Getting LaTeX installed on your computer
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When people ask me for the files to install LaTeX on their computer, they typically mean a fully functional system, which includes several things: the TeX/LaTeX compilers and associated utility programs, an editor program that is usually tailored to use with LaTeX, and miscellaneous other utility programs to make your life much easier. In years past, I used to periodically burn CD-Rs or DVD-Rs to lend out to students and faculty members who wanted to install LaTeX. But it makes little sense now that everything is so readily available online and the installer programs have become quite reliable. So now I provide this document, instead of burning discs all the time. I'll even describe an option to use LaTeX entirely online, for free, without even installing anything at all on your computer!

If you're going to be a user of LaTeX, here's a plug for something you should consider that is worth thousands of times more than the *very* small membership fee: the **TeX Users Group**, or TUG. This is the world-wide group that provides extensive support of all things TeX or LaTeX. They maintain the system of repositories and their mirror sites all around the world that contain just about every known TeX or LaTeX related program, utility, or document. This repository is called the Comprehensive TeX Archive Network, or CTAN. If there's anything you've ever wanted to do with LaTeX, someone has probably already done it and posted the code and instructions on CTAN! It's all run by volunteers around the world. All TUG members have the option of being sent a DVD each year with the latest copy of all the most common TeX/LaTeX installations for Windows, Mac OS, and Linux/Unix, along with a snapshot copy of all the CTAN files. Highly recommended!   http://www.tug.org/

First things first: the TeX/LaTeX system
The most popular and complete LaTeX distributions for your own machine are:
- **TeX Live** (available for Windows, Linux/Unix, etc., and as the C++ source code if you want to compile it for any other platform). The URL is: http://www.tug.org/texlive/
- **MiKTeX** (for Windows machines only). The URL is: http://miktex.org/
- **MacTeX** (for the Mac OS only). The URL is http://tug.org/mactex/

I've used both MiKTeX and TeX Live over the years and they provide similar functionality, but TeX Live is more regularly maintained. Since I use both Linux and Windows these days, I lean strongly toward TeX Live, but MiKTeX is also fine if you only work with Windows. You can go directly to either web site and download the full LaTeX distribution from there and manually install it. Be sure to read any installation notes first.

There is now an option to write documents using LaTeX *without installing anything* at all on your own machine! All you need is a web browser, so it even works with tablets such as an iPad. This option is called Overleaf, and it can be found at the URL https://www.overleaf.com/ . Overleaf was designed to allow very easy collaboration with other authors who might be located anywhere in the world (that has Internet access). A basic Overleaf account is free, and it comes with 1 GB of file storage. Some of my grad students have used Overleaf and been happy with it. Personally, I prefer to have my own LaTeX system installed on my own machine, where I can more directly control everything. But make your own choice!

Second things second: an editor tailored for LaTeX
There are many free LaTeX-oriented editors available. You can perform a web-search on "latex editor" and see a long list of them. But my favorite by a large margin is **TeXstudio**. It's a very powerful and capable program (which is really an integrated development environment, or IDE, rather than just an editor). It has built-in previewers for PDF, PS, and DVI, and the ability to configure just about anything you want, so you can get the program to behave just how you like it. Highly recommended! The URL is http://texstudio.sourceforge.net/ . If you're using Overleaf, no separate editor is needed—it's all part of the Overleaf system.

I do recommend that whichever editor you choose, you configure it to use the pdfLaTeX engine rather than the older LaTeX engine. Both options (and others!) come with any full LaTeX distribution, but pdfLaTeX is more sophisticated in

how it can place text on a page, and it can accept graphic files as JPEG, PNG, PDF, or EPS (whereas the older LaTeX accepts only EPS graphic files). I believe Overleaf uses the pdfLaTeX engine. See the footnote about graphics files.

Maintaining your database of reference sources
One of the great things about LaTeX is that it makes handling citations and references so easy. If you keep your references in a *.bib file (as you should unless you are a masochist), and use the BibTeX utility program that comes with your LaTeX installation, it's even easier. But if you manually maintain your *.bib file, you may accidentally introduce a BibTeX syntax error that can drive you nuts. So to avoid that frustration, and to save you time and trouble, I recommend you use a simple database manager program written expressly for BibTeX called **JabRef**. Just like LaTeX and TeXstudio, it's free. It's available for all the major operating systems; you only need to have a Java run-time environment installed (usually already installed on most machines). You can find JabRef at http://jabref.sourceforge.net/ . This is an excellent and extremely handy little program.

Tools and Utilities
There are lots of free tools and utilities out there for LaTeX. I have some of them, and am happy to share them with you, and you may discover others on your own. One tool in particular I have found useful in the past is a free command-line converter for turning JPEG files into EPS files; ask me for it if you're interested. But now that I've switched to pdfLaTeX, I really don't need that converter anymore, since pdfLaTeX can directly accept JPEG graphic files.[i]

Many years ago, I wrote the official LaTeX style files and skeleton TeX files for UW thesis and dissertation documents (also available from the UW Registrar's web site), for technical reports, and so forth. I even have files for quizzes, exams, and so forth. You're welcome to them (free of charge, of course) if they can help you!

How much does all this cost?
Everything required for a full LaTeX installation, with an excellent editor, and references database manager, is free. Yes, *absolutely free*, and the TeX User Group and other forums on the Internet provide an amazing amount of free technical support. It's an active, worldwide community that uses LaTeX. And, as mentioned earlier, a basic Overleaf account is also free.

I hope this short document has helped you on the path to becoming a LaTeX user. If you plan to write technical documents of more than a few pages long, and/or want your equations to be typeset at the highest quality, then you'll find that standard word processing programs such as Microsoft Word just aren't at all well suited to the task. TeX and LaTeX were created from scratch to produce top quality technical documents! Make your own choice.

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[i] My recommendation is to use EPS graphic files unless the figure is already a bit-mapped image such as a screen shot. The native EPS format defaults to a vector graphics format (as opposed to bit-mapped), and can thus scale without any jagged edges or pixelization effects. If you resize or scale your figures much at all from their original creation size, vector graphics are far superior to bit-mapped graphics. That's just a word to the wise.