatex_color_set:n

Updated: 2024-12-05

__zlatex_color_set:n {⟨*color spec*⟩}

此命令可以自动解析 ⟨*color spec*⟩，并以此创建或定义对应的色彩. ⟨*color spec*⟩ 可以为普通的预定义色彩名，如 red, orange 等. 亦或者是 HTML, RGB, CMYK 等色彩模型，但此时的格式略有不同。此命令仅能在 \keys_define:nn 中使用，新定义的色彩名为 zlatex@color@\l_keys_key_str. 关于参数 ⟨*color spec*⟩ 的使用，可以参见如下示例:

```
\__zlatex_color_set:n {red}
\__zlatex_color_set:n {{HTML}{393D44}}
```

7.6   thm

本模块主要用于定理类以及证明类数学环境定制. 本模块提供了丰富的接口以及选项，与此同时本模块提供了丰富的 Hook, 方便用户直接对环境进行操作.

\zlatexThmLang

Updated: 2024-11-05

`\zlatexThmLang{⟨lang⟩}`

此命令用于设置定理类环境的名称, 目前支持 cn，en，fr 三种语言. 此命令仅能在文档的导言区使用, 但为了说明此命令的使用方法，在本手册中，此命令的定义被临时改变了. 一个使用样例如下:

```
\begin{theorem}[AAA-1]
  This is a theorem AAA-1.
\end{theorem}
\zlatexThmLang{fr}
\begin{theorem}[BBB-1]
  This is a france theorem BBB-1.
\end{theorem}
\zlatexThmLang{en}
\begin{theorem}[CCC-1]
  This is a english theorem CCC-1.
\end{theorem}
```
- -
定理 7.1 (AAA-1) This is a theorem AAA-1.

Théorème 7.2 (BBB-1) This is a france theorem BBB-1.

Theorem 7.3 (CCC-1) This is a english theorem CCC-1.

\zlatexThmCreate

Updated: 2024-12-25

`\zlatexThmCreate{⟨type⟩}{⟨spec⟩}`

根据 ⟨*spec*⟩ 创建一系列类型为 ⟨*type*⟩ 的定理环境, 如果对应的环境已存在，则覆盖其原有的定义. ⟨*type*⟩ 可选 theorem，proof 两种类型, 针对 ⟨*spec*⟩，请参见下面的使用样例:

```
\zlatexThmCreate{theorem}{Zaxiom, Ztheorem=Thm|{HTML}{a0d911},
Zproposition=Prop|blue}
\zlatexThmCreate{proof}{Zproof, Zexample=EXAMPLE|red, Zsolution=Solution|}
\begin{Zproof}[AAA-2]
  This is an proof AAA-2.
\end{Zproof}
\begin{Zexample}[BBB-2]
  This is an example.
\end{Zexample}
\begin{Ztheorem}[CCC-2]
  This is a theorem
\end{Ztheorem}
```

Zproof: This is an proof AAA-2.

EXAMPLE: This is an example.

Thm 7.1 (CCC-2) This is a theorem

\zlatexThmCreate 仅可在导言区使用. 但为了说明此命令的使用方法, 在本手册中, 此命令的定义被临时改变了. 和前面的 \zlatexColorSetup 类似, 在指定色彩时可以不必要提前定义.

\zlatexThmNumber ⋆

Updated: 2024-11-05

\zlatexThmNumber

此命令表示对应环境的编号, 类似于 amsthm 中的 \thmnumber. 用户不应在除 \zlatexThmTitleFormat 外的任何地方使用, 在此命令之外, 此命令输出的内容无任何实际意义.

\zlatexThmName ⋆

Updated: 2024-11-05

\zlatexThmName

此命令表示对应环境的名称, 类似于 amsthm 中的 \thmname. 用户不应在除 \zlatexThmTitleFormat 外的任何地方使用, 在此命令之外, 此命令输出的内容无任何实际意义.

\zlatexThmNote ⋆

Updated: 2024-12-05

\zlatexThmNote{⟨*prefix*⟩}{⟨*suffix*⟩}

此命令表示对应环境的注释, 类似于 amsthm 中的 \thmnote. 用户不应在除 \zlatexThmTitleFormat 外的任何地方使用, 在此命令之外, 此命令输出的内容无任何实际意义.

\zlatexThmTitle ⋆

Updated: 2024-11-05

\zlatexThmTitle

此命令表示对应环境的标题, 包含 \zlatexThmNumber, \zlatexThmName, \zlatexThmNote 三部分. 具体的格式可以使用 \zlatexThmTitleFormat 进行指定.

\zlatexThmTitleSwitch

Updated: 2024-11-05

\zlatexThmTitleSwitch

此命令用于切换 \zlatexThmTitle 是否显示, 在自定义环境样式时比较有用. 用户不应该对此命令进行直接的调用.

```
\begin{theorem}[AAA-3]
  This is a theorem AAA-3.
\end{theorem}
\zlatexThmStyleNew{
  ZZZ={begin=, end=, option=\zlatexThmTitleSwitch},
}
\zlatexThmStyle{ZZZ}
\begin{theorem}[BBB-3]
```

```
  This is a theorem BBB-3.
\end{theorem}
```
- -

定理 7.4 (AAA-3) This is a theorem AAA-3.

定理 7.5 (BBB-3) This is a theorem BBB-3.

关于命令 \zlatexThmStyle 的使用可以参见下面的说明.

\zlatexThmTitleFormat
\zlatexThmTitleFormat*

Updated: 2024-11-05

\zlatexThmTitleFormat{⟨*format*⟩}

此命令用于指定 \zlatexThmTitle 的格式, 默认格式为:

```
\zlatexThmName\ \zlatexThmNumber\ \zlatexThmNote{(}{)}
```

\zlatexThmNoteEmptyTF

Updated: 2024-12-05

\zlatexThmNoteEmptyTF{⟨*true code*⟩}{⟨*false code*⟩}

此命令用于判断 \zlatexThmNote 是否为空, 如果为空则执行 ⟨*true code*⟩, 否则执行 ⟨*false code*⟩. 这个命令在自定义 \zlatexThmTitle 时很有用. 一个使用样例 (zLATEX 内置的 obsidian 定理样式对应的 format):

```
\zlatexThmTitleFormat*{\bfseries
  \zlatexThmName\ \zlatexThmNumber
  \zlatexThmNoteEmptyTF{}{\\}
  \zlatexThmNote{}{}
}
```

\zlatexThmBefore

Updated: 2024-12-05

\zlatexThmBefore{⟨*code:\par*⟩}

此命令用于把 ⟨*code*⟩ 置于每个环境 (命令 __zlatex_thm_warp_start:nnnn) 之前, 默认为 \par. 用户可以把 ⟨*code*⟩ 置为空或者是 \noindent 以取消段落缩进.

\qedsymbol

Updated: 2024-11-05

\qedsymbol

此命令用于输出证明环境的结束符号, 默认为 □.

\zlatexThmCnt

Updated: 2024-11-05

\zlatexThmCnt{⟨*key-value*⟩}

此命令用于定义数学类环境的计数器, 仅能在导言区使用, 但为了说明此命令的使用方法，在本手册中，此命令的定义被临时改变了. 所有可用的选项为:

```
\zlatexThmCnt{
  parent=⟨counter:section⟩,
  share=⟨bool:false⟩
}
```

⟨*parent*⟩ 用于指定计数器的父计数器，默认父计数器为 section；当父计数器更新时，此环境的计数器便会重置；⟨*share*⟩ 用于控制所有的定理类环境是否共用一个计数器，默认不共用.

\zlatexThmColorSetup

Updated: 2024-11-05

\zlatexThmColorSetup{⟨*key-value*⟩}

此命令和 \zlatexColorSetup 类似，但其仅用于对数学环境的色彩设置，且仅能在导言区使用. 所有合法的 ⟨*key*⟩ 选项请参见 zLATEX 文档类选项 mathSpec 中的数学环境.

\zlatexThmStyle

Updated: 2024-11-05

\zlatexThmStyle{⟨*style*⟩}

此命令用于设置定理类环境的样式，仅能在导言区使用. 可用的 ⟨*style*⟩ 请参见 ⟨*mathSpec*⟩ 的说明. 一个基本的使用样例：

```
\begin{theorem}[AAA-4]
  This is a 'plain' style theorem AAA-4.
\end{theorem}
\zlatexThmStyle{leftbar}
\begin{theorem}[BBB-4]
  This is a 'leftbar' style theorem BBB-4.
\end{theorem}
\zlatexThmStyle{background}
\begin{theorem}[CCC-4]
  This is a 'background' style theorem CCC-4.
\end{theorem}
\zlatexThmStyle{fancy}
\begin{theorem}[DDD-4]
  This is a 'fancy' style theorem DDD-4.
\end{theorem}
```

- -

定理 7.6 (AAA-4) This is a 'plain' style theorem AAA-4.

定理 7.7 (BBB-4) This is a 'leftbar' style theorem BBB-4.

定理 7.8 (CCC-4) This is a 'background' style theorem CCC-4.

定理 7.9 (DDD-4) This is a 'fancy' style theorem DDD-4.

\zlatexThmStyleNew

Updated: 2024-12-05

\zlatexThmStyleNew{⟨*key-value*⟩}

此命令用于定义新的定理类环境的样式，仅能在导言区使用. 调用格式为：

```
\zlatexThmStyleNew{
  ⟨style A⟩={
    begin=⟨begin code 1⟩,
    end=⟨end code 1⟩,
    option=⟨option 1⟩,
    preamble=⟨preamble code 1⟩
  },
  ⟨style B⟩={
    begin=⟨begin code 2⟩,
    end=⟨end code 2⟩,
    option=⟨option 2⟩,
    preamble=⟨preamble code 2⟩
  },
  ...
}
```

在声明对应的 ⟨*style*⟩ 后, 使用命令 \zlatexThmStyle{⟨*style*⟩} 进行切换.

\zlatexThmHook   \zlatexThmHook{⟨*key-value*⟩}

\zlatexThmHook*   \zlatexThmHook*{⟨*key-value*⟩}

Updated: 2024-11-05   此命令用于给已有的定理类环境 Hook 中添加代码, 已有的 Hook: ⟨*zlatex/thm/before*⟩,
⟨*zlatex/thm/begin*⟩, ⟨*zlatex/thm/end*⟩, ⟨*zlatex/thm/after*⟩. \zlatexThmHook
只应用于下一个环境, \zlatexThmHook* 会应用于接下来的所有环境. 各个 Hook
的位置分布如下:

```
(zlatex/thm/before) --> (warper begin)
  --> (thm-title)   --> (zlatex/thm/begin)
  --> (thm-content) --> (zlatex/thm/end) -->
(warper end) --> (zlatex/thm/after)
```

这两个命令不支持手动设置 ⟨*label*⟩, 针对于 \zlatexThmHook*, zLaTeX 会自
动设置 ⟨*label*⟩, 其格式为 thm-hook.⟨*Hook Index*⟩. 针对 ⟨*key*⟩, 所有合法的选项
为:⟨*before*⟩, ⟨*begin*⟩, ⟨*end*⟩, ⟨*after*⟩, 一个使用样例如下:

```
\begin{theorem}[AAA-5]
  This is a theorem AAA-5.
\end{theorem}
\zlatexThmHook{before=ZZa\ , begin=ZZb\ ,}
\begin{theorem}[BBB-5]
  This is a theorem BBB-5.
\end{theorem}
-----------------------------------------------------------
```

定理 7.10 (AAA-5) This is a theorem AAA-5.

ZZa **定理 7.11 (BBB-5)** ZZb This is a theorem BBB-5.

`\zlatexThmToc`

Updated: 2024-12-05

\zlatexThmToc[⟨*stretch*⟩]

此命令用于打印定理类环境的目录, ⟨*stretch*⟩ 为任意非负的浮点数, 用于指定定理目录的 stretch 值. 使用样例如下:

```
\zlatexThmToc[1.25]
\begin{proposition}[AAA-6]proposition AAA-6\end{proposition}
\begin{lemma}[BBB-6]lemma BBB-6\end{lemma}
\begin{corollary}[CCC-5]corollary CCC-5\end{corollary}
```

命题 7.1 (AAA-6) proposition AAA-6

引理 7.1 (BBB-6) lemma BBB-6

推论 7.1 (CCC-5) corollary CCC-5

`\zlatexThmTocAdd`

Updated: 2024-12-05

\zlatexThmTocAdd[⟨*key-value*⟩]{⟨*counter*⟩}

此命令用于向定理类环境目录中添加条目, ⟨*counter*⟩ 为计数器名, 可以为 section, subsection 等. ⟨*key-value*⟩ 为可选参数, 用于指定所添加的条目的其它信息. 一个使用样例如下:

```
\zlatexThmTocAdd[name=SEC-NAME]{section}
```

\zlatexThmTocLevel

Updated: 2024-12-05

\zlatexThmTocLevel{⟨*depth*⟩}

此命令用于设置定理类环境目录的最大深度, 仅能在导言区使用, 但为了说明此命令的使用方法, 本手册中此命令的定义被临时改变了. ⟨*depth*⟩ 为一个 ≥ 1 的整数.

\zlatexThmTocPrefix

Updated: 2024-12-05

\zlatexThmTocPrefix{⟨*prefix*⟩}

此命令用于所有定理类环境目录中所有条目的共同前缀, 默认为空.

\zlatexThmTocSymbol

Updated: 2024-12-05

\zlatexThmTocSymbol{⟨*key-value*⟩}

此命令用于分别设置所有定理类环境名在目录中的前缀, 仅能在导言区使用, 但为了说明此命令的使用方法, 本手册中此命令的定义被临时改变了. 所有可用的选项为:

```
\zlatexThmTocSymbol{
  ⟨axiom: A ⟩,
  ⟨definition: D ⟩,
  ⟨theorem: T ⟩,
  ⟨lemma: L ⟩,
  ⟨corollary: C ⟩,
  ⟨proposition: P ⟩,
  ⟨remark: R ⟩,
}
```

\zlatexThmTocSymbolClear

Updated: 2024-12-05

\zlatexThmTocSymbolClear

此命令用于清除所有由命令 \zlatexThmTocSymbol 指定的定理类环境名在目录中的前缀, 自然不包括由 \zlatexThmTocPrefix 指定的前缀.

7.7   titlesec

本模块的用于定义章节标题样式, 目的是实现 titlesec 和 titletoc 中的所有功能, 使其能作为上述两宏包的一个可选替代. 后续可能会与 toc module 合并.

7.8   toc

本模块主要用于自定义目录格式, 目前基于 titletoc, 后续可能会与 titlesec module 合并.

\zlatexPartialToc

Updated: 2024-11-05

\zlatexPartialToc[⟨*depth:2*⟩]

此命令用于输出每一个章节对应的子目录, 此命令目前基于 titletoc 宏包. ⟨*depth*⟩ 用于指定子目录最大深度, 默认为 2.

\zlatexStopPartialToc

Updated: 2024-11-05

\zlatexStopPartialToc{⟨***chapters**,section*⟩}{⟨*counter*⟩}

此命令用于结束子目录的搜集, 一般情况下, 用户不应该使用此命令.

8   Libraries

本节主要介绍 zLATEX 中提供的各类 library，这些 library 用于优化用户 LATEX 的文档书写和阅读体验。部分 library 是对 zLATEX 中原始功能的增强，但与此同时，文档的编译速度势必会稍微减慢，所以请酌情加载这部分 library.

所有的 library 均不默认加载，用户需要使用 \zlatexloadlibrary{⟨library name⟩} 手动加载，详细的 ⟨library name⟩ 列表请参见命令 \zlatexloadlibrary 的说明.

8.1   fancy

此 library 用于章节的格式化以及部分的，目前仅对 \chapter 进行了重定义. 如果此时 ⟨fancy⟩=true，那么在加载此 library 的同时，zLATEX 会同时加载 tcolorbox, tikz 以及 tikz 的 calc 库.

\numSuffix   \numSuffix{⟨number⟩}

Updated: 2024-11-05   此命令用于数字的格式化，其中 ⟨number⟩ 为一个任意的整数，一个使用样例如下：

```
\numSuffix{1}, \numSuffix{2}, \numSuffix{25}
----------------------------------------------------------------
st, nd, th
```

8.2 mathalias

本模块主要为一系列命令的别名定义, 后文称此为 alias, 用于简化用户在数学环境中的命令输入. 此 libray 建立了以下几个方面的 alias:

- 数学字体命令

- 各类箭头

- 各类数学算符

- 其余常见符号

- 自动括号命令 (试验阶段)

对于自动括号命令，目前还很不成熟，如果不清楚对应的命令原理请勿使用。针对此特性，推荐用于使用 pyhsics 2 宏包.

\F   \F{⟨*tokens*⟩}
\R   \R{⟨*tokens*⟩}
\K   \K{⟨*tokens*⟩}
\C   \C{⟨*tokens*⟩}
\B   \B{⟨*tokens*⟩}
\S   \S{⟨*tokens*⟩}
\FF   \FF{⟨*tokens*⟩}

Updated: 2024-12-05

以上各命令的原始定义: \F 为 \boldsymbol, \R 为 \mathrm, \K 为 \mathfrak, \C 为 \mathcal, \B 为 \mathbb, \S 为 \mathscr, \FF 为 \mathbf. 使用示例如下:

```
Normal Version: $\mathbf{A} + \mathrm{A} + \mathfrak{a} + \mathcal{A} +
\mathbb{A} + \mathscr{A} + \mathbf{A}$ \\
Alias Version: $\F{A} + \R{A} + \K{a} + \C{A} + \B{A} + \S{A} + \FF{A}$
```

Normal Version: $\mathbf{A} + \mathrm{A} + \mathfrak{a} + \mathcal{A} + \mathbb{A} + \mathscr{A} + \mathbf{A}$
Alias Version: $\boldsymbol{A} + \mathrm{A} + \mathfrak{a} + \mathcal{A} + \mathbb{A} + \mathscr{A} + \mathbf{A}$

\ma   \ma
\mma   \mma

Updated: 2024-12-05

以上各命令的原始定义: \ma 为 \mapsto, \mma 为 \longmapsto. 使用示例如下:

```
Normal Version: $a\mapsto b, a\longmapsto b$ \\
Alias Version: $a\ma b, a\mma b$
```

Normal Version: $a \mapsto b, a \longmapsto b$
Alias Version: $a \mapsto b, a \longmapsto b$

\la	\la
\La	\La
\nla	\nla
\Nla	\Nla
\lla	\lla
\Lla	\Lla

Updated: 2024-12-05

以上各命令的原始定义: \la 为 \leftarrow, \La 为 \Leftarrow, \nla 为 \nleftarrow, \Nla 为 \nLeftarrow, \lla 为 \longleftarrow, \Lla 为 \Longleftarrow. 使用示例如下:

```
Normal Version: $a\leftarrow b, a\Leftarrow b, a\nleftarrow b,           ↙
a\nLeftarrow b, a\longleftarrow b, a\Longleftarrow b$ \\
Alias Version: $a\la b, a\La b, a\nla b, a\Nla b, a\lla b, a\Lla b$.
```

Normal Version: $a \leftarrow b, a \Leftarrow b, a \nleftarrow b, a \nLeftarrow b, a \longleftarrow b, a \Longleftarrow b$

Alias Version: $a \leftarrow b, a \Leftarrow b, a \nleftarrow b, a \nLeftarrow b, a \longleftarrow b, a \Longleftarrow b$.

\ra	\ra
\Ra	\Ra
\nra	\nra
\Nra	\Nra
\rra	\rra
\Rra	\Rra

Updated: 2024-12-05

以上各命令的原始定义: \ra 为 \rightarrow, \Ra 为 \Rightarrow, \nra 为 \nrightarrow, \Nra 为 \nRightarrow, \rra 为 \longrightarrow, \Rra 为 \Longrightarrow. 使用示例如下:

```
Normal Version: $a\rightarrow b, a\Rightarrow b, a\nrightarrow b,        ↙
a\nRightarrow b, a\longrightarrow b, a\Longrightarrow b$ \\
Alias Version: $a\ra b, a\Ra b, a\nra b, a\Nra b, a\rra b, a\Rra b$.
```

Normal Version: $a \rightarrow b, a \Rightarrow b, a \nrightarrow b, a \nRightarrow b, a \longrightarrow b, a \Longrightarrow b$

Alias Version: $a \rightarrow b, a \Rightarrow b, a \nrightarrow b, a \nRightarrow b, a \longrightarrow b, a \Longrightarrow b$.

\da	\da
\Da	\Da
\nda	\nda
\Nda	\Nda
\dda	\dda
\Dda	\Dda

Updated: 2024-12-05

以上各命令的原始定义: \da 为 \leftrightarrow, \Da 为 \Leftrightarrow, \nda 为 \nleftrightarrow, \Nda 为 \nLeftrightarrow, \dda 为 \longleftrightarrow, \Dda 为 \Longleftrightarrow. 使用示例如下:

```
Normal Version: $a\leftrightarrow b, a\Leftrightarrow b, a\nleftrightarrow    ↙
b, a\nLeftrightarrow b, a\longleftrightarrow b, a\Longleftrightarrow b$ \\
Alias Version: $a\da b, a\Da b, a\nda b, a\Nda b, a\dda b, a\Dda b$.
```

Normal Version: $a \leftrightarrow b, a \Leftrightarrow b, a \nleftrightarrow b, a \nLeftrightarrow b, a \longleftrightarrow b, a \Longleftrightarrow b$

Alias Version: $a \leftrightarrow b, a \Leftrightarrow b, a \nleftrightarrow b, a \nLeftrightarrow b, a \longleftrightarrow b, a \Longleftrightarrow b$.

\xla	\xla[⟨*above*⟩](⟨*below*⟩)
\xla*	\xla*[⟨*above*⟩](⟨*below*⟩)
\Xla	\Xla[⟨*above*⟩](⟨*below*⟩)
\Xla*	\Xla*[⟨*above*⟩](⟨*below*⟩)
\xxla	\xxla[⟨*above*⟩](⟨*below*⟩)
\xxla*	\xxla*[⟨*above*⟩](⟨*below*⟩)
\xra	\xra[⟨*above*⟩](⟨*below*⟩)
\xra*	\xra*[⟨*above*⟩](⟨*below*⟩)
\Xra	\Xra[⟨*above*⟩](⟨*below*⟩)
\Xra*	\Xra*[⟨*above*⟩](⟨*below*⟩)
\xxra	\xxra[⟨*above*⟩](⟨*below*⟩)
\xxra*	\xxra*[⟨*above*⟩](⟨*below*⟩)
\hla	\hla[⟨*above*⟩](⟨*below*⟩)
\hla*	\hla*[⟨*above*⟩](⟨*below*⟩)
\hra	\hra[⟨*above*⟩](⟨*below*⟩)
\hra*	\hra*[⟨*above*⟩](⟨*below*⟩)

Updated: 2024-12-05

以上所有带有 * 命令中的 ⟨*above*⟩ 参数均会被放入 \text 命令中, 以上命令的原始定义: \xla 为 \xleftarrow, \Xla 为 \xLeftarrow, \xxla 为 \xLongleftarrow, \xra 为 \xrightarrow, \Xra 为 \xRightarrow, \xxra 为 \xLongrightarrow, \hla 为 \xhookleftarrow, \hra 为 \xhookrightarrow. 使用示例如下:

```
Normal Version: $\xleftarrow[b]{a} + \xLeftarrow[b]{a} +         ↙
\xLongleftarrow[b]{a} + \xrightarrow[b]{a} + \xRightarrow[b]{a} +  ↙
\xLongrightarrow[b]{a} + \xhookleftarrow[b]{a} + \xhookrightarrow[b]{a}$  ↙
\\
Alias Version: $\xla[a](b) + \Xla[a](b) + \xxla[a](b) + \xra[a](b) +  ↙
\Xra[a](b) + \xxra[a](b) + \hla[a](b) + \hra[a](b)$ \\
Alias Text Version: $\xla*[a](b) + \Xla*[a](b) + \xxla*[a](b) +    ↙
\xra*[a](b) + \Xra*[a](b) + \xxra*[a](b) + \hla*[a](b) + \hra*[a](b)$
```

Normal Version: $\xleftarrow[b]{a} + \xLeftarrow[b]{a} + \xLongleftarrow[b]{a} + \xrightarrow[b]{a} + \xRightarrow[b]{a} + \xLongrightarrow[b]{a} + \xhookleftarrow[b]{a} + \xhookrightarrow[b]{a}$

Alias Version: $\xleftarrow[b]{a} + \xLeftarrow[b]{a} + \xLongleftarrow[b]{a} + \xrightarrow[b]{a} + \xRightarrow[b]{a} + \xLongrightarrow[b]{a} + \xhookleftarrow[b]{a} + \xhookrightarrow[b]{a}$

Alias Text Version: $\xleftarrow[b]{\text{a}} + \xLeftarrow[b]{\text{a}} + \xLongleftarrow[b]{\text{a}} + \xrightarrow[b]{\text{a}} + \xRightarrow[b]{\text{a}} + \xLongrightarrow[b]{\text{a}} + \xhookleftarrow[b]{\text{a}} + \xhookrightarrow[b]{\text{a}}$

`\A`

`\E`

`\A`

`\E`

以上两个命令分别表示任意和存在符号, 一个使用样例如下:

```
Normal Version: $\forall \varepsilon>0, \exists \delta$ \\
Alias Version: $\A \varepsilon>0, \E \delta$
```

Normal Version: $\forall \varepsilon > 0, \exists \delta$

Alias Version: $\forall \varepsilon > 0, \exists \delta$

`\ns`

`\se`

`\sse`

`\ns`

`\se`

`\sse`

以上三个命令的原始定义: `\ns` 为 `\varnothing`, `\se` 为 `\backsimeq`, `\sse` 为 `\cong`. 一个使用样例如下:

```
Normal Version: $\varnothing, \backsimeq, \cong$ \\
Alias Version: $\ns, \se, \sse$
```

Normal Version: $\varnothing, \backsimeq, \cong$

Alias Version: $\varnothing, \backsimeq, \cong$

`\dd`

`\dd`

此命令主要用于替代默认的 `\mathrm{dd}`, 与此同时, 其会自动处理左右间隔, 更加规范的处理可以参见 fixdiff. 一个简单的使用示例如下:

```
Normal Version: $\displaystyle\int x\;\mathrm{d}x = x^{\int x\mathrm{d} x
} = \frac12x^2 + \mathrm{C}$ \\
Alias Version: $\displaystyle\int x\dd x = x^{\int x\dd x } = \frac12x^2 +
\R{C}$
```

Normal Version: $\displaystyle\int x \,\mathrm{d}x = x^{\int x\mathrm{d}x} = \frac{1}{2}x^2 + \mathrm{C}$

Alias Version: $\displaystyle\int x \,\mathrm{d}x = x^{\int x\mathrm{d}x} = \frac{1}{2}x^2 + \mathrm{C}$

`\CC`

`\RR`

`\NN`

`\ZZ`

`\CC`

`\RR`

`\NN`

`\ZZ`

以上四个命令分别表示复数域, 实数域, 自然数集以及整数集. 一个使用样例如下:

```
Normal Version: $\mathbb{C}, \mathbb{R}, \mathbb{N}, \mathbb{Z}$ \\
Alias Version: $\CC, \RR, \NN, \ZZ$
```

Normal Version: $\mathbb{C}, \mathbb{R}, \mathbb{N}, \mathbb{Z}$

Alias Version: $\mathbb{C}, \mathbb{R}, \mathbb{N}, \mathbb{Z}$

`\alt`   `\alt`
`\rot`   `\rot`
`\div`   `\div`
`\curl`   `\curl`
`\grad`   `\grad`
`\id`   `\id`
`\im`   `\im`
`\ker`   `\ker`
`\cok`   `\cok`
`\hom`   `\hom`
`\sign`   `\sign`
`\trace`   `\trace`

Updated: 2024-12-05

以上所有命令均使用 `\DeclareMathOperator` 进行声明, 其会自动处理前后间距. 一个使用样例如下:

```
Normal Version: $\operatorname{alt}, \operatorname{rot},
\operatorname{div}, \operatorname{curl}, \operatorname{grad},
\operatorname{Id}, \operatorname{Im}, \operatorname{Ker},
\operatorname{Cok}, \operatorname{Hom}, \operatorname{sign},
\operatorname{trace}$ \\
Alias Version: $\alt, \rot, \div, \curl, \grad, \id, \im, \ker, \cok,
\hom, \sign, \trace$
```

Normal Version: $\operatorname{alt}, \operatorname{rot}, \operatorname{div}, \operatorname{curl}, \operatorname{grad}, \operatorname{Id}, \operatorname{Im}, \operatorname{Ker}, \operatorname{Cok}, \operatorname{Hom}, \operatorname{sign}, \operatorname{trace}$

Alias Version: $\operatorname{alt}, \operatorname{rot}, \operatorname{div}, \operatorname{curl}, \operatorname{grad}, \operatorname{Id}, \operatorname{Im}, \operatorname{Ker}, \operatorname{Cok}, \operatorname{Hom}, \operatorname{sign}, \operatorname{trace}$

`\zab`   `\zab⟨(), [], \{\}⟩`

Updated: 2024-12-05

此命令用于处理括号的自动缩放, 一个使用样例如下:

```
Normal Version: $\displaystyle \left( \frac{1}{2} \right), \left[
\frac{1}{2} \right], \left\{ \frac12 \right\}$ \\
Alias Version: $\displaystyle \zab(\frac12), \zab[\frac12], \zab\{\frac12\}$
```

Normal Version: $\displaystyle \left(\frac{1}{2} \right), \left[\frac{1}{2} \right], \left\{ \frac{1}{2} \right\}$

Alias Version: $\displaystyle \left(\frac{1}{2} \right), \left[\frac{1}{2} \right], \left\{ \frac{1}{2} \right\}$

8.3   slide

此 library 用于从文档模式切换到 slide 模式, 无需用户对代码进行任何的更改, 仅需在导言区加载此 library 即可. zLaTeX 会自动处理文档的分页.

由于此 library 内部 patch 了很多的 LaTeX 内部命令, 所以请谨慎加载. 另外, 加载此 library 并不会牺牲太多的编译速度.

zslide 中的坐标系统: 如果不加说明, 那么 zslide 中的坐标系统均以当前页面的左上角为原点, 取向下向右为正方向. 这就意味着你的纵坐标往往为负值, 横坐标往往为正值.

\zslideFrameCntAux:nn

Updated: 2024-11-05

\zslideFrameCntAux:nn {⟨*name*⟩}{⟨*number*⟩}

此命令会向文件 \jobname.aux 中写入一个变量, 其名称为: \zsec@⟨*name*⟩@cnt, 其值为: ⟨*number*⟩. 此命令在制作目录或向后搜集文档内容时是十分有用的.

_zslide_status_bar:nnnn

Updated: 2024-11-05

_zslide_status_bar:nnnn {⟨*type*⟩}{⟨*coordinate*⟩}{⟨*width*⟩}{⟨*height*⟩}

此命令用于创建 slide 的页面背景色快, 为方便叙述, 我们称其为 ⟨*BOX*⟩. 其中 ⟨*coordinate*⟩ 为此 ⟨*BOX*⟩ 的左下角坐标, 形如 (10pt, -.1\paperwidth), 以当前页面的左上角为原点, 向下向右为正方向; ⟨*type*⟩ 为状态栏类型, 目前所有可选值有:UR, UL, BL, BC, BR, sec; ⟨*width*⟩ 为宽度, 接受一个浮点数, 默认以 \paperwidth 为单位. ⟨*height*⟩ 为状态栏的高度, 接受一个合法的 dim 类型值, 如 10pt, 2em 等.

注意: 普通用户不应该直接调用此命令, 此命令主要提供给模板的开发者.

_zslide_status_info:nnnn

Updated: 2024-11-05

_zslide_status_info:nnnn {⟨*type*⟩}{⟨*coordinate*⟩}{⟨*width*⟩}{⟨*content*⟩}

此命令用于创建 slide 的页面元信息, 其被置于一个 box 中, 为方便叙述, 我们称其为 ⟨*BOX*⟩. 其中 ⟨*type*⟩ 表示 ⟨*BOX*⟩ 在页面上的位置, 可选值有: foot, head; \g_-zslide_status_info_head_B_dim 和 \g_zslide_status_info_foot_B_dim 两个寄存器存放了 head 和 foot 中文字基线的纵坐标. ⟨*coordinate*⟩ 表示 ⟨*BOX*⟩ 的左下角坐标, 接受一个浮点数, 以 \paperwidth 为单位. 此参数以当前页面的左上角为原点, 向下向右为正方向.; ⟨*width*⟩ 为当前 ⟨*BOX*⟩ 的 (弹性) 宽度, 接受一个浮点数, 以 \paperwidth 为单位. ⟨*content*⟩ 表示 ⟨*BOX*⟩ 中存放的文本或图片内容.

注意: 此命令需放入 shipout/background 或 shipout/foreground 这两个 Hook 中, 普通用户不应该直接调用此命令, 此命令主要提供给模板的开发者.

_zslide_navigate:nnnn

Updated: 2024-11-05

_zslide_navigate:nnnn {⟨*range*⟩}{⟨*target*⟩}{⟨*target symbol*⟩}{⟨*other symbol*⟩}

此命令用于创建 slide 中的导航栏, ⟨*range*⟩ 接受一个正整数, 表示 frame 的总数; ⟨*target*⟩ 为接受一个在 0 ~ ⟨*range*⟩ 内的正整数, 表示选定的编号. ⟨*target symbol*⟩ 为选定的编号的符号, ⟨*other symbol*⟩ 为其它编号的符号.

注意: 此命令需放入 shipout/background 或 shipout/foreground 这两个 Hook 中, 普通用户不应该直接调用此命令, 此命令主要提供给模板的开发者.

\g_zslide_status_info_head_B_dim	\g_zslide_status_info_head_B_dim .... :-.9em+2.5pt
\g_zslide_status_info_foot_B_dim	\g_zslide_status_info_foot_B_dim .... :-\paperheight+2.5pt
\g_zslide_status_info_sec_L_dim	\g_zslide_status_info_sec_L_dim .... :1cm
\g_zslide_status_info_sec_B_dim	\g_zslide_status_info_sec_B_dim .... :-2.25em

New: 2025-01-14

前两个寄存器存放了 head 和 foot 中文字基线的纵坐标, 前者的默认值为 -.9em+2.5pt, 后者的默认值为 -\paperheight+2.5pt. \g_zslide_status_info_sec_L_dim 中存放了 section 文本距离页面左边界的距离, 默认值为 1cm; \g_zslide_status_info_sec_B_dim 中存放了 section 文本基线的纵坐标, 默认值为 -2.25em.

\g_zslide_status_bar_head_H_dim	\g_zslide_status_bar_head_H_dim .... :.9em
\g_zslide_status_bar_foot_H_dim	\g_zslide_status_bar_foot_H_dim .... :.9em
\g_zslide_status_bar_sec_H_dim	\g_zslide_status_bar_sec_H_dim .... :1.8em
\g_zslide_status_bar_sec_B_dim	\g_zslide_status_bar_sec_B_dim .... :-2.7em

New: 2025-01-14

前两个寄存器存放了 slide 中 head 和 foot 对应背景色块的高度, 默认值均为 .9em; \g_zslide_status_bar_sec_H_dim 中存放了 section 的背景色块的高度, 默认值为 1.8em; \g_zslide_status_bar_sec_B_dim 中存放了 section 的背景色块中文字的基线的纵坐标, 默认值为 -2.7em; 当改变此此三个寄存器的值时, 对应色块的基线保持不变, 其高度会做出相应的改变.

\zslideTitle	\zslideTitle
\zslideAuthor	\zslideAuthor
\zslideDate	\zslideDate

Updated: 2024-11-05

此三个命令用于分别保存导言区 \@title, \@author, \@date 三个变量的值, 用户可以在正文部分使用此三个变量.

_zslide_metadate:n	_zslide_metadate:n {⟨key⟩}

Updated: 2024-11-05

此命令可以根据 ⟨key⟩ 获取 slide 的 status info 中对应的元信息.

注意: 普通用户不应该直接调用此命令, 此命令主要提供给模板的开发者.

\zslideFrameTotal	\zslideFrameTotal{⟨name⟩}

Updated: 2024-11-05

用户可以在自定义导航栏时使用此命令, 此命令可以根据 ⟨name⟩ 来获取 \jobname.aux 中变量 \zsec@⟨name⟩@cnt 的值. 默认返回当前 section 下的 Frame 总数, 第一次编译亦或者是变量 \zsec@⟨name⟩@cnt 不存在, 命令 \zslideFrameTotal 将会返回 ??.

\zslideFrameIndex	\zslideFrameIndex

Updated: 2024-11-05

用户可以在自定义导航栏时使用此命令, 此命令在每一页 Frame 中会返回其对应的 Frame Index. 比如在第一页, 其返回的 Frame Index 为 1.

\zslideNavigateBall

Updated: 2024-11-05

\zslideNavigateBall[⟨*target symbol*⟩][⟨*other symbol*⟩]

此命令为上述 _zslide_navigate:nnnn 的一个具体应用. ⟨*target symbol*⟩ 默认为 ●, ⟨*other symbol*⟩ 默认为 ○. 二者的意义请参见命令 _zslide_navigate:nnnn 的说明.

\zslidelogo

Updated: 2024-11-05

\zslidelogo[⟨*key-value*⟩]{⟨*picture*⟩}

此命令用于设置 slide 的 logo 图标, 仅可在导言区使用. ⟨*picture*⟩ 为图片名称, ⟨*key-value*⟩ 的所有可用选项如下:

```
\zslidelogo[
  position = ⟨(dim1, dim2):(\paperwidth-\_zlatex_quad_dim, 1.5em)⟩,
  width = ⟨dim:2.5em⟩,
  exclude = ⟨clist:1⟩
]{⟨picture⟩}
```

⟨*exclude*⟩ 中的页码不会添加 logo, 其余页码会添加 logo.

\zslideTocPage
\thecontentslabel
\zslideToclabelSet
\zslideTocSecIcon
\zslideTocSubsecIcon

Updated: 2024-11-05

\zslideTocPage
\thecontentslabel
\zslideTocSecIcon
\zslideTocSubsecIcon
\zslideToclabelSet[⟨*extra width*⟩]{⟨*item*⟩}

这一组命令主要用于自定义 slide 中的目录, 其中 \zslideTocPage 表示目录项目对应的页码, \thecontentslabel 表示目录项目的对应的名称. \zslideTocSecIcon 和 \zslideTocSubsecIcon 表示 slide 模式下目录中 section 和 subsection 对应的 icon. 用户可以在导言区自定义这两个 icon, 默认情况下这两个 icon 的声明及效果如下:

```
\ExplSyntaxOn
Section Icon: \box_move_up:nn {2pt}
  {\hbox:n {\ztool_resize_to_wd:nn
    {6pt}{\(\blacktriangleright\)}}
  }\par

Subsection Icon: \rule[1.5pt]{3pt}{3pt}
\ExplSyntaxOff
------------------------------------------------------------
SectionIcon:▶
SubsectionIcon:■
```

\zslideToclabelSet 用于设置 slide 模式下目录中各条目的格式. ⟨*extra width*⟩ 表示 \thecontentslabel 右侧额外的间距. ⟨*item*⟩ 可以选择使用 \thecontentslabel, \zslidesecIcon, \zslidesubsecIcon 或这是其它用户自定义的符号.

`\zslideDocTextColor`

Updated: 2024-11-05

`\zslideDocTextColor{⟨color⟩}`

此命令用于覆盖原本的 slide 文本色彩为 ⟨*color*⟩. 用户不应该滥用此命令.

`\zslideDefaultUR`

`\zslideDefaultBR`

Updated: 2024-11-05

`\zslideDefaultUR`

`\zslideDefaultBR`

此二命令表示 slide 模式下, UR，BR 位置处默认的元信息.

`\zslideIfPageTF`

Updated: 2024-11-05

`\zslideIfPageTF{⟨formula⟩}{⟨true code⟩}{⟨false code⟩}`

此命令此命令在自定义 slide 的元信息时很有用, 其会自动比较当前页码与 ⟨*formula*⟩ 的关系，然后执行对应的分支. 一个使用样例如下:

```
\zslideThemeUse[
  UR={text=\zslideIfPageTF{=1}{}{\zslideDefaultUR:\ \zslideNavigateBall}},
]{AnnArborSpruce}
```

`\zslideSetup`

Updated: 2024-11-05

`\zslideSetup[⟨key⟩]{⟨spec⟩}`

此命令用于设置 slide 模式下, 用于调整 zLATEX 中关于 slide 相关的配置. ⟨*key*⟩ 表示 zLATEX 中 ⟨*key-value*⟩ 的层级名称. 此参数的所有合法选项仅有 logo, 或者置为空. ⟨*spec*⟩ 表示对具体项目的设置，所有可用的选项如下:

```
\zslideSetup{
  doc = {⟨bf-color⟩, ⟨text-color⟩, ⟨text-style⟩}
  sec = {⟨bg⟩, ⟨fg⟩, ⟨prefix⟩, ⟨suffix⟩},
  UL  = {⟨bg⟩, ⟨fg⟩, ⟨text⟩},
  % 'UR', 'BL', 'BC', 'BR' are the same as 'UL'
  toc = {
    leftmargin = {
      chapter = ⟨dim⟩,
      section = ⟨dim⟩,
      subsection = ⟨dim⟩
    },
    label = {
      % use command \zslideToclabelSet to set
      chapter = ⟨item⟩,
      section = ⟨item⟩,
      subsection = ⟨item⟩
    },
    suffix = {
      chapter = ⟨item⟩,
      section = ⟨item⟩,
      subsection = ⟨item⟩
    },
```

```
    }
}
```

\zslideThemeCreate

Updated: 2024-11-05

\zslideThemeCreate{⟨*name*⟩}spec

此命令会按照 ⟨*spec*⟩ 创建名为 ⟨*name*⟩ 的 slide **颜色主题**. 具体的可调整选项请参见命令 \zslideSetup 中的 ⟨*spec*⟩ 参数说明.

\zslideThemeUse

Updated: 2024-11-05

\zslideThemeUse[⟨*key-value*⟩]{⟨*name*⟩}

此命令仅能在导言区使用, 其会根据 ⟨*spec*⟩ 对颜色主题 ⟨*name*⟩ 中的部分配置进行重写, 然后再应用 ⟨*name*⟩ 这一 slide 主题.

　　注意: 为了编译速度考虑, 用户应在加载 zlatex 时便通过 ⟨*theme*⟩ 参数指定 slide 的主题, 且 zLATEX 仅加载一个主题, 命令 \zslideThemeUse 更大程度上是处于用户便于修改预定义主题而提供的.

AnnArborDefault

Updated: 2024-11-05

\documentclass[layout={slide, theme=AnnArborDefault}]{zlatex}
\zslideThemeUse[⟨*spec*⟩]{AnnArborDefault}

可以在加载文档类时选择此主题, 还可以使用上述命令根据 ⟨*spec*⟩ 对此主题进行部分配置进行重定义. 本主题具体效果请前往 Beamer Theme Matrix 查看.

AnnArborBeaver

Updated: 2024-11-05

\documentclass[layout={slide, theme=AnnArborBeaver}]{zlatex}
\zslideThemeUse[⟨*spec*⟩]{AnnArborBeaver}

可以在加载文档类时选择此主题, 还可以使用上述命令根据 ⟨*spec*⟩ 对此主题进行部分配置进行重定义. 本主题具体效果请前往 Beamer Theme Matrix 查看.

AnnArborAlbatross

Updated: 2024-11-05

\documentclass[layout={slide, theme=AnnArborAlbatross}]{zlatex}
\zslideThemeUse[⟨*spec*⟩]{AnnArborAlbatross}

可以在加载文档类时选择此主题, 还可以使用上述命令根据 ⟨*spec*⟩ 对此主题进行部分配置进行重定义. 本主题具体效果请前往 Beamer Theme Matrix 查看.

AnnArborSeahorse

Updated: 2024-11-05

\documentclass[layout={slide, theme=AnnArborSeahorse}]{zlatex}
\zslideThemeUse[⟨*spec*⟩]{AnnArborSeahorse}

可以在加载文档类时选择此主题, 还可以使用上述命令根据 ⟨*spec*⟩ 对此主题进行部分配置进行重定义. 本主题具体效果请前往 Beamer Theme Matrix 查看.

AnnArborSpruce

Updated: 2024-12-05

\documentclass[layout={slide, theme=AnnArborSpruce}]{zlatex}
\zslideThemeUse[⟨*spec*⟩]{AnnArborSpruce}

可以在加载文档类时选择此主题, 还可以使用上述命令根据 ⟨*spec*⟩ 对此主题进行部分配置进行重定义. 本主题具体效果请前往 Beamer Theme Matrix 查看.

8.4 theme

本 library 中定义了一系列的定理类主题, 在加载 theme library 的同时，会自动导入 tcolorbox, tikz 和 pifont 三个宏包. 同时也会加载 tikz 的 fadings, calc 两个库. 如此数量的宏包导入必然会拖慢整个文档的编译，请酌情考虑加载此 library.

shadow

Updated: 2024-12-05

`\zlatexThmStyle{shadow}`

加载此 library 后即可应用上述样式, 样式预览如下:

```
% \zlatexloadlibrary{mathalias}
\begin{remark}[AAA-7]
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;
\begin{align}
\underset{}{\mathbf{v} \bigotimes \mathbf{w}}
    & = \sum_{i=1}^3\left(a_{i1}u^iv^1+a_{i2}u^iv^2+a_{i3}u^iv^3\right) \\
    & = \int x \dd x = \frac12 x^2 + \R{C}
  \end{align}
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;%
\end{remark}
```

- -

注记 8.1 (AAA-7) As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves;

$$\mathbf{v} \bigotimes \mathbf{w} = \sum_{i=1}^{3} \left(a_{i1}u^i v^1 + a_{i2}u^i v^2 + a_{i3}u^i v^3 \right) \tag{8.1}$$

$$= \int x \, \mathrm{d}x = \frac{1}{2}x^2 + \mathrm{C} \tag{8.2}$$

As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves;

paris

Updated: 2024-12-05

`\zlatexThmStyle{paris}`

加载此 library 后即可应用上述样式, 样式预览如下:

```
% \zlatexloadlibrary{mathalias}
\begin{axiom}[BBB-7]
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;
\begin{align}
\underset{}{\mathbf{v} \bigotimes \mathbf{w}}
```

```
    & = \sum_{i=1}^3\left(a_{i1}u^iv^1+a_{i2}u^iv^2+a_{i3}u^iv^3\right) \\
    & = \int x \dd x = \frac12 x^2 + \R{C}
  \end{align}
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;%
\end{axiom}
```

公理 8.1 (BBB-7) As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves;

$$\mathbf{v} \bigotimes \mathbf{w} = \sum_{i=1}^{3} \left(a_{i1}u^iv^1 + a_{i2}u^iv^2 + a_{i3}u^iv^3 \right) \tag{8.3}$$

$$= \int x \, \mathrm{d}x = \frac{1}{2}x^2 + \mathrm{C} \tag{8.4}$$

As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves;

---

obsidian

`\zlatexThmStyle{obsidian}`

加载此 library 后即可应用上述样式, 样式预览如下:

```
% \zlatexloadlibrary{mathalias}
\begin{proposition}[CCC-7]
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;
\begin{align}
\underset{}{\mathbf{v} \bigotimes \mathbf{w}}
    & = \sum_{i=1}^3\left(a_{i1}u^iv^1+a_{i2}u^iv^2+a_{i3}u^iv^3\right) \\
    & = \int x \dd x = \frac12 x^2 + \R{C}
  \end{align}
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;%
\end{proposition}
```

❦ **命题:8.1 CCC-7** ▽

As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves;

$$\mathbf{v} \bigotimes \mathbf{w} = \sum_{i=1}^{3} \left(a_{i1}u^i v^1 + a_{i2}u^i v^2 + a_{i3}u^i v^3\right) \tag{8.5}$$

$$= \int x \, \mathrm{d}x = \frac{1}{2}x^2 + \mathrm{C} \tag{8.6}$$

As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves;

---

lapsis

Updated: 2024-12-05

`\zlatexThmStyle{lapsis}`

加载此 library 后即可应用上述样式, 样式预览如下:

```
% \zlatexloadlibrary{mathalias}
\begin{lemma}[DDD-5]
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;
\begin{align}
\underset{}{\mathbf{v} \bigotimes \mathbf{w}}
    & = \sum_{i=1}^3\left(a_{i1}u^iv^1+a_{i2}u^iv^2+a_{i3}u^iv^3\right) \\
    & = \int x \dd x = \frac12 x^2 + \R{C}
  \end{align}
As any dedicated reader can clearly see, the Ideal of practical
\tcblower
\begin{align}
  \int x \dd x = \frac12 x^2 + \R{C}
\end{align}
reason is a representation of, as far as I know, the things in themselves;%
\end{lemma}
```

引理 8.1   As any dedicated reader can clearly see, the Ideal of practical reason is a
DDD-5   representation of, as far as I know, the things in themselves;

$$\mathbf{v} \bigotimes \mathbf{w} = \sum_{i=1}^{3} \left(a_{i1}u^iv^1 + a_{i2}u^iv^2 + a_{i3}u^iv^3 \right) \tag{8.7}$$

$$= \int x \, \mathrm{d}x = \frac{1}{2}x^2 + \mathrm{C} \tag{8.8}$$

As any dedicated reader can clearly see, the Ideal of practical

$$\int x \, \mathrm{d}x = \frac{1}{2}x^2 + \mathrm{C} \tag{8.9}$$

reason is a representation of, as far as I know, the things in themselves;   ◀

---

elegant

Updated: 2024-12-05

`\zlatexThmStyle{elegant}`

加载此 library 后即可应用上述样式, 样式预览如下:

```
% \zlatexloadlibrary{mathalias}
\begin{definition}[DDD-6]
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;
\begin{align}
\underset{}{\mathbf{v} \bigotimes \mathbf{w}}
    & = \sum_{i=1}^3\left(a_{i1}u^iv^1+a_{i2}u^iv^2+a_{i3}u^iv^3\right) \\
    & = \int x \dd x = \frac12 x^2 + \R{C}
  \end{align}
As any dedicated reader can clearly see, the Ideal of practical
reason is a representation of, as far as I know, the things in themselves;%
\end{definition}
```

> **定义 8.1 (DDD-6)**
>
> As any dedicated reader can clearly see, the Ideal of practical reason is a
> representation of, as far as I know, the things in themselves;
>
> $$\mathbf{v} \bigotimes \mathbf{w} = \sum_{i=1}^{3} \left(a_{i1}u^iv^1 + a_{i2}u^iv^2 + a_{i3}u^iv^3 \right) \tag{8.10}$$
>
> $$= \int x \, \mathrm{d}x = \frac{1}{2}x^2 + \mathrm{C} \tag{8.11}$$
>
> As any dedicated reader can clearly see, the Ideal of practical reason is a
> representation of, as far as I know, the things in themselves;

9   ztool

9.1   l3sys-shell

本部分主要介绍 ztool 中实现的原始 l3sys-shell 宏包中的命令. 所以使用本部分的命令时需在编译 LaTeX 文档时启用 -shell-escape 参数, 否则此系列命令将不会指向任何操作.

WARNING: **请谨慎使用此部分的命令, 部分不当操作可能导致系统崩溃.**

`\ztool_shell_escape:n`
`\ztool_shell_escape:e`

Updated: 2024-12-05

`\ztool_shell_escape:n {`⟨*command*⟩`}`

当 -shell-escape 参数启用时, 此命令会在 shell 中执行 ⟨*command*⟩, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

`\ztool_shell_mkdir:n`
`\ztool_shell_mkdir:e`

Updated: 2024-12-05

`\ztool_shell_mkdir:n {`⟨*dir*⟩`}`

当 -shell-escape 参数启用时, 此命令会创建一个目录 ⟨*dir*⟩, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

`\ztool_shell_cp:nn`
`\ztool_shell_cp:(ee|ne|en)`

Updated: 2024-12-05

`\ztool_shell_cp:nn {`⟨*source*⟩`}{`⟨*target*⟩`}`

当 -shell-escape 参数启用时, 此命令将把文件 ⟨*source*⟩ 复制为文件 ⟨*target*⟩, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

`\ztool_shell_mv:nn`
`\ztool_shell_mv:(ee|ne|en)`

Updated: 2024-12-05

`\ztool_shell_mv:nn {`⟨*source*⟩`}{`⟨*target*⟩`}`

当 -shell-escape 参数启用时, 此命令将把文件 ⟨*source*⟩ 移动到目录 ⟨*target*⟩, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

`\ztool_shell_rm:n`
`\ztool_shell_rm:e`

Updated: 2024-12-05

`\ztool_shell_rm:n {`⟨*file*⟩`}`

当 -shell-escape 参数启用时, 此命令将删除文件 ⟨*file*⟩, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

`\ztool_shell_rmdir:n`
`\ztool_shell_rmdir:e`

Updated: 2024-12-05

`\ztool_shell_rmdir:n {`⟨*dir*⟩`}`

当 -shell-escape 参数启用时, 此命令将删除目录 ⟨*dir*⟩, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

`\ztool_get_shell_pwd:N`
`\ztool_get_shell_pwd:c`

Updated: 2024-12-05

`\ztool_get_shell_pwd:N` ⟨*tl*⟩

当 -shell-escape 参数启用时, 此命令将返回当前的工作目录, 并将其存放在 ⟨*tl*⟩ 中, 如果 -shell-escape 参数未启用, 此命令将不会执行任何操作.

\ztool_shell_split_ls:nN

`\ztool_shell_split_ls:nN {⟨dir⟩}{⟨tl⟩}`

当 `-shell-escape` 参数启用时, 此命令将返回目录 ⟨*dir*⟩ 下的所有文件名, 并将其存放在 ⟨*tl*⟩ 中, 如果 `-shell-escape` 参数未启用, 此命令将不会执行任何操作.

9.2 文件 IO 操作

本部分主要介绍 ztool 中实现的文件 IO 操作, 包括: 读取文件, 写入文件, 追加文件等操作.

`\ztool_read_file_as_seq:nnN`
`\ztool_read_file_as_seq:(neN|nnc|nec)`

Updated: 2024-12-05

`\ztool_read_file_as_seq:nnN {⟨bool⟩}{⟨file⟩}{⟨seq⟩}`

此命令用于读取文件 ⟨file⟩ 的内容, 并将其存放在 ⟨seq⟩ 中, 如果 ⟨file⟩ 不存在, 则会返回一个空的 ⟨seq⟩. ⟨bool⟩ 用于控制是否保留行尾的空格, 可选值有:`\c_-true_bool`, `\c_false_bool`, 默认为 `\c_true_bool`; 如果 ⟨bool⟩ 为 `\c_true_bool`, 则保留行尾的空格, 否则不保留.

此命令仅在一个组内有效, 且不可嵌套.

`\ztool_gread_file_as_seq:nnN`
`\ztool_gread_file_as_seq:(neN|nnc|nec)`

Updated: 2025-01-05

`\ztool_read_file_as_seq:nnN {⟨bool⟩}{⟨file⟩}{⟨seq⟩}`

此命令用于读取文件 ⟨file⟩ 的内容, 并将其存放在 ⟨seq⟩ 中, 如果 ⟨file⟩ 不存在, 则会返回一个空的 ⟨seq⟩. ⟨bool⟩ 用于控制是否保留行尾的空格, 可选值有:`\c_-true_bool`, `\c_false_bool`, 默认为 `\c_true_bool`; 如果 ⟨bool⟩ 为 `\c_true_bool`, 则保留行尾的空格, 否则不保留.

此命令作用于全局, 不可嵌套.

`\ztool_append_to_file:nn`
`\ztool_append_to_file:(no|nf|ee)`

Updated: 2024-01-05

`\ztool_append_to_file:nn {⟨file⟩}{⟨content⟩}`

此命令用于将 ⟨content⟩ 追加到文件 ⟨file⟩ 中, 如果 ⟨file⟩ 不存在, 则会创建一个名为 ⟨file⟩ 的新文件.

`\ztool_replace_file_line:nnn`
`\ztool_replace_file_line:(enn|ene|eee)`

Updated: 2024-01-05

`\ztool_replace_file_line:nnn {⟨file⟩}{⟨line⟩}{⟨content⟩}`

此命令用于将文件 ⟨file⟩ 中的第 ⟨line⟩ 行替换为 ⟨content⟩, 如果 ⟨file⟩ 不存在, 则不会进行任何操作.

`\ztool_insert_to_file:nnn`
`\ztool_insert_to_file:(nen|nfn|een)`

Updated: 2024-01-05

`\ztool_insert_to_file:nnn {⟨file⟩}{⟨line⟩}{⟨content⟩}`

此命令用于将 ⟨content⟩ 插入到文件 ⟨file⟩ 的第 ⟨line⟩ 行之前, 如果 ⟨file⟩ 不存在, 则不会进行任何操作.

下面一个示例展示了如何使用 ztool 中的几个文件 IO 操作命令:

```
\begin{filecontents}[noheader]{testIO.txt}
original content
\end{filecontents}
\ExplSyntaxOn
\seq_new:N \l_ztool_tmp_seq \seq_clear:N \l_ztool_tmp_seq
\ztool_append_to_file:nn {testIO.txt} {|APPEND-CONTENT|}
\ztool_insert_to_file:nnn {testIO.txt} {2} {|~~INSERT-CONTENT~~|}
\ztool_gread_file_as_seq:nnN {\c_false_bool} {testIO.txt} \l_ztool_tmp_seq
\seq_use:Nn \l_ztool_tmp_seq {\\}
\ExplSyntaxOff
\inputminted{text}{testIO.txt}
```
- -
originalcontent

|INSERT-CONTENT|

|APPEND-CONTENT|

```
original content
| INSERT-CONTENT |
|APPEND-CONTENT|
```

9.3 Box 操作

本部分介绍 ztool 中实现的 Box 操作, 包括 box 的测量以及 box 的简单变换.

\ztool_set_to_ht:Nn
\ztool_set_to_ht:Ne
\ztool_set_to_ht:Nc

Updated: 2024-12-05

\ztool_set_to_ht:Nn ⟨dim⟩{⟨content⟩}

此命令用于将 ⟨content⟩ 的高度保存在 ⟨dim⟩ 这一寄存器中.

\ztool_set_to_wd:Nn
\ztool_set_to_wd:Ne
\ztool_set_to_wd:Nc

Updated: 2024-12-05

\ztool_set_to_wd:Nn ⟨dim⟩{⟨content⟩}

此命令用于将 ⟨content⟩ 的宽度保存在 ⟨dim⟩ 这一寄存器中.

\ztool_gset_to_ht:Nn
\ztool_gset_to_ht:Ne
\ztool_gset_to_ht:Nc

Updated: 2024-12-05

\ztool_gset_to_ht:Nn ⟨dim⟩{⟨content⟩}

此命令用于将 ⟨content⟩ 的高度保存在 ⟨dim⟩ 这一寄存器中, 并且此操作是全局的.

\ztool_gset_to_wd:Nn
\ztool_gset_to_wd:Ne
\ztool_gset_to_wd:Nc

Updated: 2024-12-05

\ztool_gset_to_wd:Nn ⟨dim⟩{⟨content⟩}

此命令用于将 ⟨content⟩ 的宽度保存在 ⟨dim⟩ 这一寄存器中, 并且此操作是全局的.

\ztool_resize_to_wd:nn
\ztool_resize_to_wd:(en|ne)

Updated: 2024-12-05

\ztool_resize_to_wd:nn {⟨dim⟩}{⟨content⟩}

此命令用于将 ⟨content⟩ 的宽度调整为 ⟨dim⟩.

\ztool_resize_to_ht:nn
\ztool_resize_to_ht:(en|ne)

Updated: 2024-12-05

\ztool_resize_to_ht:nn {⟨dim⟩}{⟨content⟩}

此命令用于将 ⟨content⟩ 的高度调整为 ⟨dim⟩.

下面一个示例展示了如何使用 ztool 中的几个 Box 操作命令:

```
\ExplSyntaxOn
% get dim of content
\dim_new:N \l_ztool_tmp_H_dim
\dim_new:N \l_ztool_tmp_W_dim
\ztool_set_to_ht:Nn \l_ztool_tmp_H_dim {Hello,~world!}
\ztool_set_to_wd:Nn \l_ztool_tmp_W_dim {Hello,~world!}
\dim_use:N \l_ztool_tmp_H_dim \quad \dim_use:N \l_ztool_tmp_W_dim\\
```

```
% set content to dim
Hello,~world!\\
\ztool_resize_to_ht:nn {.5cm} {Hello,~world!}\\
\ztool_resize_to_wd:nn {15pt} {Hello,~world!}
\ExplSyntaxOff
```

7.54619pt   58.58836pt

Hello, world!

Hello, world!

Hello, world!

10 zLaTeX Implementation

10.1 zlatex.cls

```latex
1  % ------------------------------------------------------------------------
2  %                          zlatex class metadata
3  % ------------------------------------------------------------------------
4  \ExplSyntaxOn
5  \NeedsTeXFormat{LaTeX2e}
6  \clist_const:Nn \c__zlatex_lang_support_clist      {en, cn}
7  \tl_const:Nn \c__zlatex_class_name_tl              {zlatex}
8  \tl_const:Nn \c__zlatex_class_version_tl           {1.0.0}
9  \tl_const:Nn \c__zlatex_class_date_tl              {2024/12/17}
10 \tl_const:Nn \c__zlatex_class_description_tl
   {A~pre-release~latex3~document~class~for~article,~book,~or~slides;
11                                                    Support~languages:\clist_use:
                                                      Nn
                                                      \c__zlatex_lang_support_clist
                                                      {,~}}
12
13 \ProvidesExplClass{\c__zlatex_class_name_tl}        % Class name
14                   {\c__zlatex_class_date_tl}        % Class Date updated
15                   {\c__zlatex_class_version_tl}     % Class Version latest
16                   {\c__zlatex_class_description_tl} % Class Description
17
18
19
20 % ------------------------------------------------------------------------
21 %                        class module and library
22 % ------------------------------------------------------------------------
23 \clist_new:N \g__zlatex_module_library_loaded_clist
24 \clist_gclear:N \g__zlatex_module_library_loaded_clist
25 \cs_new_nopar:Npn \__zlatex_load_module_library:nn #1#2 {
26   \clist_map_inline:nn {#2} {
27     \clist_if_in:NnTF \g__zlatex_module_library_loaded_clist {#1:##1} {
28       \msg_set:nnn {zlatex} {#1-loaded}
         {zlatex~#1~"##1"~already~loaded,ignored~loading~\msg_line_context:}
29       \msg_warning:nnn {zlatex} {#1-loaded} {##1}
30     }{
31       \file_if_exist:nTF {#1/zlatex.#1.##1.tex}{
32         \clist_gput_right:Nn \g__zlatex_module_library_loaded_clist {#1:##1}
33         \makeatletter\file_input:n {#1/zlatex.#1.##1.tex}
34       }{
35         \msg_set:nnn {zlatex} {#1-not-found} {zlatex~#1~`##1'~not~found.}
36         \msg_error:nnn {zlatex} {#1-not-found} {##1}
```

```latex
        }
      }
    }
  }
}
\NewDocumentCommand\zlatexloadmodule{m}{
  \__zlatex_load_module_library:nn {module}{#1}\ExplSyntaxOff
}
\NewDocumentCommand\zlatexloadlibrary{m}{
  \__zlatex_load_module_library:nn {library}{#1}\ExplSyntaxOff
}



% ------------------------------------------------------------------------
%                              class tools
% ------------------------------------------------------------------------
\RequirePackage{ztool}
% zlatex hook interface
\cs_new_protected:Npn \zlatex_hook_preamble_last:n #1
  { \AddToHook{env/document/before}{#1} }
\cs_new_protected:Npn \zlatex_label_hook_preamble_last:nn #1#2
  { \AddToHook{env/document/before}[#1]{#2} }
\cs_new_protected:Npn \zlatex_hook_doc_begin:n #1
  { \AddToHook{begindocument}{#1} }
\cs_new_protected:Npn \zlatex_hook_doc_end:n #1
  { \AddToHook{enddocument}{#1} }

% zlatex key-value setup interface
\cs_new_protected:Npn \zlatex_option_keys_define:n
  { \keys_define:nn { zlatex / option } }
\cs_new_protected:Npn \zlatex_keys_define:nn #1
  { \keys_define:nn { zlatex / #1} }
\cs_new_protected:Npn \zlatex_keys_set:nn #1
  { \keys_set:nn { zlatex / #1 } }
\cs_new:Npn \__zlatex_plus_key_aux:nnn #1#2#3
  {% #1:var; #2:p-key; #3:s-key
    #2 / #3      .tl_set:N = \exp_not:c { #1 } ,
    #2 / #3 +    .code:n   = { \tl_put_right:Nn \exp_not:c { #1 } { ##1 } } ,
    #2 / #3 ~ +  .code:n   = { \tl_put_right:Nn \exp_not:c { #1 } { ##1 } }
  }



% ------------------------------------------------------------------------
%                        zlatex Message system
```

```latex
82   % -------------------------------------------------------------------                ↙    82

83   \prop_gput:Nnn \g_msg_module_type_prop { zlatex } { Class }                                83
84   \cs_new_protected:Npn \zlatex_msg_set:nn #1#2 {                                             84
85     \msg_if_exist:nnTF { zlatex }{#1}                                                         85
86       { \msg_set:nnn { zlatex }{#1}{#2} }                                                     86
87       { \msg_new:nnn { zlatex }{#1}{#2} }                                                     87
88   }                                                                                           88
89   \cs_new_protected:Npn \zlatex_msg_warn:n #1 {                                               89
90     \msg_warning:nn { zlatex }{#1}                                                            90
91   }                                                                                           91
92   \cs_new_protected:Npn \zlatex_msg_error:n #1 {                                              92
93     \msg_error:nn { zlatex }{#1}                                                              93
94   }                                                                                           94
95   % meta key warning message                                                                  95
96   \cs_new_protected:Npn \zlatex_metakey_msg_warning:nn #1#2 {                                  96
97     \zlatex_msg_set:nn {#1}                                                                   97
98       {You~use~an~invalid~key~"\l_keys_path_str"~or~key~assign~for~it~in~the~meta~            98
99       key~"#1",~Valid~options~are:#2;~Assignment~Ignored~and~zLaTeX~default~"#1"~             99
100      settings~of~this~key~substitute.}                                                      100
101    \zlatex_msg_warn:n {#1}                                                                  101
102  }                                                                                          102
103                                                                                             103

104  % zlatex class options message                                                            104
105  \zlatex_msg_set:nn {option-unknown}{                                                       105
106    You~use~an~unknown~class~option~key:'\l_keys_path_str'.~Valid~options~are:lang,~         106
107    hyper,~fancy,~class,~classOption(<clist>),~toc(<key-value>),~font(<key-value>),~         107
108    layout(<key-value>),~section(<key-value>),~mathSpec(<key-value>),~bib_index(<    ↙    108
       key-value>).~
109    Assignment~Ignored~and~LaTeX~default~settings~substitute.                               109
110  }                                                                                          110
111  \zlatex_msg_set:nn {option-language} {                                                     111
112    Current~invalid~language~option~is:~'\g__zlatex_lang_str',~zlatex~only~                  112
113    support~'en(english)',~and~'cn(chinese)'~till~now.                                       113
114  }                                                                                          114
115                                                                                             115
116                                                                                             116
117                                                                                             117

118  % -------------------------------------------------------------------                     118
119  %                          class option                                                    119
120  % -------------------------------------------------------------------                     120
121  \RequirePackage {l3keys2e}                                                                 121
122  % package options passing                                                                  122
123  \cs_new:Npn \zlatex_package_options_pass:nn #1#2 {                                          123
124    \PassOptionsToPackage{#2}{#1}                                                            124
```

```
125  }
126  \cs_new:Npn \zlatex_package_options_pass_deprecate:n #1 {
127    \zlatex_msg_set:nn {package-option}{
128      No~options~were~passed~to~package:#1,~Deprecated~this~option(s)~for~package~#1.
129    }
130    \zlatex_msg_warn:n {package-option}
131  }
132  % setup class options
133  \zlatex_option_keys_define:n {
134    % basic options
135    lang            .str_gset:N   = \g__zlatex_lang_str,
136    lang            .initial:n    = { en },
137    hyper           .bool_gset:N  = \g__zlatex_hyperref_bool,
138    hyper           .initial:n    = { false },
139    fancy           .bool_gset:N  = \g__zlatex_fancy_bool,
140    fancy           .initial:n    = { false },
141    % sub class and options
142    class           .str_gset:N   = \g__zlatex_subclass_type_str,
143    class           .initial:n    = { article },
144    classOption     .clist_gset:N = \g__zlatex_subclass_option_clist,
145    classOption     .initial:n    = { oneside, 12pt },
146    packageOption   .code:n       = {
147      \keyval_parse:NNn
148        \zlatex_package_options_pass_deprecate:n
149        \zlatex_package_options_pass:nn {#1}
150    },
151    % zlatex options meta key
152    toc             .meta:nn      = { zlatex / option / toc }{#1},
153    font            .meta:nn      = { zlatex / option / font }{#1},
154    layout          .meta:nn      = { zlatex / option / layout }{#1},
155    section         .meta:nn      = { zlatex / option / section }{#1},
156    mathSpec        .meta:nn      = { zlatex / option / mathSpec }{#1},
157    bib_index       .meta:nn      = { zlatex / option / bib_index }{#1},
158    unknown         .code:n       = {
159      \zlatex_msg_warn:n {option-unknown}
160    }
161  }
162
163  % sub-key for each meta option
164  \zlatex_keys_define:nn { option / toc }{
165    column          .int_gset:N   = \g__zlatex_toc_column_int,
166    column          .initial:n    = { 1 },
167    title           .code:n       = {
168      \@ifpackageloaded{babel}{
169        \AddToHook{package/babel/after}{
```

```
170        \zlatex_hook_doc_begin:n {\renewcommand{\contentsname}{#1}}
171      }
172    }{
173      \zlatex_hook_doc_begin:n {\renewcommand{\contentsname}{#1}}
174    }
175  },
176  title-vspace     .dim_gset:N   = \g__zlatex_toc_title_vspace_dim,
177  title-vspace     .initial:n    = { -2em },
178  stretch          .fp_gset:N    = \g__zlatex_toc_stretch_fp,
179  stretch          .initial:n    = { 1 },
180  unknown          .code:n       = {
181    \zlatex_metakey_msg_warning:nn {option-toc}
182      {column(<int>:1), title(<tl>:contentname), title-vspace(<dim>:-2em)}
183  }
184 }
185 \zlatex_keys_define:nn { option / font }{
186  config           .bool_gset:N  = \g__zlatex_font_config_bool,
187  config           .initial:n    = { false },
188  unknown          .code:n       = {
189    \zlatex_metakey_msg_warning:nn {option-font}
190      {config(<bool>:false)}
191  }
192 }
193 \zlatex_keys_define:nn { option / layout }{
194  margin           .bool_gset:N  = \g__zlatex_margin_bool,
195  margin           .initial:n    = { false },
196  slide            .bool_gset:N  = \g__zlatex_slide_bool,
197  slide            .initial:n    = { false },
198  aspect           .tl_gset:N    = \g__zlatex_aspectratio_tl,
199  aspect           .initial:n    = { 12|9 },
200  theme            .str_gset:N   = \g__zlatex_slide_theme_str,
201  theme            .initial:n    = { AnnArborDefault },
202  unknown          .code:n       = {
203    \zlatex_metakey_msg_warning:nn {option-layout}
204      {margin(<bool>:false), slide, aspect}
205  }
206 }
207 \zlatex_keys_define:nn { option / mathSpec }{
208  alias            .bool_gset:N  = \g__zlatex_math_alias_bool,
209  alias            .initial:n    = { false },
210  envStyle         .tl_gset:N    = \g__zlatex_thm_style_tl,
211  envStyle         .initial:n    = { plain },
212  font             .choice:,
213  font / newtx     .code:n       = {
214    \zlatex_hook_preamble_last:n { \RequirePackage{newtxmath} }
```

```
215    },
216    font / mtpro2   .code:n      = {
217      \zlatex_hook_preamble_last:n {
218        \RequirePackage[lite, subscriptcorrection, slantedGreek, nofontinfo]{mtpro2}
219      }
220    },
221    font / euler    .code:n      = {
222      \zlatex_hook_preamble_last:n { \RequirePackage[OT1, euler-digits]{eulervm} }
223    },
224    font / mathpazo .code:n      = {
225      \let\rmbefore\rmdefault
226      \zlatex_hook_preamble_last:n { \RequirePackage{mathpazo} }
227      \let\rmdefault\rmbefore
228    },
229    font / unknown  .code:n      = {
230      \zlatex_metakey_msg_warning:nn {option-mathSpec-font}{newtx, mtpro2, euler, ↙
         mathpazo}
231    },
232    unknown         .code:n      = {
233      \zlatex_metakey_msg_warning:nn {option-mathSpec}
234        {alias(<bool>:false), envStyle, font(<choice>:newtx,mtpro2,euler,mathpazo)}
235    }
236  }
237  \zlatex_keys_define:nn { option / bib_index }{
238    load             .bool_gset:N  = \g__zlatex_bib_index_load_bool,
239    source           .str_gset:N   = \g__zlatex_bib_source_str,
240    source           .initial:n    = { ref.bib },
241    backend          .str_gset:N   = \g__zlatex_bib_backend_str,
242    backend          .initial:n    = { biber },
243    unknown          .code:n       = {
244      \zlatex_metakey_msg_warning:nn {option-bib_index}
245        {load(<bool>:false), source, backend}
246    }
247  }
248
249  % option setup
250  \ProcessKeysOptions { zlatex / option }
251  \NewDocumentCommand{\zlatexSetup}{m}{ \zlatex_keys_set:nn {option}{#1} }
252
253
254
255  % ----------------------------------------------------------------------
256  %                      subClass and package Option
257  % ----------------------------------------------------------------------
258  % pass clist options main subclass: 'article', 'book', 'ctexbook'
```

```
259  \zlatex_msg_set:nn {option-subclass}{
260    subclass~option:"\g__zlatex_subclass_type_str"~is~not~
261    accessible,~Valid~options~are:article,~book~and~ctexbook.
262  }
263  \str_case:VnF \g__zlatex_subclass_type_str {
264    {article}{
265      \PassOptionsToClass{\g__zlatex_subclass_option_clist}{ article }
266      \LoadClass{article}
267    }
268    {book}{
269      \PassOptionsToClass{\g__zlatex_subclass_option_clist}{ book }
270      \LoadClass{book}
271    }
272    {ctexbook}{
273      \str_set:Nn \g__zlatex_lang_str {cn}
274      \PassOptionsToClass{\g__zlatex_subclass_option_clist}{ ctexbook }
275      \PassOptionsToPackage{quiet}{fontspec}
276      \LoadClass{ctexbook}
277    }
278    {l3doc}{
279      \PassOptionsToClass{\g__zlatex_subclass_option_clist}{ l3doc }
280      \LoadClass{l3doc}
281    }
282  }{\zlatex_msg_error:n {option-subclass}}
283
284  % baisc document class and packages option
285  \tl_set_rescan:NnV \l_tmpa_tl {\cctab_select:N \c_code_cctab}{\g__zlatex_lang_str}
286  \clist_if_in:NVF \c__zlatex_lang_support_clist {\l_tmpa_tl}
287    {\zlatex_msg_error:n {option-language}}
288  \str_case:VnF \g__zlatex_lang_str {
289    {en} {
290      \sys_if_engine_xetex:TF {
291        \zlatex_hook_preamble_last:n {
292          \bool_if:NF \g__zlatex_font_config_bool {
293            \zlatex_msg_set:nn {compile-engine-pdftex}
294              {Current~compile~engine~is~XETEX,~For~better~output,~use~PDFTEX~ins
               tead.}
295            \zlatex_msg_warn:n {compile-engine-pdftex}
296          }
297        }
298      }{\RequirePackage[utf8]{inputenc}}
299      \RequirePackage[T1]{fontenc}
300      \RequirePackage[english]{babel}
301      \zlatex_hook_preamble_last:n {
302        \RequirePackage{csquotes}
```

```
303        \RequirePackage{microtype}
304      }
305    }
306    {cn} {
307      \sys_if_engine_pdftex:T {
308        \zlatex_msg_set:nn {compile-engine-xetex}
309          {Current~compile~engine~is~PDFTEX,~For~chinese~material,~use~XETEX~inst ↙
             ead.}
310        \zlatex_msg_error:n {compile-engine-xetex}
311      }
312      \PassOptionsToPackage{quiet}{fontspec}
313      \PassOptionsToPackage{no-math}{fontspec}
314      \str_if_eq:VnF \g__zlatex_subclass_type_str {ctexbook}{
315        \RequirePackage[UTF8, heading]{ctex}
316        \linespread{1.3}
317      }
318    }
319 }{\zlatex_msg_error:n {option-language}}
320
321
322
323 % ----------------------------------------------------------------------------
324 %                            basic packages
325 % ----------------------------------------------------------------------------
326 \RequirePackage{xcolor}
327 \RequirePackage{framed}
328 \RequirePackage{amsfonts, amsmath}
329 \RequirePackage{esint}
330 \counterwithin{equation}{section}
331
332
333
334 % ----------------------------------------------------------------------------
335 %                            font  config
336 % ----------------------------------------------------------------------------
337 \__zlatex_load_module_library:nn {module}{fontcfg}
338
339
340
341 % ----------------------------------------------------------------------------
342 %                               layout
343 % ----------------------------------------------------------------------------
344 \__zlatex_load_module_library:nn {module}{layout}
345
346
```

```latex
% -------------------------------------------------------------------
%                          slide mode
% -------------------------------------------------------------------
\bool_if:NTF \g__zlatex_slide_bool {
  \__zlatex_load_module_library:nn {library}{slide}
}{\newcommand\zslideSetup[1]{}}



% -------------------------------------------------------------------
%                          page info
% -------------------------------------------------------------------
\__zlatex_load_module_library:nn {module}{pageinfo}



% -------------------------------------------------------------------
%                        ref and hyperref
% -------------------------------------------------------------------
\__zlatex_load_module_library:nn {module}{indexref}
\__zlatex_load_module_library:nn {module}{theme}



% -------------------------------------------------------------------
%                        Math Environments
% -------------------------------------------------------------------
\__zlatex_load_module_library:nn {module}{thm}
\bool_if:NT \g__zlatex_math_alias_bool {
  \__zlatex_load_module_library:nn {library}{mathalias}
}



% -------------------------------------------------------------------
%                          toc setup
% -------------------------------------------------------------------
\__zlatex_load_module_library:nn {module}{toc}



% -------------------------------------------------------------------
%                          sec format
% -------------------------------------------------------------------
```

```
392  \bool_if:NTF \g__zlatex_fancy_bool {
393    \__zlatex_load_module_library:nn {library}{fancy}
394  }{
395    \__zlatex_load_module_library:nn {module}{titlesec}
396  }
397
398
399
400  % -------------------------------------------------------------------
401  %                          bool check user interface
402  % -------------------------------------------------------------------
403  \NewDocumentCommand\zlatexHyperTF{mm}{
404    \bool_if:NTF \g__zlatex_hyperref_bool {#1}{#2}
405  }
406  \NewDocumentCommand\zlatexFancyTF{mm}{
407    \bool_if:NTF \g__zlatex_fancy_bool {#1}{#2}
408  }
409  \NewDocumentCommand\zlatexMarginTF{mm}{
410    \bool_if:NTF \g__zlatex_margin_bool {#1}{#2}
411  }
412  \NewDocumentCommand\zlatexSlideTF{mm}{
413    \bool_if:NTF \g__zlatex_slide_bool {#1}{#2}
414  }
415  \NewDocumentCommand\zlatexFontConfigTF{mm}{
416    \bool_if:NTF \g__zlatex_font_config_bool {#1}{#2}
417  }
418  \NewDocumentCommand\zlatexMathAliasTF{mm}{
419    \bool_if:NTF \g__zlatex_math_alias_bool {#1}{#2}
420  }
421  \NewDocumentCommand\zlatexBibIndexLoadTF{mm}{
422    \bool_if:NTF \g__zlatex_bib_index_load_bool {#1}{#2}
423  }
424
425
426
427  % -------------------------------------------------------------------
428  %                              extra commands
429  % -------------------------------------------------------------------
430  % Graphics
431  \RequirePackage{graphicx}
432  \RequirePackage{sidenotes}
433  \graphicspath{
434    {./figure/}{./figures/}{./image/}{./images/}
435    {./Pictures/}{./picture/}{./Pics/}{./pics/}
436    {./graphics/}{./graphic/}
```

```latex
437  }
438  % Iteration item
439  \renewcommand{\labelitemii}{\(\circ\)}
440  \renewcommand{\labelitemiii}{\(\diamond\)}
441  % reset counter command
442  \NewDocumentCommand{\zlatexCounterWith}{mm}{\@addtoreset{#1}{#2}}
443  % zlatex class options debug
444  \newcommand{\zlatexOptions}{
445    \textbf{Class~Options:}~
446    \str_use:N \g__zlatex_lang_str {~-~}
447    \clist_use:Nn \g__zlatex_subclass_option_clist{~-~}
448    \par
449  }
450  % verbatim command like '\verb'
451  \NewDocumentCommand\zlatexVerb{O{\texttt}v}{#1{#2}}
452  % framed env for user interface
453  \cs_new_protected:Npn \zlatexFramed:nn #1#2 {
454    \DeclareDocumentEnvironment{#1}{O{#2}}{
455      \def\FrameCommand{{\color{##1}\vrule width 3pt}\colorbox{##1!10}}
456      \MakeFramed{\advance\hsize-\width\FrameRestore}\noindent
457    }{\endMakeFramed}
458  }
459  \NewDocumentCommand\zlatexFramed{O{black}m}{
460    \zlatexFramed:nn {#2}{#1}
461  }
462  \NewDocumentCommand\zLaTeX{}{z\LaTeX{}}
```

10.2 module.fontcfg

```
1   \ProvidesExplFile{zlatex.module.fontcfg.tex}{2024/12/17}{1.0.0}{fontcfg~module~    ↙    1
      for~zlatex}
2                                                                                          2
3                                                                                          3
4   %%%%     font config module for zlatex    %%%%                                         4
5   % ==> math font                                                                        5
6   \DeclareMathSymbol{\blacktriangleright}{\mathrel}{AMSa}{"49}                           6
7                                                                                          7
8                                                                                          8
9   % ==> text font                                                                        9
10  \cs_new:Nn \__zlatex_text_symbol_patch:                                               10
11    {                                                                                    11
12      \let\oldtextbullet\textbullet                                                      12
13      \DeclareTextFontCommand{\zslideCmsyOms}                                            13
14        {\fontfamily{cmsy}\fontencoding{OMS}\selectfont}                                14
15      \DeclareRobustCommand{\textbullet}                                                 15
16        {\zslideCmsyOms\oldtextbullet}                                                   16
17    }                                                                                    17
18  % cinel font                                                                           18
19  \zlatex_hook_preamble_last:n {                                                         19
20    \bool_if:NTF \g__zlatex_font_config_bool {                                           20
21      \RequirePackage{fontspec}                                                          21
22      \newfontfamily{\Cinzel}{CinzelRegular.ttf}[                                        22
23        BoldFont=CinzelBold.ttf,                                                         23
24        ItalicFont=SabonItalic.ttf                                                       24
25      ]                                                                                  25
26    }{\def\Cinzel{\relax}}                                                               26
27  }                                                                                      27
28  % Source Han Serif SC ???                                                              28
```

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10.3 module.indexref

```
1  \ProvidesExplFile{zlatex.module.indexref.tex}{2024/12/17}{1.0.0}{indexref~modul  ↙  1
   e~for~zlatex}
2                                                                                       2
3                                                                                       3
4  %%%%%    index/ref for zlatex    %%%%%                                               4
5  % ==> package loading                                                                5
6  \bool_if:NT \g__zlatex_bib_index_load_bool {                                         6
7    \RequirePackage{indextools}                                                        7
8    \str_case:Vn \g__zlatex_bib_backend_str {                                          8
9      {bibtex}{\RequirePackage[backend=bibtex]{biblatex}}                              9
10     {biber}{\RequirePackage[backend=biber]{biblatex}}                                10
11   }                                                                                  11
12   \exp_args:Nx \addbibresource{\str_use:N \g__zlatex_bib_source_str}                 12
13 }                                                                                    13
14 \bool_if:NT \g__zlatex_hyperref_bool {                                               14
15   \RequirePackage{hyperref}                                                          15
16   \SetLinkTargetFilter{zlatex-\jobname-#1}                                           16
17 }                                                                                    17
18 \RequirePackage[nameinlink]{cleveref}                                                18
19                                                                                      19
20                                                                                      20
21 % ==> provide command                                                               21
22 \ProvideDocumentCommand\hyper@anchor{m}{}                                            22
23 \ProvideDocumentCommand\hyper@link{mmm}{}                                            23
24 \ProvideDocumentCommand{\hyper@linkstart}{mmm}{}                                     24
25 \ProvideDocumentCommand{\hyper@linkend}{}{}                                          25
26 \ProvideDocumentCommand\MakeLinkTarget{sO{}m}{}                                      26
27 \ProvideDocumentCommand\LinkTargetOn{}{}                                             27
28 \ProvideDocumentCommand\LinkTargetOff{}{}                                            28
29 \ProvideDocumentCommand\NextLinkTarget{m}{}                                          29
30 \ProvideDocumentCommand\SetLinkTargetFilter{m}{}                                     30
31                                                                                      31
32                                                                                      32
33 % ==> figure and table prefix for \cref                                             33
34 \str_case:VnF \g__zlatex_lang_str {                                                  34
35   {en}{                                                                              35
36     \IfClassLoadedTF{book}{                                                          36
37       \crefname{part}{part}{parts}                                                   37
38       \crefname{chapter}{chapter}{chapters}                                          38
39     }{\relax}                                                                        39
40     \crefname{section}{section}{sections}                                           40
41     \crefname{subsection}{subsection}{subsections}                                   41
42     \crefname{figure}{figure}{figures}                                              42
```

```
43      \crefname{table}{table}{tables}
44      \crefname{equation}{equation}{equations}
45    }
46    {cn}{
47      \IfClassLoadedTF{book}{
48        \crefname{part}{部分}{部分}
49        \crefname{chapter}{章}{章}
50      }{\relax}
51      \crefname{section}{节}{节}
52      \crefname{subsection}{小节}{小节}
53      \crefname{figure}{图}{图}
54      \crefname{table}{表}{表}
55      \crefname{equation}{方程}{方程}
56    }
57  }{\zlatex_msg_error:n {option-language}}
58
59
60  % ==> \cref format for thm
61  \cs_generate_variant:Nn \__zlatex_cref_math_env:nnn {eee}
62  \cs_new:Npn \__zlatex_cref_math_env:n #1 {
63    \exp_args:Nnff \crefname{#1}
64      {\prop_item:cn {g__zlatex_thm_name_prop}{#1}}
65      {\prop_item:cn {g__zlatex_thm_name_prop}{#1}s}
66    \creflabelformat{#1}{##2(##1)##3}
67  }
```

10.4 module.layout

```
1  \ProvidesExplFile{zlatex.module.layout.tex}{2024/12/17}{1.0.0}{layout~module~fo
   r~zlatex}
2
3
4  %%%%    layout module for zlatex    %%%%
5  \RequirePackage{geometry}
6  % document mode
7  \if@twoside
8    \geometry{a4paper, left=3cm, right=5.5cm, bottom=3.5cm, footskip=1.5cm,
     marginparsep=1em}
9    \bool_if:NTF \g__zlatex_margin_bool {
10     \geometry{a4paper, left=2.5cm, right=7.5cm, bottom=3.5cm, footskip=1.5cm,
       marginparsep=2em}
11     \dim_gset:Nn \marginparwidth{14em}
12   }{
13     \zlatex_msg_set:nn {option-page-margin}
14       {No~margin~option~is~only~accessible~in~oneside~layout,~margin~option~is~
         now~enabled~by~default.}
15     \zlatex_msg_warn:n {option-page-margin}
16   }
17 \else
18   \bool_if:NTF \g__zlatex_margin_bool {
19     \geometry{a4paper, left=2.5cm, right=7.5cm, bottom=3.5cm, footskip=1.5cm,
       marginparsep=2em}
20     \dim_gset:Nn \marginparwidth{14em}
21   }{
22     \geometry{a4paper, left=3cm, right=3cm, bottom=3.5cm, footskip=1.5cm,
       marginparsep=1em}
23     \renewcommand{\marginpar}[1]{\leftbar\noindent#1\endleftbar}
24   }
25 \fi
```

10.5 module.pageinfo

```
1  \ProvidesExplFile{zlatex.module.pageinfo.tex}{2024/12/17}{1.0.0}{pageinfo~modul
   e~for~zlatex}
2
3
4  %%%%    pageinfo module for zlatex    %%%%
5  % TODO: implement this by new mark mechanism
6
7
8  % ==> fancy page settings
9  \bool_if:NF \g__zlatex_slide_bool {
10   \RequirePackage{fancyhdr}
11   \fancypagestyle{fancy}{
12     \fancyhf{}
13     \dim_gset:Nn \headheight{15pt}
14     \renewcommand{\headrule}{\hrule width\textwidth}
15     \if@twoside
16       \fancyhead[EL]{\leftmark}
17       \fancyhead[ER]{\thepage}
18       \fancyhead[OL]{\thepage}
19       \fancyhead[OR]{\rightmark}
20     \else
21       \IfClassLoadedTF{book}{
22         \fancyhead[L]{\thepage}
23         \fancyhead[R]{\rightmark}
24       }{
25         \fancyhead[L]{\thepage}
26         \fancyhead[R]{\leftmark}
27       }
28     \fi
29   }
30   \fancypagestyle{plain}{
31     \fancyhf{}
32     \renewcommand{\headrulewidth}{0pt}
33     \renewcommand{\headrule}{}
34     \fancyfoot[C]{\thepage}
35   }
36 }
37
38
39 % ==> front/main matter
40 \IfClassLoadedTF{book}{
41   \renewcommand\frontmatter{
42     \cleardoublepage
```

```latex
43      \pagestyle{plain}
44      \@mainmatterfalse
45      \pagenumbering{Roman}
46    }
47    \renewcommand\mainmatter{
48      \cleardoublepage
49      \pagestyle{fancy}
50      \@mainmattertrue
51      \pagenumbering{arabic}
52    }
53  }{
54    \bool_if:NF \g__zlatex_slide_bool
55      {\zlatex_hook_preamble_last:n {\pagestyle{fancy}}}
56  }
57
58
59  % ==> title page
60  \let\orimaketitle\maketitle
61  \newcommand\Maketitle[1][1in]{
62    \newgeometry{margin=#1}
63    \orimaketitle
64    \restoregeometry
65  }
66  \bool_if:NTF \g__zlatex_slide_bool {
67    \renewcommand\maketitle{
68      \bool_if:NT \g__zlatex_hyperref_bool {
69        \phantomsection
70        \hypertarget{zslide-title-page}{}
71      }
72      \null\vfill\begin{center}
73        \begin{tabular}{c}{\huge\zslideTitle}\\[2em]
74        \zslideAuthor\\[2em]\zslideDate\end{tabular}
75        \vspace{\stretch{2}}\end{center}
76      \thispagestyle{empty}\setcounter{page}{0}
77      \newpage
78    }
79  }{
80    \renewcommand{\maketitle}{
81      \thispagestyle{empty}
82      % calc max width, add '1pt' for right padding in case of wrong line break
83      \ztool_set_to_wd:Nn \l_tmpa_dim {\hbox:n {\huge\bfseries\@title}}
84      \ztool_set_to_wd:Nn \l_tmpb_dim {\hbox:n {\Large\bfseries\@author}}
85      \dim_set:Nn \l_tmpa_dim {\dim_max:nn {\l_tmpa_dim}{\l_tmpb_dim} + 1pt}
86      % typeset info
87      \begin{center}\vfill\vspace*{40pt}
```

```
 88    \rule{6pt}{80pt}\enskip                                              88
 89    \parbox[b][80pt][r]{\l_tmpa_dim}{                                    89
 90      {\huge\bfseries\@title}\\[\fill]                                   90
 91      {\Large\bfseries\@author}                                          91
 92    }                                                                    92
 93    \par\vfill{\Large\textcolor{gray}{\@date}}                           93
 94    \end{center}                                                         94
 95    \restoregeometry                                                     95
 96   }                                                                     96
 97 }                                                                       97
 98                                                                         98
 99                                                                         99
100 % ==> page annotation                                                  100
101 % #1: fore/background; #2: position;                                   101
102 % #3: anchor;          #4: object                                      102
103 % #5: hook range                                                       103
104 % \RequirePackage{transparent}                                         104
105 \dim_const:Nn \zph {\paperheight}                                      105
106 \dim_const:Nn \zpw {\paperwidth}                                       106
107 \cs_generate_variant:Nn \hook_gput_code:nnn {nne}                      107
108 \cs_new_protected:Npn \__zlatex_page_annotate:nnnnn #1#2#3#4#5         108
109   {                                                                    109
110     \tl_if_empty:eTF {#5}                                              110
111       {                                                                111
112         \hook_gput_code:nnn {shipout/#1}                               112
113           {zlatex@page@mask-\l__zlatex_page_mask_label_tl}             113
114           {\put#2{\makebox(0, 0)[#3]{#4}}}                             114
115       }{                                                               115
116         \hook_gput_next_code:nn {shipout/#1}                           116
117           {\put#2{\makebox(0, 0)[#3]{#4}}}                             117
118       }                                                                118
119   }                                                                    119
120 \DeclareHookRule{shipout/background}{.}{<}{pgfrcs}                     120
121 \zlatex_keys_define:nn { page/mask }{                                  121
122   layer    .tl_set:N  = \l__zlatex_page_mask_layer_tl,                122
123   layer    .initial:n = background,                                    123
124   position .tl_set:N  = \l__zlatex_page_mask_position_tl,             124
125   position .initial:n = {(.5\zpw, .5\zph)},                           125
126   anchor   .tl_set:N  = \l__zlatex_page_mask_anchor_tl,               126
127   anchor   .initial:n = c,                                            127
128   label    .tl_set:N  = \l__zlatex_page_mask_label_tl,               128
129   label    .initial:n = { DEFAULT },                                 129
130 }                                                                      130
131 \cs_generate_variant:Nn \__zlatex_page_annotate:nnnnn {eee}           131
132 \cs_new:Npn \__page_mask@pos_parse:w (#1, #2)                         132
```

```
133      {(
134        \dim_to_decimal:n {#1} pt,
135        \dim_to_decimal:n {#2-\paperheight} pt
136      )}
137  \zlatex_msg_set:nn {pageinfo}{Only~star~version~of~\string\zlatexPageMask\
       is~label-allowed.}
138  \NewDocumentCommand{\zlatexPageMask}{so+m}
139    {
140      \group_begin:
141      \IfValueT{#2}{\zlatex_keys_set:nn { page/mask }{#2}}
142      \IfBooleanTF{#1}{\gdef\@once@hook@sign{}}{
143        \gdef\@once@hook@sign{*}
144        \tl_if_eq:enF {\l__zlatex_page_mask_label_tl}
145          { DEFAULT }
146          { \zlatex_msg_warn:n {pageinfo} }
147      }
148      \exp_args:Neee \DeclareHookRule{shipout/\l__zlatex_page_mask_layer_tl}
149        {zlatex@page@mask-\l__zlatex_page_mask_label_tl}
150        {<}{pgfrcs}
151      \__zlatex_page_annotate:eeenn
152        {\l__zlatex_page_mask_layer_tl}
153        {\exp_after:wN \__page_mask@pos_parse:w \l__zlatex_page_mask_position_tl}
154        {\l__zlatex_page_mask_anchor_tl}{#3}
155        {\@once@hook@sign}
156      \group_end:
157    }
158  \NewDocumentCommand{\zlatexPageMaskRemove}{mm}
159    {
160      \hook_gremove_code:nn {shipout/#1}
161        {zlatex@page@mask-#2}
162    }
```

10.6 module.theme

```
1  \ProvidesExplFile{zlatex.module.theme.tex}{2024/12/17}{1.0.0}{theme~module~for~  ↙
   zlatex}
2
3
4  %%%%    color module for zlatex thm and structure    %%%%
5  % ==> color setup
6  % dynamic color setup
7  \regex_new:N \l__zlatex_color_mode_regex
8  \regex_set:Nn \l__zlatex_color_mode_regex {(\cB..{1,}\cE.){2}}
9  \cs_new:Npn \__zlatex_color_set:n #1 {
10   \regex_match:NnTF \l__zlatex_color_mode_regex {#1}{
11     \definecolor{zlatex@color@\l_keys_key_str}#1
12   }{
13     \colorlet{zlatex@color@\l_keys_key_str}{#1}
14   }
15   \tl_set:ce
16     {l__zlatex_\l_keys_key_str _color_tl}
17     {zlatex@color@\l_keys_key_str}
18 }
19
20 % all colors
21 % How to use the clist in "thm" module ???
22 \definecolor{zlatex@color@royalred}{RGB}{157, 16, 45}
23 \definecolor{zlatex@color@axiom}{HTML}{000000}
24 \definecolor{zlatex@color@definition}{HTML}{bdc3c7}
25 \definecolor{zlatex@color@theorem}{HTML}{27ae60}
26 \definecolor{zlatex@color@lemma}{HTML}{2980b9}
27 \definecolor{zlatex@color@corollary}{HTML}{8e44ad}
28 \definecolor{zlatex@color@proposition}{HTML}{f39c12}
29 \definecolor{zlatex@color@remark}{HTML}{c92a2a}
30
31
32 % ==> structure theme
33 \zlatex_keys_define:nn {color}{
34   chapter        .tl_set:N    = \l__zlatex_chapter_color_tl,
35   chapter        .initial:n   = { zlatex@color@royalred },
36   chapter        .code:n      = { \__zlatex_color_set:n {#1} },
37   chapter-rule   .tl_set:N    = \l__zlatex_chapter_rule_color_tl,
38   chapter-rule   .initial:n   = { black },
39   chapter-rule   .code:n      = { \__zlatex_color_set:n {#1} },
40 }
41
42
```

```latex
% ==> index and ref theme
\zlatex_keys_define:nn {color}{
  link              .tl_set:N      =  \l__zlatex_link_color_tl,
  link              .initial:n     =  { purple },
  link              .code:n        =  { \__zlatex_color_set:n {#1} },
  cite              .tl_set:N      =  \l__zlatex_cite_color_tl,
  cite              .initial:n     =  { blue },
  cite              .code:n        =  { \__zlatex_color_set:n {#1} },
  url               .tl_set:N      =  \l__zlatex_url_color_tl,
  url               .initial:n     =  { zlatex@color@royalred },
  url               .code:n        =  { \__zlatex_color_set:n {#1} },
}


% ==> thm env themecolor
\zlatex_keys_define:nn {color}{
  % theorem-like envs (numbered)
  axiom             .tl_set:N      =  \l__zlatex_axiom_color_tl,
  axiom             .initial:n     =  { zlatex@color@axiom },
  axiom             .code:n        =  { \__zlatex_color_set:n {#1} },
  definition        .tl_set:N      =  \l__zlatex_definition_color_tl,
  definition        .initial:n     =  { zlatex@color@definition },
  definition        .code:n        =  { \__zlatex_color_set:n {#1} },
  theorem           .tl_set:N      =  \l__zlatex_theorem_color_tl,
  theorem           .initial:n     =  { zlatex@color@theorem },
  theorem           .code:n        =  { \__zlatex_color_set:n {#1} },
  lemma             .tl_set:N      =  \l__zlatex_lemma_color_tl,
  lemma             .initial:n     =  { zlatex@color@lemma },
  lemma             .code:n        =  { \__zlatex_color_set:n {#1} },
  corollary         .tl_set:N      =  \l__zlatex_corollary_color_tl,
  corollary         .initial:n     =  { zlatex@color@corollary },
  corollary         .code:n        =  { \__zlatex_color_set:n {#1} },
  proposition       .tl_set:N      =  \l__zlatex_proposition_color_tl,
  proposition       .initial:n     =  { zlatex@color@proposition },
  proposition       .code:n        =  { \__zlatex_color_set:n {#1} },
  remark            .tl_set:N      =  \l__zlatex_remark_color_tl,
  remark            .initial:n     =  { zlatex@color@remark },
  remark            .code:n        =  { \__zlatex_color_set:n {#1} },
  % proof-like envs (unnumbered)
  proof             .tl_set:N      =  \l__zlatex_proof_color_tl,
  proof             .initial:n     =  { black },
  proof             .code:n        =  { \__zlatex_color_set:n {#1} },
  exercise          .tl_set:N      =  \l__zlatex_exercise_color_tl,
  exercise          .initial:n     =  { black },
  exercise          .code:n        =  { \__zlatex_color_set:n {#1} },
```

```
 88    example           .tl_set:N      =  \l__zlatex_example_color_tl,
 89    example           .initial:n     =  { black },
 90    example           .code:n        =  { \__zlatex_color_set:n {#1} },
 91    solution          .tl_set:N      =  \l__zlatex_solution_color_tl,
 92    solution          .initial:n     =  { black },
 93    solution          .code:n        =  { \__zlatex_color_set:n {#1} },
 94  }
 95
 96
 97  % ==> unknown color key
 98  \zlatex_keys_define:nn {color}{
 99    unknown           .code:n        =  {
100      \zlatex_metakey_msg_warning:nn {color}
101        {link, cite, url, chapter, chapter-rule, axiom, definition,
102        theorem, lemma, corollary, proposition, remark}
103      }
104  }
105
106
107  % ==> init color theme
108  \DeclareHookRule{env/document/before}
109    {zlatex-themecolor-setup-user}{>}{zlatex-thmptheorem-setup-inner}
110  \DeclareHookRule{env/document/before}
111    {zlatex-themecolor-setup-user}{>}{zlatex-thmpproof-setup-inner}
112  \NewDocumentCommand{\zlatexColorSetup}{m}
113    {\zlatex_label_hook_preamble_last:nn {zlatex-themecolor-setup-user}
114      {
115        \zlatex_keys_set:nn {color}{#1}
116        \bool_if:NT \g__zlatex_hyperref_bool {
117          \hypersetup {
118            colorlinks = true,
119            urlcolor   = \tl_use:N \l__zlatex_url_color_tl,
120            linkcolor  = \tl_use:N \l__zlatex_link_color_tl,
121            citecolor  = \tl_use:N \l__zlatex_cite_color_tl,
122          }
123        }
124      }
125    }
126  \@onlypreamble\zlatexColorSetup
127  \zlatexColorSetup{link=purple, cite=blue, url=zlatex@color@royalred}
```

10.7 module.thm

```
1   \ProvidesExplFile{zlatex.module.thm.tex}{2024/12/17}{1.0.0}{thm~module~for~zlatex}
2
3
4   %%%%    Math-envs for zlatex    %%%%
5   % ==> module init
6   \clist_gclear:N \g__zlatex_thm_theorem_clist
7   \clist_gclear:N \g__zlatex_thm_proof_clist
8   \cs_new_protected:Npn \zlatex_thm_create:nn #1#2 {
9     \clist_gput_right:cn {g__zlatex_thm_#1_clist}{#2}
10  }
11  \cs_generate_variant:Nn \zlatex_thm_create:nn {ne}
12  \zlatex_thm_create:nn {theorem}{
13    axiom, definition, theorem, lemma, corollary, proposition, remark,
14  }
15  \zlatex_thm_create:nn {proof}{
16    proof, exercise, example, solution, problem,
17  }
18  \zlatex_msg_set:nn {thm-name}
19    {An~unexpected~math~env~name~in~multichoice~key:'\l_keys_key_tl',~there~is~no   ↙
      ~internal~config~for~it.}
20
21  % thm title definition
22  \cs_new_protected:Npn \zlatex_thm_name_set:nn #1#2 {
23    \prop_set_from_keyval:cn {g__zlatex_thm_name_#1_prop} {#2}
24  }
25  \zlatex_thm_name_set:nn {en}{
26    axiom       = Axiom,
27    definition  = Definition,
28    theorem     = Theorem,
29    lemma       = Lemma,
30    corollary   = Corollary,
31    proposition = Proposition,
32    remark      = Remark,
33    proof       = Proof,
34    exercise    = Exercise,
35    example     = Example,
36    solution    = Solution,
37    problem     = Problem,
38  }
39  \zlatex_thm_name_set:nn {cn}{
40    axiom       = 公理,
41    definition  = 定义,
42    theorem     = 定理,
```

```
43      lemma       = 引理,                                                    43
44      corollary   = 推论,                                                    44
45      proposition = 命题,                                                    45
46      remark      = 注记,                                                    46
47      proof       = 证明,                                                    47
48      exercise    = 练习,                                                    48
49      example     = 示例,                                                    49
50      solution    = 解,                                                      50
51      problem     = 问题,                                                    51
52    }                                                                       52
53    \zlatex_thm_name_set:nn {fr}{                                           53
54      axiom       = Axiome,                                                 54
55      definition  = Définition,                                            55
56      theorem     = Théorème,                                              56
57      lemma       = Lemme,                                                  57
58      corollary   = Corollaire,                                             58
59      proposition = Proposition,                                            59
60      remark      = Remarque,                                               60
61      proof       = Preuve,                                                 61
62      exercise    = Exercice,                                               62
63      example     = Exemple,                                                63
64      solution    = Solution,                                               64
65      problem     = Problème,                                              65
66    }                                                                       66
67    \tl_if_exist:NF \g__zlatex_lang_math_tl {                               67
68      \tl_set_eq:cc {g__zlatex_lang_math_tl}{g__zlatex_lang_str}            68
69    }                                                                       69
70                                                                            70

71                                                                            71

72    % ==> thm module tools                                                  72
73    \NewDocumentCommand{\zlatexThmLang}{m}{                                  73
74      \tl_gset:Nn \g__zlatex_lang_math_tl {#1}                              74
75      \prop_set_eq:cc                                                       75
76        {g__zlatex_thm_name_prop}                                          76
77        {g__zlatex_thm_name_\g__zlatex_lang_math_tl _prop}                 77
78    }                                                                       78
79    % \@onlypreamble\zlatexThmLang                                          79
80    \prop_new:c {g__zlatex_thm_name_prop}                                   80
81    \prop_gclear:c {g__zlatex_thm_name_prop}                                81
82    \zlatex_hook_preamble_last:n {                                          82
83      \prop_set_eq:cc {g__zlatex_thm_name_prop}                             83
84                      {g__zlatex_thm_name_\g__zlatex_lang_math_tl _prop}    84
85    }                                                                       85
86    \tl_new:N \g__zlatex_thm_title_tl                                       86
87    \NewDocumentCommand{\zlatexThmTitle}{}{                                 87
```

```latex
88      \tl_use:N \g__zlatex_thm_title_tl
89    }
90    \bool_new:N \g__zlatex_thm_title_inline_bool
91    \NewDocumentCommand{\zlatexThmTitleSwitch}{}{
92      \bool_gset_inverse:N \g__zlatex_thm_title_inline_bool
93    }
94    \NewDocumentCommand{\zlatexThmColorSetup}{m}{
95      \zlatex_keys_set:nn {color}{#1}
96    }
97    % create new thm env
98    \cs_new:Npn \__zlatex_mid_first:w #1|#2\q_stop {#1}
99    \cs_new:Npn \__zlatex_thm_color_set:w #1\q_stop #2|#3\q_stop
100     {
101       \tl_if_empty:eTF {#3}
102         {\zlatex_keys_set:nn {color}{#1=black}}
103         {\zlatex_keys_set:nn {color}{#1=#3}}
104     }
105   \cs_new:Npn \__zlatex_color_keyval_add:n #1 {
106     \zlatex_keys_define:nn {color}{
107       #1 .tl_set:c  = { l__zlatex_#1_color_tl },
108       #1 .initial:n = { black },
109       #1 .code:n    = { \__zlatex_color_set:n {##1} },
110     }
111   }
112   \cs_new:Npn \__zlatex_thm_create__:nn #1#2 {
113     \zlatex_thm_create:nn {#1}{#2}
114     \__zlatex_color_keyval_add:n {#2}
115     \prop_gput_from_keyval:cn {g__zlatex_thm_name_prop}{#2=#2}
116   }
117   \cs_new:Npn \__zlatex_thm_create__:nnn #1#2#3 {
118     \zlatex_thm_create:ne {#1}{\use_i:nn {#2}{#3}}
119     \__zlatex_color_keyval_add:n {#2}
120     \exp_last_unbraced:Ne \__zlatex_thm_color_set:w #2\q_stop #3\q_stop
121     \prop_gput:cee {g__zlatex_thm_name_prop}
122       {#2}{\exp_last_unbraced:Ne \__zlatex_mid_first:w #3\q_stop}
123   }
124   \NewDocumentCommand{\zlatexThmCreate}{mm}{
125     \zlatex_label_hook_preamble_last:nn {zlatex-thmall-setup-user}{
126     \keyval_parse:nnn
127       { \__zlatex_thm_create__:nn {#1} }
128       { \__zlatex_thm_create__:nnn {#1} }
129       { #2 }
130     }
131   }
132   % \@onlypreamble\zlatexThmCreate
```

```
133
134
135   % ==> new thm style interface
136   \NewDocumentCommand{\zlatexThmStyleNew}{+m}{
137     \keyval_parse:nnn
138       {\use_none:n}
139       {\__zlatex_thm_new_style:nn}
140       {#1}
141   }
142   \cs_new_protected:Npn \__zlatex_thm_new_style:nn #1#2 {
143     \zlatex_keys_define:nn { thm/style } {
144       #1            .meta:nn   = { zlatex/thm/style/#1 }{##1},
145       #1 / begin    .tl_gset:c = { g__zlatex_thm_style_#1_begin_tl },
146       #1 / end      .tl_gset:c = { g__zlatex_thm_style_#1_end_tl },
147       #1 / option   .tl_gset:c = { g__zlatex_thm_style_#1_option_tl },
148       #1 / preamble .code:n    = {
149         % NOTE:
150         % 1. thm preamble can be only set by one style
151         % 2. '\g__zlatex_thm_style_tl' need to be set
152         %       before '\zlatexloadlibrary{theme}'
153         \tl_if_eq:cnT {g__zlatex_thm_style_tl}{#1}{
154           % \hook_gremove_code:nn {env/document/before}{zlatex-thm-preamble}
155           \zlatex_label_hook_preamble_last:nn
156             {zlatex-thm-preamble}{##1}
157         }
158       },
159     }
160     \zlatex_keys_set:nn { thm/style }{ #1={#2} }
161   }
162   \NewDocumentCommand{\zlatexThmStyle}{m}{
163     \tl_gset:Nn \g__zlatex_thm_style_tl {#1}
164   }
165   % title switch and tcb warning, create thm styles
166   \cs_new:Npn \__zlatex_thm_title_inline:n #1 {
167     \tl_if_eq:nnTF {#1}{T}
168       {\bool_gset_true:N \g__zlatex_thm_title_inline_bool}
169       {\bool_gset_false:N \g__zlatex_thm_title_inline_bool}
170   }
171   % tcolorbox and tikz warning if missing
172   %             when create new thm style
173   \zlatex_msg_set:nn {mathEnv-dependency}{
174     MathEnv~style:'\g__zlatex_thm_style_tl'~requires~package~'tcolorbox'~and~'tik
        z',~and~
175     either~of~which~hasn't~been~loaded~in~your~preamble.~Reset~to~default~'plain'
        ~style~now.
```

```
176   }
177   \cs_new:Nn \__zlatex_thm_tcolorbox_warning: {
178     \@ifpackageloaded{tcolorbox}{\relax}{
179       \zlatex_msg_warn:n {mathEnv-dependency}
180       \tl_gset:Nn \g__zlatex_thm_style_tl {plain}
181     }
182   }
183   \zlatexThmStyleNew {
184     plain = {
185       begin  =,
186       end    =,
187       option = \__zlatex_thm_title_inline:n {T}
188     },
189     leftbar = {
190       begin = {
191         \def\FrameCommand{{\color{\thm@temp@color}\vrule~ width~ 3pt}
192         \hspace{5pt}}\MakeFramed{\advance\hsize-\width \FrameRestore}
193       },
194       end = {\endMakeFramed},
195       option = { \__zlatex_thm_title_inline:n {T} }
196     },
197     background = {
198       begin = {
199         \def\FrameCommand{\colorbox{\thm@temp@color}}
200         \MakeFramed{\advance\hsize-\width \FrameRestore}
201       },
202       end = {\endMakeFramed},
203       option = { \__zlatex_thm_title_inline:n {T} }
204     },
205     fancy = {
206       begin = {
207         \def\FrameCommand{{\color{\thm@temp@color}\vrule~ width~
                3pt}\colorbox{\thm@temp@color!10}}
208         \MakeFramed{\advance\hsize-\width \FrameRestore}
209       },
210       end = {\endMakeFramed},
211       option = { \__zlatex_thm_title_inline:n {T} }
212     },
213   }
214
215
216   % ==> thm format and style setup
217   \zlatex_msg_set:nn {mathEnv-style}{
218     You~use~an~incorrect~MathEnv~style:~'\g__zlatex_thm_style_tl',~All~valid~
219     MathEnv~are:'plain',~'leftbar',~'background',~'fancy',~'shadow',~'paris'.
```

```
220  }
221  % thm counter
222  \bool_new:N \g__zlatex_thm_cntshare_bool
223  \zlatex_keys_define:nn {thm/cnt} {
224    share     .bool_gset:N = \g__zlatex_thm_cntshare_bool,
225    share     .default:n  = true,
226    parent    .tl_gset:N   = \g__zlatex_thm_cntparent_tl,
227    parent    .initial:n   = section,
228  }
229  \NewDocumentCommand{\zlatexThmCnt}{m}{
230    \group_begin:
231      \zlatex_keys_set:nn {thm/cnt}{#1}
232    \group_end:
233  }
234  \@onlypreamble\zlatexThmCnt
235  % thm env warper
236  \cs_new:Npn \__zlatex_thm_warp_start:nnnn #1#2#3#4 {
237    \def\thm@temp@color{\tl_use:c {l__zlatex_#1_color_tl}}
238    \def\thm@temp@name{#1}
239    \__zlatex_thm_title_item:nnnn {#1}{#2}{#3}{#4}
240    \tl_use:c {g__zlatex_thm_style_\g__zlatex_thm_style_tl _option_tl}
241    \tl_if_exist:cTF {g__zlatex_thm_style_\g__zlatex_thm_style_tl _option_tl}
242      {\tl_use:c {g__zlatex_thm_style_\g__zlatex_thm_style_tl _option_tl}}
243      {\zlatex_msg_error:n {mathEnv-style}}
244    \tl_if_exist:cTF {g__zlatex_thm_style_\g__zlatex_thm_style_tl _begin_tl}
245      {\tl_use:c {g__zlatex_thm_style_\g__zlatex_thm_style_tl _begin_tl}}
246      {\zlatex_msg_error:n {mathEnv-style}}
247  }
248  \tl_new:N \__zlatex_thm_toc_prefix_tl
249  \newcommand\zlatexThmTocPrefix[1]{
250    \tl_set:Nn \__zlatex_thm_toc_prefix_tl {\exp_not:n {#1}}
251  }
252  \@onlypreamble\zlatexThmTocPrefix
253  \cs_new:Npn \__zlatex_thm_warp_end:n #1
254    {
255      \tl_if_exist:cTF {g__zlatex_thm_style_\g__zlatex_thm_style_tl _end_tl}
256        {\tl_use:c {g__zlatex_thm_style_\g__zlatex_thm_style_tl _end_tl}}
257        {\zlatex_msg_error:n {mathEnv-style}}
258      \__zlatex_thm_toc_add:eeee
259        {\g__zlatex_thm_table_level}
260        {
261          \exp_not:N \__zlatex_thm_toc_prefix_tl
262          \exp_not:n {\prop_item:Nn \g_zlatex_thm_toc_symbols_prop {#1}}
263          \zlatexThmName\ \zlatexThmNumber
264          \tl_if_empty:eF {\zlatexThmNote}{}{\ }
```

```
            \zlatexThmNote{(}{)}
      }
    {\thepage}{#1.\zlatexThmNumber}
  }
% thm title interface
\NewHook{zlatex/thm/titleformat}
\cs_new:Npn \__zlatex_thm_title_item:nnnn #1#2#3#4 {
  \tl_set:Nn \l_tmpa_tl {\exp_not:n {#2}}
  \cs_set:Npn \zlatexThmName {
    % \textcolor{\tl_use:c {l__zlatex_#1_color_tl}}
      {\prop_item:cn {g__zlatex_thm_name_prop}{#1}}
    }
  \cs_set:Npn \zlatexThmNote ##1##2
    {
      \tl_if_empty:nF {#2}
        {##1\exp_not:n {\l_tmpa_tl}##2}
    }
  \bool_if:NTF \g__zlatex_thm_cntshare_bool
    {\cs_set:Npn \zlatexThmNumber {
      \cs:w the\g__zlatex_thm_cntparent_tl\cs_end:
        .\cs:w thezlatex@thm@sharecnt\cs_end:}
      \stepcounter{zlatex@thm@sharecnt}
    }{\cs_set:Npn \zlatexThmNumber {
      \cs:w the\g__zlatex_thm_cntparent_tl\cs_end:
        .\cs:w the#1\cs_end:}
      \stepcounter{#1}
    }
  \tl_gset:Nn \g__zlatex_thm_title_tl {
    #3\zlatexThmName #4 \zlatexThmNumber
    \tl_if_empty:eF {\zlatexThmNote{}{}}{#4}
    \zlatexThmNote{(}{)} #4
  }
  \UseHook{zlatex/thm/titleformat}
}
\cs_new:Npn \__zlatex_thm_title: {
  \bool_if:NT \g__zlatex_thm_title_inline_bool
    {\group_begin:\noindent\tl_use:N \g__zlatex_thm_title_tl\group_end:}
}
% users' interface of thm title format
\NewDocumentCommand{\zlatexThmTitleFormat}{sm}{
  \IfBooleanTF{#1}{
    \AddToHook{zlatex/thm/titleformat}
      {\tl_gset:Nn \g__zlatex_thm_title_tl {#2}}
  }{
    \AddToHookNext{zlatex/thm/titleformat}
```

```
310        {\tl_gset:Nn \g__zlatex_thm_title_tl {#2}}
311      }
312  }
313  \NewDocumentCommand{\zlatexThmNoteEmptyTF}{mm}
314    {
315      \tl_if_empty:eTF {\zlatexThmNote{}{}}
316        {#1}
317        {#2}
318    }


321  % ==> Thm Toc interface
322  % list of thm: ".thlist" as file extension
323  % REF: https://github.com/mbertucci47/keytheorems
324  \bool_new:N \g__zlatex_thm_toc_bool
325  \hook_gput_code:nnn { enddocument } { thm-toc }
326    {
327      \bool_if:NT \g__zlatex_thm_toc_bool {
328        \iow_new:N \tf@thlist
329        \iow_open:Nn \tf@thlist { \c_sys_jobname_str.thlist }
330      }
331    }
332  \cs_new:Npn \__zlatex_thm_toc_add:nnnn #1#2#3#4
333    {
334      \iow_now:Ne \@auxout
335        {
336          \token_to_str:N \@writefile{thlist}
337            {\token_to_str:N \contentsline{#1}{#2}{#3}{#4}
338            \token_to_str:N \protected@file@percent}
339        }
340    }
341  \cs_generate_variant:Nn \__zlatex_thm_toc_add:nnnn { eeee, nnee }
342  \zlatex_keys_define:nn { thm/add }
343    {
344      % level   .tl_set:N  = \l__zlatex_add_thm_toc_level_tl,
345      % level   .initial:n = { section },
346      name      .tl_set:N  = \l__zlatex_add_thm_toc_name_tl,
347      name      .initial:n = { ?? },
348    }
349  \NewDocumentCommand{\zlatexThmTocAdd}{om}{
350    \group_begin:
351    \zlatex_keys_set:nn {thm/add}{#1}
352    \__zlatex_thm_toc_add:nnee {#2}
353      {\l__zlatex_add_thm_toc_name_tl}
354      {\thepage}{#2.\cs:w the#2\cs_end:}
```

```
355    \group_end:
356  }
357  \tl_new:N \g__zlatex_thm_table_level
358  \tl_set:Nn \g__zlatex_thm_table_level {subsection}
359  \NewDocumentCommand{\zlatexThmTocLevel}{m}
360    {
361      \tl_gset:Nn \g__zlatex_thm_table_level {#1}
362    }
363  \@onlypreamble\zlatexThmTocLevel
364  \NewDocumentCommand{\zlatexThmToc}{O{1}}
365    {
366      \bool_gset_true:N \g__zlatex_thm_toc_bool
367      \group_begin:
368      \legacy_if_set_false:n { @filesw }
369      \renewcommand{\baselinestretch}{#1}\normalsize
370      \@input{\jobname.thlist}
371      \group_end:
372    }
373  % thm toc symbols
374  \prop_new:N \g_zlatex_thm_toc_symbols_prop
375  \prop_set_from_keyval:Nn \g_zlatex_thm_toc_symbols_prop
376    {
377      axiom      = { \textbf{A}\; },
378      definition = { \textbf{D}\; },
379      theorem    = { \textbf{T}\; },
380      lemma      = { \textbf{L}\; },
381      corollary  = { \textbf{C}\; },
382      proposition = { \textbf{P}\; },
383      remark     = { \textbf{R}\; },
384    }
385  \NewDocumentCommand{\zlatexThmTocSymbol}{m}
386    {
387      \prop_set_from_keyval:Nn \g_zlatex_thm_toc_symbols_prop {#1}
388    }
389  \NewDocumentCommand{\zlatexThmTocSymbolClear}{}
390    { \prop_gclear:N \g_zlatex_thm_toc_symbols_prop }
391
392
393  % ==> thm env definition
394  \NewHook{zlatex/thm/before}
395  \NewHook{zlatex/thm/begin}
396  \NewReversedHook{zlatex/thm/end}
397  \NewReversedHook{zlatex/thm/after}
398  \zlatex_label_hook_preamble_last:nn {zlatex-thmptheorem-setup-inner}{
399    \newcounter{zlatex@thm@sharecnt}[\g__zlatex_thm_cntparent_tl]
```

```
400    \clist_map_inline:Nn \g__zlatex_thm_theorem_clist {
401      \newcounter{#1}[\g__zlatex_thm_cntparent_tl]
402      \__zlatex_cref_math_env:n {#1}
403      \DeclareDocumentEnvironment{#1}{O{}}{
404        \UseHook{zlatex/thm/before}
405        \__zlatex_thm_warp_start:nnnn {#1}{##1}{\bfseries}{\ }
406        \MakeLinkTarget*{#1.\zlatexThmNumber}\__zlatex_thm_title:
407        \UseHook{zlatex/thm/begin}
408        \peek_remove_spaces:n
409      }{
410        \UseHook{zlatex/thm/end}
411        \__zlatex_thm_warp_end:n {#1}
412        \UseHook{zlatex/thm/after}
413      }
414    }
415  }
416  \newcommand{\qedsymbol}{\ensuremath{\square}}
417  \zlatex_label_hook_preamble_last:nn {zlatex-thmprooof-setup-inner}{
418    \clist_map_inline:Nn \g__zlatex_thm_proof_clist {
419      \DeclareDocumentEnvironment{#1}{O{}}{
420        \noindent{\color{\tl_use:c {l__zlatex_#1_color_tl}}
421        \bfseries\prop_item:cn {g__zlatex_thm_name_prop}{#1}:}
422        \tl_set:Nn \l__arg_one_tl {#1}
423      }{\str_if_eq:VnTF \l__arg_one_tl {proof}{\hfill\qedsymbol\par}{\par}}
424    }
425  }
426  % zlatex thm hook
427  \int_new:N \g__zlatex_thm_hook_index_int
428  \int_gzero:N \g__zlatex_thm_hook_index_int
429  \cs_generate_variant:Nn \hook_gput_code:nnn {ne}
430  \NewDocumentCommand{\zlatexThmHook}{sm}{
431    \IfBooleanTF{#1}
432      {
433        \cs_set:Npn \__zlatex_hook_add:nn ##1##2
434          {
435            \int_gincr:N \g__zlatex_thm_hook_index_int
436            \hook_gput_code:nen {zlatex/thm/##1}
437              {thm-hook.\int_use:N \g__zlatex_thm_hook_index_int}{##2}
438          }
439      }{
440        \cs_set:Npn \__zlatex_hook_add:nn ##1##2
441          {
442            \int_gincr:N \g__zlatex_thm_hook_index_int
443            \hook_gput_next_code:nn {zlatex/thm/##1}{##2}
444          }
```

```
445         }
446     \keyval_parse:NNn
447       \use_none:n
448       \__zlatex_hook_add:nn {#2}
449 }
450 \hook_gput_code:nnn {zlatex/thm/before}{thm-before-par}{\par}
451 \NewDocumentCommand{\zlatexThmBefore}{+m}
452   {
453       \hook_gremove_code:nn {zlatex/thm/before}{thm-before-par}
454       \hook_gput_code:nnn {zlatex/thm/before}{thm-before-par}{#1}
455   }
456 \@onlypreamble\zlatexThmBefore
457 \DeclareHookRule{env/document/before}
458   {zlatex-thmall-setup-user}{<}{zlatex-thmptheorem-setup-inner}
459 \DeclareHookRule{env/document/before}
460   {zlatex-thmall-setup-user}{<}{zlatex-thmprooof-setup-inner}
```

10.8 module.titlesec

```
1  \ProvidesExplFile{zlatex.module.secformat.tex}{2024/12/17}{1.0.0}{secformat~mod
   ule~for~zlatex}
2
3
4  %%%%    sec format module for zlatex   %%%%
5  \RequirePackage{titlesec}
6  \RequirePackage{xtemplate}
7  \cs_new:Nn \__zlatex_titlesec_copy:nnnnnnn
8    {
9      \titleformat{#1}[#2]{#3}{#4}{#5}{#6}[#7]
10   }
11 \cs_generate_variant:Nn \__zlatex_titlesec_copy:nnnnnnn { ooffofo }
12
13 % numbered chapter format
14 \titleformat{\chapter}[display]
15   {\bfseries\huge\color{black}}
16   {\flushright\Large\color{\tl_use:N \l__zlatex_chapter_color_tl}
17   \MakeUppercase{\chaptertitlename}\hspace{1ex}
18   {\scalebox{2.5}{\thechapter}}}
19   {10pt}
20   {\color{\tl_use:N \l__zlatex_chapter_rule_color_tl}\titlerule\vspace{1ex}}
21
22 % unnumbered chapter format
23 \titleformat{name=\chapter, numberless}
24   {\bfseries\Huge}
25   {}{0pt}{}
26
27 % chapter space
28 \titlespacing{\chapter}{0pt}{-30pt}{40pt}
```

10.9 module.toc

```
1  \ProvidesExplFile{zlatex.module.toc.tex}{2024/12/17}{1.0.0}{toc~module~for~zlatex}
2
3
4  %%%%    toc setup module for zlatex    %%%%
5  % ==> main ToC interface
6  \AddToHook{cmd/@starttoc/before}{\vspace*{\dim_use:N              ↙
   \g__zlatex_toc_title_vspace_dim}}
7  \zlatex_hook_preamble_last:n {
8    % multi-column toc
9    \int_compare:nNnT {\g__zlatex_toc_column_int} > {1}
10     {
11       \RequirePackage{multicol}
12       \AddToHook{cmd/@starttoc/before}{
13         \begin{multicols}{\int_use:N \g__zlatex_toc_column_int}
14       }
15       \AddToHook{cmd/@starttoc/after}{\end{multicols}}
16     }
17   % toc strech
18   \AddToHookNext{cmd/@starttoc/before}{
19     \renewcommand{\baselinestretch}{\fp_use:N \g__zlatex_toc_stretch_fp}\normalsize
20   }
21   \AddToHookNext{cmd/@starttoc/after}{
22     \renewcommand{\baselinestretch}{1.3}\normalsize
23   }
24 }
25
26
27 % ==> partial ToC
28 \RequirePackage{titletoc}
29 \NewDocumentCommand\zlatexPartialTocStop{mm}{
30   \int_compare:nNnTF {#2}<{1}
31     {\relax}{\stopcontents[#1]}
32 }
33 \NewDocumentCommand{\zlatexPartialToc}{O{2}}{
34   % toc depth
35   \setcounter{tocdepth}{#1}
36   \titlecontents{psection}[2em]
37     {} {\contentslabel{2em}} {} {\titlerule*[1pc]{.}\contentspage}
38   \titlecontents{psubsection}[4.5em]
39     {} {\contentslabel{2.5em}} {} {\titlerule*[1pc]{.}\contentspage}
40   \titlecontents{psubsubsection}[5.5em]
41     {} {\contentslabel{0em}} {} {\titlerule*[1pc]{.}\contentspage}
42   % print partial Toc
```

```
43    \IfClassLoadedTF{book}{
44      \startcontents[chapters]
45      \printcontents[chapters]{p}{1}{}
46      \AddToHook{cmd/chapter/before}{\zlatexPartialTocStop{chapters}{\thechapter}}
47    }{
48      \startcontents[sections]
49      \printcontents[sections]{p}{1}{}
50      \AddToHook{cmd/section/before}{\zlatexPartialTocStop{section}{\thesection}}
51    }
52  }
```

10.10 library.fancy

```
1  \ProvidesExplFile{zlatex.library.fancy.tex}{2024/12/17}{1.0.0}{fancy~library~fo      1
   r~zlatex}
2                                                                                       2
3                                                                                       3
4  %%%%    fancy library for zlatex    %%%%                                             4
5  % ==> handle fancy option                                                            5
6  \RequirePackage[explicit]{titlesec}                                                  6
7  \newif\ifloadtikz                                                                    7
8  \bool_if:NTF \g__zlatex_fancy_bool {                                                 8
9    \RequirePackage[many]{tcolorbox}                                                   9
10   \loadtikztrue                                                                      10
11 }{\loadtikzfalse}                                                                    11
12 \ExplSyntaxOff\ifloadtikz                                                            12
13   \RequirePackage{tikz}                                                              13
14   \usetikzlibrary{calc}                                                              14
15 \fi\ExplSyntaxOn                                                                     15
16                                                                                      16
17                                                                                      17
18 % ==> fancy chapter                                                                  18
19 \definecolor{zchapColor}{HTML}{7f8184}                                               19
20 \newif\ifFancyChapter                                                                20
21 \IfClassLoadedTF{book}{                                                              21
22   \RequirePackage{anyfontsize}                                                       22
23   \FancyChaptertrue                                                                  23
24   % numbered chapter format                                                          24
25   \titleformat{\chapter}[display]                                                    25
26     {\huge}{}                                                                        26
27     {20pt}{                                                                          27
28       \begin{tikzpicture}[overlay, remember~ picture]%                               28
29         % mark nodes (need 'calc' library)                                           29
30         \coordinate (A) at ($(current~ page.north~ west)+(.125\paperwidth, 0pt)$);   30
31         \coordinate (stripES) at ($(A)+(3em, -.25\paperheight)$);                    31
32         % chapter head                                                               32
33         \fill[zchapColor] (A) rectangle (stripES);                                   33
34         \draw[draw=zchapColor] (stripES)++(.25em, 4em)   --                          34
           ++(.75\paperwidth-3.25em, 0pt);
35         \draw[draw=zchapColor] (stripES)++(.25em, 1.5pt) --                          35
           ++(.75\paperwidth-3.25em, 0pt);
36         \draw[draw=zchapColor] (stripES)++(.25em, 0em)   --                          36
           ++(.75\paperwidth-3.25em, 0pt);
37         % chapter title and index                                                    37
38         \node[anchor=south, color=white] at ($(stripES)+(-1.5em, 0em)$)             38
39           {\normalsize\scalebox{4}{\thechapter}\numSuffix{\thechapter}};            39
```

```latex
            \node[anchor=south~ west, inner~ sep=0pt,
                yshift=4.25em, xshift=.25em,
                font=\Large\bfseries, color=zchapColor
            ] at (stripES) {\z@subtitle};
            \node[anchor=south~ west, inner~ sep=0pt,
                yshift=1.5em, xshift=.25em,
                font=\Cinzel\Huge\bfseries, color=zchapColor
            ] at (stripES) {#1};
            % parbox insert
            \node[anchor=north~ west, inner~ sep=0pt] at ($(stripES)+(-3em, -1em)$){
                \parbox[t]{.3\paperwidth}{\fontsize{10pt}{15pt}
                    \selectfont\Cinzel\itshape\z@leftContent}
            };
            \node[anchor=north~ west, inner~ sep=0pt] at
            ($(stripES)+(-3em+.45em+.3\paperwidth, -1em)$){
                \parbox[t]{\dimeval{.45\paperwidth-.45em}}{
                    \fontsize{10pt}{15pt}\selectfont\z@rightContent}
            };
            % saying block
            \coordinate (sayingWN) at ($(current~ page.south~ west)+(0,
            .3\paperheight)$);
            \shade[top~ color=white, bottom~ color=zchapColor!25] (sayingWN)
                rectangle ++(1\paperwidth, 5pt);
            \shade[top~ color=zchapColor!25, bottom~ color=white]
            ($(sayingWN)+(0em, -.15\paperheight)$)
                rectangle ++(1\paperwidth, -5pt);
            \node at ($(sayingWN)+(.5\paperwidth, -0.075\paperheight)$) {
                \parbox[t][][r]{.75\paperwidth}{\fontsize{15pt}{22.5pt}\selectfont
                    \MakeUppercase{\Cinzel\z@saying\\\hspace*{\fill}{\itshape\normalsiz
                    e\z@sayauthor}}}
            };
        \end{tikzpicture}
    }
    [\thispagestyle{empty}\clearpage]
  % unnumbered chapter format
  \titleformat{name=\chapter, numberless}
    {\bfseries\Huge}
    {}{0pt}{#1}
}{\relax}
% find number suffix: 1 -> st, 2 -> nd, ...
\prop_new:N \g_arabix_suffix_prop
\prop_set_from_keyval:Nn \g_arabix_suffix_prop {
  1=st, 2=nd, 3=rd, 11=th, 12=th, 13=th, 0=th, _=th
}
\NewDocumentCommand\numSuffix{m}{
```

```
81    \int_compare:nTF {11 <= #1 <= 13}
82      {\prop_item:Ne \g_arabix_suffix_prop {#1}}
83      {\int_compare:nTF {\int_mod:nn {#1}{10} > 3}
84        {\prop_item:Ne \g_arabix_suffix_prop {_}}
85        {\prop_item:Ne \g_arabix_suffix_prop {\int_mod:nn {#1}{10}}}
86      }
87  }
88  % fancy chapter material default
89  \ExplSyntaxOff\ifFancyChapter
90    % default settings
91    \newcommand{\z@subtitle}{Subtitle}
92    \newcommand{\z@saying}{SAYING}
93    \newcommand{\z@sayauthor}{-- Author}
94    \newcommand{\z@rightContent}{Right Content}
95    \newcommand{\z@leftContent}{\includegraphics[width=1\linewidth]{example-image ↙
       -duck}\\[.5em]Figure                                                        ↙
       Description}
96    % users' interface
97    \NewDocumentCommand{\zsubtitle}{m}{\renewcommand\z@subtitle{#1}}
98    \NewDocumentCommand{\zchapterSaying}{O{}m}{\renewcommand\z@saying{#2}\renewco ↙
       mmand\z@sayauthor{#1}}
99    \NewDocumentCommand{\zchapterLContent}{m}{\renewcommand\z@leftContent{#1}}
100   \NewDocumentCommand{\zchapterRContent}{m}{\renewcommand\z@rightContent{#1}}
101 \else
102   \NewDocumentCommand{\zsubtitle}{m}{\relax}
103   \NewDocumentCommand{\zchapterSaying}{O{}m}{\relax}
104   \NewDocumentCommand{\zchapterLContent}{m}{\relax}
105   \NewDocumentCommand{\zchapterRContent}{m}{\relax}
106 \fi\ExplSyntaxOn
107
108
109 % ==> fancy section
```

10.11 library.mathalias

```
1  \ProvidesExplFile{zlatex.library.mathalias.tex}{2024/12/17}{1.0.0}{mathalias~li ⟋    1
   brary~for~zlatex}
2                                                                                        2
3                                                                                        3
4  %%%%%    mathalias for zlatex    %%%%%                                                 4
5  \RequirePackage{amssymb, mathrsfs}                                                     5
6  \RequirePackage{mathtools}                                                             6
7  \let\oldS\S                                                                            7
8  \let\S\undefined                                                                       8
9  \let\olddiv\div                                                                        9
10 \let\oldhom\hom                                                                        10
11                                                                                        11
12                                                                                        12
13 % alias setup                                                                          13
14 \cs_new_protected:Npn \zlatex_math_alias:nn #1#2                                        14
15   {                                                                                    15
16     \cs_new:cpn {#1}{#2}                                                                16
17   }                                                                                    17
18 \zlatex_hook_preamble_last:n {                                                          18
19   % ==> Math Font                                                                       19
20   \newcommand{\F}[1]{\ensuremath{\boldsymbol{#1}}}                                      20
21   \newcommand{\R}[1]{\ensuremath{\mathrm{#1}}}                                          21
22   \newcommand{\K}[1]{\ensuremath{\mathfrak{#1}}}                                        22
23   \newcommand{\C}[1]{\ensuremath{\mathcal{#1}}}                                         23
24   \newcommand{\B}[1]{\ensuremath{\mathbb{#1}}}                                          24
25   \newcommand{\S}[1]{\ensuremath{\mathscr{#1}}}                                         25
26   \@ifpackageloaded{ascii}                                                              26
27     {\let\asciiFF\FF\renewcommand{\FF}[1]{\ensuremath{\mathbf{#1}}}}                     27
28     {\newcommand{\FF}[1]{\ensuremath{\mathbf{#1}}}}                                      28
29                                                                                        29
30                                                                                        30
31   % ==> Math Arrow                                                                      31
32   % simple arrow                                                                        32
33   \prop_new:N \g_zlatex_math_simple_arrow_prop                                          33
34   \prop_set_from_keyval:Nn \g_zlatex_math_simple_arrow_prop                             34
35     {% 1.double:long;  2.capital:double line;                                           35
36      % 3.neg:negation; 4.No '\nlongleftarrow', '\nLongleftarrow' etc.                   36
37       ma   = \mapsto,                                                                   37
38       mma  = \longmapsto,                                                               38
39       % left arrow                                                                      39
40       la   = \leftarrow,                                                                40
41       La   = \Leftarrow,                                                                41
42       nla  = \nleftarrow,                                                               42
```

91

```
        Nla  = \nLeftarrow,
        lla  = \longleftarrow,
        Lla  = \Longleftarrow,
        % right arrow
        ra   = \rightarrow,
        Ra   = \Rightarrow,
        nra  = \nrightarrow,
        Nra  = \nRightarrow,
        rra  = \longrightarrow,
        Rra  = \Longrightarrow,
        % bidirectional arrow
        da   = \leftrightarrow,
        Da   = \Leftrightarrow,
        nda  = \nleftrightarrow,
        Nda  = \nLeftrightarrow,
        dda  = \longleftrightarrow,
        Dda  = \Longleftrightarrow,
      }
    \prop_map_inline:Nn \g_zlatex_math_simple_arrow_prop
      {
        \zlatex_math_alias:nn {#1}{#2}
      }
% extend text arrow
\cs_new:Npn \ext_arrow_set:nn #1#2
  { \exp_args:Nee \NewDocumentCommand{\use:c {#1}}{sO{}D(){}}
      {
        \IfBooleanTF{##1}
          {#2[\text{##3}]{\text{##2}}}
          {#2[##3]{##2}}
      }
  }
\keyval_parse:NNn \use_none:n \ext_arrow_set:nn
  {
    xla  = \xleftarrow,
    Xla  = \xLeftarrow,
    xxla = \xLongleftarrow,
    xra  = \xrightarrow,
    Xra  = \xRightarrow,
    xxra = \xLongrightarrow,
    hla  = \xhookleftarrow,
    hra  = \xhookrightarrow,
  }


% ==> Math Operator and symbols
```

92

```
88    % REF: 1. https://en.wikipedia.org/wiki/List_of_mathematical_abbreviations
89    %      2. https://tex.stackexchange.com/a/289946/294585
90    \newcommand{\A}{\ensuremath{\forall}}
91    \newcommand{\E}{\ensuremath{\exists}}
92    \newcommand{\ns}{\ensuremath{\varnothing}}
93    \newcommand{\se}{\ensuremath{\backsimeq}}
94    \newcommand{\sse}{\ensuremath{\cong}}
95    \newcommand{\CC}{\ensuremath{\mathbb{C}}}
96    \newcommand{\RR}{\ensuremath{\mathbb{R}}}
97    \newcommand{\ZZ}{\ensuremath{\mathbb{Z}}}
98    \newcommand{\NN}{\ensuremath{\mathbb{N}}}
99    \newcommand{\dd}{\ensuremath{\mathchoice{\:}{\mspace{1.5mu}}{}{}\mathrm{d}}}
100   % math operator alias setup
101   \cs_set_protected:Npn \zlatex_op_name_set:nn #1#2
102     { \exp_args:Nee \DeclareMathOperator{\use:c {z#1}}{#2} }
103   \keyval_parse:NNn \use_none:n \zlatex_op_name_set:nn
104     {
105       alt  = alt,
106       rot  = rot,
107       div  = div,
108       curl = curl,
109       grad = grad,
110       id   = Id,
111       im   = Im,
112       ker  = Ker,
113       cok  = Cok,
114       hom  = Hom,
115       sign = sign,
116       trace = trace,
117     }
118   \tl_const:Nn \c_zlatex_math_ops_tl { \cdot \wedge \times \oplus \otimes }
119   \clist_map_inline:nn
120     { trace, alt, rot, div, curl, grad, id, im, ker, cok, hom, sign }
121     {\cs_set_protected_nopar:cpn {#1}{\use:c {z#1} \peek_after:Nw
      \zlatex_op_check:}}
122   \cs_new_protected:Nn \zlatex_op_check: {
123     \tl_map_inline:Nn \c_zlatex_math_ops_tl {
124       \token_if_eq_meaning:NNT \l_peek_token ##1 {\tl_map_break:n {{\!}}}
125     }
126   }
127
128
129   % ==> pyhsics package commands (\qty, ...) implementation ???
130   % \qty(#1) --> \left(#1\right)
131   \NewDocumentCommand{\zab}{d()d[]d\{\}}
```

```
132     {
133       \IfValueT{#1}{ \left(#1\right) }
134       \IfValueT{#2}{ \left[#2\right] }
135       \IfValueT{#3}{ \left\{#3\right\} }
136     }
137 }
```

10.12   library.slide

```
1  \ProvidesExplFile{zlatex.library.slide.tex}{2024/12/17}{1.0.0}{slide~library~fo   1
   r~zlatex}
2                                                                                     2
3                                                                                     3
4  %%%%    slide/presentation library for zlatex    %%%%                              4
5  % ==> slide initialization                                                         5
6  \dim_new:N \c_zlatex_quad_dim                                                      6
7  \ztool_gset_to_wd:Nn \c_zlatex_quad_dim {\quad}                                    7
8  \exp_args:NNnx \seq_set_split:Nnn \l_tmpa_seq {|}{\g__zlatex_aspectratio_tl}       8
9  \RequirePackage[explicit]{titlesec}                                                9
10 \RequirePackage{titletoc}                                                         10
11 \geometry {                                                                       11
12   papersize={\seq_item:Nn \l_tmpa_seq {1}cm, \seq_item:Nn \l_tmpa_seq {2}cm},     12
13   hmargin=1cm, top=.4cm, includefoot, bottom=5.5pt,                               13
14   footskip=\dim_eval:n {1.25em + 5pt}                                             14
15 }                                                                                 15
16                                                                                    16
17                                                                                    17
18 % ==> marker and commands patches                                                 18
19 \mark_new_class:n {zslide-left}                                                    19
20 \mark_new_class:n {zslide-right}                                                   20
21 \IfClassLoadedTF{book}{                                                            21
22   \let\cleardoublepage\clearpage                                                   22
23   \renewcommand\chaptermark[1]{\mark_insert:nn {zslide-left}{#1}}                  23
24   \renewcommand\thesection{\arabic{section}}                                       24
25   \renewcommand\tableofcontents {                                                  25
26     \if@twocolumn\@restonecoltrue\onecolumn\else\@restonecolfalse\fi               26
27     \section*{\contentsname\@mkboth{\MakeUppercase\contentsname}{\MakeUppercase    27
       \contentsname}}
28     \@starttoc{toc}\if@restonecol\twocolumn\fi                                     28
29     \setcounter{page}{1}                                                           29
30   }                                                                                30
31   \zlatex_hook_preamble_last:n {                                                   31
32   \renewcommand\mainmatter{}                                                       32
33   \renewcommand\frontmatter{}                                                      33
34   \renewcommand\part{                                                              34
35     \if@openright                                                                  35
36       \cleardoublepage                                                             36
37     \else                                                                          37
38       \clearpage                                                                   38
39     \fi                                                                            39
40     \thispagestyle{empty}                                                          40
41     \if@twocolumn                                                                  41
```

```
      \onecolumn
      \@tempswatrue
    \else
      \@tempswafalse
    \fi
    \null\vfil
    \secdef\@part\@spart
  }
  \titleformat{\chapter}
    {\Huge}{}{0pt}
    {\hspace{0pt}\vfill\centerline{\makebox(0, 0){#1}}\vfill\hspace{0pt}}
    [\thispagestyle{empty}]
  \titleformat{name=\chapter, numberless}
    {\Huge}{}{0pt}
    {\hspace{0pt}\vfill\centerline{\makebox(0, 0){#1}}\vfill\hspace{0pt}}
    [\thispagestyle{empty}]
  }
}{\relax}
\dim_new:N \g_zslide_status_info_sec_B_dim
\dim_new:N \g_zslide_status_info_sec_L_dim
\dim_gset:Nn \g_zslide_status_info_sec_B_dim {-2.25em}
\dim_gset:Nn \g_zslide_status_info_sec_L_dim {1cm}
\renewcommand\sectionmark[1]{\mark_insert:nn {zslide-left}{#1}}
\renewcommand\subsectionmark[1]{\mark_insert:nn {zslide-right}{\thesubsection\ #1}}
\titlespacing*{\section}{0pt}{*0}{0pt}
\titleformat{\section}
  {\Large}{}{0pt}
  {
    \AddToHookNext{shipout/foreground}{
      \put(\dim_use:c {g_zslide_status_info_sec_L_dim}, \dim_use:c
      {g_zslide_status_info_sec_B_dim}){\Large
        \textcolor{\tl_use:N \l__zlatex_slide_sec_fg_tl}{
          \tl_use:N \l__zlatex_slide_sec_prefix_tl #1
          \tl_use:N \l__zlatex_slide_sec_suffix_tl
      }}
    }
  }[
    \bool_gset_true:N \g_new_sec_bool
    \int_gset:Nn \g__zlatex_slide_framecnt_int {1}
  ]
\hook_gput_code:nnn {cmd/tableofcontents/before}
  {zslide-toc-leftmark}
  {
    \mark_insert:nn {zslide-left}{contents}
  }
```

```
% ==> status rule bar and metadata-item
\bool_new:N \g_new_sec_bool
\int_new:N \g__zlatex_slide_framecnt_int
\int_gset:Nn \g__zlatex_slide_framecnt_int {1}
\cs_new:Npn \zslideFrameCntAux:nn #1#2 {
  \iow_now:Nn \@auxout {
    \unexpanded{\global\@namedef{zsec@#1@cnt}{#2}}
  }
}
\cs_generate_variant:Nn \zslideFrameCntAux:nn {ee}
\AddToHook{cmd/chapter/before}{\newpage}
\AddToHook{cmd/tableofcontents/before}
  {\renewcommand{\contentsname}{Outline}}
\AddToHook{cmd/section/before}{
  \newpage\int_gdecr:N \g__zlatex_slide_framecnt_int
  \ifnum\arabic{section}=0\else
  \zslideFrameCntAux:ee
    {\Roman{section}}
    {\int_use:N \g__zlatex_slide_framecnt_int}
  \fi
}
\AddToHook{shipout/firstpage}{
  \setcounter{page}{0}
  \hyper@anchor{zslide@titlepage}
}
\AddToHook{shipout/lastpage}{
  \label{zslide-last-page}
  \hyper@anchor{zslide@lastpage}
  \zslideFrameCntAux:ee
    {\Roman{section}}
    {\int_use:N \g__zlatex_slide_framecnt_int}
}
\AddToHook{shipout/after}{
  \bool_gset_false:N \g_new_sec_bool
  \int_gincr:N \g__zlatex_slide_framecnt_int
}
\hook_gput_code:nnn {shipout/background}{zslide-background}
  {
    \put(0, -\paperheight){\textcolor
      {\tl_use:N \l__zlatex_slide_doc_bgcolor_tl}
      {\rule{1\paperwidth}{1\paperheight}}}
  }
```

```
131  % interface for status bar and metadata
132  \dim_new:N \g_zslide_status_bar_head_H_dim
133  \dim_new:N \g_zslide_status_bar_foot_H_dim
134  \dim_new:N \g_zslide_status_bar_sec_H_dim
135  \dim_new:N \g_zslide_status_bar_sec_B_dim
136  \dim_gset:Nn \g_zslide_status_bar_head_H_dim {.9em}
137  \dim_gset:Nn \g_zslide_status_bar_foot_H_dim {.9em}
138  \dim_gset:Nn \g_zslide_status_bar_sec_H_dim  {1.8em}
139  \dim_gset:Nn \g_zslide_status_bar_sec_B_dim  {-2.7em}
140  \AddToHook{shipout/background}{
141    \_zslide_status_bar:nnnn {UL}{(0,              -\dim_use:c
       {g_zslide_status_bar_head_H_dim})}{.5}{\dim_use:c
       {g_zslide_status_bar_head_H_dim}}
142    \_zslide_status_bar:nnnn {UR}{(.5\paperwidth,  -\dim_use:c
       {g_zslide_status_bar_head_H_dim})}{.5}{\dim_use:c
       {g_zslide_status_bar_head_H_dim}}
143    \_zslide_status_bar:nnnn {BL}{(0,
       -\paperheight)}{.33}{\dim_use:c {g_zslide_status_bar_foot_H_dim}}
144    \_zslide_status_bar:nnnn {BC}{(.33\paperwidth,
       -\paperheight)}{.34}{\dim_use:c {g_zslide_status_bar_foot_H_dim}}
145    \_zslide_status_bar:nnnn {BR}{(.67\paperwidth,
       -\paperheight)}{.33}{\dim_use:c {g_zslide_status_bar_foot_H_dim}}
146    \bool_if:NT \g_new_sec_bool {
147      \_zslide_status_bar:nnnn {sec}
148        {(0, \dim_use:c {g_zslide_status_bar_sec_B_dim})}
149        {1}
150        {\dim_use:c {g_zslide_status_bar_sec_H_dim}}
151    }
152  }
153  \AddToHook{shipout/foreground}{
154    \_zslide_status_info:nnnn {head}{ 0 }{.5 }{ \hfill\_zslide_metadate:n {UL}\  }
155    \_zslide_status_info:nnnn {head}{.5 }{.5 }{ \ \_zslide_metadate:n {UR}\hfill }
156    \_zslide_status_info:nnnn {foot}{ 0 }{.33}{ \hfill\_zslide_metadate:n
       {BL}\hfill }
157    \_zslide_status_info:nnnn {foot}{.33}{.34}{ \hfill\_zslide_metadate:n
       {BC}\hfill }
158    \_zslide_status_info:nnnn {foot}{.67}{.33}{ \hfill\_zslide_metadate:n
       {BR}\quad  }
159    \exp_args:Ne \hyper@anchor{zslide@\FirstMark{zslide-left}.\int_use:N
       \g__zlatex_slide_framecnt_int}
160  }
161  \cs_new_protected:Npn \_zslide_status_bar:nnnn #1#2#3#4 {
162    \ifnum\thepage=0\else
163      \put#2 {\textcolor{\tl_use:c
       {l__zlatex_slide_#1_bg_tl}}{\rule{#3\paperwidth}{#4}}}
```

```
164    \fi
165  }
166  \dim_new:N \g_zslide_status_info_head_B_dim
167  \dim_new:N \g_zslide_status_info_foot_B_dim
168  \dim_gset:Nn \g_zslide_status_info_head_B_dim {-.9em+2.5pt}
169  \dim_gset:Nn \g_zslide_status_info_foot_B_dim {-\paperheight+2.5pt}
170  \cs_new_protected:Npn \_zslide_status_info:nnnn #1#2#3#4 {
171    \ifnum\thepage=0\else
172      \put(#2\paperwidth, \dim_use:c {g_zslide_status_info_#1_B_dim})
173        {\hbox~ to~ #3\paperwidth {#4}}
174    \fi
175  }
176  \cs_set:Npn \_zslide_navigate:nnnn #1#2#3#4 {
177    \int_step_inline:nnn {1}{#1}{
178      \int_compare:nNnTF {#2} = {##1}
179        {\bool_if:NTF \g__zlatex_hyperref_bool
180          {\hyper@link{link}{zslide@\FirstMark{zslide-left}.##1}{#3}}
181          {#3}
182        }
183        {\bool_if:NTF \g__zlatex_hyperref_bool
184          {\hyper@link{link}{zslide@\FirstMark{zslide-left}.##1}{#4}}
185          {#4}
186        }
187    }
188  }
189  % zslide metadata key-value
190  \zlatex_hook_preamble_last:n {
191    \let\zslideTitle\@title
192    \let\zslideAuthor\@author
193    \let\zslideDate\@date
194  }
195  \zlatex_keys_define:nn { slide }{
196    % theme related keys
197    doc              .meta:nn   = { zlatex / slide / doc }{#1},
198    doc / bg-color    .tl_set:N = \l__zlatex_slide_doc_bgcolor_tl,
199    doc / text-color .tl_set:N = \l__zlatex_slide_doc_textcolor_tl,
200    doc / text-style .tl_set:N = \l__zlatex_slide_doc_textstyle_tl,
201    sec              .meta:nn   = { zlatex / slide / sec }{#1},
202    sec / prefix      .tl_set:N = \l__zlatex_slide_sec_prefix_tl,
203    sec / suffix      .tl_set:N = \l__zlatex_slide_sec_suffix_tl,
204    sec / bg          .tl_set:N = \l__zlatex_slide_sec_bg_tl,
205    sec / fg          .tl_set:N = \l__zlatex_slide_sec_fg_tl,
206    UL               .meta:nn   = { zlatex / slide / UL }{#1},
207    UL / text         .tl_set:N = \l__zlatex_slide_UL_text_tl,
208    UL / bg           .tl_set:N = \l__zlatex_slide_UL_bg_tl,
```

```
209    UL / fg              .tl_set:N  = \l__zlatex_slide_UL_fg_tl,                        209
210    UR                   .meta:nn   = { zlatex / slide / UR }{#1},                       210
211    UR / text            .tl_set:N  = \l__zlatex_slide_UR_text_tl,                      211
212    UR / bg              .tl_set:N  = \l__zlatex_slide_UR_bg_tl,                        212
213    UR / fg              .tl_set:N  = \l__zlatex_slide_UR_fg_tl,                        213
214    BL                   .meta:nn   = { zlatex / slide / BL }{#1},                       214
215    BL / text            .tl_set:N  = \l__zlatex_slide_BL_text_tl,                      215
216    BL / bg              .tl_set:N  = \l__zlatex_slide_BL_bg_tl,                        216
217    BL / fg              .tl_set:N  = \l__zlatex_slide_BL_fg_tl,                        217
218    BC                   .meta:nn   = { zlatex / slide / BC }{#1},                       218
219    BC / text            .tl_set:N  = \l__zlatex_slide_BC_text_tl,                      219
220    BC / bg              .tl_set:N  = \l__zlatex_slide_BC_bg_tl,                        220
221    BC / fg              .tl_set:N  = \l__zlatex_slide_BC_fg_tl,                        221
222    BR                   .meta:nn   = { zlatex / slide / BR }{#1},                       222
223    BR / text            .tl_set:N  = \l__zlatex_slide_BR_text_tl,                      223
224    BR / bg              .tl_set:N  = \l__zlatex_slide_BR_bg_tl,                        224
225    BR / fg              .tl_set:N  = \l__zlatex_slide_BR_fg_tl,                        225
226    % toc related keys                                                                   226
227    toc                      .meta:nn  = { zlatex / slide / toc }{#1},                   227
228    toc / leftmargin         .meta:nn  = { zlatex / slide / toc /              ↙    228
       leftmargin }{#1},
229    toc / leftmargin / chapter    .dim_set:N =                                  ↙    229
       \l__zlatex_slide_toc_leftmargin_chapter_dim,
230    toc / leftmargin / chapter    .initial:n = { 2em },                               230
231    toc / leftmargin / section    .dim_set:N =                                  ↙    231
       \l__zlatex_slide_toc_leftmargin_section_dim,
232    toc / leftmargin / section    .initial:n = { 4em },                               232
233    toc / leftmargin / subsection .dim_set:N =                                  ↙    233
       \l__zlatex_slide_toc_leftmargin_subsection_dim,
234    toc / leftmargin / subsection .initial:n = { 6em },                               234
235    toc / label              .meta:nn  = { zlatex / slide / toc / label }{#1},    235
236    toc / label / chapter         .tl_set:N  = \l__zlatex_slide_toc_label_chapter_tl,   236
237    toc / label / chapter         .initial:n = {                                ↙    237
       \zslideToclabelSet[.25em]{\thecontentslabel.} },
238    toc / label / section         .tl_set:N  = \l__zlatex_slide_toc_label_section_tl,   238
239    toc / label / section         .initial:n = {                                ↙    239
       \zslideToclabelSet[.25em]{\zslideTocSecIcon} },
240    toc / label / subsection      .tl_set:N  =                                  ↙    240
       \l__zlatex_slide_toc_label_subsection_tl,
241    toc / label / subsection      .initial:n = {                                ↙    241
       \zslideToclabelSet[.5em]{\zslideTocSubsecIcon} },
242    toc / suffix             .meta:nn  = { zlatex / slide / toc / suffix }{#1},    242
243    toc / suffix / chapter        .tl_set:N  =                                   ↙    243
       \l__zlatex_slide_toc_suffix_chapter_tl,
244    toc / suffix / chapter        .initial:n = {  },                                  244
```

```
245    toc / suffix / section        .tl_set:N  =
       \l__zlatex_slide_toc_suffix_section_tl,
246    toc / suffix / section        .initial:n = {  },
247    toc / suffix / subsection     .tl_set:N  =
       \l__zlatex_slide_toc_suffix_subsection_tl,
248    toc / suffix / subsection     .initial:n = {  },
249    toc / unknown                 .code:n    = {
250      \zlatex_metakey_msg_warning:nn {slide-toc}{
251        leftmargin(<key-value>:chapter[<dim>:2em], section[<dim>:4em],
           subsection[<dim>:6em]), ~
252        label(<key-value>:chapter[<tl>:thechapter;hbox:1em],
           section[<tl>:thesection;hbox:1em],
253          subsection[<tl>:thesubsection;hbox:2em]),~
254        after(<key-value>:chapter[tl:<empty>], section[tl:<empty>],
           subsection[tl:<empty>])
255      }
256    },
257    unknown                       .code:n    = {
258      \zlatex_metakey_msg_warning:nn {slide}{
259        sec(<key-value>:prefix, suffix, bg, fg),~
260        UL(<key-value>:text, bg, fg), UR(<key-value>:text, bg, fg),~
261        BL(<key-value>:text, bg, fg), BC(<key-value>:text, bg, fg),~
262        BR(<key-value>:text, bg, fg)
263      }
264    }
265  }
266  \cs_new_protected:Npn \_zslide_metadate:n #1 {
267    \bool_if:NT \g__zlatex_hyperref_bool
268      {\hyper@link{link}{zslide@titlepage}}
269      {\scriptsize\textcolor{\tl_use:c {l__zlatex_slide_#1_fg_tl}}
270        {\tl_use:c {l__zlatex_slide_#1_text_tl}}}}
271  }
272
273
274  % ==> zslide custom interface
275  % zslide users' tools
276  \NewDocumentCommand{\zslideFrameTotal}{m}{%
277    \cs_if_exist:cTF {zsec@#1@cnt}
278      {\cs:w zsec@#1@cnt\cs_end:}
279      {??}
280  }
281  \NewDocumentCommand{\zslideFrameIndex}{}{
282    \int_use:N \g__zlatex_slide_framecnt_int
283  }
284  \NewDocumentCommand{\zslideNavigateBall}{O{\(\bullet\)}}O{\(\circ\)}}
```

```
285    {
286      \cs_if_exist:cTF {zsec@\Roman{section}@cnt}
287        {\_zslide_navigate:nnnn
288          {\zslideFrameTotal{\Roman{section}}}
289          {\zslideFrameIndex}
290          {\textcolor{\l__zlatex_slide_UR_fg_tl}{#1}}
291          {\textcolor{\l__zlatex_slide_UR_fg_tl}{#2}}
292        }{??}
293    }
294  \zlatex_keys_define:nn { slide / logo }
295    {
296      position  .tl_gset:N     = \g__zlatex_slide_logo_position_tl,
297      % position  .initial:n  = { (\textwidth/2+\paperwidth/2, 1.5em) }, % deprecated
298      position  .initial:n     = { (\paperwidth-\c_zlatex_quad_dim, 1.5em) },
299      width     .dim_gset:N    = \g__zlatex_slide_logo_width_dim,
300      width     .initial:n     = { 2.5em },
301      exclude   .clist_gset:N = \g__zlatex_slide_logo_exclude_clist,
302      exclude   .initial:n     = { 0 },
303    }
304  \NewDocumentCommand{\zslidelogo}{om}
305    {
306      \IfValueT{#1}{\zlatex_keys_set:nn { slide / logo }{#1}}
307      \__zlatex_page_annotate:eeenn
308        {background}
309        {\exp_after:wN \__page_mask@pos_parse:w \g__zlatex_slide_logo_position_tl}
310        {rb}{
311          \edef\current@page{\thepage}
312          \clist_if_in:NVF \g__zlatex_slide_logo_exclude_clist\current@page
313            {\includegraphics[width=\g__zlatex_slide_logo_width_dim]{#2}}
314        }{}
315    }
316  \@onlypreamble\zslidelogo
317  % slide toc customization
318  \let\zslideTocPage\contentspage
319  % bug: can NOT alias for command:'\thecontentslabel'
320  \NewDocumentCommand{\zslideToclabelSet}{om}{
321    \ztool_set_to_wd:Nn \l_tmpa_dim {#2}
322    \IfNoValueTF {#1}{\dim_set:Nn \l_tmpb_dim {\l_tmpa_dim}}
323      {\dim_set:Nn \l_tmpb_dim {\l_tmpa_dim + #1}}
324    \contentslabel[#2]{\dim_use:N \l_tmpb_dim}
325  }
326  \clist_map_inline:nn {chapter, section, subsection}{
327    \titlecontents{#1}
328      [\dim_use:c {l__zlatex_slide_toc_leftmargin_#1_dim}]
329      {\vspace*{\fill}}{\tl_use:c {l__zlatex_slide_toc_label_#1_tl}}
```

```
330       {}{\tl_use:c {l__zlatex_slide_toc_suffix_#1_tl}}
331    }
332    \setcounter{tocdepth}{2}
333    \gdef\zslideTocSecIcon
334      {\box_move_up:nn {2pt}
335        {\hbox:n {\ztool_resize_to_wd:nn
336          {6pt}{\(\blacktriangleright\)}}
337        }
338      }
339    \gdef\zslideTocSubsecIcon{\rule[1.5pt]{3pt}{3pt}}
340    % \AddToHook{cmd/@starttoc/before}{\vspace*{\fill}}
341    % \AddToHook{cmd/@starttoc/after}{\vspace*{\stretch{3}}}
342    % slide mode setup interface
343    \NewDocumentCommand{\zslideSetup}{om}{
344      \IfNoValueTF {#1}{
345        \zlatex_keys_set:nn { slide }{#2}
346      }{
347        \zlatex_keys_set:nn { slide / #1 }{#2}
348      }
349    }
350
351
352    % ==> slide theme create interface
353    \clist_new:N \g__zslide_all_themes_clist
354    \clist_gclear:N \g__zslide_all_themes_clist
355    \cs_new_protected:Npn \_zslide_theme_create:nn #1#2 {
356      \tl_new:c {g__zslide_theme_#1_tl}
357      \clist_gput_right:Nn \g__zslide_all_themes_clist {g__zslide_theme_#1_tl}
358      \keys_precompile:nnN { zlatex/slide }{#2}\l_tmpa_tl
359      \tl_set_eq:cc {g__zslide_theme_#1_tl} {l_tmpa_tl}
360    }
361    \str_new:N \g__zslide_theme_current_str
362    \cs_new_protected:Npn \_zslide_theme_use:nn #1#2 {
363      \tl_use:c {g__zslide_theme_#1_tl}
364      \IfNoValueF{#2}{
365        \zlatex_keys_set:nn { slide }{#2}
366      }
367    }
368    \cs_new_protected:Npn \zslide_set_doc_text_color:n #1 {
369      \color{#1}\global\let\default@color\current@color
370    }
371    \NewDocumentCommand{\zslideThemeCreate}{mm}{
372      \_zslide_theme_create:nn {#1}{#2}
373    }
374    \NewDocumentCommand{\zslideThemeUse}{om}{
```

```
375    \_zslide_theme_use:nn {#2}{#1}
376    }
377    \NewDocumentCommand\zslideDocTextColor{m}{
378      \zslide_set_doc_text_color:n {#1}
379    }
380    % page check interface
381    \prg_new_conditional:Npnn \zslide_if_page:n #1 {p, T, F, TF}
382      {
383        \int_compare:nTF {\thepage#1}
384          { \prg_return_true: }
385          { \prg_return_false: }
386      }
387    \prg_generate_conditional_variant:Nnn \zslide_if_page:n {e} { T, F, TF }
388    \NewDocumentCommand{\zslideIfPageTF}{mmm}
389      {
390        \zslide_if_page:nTF {#1}
391          {#2}{#3}
392      }
393    % BUG: if no subsection, mark-'zslide-right' added manually will be lost
394    \NewDocumentCommand{\zslideDefaultUR}{}
395      {
396        \mark_if_eq:nnnnTF {page}{zslide-right}{first}{last}
397          {\ifnum\arabic{subsection}=0\else\FirstMark{zslide-right}\fi}
398          {\ifnum\arabic{subsection}=0\else\FirstMark{zslide-right}\,--\,\LastMark{
           zslide-right}\fi}
399      }
400    \NewDocumentCommand{\zslideDefaultBR}{}
401      {
402        \zslideDate\quad
403        \thepage/\bool_if:NT \g__zlatex_hyperref_bool
404          {\hyper@link{link}{zslide@lastpage}}{
405            \textcolor{\l__zlatex_slide_BR_fg_tl}
406              {\pageref*{zslide-last-page}}
407          }
408      }
409
410
411    % ==> pre-defined slide theme: 'theme'-'color'
412    \str_case:NnF \g__zlatex_slide_theme_str {
413      % slide theme: AnnArbor-default
414      {AnnArborDefault}{
415        \definecolor{Ann-default-I}{HTML}{0000a3} % blue
416        \definecolor{Ann-default-II}{HTML}{ffc20c} % light yellow
417        \definecolor{Ann-default-III}{HTML}{ffcb03}
418        \_zslide_theme_create:nn {AnnArborDefault}{
```

104

```
419        doc = {
420          bg-color = white,
421          text-color = black,
422          text-style = \sfdefault
423        },
424        UL = {
425          bg   = Ann-default-I,
426          fg   = Ann-default-II,
427          text = {\ifnum\arabic{section}=0\else Section\ \thesection\fi}
428        },
429        UR = {
430          bg   = Ann-default-II,
431          fg   = Ann-default-I,
432          text = {\zslideDefaultUR}
433        },
434        BL = {
435          bg   = Ann-default-I,
436          fg   = Ann-default-III,
437          text = \zslideAuthor
438        },
439        BC = {
440          bg   = Ann-default-III,
441          fg   = Ann-default-I,
442          text = \zslideTitle
443        },
444        BR = {
445          bg   = Ann-default-II,
446          fg   = Ann-default-I,
447          text = \zslideDefaultBR
448        },
449        sec = {
450          fg   = Ann-default-I,
451          bg   = Ann-default-III,
452          prefix = {},
453          suffix = {}
454        }
455      }
456    }
457
458    % slide theme: AnnArbor-beaver
459    {AnnArborBeaver}{
460      \definecolor{Ann-bea-I}{HTML}{a30000}
461      \definecolor{Ann-bea-II}{HTML}{e0e0e0}
462      \definecolor{Ann-bea-III}{HTML}{f0f0f0}
463      \_zslide_theme_create:nn {AnnArborBeaver}{
```

```
    doc = {
      bg-color = white,
      text-color = black,
      text-style = \sfdefault
    },
    UL = {
      bg   = Ann-bea-I,
      fg   = Ann-bea-II,
      text = {\ifnum\arabic{section}=0\else Section\ \thesection\fi}
    },
    UR = {
      bg   = Ann-bea-II,
      fg   = Ann-bea-I,
      text = {\zslideDefaultUR}
    },
    BL = {
      bg   = Ann-bea-I,
      fg   = Ann-bea-II,
      text = \zslideAuthor
    },
    BC = {
      bg   = Ann-bea-III,
      fg   = Ann-bea-I,
      text = \zslideTitle
    },
    BR = {
      bg   = Ann-bea-II,
      fg   = Ann-bea-I,
      text = \zslideDefaultBR
    },
    sec = {
      fg   = Ann-bea-I,
      bg   = Ann-bea-III,
      prefix = {},
      suffix = {}
    }
  }
}

% slide theme: AnnArbor-Albatross
{AnnArborAlbatross}{
  \definecolor{Ann-alb-I}{HTML}{000039} % UL bg
  \definecolor{Ann-alb-II}{HTML}{bfbfff}% UL fg
  \definecolor{Ann-alb-III}{HTML}{00005f}% UR bg
  \definecolor{Ann-alb-IV}{HTML}{00004c}% BC bg
```

```
509    \definecolor{Ann-alb-V}{HTML}{00007f} % doc bg
510    \definecolor{Ann-alb-VI}{HTML}{ffe700}% doc text color
511    \_zslide_theme_create:nn {AnnArborAlbatross}{
512      doc = {
513        bg-color = Ann-alb-V,
514        text-color = Ann-alb-VI,
515        text-style = \sfdefault
516      },
517      UL = {
518        bg   = Ann-alb-I,
519        fg   = Ann-alb-II,
520        text = {\ifnum\arabic{section}=0\else Section\ \thesection\fi}
521      },
522      UR = {
523        bg   = Ann-alb-III,
524        fg   = Ann-alb-II,
525        text = {\zslideDefaultUR}
526      },
527      BL = {
528        bg   = Ann-alb-I,
529        fg   = Ann-alb-II,
530        text = \zslideAuthor
531      },
532      BC = {
533        bg   = Ann-alb-IV,
534        fg   = Ann-alb-II,
535        text = \zslideTitle
536      },
537      BR = {
538        bg   = Ann-alb-III,
539        fg   = Ann-alb-II,
540        text = \zslideDefaultBR
541      },
542      sec = {
543        bg   = Ann-alb-IV,
544        fg   = Ann-alb-II,
545        prefix = {},
546        suffix = {}
547      }
548    }
549  }
550
551  % slide theme: AnnArbor-seahorse
552  {AnnArborSeahorse}{
553    \definecolor{Ann-sea-I}{HTML}{c2c2e8} % UL bg
```

```
554    \definecolor{Ann-sea-II}{HTML}{d7d7f0}% UR bg                     554
555    \definecolor{Ann-sea-III}{HTML}{ccccec}% BC bg                    555
556    \_zslide_theme_create:nn {AnnArborSeahorse}{                      556
557      doc = {                                                         557
558        bg-color = white,                                             558
559        text-color = black,                                          559
560        text-style = \sfdefault                                       560
561      },                                                              561
562      UL = {                                                          562
563        bg   = Ann-sea-I,                                             563
564        fg   = black,                                                 564
565        text = {\ifnum\arabic{section}=0\else Section\ \thesection\fi} 565
566      },                                                              566
567      UR = {                                                          567
568        bg   = Ann-sea-II,                                            568
569        fg   = black,                                                 569
570        text = {\zslideDefaultUR}                                     570
571      },                                                              571
572      BL = {                                                          572
573        bg   = Ann-sea-I,                                             573
574        fg   = black,                                                 574
575        text = \zslideAuthor                                          575
576      },                                                              576
577      BC = {                                                          577
578        bg   = Ann-sea-III,                                           578
579        fg   = black,                                                 579
580        text = \zslideTitle                                           580
581      },                                                              581
582      BR = {                                                          582
583        bg   = Ann-sea-II,                                            583
584        fg   = black,                                                 584
585        text = \zslideDefaultBR                                       585
586      },                                                              586
587      sec = {                                                         587
588        fg   = black,                                                 588
589        bg   = Ann-sea-III,                                           589
590        prefix = {},                                                  590
591        suffix = {}                                                   591
592      }                                                               592
593    }                                                                 593
594  }                                                                   594
595                                                                      595
596  % slide theme: AnnArbor-Spruce                                      596
597  {AnnArborSpruce}{                                                   597
598    \definecolor{Ann-spr-I}{HTML}{005128} % UL bg                     598
```

```
599    \definecolor{Ann-spr-II}{HTML}{d8e8e0}% UR bg
600    \definecolor{Ann-spr-III}{HTML}{99c1ad}% BC bg
601    \definecolor{Ann-spr-IV}{HTML}{7fb298}% UL/BL fg
602    \definecolor{Ann-spr-V}{HTML}{e5efea}% sec bg
603    \_zslide_theme_create:nn {AnnArborSpruce}{
604      doc = {
605        bg-color = white,
606        text-color = black,
607        text-style = \sfdefault
608      },
609      UL = {
610        bg   = Ann-spr-I,
611        fg   = Ann-spr-IV,
612        text = {\ifnum\arabic{section}=0\else Section\ \thesection\fi}
613      },
614      UR = {
615        bg   = Ann-spr-II,
616        fg   = Ann-spr-I,
617        text = {\zslideDefaultUR}
618      },
619      BL = {
620        bg   = Ann-spr-I,
621        fg   = Ann-spr-IV,
622        text = \zslideAuthor
623      },
624      BC = {
625        bg   = Ann-spr-III,
626        fg   = Ann-spr-I,
627        text = \zslideTitle
628      },
629      BR = {
630        bg   = Ann-spr-II,
631        fg   = Ann-spr-I,
632        text = \zslideDefaultBR
633      },
634      sec = {
635        fg   = Ann-spr-I,
636        bg   = Ann-spr-V,
637        prefix = {},
638        suffix = {}
639      }
640    }
641  }
642 }{
643   \zlatex_metakey_msg_warning:nn {slide-theme}{
```

```
644      AnnArborDefault(default), AnnArborBeaver,                              644
645      AnnArborAlbatross, AnnArborSeahorse                                    645
646    }                                                                        646
647    \str_set:Nn \g__zlatex_slide_theme_str {AnnArborDefault}                 647
648  }                                                                          648
649                                                                             649
650                                                                             650
651  % ==> slide mode init options                                             651
652  \_zslide_theme_use:nn { \str_use:N \g__zlatex_slide_theme_str }{}          652
653  \zslide_set_doc_text_color:n { \tl_use:N \l__zlatex_slide_doc_textcolor_tl } 653
654  \renewcommand{\familydefault}{ \tl_use:N \l__zlatex_slide_doc_textstyle_tl } 654
655  \zlatex_hook_preamble_last:n                                               655
656    {                                                                        656
657      \pagestyle{empty}                                                      657
658      \__zlatex_text_symbol_patch:                                           658
659    }                                                                        659
```

10.13 library.theme

```
1  \ProvidesExplFile{zlatex.library.theme.tex}{2024/12/17}{1.0.0}{theme~library~fo
   r~zlatex}
2
3
4  %%%%     theme library for zlatex thm and structure    %%%%
5  %% ==> new thm theme
6  % preamble
7  \RequirePackage[many]{tcolorbox}
8  \RequirePackage{adjustbox}
9  \RequirePackage{tikz}
10 \RequirePackage{etoolbox}
11 \patchcmd{\pgfutil@InputIfFileExists}{\input #1}{
12   \@pushfilename
13   \xdef\@currname{#1}
14   \input #1
15   \@popfilename
16 }{}{}
17 \usetikzlibrary{fadings, calc}
18 \RequirePackage{pifont}
19
20 % thm icon interface
21 \prop_new:N \g__zlatex_thm_icon_prop
22 \prop_gclear:N \g__zlatex_thm_icon_prop
23 \prop_gput_from_keyval:cn {g__zlatex_thm_icon_prop}
24   {
25     axiom       = \ding{111},
26     definition  = \ding{118},
27     theorem     = \ding{169},
28     lemma       = \ding{170},
29     corollary   = \ding{168},
30     proposition = \ding{125},
31     remark      = \ding{46},
32     proof       = ,
33     exercise    = \ding{45},
34     example     = ,
35     solution    = \ding{45},
36     problem     = ,
37   }
38
39 % thm additional theme
40 \zlatexThmStyleNew{
41   % theme shadow: copy from an old book
42   shadow = {
```

```
43      begin = {
44        \begin{tcolorbox}[
45          enhanced~ jigsaw, breakable,
46          top=1.5pt,  bottom=1.5pt,
47          left=3pt,   right=3pt,
48          boxrule=0pt, sharp~corners,
49          drop~fuzzy~shadow,
50          colback={\thm@temp@color!10},
51          borderline~west={3pt}{0pt}{\thm@temp@color}
52        ]
53      },
54      end = {\end{tcolorbox}},
55      option = {
56        \__zlatex_thm_title_inline:n {T}
57        \__zlatex_thm_tcolorbox_warning:
58      }
59    },
60    % theme paris from: An internet sketch book
61    paris = {
62      begin = {
63        \begin{tcolorbox}[
64          enhanced,   breakable,
65          top=1.5pt,  bottom=1.5pt,
66          left=3pt,   right=3pt,
67          boxrule=0pt,    sharp~corners,
68          colback=gray!5, drop~fuzzy~shadow,
69          overlay={
70            \draw[\thm@temp@color, line~width=0.2pt]
                 (frame.north~west)--(frame.north~east);
71            \draw[\thm@temp@color, line~width=3pt]
                 ([yshift=1.5pt]frame.north~west) -- +(2.5cm, 0);
72          }
73        ]
74      },
75      end = {\end{tcolorbox}},
76      option = {
77        \__zlatex_thm_title_inline:n {T}
78        \__zlatex_thm_tcolorbox_warning:
79      }
80    },
81    % elegant theme from: ElegantLaTeX Project
82    elegant = {
83      begin = {
84        \begin{tcolorbox}[
85          enhanced,   breakable,
```

```
       top=8pt,    bottom=1.5pt,
       left=3pt,   right=3pt,
       arc=3pt,    boxrule=0.5pt,
       before~upper*={\setlength{\parindent}{1em}},
       fontupper=\rmfamily,   fonttitle=\bfseries,
       lower~separated=false, separator~sign={.},
       attach~boxed~title~to~top~left={yshift=-0.11in, xshift=0.15in},
       boxed~title~style={boxrule=0pt, colframe=white, arc=0pt, outer~arc=0pt},
       title=\zlatexThmTitle,
       coltitle = white,          colbacktitle = \thm@temp@color,
       colframe = \thm@temp@color, colback  = \thm@temp@color!5,
     ]
   },
   end = {\end{tcolorbox}},
   option = {
     \__zlatex_thm_title_inline:n {F}
     \__zlatex_thm_tcolorbox_warning:
     \zlatex_keys_set:nn {color}{
       axiom       = {HTML}{2c3e50},
       definition = {RGB}{0, 166, 82},
       theorem     = {RGB}{255, 134, 23},
       lemma       = {RGB}{255, 134, 23},
       corollary   = {RGB}{255, 134, 23},
       proposition = {RGB}{0, 173, 247},
     }
   }
},
% obsidian theme from: obsidian plug 'Callouts'
obsidian = {
  begin = {
    \begin{tcolorbox}[
      enhanced,   breakable,
      top=5pt,    bottom=8pt,
      left=10pt,  right=10pt,
      arc=3pt,    frame~hidden,
      colback = \thm@temp@color!20,
    ] { \zlatexThmTitle }\par
  },
  end = {\end{tcolorbox}},
  preamble = {
    \zlatexThmTitleFormat*{
      \def\temp@icon{\prop_item:ce {g__zlatex_thm_icon_prop}{\thm@temp@name}}
      \noindent\sffamily\bfseries\textcolor{\thm@temp@color}{
        \temp@icon\ \zlatexThmName :\zlatexThmNumber
        \zlatexThmNoteEmptyTF{}{\ }
```

```
131        \zlatexThmNote{}{}\ \raise7pt\hbox{\rotatebox{-90}{\(\triangleright\)}}}
132      }
133    }
134  },
135  option = {
136    \__zlatex_thm_title_inline:n {F}
137    \__zlatex_thm_tcolorbox_warning:
138  }
139 },
140 % lapsis theme from: book 'Foundation Mathematics for the Physical Sciences'
141 % NOTE: 'overlay' --> 'frame~code~app' ???
142 lapsis = {
143  begin = {
144   \begin{tcolorbox}[
145     enhanced,  breakable,
146     top=1.5pt, bottom=1.5pt,
147     left=2pt,  leftlower=-3pt,
148     right=3pt, arc=0pt, frame~hidden,
149     bicolor,   colback=\thm@temp@color!60,
150     opacitybacklower=0,
151     overlay~first = {
152       \fill[color=\thm@temp@color!50, path~fading=east]
153         (frame.north~west)++(-5cm, -1pt) rectangle
           ($(frame.south~east)+(5cm, 0pt)$);
154       \draw[color=\thm@temp@color, thick]
155         (frame.north~west)++(-5cm, -1pt)--($(frame.north~east)+(5cm, 0pt)$);
156     },
157     overlay~last={
158       \draw[color=\thm@temp@color, thick]
159         (frame.south~west)++(-5cm, -1pt)--($(frame.south~east)+(5cm, 0pt)$);
160       \fill[color=\thm@temp@color!50, path~fading=east]
161         (frame.north~west)++(-5cm, -1pt) rectangle
           ($(frame.south~east)+(5cm, 0pt)$);
162     },
163     overlay~unbroken={
164       \fill[color=\thm@temp@color!50, path~fading=east]
165         (frame.north~west)++(-5cm, -1pt) rectangle
           ($(frame.south~east)+(5cm, 0pt)$);
166       \draw[color=\thm@temp@color, thick]
167         (frame.north~west)++(-5cm, -1pt)--($(frame.north~east)+(5cm, 0pt)$);
168       \draw[color=\thm@temp@color, thick]
169         (frame.south~west)++(-5cm, -1pt)--($(frame.south~east)+(5cm, 0pt)$);
170     },
171   ]\zlatex@llapnote{\zlatexThmTitle}
172  },
```

```
173      end = {\hfill$\mathcolor{\thm@temp@color}{\blacktriangleleft}$\end{tcolorbox}},    173
174      option = {                                                                          174
175        \__zlatex_thm_title_inline:n {F}                                                  175
176        \__zlatex_thm_tcolorbox_warning:                                                  176
177      },                                                                                  177
178      preamble = {                                                                        178
179        \DeclareMathSymbol{\blacktriangleleft}{\mathrel}{AMSa}{"4A}                        179
180        \zlatexThmTitleFormat*{\bfseries                                                   180
181          \zlatexThmName\ \zlatexThmNumber                                                 181
182          \zlatexThmNoteEmptyTF{}{\\}                                                      182
183          \zlatexThmNote{}{}                                                              183
184        }                                                                                 184
185        \newcommand{\zlatex@llapnote}[1]{                                                  185
186          \mbox{}\llap{                                                                   186
187          \adjustbox{set~height=0pt, set~depth=0pt}{                                       187
188            \parbox[t]{2.85cm}{\raggedleft #1}}\hspace*{.75em}}                            188
189        }                                                                                 189
190      }                                                                                   190
191    },                                                                                    191
192  }                                                                                       192
```

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Index

The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.

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