A Thesis Template for Huazhong University of Science and Technology: the hustthesis class *

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*This document corresponds to hustthesis.cls v1.2, dated 2016/06/01.

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I Introduction

This is a thesis template for Huazhong University of Science & Technology. This template is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

The whole project is published under LPPL v1.3 License at GitHub.

中文使用说明见 Part II。

English version instruction is in Part III.

II 中文使用说明

1 使用必要条件

1. 安装最新版本的 TeXLive（推荐）或 MiKTeX。因为未及时更新的宏包可能存在未修复的 bug，请确保所有宏包都更新至最新。
2. 安装如下中文字体[1]：
   a) AdobeSongStd-Light
   b) AdobeKaitiStd-Regular
   c) AdobeHeitiStd-Regular
   d) AdobeFangsongStd-Regular

如果使用 LuaTeX，安装字体之后需运行命令 `mkluatexfontdb` 生成字体索引。

2 安装

2.1 安装到本地

使用如下命令即可安装本模板到本地：

```
make install
```

如需卸载，则使用如下命令：

```
make uninstall
```

对于没有安装 Make 的 Windows 系统用户，可以使用如下命令安装：

```
makewin32.bat install
```

如需卸载，则使用如下命令：

```
makewin32.bat uninstall
```

虽然 `makewin32.bat` 表现与 `Makefile` 极其相似，但是还是强烈建议你安装 Make，对于 Windows 用户可以在这里下载。

[1] 本模板所用到的英文字体 Tex Gyre Termes，Droid Sans 和 CMU Typewriter Text 均默认安装于 TeXLive 和 MiKTeX 中。

2.2 免安装使用

如果你希望临时使用本模板，而非安装到本地供长期使用。使用如下命令解压模板文件：

```
make unpack
```

对于没有安装 Make 的 Windows 系统用户，则使用如下命令解压：

```
makewin32.bat unpack
```

再将 hustthesis 目录下的如下文件拷贝到你 TEX 工程根目录下即可：

- hustthesis.bst
- hustthesis.cls
- hust-title.eps
- hust-title.pdf

3 基本用法

本文档只能使用 XeLaTeX 或 LuaLaTeX（推荐）编译。

在源文件开头处选择加载本文档类型，即可使用本模板，如下所示：

```
\documentclass{hustthesis}
```

3.1 文档类型选项

加载本文档类型时，有如下三个选项提供选择。

format　format = ⟨*draft*|***final***⟩

提交草稿选择 draft 选项，提交最终版选 final 选项。其中草稿正文页包括页眉（“华中科技大学 xx 学位论文”）、页眉修饰线（双线）、页脚（页码）和页脚修饰线（单线）。而最终版正文页不包括页眉、页眉修饰线和页脚修饰线，仅包含页脚（页码）。如果不指定，默认设置为 final。

degree　degree = ⟨***none***|*fyp*|*bachelor*|*master*|*phd*⟩

指定论文种类，它将通过设置字段\HUST@zhapplyname 和\HUST@enapplyname 来影响中英文封面处的标题和正文处的页眉（如果 format 设为 draft）。各个不同的选项产生的效果见表 1。如果不指定，默认设置为 none。

language　language = ⟨***chinese***|*english*|*english-draft*⟩

Updated: 2013-07-01

指定论文语言。特别的，如果设定为 english-draft，将会剔除论文中的所有中文内容，这有利于在未安装中文字体的环境中使用。如果不指定，默认设置为 chinese。

Table 1: degree 选项的作用

选项	中文标题 （字段\HUST@zhapplyname）	英文标题 （字段\HUST@enapplyname）
none	学位论文	A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree
fyp	毕业论文	A Thesis Submitted in Partial Fulfillment of the Requirements for Final Year Project
bachelor	学士学位论文	A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor
master	硕士学位论文	A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master
phd	博士学位论文	A Thesis Submitted in Partial Fulfillment of the Requirements for the Ph.D

3.2 基本字段设置

模板中定义一些命令用于设置文档中的字段。其中一部分命令是以\zhX{<Chinese var>}, \enX{<English var>}和\X{<Chinese var>}{<English var>}的形式出现，他们分别意味着设置字段 X 的中文部分，英文部分及一同设定。

\zhtitle
\entitle
\title

\zhtitle{⟨*Chinese title*⟩}
\entitle{⟨*English title*⟩}
\title{⟨*Chinese title*⟩}{⟨*English title*⟩}

这一组命令用于设定论文的中英文标题。

\zhauthor
\enauthor
\author

\zhauthor{⟨*Chinese author*⟩}
\enauthor{⟨*English author*⟩}
\author{⟨*Chinese author*⟩}{⟨*English author*⟩}

这一组命令用于设定论文的中英文作者名。

\date `\date{⟨Year⟩}{⟨Month⟩}{⟨Day⟩}`

该命令用于设定论文的答辩日期。如果不设定，则会选择当前编译日期作为答辩日期。

\zhschoolname `\zhschoolname{⟨Chinese schoolname⟩}`
\enschoolname `\enschoolname{⟨English schoolname⟩}`
\schoolname `\schoolname{⟨Chinese schoolname⟩}{⟨English schoolname⟩}`

这一组命令用于设定论文的中英文学校名。该字段在模板中已默认设置为 `\schoolname{华中科技大学}{Huazhong University of Science \& Technology}`。所以除非需更改学校名，无需使用该命令。

\zhaddress `\zhaddress{⟨Chinese address⟩}`
\enaddress `\enaddress{⟨English address⟩}`
\address `\address{⟨Chinese address⟩}{⟨English address⟩}`

这一组命令用于设定论文的中英文学校地址。该字段在模板中已默认设置为 `\address{中国，武汉，430074}{Wuhan~430074, P.~R.~China}`。所以除非需更改学校地址，无需使用该命令。

\zhmajor `\zhmajor{⟨Chinese major⟩}`
\enmajor `\enmajor{⟨English major⟩}`
\major `\major{⟨Chinese major⟩}{⟨English major⟩}`

这一组命令用于设定论文的中英文专业名。

\zhsupervisor `\zhsupervisor{⟨Chinese supervisor⟩}`
\ensupervisor `\ensupervisor{⟨English supervisor⟩}`
\supervisor `\supervisor{⟨Chinese supervisor⟩}{⟨English supervisor⟩}`

这一组命令用于设定论文的中英文指导老师名（含职称）。

\zhasssupervisor `\zhasssupervisor{⟨Chinese asssupervisor⟩}`
\enasssupervisor `\enasssupervisor{⟨English asssupervisor⟩}`
\asssupervisor `\asssupervisor{⟨Chinese asssupervisor⟩}{⟨English asssupervisor⟩}`

这一组命令用于设定论文的中英文副指导老师名（含职称）。该命令是可选的，如果不加以设定，封面处不会显示相应项。

\schoolcode `\schoolcode{⟨school code⟩}`

用于设置学校代码。

\stuno `\stuno{⟨student number⟩}`

用于设置学号。

\classno `\classno{⟨classify number⟩}`

用于设置分类号。

\secretlevel `\secretlevel{⟨secret level⟩}`

用于设置密级。

\zhabstract `\zhabstract{⟨Chinese abstract⟩}`
\enabstract `\enabstract{⟨English abstract⟩}`
\abstract `\abstract{⟨Chinese abstract⟩}{⟨English abstract⟩}`

这一组命令用于设定论文的中英文摘要。

\zhkeywords `\zhkeywords{⟨Chinese keywords⟩}`
\enkeywords `\enkeywords{⟨English keywords⟩}`
\keywords `\keywords{⟨Chinese keywords⟩}{⟨English keywords⟩}`

这一组命令用于设定论文的中英文关键字。

3.3 其它基本命令

下面来介绍其它基本命令。

\frontmatter
\mainmatter
\backmatter

这一组命令用于设定论文的状态、改变样式，其具体使用见简单示例。`\frontmatter` 用在文档最开始，表明文档的前言部分（如封面，摘要，目录等）的开始。`\mainmatter` 表示论文正文的开始。`\backmatter` 表示论文正文的结束。

\maketitle
\makecover

`\maketitle` 和`\makecover` 作用相同，用于生成封面和版权页面。

\makeabstract

用于生成中英文摘要页面。

\tableofcontents

用于生成目录。

\zhdateformat
\endateformat

用于打印中英文日期。

ack

`ack` 环境用于致谢页面。使用方法如下：

```
\begin{ack}
    <content>
\end{ack}
```

\bibliography `\bibliography{⟨.bib file⟩}`

用于生成参考文献。

appendix

`appendix` 环境用于附录环境。你可以将附录置于 `appendix` 环境中，如：

```
\begin{appendix}
    <content>
\end{appendix}
```

`\appendix` 或者使用`\appendix`代表后文均为附录，如：

```
\appendix
<content>
```

`\listoffigures` `\listoftables` 这两个命令分别用于生成图片和表格索引，可以根据要求在论文前言中使用或附录中使用。

`publications` `publications`环境用于已发表论文页面。一般用于附录中。使用上同`enumerate`环境。如下：

```
\begin{publications}
    \item <thesis>
    <...>
\end{publications}
```

`\TurnOffTabFontSetting` `\TurnOnTabFontSetting`

因为模板中设定了表格的行距和字号，使得使用中无法临时自定义表格的行距和字号。故提供两个命令用于关闭和开启默认表格的行距和字号设置。比如你如果需要输出一个自己定义字号的表格，可以使用如下示例：

```
\begingroup
\TurnOffTabFontSetting
\footnotesize % 设置字号
\begin{tabular}{...}
    <content>
\end{tabular}
\TurnOnTabFontSetting
\endgroup
```

`\email` `\email{⟨Email Address⟩}`

用于生成邮箱地址。如`\email{name@example.com}`会生成如下效果的地址：name@example.com 。

4 简单示例

如下为一个使用本模板的简单示例。更完整的例子请见 hustthesis-zh-example.tex 文件，其效果见 hustthesis-zh-example.pdf。

```
\documentclass[degree=phd,language=chinese]{hustthesis}

\stuno{你的学号}
\schoolcode{10487}
\title{中文标题}{英文标题}
\author{作者名}{作者名拼音}
\major{专业中文}{专业英文}
\supervisor{指导老师中文}{指导老师英文}
\date{2013}{7}{1} % 答辩日期

\zhabstract{中文摘要}
\zhkeywords{中文关键字}
\enabstract{英文摘要}
\enkeywords{英文关键字}

\begin{document}

\frontmatter
\maketitle
\makeabstract
\tableofcontents
\listoffigures
\listoftables
\mainmatter

%% 正文

\backmatter

\begin{ack}
%% 致谢
\end{ack}
\bibliography{参考文献.bib文件}

\appendix

\begin{publications}
%% 发表过的论文列表
\end{publications}

%% 附录剩余部分
```

```
\end{document}
```

5 预设宏包介绍

本模板中预设了一些宏包，下面对其进行简单介绍。

- algorithm2e 算法环境。
- enumitem 自定义列表环境的式样。
- fancynum 用于将大数每三位断开。
- listings 代码环境。如需更好的代码高亮可以使用 minted 宏包。
- longtable 跨页的超长表格环境。
- ltxtable longtable 环境和 tabularx 环境的合并。
- multirow 用于表格中合并行。
- overpic 用于在图片上层叠其他内容。
- tabularx 扩展到表格环境。
- zhnumber 用于生成中文数字。

6 高级设置

6.1 切换字体

模板正文字体为宋体（AdobeSongStd-Light），同时我们提供如下命令切换中文字体：

`\HEI` `{\HEI ⟨content⟩}`
`\hei` `\hei{⟨content⟩}`
切换字体为黑体（AdobeHeitiStd-Regular）。

`\KAI` `{\KAI ⟨content⟩}`
`\kai` `\kai{⟨content⟩}`
切换字体为楷体（AdobeKaitiStd-Regular）。

`\FANGSONG` `{\FANGSONG ⟨content⟩}`
`\fangsong` `\fangsong{⟨content⟩}`
切换字体为仿宋（AdobeFangsongStd-Regular）。

如果需要加载其他字体，请参阅宏包 fontspec，宏包 xeCJK（对于 XeLaTeX）和宏包 luatex-ja（对于 LuaLaTeX）的文档。

6.2 内部字段设置

本模板定义了很多内部字段，其具体内容见 section 7。通过更改这些字段，可以对论文格式进行自定义。

III English Version Instruction

1 Requirement

Install the latest version of TeXLive(Recommend) or MiKTeX. Please ensure that all the packages are up-to-date.

If you need to produce the final format of thesis (see subsection 3.1 for more details), you should also need to install following Chinese fonts:

- AdobeSongStd-Light
- AdobeKaitiStd-Regular
- AdobeHeitiStd-Regular
- AdobeFangsongStd-Regular

If you use LuaTeX, *you need to run the command* `mkluatexfontdb` *to refresh font database index after installing the fonts.*

2 Installation

2.1 Install into local

Use the command below to install this template into local.

```
make install
```

If you need uninstall it, use the command below.

```
make uninstall
```

For Windows User who don't install `Make`, use the command below to install.

```
makewin32.bat install
```

If you need uninstall it, use the command below.

```
makewin32.bat uninstall
```

Although `makewin32.bat` behaves much like `Makefile`, I still recommend you install `Make` into your Windows. You can download it from here.

2.2 Use without installation

If you want to use this template temporary rather than installing it into local for long term use. Run below command to unpack the package.

```
make unpack
```

For Windows User who don't install `Make`, use the command below to unpack the package.

```
makewin32.bat unpack
```

Then copy the following files from directory `hustthesis` into your TEX project root directory.

- `hustthesis.bst`
- `hustthesis.cls`
- `hust-title.eps`
- `hust-title.pdf`

3 Usage

> *This template can only be compiled by*
> XELATEX *or* LuaLATEX*(Recommend).*

Insert below code in the top of source code to use this template:

```
\documentclass[language=english]{hustthesis}
```

3.1 Option

There're three options available when use this template.

`format` `format = ⟨draft|final⟩`

If `format` is set to `final`, the header will be removed. This option is only valid if `language` is not set to `english-draft`. The default value is `final`.

`language` `language = ⟨chinese|english|english-draft⟩`

Updated: 2013-07-01

Set what language is used in the document. Specially, if it's set to `english-draft`, all the Chinese characters will be removed in the document. This is extremely helpful when you don't install Chinese fonts. The default value is `chinese`.

degree `degree = ⟨none|fyp|bachelor|master|phd⟩`

Set the category of thesis. It will influence the title of document, see Table 2. The default value is `none`.

Table 2: Title under different `degree`

Option	Title
`none`	A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree
`fyp`	A Thesis Submitted in Partial Fulfillment of the Requirements for Final Year Project
`bachelor`	A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor
`master`	A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master
`phd`	A Thesis Submitted in Partial Fulfillment of the Requirements for the Ph.D

3.2 Variables setting

There're some commands which are used to set the variables for the thesis.

`\title` `\title{⟨title⟩}`

Set title.

`\author` `\author{⟨author⟩}`

Set author.

`\date` `\date{⟨Year⟩}{⟨Month⟩}{⟨Day⟩}`

Set date. If you don't set it, template will use current date.

`\schoolname` `\schoolname{⟨school name⟩}`

Set the name of school which has been set as `\schoolname{Huazhong University of Science \& Technology}` by default. So unless you want to change the name, you don't need to use this command.

`\address` `\address{⟨address⟩}`

Set the address of school which has been set as `\address{Wuhan~430074, P.~R.~China}` by default. So unless you want to change the address, you don't need to use this command.

`\major` `\major{⟨major⟩}`

Set your major.

`\supervisor` `\supervisor{⟨supervisor⟩}`

Set your supervisor.

`\asssupervisor` `\asssupervisor{⟨ass-supervisor⟩}`

Set your ass-supervisor if you have.

`\abstract` `\abstract{⟨abstract⟩}`

Put your abstract.

`\keywords` `\keywords{⟨keywords⟩}`

Put your keywords.

3.3 Other commands

`\frontmatter` `\mainmatter` `\backmatter` Used to determine the different part of document. You can see the example at section 4.

`\maketitle` `\makecover` `\maketitle` and `\makecover` are the same. Used to create the title page.

`\makeabstract` Used to create abstract page.

`\tableofcontents` Used to create table of contents.

`\endateformat` Used to print the date.

`ack` The `ack` environment is used to create acknowledge page.

```
\begin{ack}
    <content>
\end{ack}
```

\bibliography `\bibliography{⟨.bib file⟩}`

Used to create bibliography page.

appendix The `appendix` environment is for appendix of course. Used like this:

```
\begin{appendix}
    <content>
\end{appendix}
```

\appendix Or simple use `\appendix` to indicate that the rest of document are all in appendix, like this:

```
\appendix
<content>
```

\listoffigures Create the index for all the figures and tables separately.
\listoftables

publications The `publications` environment is where you list all of your published thesises. It's usually putted in appendix.

```
\begin{publications}
    \item <thesis>
    <...>
\end{publications}
```

\TurnOffTabFontSetting
\TurnOnTabFontSetting

This template has set the font size and line spread for all the tables which makes it's impossible to change font format temporary in one table. So it provides these to command to temporary disable or enable default font setting in table. For example, if you want to change table font size, you can use the code like this:

```
\begingroup
\TurnOffTabFontSetting
\footnotesize % Set your font format as you like.
\begin{tabular}{...}
    <content>
\end{tabular}
\TurnOnTabFontSetting
\endgroup
```

\email `\email{⟨Email Address⟩}`

A command to display email address. For example, `\email{name@example.com}` would look like this: name@example.com .

4 Simple example

Below is a simple example of using this template. For a complete example see `hustthesis-en-example.tex` which will generate hustthesis-en-example.pdf.

```
\documentclass[degree=phd,language=english]{hustthesis}

\title{your title}
\author{your name}
\major{your major}
\supervisor{your supervisor}
\date{2013}{7}{1}

\abstract{the abstract}
\keywords{the keywords}

\begin{document}

\frontmatter
\maketitle
\makeabstract
\tableofcontents
\listoffigures
\listoftables
\mainmatter

%% main body

\backmatter

\begin{ack}
%% acknowledge
\end{ack}
\bibliography{.bib file}

\appendix

\begin{publications}
%% your publications
\end{publications}
```

```
36
37 %% rest of appendix
38
39 \end{document}
```

5 Introduction to some packages used in the template

Here's a list of some packages used in the template.

- algorithm2e For display algorithm.
- enumitem For set the style of enumerate, itemize and description environment.
- fancynum Display the really big number.
- listings For display the highlighted code. If you need better quality, use the package minted.
- longtable Create a very long table.
- ltxtable Combine the features of longtable anb tabularx.
- multirow Combine multi-rows in table.
- overpic Put something over a picture,
- tabularx A better table environment.

IV Implementation

```
%<*class>
\RequirePackage{ifthen}
```

1 Process Options

Use xkeyval to process options.

```
\RequirePackage{xkeyval}
```

Option `format`.

```
\newif\ifHUST@finalformat
\HUST@finalformattrue
\DeclareOptionX{format}[final]{
  \ifthenelse{\equal{#1}{final}}{
    \HUST@finalformattrue
  }{
    \ifthenelse{\equal{#1}{draft}}{
      \HUST@finalformatfalse
    }{
      \ClassError{hustthesis}
      {Option format can only be 'final' or 'draft'}
      {Try to remove option format^^J}
    }
  }
}
```

Option `language`.

```
\gdef\HUST@language{chinese}
\DeclareOptionX{language}[chinese]{
  \ifthenelse{\equal{#1}{chinese} \OR \equal{#1}{english} \OR \equal{#1}{english-dra
    \gdef\HUST@language{#1}
  }{
    \ClassError{hustthesis}
    {Option language can only be 'chinese', 'english' or 'english-draft'}
    {Try to remove option language^^J}
  }
}
```

Option degree.

```
\gdef\HUST@degree{none}
\DeclareOptionX{degree}[none]{
  \ifthenelse{\equal{#1}{none} \OR \equal{#1}{fyp} \OR \equal{#1}{bachelor} \OR \equ
    \gdef\HUST@degree{#1}
  }{
     \ClassError{hustthesis}
      {Option degree can only be 'none', 'fyp', 'bachelor', 'master' or 'phd'}
      {Try to remove option degree^^J}
  }
}
```

Process options and load class book.

```
\DeclareOption*{\PassOptionsToClass{\CurrentOption}{book}}
\ProcessOptionsX
\LoadClass[12pt, a4paper, openany]{book}
```

2 Check Engine

Check engine, only XeLaTeX and LuaLaTeX are supported.

```
\RequirePackage{iftex}
\ifXeTeX\else
  \ifLuaTeX\else
    \begingroup
      \errorcontextlines=-1\relax
      \newlinechar=10\relax
      \errmessage{^^J
      ******************************************************^^J
      * XeTeX or LuaTeX is required to compile this document.^^J
      * Sorry!^^J
      ******************************************************^^J
      }%
    \endgroup
  \fi
\fi
```

3 Font Setting

Set font used in document. Firstly, it's font setting for English font under `english-draft` mode. We use fontspec package to handle font. We

choose Tex Gyre Termes, Droid Sans and CMU Typewriter Text as document main font, sans font and mono font.

```
\ifthenelse{\equal{\HUST@language}{english-draft}}{
    \RequirePackage{fontspec}
    \setmainfont[
      Ligatures={Common,TeX},
      Extension=.otf,
      UprightFont=*-regular,
      BoldFont=*-bold,
      ItalicFont=*-italic,
      BoldItalicFont=*-bolditalic]{texgyretermes}
    \setsansfont[Ligatures={Common,TeX}]{Droid Sans}
    \setmonofont{CMU Typewriter Text}
    \defaultfontfeatures{Mapping=tex-text}
```

Now let's set the Chinese font commands into empty, when document is under `english-draft` mode.

```
    \let\HEI\relax
    \let\KAI\relax
    \let\FANGSONG\relax
    \newcommand{\hei}[1]{#1}
    \newcommand{\kai}[1]{#1}
    \newcommand{\fangsong}[1]{#1}
}{}
```

Below is the font setting under `chinese` or `english` mode. We chooses the same English font as under `english-draft` mode. We use xecjk package (for XeLaTeX) or luatex-ja package (for LuaLaTeX, recommend) to handle Chinese font. We will use font: AdobeSongStd-Light, AdobeKaitiStd-Regular, AdobeHeitiStd-Regular and AdobeFangsongStd-Regular.

```
\ifthenelse{\equal{\HUST@language}{english-draft}}{}{
    \ifXeTeX  % XeTeX 下使用 fontspec + xeCJK 处理字体
      % 英文字体
      \RequirePackage{fontspec}
      \RequirePackage{xunicode}
      \setmainfont[
        Ligatures={Common,TeX},
        Extension=.otf,
        UprightFont=*-regular,
        BoldFont=*-bold,
        ItalicFont=*-italic,
        BoldItalicFont=*-bolditalic]{texgyretermes}
```

```
88          \setsansfont[Ligatures={Common,TeX}]{Droid Sans}
89          \setmonofont{CMU Typewriter Text}
90          \defaultfontfeatures{Mapping=tex-text}
91          % 中文字体
92          \RequirePackage[CJKmath]{xeCJK}
93          \setCJKmainfont[
94           BoldFont={Adobe Heiti Std},
95           ItalicFont={Adobe Kaiti Std}]{Adobe Song Std}
96          \setCJKsansfont{Adobe Kaiti Std}
97          \setCJKmonofont{Adobe Fangsong Std}
98          \xeCJKsetup{PunctStyle=kaiming}
99
100         \newcommand\ziju[2]{{\renewcommand{\CJKglue}{\hskip #1} #2}}
```

\HEI

```
101         \newCJKfontfamily\HEI{Adobe Heiti Std}
```

(*End definition for* \HEI*. This function is documented on page 11.*)

\KAI

```
102         \newCJKfontfamily\KAI{Adobe Kaiti Std}
```

(*End definition for* \KAI*. This function is documented on page 11.*)

\FANGSONG

```
103         \newCJKfontfamily\FANGSONG{Adobe Fangsong Std}
```

(*End definition for* \FANGSONG*. This function is documented on page 11.*)

\hei

```
104         \newcommand{\hei}[1]{{\HEI #1}}
```

(*End definition for* \hei*. This function is documented on page 11.*)

\kai

```
105         \newcommand{\kai}[1]{{\KAI #1}}
```

(*End definition for* \kai*. This function is documented on page 11.*)

\fangsong

```
106         \newcommand{\fangsong}[1]{{\FANGSONG #1}}
```

(*End definition for* `\fangsong`. *This function is documented on page 11.*)

```
    \else\fi
    \ifLuaTeX  % LuaTeX 下使用 luatex-ja 处理字体 [推荐]
      \RequirePackage{luatexja-fontspec}
      % 英文字体
      \setmainfont[Ligatures={Common,TeX}]{Tex Gyre Termes}
      \setsansfont[Ligatures={Common,TeX}]{Droid Sans}
      \setmonofont{CMU Typewriter Text}
      \defaultfontfeatures{Mapping=tex-text,Scale=MatchLowercase}
      % 中文字体
      \setmainjfont[
       BoldFont={AdobeHeitiStd-Regular},
       ItalicFont={AdobeKaitiStd-Regular}]{AdobeSongStd-Light}
      \setsansjfont{AdobeKaitiStd-Regular}
      \defaultjfontfeatures{JFM=kaiming}

      \newcommand\ziju[2]{\vbox{\ltjsetparameter{kanjiskip=#1} #2}}
```

`\HEI`

```
      \newjfontfamily\HEI{AdobeHeitiStd-Regular}
```

(*End definition for* `\HEI`. *This function is documented on page 11.*)

`\KAI`

```
      \newjfontfamily\KAI{AdobeKaitiStd-Regular}
```

(*End definition for* `\KAI`. *This function is documented on page 11.*)

`\FANGSONG`

```
      \newjfontfamily\FANGSONG{AdobeFangsongStd-Regular}
```

(*End definition for* `\FANGSONG`. *This function is documented on page 11.*)

`\hei`

```
      \newcommand{\hei}[1]{{\jfontspec{AdobeHeitiStd-Regular} #1}}
```

(*End definition for* `\hei`. *This function is documented on page 11.*)

`\kai`

```
      \newcommand{\kai}[1]{{\jfontspec{AdobeKaitiStd-Regular} #1}}
```

(*End definition for* `\kai`. *This function is documented on page 11.*)

`\fangsong`

```
      \newcommand{\fangsong}[1]{{\jfontspec{AdobeFangsongStd-Regular} #1}}
```

(*End definition for* `\fangsong`. *This function is documented on page* 11.)

```
    \else\fi
```

Generate Chinese number using zhnumber.

```
    \RequirePackage{zhnumber}
    \def\CJKnumber#1{\zhnumber{#1}} % 兼容 CJKnumb
}
```

4 Basic Format

We set global line spread to 1.3.

```
\linespread{1.3}\selectfont
```

Use geometry package to handle paper page.

```
\RequirePackage{geometry}
\geometry{
  top=1.77in,
  bottom=1.1in,
  left=1.1in,
  right=1.1in,
  includefoot
}
\pagewidth=\paperwidth
\pageheight=\paperheight
```

Indent of paragraph and skip between paragraphs.

```
\RequirePackage{indentfirst}
\setlength{\parindent}{2em}
\setlength{\parskip}{0pt plus 2pt minus 1pt}
```

Packages to handle color.

```
\RequirePackage{color}
\RequirePackage[table]{xcolor}
```

Use hyperref package to generate cross-reference link.

```
\RequirePackage[unicode]{hyperref}
\hypersetup{
  bookmarksnumbered=true,
  bookmarksopen=true,
  bookmarksopenlevel=1,
  breaklinks=true,
  colorlinks=true,
  allcolors=black,
```

```
  linktoc=all,
  plainpages=false,
  pdfpagelabels=true,
  pdfstartview={XYZ null null 1},
  pdfinfo={Template.Info={hustthesis.cls v1.1 2013/07/01, Copyright (C) 2013-2014 by
}
```

5 Load Packages

Load packages for math.

```
\RequirePackage{amsmath,amssymb,amsfonts}
\RequirePackage[amsmath,amsthm,thmmarks,hyperref,thref]{ntheorem}
\RequirePackage{fancynum}
\setfnumgsym{\,}
\RequirePackage[lined,boxed,linesnumbered,ruled,vlined,algochapter]{algorithm2e}
```

Load packages for picture.

```
\RequirePackage{overpic}
\RequirePackage{graphicx,caption,subcaption}
```

Load packages for table.

```
\RequirePackage{array}
\RequirePackage{multirow,tabularx,ltxtable}
```

Load package for code highlight. Here we use listings to highlight the code. But if you need more features, use minted.

```
\RequirePackage{listings}
```

Load package for bibliography cite style.

```
\RequirePackage[numbers,square,comma,super,sort&compress]{natbib}
```

Other packages for style setting.

```
\RequirePackage{titlesec}
\RequirePackage{titletoc}
\RequirePackage{tocvsec2}
\RequirePackage[inline]{enumitem}
\RequirePackage{fancyhdr}
\RequirePackage{afterpage}
\RequirePackage{datenumber}
\RequirePackage{etoolbox}
\RequirePackage{appendix}
\RequirePackage[titles]{tocloft}
\RequirePackage{xstring}
\RequirePackage{perpage}
```

6 Variables Setting

\zhtitle Commands to set the title.

\entitle
```
186 \def\zhtitle#1{\gdef\HUST@zhtitle{#1}\hypersetup{pdftitle={#1}}}
```
\title
```
187 \def\entitle#1{\gdef\HUST@entitle{#1}}
188 \DeclareDocumentCommand\title{m g}
189 {
190   \IfNoValueTF{#2}{
191     \zhtitle{#1}\entitle{#1}
192   }{
193     \zhtitle{#1}\entitle{#2}
194   }
195 }
196 \title{}{}
```

(*End definition for* `\zhtitle`, `\entitle`, *and* `\title`. *These functions are documented on page* 6.)

\zhauthor Commands to set the author.

\enauthor
```
197 \def\zhauthor#1{\gdef\HUST@zhauthor{#1}\hypersetup{pdfauthor={#1}}}
```
\author
```
198 \def\enauthor#1{\gdef\HUST@enauthor{#1}}
199 \DeclareDocumentCommand\author{m g}
200 {
201   \IfNoValueTF{#2}{
202     \zhauthor{#1}\enauthor{#1}
203   }{
204     \zhauthor{#1}\enauthor{#2}
205   }
206 }
207 \author{}{}
```

(*End definition for* `\zhauthor`, `\enauthor`, *and* `\author`. *These functions are documented on page* 6.)

\date A command to set the date and several commands to display date.

\zhdateformat
\endateformat
\dateformat
```
208 \def\date#1#2#3{
209   \setdate{#1}{#2}{#3}
210 }
211 \setdatetoday
212 \def\zhdateformat{~\thedateyear~年~\thedatemonth~月~\thedateday~日}
213 \def\endateformat{\datedate}
214 \ifthenelse{\equal{\HUST@language}{chinese}}{
```

```
  \let\dateformat\zhdateformat
}{
  \let\dateformat\endateformat
}
```

(*End definition for* `\date` *and others. These functions are documented on page 15.*)

`\zhschoolname` `\enschoolname` `\schoolname` Commands to set the school name.

```
\def\zhschoolname#1{\gdef\HUST@zhschoolname{#1}}
\def\enschoolname#1{\gdef\HUST@enschoolname{#1}}
\DeclareDocumentCommand\schoolname{m g}
{
  \IfNoValueTF{#2}{
    \zhschoolname{#1}\enschoolname{#1}
  }{
    \zhschoolname{#1}\enschoolname{#2}
  }
}
\schoolname{华中科技大学}{Huazhong University of Science~\char38~Technology}
```

(*End definition for* `\zhschoolname`, `\enschoolname`, *and* `\schoolname`. *These functions are documented on page 7.*)

`\zhaddress` `\enaddress` `\address` Commands to set the address.

```
\def\zhaddress#1{\gdef\HUST@zhaddress{#1}}
\def\enaddress#1{\gdef\HUST@enaddress{#1}}
\DeclareDocumentCommand\address{m g}
{
  \IfNoValueTF{#2}{
    \zhaddress{#1}\enaddress{#1}
  }{
    \zhaddress{#1}\enaddress{#2}
  }
}
\address{中国，武汉，430074}{Wuhan~430074, P.~R.~China}
```

(*End definition for* `\zhaddress`, `\enaddress`, *and* `\address`. *These functions are documented on page 7.*)

`\zhmajor` `\enmajor` `\major` Commands to set the major.

```
\def\zhmajor#1{\gdef\HUST@zhmajor{#1}}
\def\enmajor#1{\gdef\HUST@enmajor{#1}}
\DeclareDocumentCommand\major{m g}
```

```
{
  \IfNoValueTF{#2}{
    \zhmajor{#1}\enmajor{#1}
  }{
    \zhmajor{#1}\enmajor{#2}
  }
}
\major{}{}
```

(*End definition for* `\zhmajor`, `\enmajor`, *and* `\major`. *These functions are documented on page* 7.)

`\zhsupervisor` `\ensupervisor` `\supervisor` Commands to set the supervisor.

```
\def\zhsupervisor#1{\gdef\HUST@zhsupervisor{#1}}
\def\ensupervisor#1{\gdef\HUST@ensupervisor{#1}}
\DeclareDocumentCommand\supervisor{m g}
{
  \IfNoValueTF{#2}{
    \zhsupervisor{#1}\ensupervisor{#1}
  }{
    \zhsupervisor{#1}\ensupervisor{#2}
  }
}
\supervisor{}{}
```

(*End definition for* `\zhsupervisor`, `\ensupervisor`, *and* `\supervisor`. *These functions are documented on page* 7.)

`\zhasssupervisor` `\enasssupervisor` `\asssupervisor` Commands to set the asssupervisor.

```
\def\zhasssupervisor#1{\gdef\HUST@zhasssupervisor{#1}}
\def\enasssupervisor#1{\gdef\HUST@enasssupervisor{#1}}
\DeclareDocumentCommand\asssupervisor{m g}
{
  \IfNoValueTF{#2}{
    \zhasssupervisor{#1}\enasssupervisor{#1}
  }{
    \zhasssupervisor{#1}\enasssupervisor{#2}
  }
}
\asssupervisor{}{}
```

(*End definition for* `\zhasssupervisor`, `\enasssupervisor`, *and* `\asssupervisor`. *These functions are documented on page* 7.)

\schoolcode A command to set school code.

```
\def\schoolcode#1{\gdef\HUST@schoolcode{#1}}
\schoolcode{}
```

(*End definition for* `\schoolcode`*. This function is documented on page 7.*)

\stuno A command to set student number.

```
\def\stuno#1{\gdef\HUST@stuno{#1}}
\stuno{}
```

(*End definition for* `\stuno`*. This function is documented on page 7.*)

\classno A command to set classification number.

```
\def\classno#1{\gdef\HUST@classno{#1}}
\classno{}
```

(*End definition for* `\classno`*. This function is documented on page 7.*)

\secretlevel A command to set secret level.

```
\def\secretlevel#1{\gdef\HUST@secretlevel{#1}}
\secretlevel{}
```

(*End definition for* `\secretlevel`*. This function is documented on page 8.*)

\zhabstract Commands to set the abstract.
\enabstract
\abstract

```
\long\def\zhabstract#1{\long\gdef\HUST@zhabstract{#1}}
\long\def\enabstract#1{\long\gdef\HUST@enabstract{#1}}
\DeclareDocumentCommand\abstract{+m +g}
{
  \IfNoValueTF{#2}{
    \zhabstract{#1}\enabstract{#1}
  }{
    \zhabstract{#1}\enabstract{#2}
  }
}
\abstract{}{}
```

(*End definition for* `\zhabstract`*,* `\enabstract`*, and* `\abstract`*. These functions are documented on page 8.*)

\zhkeywords Commands to set the keywords.
\enkeywords
\keywords

```
\def\zhkeywords#1{\gdef\HUST@zhkeywords{#1}\hypersetup{pdfkeywords={#1}}}
\def\enkeywords#1{\gdef\HUST@enkeywords{#1}}
\DeclareDocumentCommand\keywords{m g}
{
```

```
  \IfNoValueTF{#2}{
    \zhkeywords{#1}\enkeywords{#1}
  }{
    \zhkeywords{#1}\enkeywords{#2}
  }
}
\keywords{}{}
```

(*End definition for* `\zhkeywords`, `\enkeywords`, *and* `\keywords`. *These functions are documented on page 8.*)

7 Localization

Chinese localization. [2]

```
\ifthenelse{\equal{\HUST@language}{chinese}}{
    \def\indexname{索引}
    \def\figurename{图}
    \def\tablename{表}
    \AtBeginDocument{\def\listingscaption{代码}}
    \def\bibname{参考文献}
    \def\contentsname{目\hspace{1em}录}
    \def\contentsnamenospace{目录}
    \def\appendixname{附录}
    \def\HUST@listfigurename{插图索引}
    \def\HUST@listtablename{表格索引}
    \def\equationautorefname{公式}
    \def\footnoteautorefname{脚注}
    \def\itemautorefname~#1\null{第~#1~项\null}
    \def\figureautorefname{图}
    \def\tableautorefname{表}
    \def\appendixautorefname{附录}
    \expandafter\def\csname\appendixname autorefname\endcsname{\appendixname}
    \def\chapterautorefname~#1\null{第\zhnumber{#1}章\null}
    \def\sectionautorefname~#1\null{#1~小节\null}
    \def\subsectionautorefname~#1\null{#1~小节\null}
    \def\subsubsectionautorefname~#1\null{#1~小节\null}
    \def\FancyVerbLineautorefname~#1\null{第~#1~行\null}
    \def\pageautorefname~#1\null{第~#1~页\null}
    \def\lstlistingautorefname{代码}
```

[2] The `autorefname` Reference:http://tex.stackexchange.com/questions/52410/how-to-use-the-command-autoref-to-implement-the-same-effect-when-use-the-comman

```
    \def\definitionautorefname{定义}
    \def\propositionautorefname{命题}
    \def\lemmaautorefname{引理}
    \def\theoremautorefname{定理}
    \def\axiomautorefname{公理}
    \def\corollaryautorefname{推论}
    \def\exerciseautorefname{练习}
    \def\exampleautorefname{例}
    \def\proofautorefname{证明}
    \SetAlgorithmName{算法}{算法}{算法索引}
    \SetAlgoProcName{过程}{过程}
    \SetAlgoFuncName{函数}{函数}
    \def\AlgoLineautorefname~#1\null{第~#1~行\null}
}{}
```

English localization.

```
\ifthenelse{\equal{\HUST@language}{chinese}}{}{
    \def\HUST@listfigurename{List of Figures}
    \def\HUST@listtablename{List of Tables}
    \def\equationautorefname{Equation}
    \def\footnoteautorefname{Footnote}
    \def\itemautorefname{Item}
    \def\figureautorefname{Figure}
    \def\tableautorefname{Table}
    \def\appendixautorefname{Appendix}
    \expandafter\def\csname\appendixname autorefname\endcsname{\appendixname}
    \def\chapterautorefname{Chapter}
    \def\sectionautorefname{Section}
    \def\subsectionautorefname{Subsection}
    \def\subsubsectionautorefname{Sub-subsection}
    \def\FancyVerbLineautorefname{Line}
    \def\pageautorefname{Page}
    \def\lstlistingautorefname{Code Fragment}
    \def\definitionautorefname{Definition}
    \def\propositionautorefname{Proposition}
    \def\lemmaautorefname{Lemma}
    \def\theoremautorefname{Theorem}
    \def\axiomautorefname{Axiom}
    \def\corollaryautorefname{Corollary}
    \def\exerciseautorefname{Exercise}
    \def\exampleautorefname{Example}
    \def\proofautorefname{Proof}
```

```
    \SetAlgorithmName{Algorithm}{Algorithm}{List of Algorithms}
    \SetAlgoProcName{Procedure}{Procedure}
    \SetAlgoFuncName{Function}{Function}
    \def\AlgoLineautorefname{Line}
}
```

Internal variables.

```
\def\HUST@classnotitle{{分}\hfill{类}\hfill{号}}
\def\HUST@stunotitle{学号}
\def\HUST@schoolcodetitle{学校代码}
\def\HUST@secrettile{密级}
\def\HUST@zhauthortitle{{学}\hfill{位}\hfill{申}\hfill{请}\hfill{人}}
\def\HUST@zhmajortitle{{学}\hfill{科}\hfill{专}\hfill{业}}
\def\HUST@zhsupervisortitle{{指}\hfill{导}\hfill{教}\hfill{师}}
\def\HUST@zhasssupervisortitle{{副}\hfill{指}\hfill{导}\hfill{教}\hfill{
师}}
\def\HUST@zhdatetitle{{答}\hfill{辩}\hfill{日}\hfill{期}}

\def\HUST@enauthortitle{Student}
\def\HUST@enmajortitle{Major}
\def\HUST@ensupervisortitle{Supervisor}
\def\HUST@enasssupervisortitle{Co-Supervisor}

\def\HUST@originaldeclare{独创性声明}
\long\def\HUST@originaldeclaretext{
  本人声明所呈交的学位论文是我个人在导师的指导下进行的研究工作及取得的研
究成果。尽我所知，除文中已标明引用的内容外，本论文不包含任何其他人或集体已
经发表或撰写过的研究成果。对本文的研究做出贡献的个人和集体，均已在文中以明
确方式标明。本人完全意识到本声明的法律结果由本人承担。
}
\def\HUST@zhauthorsig{学位论文作者签名：}
\def\HUST@zhdatefield{日期：\hspace{2em}年\hspace{2em}月\hspace{2em}
日}

\def\HUST@authtitle{学位论文版权使用授权书}
\long\def\HUST@authorizationtext{
  本学位论文作者完全了解学校有关保留、使用学位论文的规定，即：学校有权保
留并向国家有关部门或机构送交论文的复印件和电子版，允许论文被查阅和借阅。本
人授权华中科技大学可以将本学位论文的全部或部分内容编入有关数据库进行检索，
可以采用影印、缩印或扫描等复制手段保存和汇编本学位论文。
}
\long\def\HUST@authorizationaddon{
```

```
 本论文属于
 \tabincell{l}{
  保密$\square$, 在~\makebox[2em]{\hrulefill} 年解密后适用本授权书。\\
  不保密~$\square$。
 }
}
\def\HUST@authorizationcheck{（请在以上方框内打“$\surd$”）}
\def\HUST@zhteachersig{指导教师签名：}

\def\HUST@zhabstractname{摘\hspace{1em}要}
\def\HUST@zhabstractnamenospace{摘要}
\def\HUST@zhkeywordstitle{关键词：}
\def\HUST@enabstractname{Abstract}
\def\HUST@enkeywordstitle{Key words:}

\ifthenelse{\equal{\HUST@language}{chinese}}{
  \def\HUST@ackname{致\hspace{1em}谢}
  \def\HUST@acknamenospace{致谢}
  \def\HUST@publicationtitle{攻读学位期间发表的学术论文}
}{
  \def\HUST@ackname{Acknowledge}
  \def\HUST@acknamenospace{Acknowledge}
  \def\HUST@publicationtitle{Publication}
}

\ifthenelse{\equal{\HUST@degree}{none}}{
  \def\HUST@zhapplyname{学位论文}
  \def\HUST@enapplyname{A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree}
}{}

\ifthenelse{\equal{\HUST@degree}{fyp}}{
  \def\HUST@zhapplyname{毕业设计论文}
  \def\HUST@enapplyname{A Thesis Submitted in Partial Fulfillment of the Requirements for Final Year Project}
}{}

\ifthenelse{\equal{\HUST@degree}{bachelor}}{
  \def\HUST@zhapplyname{学士学位论文}
  \def\HUST@enapplyname{A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor}
```

```
}{}

\ifthenelse{\equal{\HUST@degree}{master}}{
  \def\HUST@zhapplyname{硕士学位论文}
  \def\HUST@enapplyname{A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master}
}{}

\ifthenelse{\equal{\HUST@degree}{phd}}{
  \def\HUST@zhapplyname{博士学位论文}
  \def\HUST@enapplyname{A Thesis Submitted in Partial Fulfillment of the Requirements for the Ph.D}
}{}

\ifthenelse{\equal{\HUST@language}{chinese}}{
  \hypersetup{pdfsubject={\HUST@zhschoolname\HUST@zhapplyname}}
}{
  \hypersetup{pdfsubject={\HUST@enapplyname}}
}
```

Set `\listfigurename` and `\listtablename`.

```
\def\listfigurename{\HUST@listfigurename}
\def\listtablename{\HUST@listtablename}
```

8 Style Setting

8.1 Equation Style

Allow long equation breaking between lines or pages.

```
\allowdisplaybreaks[4]
```

Set skip between equation and context.

```
\abovedisplayskip=10bp plus 2bp minus 2bp
\abovedisplayshortskip=10bp plus 2bp minus 2bp
\belowdisplayskip=\abovedisplayskip
\belowdisplayshortskip=\abovedisplayshortskip
```

Set equation numbering style.

```
\numberwithin{equation}{chapter}
```

8.2 Theorem Style

We use amsthm to handle the proof environment and use ntheorem to handle other theorem environments.

```
\theoremnumbering{arabic}
\ifthenelse{\equal{\HUST@language}{chinese}}{
  \theoremseparator{: }
}{
  \theoremseparator{:}
}
\theorempreskip{1.2ex plus 0ex minus 1ex}
\theorempostskip{1.2ex plus 0ex minus 1ex}
\theoremheaderfont{\normalfont\bfseries\HEI}
\theoremsymbol{}

\theoremstyle{definition}
\theorembodyfont{\normalfont}
\ifthenelse{\equal{\HUST@language}{chinese}}{
  \newtheorem{definition}{定义}[chapter]
}{
  \newtheorem{definition}{Definition}[chapter]
}

\theoremstyle{plain}
\theorembodyfont{\itshape}
\ifthenelse{\equal{\HUST@language}{chinese}}{
  \newtheorem{proposition}{命题}[chapter]
  \newtheorem{lemma}{引理}[chapter]
  \newtheorem{theorem}{定理}[chapter]
  \newtheorem{axiom}{公理}[chapter]
  \newtheorem{corollary}{推论}[chapter]
  \newtheorem{exercise}{练习}[chapter]
  \newtheorem{example}{例}[chapter]
  \def\proofname{\hei{证明}}
}{
  \newtheorem{proposition}{Proposition}[chapter]
  \newtheorem{lemma}{Lemma}[chapter]
  \newtheorem{theorem}{Theorem}[chapter]
  \newtheorem{axiom}{Axiom}[chapter]
  \newtheorem{corollary}{Corollary}[chapter]
  \newtheorem{exercise}{Exercise}[chapter]
```

```
  \newtheorem{example}{Example}[chapter]
  \def\proofname{\textbf{Proof}}
}
```

8.3 Floating Objects Style

Set the skip to the context for floating object with argument 'h'.

```
\setlength{\intextsep}{0.7\baselineskip plus 0.1\baselineskip minus 0.1\baselineskip
```

Set the skip to the context for top or bottom floating object.

```
\setlength{\textfloatsep}{0.8\baselineskip plus 0.1\baselineskip mi-
nus 0.2\baselineskip}
```

Set the fraction of floating object. Make the fraction less crowded than default value to prevent floating object occupying too much space.

```
\renewcommand{\textfraction}{0.15}
\renewcommand{\topfraction}{0.85}
\renewcommand{\bottomfraction}{0.65}
\renewcommand{\floatpagefraction}{0.60}
```

8.4 Table Style

`\tabincell` A command make it easier to insert a new table into an existing cell.

```
\newcommand{\tabincell}[2]{\begin{tabular}{@{}#1@{}}#2\end{tabular}}
```

(*End definition for* `\tabincell`. *This function is documented on page* **??**.)

To prevent `\cline` breaking page in longtable environment, use in this way: ⟨*table content*⟩ `\\* \nopagebreak \cline{i-j}` [3]

```
\def\@cline#1-#2\@nil{%
  \omit
  \@multicnt#1%
  \advance\@multispan\m@ne
  \ifnum\@multicnt=\@ne\@firstofone{&\omit}\fi
  \@multicnt#2%
  \advance\@multicnt-#1%
  \advance\@multispan\@ne
  \leaders\hrule\@height\arrayrulewidth\hfill
  \cr
  \noalign{\nobreak\vskip-\arrayrulewidth}}
```

[3] Reference: http://tex.stackexchange.com/questions/52100/longtable-multirow-problem-with-cline-and-nopagebreak

Here we set the global font setting (font size: 11pt and line spread: 1.4) for tables. But first we will declare a variable to determine whether table global font setting is activated.

```
\newif\ifHUST@useoldtabular
\HUST@useoldtabularfalse
```

\TurnOffTabFontSetting Use \TurnOffTabFontSetting to deactivate global font setting.

```
\def\TurnOffTabFontSetting{\HUST@useoldtabulartrue}
```

(*End definition for* \TurnOffTabFontSetting. *This function is documented on page 17.*)

\TurnOnTabFontSetting Use \TurnOnTabFontSetting to activate global font setting.

```
\def\TurnOnTabFontSetting{\HUST@useoldtabularfalse}
```

(*End definition for* \TurnOnTabFontSetting. *This function is documented on page 17.*)

Hook the tabular, tabularx and longtable environment to imply the global font setting.

```
\AtBeginEnvironment{tabular}{
  \ifHUST@useoldtabular\else
    \fontsize{11pt}{15.4pt}\selectfont
  \fi
}
\AtBeginEnvironment{tabularx}{
  \ifHUST@useoldtabular\else
    \fontsize{11pt}{15.4pt}\selectfont
  \fi
}
\AtBeginEnvironment{longtable}{
  \ifHUST@useoldtabular\else
    \fontsize{11pt}{15.4pt}\selectfont
  \fi
}
```

8.5 Caption Style

Set caption font size as 11pt, use hang format, remove ':' after number and set the skip between context as 12pt.

```
\DeclareCaptionFont{HUST@captionfont}{\fontsize{11pt}{14.3pt}\selectfont}
\DeclareCaptionLabelFormat{HUST@caplabel}{#1~#2}
\captionsetup{
  font=HUST@captionfont,
  labelformat=HUST@caplabel,
```

```
  format=hang,
  labelsep=quad,
  skip=12pt
}
```

Set figure and table numbering style.

```
\renewcommand{\thetable}{\arabic{chapter}.\arabic{table}}
\renewcommand{\thefigure}{\arabic{chapter}-\arabic{figure}}
```

8.6 Code Highlight Style

```
\definecolor{HUST@lstgreen}{rgb}{0,0.6,0}
\definecolor{HUST@lstmauve}{rgb}{0.58,0,0.82}

\lstset{
  basicstyle=\footnotesize\ttfamily\linespread{1}\selectfont\FANGSONG,
  keywordstyle=\color{blue}\bfseries,
  commentstyle=\color{HUST@lstgreen}\itshape\KAI,
  stringstyle=\color{HUST@lstmauve},
  showspaces=false,
  showstringspaces=false,
  showtabs=false,
  numbers=left,
  numberstyle=\tiny\color{black},
  frame=lines,
  rulecolor=\color{black},
  breaklines=true
}
```

8.7 Section Title Style

Set the numbering depth for section.

```
\setcounter{secnumdepth}{3}
```

Chapter tilte format and spacing setting.

```
\titleformat{\chapter}
  {
    \bfseries
    \HEI
    \centering
    \fontsize{18pt}{23.4pt}\selectfont
  }
  {
```

```
    \ifthenelse{\equal{\HUST@language}{chinese}}
    {\zhnumber{\thechapter}}
    {Chapter~\thechapter}
  }
  {1em}
  {}
\titlespacing*{\chapter}{0pt}{0pt}{20pt}
```

Section tilte format and spacing setting.

```
\titleformat*{\section}{\bfseries\HEI\fontsize{16pt}{20.8pt}\selectfont}
\titlespacing*{\section}{0pt}{18pt}{6pt}
```

Subsection tilte format and spacing setting.

```
\titleformat*{\subsection}{\bfseries\HEI\fontsize{14pt}{18.2pt}\selectfont}
\titlespacing*{\subsection}{0pt}{12pt}{6pt}
```

Subsubsection tilte format and spacing setting.

```
\titleformat*{\subsubsection}{\bfseries\HEI\fontsize{13pt}{16.9pt}\selectfont}
\titlespacing*{\subsubsection}{0pt}{12pt}{6pt}
```

8.8 TOC Style

TOC depth.

```
\setcounter{tocdepth}{1}
```

TOC right margin.

```
\contentsmargin{2.0em}
```

Remove vertical space between two continues chapter entries. [4]

```
\newskip\HUST@oldcftbeforechapskip
\HUST@oldcftbeforechapskip=\cftbeforechapskip
\newskip\HUST@oldcftbeforesecskip
\HUST@oldcftbeforesecskip=\cftbeforesecskip
\let\HUST@oldl@chapter\l@chapter
\let\HUST@oldl@section\l@section
\let\HUST@oldl@subsection\l@subsection
\def\l@chapter#1#2{\HUST@oldl@chapter{#1}{#2}\cftbeforechapskip=3pt}
\def\l@section#1#2{\HUST@oldl@section{#1}{#2}\cftbeforechapskip=\HUST@oldcftbeforech
\def\l@subsection#1#2{\HUST@oldl@subsection{#1}{#2}\cftbeforesecskip=\HUST@oldcftbef
```

Set LOF LOT style. [5]

[4] Reference:http://tex.stackexchange.com/questions/89103/remove-vertical-space-between-two-chapters-in-table-of-contents-in-latex

[5] Reference:http://www.latex-community.org/viewtopic.php?f=5&t=1838

```
\renewcommand*\cftfigpresnum{\figurename~}
\newlength{\HUST@cftfignumwidth@tmp}
\settowidth{\HUST@cftfignumwidth@tmp}{\cftfigpresnum}
\addtolength{\cftfignumwidth}{\HUST@cftfignumwidth@tmp}
\renewcommand{\cftfigaftersnumb}{\quad~}
\renewcommand*\cfttabpresnum{\tablename~}
\newlength{\HUST@cfttabnumwidth@tmp}
\settowidth{\HUST@cfttabnumwidth@tmp}{\cfttabpresnum}
\addtolength{\cfttabnumwidth}{\HUST@cfttabnumwidth@tmp}
\renewcommand{\cfttabaftersnumb}{\quad~}
```

8.9 Head & Foot Style

```
\let\ps@plain\ps@fancy
\pagestyle{fancy}
\fancyhf{}
\renewcommand{\headrulewidth}{0pt}
\renewcommand{\footrulewidth}{0pt}

\ifthenelse{\equal{\HUST@degree}{fyp}}{
  \fancyfoot[R]{\thepage}
}{
  \fancyfoot[C]{\thepage}
}

\ifthenelse{\equal{\HUST@language}{english-draft}}{}{
  \ifHUST@finalformat\else
    \fancyhead[C]{
      \ziju{1em}{\kai{\fontsize{14pt}{18.2pt}\selectfont\HUST@zhschoolname\HUST@zhap
      \vskip -5pt
      \vbox{
        \hrule width \textwidth height 2pt
      }
    }
  \fi
}
```

8.10 List Environment Style

```
\setlist{noitemsep,partopsep=0pt,topsep=.8ex}
\setlist[1]{labelindent=\parindent}
\setlist[enumerate,1]{label=\arabic*.,ref=\arabic*}
```

```
\setlist[enumerate,2]{label*=\arabic*,ref=\theenumi.\arabic*}
\setlist[enumerate,3]{label=\emph{\alph*}),ref=\theenumii\emph{\alph*}}
\setlist[description]{font=\bfseries\HEI}
```

8.11 Footnote Style

```
\MakePerPage{footnote}
```

9 Specical Page

\frontmatter
\mainmatter
\backmatter

```
\def\frontmatter{
  \clearpage
  \@mainmatterfalse
  \pagenumbering{Roman}
}
\def\mainmatter{
  \clearpage
  \@mainmattertrue
  \pagenumbering{arabic}
}
\def\backmatter{
  \clearpage
  \@mainmatterfalse
  \settocdepth{chapter}
  \hypersetup{bookmarksopenlevel=0}
}
```

(*End definition for* `\frontmatter`, `\mainmatter`, *and* `\backmatter`. *These functions are documented on page 16.*)

Chinese title page.

```
\def\HUST@zhtitlepage{
  \begin{center}
  \vspace*{-1.0cm}
  \parbox[t][2.2cm][t]{\textwidth}{
    \begin{center}
      \setlength{\tabcolsep}{0pt}
      \setlength{\extrarowheight}{12pt}
      \TurnOffTabFontSetting
      \fontsize{14pt}{16.8pt}\selectfont
      \begin{tabularx}{\textwidth}{p{4em}p{5em}Xp{2em}p{12em}}
        \HUST@classnotitle    & \makebox[5em][l]{\rule[-2.0pt]{5em}{1pt}\hspace{-5em
```

```
        \HUST@stunotitle      & \makebox[12em][l]{\rule[-2.0pt]{12em}{1pt}\hspace{-1
        \HUST@schoolcodetitle & \makebox[5em][l]{\rule[-2.0pt]{5em}{1pt}\hspace{-5em
        \HUST@secrettile      & \makebox[12em][l]{\rule[-2.0pt]{12em}{1pt}\hspace{-1
      \end{tabularx}
      \TurnOnTabFontSetting
    \end{center}
    }
  \parbox[t][6cm][t]{\textwidth}{
    \vspace{1.0cm}
    \begin{center}
    \includegraphics[scale=1.1]{hust-title.pdf}\\[0.8cm]
    \ziju{10bp}{\fontsize{42pt}{54.6pt}\selectfont\HEI\HUST@zhapplyname}
    \end{center}
  }
  \parbox[t][4.8cm][t]{.8\textwidth}{
    \vspace{1.4cm}
    \begin{center}
    \fontsize{22pt}{35.2pt}\selectfont\hei{\HUST@zhtitle}
    \end{center}
  }
  \parbox[t][7.4cm][t]{\textwidth}{
    \vspace{1.2cm}
    \begin{center}
    \fontsize{18pt}{27.0pt}\selectfont
    \setlength{\extrarowheight}{0pt}
    \TurnOffTabFontSetting
    \begin{tabular}{p{5em}@{{: \hspace{1em}}}l}
    \HUST@zhauthortitle       & {\HUST@zhauthor} \\
    \HUST@zhmajortitle      & {\HUST@zhmajor} \\
    \HUST@zhsupervisortitle & {\HUST@zhsupervisor} \\
    \ifthenelse{\equal{\HUST@zhasssupervisor}{}}{}{
      \HUST@zhasssupervisortitle & {\HUST@zhasssupervisor} \\
    }
    \HUST@zhdatetitle & \zhdateformat
    \end{tabular}
    \TurnOnTabFontSetting
    \end{center}
  }
  \end{center}
}
```

English title page.

```
\def\HUST@entitlepage{
  \begin{center}
    \parbox[t][4.5cm][t]{.9\textwidth}{
      \begin{center}
        \fontsize{16pt}{17.6pt}\selectfont
        \HUST@enapplyname
      \end{center}
    }
    \parbox[t][5.7cm][t]{\textwidth}{
      \begin{center}
        \fontsize{18pt}{23.4pt}\selectfont
        \textbf{\textsf{\HUST@entitle}}
      \end{center}
    }
    \parbox[t][5cm][t]{.8\textwidth}{
      \begin{center}
      \setlength{\extrarowheight}{5pt}
      \fontsize{16pt}{24.0pt}\selectfont
      \TurnOffTabFontSetting
      \begin{tabular}{l@{~:~}p{18em}}
        \HUST@enauthortitle     & {\HUST@enauthor} \\
        \HUST@enmajortitle      & {\HUST@enmajor} \\
        \HUST@ensupervisortitle & {\HUST@ensupervisor}
        \ifthenelse{\equal{\HUST@enasssupervisor}{}}{}{
          \\ \HUST@enasssupervisortitle & {\HUST@enasssupervisor}
        }
      \end{tabular}
      \TurnOnTabFontSetting
      \end{center}
    }
    \parbox[t][7cm][b]{.8\textwidth}{
      \begin{center}
      \bfseries
      \fontsize{14pt}{28.0pt}\selectfont
      \HUST@enschoolname \\
      \HUST@enaddress \\
      \endateformat
    \end{center}
    }
  \end{center}
```

```
}
```

Copyright page.

```
\def\HUST@authorization{
  \centerline{\fontsize{16pt}{20.8pt}\selectfont \HEI \HUST@originaldeclare}
  \vspace{1cm}
  {
    \fontsize{12pt}{24.0pt}\selectfont
    \indent\HUST@originaldeclaretext
  }
  \\[1.9cm]
  \parbox[t]{\textwidth}{
    \fontsize{12pt}{18.0pt}\selectfont
    \TurnOffTabFontSetting
    \hfill\begin{tabular}{ll}
        \HUST@zhauthorsig & \hspace{2em}\\
        \HUST@zhdatefield & \hspace{2em}\\
    \end{tabular}
    \TurnOnTabFontSetting
  }
  \\[1.9cm]
  \centerline{\fontsize{16pt}{20.8pt}\selectfont \HEI \HUST@authtitle}
  \\[1cm]
  {
    \fontsize{12pt}{24.0pt}\selectfont
    \indent\HUST@authorizationtext \\
    \indent\HUST@authorizationaddon \\
    \indent\HUST@authorizationcheck
  }
  \\[1.9cm]
  \hspace{2em}\parbox[t]{.9\textwidth}{
    \fontsize{12pt}{18.0pt}\selectfont
    \TurnOffTabFontSetting
    \begin{tabular}{ll}
        \HUST@zhauthorsig & \hspace{2em}\\
        \HUST@zhdatefield & \hspace{2em}\\
    \end{tabular}
    \hfill
    \begin{tabular}{ll}
        \HUST@zhteachersig & \hspace{2em}\\
        \HUST@zhdatefield & \hspace{2em}\\
    \end{tabular}
```

```
    \TurnOnTabFontSetting
  }
  \vfill
}
```

\maketitle Commands to generate title page.

\makecover

```
\def\maketitle{
  \newgeometry{
    top=1.2in,
    bottom=1.2in,
    left=1in,
    right=1in,
  }
  \let\HUST@oldthepage\thepage
  \ifthenelse{\equal{\HUST@language}{english-draft}}
  {\def\thepage{Titlepage}}
  {\def\thepage{封面}}
  \begin{titlepage}
    \ifthenelse{\equal{\HUST@language}{english-draft}}{}{
      \thispagestyle{empty}
      \HUST@zhtitlepage
      \clearpage
    }
    \thispagestyle{empty}
    \HUST@entitlepage
  \end{titlepage}
  \ifthenelse{\equal{\HUST@language}{english-draft}}{}{
    \def\thepage{版权页}
    \thispagestyle{empty}
    \HUST@authorization
    \clearpage
  }
  \restoregeometry
  \let\thepage\HUST@oldthepage
  \setcounter{page}{1}
}
\let\makecover\maketitle
```

(*End definition for* `\maketitle` *and* `\makecover`. *These functions are documented on page* 16.)

Chinese abstract page.

```
\def\HUST@zhabstractpage{
  \chapter*{\HUST@zhabstractname}
```

```
  \begingroup
  \fontsize{10.5pt}{13.7pt}\selectfont
  \HUST@zhabstract \par
  \vskip 1.2ex
  \noindent\hei{\HUST@zhkeywordstitle}\hspace{.8em} \HUST@zhkeywords
  \endgroup
}
```

English abstract page.

```
\def\HUST@enabstractpage{
  \chapter*{\textsf{\HUST@enabstractname}}
  \begingroup
  \fontsize{10.5pt}{13.7pt}\selectfont
  \HUST@enabstract \par
  \vskip 1.2ex
  \noindent\textbf{\HUST@enkeywordstitle}\hspace{.8em} \HUST@enkeywords
  \endgroup
}
```

`\makeabstract` A command to generate abstract page.

```
\def\makeabstract{
  \phantomsection
  \ifthenelse{\equal{\HUST@language}{chinese}}{
    \addcontentsline{toc}{chapter}{\HUST@zhabstractnamenospace}
  }{
    \addcontentsline{toc}{chapter}{\HUST@enabstractname}
  }
  \ifthenelse{\equal{\HUST@language}{english-draft}}{}{
    \HUST@zhabstractpage
    \clearpage
  }
  \HUST@enabstractpage
  \clearpage
}
```

(*End definition for* `\makeabstract`*. This function is documented on page 16.*)

`\tableofcontents` A command to generate table of contents.

```
\let\HUST@tableofcontents\tableofcontents
\def\tableofcontents{
  \ifthenelse{\equal{\HUST@language}{chinese}}{
    \pdfbookmark{\contentsnamenospace}{\contentsnamenospace}
  }{
```

```
    \pdfbookmark{\contentsname}{\contentsname}
  }
  \HUST@tableofcontents
  \clearpage
}
```

(*End definition for* `\tableofcontents`. *This function is documented on page 16.*)

`ack` A command to generate acknowledge page.

```
\newenvironment{ack}{
  \clearpage
  \phantomsection
  \addcontentsline{toc}{chapter}{\HUST@acknamenospace}
  \chapter*{\HUST@ackname}
  \begingroup
  \fontsize{10.5pt}{13.7pt}\selectfont
}{
  \endgroup
}
```

`publications` A command to generate publications page.

```
\newenvironment{publications}{
  \clearpage
  \ifHUST@inappendix
    \chapter{\HUST@publicationtitle}
  \else
    \phantomsection
    \addcontentsline{toc}{chapter}{\HUST@publicationtitle}
    \chapter*{\HUST@publicationtitle}
  \fi
  \begin{enumerate}[labelindent=0pt,label={[\arabic*]},itemsep=0.5ex]
  \fontsize{10.5pt}{10.5pt}\selectfont
}{
  \end{enumerate}
}
```

`\bibliography` A command to generate bibliography page.

```
\bibliographystyle{hustthesis}
\let\HUST@bibliography\bibliography
\def\bibliography#1{
  \clearpage
  \phantomsection
```

```
  \addcontentsline{toc}{chapter}{\bibname}
  \begingroup
  \fontsize{10.5pt}{10.5pt}\selectfont
  \setlength\bibsep{0.5ex}
  \HUST@bibliography{#1}
  \endgroup
}
```

(*End definition for* `\bibliography`*. This function is documented on page 17.*)

`appendix` The appendix environment.

```
\newif\ifHUST@inappendix
\HUST@inappendixfalse
\newif\ifHUST@appendix@resetmainmatter
\HUST@appendix@resetmainmatterfalse
\renewenvironment{appendix}{
  \if@mainmatter
    \HUST@appendix@resetmainmatterfalse
  \else
    \HUST@appendix@resetmainmattertrue
    \@mainmattertrue
  \fi
  \appendixtitletocon
  \appendices
  \titleformat{\chapter}
  {
    \bfseries\HEI
    \centering
    \fontsize{18pt}{23.4pt}\selectfont
  }
  {\appendixname\,\thechapter}
  {1em}
  {}
  \HUST@inappendixtrue
}{
  \endappendices
  \HUST@inappendixfalse
  \ifHUST@appendix@resetmainmatter
    \HUST@appendix@resetmainmatterfalse
    \@mainmatterfalse
  \else\fi
}
```

\listoffigures A command to generate list of figures.

```
\let\HUST@listoffigures\listoffigures
\def\listoffigures{
  \clearpage
  \ifHUST@inappendix
    \addtocounter{chapter}{1}
    \def\listfigurename{\appendixname\,\thechapter\hspace{1em}\HUST@listfigurename}
  \else
    \def\listfigurename{\HUST@listfigurename}
  \fi
  \phantomsection
  \ifHUST@inappendix
    \addcontentsline{toc}{chapter}{\thechapter\hspace{1em}\HUST@listfigurename}
  \else
    \addcontentsline{toc}{chapter}{\listfigurename}
  \fi
  \HUST@listoffigures
  \def\listfigurename{\HUST@listfigurename}
}
```

(*End definition for* `\listoffigures`*. This function is documented on page 17.*)

\listoftables A command to generate list of tables.

```
\let\HUST@listoftables\listoftables
\def\listoftables{
  \clearpage
  \ifHUST@inappendix
    \addtocounter{chapter}{1}
    \def\listtablename{\appendixname\,\thechapter\hspace{1em}\HUST@listtablename}
  \else
    \def\listtablename{\HUST@listtablename}
  \fi
  \phantomsection
  \ifHUST@inappendix
    \addcontentsline{toc}{chapter}{\thechapter\hspace{1em}\HUST@listtablename}
  \else
    \addcontentsline{toc}{chapter}{\listtablename}
  \fi
  \HUST@listoftables
  \def\listtablename{\HUST@listtablename}
}
```

(*End definition for* `\listoftables`*. This function is documented on page 17.*)

10 Other Command

\email

```
970 \def\email#1{
971   \href{mailto:#1}{\texttt{#1}}
972 }
```

(*End definition for* `\email`. *This function is documented on page* 18.)

```
973 %</class>
```

V 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.

A

\abovedisplayshortskip 34, 34
\abovedisplayskip 34, 34
\abstract *7*, *7*, *15*, 15, 29, 29, 29
ack (environment) *7*, *15*, 867
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