The WESTLAKETHESIS Class*

西湖大学学位论文 LaTeX 模板

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Released 2026-06-14 v0.0.1

Abstract | 摘要

The westlakeThesis is a LaTeX bundle for Westlake University dissertations, including Ph.D. thesis format, beamer theme, and poster template.

westlakeThesis 是西湖大学学位论文 LaTeX 套装, 其中包含博士论文格式, beamer 主题与 poster 模板.

User Agreement | 用户协议

1. This template is open source under the LPPL 1.3c license, and you are free to use the compiled PDF file.

   本模板通过 LPPL 1.3c 协议开放源代码, 您可以随意使用编译出的 PDF 文件.

2. This template is built from Reference Template for Degree Dissertations distributed by Westlake University Graduate School, the maintainer will not be responsible to the trouble of format review.

   本模板根据西湖大学研究生院颁发的学位论文参考模板编写而成, 作者不对使用本模板产生的格式审查问题负责.

3. This template is highly experimental currently, use at own risk. Welcome to submit issues or PR on GitHub to contribute to the standardization of westlakeThesis.

   本模板目前处于高度测试阶段, 可能存在格式风险. 欢迎前往 GitHub 提交反馈意见或拉取请求，为推动规范化 westlakeThesis 贡献力量.

*https://ctan.org/pkg/westlakethesis, https://github.com/myhsia/westlakethesis

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1 Loading the template

Write down the line

```
\documentclass[mode = (thesis|beamer|poster)]{westlakethesis}
```

to use the interfaces provided by the corresponding `mode` in this template.

2 User's Interfaces

`\westlakeset` `\westlakeset {⟨key-value list⟩}`

Configure the information of the thesis, and shoulde be used only within the preamble. Its mandatory argument accepts the following key-values:

`id` = ⟨*text*⟩: Configure the student ID.

`school` = ⟨*key*⟩: Configure the school, only the abbreviation is accepted. The template can map it to the full name automatically then output on the bilingual covers.

`science`, `sci`: School of Science	`sls`: School of Life Sciences
`engineering`, `eng`: School of Engineering	`medicine`, `med`: School of Medicine

`title`, `subject`, `author`, `PI` = ⟨*text*⟩: Configure the title, subject, author, supervisor, with the bilingual separated with a slash `/`.

`master` = ⟨*true*|**false**⟩: Switch the format to Master.

`bibsource` = ⟨*string*⟩: Configure the source of the bibliography.

`\maketitle` Generates the cover page.

`abstract` (*env.*) Inputs the abstract. It accepts one optional argument to choose the language.

```
\begin{abstract} [⟨language⟩] ⟨context⟩ \end{abstract}
```

`\keywords` `\keywords {⟨comma list⟩}.`

Inputs the keywords, and should not outside the `abstract` environment.

`\printbibliography` Print the bibliography. If the users have not assigned the `bibsource` key in `\westlakeset`, then only a chapter title will be outputted.

`\commitment` `\commitment [⟨comma list⟩]`

This command is used to generate the commitment page. It accepts one optional argument to include the signatures and dates, the signature file and data should be delimited with a half-width comma (,). The university requires 3 sets of signature and 3 sets of date on the commitment page. So, as an example, one can write

```
\commitment [ example-image-a, June 2025,
              example-image-a, July 2025,
              example-image-b, July 2025 ]
```

1 载入此模板

只需写下

```
\documentclass[mode = (thesis|beamer|poster)]{westlakethesis}
```

即可使用此模板中对应 mode (模式) 中提供的接口.

2 用户接口

\westlakeset `\westlakeset {⟨键值列表⟩}`

设置论文信息, 仅限在导言区使用. 其强制参数接受如下键值对:

id = ⟨*text*⟩: 设置学号信息.

school = ⟨*key*⟩: 设置所在学院, 仅接受学院简称. 模板会自动将简称映射到全称并输出在对应的中英文封面上.

science, sci: 理学院	sls: 生命科学学院
engineering, eng: 工学院	medicine, med: 医学院

title, subject, author, PI = ⟨*text*⟩: 设置标题, 所属专业, 作者姓名, 导师姓名, 中英文版本之间以斜线 / 分割.

master = ⟨*true*|**false**⟩: 切换至硕士学位论文格式.

bibsource = ⟨*string*⟩: 设置参考文献文件源.

\maketitle 生成封面页.

---

abstract (*env.*) 输入摘要. 其接受一个可选参数用于选择摘要的语言.

```
\begin{abstract} [⟨language⟩] ⟨context⟩ \end{abstract}
```

`\keywords` `\keywords {⟨逗号分隔列表⟩}.`

输入关键词, 需在 `abstract` 环境中使用.

`\printbibliography` 输出参考文献. 若用户未在 `\westlakeset` 中指定 `bibsource`, 则只输出章节标题.

`\commitment` `\commitment [⟨逗号分隔列表⟩]`

此命令用于生成承诺书. 其接受一个可选参数用于插入签名和日期, 签名文件和日期之间需以半角逗号 (,) 间隔. 根据大学要求, 签名页上共有 3 组签名与日期. 例如, 用户可以输入

```
\commitment [ example-image-a, June 2025,
              example-image-a, July 2025,
              example-image-b, July 2025 ]
```

A The Source Code

Using `wu` as the namespace.

```
⟨@@=wu⟩
```

A.1 `westlakethesis.cls`

Start the optionlist `class` for l3docstrip.

```
⟨*class⟩
```

Knowledge Orange
Exploration Blue

Define official colors[1].

```
\color_set:nnn { Knowledge Orange } { HTML } { F18B1C }
\color_set:nnn { Exploration Blue } { HTML } { 00498F }
```

(*End of definition for* `Knowledge Orange` *and* `Exploration Blue`.)

__wu_msg_new:nn
__wu_msg_error:nn
__wu_msg_warning:nn
__wu_msg_info:nn

Message management: private functions for creating new message and broadcasting it as error, warning, or info.

```
\clist_map_inline:nn { new, error, warning, info }
  {
    \cs_new_protected:cpn { __wu_msg_#1:nn }
      { \use:c { msg_#1:nnn } { westlakethesis } }
  }
```

(*End of definition for* `\__wu_msg_new:nn` *and others.*)

New message: `not found module`, will be used in `\__wu_load_module:n`.

```
\__wu_msg_new:nn { not ~ found ~ module }
  { The ~ WestlakeThesis ~ module ~ `#1' ~ not ~ found. }
```

New message: `not recommended fontset`, will be used in the `thesis` mode.

```
\__wu_msg_new:nn { not ~ recommended ~ fontset }
  {
    The ~ fontset ~ `#1' ~ is ~ not ~ recommended, ~ using ~ `windows' ~
    fontset ~ to ~ achieve ~ a ~ maximum ~ compliance ~ of ~ the ~ official ~
```

[1] https://en.westlake.edu.cn/about/VIS/

```
    requirement.
  }
```

New message: `unknown mode` for global option `mode` key.

```
\__wu_msg_new:nn { unknown ~ mode }
  { Couldn't ~ load ~ the ~ `#1' ~ mode ~ of ~ WestlakeThesis. }
```

`\__wu_unknown_option:n` Function for passing unknown options to the basic class.

```
\cs_new_protected_nopar:Npn \__wu_unknown_option:n #1
  {
    \tl_if_empty:nTF {#1}
      {
        \clist_gput_right:NV \g__wu_base_cls_opt_clist \l_keys_key_str
      }
      {
        \exp_args:NNx \clist_gput_right:Nn \g__wu_base_cls_opt_clist
          { \l_keys_key_str = \exp_not:n {#1} }
      }
  }
```

Variable for storing basic class options.

`\g__wu_base_cls_opt_clist`

```
\clist_clear_new:N \g__wu_base_cls_opt_clist
```

(*End of definition for* `\__wu_unknown_option:n` *and* `\g__wu_base_cls_opt_clist`.)

`\__wu_load_module:N` Functions for loading module in `westlakethesis.cls`.

```
\cs_new_protected_nopar:Npn \__wu_load_module:N #1
  {
    \clist_map_inline:Nn #1
      {
        \file_if_exist_input:nF { wu-##1.code.tex }
          { \__wu_msg_error:nn { not ~ found ~ module } { ##1 } }
      }
  }
```

(*End of definition for* `\__wu_load_module:N`.)

Under different modes, the required modules will be loaded.

- `depend`: Loading the dependencies: class and packages.
- `kernel`: Inner functions for the `thesis` module.
- `params`: Storing the constant variables.
- `thesis`: Formats of Westlake University dissertations.
- `beamer`: Westlake University beamer template.
- `poster`: Westlake University poster template.
- `usrdoc`: WESTLAKETHESIS documentation.

`\g__wu_clsoption_mode_str`
`\g__wu_module_usage_clist`

Loading the `thesis` mode by default.

```
\str_new:N \g__wu_clsoption_mode_str
\clist_new:N \g__wu_module_usage_clist
\keys_define:nn { __wu / clsoption }
  {
    mode          .choices:nn =
      { thesis, beamer, poster, usrdoc }
      { \str_gset:Nn \g__wu_clsoption_mode_str {#1} },
    mode          .initial:n  = { thesis },
    mode          .usage:n    = { load   },
    unknown       .code:n     = \__wu_unknown_option:n {#1},
  }
```

Process the class options and loading the corresponding modules.

```
\ProcessKeyOptions [ __wu / clsoption ]
\str_case:NnF \g__wu_clsoption_mode_str
  {
    { thesis }
    {
      \clist_gset:Nn \g__wu_module_usage_clist
        { depend, kernel, params, thesis }
    }
    { usrdoc }
```

```
    {
      \clist_gset:Nn \g__wu_module_usage_clist
        { depend, kernel, usrdoc }
    }
    { beamer }
    {
      \clist_gset:Nn \g__wu_module_usage_clist
        { depend, kernel, params, beamer }
    }
    { poster }
    {
      \clist_gset:Nn \g__wu_module_usage_clist
        { poster }
    }
  } { \__wu_msg_error:nn { unknown mode } { \g__wu_clsoption_mode_str } }
\__wu_load_module:N \g__wu_module_usage_clist
```

(*End of definition for* `\g__wu_clsoption_mode_str` *and* `\g__wu_module_usage_clist`.)

`\westlakeset` LaTeX 2_ε user's interface for filling information, only valid in preamble. The keys it accepts will be different under different modes. Then load the auxiliary function if it has been defined in current mode.

```
\@onlypreamble \westlakeset
\NewDocumentCommand \westlakeset { m }
  {
    \exp_args:No \keys_set:nn { \g__wu_clsoption_mode_str / set } {#1}
    \cs_if_exist_use:N \__wu_westlakeset_aux:
  }
```

(*End of definition for* `\westlakeset`. *This function is documented on page 3.*)

End the optionlist `class` for l3docstrip.

```
⟨/class⟩
```

`\l__wu_set_title_tl` Key–value definitions for different modes. Using the namespace for filtering.

`\l__wu_set_author_tl`

```
⟨*thesis | beamer | poster | usrdoc⟩
```

`\l__wu_set_date_tl`

`\l__wu_set_bib_str`

`\l__wu_set_subject_tl`

`\l__wu_set_school_tl`

`\l__wu_set_PI_tl`

`\l__wu_set_id_tl`

`\l__wu_set_master_bool`

```
⟨thesis⟩\keys_define:nn { thesis / set }
⟨beamer⟩\keys_define:nn { beamer / set }
⟨poster⟩\keys_define:nn { poster / set }
⟨usrdoc⟩\keys_define:nn { usrdoc / set }
  {
    title     .tl_set:N   = \l__wu_set_title_tl,
    author    .tl_set:N   = \l__wu_set_author_tl,
    date      .tl_set:N   = \l__wu_set_date_tl,
⟨!usrdoc⟩    bibsource .str_set:N  = \l__wu_set_bib_str,
⟨!usrdoc⟩    subject   .tl_set:N   = \l__wu_set_subject_tl,
⟨thesis⟩    school    .tl_set:N   = \l__wu_set_school_tl,
⟨thesis⟩    PI        .tl_set:N   = \l__wu_set_PI_tl,
⟨thesis⟩    id        .tl_set:N   = \l__wu_set_id_tl,
⟨thesis⟩    master    .bool_set:N = \l__wu_set_master_bool,
⟨thesis⟩      master  .initial:n  = false,
⟨thesis⟩      master  .default:n  = true,
  }
```

The auxiliary function of `\westlakeset` for different modes. Parsing the bilingualism of the items `title`, `school`, `subject`, `author`, and `PI` after filling information, then decide whether to load the gbt7714 package by setting the boolean `\l__wu_load_bib_bool`.

```
\cs_new_protected:Npn \__wu_westlakeset_aux:
  {
⟨thesis⟩    \clist_map_inline:nn { title, author, subject, school, PI }
⟨beamer | poster⟩    \clist_map_inline:nn { title, author, subject }
⟨!usrdoc⟩      { \__wu_parse_slash_ab:c { l__wu_set_##1_tl } }
⟨beamer⟩    \title  [ \l__wu_set_title_tl_b  ] { \l__wu_set_title_tl_a  }
⟨beamer⟩    \author [ \l__wu_set_author_tl_b ] { \l__wu_set_author_tl_a }
⟨beamer⟩    \date   { \l__wu_set_date_tl    }
⟨!usrdoc⟩    \str_if_empty:NF \l__wu_set_bib_str
⟨!usrdoc⟩      { \bool_gset_true:N \l__wu_load_bib_bool }
  }
```

Configure the metadata of the document via hyperref.

```
\hypersetup
```

```
  {
    hidelinks,
⟨usrdoc⟩    colorlinks,
  }
⟨/thesis | beamer | poster | usrdoc⟩
```

(*End of definition for* `\l__wu_set_title_tl` *and others.*)

A.2 wu-depend.code.tex

Start the optionlist `depend` for l3docstrip.

```
⟨*depend⟩
```

Prevent the warnings raised by xeCJK (valid for XeTeX) when redefining fonts.

```
\sys_if_engine_xetex:T
  { \PassOptionsToPackage { quiet } { xeCJK } }
```

Load the base classes and required packages under different modes: The zhlineskip, geometry, tocloft, lmodern, newtxtext, and microtype (only valid under the pdfTeX, XeTeX, and LuaTeX engines) packages are only required in the `thesis` mode.

```
\str_case:en { \g__wu_clsoption_mode_str }
  {
    { thesis }
    {
      \clist_gput_right:Nn \g__wu_base_cls_opt_clist { a4paper, zihao = -4 }
      \exp_args:NNV \LoadClass [ \g__wu_base_cls_opt_clist ] { ctexrep }
      \RequirePackage [ bodytextleadingratio = 1.5 ] { zhlineskip }
      \RequirePackage { geometry, lmodern, newtxtext }
      \RequirePackage [ titles ] { tocloft }
      \bool_lazy_or:nnT { \sys_if_engine_pdftex_p:      }
                        { \sys_if_engine_opentype_p:    }
                        { \RequirePackage { microtype } }
    }
    { beamer }
    {
      \clist_gput_right:Nn \g__wu_base_cls_opt_clist
```

```
        { aspectratio = 1610 }
      \exp_args:NNV \LoadClass [ \g__wu_base_cls_opt_clist ] { beamer }
    }
    { usrdoc }
    {
      \clist_gput_right:Nn \g__wu_base_cls_opt_clist
        { 11pt, letterpaper, cs-break = true }
      \exp_args:NNV \LoadClass [ \g__wu_base_cls_opt_clist ] { l3doc  }
    }
    { poster }
    {
      \clist_gput_right:Nn \g__wu_base_cls_opt_clist
        { }
      \exp_args:NNV \LoadClass [ \g__wu_base_cls_opt_clist ] { beamer }
    }
  }
```

Load the required packages for all of the modes.

```
\RequirePackage { graphicx, hyperref, lipsum, zhlipsum, array }
```

Configure the possible paths for searching figures.

```
\graphicspath
  {
    {./fig/}  {./pic/}  {./figure/}  {./picture/}  {./media/}
    {./figs/} {./pics/} {./figures/} {./pictures/}
  }
```

Determine whether to load the gbt7714 package according to `\l__wu_load_bib_bool`, which has been set via `\westlakeset` here.

```
\hook_gput_code:nnn { begindocument / before } { . }
  {
    \bool_if_exist:NT \l__wu_load_bib_bool
      {
        \bool_if:NT \l__wu_load_bib_bool
          {
            \RequirePackage [ sort, uppercasefamily = false ] { gbt7714 }
```

```
            \bibliographystyle { gbt7714-numeric }
          }
      }
  }
```

End the optionlist `depend` for l3docstrip.

⟨/depend⟩

A.3 wu-kernel.code.tex

Start the optionlist `kernel` for l3docstrip.

⟨*kernel⟩

__wu_parse_slash_ab:c

This function is used for parsing the binary sequence variable `\#1` (delimited with /): store the first element in `\#1_a`, store the second element in `\#1_b`.

```
\cs_new:Npn \__wu_parse_slash_ab:c #1
  {
    \exp_args:Nc \tl_if_blank:VF {#1}
      {
        \tl_clear_new:c { #1_a }
        \tl_clear_new:c { #1_b }
        \seq_clear:N \l__wu_set_tmpa_seq
        \seq_set_split:Nne \l__wu_set_tmpa_seq { / } { \use:c {#1} }
        \seq_get_left:Nc  \l__wu_set_tmpa_seq { #1_a }
        \seq_get_right:Nc \l__wu_set_tmpa_seq { #1_b }
      }
  }
\cs_generate_variant:Nn \seq_get_left:NN  { Nc }
\cs_generate_variant:Nn \seq_get_right:NN { Nc }
```

Temporary variable used in `\__wu_parse_slash_ab:c`.

\l__wu_set_tmpa_seq

```
\seq_clear_new:N \l__wu_set_tmpa_seq
```

(*End of definition for* `\__wu_parse_slash_ab:c` *and* `\l__wu_set_tmpa_seq`.)

__wu_spread_box:nn This function is used for typesetting the content #2 in a horizontal box to the width #1 by stretching the glue.

```
\cs_new_protected:Npn \__wu_spread_box:nn #1#2
  {
    \mode_leave_vertical:
    \hbox_to_wd:nn {#1}
      { \exp_args:Nee \tl_map_inline:nn {#2} { ##1 \hfil } \unskip }
  }
```

(*End of definition for* `\__wu_spread_box:nn`.)

__wu_center_box:nnn This function is used for typesetting the content #2 centering within several horizontal boxes with width #1, then underline every line with thickness #3.

```
\cs_new_protected:Npn \__wu_center_box:nnn #1#2#3
  {
    \mode_leave_vertical:
    \dim_set:Nn \l_tmpa_dim {#1}
    \box_gset_eq_drop:NN 1 \voidb@x
    \group_begin:
    \vbox_set:Nn 0
      {
        \dim_set:Nn  \parindent   { 0pt            }
        \skip_set:Nn \leftskip    { 0pt plus 1fil  }
        \skip_set:Nn \rightskip   { 0pt plus -1fil }
        \skip_set:Nn \parfillskip { 0pt plus 2fil  }
        #3 \par
        \loop
        \box_set_to_last:N 2
        \reverse_if:N \if_box_empty:N 2
        \vbox_gset_top:Nn 1
          {
            \hbox_to_wd:nn {#1} { \strut \hbox_unpack_drop:N 2 }
            \skip_vertical:n {#2}
            \__box_rule_horizontal:nn { .5pt } { \c_zero_dim }
            \skip_vertical:n { 9.6pt } \vbox_unpack_drop:N 1
```

```
        }
      \unskip \unpenalty
      \repeat
    }
  \group_end:
  \tex_box:D 1
}
```

(*End of definition for* `\__wu_center_box:nnn`.)

`\__wu_signature_inline:n` This function is used to include the signature image file inline, i.e., centering align to the text with a height equal to 2.4 times the current font size.

```
\cs_new:Npn \__wu_signature_inline:n #1
  {
    \box_move_down:nn { \fp_eval:n { .9 * \f@size } \p@ }
      {
        \hbox:n
          {
            \includegraphics
              [height = \fp_eval:n { 2.4 * \f@size } \p@] {#1}
          }
      }
  }
\cs_new_nopar:Npn \__wu_fontsize:nn #1#2
  {
    \__wu_kernel_bilingual:nnn {#1}
      {
        \fontsize
          { \dim_to_decimal:n {  #2 bp          } }
          { \dim_to_decimal:n { (#2 bp) * 6 / 5 } } \selectfont
      } { \ctex_zihao:n {#2} }
  }
```

(*End of definition for* `\__wu_signature_inline:n`.)

`\__wu_kernel_month:n` These functions are used to typeset month and year in English or Chinese.

`\__wu_kernel_year:n`

```
\cs_new_protected_nopar:Npn \__wu_kernel_month:n #1
  {
    \__wu_kernel_bilingual:nnn {#1}
      {
        \if_case:w \int_value:w \c_sys_month_int
          \or: January \or: February \or: March
          \or: April   \or: May      \or: June
          \or: July    \or: August   \or: September
          \or: October \or: November \or: December
        \fi:
      }
      { \zhnum_digits:Nn \c_false_bool { \int_value:w \c_sys_month_int } 月 }
  }
\cs_new_protected_nopar:Npn \__wu_kernel_year:n #1
  {
    \__wu_kernel_bilingual:nnn {#1}
      { \int_value:w \c_sys_year_int }
      { \zhnum_digits:Nn \c_false_bool { \int_value:w \c_sys_year_int  } 年 }
  }
```

(*End of definition for* `\__wu_kernel_month:n` *and* `\__wu_kernel_year:n`.)

`\__wu_kernel_bilingual:nnn` This function will output `#2` when `#1` equals to `en`, output `#3` when `#1` equals to `cn`.

```
\cs_new_nopar:Npn \__wu_kernel_bilingual:nnn #1#2#3
  { \str_case:on {#1} { { en } {#2} { cn } {#3} } }
```

(*End of definition for* `\__wu_kernel_bilingual:nnn`.)

`\printbibliography` LaTeX 2_ε user's interface for printing the bibliography. When the `bibsource` key is assigned in `\westlakeset`, it will output the complex bibliography; when the `bibsource` key is not assigned, it will output only a chapter title.

```
\hook_gput_code:nnn { begindocument / before } { . }
  {
    \bool_if_exist:NT \l__wu_load_bib_bool
      {
```

```
    \bool_if:NTF \l__wu_load_bib_bool
      {
        \DeclareDocumentCommand \printbibliography {}
          {
            \addcontentsline{toc}{chapter}{参考文献}
            \group_begin:
              \dim_set:Nn \bibsep {1pt}
              \linespread{1.85} \__wu_fontsize:nn { cn } { 5 }
              \bibliography { \l__wu_set_bib_str }
            \group_end:
          }
      } { \newcommand \printbibliography { \chapter* { 参考文献 } } }
  }
}
```

(*End of definition for* `\printbibliography`. *This function is documented on page* 4.)

End the optionlist `kernel` for l3docstrip.

```
⟨/kernel⟩
```

A.4 wu-params.code.tex

Start the optionlist `params` for l3docstrip.

```
⟨*params⟩
```

`\l__wu_school_en_prop` `\l__wu_school_cn_prop`

Storing the aliases of the English and Chinese names of schools into two property lists.

```
\prop_new:N \l__wu_school_en_prop
\prop_new:N \l__wu_school_cn_prop
\prop_set_from_keyval:Nn \l__wu_school_en_prop
  {
    science     = Science,
    sci         = Science,
    engineering = Engineering,
    eng         = Engineering,
    sls         = Life ~ Sciences,
    medicine    = Medicine,
```

```
    med         = Medicine,
  }
\prop_set_from_keyval:Nn \l__wu_school_cn_prop
  {
    science     = 理学院,
    sci         = 理学院,
    engineering = 工学院,
    eng         = 工学院,
    sls         = 生命科学学院,
    medicine    = 医学院,
    med         = 医学院,
  }
```

(*End of definition for* `\l__wu_school_en_prop` *and* `\l__wu_school_cn_prop`.)

`\l__wu_cover_id_box` `\l__wu_cover_code_box` `\l__wu_cover_en_table_box` `\l__wu_cover_id_dim` `\l__wu_cover_code_dim` `\l__wu_cover_en_table_dim`

Storing the dimension variables by setting the content of boxes: The length of student ID, the length of university code, the length of English cover items.

```
\box_new:N \l__wu_cover_id_box
\box_new:N \l__wu_cover_code_box
\box_new:N \l__wu_cover_en_table_box
\hbox_gset:Nn \l__wu_cover_id_box { 0 }
\hbox_gset:Nn \l__wu_cover_code_box { School ~ Code: }
\hbox_gset:Nn \l__wu_cover_en_table_box
  { \__wu_fontsize:nn { en } { 16 } \sffamily Supervisor: }
\dim_const:Nn \l__wu_cover_id_dim
  { 13 \box_wd:N \l__wu_cover_id_box }
\dim_const:Nn \l__wu_cover_code_dim
  { \box_wd:N \l__wu_cover_code_box }
\dim_const:Nn \l__wu_cover_en_table_dim
  { \box_wd:N \l__wu_cover_en_table_box }
```

(*End of definition for* `\l__wu_cover_id_box` *and others.*)

`\l__wu_cover_affilid_tl` `\l__wu_commitment_a_title_tl` `\l__wu_commitment_b_title_tl` `\l__wu_commitment_a_body_tl` `\l__wu_commitment_b_body_tl`

Store the text contents: The school code, the titles and context of the commitment page.

```
\tl_const:Nn \l__wu_cover_affilid_tl { 14626 }
\tl_const:Nn \l__wu_commitment_a_title_tl
```

```
  { 西湖大学研究生学位论文独创性声明 }
\tl_const:Nn \l__wu_commitment_b_title_tl
  { 西湖大学研究生学位论文版权使用授权书 }
\tl_const:Nn \l__wu_commitment_a_body_tl
  {
    本人声明：所呈交的学位论文是本人在导师指导下进行的研究工作及取得的研究成果。
    除了文中特别加以标注和致谢的地方外，论文中不包含其他人已经发表或撰写过的研究
    成果。与本人一同参与本研究工作的合作者所做的任何贡献均已在论文中作了明确的说
    明并表示谢意。本声明的法律结果由本人承担。
  }
\tl_const:Nn \l__wu_commitment_b_body_tl
  {
    本学位论文作者完全了解\ \underline{\kaishu 西湖大学}\ 有关收藏和利用博士、硕
    士学位论文的规定，即：学校有权收藏、使用并向国家有关部门或机构送交论文的印刷
    本和电子版本；允许论文被查阅和借阅；学校可以公布论文的全部或部分内容，可以采
    用影印、缩印或其它复制手段保存论文。
  }
```

(*End of definition for* `\l__wu_cover_affiliid_tl` *and others.*)

`\l__wu_load_bib_bool` Boolean for judging whether to load the gbt7714 package.

```
\bool_new:N \l__wu_load_bib_bool
```

(*End of definition for* `\l__wu_load_bib_bool`.)

End the optionlist `params` for l3docstrip.

```
⟨/params⟩
```

A.5 wu-thesis.code.tex

Start the optionlist `thesis` for l3docstrip.

```
⟨*thesis⟩
```

Check if current fontset is the officially recommended one.

```
\tl_if_eq:nVF { windows } \g__ctex_fontset_tl
  {
    \exp_args:Nno \__wu_msg_warning:nn
```

```
      { not ~ recommended ~ fontset } { \g__ctex_fontset_tl }
  }
```

Configure the geometry.

```
\geometry { a4paper, hmargin = 1.25in, vmargin = 1in }
```

\maketitle LaTeX 2_ε user's interface for generating cover page.

__wu_maketitle_cn:
__wu_maketitle_en:

```
\RenewDocumentCommand \maketitle {}
  {
    \__wu_maketitle_cn:
    \__wu_maketitle_en:
  }
```

Auxiliary commands of the \maketitle macro.

```
\cs_new_protected:Nn \__wu_maketitle_cn:
  {
    \begin{titlepage}
      \group_begin:
        \raggedleft \noindent
        \fangsong
        \linespread{1.0}\selectfont
        \begin{tabular}
          {
            p { 4\ccwd } @{: }
            p \l__wu_cover_id_dim
          }
          \__wu_spread_box:nn  { 4\ccwd } { 单位代码 } &
          \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
            { \l__wu_cover_affilid_tl  } \\
          \__wu_spread_box:nn  { 4\ccwd } { 学号     } &
          \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
            { \l__wu_set_id_tl         } \\
        \end{tabular}
        \par \vspace{1.2\baselineskip}
      \group_end:
      \begin{center}
```

```
    \includegraphics[height = 1.63cm]{westlake-badge-cn.pdf}
    \par \vspace{.65\baselineskip}
    \LARGE
    \bool_if:NTF \l__wu_set_master_bool { 硕士 } { 博士 }
    学位论文
    \par \vspace{1.15\baselineskip}
    \group_begin:
      \linespread{1.5}\selectfont \Huge \sffamily
      \parbox { 10\ccwd } { \centering \l__wu_set_title_tl_a }
    \group_end:
  \end{center}
  \vfill
  \begin{center}
    \linespread{1.35} \__wu_fontsize:nn { cn } { 3 }
    \begin{tabular} { p { 4\ccwd } @{: } p { 15ex } }
      \__wu_spread_box:nn  { 4\ccwd } { 培养单位 } &
      \__wu_center_box:nnn {  15ex  } { -4.5pt   }
        {
          \prop_item:No \l__wu_school_cn_prop
            { \l__wu_set_school_tl }
        } \\
      \__wu_spread_box:nn  { 4\ccwd } { 学科     } &
      \__wu_center_box:nnn {  15ex  } { -4.5pt   }
        { \l__wu_set_subject_tl_a  } \\
      \__wu_spread_box:nn  { 4\ccwd } { 研究生   } &
      \__wu_center_box:nnn {  15ex  } { -4.5pt   }
        { \l__wu_set_author_tl_a   } \\
      \__wu_spread_box:nn  { 4\ccwd } { 指导教师 } &
      \__wu_center_box:nnn {  15ex  } { -4.5pt   }
        { \l__wu_set_PI_tl_a       } \\
    \end{tabular}
    \par \vspace{3.5\baselineskip}
    \__wu_fontsize:nn { cn } { 3 }
    \__wu_kernel_year:n { cn } \__wu_kernel_month:n { cn }
```

```
      \end{center}
      \vspace*{1.25\baselineskip}
    \end{titlepage}
  }
\cs_new_protected:Nn \__wu_maketitle_en:
  {
    \begin{titlepage}
      \group_begin:
        \raggedleft \noindent
        \fangsong
        \linespread{1.0}\selectfont
        \begin{tabular}
          {
            p \l__wu_cover_code_dim @{~}
            p \l__wu_cover_id_dim
          }
          School ~ Code: &
          \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
            { \l__wu_cover_affilid_tl    } \\
          Student ~ ID:  &
          \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
            { \l__wu_set_id_tl           } \\
        \end{tabular}
        \par \vspace{1.2\baselineskip}
      \group_end:
      \begin{center}
        \includegraphics[height = 1.63cm]{westlake-badge-cn.pdf}
        \par \vspace{2.5\baselineskip}
        \group_begin:
          \linespread{1.3}\selectfont \Huge \sffamily
          \parbox { .9\linewidth }
            {
              \centering
              \__wu_fontsize:nn { en } { 20 } \selectfont \bfseries \sffamily
```

```
            \l__wu_set_title_tl_b
          }
          \par \vspace{1.1\baselineskip}
      \group_end:
      \group_begin:
        \__wu_fontsize:nn { cn } { 4 } \sffamily \bfseries
          (
            Degree ~ of ~
            \bool_if:NTF \l__wu_set_master_bool { Master } { Doctor }
          )
      \group_end:
    \end{center}
    \vfill
    \begin{center}
      \linespread{1.35} \__wu_fontsize:nn { cn } { 3 } \sffamily \selectfont
      \begin{tabular}
        {
          p \l__wu_cover_en_table_dim @{~}
          p { 15ex }
        }
        School:     &
        \__wu_center_box:nnn {  15ex  } { -4.8pt   }
          {
            \prop_item:No \l__wu_school_en_prop
              { \l__wu_set_school_tl }
          } \\
        Discipline: &
        \__wu_center_box:nnn {  15ex  } { -4.8pt   }
          { \l__wu_set_subject_tl_b   } \\
        Candidate:  &
        \__wu_center_box:nnn {  15ex  } { -4.8pt   }
          { \l__wu_set_author_tl_b    } \\
        Supervisor: &
        \__wu_center_box:nnn {  15ex  } { -4.8pt   }
```

```
            { \l__wu_set_PI_tl_b        } \\
        \end{tabular}
        \par \vspace{3.5\baselineskip}
        \__wu_fontsize:nn { cn } { 3 }
        \__wu_kernel_month:n { en }, \space \__wu_kernel_year:n  { en }
      \end{center}
      \vspace*{1.25\baselineskip}
    \end{titlepage}
  }
```

(*End of definition for* `\maketitle`*,* `\__wu_maketitle_cn:`*, and* `\__wu_maketitle_en:`*. This function is documented on page 3.*)

`abstract` (*env.*) Generate the abstract in English and Chinese, and the command `\keywords` inside this environment will appear as English or Chinese version due to `#1`.

```
\RenewDocumentEnvironment {abstract} { O { en } }
  {
    \cleardoublepage
    \tl_set:Nn \l__wu_abstract_language_tl {#1}
    \null \vspace{1.8\baselineskip}
    \@beginparpenalty\@lowpenalty
    \noindent
    \__wu_kernel_bilingual:nnn {#1}
      {
        \textbf { Abstract:~ }
        \addcontentsline { toc } { chapter } { Abstract }
      }
      {
        \textbf { 摘要：  }
        \addcontentsline { toc } { chapter } { 摘要     }
      }
    \ignorespaces
  } { \@endparpenalty\@M }
\hook_gput_code:nnn { env / abstract / before } { . }
  { \linespread{1.63}\selectfont }
```

\keywords LaTeX 2_ε user's interface for typesetting keywords. Language will be chosen automatically inside the `abstract` environment.

```
\NewDocumentCommand \keywords { m }
  {
    \par \noindent
    \__wu_kernel_bilingual:nnn { \l__wu_abstract_language_tl }
      { \textbf { Keywords: ~ } \clist_use:nn {#1} { ;~ } }
      { \textbf { 关键词：     } \clist_use:nn {#1} { ;  } }
  }
```

(*End of definition for* `\keywords`. *This function is documented on page* 4.)

\if@mainmatter
\frontmatter
\mainmatter

Copy the commands from the book class.

(*End of definition for* `\if@mainmatter`, `\frontmatter`, *and* `\mainmatter`.)

```
\newif \if@mainmatter \@mainmattertrue
\newcommand \frontmatter
  { \cleardoublepage \@mainmatterfalse \pagenumbering {roman} }
\newcommand \mainmatter
  { \cleardoublepage \@mainmattertrue \pagenumbering {arabic} }
% \hook_gput_code:nnn { cmd / @schapter / after } { . }
%   { \addcontentsline{toc}{chapter}{\CTEX@chaptername} }
```

\commitment LaTeX 2_ε user's interface for typesetting the commitment page, with signature image attached.

```
\NewDocumentCommand \commitment { O{} }
  {
    \begin{titlepage}
      \null \vspace{1.2\baselineskip}
      \begin{center}
        \__wu_fontsize:nn { cn } { 3 } \sffamily
        \l__wu_commitment_a_title_tl
      \end{center}
      \par \vspace{.5\baselineskip}
      \l__wu_commitment_a_body_tl
```

```
    \par \vspace{2\baselineskip} \smallskip
    \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
      学位论文作者签名：
      \__wu_signature_inline:n { \clist_item:nn {#1} { 1 } }
    \end{minipage} \hfill
    \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
      签字日期：
      \exp_args:Ne \tl_map_inline:nn { \clist_item:nn {#1} { 2 } } { ##1 }
    \end{minipage}
    \hspace*{2\ccwd}
    \par \vspace{3.25\baselineskip}
    \begin{center}
      \__wu_fontsize:nn { cn } { 3 } \sffamily
      \l__wu_commitment_b_title_tl
    \end{center}
    \par \vspace{.5\baselineskip}
    \l__wu_commitment_b_body_tl
    \par \vspace{2\baselineskip} \smallskip
    \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
      学位论文作者签名：
      \__wu_signature_inline:n { \clist_item:nn {#1} { 3 } }
      \par \vspace{\baselineskip}
      签字日期：
      \exp_args:Ne \tl_map_inline:nn { \clist_item:nn {#1} { 4 } } { ##1 }
    \end{minipage}\hfill
    \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd }}
      导师签名：
      \__wu_signature_inline:n { \clist_item:nn {#1} { 5 } }
      \par \vspace{\baselineskip}
      签字日期：
      \exp_args:Ne \tl_map_inline:nn { \clist_item:nn {#1} { 6 } } { ##1 }
    \end{minipage}
    \hspace*{2\ccwd}
  \end{titlepage}
```

```
  }
```

(*End of definition for* `\commitment`. *This function is documented on page* 4.)

Chapter (`Heading 1`) format.

```
\ctex_set:nn { chapter }
  {
    format+    = \__wu_fontsize:nn { cn } { 3 } \sffamily \mdseries,
    number     = \arabic{chapter},
    beforeskip = 40pt,     afterskip = 30pt,
    aftername  = \enspace, fixskip,
    tocline    = \CTEXnumberline{#1}#2
  }
```

Section (`Heading 2`) format.

```
\ctex_set:nn { section }
  {
    format+    = \__wu_fontsize:nn { cn } { 4 } \sffamily \mdseries \raggedright,
    beforeskip = 18pt,     afterskip = 15pt,
    aftername  = \enspace, fixskip
  }
```

Subsection (`Heading 3`) format.

```
\ctex_set:nn { subsection }
  {
    format+    = \__wu_fontsize:nn { en } { 13 } \sffamily \mdseries \raggedright,
    beforeskip = 15.5pt,   afterskip = 13.5pt,
    aftername  = \quad,    fixskip
  }
```

Susubsection (`Heading 4`) format.

```
\ctex_set:nn { subsubsection }
  {
    format+    = \__wu_fontsize:nn { cn } { -4 } \sffamily \mdseries \raggedright,
    beforeskip = 13pt,     afterskip = 12pt,
    aftername  = \quad,    fixskip
  }
```

Table of contents format.

```
\ctex_set:n { contentsname = 目\quad 录, secnumdepth = 3 }
\renewcommand \cftchapfont     { \sffamily                  }
\renewcommand \cftchappagefont { \mdseries                  }
\renewcommand \cftchapleader   { \cftdotfill { \cftdotsep } }
\dim_set:Nn \cftbeforechapskip { \c_zero_dim                }
\dim_set:Nn \cftbeforesecskip  { \c_zero_dim                }
\dim_set:Nn \cftsecindent      { \ccwd                      }
\dim_set:Nn \cftsubsecindent   { 2\ccwd                     }
\dim_set:Nn \cftsecnumwidth    { \ccwd                      }
\dim_set:Nn \cftsubsecnumwidth { 2\ccwd                     }
\renewcommand \cftdotsep       { .5                         }
\renewcommand \@pnumwidth      { 2ex                        }
```

End the optionlist `thesis` for l3docstrip.

⟨/thesis⟩

A.6 wu-beamer.code.tex

Start the optionlist `beamer` for l3docstrip.

⟨*beamer⟩

Loading the westlake beamer theme.

```
\RequirePackage [ mono = false ] { libertine }
\RequirePackage { anyfontsize }
\usetheme [ logobg = westlake-logo.pdf,    lbadge = westlake-badge-cn.pdf,
              mainbg = westlake-paint-a.png, basebg = westlake-paint-b.png  ]
          { westlake }
```

End the optionlist `beamer` for l3docstrip.

⟨/beamer⟩

A.7 wu-usrdoc.code.tex

Start the optionlist `usrdoc` for l3docstrip.

⟨*usrdoc⟩

Loading the l3draw package.

```
\RequirePackage { l3draw }
```

\draw_lineto_tikz_w:
\draw_moveto_tikz_w:
\draw_curveto_tikz_w:

Auxiliary functions for parsing Ti*k*Z Bézier coordinates.

```
\cs_new_protected:Npn \draw_lineto_tikz_w: (#1, #2)
  { \draw_path_lineto:n { (#1 cm, #2 cm) } }
\cs_new:Npn \draw_moveto_tikz_w:  (#1, #2)
  { \draw_path_moveto:n { (#1 cm, #2 cm) } }
\cs_new_protected:Npn \draw_curveto_tikz_w:
  controls (#1, #2) and (#3, #4) .. (#5, #6)
  {
    \draw_path_curveto:nnn
      { (#1 cm, #2 cm) } { (#3 cm, #4 cm) } {(#5 cm, #6cm)}
  }
```

(*End of definition for* `\draw_lineto_tikz_w:` , `\draw_moveto_tikz_w:` , *and* `\draw_curveto_tikz_w:`.)

\l_WESTLAKE_hologo_box
\l_UNIVERSITY_hologo_box
\l__wu_WESTLAKE_hologo_box
\l__wu_UNIVERSITY_hologo_box

Boxes for saving **WESTLAKE** and **UNIVERSITY**.

```
%    \begin{macrocode}
\box_new:N \l_WESTLAKE_hologo_box
\box_new:N \l_UNIVERSITY_hologo_box
\box_new:N \l__wu_WESTLAKE_hologo_box
\box_new:N \l__wu_UNIVERSITY_hologo_box
\hbox_gset:Nn \l_WESTLAKE_hologo_box
  {
    \draw_begin:
    \draw_transform_xscale:n { 1.3333  }
    \draw_transform_yscale:n { -1.3333 }
    % W
    \draw_transform_xshift:n { 3.1946  cm/+1.3333 }
    \draw_transform_yshift:n { 35.0833 cm/+1.3333 }
    \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
    \clist_map_inline:nn
      {
        {(.0413, 7.4108)},  {(.0706, 7.4108)},  {(.0706, 7.2769)},
```

```
      {(.0437, 7.2769)},  {(.0437, 7.3593)},  {(.0098, 7.298)},
      {(-.0098, 7.298)},  {(-.0436, 7.3593)}, {(-.0436, 7.2769)},
      {(-.0706, 7.2769)}, {(-.0706, 7.4108)}, {(-.0413, 7.4108)},
    } { \draw_lineto_tikz_w: #1 \scan_stop: }
  \draw_path_close:
  \draw_transform_shift_reset:
  % E
  \draw_transform_xshift:n { 3.441   cm/+1.3333 }
  \draw_transform_yshift:n { 35.1468 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.3361)
  \clist_map_inline:nn
    {
      {(-.0615, 7.3361)}, {(-.0615, 7.3067)}, {(-.005, 7.3067)},
      {(-.005, 7.2823)},  {(-.0615, 7.2823)}, {(-.0615, 7.2547)},
      {(0, 7.2547)},      {(0, 7.2291)},      {(-.0912, 7.2291)},
      {(-.0912, 7.363)},  {(0, 7.363)}
    } { \draw_lineto_tikz_w: #1 \scan_stop: }
  \draw_path_close:
  \draw_transform_shift_reset:
  % S
  \draw_transform_xshift:n { 3.5962  cm/+1.3333 }
  \draw_transform_yshift:n { 35.1327 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (0, 7.3031)      and (-.0258, 7.2965) .. (-.0447, 7.2916)},
      {controls (-.0619, 7.2872) and (-.0689, 7.2845) .. (-.0689, 7.2755)},
      {controls (-.0689, 7.2672) and (-.0621, 7.2623) .. (-.0506, 7.2623)},
      {controls (-.0353, 7.2623) and (-.0315, 7.2703) .. (-.0313, 7.2774)},
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_lineto_tikz_w: (-.0027, 7.2774) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (-.0032, 7.2485) and (-.0277, 7.2354) .. (-.0504, 7.2354)},
```

```
      {controls (-.0811, 7.2354) and (-.0971, 7.2556) .. (-.0971, 7.2755)},
      {controls (-.0971, 7.3073) and (-.0724, 7.3133) .. (-.0543, 7.3177)},
      {controls (-.0359, 7.3223) and (-.0284, 7.3253) .. (-.0284, 7.3369)},
      {controls (-.0284, 7.3473) and (-.0398, 7.351)  .. (-.0495, 7.351)},
      {controls (-.0633, 7.351)  and (-.0726, 7.3438) .. (-.0732, 7.333)},
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_lineto_tikz_w: (-.1014, 7.333) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (-.1008, 7.3588) and (-.079, 7.3781)  .. (-.0501, 7.3781)},
      {controls (-.0206, 7.3781) and (0, 7.3608)      .. (0, 7.3361)},
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_path_close:
  \draw_transform_shift_reset:
  % T
  \draw_transform_xshift:n { 3.6639  cm/+1.3333 }
  \draw_transform_yshift:n { 35.1821 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
  \clist_map_inline:nn
    {
      {(.0309, 7.3361)},  {(.0309, 7.2291)},  {(.0693, 7.2291)},
      {(.0693, 7.2021)},  {(-.0384, 7.2021)}, {(-.0384, 7.2291)},
      {(0, 7.2291)}
    } { \draw_lineto_tikz_w: #1 \scan_stop: }
  \draw_path_close:
  \draw_transform_shift_reset:
  % L
  \draw_transform_xshift:n { 3.8971  cm/+1.3333 }
  \draw_transform_yshift:n { 35.1468 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
  \clist_map_inline:nn
    {
      {(-.0597, 7.3361)}, {(-.0597, 7.2291)}, {(-.0905, 7.2291)},
      {(-.0905, 7.363)},  {(0, 7.363)}
```

```
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% A
\draw_transform_xshift:n { 3.9755  cm/+1.3333 }
\draw_transform_yshift:n { 35.1151 cm/+1.3333 }
\draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
\clist_map_inline:nn
  {
    {(.019, 7.2887)},   {(.038, 7.3361)},     {(0, 7.3361)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_moveto_tikz_w: (.0341, 7.2531)
\clist_map_inline:nn
  {
    {(.0341, 7.2531)},  {(.0039, 7.2531)},    {(-.0499, 7.387)},
    {(-.0205, 7.387)},  {(-.0098, 7.3604)},   {(.0478, 7.3604)},
    {(.0585, 7.387)},   {(.0879, 7.387)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% K
\draw_transform_xshift:n { 4.1547  cm/+1.3333 }
\draw_transform_yshift:n { 35.108  cm/+1.3333 }
\draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
\clist_map_inline:nn
  {
    {(.0527, 7.3926)},    {(.0896, 7.3926)},  {(.0271, 7.3256)},
    {(.0896, 7.2587)},    {(.0527, 7.2587)},  {(0, 7.3152)},
    {(0, 7.2587)},        {(-.0309, 7.2587)}, {(-.0309, 7.3926)},
    {(0, 7.3926)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% E
```

```
    \draw_transform_xshift:n { 4.4178  cm/+1.3333 }
    \draw_transform_yshift:n { 35.1468 cm/+1.3333 }
    \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
    \clist_map_inline:nn
      {
        {(-.0615, 7.3361)},   {(-.0615, 7.3067)}, {(-.005, 7.3067)},
        {(-.005, 7.2823)},    {(-.0615, 7.2823)}, {(-.0615, 7.2547)},
        {(0, 7.2547)},        {(0, 7.2291)},      {(-.0912, 7.2291)},
        {(-.0912, 7.363)},    {(0, 7.363)}
      } { \draw_lineto_tikz_w: #1 \scan_stop: }
    \draw_path_close:
    \draw_transform_shift_reset:
    \color_fill:n { Exploration Blue }
    \draw_path_use_clear:n { fill }
    \draw_end:
  }
\hbox_gset:Nn \l_UNIVERSITY_hologo_box
  {
    \draw_begin:
    \draw_transform_xscale:n { 1.3333  }
    \draw_transform_yscale:n { -1.3333 }
    % U
    \draw_transform_xshift:n { 4.6517  cm/+1.3333 }
    \draw_transform_yshift:n { 34.578  cm/+1.3333 }
    \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
    \clist_map_inline:nn
      {
        {controls (0, 7.5806)      and (-.0119, 7.591) .. (-.0265, 7.591)},
        {controls (-.0411, 7.591)  and (-.053, 7.5806) .. (-.053, 7.5677)}
      } { \draw_curveto_tikz_w: #1 \scan_stop: }
    \clist_map_inline:nn
      {
        {(-.053, 7.4835)},  {(-.0839, 7.4835)}, {(-.0839, 7.5677)}
      } { \draw_lineto_tikz_w: #1 \scan_stop: }
```

```
\clist_map_inline:nn
  {
    {controls (-.0839, 7.5976) and (-.0581, 7.6219).. (-.0265, 7.6219)},
    {controls (0.0052, 7.6219) and (0.0309, 7.5976).. (0.0309, 7.5677)}
  } { \draw_curveto_tikz_w: #1 \scan_stop: }
\clist_map_inline:nn
  {
    {(0.0309, 7.4835)}, {(0, 7.4835)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% N
\draw_transform_xshift:n { 4.8461  cm/+1.3333 }
\draw_transform_yshift:n { 34.5816 cm/+1.3333 }
\draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
\clist_map_inline:nn
  {
    {(-.0586, 7.4812)}, {(-.092, 7.4812)},  {(-.092, 7.6151)},
    {(-.0623, 7.6151)}, {(-.0623, 7.5285)}, {(-.0037, 7.6151)},
    {(0.0297, 7.6151)}, {(0.0297, 7.4812)}, {(0, 7.4812)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% I
\draw_transform_xshift:n { 0       cm/+1.3333 }
\draw_transform_yshift:n { 36.8923 cm/+1.3333 }
\draw_moveto_tikz_w: (3.6872, 5.8818) \scan_stop:
\clist_map_inline:nn
  {
    {(3.7181, 5.8818)}, {(3.7181, 5.7479)}, {(3.6872, 5.7479)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% V
```

```
\draw_transform_xshift:n { 5.0659  cm/+1.3333 }
\draw_transform_yshift:n { 34.5921 cm/+1.3333 }
\draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
\clist_map_inline:nn
  {
    {(-.0361, 7.4719)}, {(-.0655, 7.4719)}, {(-.0151, 7.6059)},
    {(0.0151, 7.6059)}, {(0.0655, 7.4719)}, {(0.0361, 7.4719)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_path_close:
\draw_transform_shift_reset:
% E
\draw_transform_xshift:n { 5.1738  cm/+1.3333 }
\draw_transform_yshift:n { 34.6415 cm/+1.3333 }
\draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
\clist_map_inline:nn
  {
    {(0.0912, 7.5677)}, {(0.0912, 7.5408)}, {(0.0297, 7.5408)},
    {(0.0297, 7.5114)}, {(0.0861, 7.5114)}, {(0.0861, 7.487)},
    {(0.0297, 7.487)},  {(0.0297, 7.4595)}, {(0.0912, 7.4595)},
    {(0.0912, 7.4338)}, {(0, 7.4338)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\draw_transform_shift_reset:
% R
\draw_transform_xshift:n { 5.4049  cm/+1.3333 }
\draw_transform_yshift:n { 34.5392 cm/+1.3333 }
\draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
\clist_map_inline:nn
  {
    {(-.0295, 7.5677)}, {(-.0295, 7.5364)}, {(0, 7.5364)}
  } { \draw_lineto_tikz_w: #1 \scan_stop: }
\clist_map_inline:nn
  {
    {controls (0.0085, 7.5364) and (0.0157, 7.5436) ..  (0.0157, 7.5521)},
    {controls (0.0157, 7.5606) and (0.0085, 7.5677) ..  (0, 7.5677)}
```

```
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_moveto_tikz_w: (0.0182, 7.5889) \scan_stop:
  \draw_lineto_tikz_w: (0.0191, 7.5885) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (0.0334, 7.5819) and (0.0427, 7.5677) ..  (0.0427, 7.5521)},
      {controls (0.0427, 7.53)   and (0.0247, 7.5121) ..  (0.0027, 7.5121)}
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \clist_map_inline:nn
    {
      {(-.0592, 7.5121)}, {(-.0592, 7.646)},  {(-.0295, 7.646)},
      {(-.0295, 7.5921)}, {(-.0114, 7.5921)}, {(0.0149, 7.646)},
      {(0.0461, 7.646)}
    } { \draw_lineto_tikz_w: #1 \scan_stop: }
  \draw_transform_shift_reset:
  % S
  \draw_transform_xshift:n { 5.5541  cm/+1.3333 }
  \draw_transform_yshift:n { 34.5322 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (-.0172, 7.5633) and (-.0242, 7.5606) .. (-.0242, 7.5516)},
      {controls (-.0242, 7.5433) and (-.0174, 7.5384) .. (-.0059, 7.5384)},
      {controls (0.0094, 7.5384) and (0.0132, 7.5463) .. (0.0135, 7.5534)}
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_lineto_tikz_w: (0.042, 7.5534) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (0.0415, 7.5246) and (0.017, 7.5114)  .. (-.0057, 7.5114)},
      {controls (-.0364, 7.5114) and (-.0524, 7.5316) .. (-.0524, 7.5516)},
      {controls (-.0524, 7.5834) and (-.0277, 7.5895) .. (-.0096, 7.5938)},
      {controls (0.0088, 7.5983) and (0.0163, 7.6013) .. (0.0163, 7.613)},
      {controls (0.0163, 7.6234) and (0.0049, 7.6271) .. (-.0048, 7.6271)},
      {controls (-.0186, 7.6271) and (-.0279, 7.6199) .. (-.0285, 7.609)}
```

```
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_lineto_tikz_w: (-.0567, 7.609) \scan_stop:
  \clist_map_inline:nn
    {
      {controls (-.0561, 7.6349) and (-.0343, 7.6542) .. (-.0054, 7.6542)},
      {controls (0.0241, 7.6542) and (0.0447, 7.6369) .. (0.0447, 7.6121)},
      {controls (0.0447, 7.5792) and (0.0189, 7.5726) .. (0, 7.5677)}
    } { \draw_curveto_tikz_w: #1 \scan_stop: }
  \draw_transform_shift_reset:
  % I
  \draw_transform_xshift:n { 0.0     cm/+1.3333 }
  \draw_transform_yshift:n { 36.8923 cm/+1.3333 }
  \draw_moveto_tikz_w: (4.2252, 5.8818) \scan_stop:
  \clist_map_inline:nn
    {
      {(4.2561, 5.8818)}, {(4.2561, 5.7479)}, {(4.2252, 5.7479)}
    } { \draw_lineto_tikz_w: #1 \scan_stop: }
  \draw_transform_shift_reset:
  % T
  \draw_transform_xshift:n { 5.6949  cm/+1.3333 }
  \draw_transform_yshift:n { 34.5004 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
  \clist_map_inline:nn
    {
      {(0.0384, 7.5677)}, {(0.0384, 7.6747)}, {(0.0693, 7.6747)},
      {(0.0693, 7.5677)}, {(0.1076, 7.5677)}, {(0.1076, 7.5407)},
      {(0, 7.5407)}
    } { \draw_lineto_tikz_w: #1 \scan_stop: }
  \draw_transform_shift_reset:
  % Y
  \draw_transform_xshift:n { 5.9796  cm/+1.3333 }
  \draw_transform_yshift:n { 34.4651 cm/+1.3333 }
  \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
  \clist_map_inline:nn
```

```
      {
        {(-.0332, 7.6208)}, {(-.0663, 7.5677)}, {(-.0968, 7.5677)},
        {(-.0486, 7.6449)}, {(-.0486, 7.7017)}, {(-.0178, 7.7017)},
        {(-.0178, 7.6449)}, {(-.0176, 7.6447)}, {(0.0304, 7.5677)}
      } { \draw_lineto_tikz_w: #1 \scan_stop: }
    \draw_transform_shift_reset:
    \color_fill:n { Exploration Blue }
    \draw_path_use_clear:n { fill }
    \draw_end:
  }
```

(*End of definition for* `\l_WESTLAKE_hologo_box` *and others. These variables are documented on page* ??.)

`\HoLogo@WESTLAKE`
`\HoLogo@UNIVERSITY`
`\HoLogo@thesis`
`\HoLogo@westlakethesis`
`\HoLogo@WestlakeThesis`

Define hologos for WESTLAKETHESIS.

```
\def \HoLogo@WESTLAKE #1
  {
    \box_gset_eq:NN \l__wu_WESTLAKE_hologo_box \l_WESTLAKE_hologo_box
    \box_scale:Nnn \l__wu_WESTLAKE_hologo_box { \f@size / 10 } { \f@size / 10 }
    \mode_leave_vertical:
    \box_move_down:nn { \fp_eval:n { \f@size * .015 } \p@ }
      { \box_use_drop:N \l__wu_WESTLAKE_hologo_box }
  }
\def \HoLogo@UNIVERSITY #1
  {
    \box_gset_eq:NN \l__wu_UNIVERSITY_hologo_box \l_UNIVERSITY_hologo_box
    \box_scale:Nnn \l__wu_UNIVERSITY_hologo_box { \f@size / 10 } { \f@size / 10 }
    \mode_leave_vertical:
    \box_move_down:nn { \fp_eval:n { \f@size * .015 } \p@ }
      { \box_use_drop:N \l__wu_UNIVERSITY_hologo_box }
  }
\def \HoLogo@thesis #1
  {
    \hbox_set:Nn \l_tmpa_box
      {
        \normalfont \scshape \fontencoding{T1}\fontfamily {LinuxBiolinumT-TLF}
```

```
        \selectfont \tl_map_inline:nn { th\scan_stop: esis } { ##1\kern-.05em }
      }
    \box_scale:Nnn \l_tmpa_box { 1 } { 1.1 }
    \color_select:n { Knowledge Orange }
    \box_use_drop:N \l_tmpa_box
  }
\def \HoLogo@westlakethesis #1
  {
    \scshape
    \tl_map_inline:nn { westlak{e\kern-.1em}{T\kern-.05em}hesis } {##1\kern-.05em}
  }
\def \HoLogo@WestlakeThesis #1
  {
    \draw_begin:
    \hbox_set:Nn \l_tmpb_box
      {
        \hologo{WESTLAKE}
        \HOLOGO@discretionary
        \hologo{thesis}
      }
    \draw_path_moveto:n
      { \f@size * .15pt/2,                          1.3\box_ht:N \l_tmpb_box }
    \draw_path_curveto:nnn
      {  \box_wd:N \l_tmpb_box/3,                   1.9\box_ht:N \l_tmpb_box }
      { 2\box_wd:N \l_tmpb_box/3,                   1.9\box_ht:N \l_tmpb_box }
      { \box_wd:N \l_tmpb_box - \f@size * .15pt/2, 1.3\box_ht:N \l_tmpb_box }
    \color_select:n { Knowledge Orange }
    \draw_set_cap_round:
    \draw_set_linewidth:n  { \f@size * .15pt }
    \draw_path_use_clear:n { stroke }
    \draw_box_use:N \l_tmpb_box
    \draw_end:
  }
```

(*End of definition for* `\HoLogo@WESTLAKE` *and others.*)

Load the docext package.

```
\RequirePackage [ color = Exploration Blue ] { docext }
\DeclareDocumentCommand \mail { m } { \href{mailto:#1}{\ttfamily #1} }
```

End the optionlist `usrdoc` for l3docstrip.

```
⟨/usrdoc⟩
```

Restore the namespace.

```
⟨@@=⟩
```

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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