

ENGG*3100

Getting Started
LaTeX and TeXMakerX

January 2010

Antony Savich
School of Engineering
University of Guelph

Introduction and Motivation

In industry and academia, there is a recognized need for a robust typesetting environment, which regular desktop publishing packages cannot provide. TeX is a de facto environment for automated type setting, and LaTeX is package that provides tools and macros for easy document authoring on top of TeX. It effectively separates content from formatting, which is perfect when you want to focus on the quality of the text, and absolutely not on how the document will end up looking in the end (anti – WYSIWYG).

Like most open source projects, there are many LaTeX distributions. MikTeX is the distribution installed on the lab computers, and also the one we will be using in a portable format downloadable through our course's website. It provides the basic executables (called typesetters, or synthesizers) that will convert a set of text documents and image files into finely set and very well formatted PS or PDF files, amongst others (eg. HTML, presentation slides, etc), automatically.

So, what you will need to produce in writing a document with LaTeX is a tex t file (with some simple stylistic markup – a reference and templates are provided) and image files in .jpg or .pdf if you would like to include those as figures.

To help the authoring process, there are a number of tools available that will aid plain text editing (such as spellchecking), provide basic stylistic templates to insert figures and tables, and have buttons to automate the “compilation” of your plain text file into a nice looking, indexed and referenced .pdf file. Commercial packages include WinEdt, Scientific Word, and a few others.

We will be using an open source platform based on the Texworks editor and MikTeX compiler. A package, based on the UsbTex distribution, contains everything you need and is provided on our course website. You simply uncompress the contents either to your usb key, or to your network user directory. You can also take this package home and install it on your own computer.

You will use the provided LaTeX template for the documents already containing some simple markup examples (eg. proposal template with major section headings, a letter, etc.), and a few general steps below to open your documents, be able to type in your text, and see the preview of your document in a viewer (ie. SumatraPDF in our case). Templates for midterm and final reports and the two page paper will be provided to you through the semester.

Starting with the LaTeX editing environment

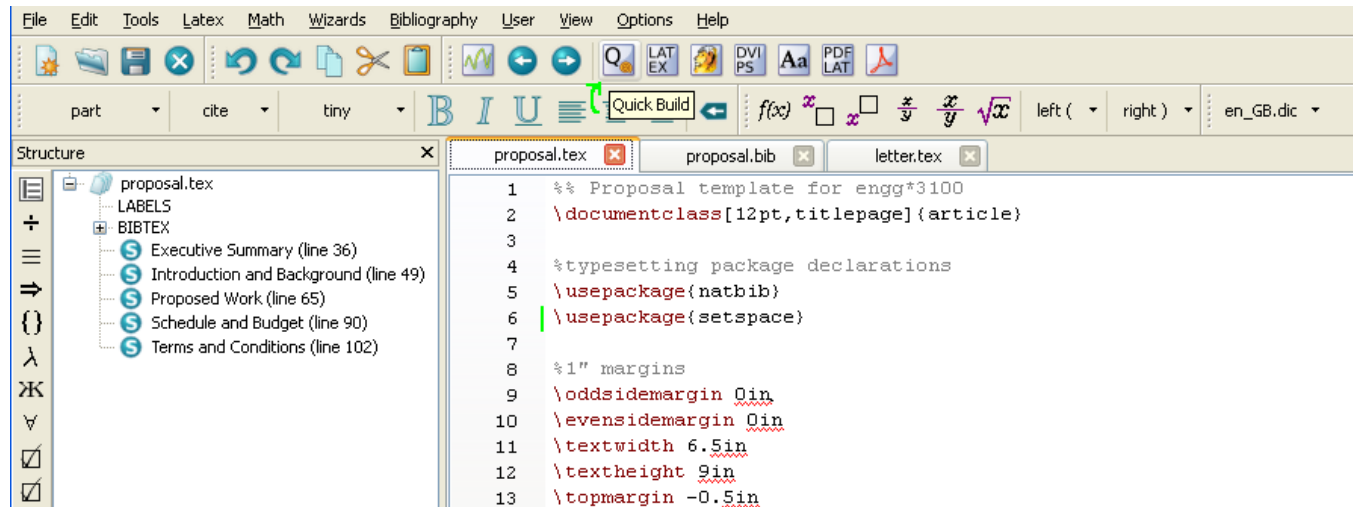
For installation to USB drives on lab computers or other Windows XP stations, please follow the steps below. Note that the package provided does not work with Windows7 and may not work with Vista. Please see “Standalone Installation” section for instructions on these and other operating systems.

1. Download USBTex-1.2x.zip from course website and extract it to a directory of your choice. The zip file is around 60Mb, the extracted environment takes up approximately 200Mb.
2. When starting the environment on any computer, run “init.bat”. It takes a bit of time to finish the automatic initialization, more so depending on the computer you use and software/fonts already installed on it.
3. To run the editor, use “TexMaker.bat”.
4. When you're done, run “reset.bat” before removing your USB stick. If this is your home computer, and the files are in same location on hard drive, you don't have to reset or initialize your environment every time you use it. One time “init” is enough.



Document editing instructions

The templates you will be provided with contain the basic layout of the deliverable documents. The package available from the website contains a template of the project proposal (proposal.tex), which opens automatically from USBTeX-1.2x\Documents\ folder. A template for a letter is also there (letter.tex), and the bibliography for proposal (proposal.bib). You will be provided with other templates separately (project reports and two page paper). Please familiarize yourself with the template you have and what you can do with it. After that, make the changes to text and generate the pdf! You can create a separate directory for your figures to keep the workspace clean, just make sure you reference the subdirectory names in the figures declarations. To build your pdf, press on “Quick Build” button (see below).



Every time you build the document, the system will automatically typeset the text, and may display any errors or warnings in the “messages” or “errors” tab. Some errors will be obvious, most are typos and are easily correctable.

One hint, you need to run BibTeX the first time you open a provided template document that contains references, so your bibliography gets compiled correctly (eg. proposal.tex is associated and uses a bibliography file for reference information, proposal.bib). After that, any changes you make the bibliography files (*.bib) will invoke the bibliography compiler for an automatic update. In our case, since proposal.bib is already provided as is, you can either press F11 or run Tools->BibTeX first time you compile your proposal.

Standalone installation

If you are using Windows7, Mac or Linux, or if you would like to install a standalone environment from scratch on your own computer, the software we are using is available in many flavours. However, the provided portable environment, USBTeX, is packaged for Windows. For a standalone installation, you will need:

- Windows and Linux
 - Miktex <http://miktex.org/>
 - TexMakerX <http://texmakerx.sourceforge.net/>
 - SumatraPDF <http://blog.kowalczyk.info/software/sumatrapdf/index.html>
- Mac:
 - MacTeX <http://www.tug.org/mactex/2009/>
 - TexMakerX (optional) <http://texmakerx.sourceforge.net/>

Acrobat will do as PDF previewer as well, but it is rather slow compared to SumatraPDF or the pdf viewer built into Mac OSX. All these packages have good help pages to get you through the installation. If you would like to try different other latex editors besides TexMakerX: http://en.wikipedia.org/wiki/Comparison_of_TeX_editors will help.

In case of questions or problems...

Check out the latex primer document on our website for more table, and otherwise, formatting options. The key is to focus on the content, and not to worry about fancy formatting unless you have free time on your hands. Your presentation, which is already automatically typeset by latex and looking good, will not influence our evaluation of your work.

.Having said that however, if you experience major

problems for some reason (most of which are due to simple typos), please address them ahead of time. The large class size is a factor that will reduce the chances of your request being served on time the closer your are to a deadline.

Useful references

Lots of examples at Laurier - <http://denethor.wlu.ca/latex/>

Google, with “latex ...some feature...”, will give you tons of examples and explanations. Eg. “latex angled text in tables”