

Getting ready for L^AT_EX

Alexis Dimitriadis

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LaTeX is a great system, but it takes some work to learn. Unfortunately, it also takes some work to set up the necessary software. This is my outline of how to do it.

This is unlikely to be a self-sufficient reference. Consider it a checklist: It mostly tells you what you need to google, read up on, or ask for help with at each step.

1 Overview

1. **Download and install** the necessary software: A T_EX distribution,¹ a suitable editor, and if you are on Windows, a more-suitable PDF viewer as well.
2. **Configure** your new tools to work well together. Set up a place to put your own packages, so that TeX can find them.
3. Follow a simple tutorial to **learn the basics** of using LaTeX.
4. Find out what **packages** you need. Include them, and no others for now, in your document header.

If you're about to write a dissertation in LaTeX, you should also do the following:

5. Set up a **bibliography** “database” (*.bib*) to use with BibTeX. It allows you to keep all your references in one centralized file.
6. Download and set up the *lotdiss.cls* **style for LOT dissertations**.
7. **Organize** your draft into chapters, add your content and settings, and *remove* any settings (e.g. document margins) that conflict with the work of lotdiss.

Currently, this document only covers the set-up steps: Getting and configuring the necessary software. I plan to gradually extend it with more material.

2 Getting the software

There are several “distributions” of T_EX, L^AT_EX and associated programs. When googling for them, take care that you **get them from a reputable website** (generally the program’s own download page). Some are also offered on other websites, which bundle them with their own software/adware which they install along with what you actually want.

1. **Get T_EX**. For Windows, MikTeX is a favorite but TeX Live is also popular. Find one and download the installation. I’m familiar with MikTeX, so that would be my first choice.

To install MikTeX, you first download an installer (a very small program). When you run it it will download all the necessary files, which takes a while, but it will **not** install T_EX. To really install it, you need to start the installer a second time, and it will detect the necessary files and offer to install them.

¹T_EX is an advanced system for formatting text, created by Donald Knuth. L^AT_EX is the most popular suite of high-level commands for T_EX. I try to keep the names straight, but you won’t be missing much if you just read “LaTeX” everywhere.

2. **Get a PDF viewer (Windows only)** Running a .tex file through LaTeX creates a PDF document that you can open with any PDF viewer.²

Unfortunately, Acrobat is a very poor fit for when you are repeatedly editing and reformatting your document. *Sumatra PDF* is much better suited to use with LaTeX, so download it and install it. There's no need to make it your default PDF viewer— you can continue to use Acrobat everywhere else.

On Macs, *Preview* will work fine with LaTeX PDFs: You don't need to download another viewer.

3. **Get an editor.** A TeX “document” is a “plain text” file containing a description of your formatted document. To create the document you could use any text editor (even Word, though you'd be crazy to do that), but really you should use an editor that can automatically run TeX to format your document at the press of a button.

For **Windows**, I recommend *TeXnicCenter*, which is simple and functional and works reasonably well. Install MikTeX and Sumatra PDF first, so that TeXnicCenter can find them during its configuration step.

For **Macs**, Texshop seems to be the popular editor choice.

There are plenty of other choices. You can google around for recommendations, but stay away from emacs, vim and Lyx (unless you are already using one of them, of course). They're all great editors in one way or another, but not worth learning just to use LaTeX.

That's it for the software download. Down the line you'll probably need to download some packages (extensions) that are not already present in your TeX distribution, but other wise you're good to go.

3 Setting up TeXCenter and SumatraPDF

Congratulations, you've downloaded the software. If you're on Windows, it's a good idea to make some changes to the default set-up. Mac users only need Part 2 (a place to install packages).

3.1 Linking programs to find each other

1. Run TeXCenter from the Run menu. The first time you'll run it, you'll see a “Wizard” that will set it up to run LaTeX for you. (You can ignore the Hints window).
2. The Wizard will ask you to find the folder containing the TeX programs. They're probably in the folder `C:\Program Files\MikTeX\miktex\bin`. (Change the beginning of the path if necessary). Click on the [...] button to browse.
3. Accept the defaults for the rest of the Wizard. We'll modify some in the next step. You don't need to provide a PostScript program.
4. If everything goes well, Sumatra PDF will be detected and set up as the editor's PDF viewer. If not, you'll need to configure TeXCenter to use SumatraPDF instead of Acrobat. (You're not giving up Acrobat: your PDF files will continue to open with Acrobat when you click on them.)

Let the Wizard finish. Once TeXCenter is running, go to the menu option **Build / Define Output Profiles**. Choose `LaTeX => PDF`, and change the settings as follows.

²TeX and LaTeX can also produce output in the TeX-specific DVI format, for which there are separate viewers (included in the TeX distribution). Never mind that for now.

On the (La)TeX tab: In the beginning of the field “Commandline arguments to pass to the compiler”, add the option `-synctex=-1` (that’s a number, -1). There should be no spaces inside this option, but use a space to separate it from the other options.

On the Viewer tab, apply the following settings:

Path of executable:

`C:\Program Files\SumatraPDF\SumatraPDF.exe -reuse-instance`

View project output: Select “DDE Command”

Command: `[Open ("%Bm.pdf", 0, 1, 0)]`

Server: SUMATRA

Topic control

Forward Search: Select “DDE Command”

Command: `[ForwardSearch ("%bm.pdf", "%Wc", %l, 0, 0, 1)]`
(That’s a letter ell in “%l”, not a digit)

Server: SUMATRA

Topic control

Close document before running

(La)TeX

3.2 A place to install packages

LaTeX comes with a huge number of extensions, called “packages”. Many of these came with your distribution, others will be downloaded automatically, but some you’ll need to install yourself. Create a place to keep them, as follows:

1. **On a Mac**, the location should be the folder `Library/texmf` in your home directory. LaTeX will look there automatically and you don’t need to do anything else.
2. **On Windows**, choose a reasonable place, somewhere **not** in the folder where you put your day to day documents. If you can’t think of one, make a folder `Library/tex-styles`.
3. In your new extensions folder, create the following **subfolders**: `tex`, `bibtex`, `bibtex/bst`, and `bibtex/bib`. Packages you install yourself will need to go in one of these, as appropriate.
4. If you’re on Windows, you need to tell MikTeX where your extensions folder is. Open the *MikTeX Options* program (Windows Start menu : MikTeX : Maintenance : Settings), go to the **Roots** tab, and use **Add** to add the path to your extensions folder.

Before closing *MikTeX Options*, go back to the *General* tab. Because there are so many files, LaTeX keeps an index of what is where. Whenever you add some manually, you will need to tell it to refresh the index. You do that with the button Refresh FNDB (File Name Data Base).

3.3 Automatic package downloading

One of the nicest features of MikTeX is that it can download packages for you on the fly. Enable it from the *General* tab of the *MikTeX Options* program. (The option “Ask me first” might not work on some systems. If that happens, change it to “Yes”).

3.4 Making some links

This step is optional, but I highly recommend it: TeXCenter allows you to add some custom links under the **TOOLS** menu option. Doing so now can save you a lot of trouble later.

1. In the **TOOLS** menu, go to **Customize** and choose the **TOOLS** tab. Find the **New** button.
2. Make an entry called *MikTeX Options*. Set it to run the command `mo.exe`
3. Make an entry called *My LaTeX styles*. Set it to run **explorer.exe**. In the *Arguments* field, enter the path to the extensions folder you created earlier.

If you're on a Mac, make an alias to your extensions folder and put it on your desktop (or in any other place you will *not* forget).

4 Ready to go

1. Figure out where you'll save your first LaTeX documents. They're your writings, so they belong together with Word documents and the like. Create a new folder to experiment in.
2. Make a minimal LaTeX document and save it in your new folder. The file name **must end in .tex** (do this even if you use a Mac).

```
\documentclass{article}

\begin{document}
  Hello, world!!!!!!
\end{document}
```

3. TeXCenter has a drop-down box showing the selected "build profile". Switch it to the profile called `LaTeX => PDF`. Find and press the **Build** button and then the **View** button, or the **Build-and-View** button.
4. If everything went well, you'll soon see your document in the PDF viewer. LaTeX will need to do a bunch of set-up the first time you do this, so expect it to take a few minutes; it'll be very fast the second time.
5. Double-clicking on some text in the PDF viewer should switch you to your editor and bring up the same text. (Mac users: hold down the Control key as you click).

Finally done! You can now start learning what you can put in your document.

5 Learning LaTeX

Find a good online tutorial and study the parts that are relevant. I recommend *The Not So Short Introduction to LaTeX 2e*, by Tobias Oetiker. Google it.

Looking at LaTeX documents from friends and colleagues is an easy way to see how to do certain linguistic things in LaTeX. But do read through a tutorial as well, and don't use the sample document as the starting point for your text (see the warning in the next section).

This section will probably be extended in the future.

6 Selecting packages

If you're just starting with LaTeX, you probably have a well-meaning friend who's eager to share his or her LaTeX "preamble" (document header), full of packages and definitions that you might possibly use some day. I recommend that you save such samples for future reference, but **keep them out** of your documents: Extensive customizations you don't understand are far more likely to cause you problems than to help you, in the short and long term. Keep your preamble as simple as possible, and don't add anything unless you know what it's there for.

Keep in mind that there are extension packages for a huge variety of uses. If you need to do something, google it.

Take a look at my LaTeX webpages (the really old one and the new one) for a selection of useful packages. You're most likely to need:

1. A numbered example environment; *gb4e.sty* or *linguex.sty* are popular and easy to use. Both come with support for word-aligned sentence glosses.
2. bibliography management (BibTeX), with the *Author (Year)* citation style (*natbib.sty*);
3. including images (*graphics.sty*);
4. syntax trees (*qtree.sty*).

All of the above are available as standard extension packages. MikTeX will download and install them automatically if they're not there already, while TeX Live should include them already.

5. If you're using LaTeX for your dissertation, get set up with *lotdiss.cls*. You'll need to download it from my latex page, and install it in the package folder you created in section 3.2. (And don't forget to "rebuild FNDB" afterwards.)
6. If you've got a lot of phonetic symbols or text from more than one non- Latin alphabet, read up on XeTeX. It is included in your TeX distribution– nothing to download.

Here are some other things that there are special LaTeX facilities for (mostly in the form of packages): table of contents, list of figures, index, etc.; slides for presentations; OT tableaux; Discourse Representation Structures; Attribute-Value Matrices; IPA symbols; mathematical and logical notation; movement arrows and similar mark-up; colored text or backgrounds; custom-made commands.