

Online L^AT_EX editors and other resources

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Abstract

In this paper I will review several L^AT_EX editors and other resources available online. I will focus on the range of packages offered and compilation options available. The main question I aim to answer in this paper is how online L^AT_EX tools change the way we can work with L^AT_EX.

Introduction

The main question I would like to ask in this paper is how online L^AT_EX tools change the way we may work with L^AT_EX. To answer this question I will review several L^AT_EX editors and resources available online. I will focus mainly on writeL^AT_EX [8] and ShareLaTeX [5], which, in my opinion, are the most interesting online editors available.

Using L^AT_EX in online environment can have different motivations. First, it is very convenient for people working mainly with L^AT_EX. Online solutions offer this environment on virtually any machine with Internet access. Not only editing and compilation is possible, but also file storage in the cloud is available for these services. Also, online L^AT_EX editor makes collaboration easier (file sharing, version control, the same package set available for the collaborators).

Online L^AT_EX solutions can also be a great help in teaching L^AT_EX. They can be a fast and easy way to start editing and compiling documents without installation of the L^AT_EX environment and an editor—convenient for both teachers and students.

1 writeL^AT_EX and ShareLaTeX

WriteL^AT_EX and ShareLaTeX are mature but still rapidly developing projects. They are not only L^AT_EX editors but also offer a wide range of services in order to make working in an online environment easy and effective. Both environments offer:

- an editor (with syntax highlighting, line numbering and live preview),
- an online L^AT_EX compiler,
- file storage,
- document templates,
- sharing and collaboration options.

First let us take a look at the *Privacy and terms of service*, since we are offered an option of keeping our files in the cloud. For writeL^AT_EX, we read that:

By using our Services you provide us with information, files, and folders that you submit to

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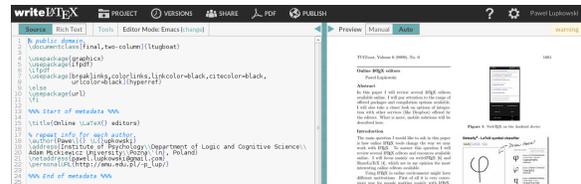


Figure 1: writeL^AT_EX interface

writeL^AT_EX (together, ‘your stuff’). You retain full ownership to your stuff. We don’t claim any ownership to any of it. [8]

ShareLaTeX providers also assure us that:

You retain all ownership, copyright and intellectual property rights to any content uploaded to ShareLaTeX. Your content will only be shared with other users of your choosing and we will never share your content with third parties without your consent. [5]

In what follows I will focus only on the functionality offered for writeL^AT_EX and ShareLaTeX’s free accounts (they both offer various paid plans suited for different users’ needs—more information can be found on the projects’ websites).

The WriteL^AT_EX interface is presented in Figure 1. It has two panels—on the left is an editor and on the right a live preview. The compilation is done automatically; after each source change the preview is refreshed. You can hide either of the panels. More importantly, you can also turn off the live preview. One of the nice features of the writeL^AT_EX editor is that you can turn on emacs or vim mode to use the corresponding key-bindings. Unfortunately, spell checking is not available in the free account.

Recently a new feature has been added to the editor called *Rich Text*. This mode allows you to write your document in a semi-WYSIWYG fashion. A comparison of default mode and rich text mode is presented in Figure 2. This new mode is well designed and preserves a clear structure of a L^AT_EX code. In my opinion it might be useful for beginners, especially when editing complicated texts.

Another point I find interesting in this editor is that you do not have to register to use it. You can just start writing right away after visiting the web page. This opens a wide range of interesting applications. One such is to publish your document in writeL^AT_EX in such a way that it might be opened and edited by other users. This mechanism is used e.g. by the L^AT_EX template page described in Section 3.

As for ShareLaTeX, its interface is very similar to that of writeL^AT_EX (see Figure 3). At the start, it displays three panels—the leftmost one displays files used in a given project; the middle one is an editor

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145 \begin{enumerate}
146 \item the nodes of  $\Phi$  are (occurrences of) questions and d-wfs; they are
    called e-nodes and d-nodes, respectively;
147 \item  $Q_0$  is the root of  $\Phi$ ;
148 \item each leaf of  $\Phi$  is a direct answer to  $Q_0$ ;
149 \item  $d(Q) \cap X = \emptyset$ ;
150 \item each d-node of  $\Phi$ :
151 \begin{enumerate}
152 \item is an element of  $X$ , or
153 \item is a direct answer to the e-node  $Q^*$  which immediately precedes
    in  $\Phi$  the d-node considered (where  $Q^* \setminus \text{neg } Q$ ), or
154 \item is entailed by (a set of) d-nodes which precede the d-node in
     $\Phi$ ;
155 \end{enumerate}
156 \item for each e-node  $Q^*$  of  $\Phi$  different from the root  $Q_0$ :
157 \begin{enumerate}
158 \item  $\text{Im}(Q^*) \cap Q^* = \emptyset$  and
159 \item  $\text{Im}(Q^*) \cap Q^*$  for some e-node  $Q^{**}$  of  $\Phi$ 
    which precedes  $Q^*$  in  $\Phi$ , or
160 \item  $\text{Im}(Q^*) \cap Q^* = \{A_1, \dots, A_n\}$  for some e-node
     $Q^{**}$  and some d-nodes  $A_1, \dots, A_n$  of  $\Phi$  that precede  $Q^*$ 
    in  $\Phi$ ;
161 \end{enumerate}
162 \item each d-node has at most one immediate successor;
163 \item  $\Phi$  involves at least one e-node different from the root  $Q_0$ ;
164 \item an immediate successor of an e-node different from the root  $Q_0$  is
    either a direct answer to the e-node, or exactly one e-node;
165 \item if the immediate successor of an e-node  $Q^*$  is not an e-node, then
    each direct answer to  $Q^*$  is an immediate successor of  $Q^*$ .
166 \end{enumerate}
167 \end{defn}

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145 \begin{enumerate}
146 \item the nodes of  $\Phi$  are (occurrences of) questions and d-wfs; they are called e-nodes and d-nodes, respectively;
147 \item  $Q$  is the root of  $\Phi$ ;
148 \item each leaf of  $\Phi$  is a direct answer to  $Q$ ;
149 \item  $d(Q) \cap X = \emptyset$ ;
150 \item each d-node of  $\Phi$ :
151 \begin{enumerate}
152 \item is an element of  $X$ , or
153 \item is a direct answer to the e-node  $Q^*$  which immediately precedes in  $\Phi$  the d-node considered (where  $Q^* \neq Q$ ), or
154 \item is entailed by (a set of) d-nodes which precede the d-node in  $\Phi$ ;
155 \end{enumerate}
156 \item for each e-node  $Q^*$  of  $\Phi$  different from the root  $Q$ :
157 \begin{enumerate}
158 \item  $d(Q^*) \neq d(Q)$  and
159 \item  $\text{Im}(Q^*, Q^*)$  for some e-node  $Q^{**}$  of  $\Phi$  which precedes  $Q^*$  in  $\Phi$ , or
160 \item  $\text{Im}(Q^*, \{A_1, \dots, A_n\}, Q^*)$  for some e-node  $Q^{**}$  and some d-nodes  $A_1, \dots, A_n$  of  $\Phi$  that precede  $Q^*$  in  $\Phi$ ;
161 \end{enumerate}
162 \item each d-node has at most one immediate successor;
163 \item  $\Phi$  involves at least one e-node different from the root  $Q$ ;
164 \item an immediate successor of an e-node different from the root  $Q$  is either a direct answer to the e-node, or exactly one e-node;
165 \item if the immediate successor of an e-node  $Q^*$  is not an e-node, then each direct answer to  $Q^*$  is an immediate successor of  $Q^*$ .
166 \end{enumerate}
167 \end{defn}

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Figure 2: write \LaTeX interface—regular vs rich text mode example

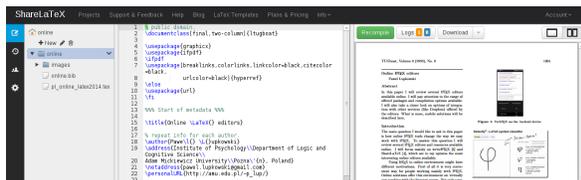


Figure 3: ShareLaTeX interface

and the rightmost is a preview. By default compilation is manual; you click “Recompile” to see changes in the preview. As in write \LaTeX you can turn on emacs or vim editor mode. It is worth stressing that registration is necessary to use ShareLaTeX.

Very usefully, ShareLaTeX offers different compilers to use for your documents (via the *Settings* section). Currently ShareLaTeX supports \LaTeX , pdf \LaTeX , X \LaTeX and Lua \LaTeX . At present, write \LaTeX only supports pdf \LaTeX , but adding X \LaTeX is planned (see [8, Help]).

Both write \LaTeX and ShareLaTeX are intuitive and easy to use and explore. Tutorials and help are also offered. A comparison of these editors in a variety of categories is presented in Table 1.

To conclude this section, it is worth mentioning another interesting project: \LaTeX lab [2]. This editor is developed within Google Docs. One of its interesting features is that it allows using a local \LaTeX installation as an compiler.

Table 1: write \LaTeX vs. ShareLaTeX (free accounts)

	write \LaTeX	ShareLaTeX
storage quota	100MB	no data
tag projects	yes	yes
Dropbox	no	no
compilers	pdf \LaTeX	pdf \LaTeX , \LaTeX , X \LaTeX , Lua \LaTeX
templates	yes	yes
*.zip upload	yes	yes
file history	yes	no
limited number of projects	no	no
mobile support	yes	poor
edit without registration	yes	no
collaboration	unlimited	with 1 user only

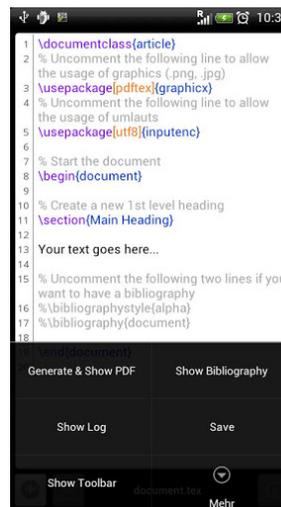


Figure 4: VerbTeX on the Android device

2 Go mobile

The editors presented in the previous section can be used on a mobile device (with a reasonably big screen). But there is a tool that is designed especially for mobile devices, namely VerbTeX [7]. VerbTeX is available for all popular mobile platforms, notably Android, iOS, and Windows 8.

VerbTeX works in two modes: local (storing your files on the mobile device) and cloud mode (keeping your files in the *verbosus.com* cloud). Files in local mode can be synchronised with a Dropbox account. Files are stored as projects. In the free version of this application you can have at most two documents in one project. VerbTeX allows you to create, store and edit your documents on the mobile

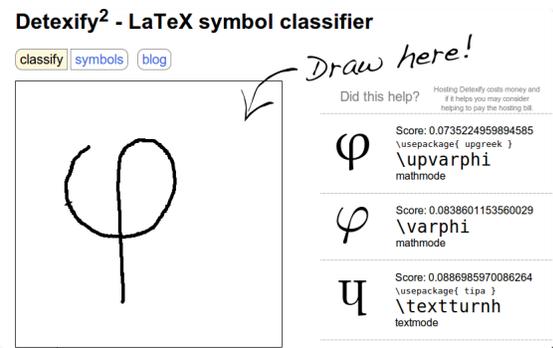


Figure 5: Detexify

device. Previously existing files can be uploaded and to help in writing new documents, a custom *new.tex* document template is available. The editor offers syntax highlighting and line numbering, as can be noticed in Figure 4. Most important, to compile your document you will need an Internet connection. This keeps the application quite small—the Android version is only 1.7MB. The default compilation output is PDF.

3 Other online resources

Let's turn to other online resources useful for working with \LaTeX . The tool I use the most is certainly *Detexify* [1]. The idea behind this tool is to make it easy to find a command for a given symbol listed in [4]. All you have to do is draw your desired symbol and then wait. You will obtain a list of recognised symbols with commands. Furthermore, each command is supplemented with some information about the package needed to use it. *Detexify* is presented in Figure 5.

Detexify enables a fast, efficient and very intuitive symbol search. The tool is also available for mobile devices running Android or iOS.

Another online resource worth mentioning here is the \LaTeX templates website [3]. The page hosts a large (and still growing) number of \LaTeX document templates grouped in useful categories, such as academic journals, articles, books, calendars, conference posters, etc. Each template is described in detail and supplemented with an example. A very nice feature is that the templates can be edited online using `writeln\TeX` by just a single click on the “Open with `writeln\TeX`” button, making the templates even more useful and easy to use.

Our list of useful \LaTeX resources is closed by an online table editor. I often find it hard to easily design a large table. [6] can help in such a situation. This online tool helps you to design a table in a WYSIWYG fashion and then export it to \LaTeX code

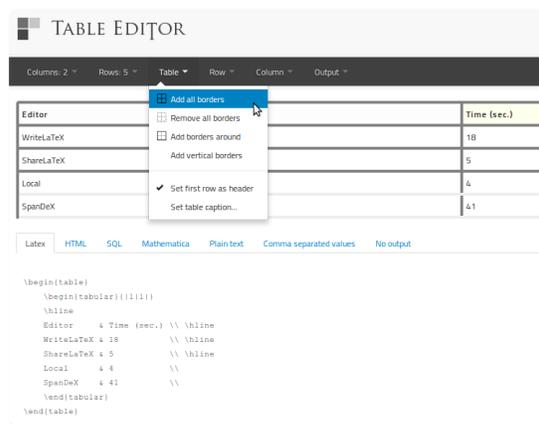


Figure 6: Online table editor

(and other formats, such as HTML, plain text and Mathematica code). The tool allows you to decide on the table borders, merge cells, add caption and edit text align in cells. The interface is shown in Figure 6.

Of course the short list given here is far from being complete, but it represents resources that I find most useful in my everyday work.

Summary

The way we work today is heavily influenced by the Internet and more and more by mobile devices. Tools and resources described in this paper enable us to work with \LaTeX according to these new trends. Document typesetting might be device-independent: we may easily create, edit and share document using a web browser or even a mobile phone. This opens new possibilities for \LaTeX users, possibilities available already for users of WYSIWYG editors, like Office Online or Google Docs.

References

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