Putting problem sheets
on the Web in PDF format

This short document lists the Unix or Linux commands for putting coursework sheets, etc., on the Web in PDF format. They refer to an imaginary course given by Peter Cameron (login name `pjc`) with code MAS999, called "Metamagical Themas 2". Simply adjust this for your own course.

You can of course make PDF files for other purposes (e.g. exam papers for the library) using these instructions.

PC and Macintosh users can also use this method – log in to a departmental Unix machine first (use FTP or similar to move your files) and then follow these instructions, using the Unix commands like magic spells. Or see the next page for links to documents by Wilfrid Hodges and Francis Wright.

Where to put it?

1. If you already have a Web page, change to your `public_html` directory and go to Step 3. (You will probably want to put a link on your Web page once everything is set up.)

2. In your Unix root directory, do the following:

```
mkdir public_html
chmod a+rx public_html
cd public_html
```

3. Now create a subdirectory for your course material:

```
mkdir MAS999
chmod a+rx MAS999
cd MAS999
```

Further information

This document will be placed on the Web at the address

`http://www.maths.qmul.ac.uk/~pjc/MAS999/instr.pdf`

Look also at

`http://www.maths.qmul.ac.uk/~pjc/MAS999/`

to see how it works.

For background and Macintosh issues see

`http://www.maths.qmul.ac.uk/~wilfrid/macinstr.pdf`

and for Windows issues see

`http://centaur/Generating_PDF/`

For general information about Web pages see

`http://www.maths.qmul.ac.uk/~mathres/template/start.html`

The index

Make a file called `index.html` in this subdirectory. Here is an example.

```
<HTML>
<HEAD>
<TITLE>MAS999 course material</TITLE>
</HEAD>

<BODY>
<H1>MAS999 course material</H1>
From here you can take copies of the
problem sheets for the course
MAS999, <I>Metamagical Themas 2</I>.

<UL>
<LI><A HREF="cw1.pdf">Coursework 1</A>
<LI>Coursework 2 (not yet available)
</UL>

<HR>
<A HREF=mailto:p.j.cameron@qmul.ac.uk>
Peter J. Cameron</A><BR>
20 March 2000
</BODY>
</HTML>
```

Then do `chmod a+r index.html` to make it readable by everyone.

Making a PDF file

These instructions assume that your problem sheet is a LaTeX file called `cw1.tex`.

1. Put the commands

```
\usepackage{times}
\usepackage{mathptm}
```

in the preamble. (Not required but strongly recommended – see page 10.)

2. Now issue the command

```
pdflatex cw1
```

If you are not in the HTML directory for the course, copy the file `cw1.pdf` to that directory. Then do

```
chmod a+r cw1.pdf
```

Making a PDF file, 2

1. An alternative method which works if you don't have `pdflatex` is the following:

```
latex cw1
dvips -o cw1.ps cw1.dvi
ps2pdf cw1.ps cw1.pdf
```

2. If you use plain TeX replace `pdflatex` by `pdftex`. You will have to declare the Times fonts in the TeX document.

3. Finally: test it out, and tell Sharon Silverne to put a link from your course description in the undergraduate handbook to your newly created website. The address in this case would be

```
http://www.maths.qmul.ac.uk/~pjc/MAS999/
```

Adding links

If you use `pdflatex`, you can very easily put links into your PDF document, as follows.

1 Put the line

```
\usepackage{hyperref}
```

in the preamble of your LaTeX document. (Or, for a prettier result, put `[colorlinks=true]` before `{hyperref}`.)

2. Your cross-references and citations will automatically become active (clickable) links.

3. To add external references to the document, use the command
`\href{`*URL*`}{`*link text*`}`.

For example, the second page of this document contains the code

```
\href{http://www.maths.qmul.ac.uk/%
~pjc/MAS999/instr.pdf}{on the Web}
```

Other issues

1. An `index.html` file is not really necessary. If you don't have such a file, then anyone coming to that directory should get a directory listing and can click on the file that they want. This saves updating your index file every time you add a problem sheet. (Of course, an index file can do much more!)

2. If you are putting lecture notes on the Web, you may want to give the students the option of printing out several sheets to the page. Follow the `latex`-`dvips`-`ps2pdf` route with a new third stage

```
mpage -4 file.ps >file4.ps
```

for 4-up, that is, 4 pages on a sheet. (You can replace 4 by 2 or 8 here.) The result, applied to this document, is on the web.

3. See Wilfrid Hodges' document for information about putting other kinds of documents into PDF format.

Including graphics

To include graphics files in LaTeX documents, I recommend the following method.

1. To convert the graphic to PostScript, load it into `xv`, and save as PostScript. (Alternatively, you can print to a file as Wilfrid suggests, but then you have to tangle with bounding boxes.) You can also use `xv` to crop the image to the required size, or to manipulate it in other ways.

2. Put `\usepackage{graphicx}` at the start, and then use `\includegraphics{foo.ps}`. You can resize with an optional argument, e.g. `[scale=0.8]`, before the filename argument.

3. This method is not compatible with `pdflatex`; you must use the alternative method. Also, it is not compatible with `mpage`.

Here is an example. See Wilfrid's notes for more information.

Using Times fonts

The packages `times` and `mathptm` set your document in Times Roman, instead of the default Computer Modern.

The reason for doing this is that, since Times fonts are built-in to Acrobat Reader, they don't have to be included in your document, and this results in nuch smaller files which are quicker to load (typically one-fifth the size for a problem sheet).

Macintosh users who have MathTime may use this package instead. However, it doesn't work on some of our Linux systems (including mine) because of missing fonts. Tread carefully!