Learning Tex

Sam Wang

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1 Installation

About Tex Distribution

On Windows, MiKTex is a good choice with not too large size. Note MiKTex has its own package manager (GUI of course, but not as same as that of TexLive) and make sure to use the best repository to fast-download packages.

On Mac, I tried a basic installation package of MacTex (the full package is over 3G). Note MacTex uses a basic version of TexLive as package manager. So make sure Tex commands are in user path and have correct user/group and permission to get executed. Also choose the right repository with
tlmgr option repository `http://<mirror-domain>/systems/texlive/tlnet/`

About Editor MiKTex includes a front end, Texworks while the basic MacTex does not. A better choice (for my taste) is *Visual Code + Latex Workshop(plugin)*. Latex Workshop uses *latexmk* to compile tex files by default. So make sure it is installed (via package manager). In case both TexLive and MiKTex are installed, Latex Workshop seems to be looking for TexLive?

About Q&A [Q&A]

2 Concept

Preamble Part before `\begin{document}`

Command Start from \

Environment Block to have settings in its own scope

Font *serif* has small details at the end of letter strokes and thus is suitable for body
sans-serif for headings and text on low-resolution screens
`monospace`(`\texttt`) for source code.

Online document (in case no *texdoc*) `http://ctan.org/pkg/<package-name>`
to find document

3 Basic Style

3.1 Semantic markup

`\emph` is more flexible than `\textit` in that it represents the intention *instead of a detailed style*. Also note *c*an be nested and the effect is to flip between normal and italic.

3.2 New Command

Define new command inside preamble (before `\begin{document}`):
`\newcommand{command-name}[parameter-count][optional-parameters]{definition}`
`\site[git]{github.com/sevenbamboos}` → `git://github.com/sevenbamboos`

3.3 Item

1. First action
   (a) Step one
   (b) Step two
2. Second action
   - Member A
     Courage Average **
     Intelligence Poor *
     Knowledge Good ***
   - Member B

3.4 Table

Name	User-friendly	Powerful
TeXworks (see 1 on page 1)	⋆⋆	⋆⋆⋆
Visual Code + Latex Workshop	⋆⋆⋆⋆	⋆⋆

3.5 Image

3.6 Reference

`\label{key} \ref{key} \page{ref}`

3.7 Math

Check math symbols at [symbols]
Inline equation: $x_{1,2} = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$
Display equation:

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Numbered equation:

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \tag{1}$$

$$\begin{aligned} a + b + c &= 1 \\ b + c &= 0 \\ c &= 2 \\ s &= \overline{AB} \\ s &= \underline{AB} \\ n &= \underbrace{1 + 1 + \cdots + 1}_{n} \end{aligned}$$

$$\overbrace{1 + 1 + \cdots + 1}^{n} = ?$$

3.8 Source code

```
1  class Foo {
2    // hello world :)
3    public static void main(String[] args) {
4      System.out.println("Hello world");
5    }
6  }
```

References

[symbols] https://en.wikibooks.org/wiki/LaTeX/Mathematics

[Q&A] https://tex.stackexchange.com