

The LiteSolution Template

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Abstract

This is the document for [LiteSolution](#) template, which provides a lite design of the solution of test paper.

1 Introduction

1.1 The purpose of this template

This template provides a fresh design for typesetting solutions of midterm or final exam, textbooks and other exercises. Welcome to feedback bugs or ideas via email xiamyphys@gmail.com or [GitHub](#).

1.2 Installing [LiteSolution](#) and loading it

For portable version, simply download latest `litesolution.cls` file from [GitHub](#) or [CTAN](#) and save it under your working directory. This way of installation is simple and convenient, but you have to manually update `.cls` now and then.

However, I strongly suggest that you should use terminal/cmd to implement the commands to update all the packages (and install this package) to the latest version or switch to portable version instead

```
sudo tlmgr update --self --all
```

If you are in some areas with awful Internet environment (such as a), you can choose proper mirror source or use other means¹. To learn more, please refer to [How do I update my TeX distribution?](#)

1.3 Compatibility

The test environments are macOS + MacTeX 2024 / Overleaf and they all work fine for pdfLaTeX and XeLaTeX compilers. Windows, Linux and Unix platforms compatibility unknown.

¹Please comply with local network regulations.

2 Global options of LiteSolution

```
\documentclass[options]{litesolution}
```

2.1 The **answer** option

This option has two modes, **ans** and **noans**, which can show and hide answers respectively. After you enabled the **noans** mode, the contents in the environment **solution**, the command **ans** and the answers of choice questions will be replaced with an area of the same blank size as the original contents.

2.2 The **counter** option

This option has two modes, **separate** and **continuous**, which can make the page number between chapters be reset or continuous.

3 Commands of LiteSolution

3.1 The **chapterimage** command

```
\chapterimage {<image path>}
```

This command can assign the title background image for each subsequent chapter.

3.2 The **chapterfont** command

```
\chapterfont [<font features>] {<font name>}
```

This command can assign the title font for each chapter and the default font of the title is *Songti SC* in Chinese and *Libertinus* in English. This command is *only available with Xe_{La}TeX compiler*.

3.3 The **ans** command

```
\ans {<contents>}
```

This command can underline the answer, and if mode **noans** is enabled, the answer will disappear, leaving only a horizontal line the same width as the answer.

3.4 The **solute** command

```
\solute {<number>}
```

This command can create a fixable answer box when the mode **noans** is enabled.

3.5 The **watermark** command

```
\watermark {<image path>}
```

This command can add watermark to the document.



3.6 Other preset commands

This template provides the same math commands as §1.5 of the template **LiteBook** described additionally.

4 Environments of **LiteSolution**

4.1 The **choice** environment

```
\begin{problem}[Keywords]
  You can add keywords to the problem.
\end{problem}
```

 **PROBLEM 1.**  **Keywords**
You can add keywords to the problem.

4.2 The **solution** environment

```
\begin{solution}\leavevmode
  \begin{tasks}(4)
    \task Choice A \task[\small\faIcon{check-square}.] Choice B
    \addtocounter{task}{1} \task Choice C \task Choice D
  \end{tasks}
\end{solution}
```

 **SOLUTION.**

A. Choice A

☒ Choice B

C. Choice C

D. Choice D

4.3 The **note** environment

```
\begin{note}
  Please note that...
\end{note}
```

 **NOTE.** Please note that...

5 Version History

This template is used to type the midterm and final exam solutions of *College Physics*. Initially, I used the **VividBook** template for layout. However, this template is too bloated and many functions & designs are excess and need to be redesigned, so I started developing the **LiteSolution** template.

Update Announcements

Version 0.1b – 2023/07/06

- Support page number remaking between chapters.
 - Added `watermark` command.
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Version 1.0a – 2023/11/15

- Redesigned the `chapterimage` part, include the layout and the code.
 - Redesigned the `choice` and `solution` environments, keywords are optional and supports star (*) key.
 - Replaced the `exercise` environment with the `problem` environment, supports adding only keywords or points.
 - Added the `note` environment and some custom commands.
-

Version 1.2a – 2023/12/13

- Fixed the bug that the gap around the chapter image.
 - Added some commands for matrices.
 - Redesigned the `chapterfont` command.
 - Redesigned the `proof` environment.
 - Supports to adjust the height of solution box when output the exam paper without answer.
 - Fixed the bug that warnings of the packages `xeCJK` and `fontspec`.
-

Version 1.3a – 2023/03/08

- Added the mode `tcolorbox`, which you can choose whether the `tcolorbox` breakable or not.
 - This version separate the `chapterimage` part to a single `titleimage.sty` file, which will be posted on `ctan.org` soon to make this template more maintainable.
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Version 2.0a – 2024/03/11

- This version redesigned the whole template and simplified the code, replaced the `tcolorbox` design with `amsthm` to accelerate compile.
- Redesigned the chapter title.
- Supports the pdf \LaTeX compiler.