LaTeX Document Template

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Abstract

This document serves as a template for creating LaTeX documents. The style file `document.sty`, written in LaTeX 2_ε, defines or imports the overall layout, formatting, and environments of the document. This document includes two main sections: "Format" and "Environment". The "Format" section describes the overall document structure, including the header and footer setup, hyperlink and reference management, citation and bibliography management, and the use of footnotes. The "Environment" section demonstrates various environments in LaTeX, such as lists, quotes, and code formatting. The document is structured to include content from separate files, allowing for modular organization of the document. The document also includes an appendix section for additional content.

Contents

1 Format

This is a template for creating LaTeX documents. The style file `document.sty`, written in LaTeX 2_ε, defines the overall layout and formatting of the document. The theorem-like environments are inspired by the template [sleepymalc, 2022]. For detail implementation, refer to the GitHub repository [Chang, 2025].

1.1 Section & content

The default font size is set to 11pt, and the document class is set to `article` with two-sided printing. The document is divided into sections, and the content is included from separate files using the `\addcontent` command. The sections are numbered automatically, and the section titles are displayed in boldface. The content is organized into directories, with the main content in the `content` directory and the appendix content in the `appendix` directory. The `\setdirectory` command is used to specify the directory for the main content, and the `\setappendix` command is used to specify the directory for the appendix content. The `\addcontent` command is used to include the content from the specified directory. To add a new section, create a new file in the `content` directory and use the `\addcontent{filename}` command to include it in the main document. In the new file, use the `\section{Section Title}` command to create a new section. Within the section, you can use the `\subsection{Subsection title}` command to create subsections.

1.2 Header & footer

The header and footer are set using the `fancyhdr` package. The header contains the section number and title at the center, and the footer contains the page number also at the center. The header height is set to 0.5 inches and the margins are set to 0.5 inches on the left and right, and 1 inch at the bottom. Footnotes are provided and should be used sparingly. If you do require a footnote, it should be properly typeset after the phrase (and after punctuation marks if there is one.) Footnotes are created using the `\footnote{text}` command. The footnote text is placed at the bottom of the page.[1]

1.3 Hyperlink & reference

The `hyperref` package is used to create hyperlinks in the document. The color box is disabled for the links to ensure that the document is print-friendly. A sample usage is as follows: `\href{link}{text}`. Other than the hyperlinks, the other is using the macro `\ref{name}` to reference the labeled (sub)section, equation, figure, table, algorithm, or theorem-like environment. The labeling is done using the `\label{name}` command, which is placed right after the (sub)section or within the environment.

1.4 Citation & bibliography

The `biblatex` package is used for managing citations and bibliographies. The bibliography file is specified using the `\addbibresource{filename.bib}` command. Citations are created using the `\autocite{key}` command, where `key` is the citation key defined in the bibliography file. The bibliography is printed at the end of the document using the `\printbibliography` command. The bibliography style is set to APA using the `style=apa` option when loading the `biblatex` package. The backend for the bibliography is set to Biber using the `backend=biber` option. While the bibtex is more classical, Biber provides more advanced features and better support for modern bibliography styles. It is recommended to use Biber for new documents, and this template is set up to use Biber by default.

2 Environment

An *environment* in LaTeX is a section of the document that is formatted in a specific way. This document demonstrates various environments, including the use of scripts, tables, figures, algorithms, and framed environments.

[1] The footnote text is automatically numbered, formatted and placed at the bottom of the page like this.

The basic usage of an environment is shown below.

```
\begin{environment}
  some content included in the environment
\end{environment}
```

Here are some common environments used in LaTeX including `enumerate`, `itemize`, and `displayquote`.

1. First item in an enumerated list.
2. Second item in the same list.
3. Third item and more ...

```
\begin{enumerate}
  \item First item in an enumerated list.
  \item Second item in the same list.
  \item Third item and more ...
\end{enumerate}
```

- First item in an unordered list.
- Second item in the same list.
- Third item and more ...

```
\begin{itemize}
  \item First item in an unordered list.
  \item Second item in the same list.
  \item Third item and more ...
\end{itemize}
```

> *This is a quote, which uses the* `csquotes` *package with customization set inside the* `document.sty` *file.*

```
\begin{displayquote}
  This is a quote, which uses the \verb|csquotes|
  ↪ package with customization set inside the
  ↪ \verb|document.sty| file.
\end{displayquote}
```

2.1 Script

To include inline script code, the `fancyvrb` package is used. To show `print("Hello, World!")`, one can use `\Verb|print("Hello, World!")|`. To include block scripts in your document, the `minted` package is used. Here is an example of a `python` script:

```python
def hello_world():
    print("Hello, World!")
hello_world()
```

```
\begin{minted}{python}
def hello_world():
    print("Hello, World!")
hello_world()
\end{minted}
```

2.2 Algorithm

All algorithms must be presented clearly, concisely, and located at the top of the page. (See Algorithm 1.) The `algorithm` and `algpseudocode` packages are used to format algorithms.

Algorithm 1 Fibonacci Sequence

Require: $n \in \mathbb{N}$ ▷ input: a natural number n

```
function FIBONACCI(n)
    if n ≤ 1 then                          ▷ base case: return n if n is 0 or 1
        return n
    else                                   ▷ recursive case: sum of the two preceding numbers
        return FIBONACCI(n − 1) + FIBONACCI(n − 2)
    end if
end function
```

Table 1. Sample table

Part		
Name	Description	Size (μm)
Dendrite	Input terminal	~100
Axon	Output terminal	~10
Soma	Cell body	up to 10^6

2.3 Table

All tables must be centered, neat, legible and located at the top of the page. The table title always appears before the table itself, and must be in lower case (except for first word and proper nouns). Note that publication-quality tables *do not contain vertical rules* [NeurIPS, 2023]. This document template uses the `booktabs` package, which allows for typesetting high-quality, professional, and publication-ready tables. (See Table 1.)

2.4 Figure

All figures must be centered, neat, legible and located at the top of the page. The figure caption always appears after the figure itself, and should be in lower case (except for first word and proper nouns), and smaller than the main text. The `caption` and `subcaption` packages are used to format the figure captions. Colored figures are allowed, but it is best for the figure captions and the paper body to be legible if the paper is printed in either black/white or in color. (See Figure **??**.)

2.5 Frame

This document demonstrates the usage of the custom theorem-like environments defined in the `document.sty` package.

Definition 2.5.1 (Sample Definition). This is an example of a definition environment.

Assumption 2.5.2 (Sample Assumption). This is an example of an assumption environment.

Conjecture 2.5.3 (Sample Conjecture). This is an example of a conjecture environment.

Lemma 2.5.4 (Sample Lemma). This is an example of a lemma. It shares the same style as the theorem environment.

Proof

This is an example of a proof environment. It is used to provide a proof for the lemma. ■

Theorem 2.5.5 (Sample Theorem). This is an example of a theorem environment.

Sample Proof

This is an example of a proof for the theorem. ■

Corollary 2.5.6 (Sample Corollary). This is an example of a corollary. It also shares the same style as the theorem environment.

Proof

This is an example of a proof for the corollary. ■

Proposition 2.5.7 (Sample Proposition). This is an example of a proposition. It also shares the same style as the theorem environment.

Proof

This is an example of a proof for the proposition. ■

Remark 2.5.8 (Sample Remark). This is an example of a remark environment.

Example 2.5.9 (Sample Example). This is an example of an example environment.

Solution

This is an example of an solution environment. □

Problem 2.5.10 (Sample Problem). This is an example of a problem environment.

These environments are designed to enhance the readability and organization of mathematical documents. Each environment has a specific purpose and style, making it easier for readers to follow the logical flow of the content.

Appendices

References

Chang, H.-S. [2025]. LaTeX document template.

NeurIPS. [2023]. *Neurips latex template*. Retrieved July 24, 2025, from https://neurips.cc/Conferences/2023/PaperInformation/StyleFiles

sleepymalc. [2022]. Latex template.