How to set up your computer to start using LaTeX

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1 Introduction

Thank you for your interest in LaTeX typesetting system and this article will help you to get you ready for starting to use LaTeX on your computer.

Although I would like to write a continuous text on how to install everything on different kinds of OSes (Operating Systems), I believe, that it is not necessary to duplicate any content, if it can be found in a better shape elsewhere. Therefore, I suggest you reading chapters of the book called LaTeX hosted on the website called wikibooks.org. You can find an on-line version of the book or the PDF version of it, which I think is much more suitable for reading or printing.

The list of the needed software is already there and if somebody feels very comfortable with his system, no specific directions should be necessary for them.

2 Software from the Department of Chemistry

Computer Office is already providing images for deploying the whole OS and necessary software for Chemistry Department members. As far as I was informed, there are images for Linux and Windows systems. For Macs, there might be customized installers as well available on `http://www.google.co.uk`.

3 LaTeX distribution installation

You need either of these:

- "TeX Live" LaTeX distribution which is available for Linux/Mac/Windows, but should be preferred on Linux machines.
- "MacTeX" LaTeX distribution which is available for Mac machines only and should be the preferred option on these machines.
- "MiKTeX" LaTeX distribution which is available for Windows machines only and should be the preferred option on these machines.

3.1 Notes for Linux users

Use your Linux Distribution package manager whenever you can and install "TeX Live" only from there. If you do not know how to do it, please refer to your Distribution Wikipedia and search it for 'LaTeX' or 'TeX Live'.

Here is a list of most popular distributions and links to their Wikipedia Pages:

.deb based Debian, [1] Ubuntu, [2] and for distributions, which are derived from these two, the same wiki pages can be used. However, for full installation of TEX Live you can try these terminal commands (issue them as root):

```
# aptitude update
# aptitude install texlive-full
```

.rpm based For Fedora, RedHat, CentOS and openSUSE distributions, use your package manager and install the full TEX Live distribution. The following command executed in terminal as root should work:

```
# yum install texlive-full
```

ArchLinux and derivatives The following instruction should work on ArchLinux and Chackra distributions. Both use pacman as their packages manager, so the following commands executed as root user will suffice:

```
# pacman -S texlive-most texlive-lang
```

NB the second package texlive-lang is for the different languages support and if you use only English language, then you are free to install only the `texlive-most` package

Archlinux has a very good wiki article: `https://wiki.archlinux.org/index.php/TeX_Live`.

Gentoo and derivatives This applies for Gentoo, Funtoo, Sabayon distributions. Things which work will definitely work on the other two distributions, so we will analyse only Gentoo.

For checking the list of functionality for texlive distribution, enter:

```
# equery uses texlive
```

and you will get the list of available use flags. You will have to enable the needed flags in the `/etc/portage/package.use` and then just emerge the packages:

```
emerge -av texlive
```

In order to get a newer version of TEX Live, just unmask the needed packages via `/etc/portage/package.accept_k`

Gentoo has a very good Wiki page documenting the installation.

Others Install the TEX Live distribution via your distributions packet manager. If you do not know how to do that, ask in the forums on your distribution web page.

3.2 Notes for Mac users

For easier experience, just install the full MacTEX installation which can be found on the following website. [3]

3.3 Notes for Windows users

For easier experience, download MiKTEX installation files from their website. [4] There are mainly 2 wise options to select:

[1] The URL for Debian wiki is `http://wiki.debian.org/Latex`
[2] The URL for Ubuntu wiki is `https://help.ubuntu.com/community/LaTeX`
[3] The URL for the MacTEX website is `http://www.tug.org/mactex/`
[4] The URL for the website is `http://miktex.org/2.9/setup`

Install everything Although this might be very convenient as one will not have to worry about missing packages, but it takes space. On the other hand, slightly more than 1GB of occupied space on modern computers will not make a difference.

Install a base system This is the alternative, which would take less space. What is more, one can select an option where necessary packages could be installed on the fly without any user intervention.

4 Editing a .tex file

Mainly there are two choices:

- IDE (Integrated Development Environment) [5]
- Just a text editor.

While IDEs generally will provide a user with much more integrated environment, this does not necessarily mean, that producing LaTeX documents with an IDE is generally faster. There are many very powerful text editors, which might have a steep learning curve, but once mastered, they are very fast. What is more, some text editors might be better in some tasks than other, so there is no such thing as "the best" IDE or text editor for LaTeX.

The most important projects are mentioned bellow:

VIM & Emacs VIM is the best editor, in my opinion. It is very fast, lightweight and it can be customized a lot. Although it has a steep learning curve, it is very rewarding afterwards and reading any of the books on VIM would help a lot.

This being said, everybody admit, that Emacs is also good, and many argue that it is better than VIM. This has much to do with so-called editor wars. [6]

Since both are very advanced editors, you will find that they have very powerful LaTeX plug-ins, which might make the work faster than with most of the IDEs.

LyX This is a project, that aims the user to give a word-processor, which would use LaTeX internally. Although one can achieve really good results with it, technically you do not write LaTeX and it will not help you at all with LaTeX if you want to learn it. However, since it does a lot of automatic things, it might be a very good reference tool for searching hints how to achieve some things with LaTeX (eg. searching for symbols, remembering commands).

That said, I have to insist on you that **YOU DO NOT USE THIS WORD PROCESSOR, OTHER THAN FOR REFERENCE!** The reason is because publishers do not accept LyX files and once you export them to LaTeX it becomes a mess. What is more, it will be easier to collaborate with colleagues if you use LaTeXÀnd sometimes, it tries to do more, than you want, or ask him to do and then you get errors, and spend so much precious time debugging instead of writing your thesis.

TeXShop This is probably the first good IDE for Mac, which was highly successful and still is very popular.

TeXnicCenter This is one of better IDEs for LaTeX typesetting in Windows OS.

TeXworks A cross-platform IDE which was inspired by **TeXShop**.

TeXMaker A good cross-platform IDE using Qt toolkit.

[5] Wikipedia article
[6] Editor wars on Wikipedia

Other projects, which can be still very well used to achieve good results, but are somewhat less popular:

Kile This is an IDE for Linux.

Geany This is an IDE for Linux.

Others Need to add more.

5 Bibliography management software

Bibliography is usually managed through so-called BibTEX and there are various GUIs (Graphical User Interfaces) to deal with such things.

Some IDEs can interface with BibTEX, but may or may not require some additional setup. As of how to do this, the best place to search would be the documentation of your IDE of choice or some web-search engine (eg. Google, Bing, etc.) Also some more advanced text editors can also do it (eg. VIM and Emacs). However, there is a third category, which includes stand-alone software for managing bibliographies (eg. Jabref, Bibdesk (OS X only),)

6 PDF viewers

Good PDF viewers are different across different platforms. I believe, that you might want say, that Adobe's PDF viewer is very good, but the truth is that it is slow and not as reliable as others.

A much better alternative might look **Foxit** PDF reader, which is available for both Linux and Windows operating systems. However, by no means it is the best solution and one should research a bit before settling down with the most appealing PDF viewer.

6.1 On Linux

Linux users have a huge variety of PDF viewers to select from. One should search distribution's repositories, but just to mention a few:

Evince Default for GNOME;

Okular Default for KDE;

epdf

zathura

mupdf

6.2 On Mac

The best choices seem to be viewers **Preview** and **Skim** as both are relatively light and provide a good number of features. There might be others, which I am not aware off as well.

6.3 On Windows

The best choice would be a **Sumatra** PDF viewer. Other alternatives either need to be bought or they are not as reliable/complete as **Sumatra** PDF viewer.

7 Other useful software & links