

# Do It Yourself Tex

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C'est assez qu'ont ait vu par là qu'il ne faut point  
Agir chacun de même sort.  
-- La Fontaine <sup>1</sup>

## Abstract

This package consists of a collection of annotated and *easily modified* forms and macro files, together with concrete examples which are intended to illustrate how *plain* XeTeX can be employed to typeset even quite complicated documents. Various files illustrate how to directly use fonts of a specified type and size, how to find Unicode glyphs and how to call them for use, how to import images, use colour etc.. Unicode tables of fonts and special glyphs (arrows, geometric shapes ...) are included and an HTML page provides direct links to font sources and further Unicode information.

A special section deals with right to left texts and the setting up of a unicode definition file which permits the input of a pointed (i.e. with the inclusion of vowel symbols) text from a Latin keyboard.

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  - Texts in Hebrew, Arabic and ancient semitic scripts

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<sup>1</sup> *Fables*, “L'Ane chargé d'éponges et l'ane chargé de sel”

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### 6. Shell files

These include `photos2eps`, `reduce`, `bak` and `del` to quickly perform certain batch operations.

### Raison d'être

I started off using plain  $\text{\TeX}$  in the 1980s and over the years I developed forms, shortcuts, font and font size definitions for use in my research books, teaching manuals, genealogical books etc.

In particular I would vary the font and the font sizes from text to text and even within a text. As an example, the present section headings are set in 14 point Libertine Roman Bold which is called by the command `\bffourteen`. This is defined in the macro file `[my_fonts.mac]` as:

```
\font\bffourteen = [ ... /MY-FONTS/LinLibertineRB.otf] at 14.0 pt
```

This definition leads to the unique directory MY-FONTS where I keep my fonts and also states the desired point size. As the need for a new font or font size arose, a simple copy and paste and a few changes sufficed to create the new definition.

The last paragraph illustrates some of the shortcuts that appear in the macro file `[format_XETEX.mac]`. Notice that where it reads “`[my_fonts.mac]`” there is a little space (in fact `\gl`) between the `[ ]` and “`my_fonts.mac`” and also before and after the underscore. Instead of writing the spacing commands I defined `\[, \]` and `\unl`. Further I defined `\bsl` so that I could quickly typeset the commands themselves.

At one point, I told myself that I should learn  $\text{La}\text{\TeX}$ , but I became frustrated by the commands needed to change fonts and font sizes as well as spacings etc. It is obvious that there are some wonderful  $\text{La}\text{\TeX}$  packages; however even for importing images (see Section 3) I found that I could do it myself by writing simple shortcuts that I could quickly modify during trials and for different purposes.

It was only last year that I came across Petr Olšák's *OPmac -- macros for plain $\text{\TeX}$*  and from it I learned how to create notes in the margin and a better way of creating tables. His manual inspired me to make my small contribution to the world of plain  $\text{\TeX}$  in the hope that it would prove useful.

My pedagogical philosophy (see e.g. the *Octave* manual in the *Text Samples* directory) has always been to aim for clarity by avoiding the most general form of a command and by providing real examples. To this effect I have often made the commands visible in the PDF output -- see `[images_colour_marginal-notes.pdf]` -- and by annotating other commands in the  $\text{\TeX}$  file.

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### Fonts and Unicode

XeTeX was created by Jonathan Kew in the 1990s with the idea of using Unicode based fonts. Thus, in order to facilitate the use of XeTeX, and to avoid a great deal of searching by users, the directory FONTS+UNICODE contains an HTML page entitled *Sources\_for Fonts and Unicode.html* which has direct links to various sites dealing with Unicode and sources of fonts. In addition there are two sub-directories; one with tables for a selection of fonts and the other some Unicode tables (e.g. arrows) which I generated.

XeTeX, which works without the necessity of further manipulation of classical Tex documents, in turn has a further advantage as stated in connection with the CTAN package “xetex”: “XeTeX’s immediate output is an extended variant of DVI format, which is ordinarily processed by a tightly bound processor (called xdvipdfmx), that produces PDF”, i.e. if you type: xetex file\_01.tex, you obtain: file\_01.pdf.

Because of these advantages it is assumed in the following discussions that plain XeTeX is being used.

### Forms and Macro Files

[N.B. Because I work with so many TeX files, often at the same time, I did not want to use the extension “tex” for what I refer to as macro files. I decided to use the extension “mac”. This, of course, can be changed to suit the user's taste.]

This directory contains the following macro files; additional information is given at the top of each file.

[format\_XETEX.mac]. This contains a collection of shortcuts for spacings, special symbols, etc. that I created over the years, e.g. instead of repeatedly typing `\medskip\noindent`, I only have to type `\mni`.

[unicode\_latin.mac]. These provide for the entry of French and German accented letters without switching keyboards; e.g. typing `\ge` will produce the “e-grave” letter è. The same can be done for other languages as the file [unicode\_hebrew.mac]

[macros.mac]. These are macros with a specified text, e.g.  
Typing `\infobox{This is an information box}` produces:

This is an information box

[ancestors.mac]. This is included to suggest how one can save a great deal of typing by using abbreviations for repeated items.

[additional.mac]. This contains `\printdate` and `\raggedleft` (for right to left texts).

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[petr\_olsak.mac]. This is a *verbatim* copy of Petr Olšák's *OPmac -- macros for plainT<sub>E</sub>X* -- used here with his permission -- which was renamed to clearly indicate the author. The directory also contains a copy of his manual, again with the title changed.

[my\_fonts.mac]. This contains all the font definitions, e.g. \bftwenty

In addition the directory contains the following forms and texts.

[FORM\_PLAIN.tex]. This is an easily modifiable “good to go” form with all the inputs and dimensions present and in addition contains a sub-form for headers and numbering.

[letter\_form.tex]. This letter form has a provision for automatically adding -- via PSTricks -- your signature.

[images-colour-marginal-notes.tex]. This illustrates how to use PSTricks to import and rotate images, how to add marginal notes, using [petr\_olsak.mac], and colour using \color.

[two-columns.tex]. There is also a multi-column command in [petr\_olsak.mac].

[calling\_glyphs.tex]. This explains how to find glyphs and how to call them for use.

[font\_size.tex]. This explains how do find the actual point values associated with a font at a given nominal value

A sub-directory contains the forms and macro files for right to left languages.

## Text Samples

This directory contains illustrative excerpts, with both the T<sub>E</sub>X and the corresponding PDF files, in three very different areas: a programming manual; a genealogical book and names written in Canadian aboriginal syllabics.

## Right to Left Texts

A special, again with a ready to use form and the macro files in this directory, illustrates the use of the bi-directional command \bidi.

This section contains the following illustrative texts:

A Biblical text with both coded and imported Hebrew and the use of marginal notes to indicate the verse numbers and also to signal a special feature in the text. In addition it illustrates how one switches from a right to left text to a left to right text.

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A discussion of a fragment from the *Dead Sea Scrolls*. This file includes two imported images and the same text set -- via the importation of the Biblical text from a web source -- in four different fonts: "square" letters (i.e. the present day forms), two different ancient semitic letters and Samaritan (still in use).

A sample Arabic text with an imported portion of the *Quran* and the use of [petr\_olsak.mac] to create a table.