TEX Trickery: notes on my LATEX setup

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Chapter 1

Prelude

1.1 Custom TEX tree

To install custom fonts, style, etc., you usually dump them in a particular location in you `$HOME`. The exact location can be discovered with the command:

```
$ kpsewhich -var-value=TEXMFHOME
```

The `kpsewhich` program is usually a part of TEXLive. The default location is something like `/home/user/texmf`. But if you don't want yet another directory littering your `$HOME`, you can change it like this (replace `~/.texmf` with whatever location you like):

```
$ mv ~/texmf ~/.texmf
$ mkdir -p ~/.texmf/web2c
$ cp /usr/share/texmf-dist/web2c/texmf.cnf ~/.texmf/web2c/
# change the TEXMFHOME line to look like this: "TEXMFHOME = ~/.texmf",
$ vim .texmf/web2c/texmf.cnf
$ echo -e "TEXMFCNF=$HOME/.texmf/web2c\nexport TEXMFCNF" >> ~/.bashrc
$ source ~/.bashrc
```

The exact location of things depends on what that thing is concretely (fonts, styles, bib styles, etc.). For our purposes, the (now unused) projector class for presentations would go in `/home/user/.texmf/tex/latex/` and the Charis SIL font (which consist of a bunch of `*.ttf` files; cf. §1.2) goes in (create the sub-folders as needed):

```
/home/user/.texmf/fonts/truetype/
```

`XeLaTeX` has a peculiarity regarding fonts, however: if installed per user, it expects them to be in the `~/.fonts` directory. Simple solution, though, just create a symbolic link:

```
$ ln -s ~/.texmf/fonts ~/.fonts
```

More generally, the first thing to do, to discover where whatever you want to install should be installed, is using `kpsewhich`. It can be used to do a lot of things (`$ kpsewhich --help`), but the one we're interested in here, location of styles,

uses the `--show-path NAME` option. The list of allowed names is part of the output of the `--help-formats` option. So for instance, to discover where to place BiBTeX style files (`*.bst`), run:

```
$ kpsewhich --show-path bst
```

This will output a list of locations where BiBTeX style files are searched for. It usually starts with the current location (`.`), and then follows a list of comma-separated alternative locations. According to our changes above, one of those locations will be:

```
/home/user/.texmf/bibtex/bst//
```

The two slashes at the end instruct bibtex to also search sub-directories. (By the way, another thing that can show up in a given path is having `!!` at the start. This tells bibtex not to actually search the location, but instead rely on the `ls-R` database. This is the database that is updated when running `$ texhash .`—see below.)

So if you have a file called `mystyle.bst`, put it in the appropriate location—I would use `/home/user/.texmf/bibtex/bst/`—or create a folder named `mystyle` and put `mystyle.bst` inside it. Then run `$ texhash .` (don't forget the dot!) from the "appropriate location" folder you used. And you're done: you can now put:

```
\bibliographystyle{mystyle}
```

in any LaTeX document, and bibtex will find and use it!

1.2 Colours and fonts

The `color` package. The `documentclass` line contains one option, `dvipsnames*`, that belongs to the `xcolor` package, but setting it only when loading `xcolor` might cause conflicts with other packages that also automagically load that package (namely `tikz`). Having that option given to `documentclass` avoids the possibility of any such conflict. (What this particular option does, incidently, is to load a set colours larger then the basic set, which contains the colour MidnightBlue, used for hyperrefs. The starred version loads colour on demand, i.e. required a `\providecolors` command.)

The Charis SIL font. It can be downloaded from http://software.sil.org/charis/download/ and installed as described above.

The math font. The code is below; the last two lines are to use the default `mathcal` font, instead of the one with `bitstream-charter`, which is harder to read.

```
\usepackage[bitstream-charter]{mathdesign}
\DeclareSymbolFont{usualmathcal}{OMS}{cmsy}{m}{n}
\DeclareSymbolFontAlphabet{\mathcal}{usualmathcal}
```

Chapter 2

Tweaking

2.1 llncs

If you think the bibliography style looks ugly with some sentences that don't end up a dot (I do), you can add that dot, like so: in the style file, by default `splncs03.bst`, look for this piece of code:

```
FUNCTION {fin.entry}
{ duplicate$ empty$
    'pop$
    'write$
  if$
  newline$
}
```

Replace it with the below code, recompile your (Bib/La)TeX, and now you should have proper(ly ended) sentences in your bibliography.

```
FUNCTION {fin.entry}
{
  add.period$
  duplicate$ empty$
    'pop$
    'write$
  if$
  newline$
}
```

2.2 minted

Using the `minted` package, is troublesome because of the double build directories. The solution is the following. Load the package like this:

```
\usepackage[outputdir=build]{minted}
```

This means that doing the main compile, the package will temporarily create the file `build/report.pyg` (in the case of the `reports` template).

So far so good. The problem is that when doing the unabridged build, so far as `minted` knows, its output directory is still `build/`, so it will expect a file in that directory named `Unabridged.pyg`. The solution is to add this line to the `compile()` method (in `CompileTeX.sh` script), *before invoking the compiler*:

```
ln -srf "$build_dir_unabridged"/"$name_unabridged".pyg "$build_dir_regular"
```