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Chapter 1

Template

1.1 How to compile a `.tex` file to a `.pdf` file

1.1.1 Tools

To process the files you (may) need:

- `pdflatex` (for example from `tetex` package $\geq 0.9-6$, which you can get from [Red Hat 5.2](#));
- `acroread` (a PDF viewer, available from <http://www.adobe.com/>);
- `ghostscript` ≥ 5.10 (for example from [Red Hat Contrib](#)) and `ghostview` or `gv` (from RedHat Linux);
- `efax` package could be useful, if you plan to fax documents.

1.1.2 How to use the tools

Follow these steps:

1. put all source `.tex` files in one directory, then `chdir` to the directory (or put some of them in the `LTEXsearch` path — if you know how to do this);
2. run “`pdflatex file.tex`” on the main file of the document three times (three — to prepare valid table of contents);
3. to see or print the result use `acroread` (unfortunately some versions of `acroread` may produce PostScript which is too complex), or

4. run `ghostscript`: “`gv file.pdf`” to display or:
“`gs -dNOPAUSE -sDEVICE=pswrite -q -dBATCH -sOutputFile=file.ps file.pdf`”
to produce a PostScript file;
5. run “`fax send phone-number file.ps`” as root to send a fax, or — if you know how to do this — modify the fax script to be able to fax `.pdf` files directly (you have to insert “`%PDF*`” somewhere...).

1.2 How to write a document

1.2.1 The main document

Choose the name of the document, say `document`. Copy `template.tex` to `document.tex`, then edit it, change the title, the authors and set proper `include(s)` for all the chapters.

1.2.2 Chapters

Each chapter should be included in the main document as a separate file. You can choose any name for the file, but we suggest adding a suffix to the name of the main file. For our example we use the file name `document_chapter1.tex`.

First, copy `template_chapter.tex` to `document_chapter1.tex` and add the line

```
\include{document_chapter1}
```

in the `document.tex`, then edit `document_chapter1.tex`, change the chapter title and edit the body of the chapter appropriately.

1.2.3 Spell-checking

Do use a spell-checker, please!

You may also want to check grammar, style and so on. Actually you should do it (if you have enough spare time). But you *must* check spelling!

You can use the `ispell` package for this, from within `emacs`, or from the command line:

```
ispell -t document_chapter1.tex
```

1.3 \LaTeX and $\text{pdf}\text{\LaTeX}$ capabilities

1.3.1 Overview

First you edit your source `.tex` file. In \LaTeX you compile it using the `latex` command to a `.dvi` file (which stands for device-independent). The `.dvi` file can be converted to any device-dependent format you like using an appropriate driver, for example `dvips`.

When producing `.pdf` files you should use `pdflatex`, which produces directly `.pdf` files out of `.tex` sources. Note that in the `.tex` file you may need to use some PDF specific packages.

For viewing `.tex` files use your favourite text editor, for viewing `.dvi` files under X Window System use `xdvi` command, `.ps` files can be viewed with `gv` (or `ghostview`) and `.pdf` files with `acroread`, `gv` or `xpdf`.

1.3.2 \LaTeX

A lot of examples can be found in this document.

You should also print

- `doc/latex/general/latex2e.dvi` and
- `doc/latex/general/lshort2e.dvi`

from your `tetex` distribution (usually in

- `/usr/share/texmf` or
- `/usr/lib/texmf/texmf`).

1.3.3 $\text{pdf}\text{\LaTeX}$

Consult `doc/pdftex/manual.pdf` from your `tetex` distribution for more details. Very useful informations can be found in the `hyperref` and `graphics` package manuals:

- `doc/latex/hyperref/manual.pdf` and
- `doc/latex/graphics/grfguide.dvi`.

1.3.4 Examples

References

MIMUW

Hyperlinks

This is a target.

And [this is a link](#).

Dashes, etc.

There are three kinds of horizontal dash:

- - (use inside words; for example “home-page”, “X-rated”)
- – (use this one between numbers; for example “pages 2–22”)
- — (use this one as a sentence separator — like here)

National characters

- ó, é, í, ...
- è, à, ì, ...
- ô, ê, ...
- ã, ñ, ...
- ö, ë, ...
- ž
- å, ç
- ł, ø, ß

There are other ways to do this, see the documentation for `inputenc` package.

Reserved characters

Some characters have some special meaning, thus cannot be entered in the usual way.

- \$ & % # _ { }
- \
- ~ ^

Math

- $1^2, 1^{2n}, \dots$
- i_1, i_{2n}, \dots
- $\frac{1}{2}, \frac{2n}{2-3}, \dots$
- $\alpha, \beta, \gamma, \Omega, \dots$
- $\rightarrow, \Rightarrow, \geq, \neq, \in, \star, \dots$
- $\sqrt{2}, \dots$
- $\overline{2+2}, \dots$

For more examples and symbols see chapter 3 of `lshort2e.dvi`.

Fonts

- Roman
- *Emphasis*
- Medium weight — the default
- **Boldface**
- Upright
- *Slanted*
- Sans serif
- SMALL CAPS
- Typewriter
- and sizes:
 - tiny
 - scriptsize
 - footnotesize
 - small
 - normalsize

- large
- Large
- LARGE
- huge
- Huge