TEXworks: A simple GUI with advanced options

Sytse Knypstra

1 Abstract

Out of the many available TEX (LATEX, ConTEXt) editors, TEXworks is relatively new. It excels in simplicity of the user interface, the linking between the source text and the PDF output and in its substantial degree of flexibility. With the use of scripts the user can add nearly any desired option.

2 Introduction

As a small-scale user of ConTEXt I don't much care which editor I use, as long as it is easy to install, easy to type in the source text and transform this into a PDF file by simply pressing a button. Furthermore, a PDF viewer should be attached which doesn't protest if after a new run an old version has to be overwritten. My starting point is in fact: the simpler the better.

3 Simplicity

TEXworks meets these requirements. It is easy to install and use and a viewer is attached that shows the PDF result without any problems, even with a magnifying glass. This simplicity in use is not a consequence of the fact that the program is in its infancy. It is deliberate. The authors, originally Jonathan Kew and now Stefan Löffler, were inspired by the success of TEXShop which is available only for the Mac OS X platform. That program made TEX (LATEX, ConTEXt) more widely accessible to a large group of new users.

TEXworks is available for all common platforms, including Linux and Windows. It does not look intimidating for newbies: no screen populated with pop-up menus, no menu bars with mathematical symbols, only two plain windows that fill the screen (see figure 1). On the left hand side we see a window for the source text, with an output panel below which disappears when the TEX-engine does not report any errors, and on the right hand side a window with the resulting PDF. It is easy to jump between corresponding places: 'Ctrl+left mouse click' causes the matching paragraph to be highlighted. This linkage is provided by SyncTEX.

TEXworks does not focus on one macro package as some other editors do. This means that specific LATEX options are absent in the menu, which adds to the simplicity of the user interface. But it also has its downside. Some more advanced or specific LATEX options which in other editors are included in the menu have to be added by editing configuration files. This applies in particular to spellchecking and auto-completion. I have been satisfied with the standard options of TEXworks, but for the preparation of this paper I investigated some additional options.

4 Spellchecking and auto-completion

First, spellchecking. Normally I don't bother to install spellcheckers (I never make spelling mistakes :)), but of course it is possible to do so. In TEXworks it is rather simple: you need a `.aff` and a `.dic` file of the language to be used. I found them somewhere hidden in my Linux installation under `~/.mozilla/firefox`, and it seems they are also included in LibreOffice. Next you copy them to `/usr/share/myspell/dicts`, or you can create a link to that directory. If you then start TEXworks, you can tick the desired language in the menu under `Edit` → `Spelling`. The result, with `fy` (West-Frisian, my mother tongue), can be seen in figure 1. The spellchecker ignores all words beginning with \, regardless of whether they are TEX, LATEX, or ConTEXt commands.

Second, auto-completion. In the appropriate configuration file I inserted the line: `tw:=TeXworks`. Then, after typing '`tw`', followed by 'TAB', one of the two following words shows up: '`\textwidth`' or '`TeXworks`'. The first word is a member of the set of approximately 600 abbreviations that were entered in advance for LATEX; for this article I need the second word. If the wrong word appears first, you must press 'TAB' again. For ConTEXt a script `autocomplete.js` is available, made by Henrik Skov Midtiby (see under Sources). After copying this file to the correct folder, your ConTEXt commands are auto-completed if you press 'Ctrl+M' one or more times.

5 Scripts

This brings us to the subject of 'scripts'. The authors of TEXworks wanted to keep their program simple in order to attract beginners, but at the same time they did not want to put off experienced users who need more advanced options. Therefore it is possible to add scripts, in principle in one of the scripting languages QtScript, Lua or Python. In practice all existing scripts have been written in QtScript (very similar to JavaScript; the filenames also end in `.js`).

Scripts exist in two flavours: hook scripts and standalone scripts. Hook scripts are executed when certain situations arise, for example immediately after starting TEXworks, or following the compilation of the source text. Standalone scripts, on the other hand, are executed by selecting menu items or pressing corresponding key combinations. One

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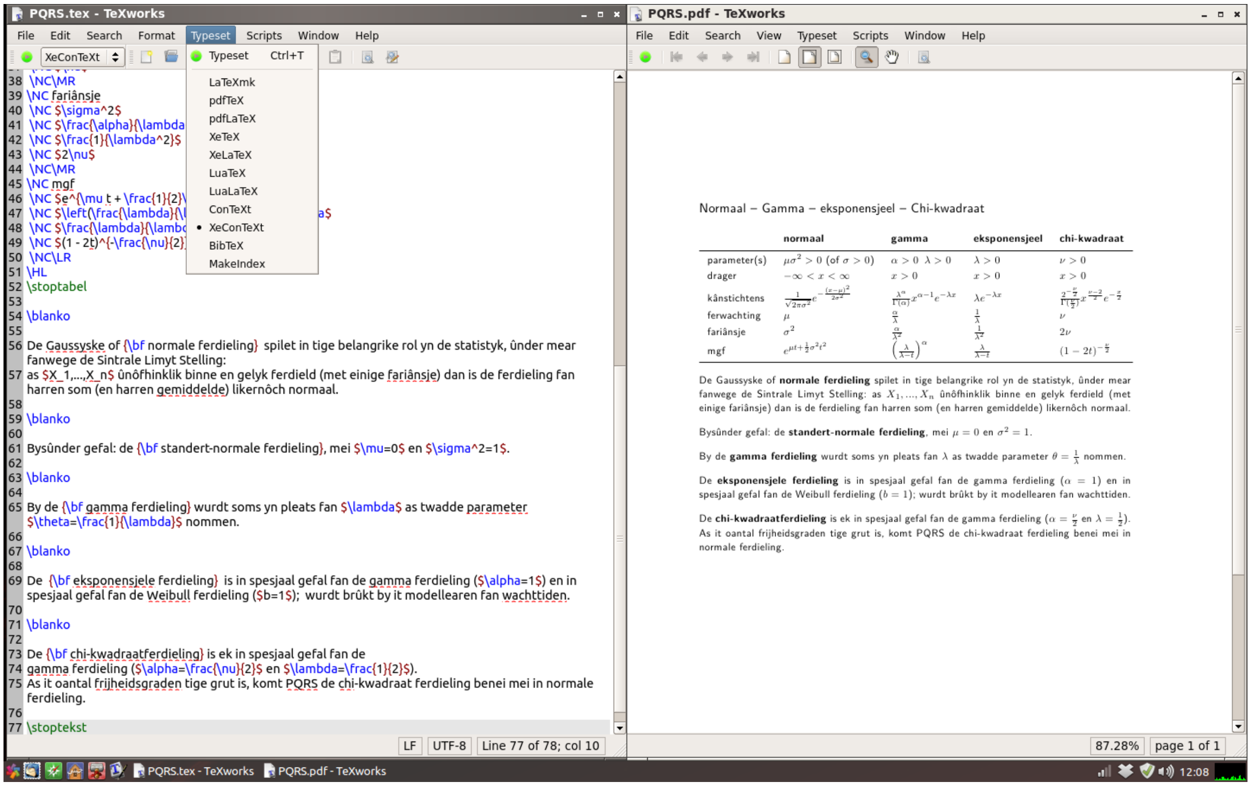

```
 \NC\MR
\NC fariânsje
 \NC $\sigma^2$
 \NC $\frac{\alpha}{\lambda
 \NC $\frac{1}{\lambda^2}$
 \NC $2\nu$
 \NC\MR
\NC mgf
 \NC $e^{\mu t + \frac{1}{2}\
 \NC $\left(\frac{\lambda}{\l                                a$
 \NC $\frac{\lambda}{\lambc
 \NC $(1 - 2t)^{-\frac{\nu}{2}
 \NC\LR
\HL
\stoptabel

\blanko

De Gaussyske of {\bf normale ferdieling}  spilet in tige belangrike rol yn de statistyk, ûnder mear fanwege de Sintrale Limyt Stelling:
as $X_1,...,X_n$ ûnôfhinklik binne en gelyk ferdield (met einige fariânsje) dan is de ferdieling fan harren som (en harren gemiddelde) likernôch normaal.

\blanko

Bysûnder gefal: de {\bf standert-normale ferdieling}, mei $\mu=0$ en $\sigma^2=1$.

\blanko

By de {\bf gamma ferdieling} wurdt soms yn pleats fan $\lambda$ as twadde parameter $\theta=\frac{1}{\lambda}$ nommen.

\blanko

De  {\bf eksponensjele ferdieling}  is in spesjaal gefal fan de gamma ferdieling ($\alpha=1$) en in spesjaal gefal fan de Weibull ferdieling ($b=1$);  wurdt brûkt by it modellearen fan wachttiden.

\blanko

De {\bf chi-kwadraatferdieling} is ek in spesjaal gefal fan de
gamma ferdieling ($\alpha=\frac{\nu}{2}$ en $\lambda=\frac{1}{2}$).
As it oantal frijheidsgraden tige grut is, komt PQRS de chi-kwadraat ferdieling benei mei in normale ferdieling.

\stoptekst
```

Normaal – Gamma – eksponensjeel – Chi-kwadraat

	normaal	**gamma**	**eksponensjeel**	**chi-kwadraat**
parameter(s)	$\mu\sigma^2 > 0$ (of $\sigma > 0$)	$\alpha > 0\ \ \lambda > 0$	$\lambda > 0$	$\nu > 0$
drager	$-\infty < x < \infty$	$x > 0$	$x > 0$	$x > 0$
kânstichtens	$\frac{1}{\sqrt{2\pi\sigma^2}}e^{-\frac{(x-\mu)^2}{2\sigma^2}}$	$\frac{\lambda^\alpha}{\Gamma(\alpha)}x^{\alpha-1}e^{-\lambda x}$	$\lambda e^{-\lambda x}$	$\frac{2^{-\frac{\nu}{2}}}{\Gamma(\frac{\nu}{2})}x^{\frac{\nu-2}{2}}e^{-\frac{x}{2}}$
ferwachting	μ	$\frac{\alpha}{\lambda}$	$\frac{1}{\lambda}$	ν
fariânsje	σ^2	$\frac{\alpha}{\lambda^2}$	$\frac{1}{\lambda^2}$	2ν
mgf	$e^{\mu t+\frac{1}{2}\sigma^2 t^2}$	$\left(\frac{\lambda}{\lambda-t}\right)^\alpha$	$\frac{\lambda}{\lambda-t}$	$(1-2t)^{-\frac{\nu}{2}}$

De Gaussyske of **normale ferdieling** spilet in tige belangrike rol yn de statistyk, ûnder mear fanwege de Sintrale Limyt Stelling: as $X_1, ..., X_n$ ûnôfhinklik binne en gelyk ferdield (met einige fariânsje) dan is de ferdieling fan harren som (en harren gemiddelde) likernôch normaal.

Bysûnder gefal: de **standert-normale ferdieling**, mei $\mu = 0$ en $\sigma^2 = 1$.

By de **gamma ferdieling** wurdt soms yn pleats fan λ as twadde parameter $\theta = \frac{1}{\lambda}$ nommen.

De **eksponensjele ferdieling** is in spesjaal gefal fan de gamma ferdieling ($\alpha = 1$) en in spesjaal gefal fan de Weibull ferdieling ($b = 1$); wurdt brûkt by it modellearen fan wachttiden.

De **chi-kwadraatferdieling** is ek in spesjaal gefal fan de gamma ferdieling ($\alpha = \frac{\nu}{2}$ en $\lambda = \frac{1}{2}$). As it oantal frijheidsgraden tige grut is, komt PQRS de chi-kwadraat ferdieling benei mei in normale ferdieling.

Figure 1: Screenshot of TEXworks with expanded *Typeset* menu.

supplied example makes a selected text bold. The script places '`\textbf{`' and '`}`' around the selected text. Using scripts offers many possibilities, but in order to create them, you have to know the scripting language. It's much easier to download published scripts from the Internet, place them in the correct folder and, if necessary, adapt them to your own needs. The boldface example can be adapted for ConTEXt by replacing '`\textbf{`' by '`{\bf`'.

A convenient script for LATEX users is an available hook script that is executed immediately after compiling (at the event `AfterTypeset`). If an error is detected during compilation, it opens a second tab page in the output panel with a list of errors found, which you can then trace and correct. The first tab page contains *all* output notifications.

6 Overview

Not (yet) implemented is a method of folding text, which would give you a better overview over long stretches of text. But there is an alternative: you can open a panel (next to the source text) in which the structure of chapters and (sub)sections is shown, along with possible bookmarks. A bookmark is created by putting a `%` at the start of a line. Hence it does not appear in the resulting PDF. By clicking the section title or bookmark you jump to the desired place in the source text.

In summary, TEXworks is a very suitable editor to start with in the TEX world. A convenient option is the possibility to easily jump between corresponding places in the source text and the PDF file. For more experienced users (mastering the QtScript language) adding scripts will extend the options available almost without limit.

References

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[2] `http://github.com/texworks`. Development site for TEXworks.

[3] `http://www.youtube.com/watch?v=9-Z43CSPgM0`. Jonathan Kew's presentation for the TUG 2010 conference: *TEXworks for newcomers and what's new for old hands.*

[4] `http://twscript.paulanorman.info/index.html`. The scripting site of Paul A. Norman.

[5] `https://github.com/henrikmidtiby/TeXworks-scripts`. Contains the script `autocomplete.js` for ConTEXt by Henrik Skov Midtiby.

◇ Sytse Knypstra
`sytse dot knypstra (at) home dot nl`