

Introduction to L^AT_EX 2_ε

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L^AT_EX 2_ε is an extension of the Donald Knuth's T_EX language built upon a set of macros developed by Leslie Lamport. It is a program that allows you to produce articles, books, slides, etc. However, unlike what-you-see-is-what-you-get programs such as Microsoft Word or Pages for Mac, L^AT_EX 2_ε requires you to first compile the .tex file of code before being able to visualise the final output, say in .pdf or .ps formats. First, you declare the type of document you want, e.g. book, article, slides, etc. and list the parts of the document, e.g. chapters, sections, subsections, frames, etc. Within each part of your document, you enter the content in plain text and mark-up some parts. L^AT_EX 2_ε takes care of the formatting, allowing you to predominantly focus on the content rather than the presentation of your work. Of course, you can modify how your work is displayed as you advance in your proficiency with L^AT_EX 2_ε.

L^AT_EX 2_ε was designed with mathematicians and other scientists particularly engineers, chemists and Physicists in mind. It is the standard for publication across a wide number of fields within the natural sciences. However, its use is not ubiquitous across all disciplines, particularly those in humanities, though less so in social science. L^AT_EX 2_ε is the academic standard across the economics profession, though its use is not as pervasive as in mathematics and physics. If your work is technical, including equations and graphs in documents for instance, then L^AT_EX 2_ε may be productive for you to learn as it is quicker than a word processor and it is easier to produce output with than with a word processor. L^AT_EX 2_ε can be used in tandem with bibtex that produces bibliographic material from a separate file. [Zotero](#) is my recommendation as a tool to help you collect, organise, cite and share your research sources; it generates bibtex formatted citation files and can store pdfs of papers on the cloud. Users of End-Note should look for bibtex formats when gathering citations. Jabref is another program that helps to manage the external file of bibliographic material.

The following list provides what I consider the three tasks you might want to undertake in order to get started with L^AT_EX 2_ε

1. You will need to download and install a **T_EX distribution** first: [Tex Live](#) (my recommendation) is a platform independent distribution for L^AT_EX 2_ε. For Windows users, the [MiKTeX](#) T_EX distribution or the [proTeXt](#) T_EX distribution are very good distributions and while proTeXt is easier to download in that it gives you less options since it installs all packages

at once, MiKTeX can also be handy since it takes less time to download and installs packages ‘on the fly’ when you need them. If you are new to $\text{\LaTeX} 2_{\epsilon}$, proTeXt might be the best for you to start with as most packages you will need are bundled in, in addition to TeXnicCenter (see second task) and Ghostscript (a software for processing PostScript .ps files). For Mac users, TeX Live is a good distribution as mentioned above, though [MacTeX](#) seems to be a general recommendation for which I have no experience with. For Unix users, TeX Live might be preferable to MiKTeX as it installs everything at once, though MiKTeX allows ‘on the fly’ package installation; in addition, there are a richer set of command line tools for TeX Live, it typically is safer on multi-user systems and tends to have rather up-to-date binaries since it is developed by a team rather than by only one developer.

2. Given you have downloaded and installed your \TeX distribution, you will then need an **editor** to generate the .tex file; word processors are inappropriate for this task because their in-built mark-up often conflicts with that generating the .tex file. With MiKTeX, you get [TeXworks](#) whose default setup splits the screen in half, one half for the editor and the other half for the output file (pdf / ps). My preference (in Windows) is for [TeXnicCenter](#) since although TeXworks is platform independent while TeXnicCenter operates on Windows only, TeXnicCenter has more features than TeXworks. [Texmaker](#) is a good editor for Mac users and is platform independent like TeXworks. Experienced computer users may wish to use an editor of their choice, [GNU Emacs](#) being mine for Unix systems, which is platform independent like its closest rival, [Vim](#).
3. Now that you have downloaded and installed your \TeX distribution and obtained an editor, you will need to start learning to write in $\text{\LaTeX} 2_{\epsilon}$. Other than obtaining and deciphering your colleagues’ .tex files, the best place to start – this supposedly takes 157 minutes to learn – would be the **guide**, ‘The Not So Short Introduction to $\text{\LaTeX} 2_{\epsilon}$ ’, available at <http://tobi.oetiker.ch/lshort/lshort.pdf>. In addition to countless books, web references and forum pages, there is a useful wiki devoted to $\text{\LaTeX} 2_{\epsilon}$ at <http://en.wikibooks.org/wiki/LaTeX>.