
T_EXonWeb

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Abstract

This article describes a web application T_EXonWeb which allows using the (L^A)T_EX typesetting system without needing installation on a local computer. T_EXonWeb is simple, with a text area where the user can write the source code of his document and then click the button to get resulting PDF or PostScript output. This article briefly summarizes the features and capabilities of T_EXonWeb.

1 Introduction

One of the main aims of the T_EXonWeb application is to provide a simple interface for document processing using the typographic system (L^A)T_EX. Many users would like to produce high-quality documents but are not familiar with the non-trivial (L^A)T_EX installation and configuration. Also, sometimes users are in a situation where they cannot use their own computer and have to work for example in an Internet café. This is a time when they can use T_EXonWeb. The only thing needed is a web browser.

2 First steps

T_EXonWeb can be used with any web browser supporting JavaScript and cascading style sheets. We recommend Mozilla Firefox or Internet Explorer. Upon visiting the web address `http://tex.mendelu.cz/en`, the user sees a simple page with a text area in which the template of a L^AT_EX document is entered. He can immediately start to work and write text and T_EX or L^AT_EX commands. There are no limitations on length or complexity of documents, or on the T_EX commands available.

T_EXonWeb can be used in two modes — anonymous and authenticated. Anonymous access is designated for very simple and short documents with no other included parts. Here the user just types a document and presses a button to get PDF or PostScript. No special features or tools are available.

More users create their own accounts and work in authenticated mode. To do this, a user follows the ‘Create account’ link and provides a login name and password. If the login name is not yet used by another user, a new account is created and the user can log in. This mode is designated for repeated usage of T_EXonWeb. Users can typeset more complex documents, store them on the server, set up working space and use supporting tools (spell-checker, table wizard, etc.).

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3 User interface

The most important part of the application is the text area which acts as an editor, where the user can type the source code of his document. Under the editor window, there are buttons ‘PDF’ and ‘PostScript’ which produce the document in the corresponding format. Next to these there is a ‘Log file’ button for viewing the log file created by processing the document. See Fig. 1.

Below these buttons are option menus to set how the document should be processed. The first item determines whether the plain or L^AT_EX format is used. The second item defines if the document is processed one, two or three times (e.g., if generating a table of contents). The last item, if checked, returns the document in .zip format (for slow Internet connections).

If the user is logged in, a user menu and toolbar are above the editor window. The user menu consists of these items:

- File — options to open and save files stored on the server, upload and download files from the local computer and process documents into PDF or PostScript formats.
- Edit — options for the usual undo, redo, copy and paste actions.
- Settings — options to toggle syntax highlighting, toolbar and detailed setting of user interface.
- Styles — templates for standard documents such as letters, wall calendars and business cards.
- Tools — spell checker, table wizard or inserting non-breaking spaces.
- Help — Documentation of T_EXonWeb.

The set of tools simplifies document editing. A spell checker highlights misspelled words, while another tool can insert non-breaking spaces in suitable places. There are also wizards for inserting code of more complex components such as tables or pictures. The user can use these interactive tools to define the properties of the object being inserted without knowing the exact syntax of L^AT_EX commands.

There is also a toolbar for interactive insertion of L^AT_EX commands. The user just clicks an icon and the code appears in the editor window. Commands are divided into related sets — undo/redo, font settings, headings, paragraph settings, lists, spacings, math symbols, etc.

4 Implementation of T_EXonWeb

The T_EXonWeb application runs on a common IBM PC compatible with dual-core processor and 4 GB RAM. The server runs the Linux-based CentOS

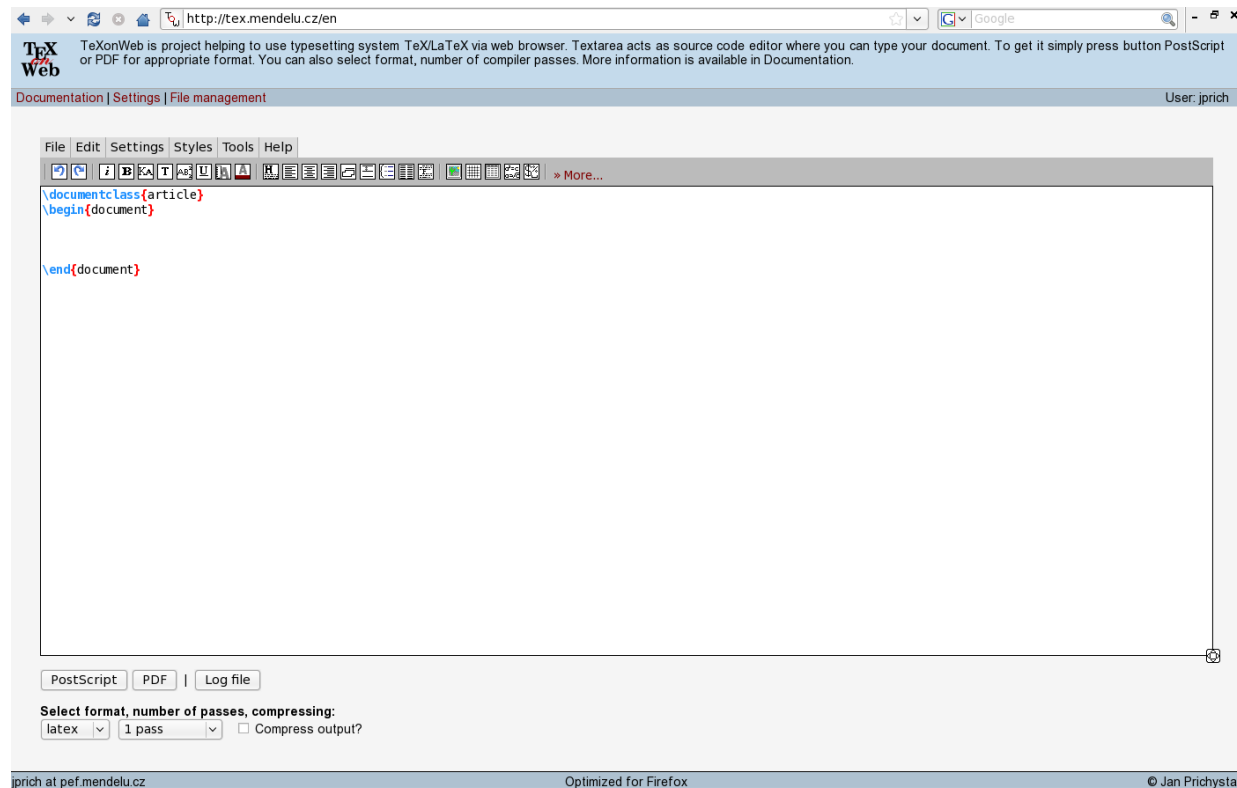


Figure 1: TeXonWeb main page

operating system with Apache web server. The application is programmed in Perl and JavaScript. The core of the application is a Perl module and the user interface creates a few Perl scripts. The toolbar and other parts of the user interface are implemented in JavaScript. The TeX processor comes from the `tetex` package provided in CentOS. Installation is located in a special directory and runs under `chroot`. This precaution makes attacking the system more difficult. For example, including or viewing system files are not allowed. We also enforce a limitation on the size of uploaded documents.

How does TeXonWeb work? The user types the source code of the document and clicks the button for translation. A Perl function sends the source code to the server, placing a `\nonstopmode` command at the beginning. This provides non-interactive translation, omitting prompting when an error occurs. Then PDF or PostScript is generated depending on the options set in the ‘Settings’ page or directly on the main page. The resulting file is returned to the web browser for the user to view. If an error makes translation impossible, the user is notified to view the log file.

5 Conclusion

TeXonWeb is not intended as a full substitution of specialized (L)TeX editors installed on a local computer. A web page could not offer such comfort in writing documents. But in some situations it could be useful. For instance, TeX beginners who want to try how TeX works may find it interesting.

TeXonWeb is still being developed and new functions and options are being added. Currently we are working on multilingual support, document templates, editor improvements and support of the Opera web browser.

You can try TeXonWeb at the url <http://tex.mendelu.cz/en>.

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