LyX: An editor not just for secretaries

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Abstract

The article presents a less known but nonetheless interesting editor named LyX, which can be used not only for mundane secretarial tasks but also more difficult jobs.

1 What is LyX?

One could say that an editor is an editor, but LyX is a little bit different.

The basic difference with other TEX editors lies in that LyX does not display TEX commands, it writes files in its own format, and the text in the editor window is pre-formatted (Fig. 1).
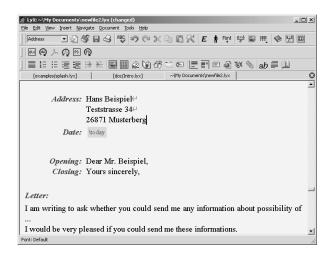

Figure 1: The LyX editor window

Text preformatting does not make LyX a WYSIWYG, i.e., *what you see is what you get* editor but a so-called WYSIWYM, i.e., *what you see is what you mean* editor. That what we see is what we want to achieve, thus in what way TEX is going to typeset it is a secondary issue — TEX surely will do its best. In the long run the WYSIWYG mode is tiresome and takes the author's attention from the content. With LyX the text is preformatted only to mark out (sub)titles, font size changes, lists or tables.

Options are available to set the basic text font and its size as well as colors. This is to facilitate the writing process. The default light rose background does not strain the eyes.

The editor comes with extensive documentation and an excellent tutorial, so one can quickly reach the stage of making conscious use of the program.

LyX is available for Linux, Mac OS X and MS Windows. It now offers Unicode support with UTF-8 encoded input and X∃TEX processing.

The LyX home page is `http://www.lyx.org`.

2 Working with LyX

A new LyX document is created in two ways: by selecting from one of a set of templates or opening an empty document. An empty document is not empty — it has a default preamble. In document settings the class is chosen from a list; one may choose additional class options, page geometry parameters and thus "click-out" the preamble.

The document settings area also offers fields for entering one's own "magic words" to be placed in the preamble.

LyX allows for the creation of document templates: new documents can be composed from such templates. They are just ordinary LyX documents in which a class with its parameters is defined and sample text is filled in. Templates are convenient not only for more complicated documents like presentations or articles in predefined journal styles but also for letters or ordinary papers because they automate and minimize standard actions.

Titles, lists, and most other environments are selected from a list located to the left on the tool bar, just below the menu. Font or font size changes, paragraph settings are conducted through dialog windows. Many common environments and editing commands are available through keyboard shortcuts which immensely speeds up the writing.

Labels and references, index items, tables of contents, tables, images, inserts, minipages, quotations, footnotes and so on, i.e., all basic document elements, are available from the menu or tool bars with one or two mouse clicks.

LyX offers convenient tools for table editing, available from the tools menu or by right-clicking directly on the table. Changes of table layout, justi-

fication, joining cells in rows, borders and so on are easy to do with L$_Y$X.

Inserting images into the text is similarly uncomplicated. One can specify if the image should be shown in the editor window and at what size. Inserts with pictures or tables might be folded to minimize distraction.

After the text is entered, it is time to compile the document, which in L$_Y$X terminology is called "viewing", as compilation is automatically followed by viewing of the compiled document. This is convenient and nice, because L$_Y$X compiles until all references become up-to-date. If a bibliography or indexes are present in the document, the relevant programs will also be called in the proper order.

If the document contains an error, L$_Y$X will display a window with the list of errors. This allows one to navigate through the document to the places which TEX indicates. There shouldn't be many errors; for example, L$_Y$X itself enters names of the environments we choose from the list.

To facilitate navigation and approximate the result, titles and lists are numbered automatically and the table of contents is created. A nice feature is navigation bookmarks, of which one can create up to five.

Change tracking, indicated by the use of color, is a tool which cannot be overestimated. Changes made in the document might be accepted or rejected. Moreover, version control, based on RCS, is built into L$_Y$X.

The comfort of editing is increased by the ability to open several buffers with one document as well as the availability of session management.

3 More advanced features

The authors of the editor did not forget about mathematical expressions, which are displayed in the editor's window and are comfortably editable. The math symbol panel allows for easy access to needed symbols.

Math expressions entered into a L$_Y$X document can be passed to one of the supported computer algebra systems (Maxima, Octave, Mathematica and Maple). The calculated result is inserted into the document.

A serious article requires a bibliography. Here also, L$_Y$X does not fall short, allowing the use of a bibliography database. Unfortunately, the database has to be prepared outside of L$_Y$X. Some bibliography database management programs (e.g., TkBIBTEX and pybibliographer) communicate with L$_Y$X through pipes.

If the need arises to enter a L^{A}TEX command,

this can be done by employing TEX code inserts. We are thus allowed to enter code which will not be interpreted by L$_Y$X, but passed verbatim.

When working with large documents, it is convenient to divide them into smaller parts. Although each L$_Y$X document has its own preamble, L$_Y$X "sees" only the content when incorporating parts into the main document. This allows for separate compilation of parts and of the whole. Also, both L^{A}TEX and text files can be included into the main document.

If we arrive at a stage where L$_Y$X does not suffice, we can convert the document from the L$_Y$X format to the TEX format. The resulting files are readable enough to be of further use.

4 Peculiarities of L$_Y$X

For compilation, L$_Y$X creates a temporary directory to which all converted document files are written and to which all related files, e.g., images, are copied. One should remember that if one wants to have the resulting document in the same directory as the L$_Y$X document one should export it, otherwise the resulting document will not be available after the closing of the document or of the editor. L$_Y$X offers exports to all the usual formats: DVI, PS, PDF, TXT, and also to HTML formats. Other formats can be supported provided the appropriate converters are available.

L$_Y$X cooperates with the following spell checking programs: aspell, ispell and hspell. Unfortunately, spell checking does not function while typing occurs, it has to be activated manually. Spell checking starts from the current cursor position.

L$_Y$X uses document classes in a peculiar way. The editor allows the use of only those classes which are available with the TEX installation and which have their own L$_Y$X *.layout configuration files. For most of the popular classes (standard classes, mwcls, memoir, koma-script, beamer and about a hundred others) such files exist. The configuration files contain information about class options and the way the environments are presented by the editor. All the environments which we want to be available on the list should be defined in the configuration file.

The editor automatically configures itself during its first run by locating all programs it needs and checking the availability of classes.

5 Final remarks

The most important merit of L$_Y$X is that it opens the TEX world to those who have minimal, or none whatsoever, knowledge of it.

Happy L$_Y$Xing!