
Something that worked for me...

Something that worked for me... is a completely new section containing short reviews and articles for you to quickly read *and contribute to*. The editors invite people who just have not the time for a long review or article. If you would like to contribute any "tips of the trade" which worked for you in teaching and would like to share your experience with the wider Maths, Stats & OR academic community, email the editors or complete the online form at: <http://ltsn.mathstore.ac.uk/feedback/submit/articleidea.htm>

In the last issue Adrian Bowman discussed some techniques for producing seminar slides using LaTeX and PDF. In this short article Chris Sangwin talks about how to convert and publish LaTeX based materials on the Web.

The main problem one encounters immediately with all these systems is how to deal with the many and varied packages (included using the `\usepackage` command) that can be used to enhance core LaTeX. The bad news is that every package is different and each publication route favours different packages. If you choose to use many of these packages your only option might be the multi-step process below which converts the final postscript file to PDF. This becomes a particular problem if you choose to include graphics or diagrams type-set within LaTeX itself. If you predominantly use only core LaTeX you will have greater choice and will be able to convert directly.

For the record I use the following system: I have a PC and use MiKTeX version 2.0 via the interface provided by WinEdt. MiKTeX is free (www.miktex.org), easy to instal and reliable to use. The editor WinEdt is available from www.winedt.com and requires a modest registration fee - I don't work on commission for them but have certainly had good value! This article assumes at least basic familiarity with LaTeX and use of the Web. In the following examples we assume that we have a LaTeX file called `notes.tex` that we wish to publish on the Web.

One method is to display the LaTeX file directly using a plug-in to read it on a web browser. This can be done with a plug-in such as the IBM `techexplorer`. Details of this can be obtained from <http://www-4.ibm.com/software/network/techexplorer/>

Of course the natural language of the Web is HTML and so we might naturally try to publish our material in this format. There are packages that converts LaTeX to HTML directly. The big problem for mathematicians wishing to publish on the Web is how to display equations and other mathematical symbols. HTML is not very good at this and there does not seem to be any readily available solution.

One system, `latex2html`, uses individual picture files for each equation. In my opinion this is rather messy and results in a very cluttered file space. A much better, and free for academic use, system is to use the TeX to HTML converter TtH <http://hutchinson.belmont.ma.us/tth/>

This system creates a single file. In practise the results are good but may require some editing to get make sure the HTML file is perfect. Pictures, and diagrams need to be inserted by hand which can be time-consuming. You can also insert hyperlinks to embed your document in the Web. So, if you are looking for an easy way to create HTML documents direct from LaTeX files this is worth investigating further.

Perhaps the most reliable route to posting your document on the Web is to use Adobe's portable document format known as PDF. There are many ways to do this, the first and easiest is a single step process using the command (provided by MiKTeX and perhaps other systems) `pdflatex notex.tex`

This method is quick and easy although it does suffer from the problem that `pdflatex` does not support all packages. In particular for me the package `PSTricks` - for typesetting diagrams - uses postscript and so one has to use the following muti-step method.

(1) use LaTeX in the normal way, for example `latex notes.tex` - you may need to repeat this to ensure correct cross referencing etc.

(2) now create a postscript file using the command `dvips -Ppdf notex`

The flag "`-Ppdf`" may vary depending on the implementation of LaTeX you have. The point here is that you want to ensure the correct font sets are used in the final PDF document. Clearly it is impossible for me to detail all the variations here. If you have MiKTeX experiment and produce PDF files with and without this option - you'll soon see the improvement.

(3) convert to the postscript file to PDF. One way to do this is to purchase some dedicated software such as Adobe's `acrobat distiller`. One free way to achieve the same effect is to use one of the Web based services such as <http://www.ps2pdf.com/convert/convert.htm>

Of course, like all Web based systems one cannot vouch for its reliability or security.