GeanyLaTeX – A LaTeX plugin for Geany

Version 0.5dev

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Note: Please note the document has been created on March 7, 2010. If you are using devel version from SVN, please compile and check `doc/geanylatex.tex` from sources. Please check page 4, section 4.2 how to do so.

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1 About the plugin

GeanyLaTeX is a little plugin to improve support of LaTeX on Geany. It implements a couple of maybe useful functions:

- Wizard to create new LaTeX documents in a fast and easy way with a bunch of templates available

- A front end for add labels \label and references \ref and \pageref with getting suggestion from aux file of document

- Inserting special characters through menu

- Help entering the right fields for BibTeX entries by providing templates

- Easy inserting format patterns like \texttt through menu

- Support on inserting environments by offering an dialog and recognising selections

- Shortcuts for inserting \item and \newline

- Toolbar with often used format options

- A couple of useful autocompletion functions during typing

2 News & ChangeLog

Since 0.4

- Introducing custom templates for LaTeX-Wizard
- Adding a icon for LaTeX-Wizard to toolbar
- Adding shortcuts for inserting common list environments like `enumerate`, `itemize` and `description`
- Some general bugfixes and improvments. As always, see ChangeLog or svn log.
- Switch to waf for building the plugin
- Move some LaTeX-specific stuff out of Geany's core into the plugin. This is effecting e.g. this functions
    - Autocompletion of `\end{}` and `\endgroup{}`
- Increasing dependency for plugin to Geany Plugin API v166
- Make inserting text for references configurable.

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- Adding a toolbar with often used format commands
- Adding a configuration dialog to configure basic options of plugin
- Moved documentation into a TeX-document
- Replace \u-UTF-8 letters by octal coded chars to don't depend on C99 anymore.
- Added a function to bulk replace special characters inside marked text by keybinding
- Added a function to replace special characters on typing

3 Requirements

Please note: This section of documentation is only valid with standalone distribution of GeanyLATEX. If you are planning to use the common geany-plugins project, please check documentation over there as there are some specialties you might like to know.

For compiling the plugin yourself, you will need the GTK ($>=$ 2.8.0) libraries and header files. You will also need its dependency libraries and header files, such as Pango, Glib and ATK. All these files are available at http://www.gtk.org.

And obviously, you will need to have Geany with its header files installed (in case you are compiling the plugin on your own). If you have Geany installed from the sources, you should be ready to go. If you used a prepared package e.g. from your distribution you probably need to install an additional package, this might be called geany-dev or geany-devel. Please note that in order to compile and use this plugin, you need Geany 0.19svn or later (Geany Plugin API v170 or higher).

Furthermore you need, of course, a C compiler and python installed. The GNU version of the C compiler is recommended. Also there should be a working LATEX-environment on your System.

There is no special need in RAM or CPU so the plugin should compile and run on all systems Geany is able to run.

4 Installation

Please note: This section of documentation is only valid with standalone distribution of GeanyLATEX. If you are planning to use the common geany-plugins project, please check documentation over there as there are some specialties you might like to know.

4.1 Compiling the plugin itself

Compiling and installing the code is done by the following three commands:

```
$ ./waf configure
$ ./waf build
$ ./waf install %$
```

For more configuration details run `./waf --help`

By default the plugin is getting installed into the lib subfolder of your found Geany installation. So if you have installed Geany to `/usr/local/` the plugin will be installed to `/usr/local/lib/geany/`. Translation files will be installed to `/usr/local/share/locale/` in this case.

If there are any errors during compilation, check your build environment and try to find the error, otherwise contact one of the authors[1]

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[1]Contact data can be found at chapter 13, page 18.

4.2 Compiling of documentation

Sources of this documentation are available throught `doc/geanylatex.tex` inside source tree. To compile the sources, usage of `pdflatex` (should be delivered with your favorite LaTeX distribution) is recommended. For compiling into HTML format you might like to use `htlatex`. The HTML version of this documentation shipped with source tarball has been compiled with

```
htlatex geanylatex.tex xhtml -cvalidate -interaction=batchmode
```

5 Usage
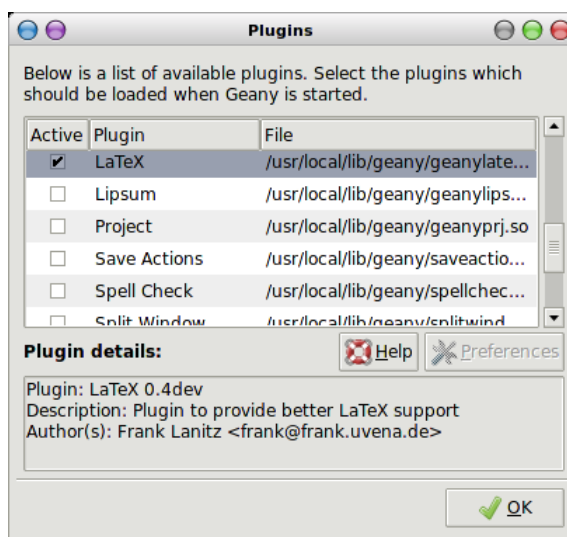
Figure 1: Plugin manager with GeanyLaTeX of Geany 0.16

After GeanyLaTeX has been installed successful the plugin can be loaded through Geany's plugin manager and a new sub menu in the Tools menu will appear as well as new key bindings will be available inside Geany's key binding interface. Inside the sub menu you will find entries for functions supported by this version of the plugin. The main menu entry will be called something like `LaTeX`, depending on your locale.

Also if the option for showing the toolbar is activated on configuration dialog, the toolbar with common used format functions appears on at top of editor widget. This feature is turned off by default.

6 Features

Let's go into more detail on some features.

6.1 LaTeX-Wizard

6.1.1 General usage of wizard

The LaTeX-Wizard is implementing a easy way creating a number of default documents.
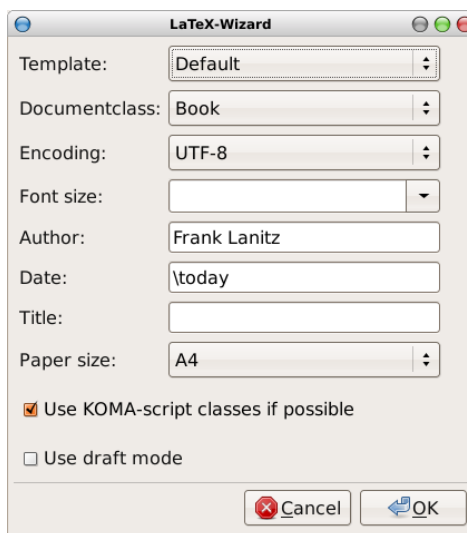
Figure 2: LaTeX-Wizard of version 0.5dev

The wizard is offering a chance to choose from a couple of templates with the possibility of adding customer templates. This can be chosen from **Templates** pulldown on top of dialog.

This can be set by choosing the needed entry form **Documentclass** pulldown menu.

Encoding is configuring the packages `inputenc` to for example `\usepackage[utf8]{inputenc}` in case of the document encoding should be UTF-8. Also it sets the encoding Geany is using for the newly created document.

Font size as well as **Paper size** will set class option for font/paper size of the new created document. **Author**, **Date**, **Title** will be also passed to the corresponding command inside the file header.

Option **Use draft mode** will add `draft` to list of document options which allows some help during debugging of document.

Since KOMA script is quiet popular the option **Use KOMA script if possible** allows to activate the usage of KOMA script. If this options is activated instead of `book`, `scrbook` will be used as document class. Default is activated here. This option is deactivated by default and can be set through GeanyLaTeX's configuration dialog mentioned earlier in this document.

This wizard can also be called by a shortcut. Please have a look onto section 2, page 12.

6.1.2 Default templates

Document types that are currently supported by the wizard are:

- book

- report

- article

- letter (default letter class)

- presentation (LaTeX beamer)

6.1.3 Extending by own templates

GeanyLaTeX is offering a way for extending the wizard by user defined templates. This templates will be stored inside the plugin configuration dir with file extension glt. For creating a customized template you will need to create a normal *.tex file and store it inside the directory. On most Linux systems this should be `~/.config/geany/geanyLaTeX/`.

Inside your template you can refer to wizard's field by using some special strings which are:

Table 1: List of available symbols on custom templates

Symbol	Usage
{CLASSOPTION}	Will be replaced by the classoptions set on the wizard as for example font size or paper size.
{DOCUMENTCLASS}	Will be replaced by the choosen document class based on the pulldown of wizard and whether option for KOMA script has been set.
{DATE}	Will be replaced by the input given on the date field of wizard.
{TITLE}	Will be replaced by the input given on the title field of wizard.
{AUTHOR}	Will be replaced by the input given on the author field of wizard.
{ENCODING}	Will be replace by choosen encoding from pulldown of wizard
{OPENING}	Will be replaced by »Dear Sir or Madame« in local geanyLaTeX is running with. If you like to overwrite it, please don't use the symbol and hardcode the phrase instead.
{CLOSING}	Will be replaced by »With kind regards« in local geanyLaTeX is running with. If you like to overwrite it, please don't use the symbol and hardcode the phrase instead.

If you have other than the default templates defined they will be add to templates pulldown. So when creating a template, please keep care to set up a good name for the file, as the filename will be the identifier you can choose from on pulldown.

In future a number of templates should be available also online at http://frank.uvena.de/files/geany/data/geanyLaTeX/. Please feel also free to publish templates in case of you have some useful one.

If you need more general templates, you may have a look onto Geany's build in template feature – briefly introduced on chapter 11.1, page 17.

6.2 Inserting References and Labels

An often used feature on writing of documents is adding and referring to labels. GeanyLATEX is adding some support here for more comfortable adding new labels and reference offering a GUI.
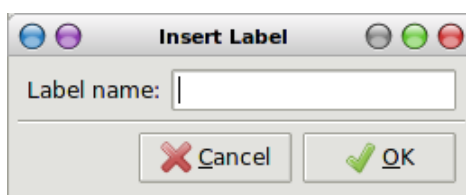
Figure 3: Insert label dialog on GeanyLATEX 0.4

After an label was added GeanyLATEX is offering a dialog for inserting normal references and page references to a label.
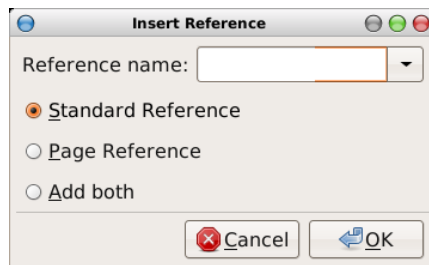
Figure 4: Insert reference dialog on GeanyLATEX 0.5svn

The suggestions inside the pull down are based on the aux files creating by processing of *.tex file located inside directory of current TEX-file. When first step was successful the files are parsed for \newlabel{}{}{} and outcome is tried to interpret them properly. The found entries will be inserted into pull down sorted by alphabet.

Both, the inserting labels as well as the inserting reference dialog can be accessed by key binding also. See chapter 2 here.

6.3 BibTeX templates for catalogue entries

GeanyLATEX is offering a number of often used templates for BibTeX catalogue entries. They can be access by the plugin submenu in Geany's tools menu:

- Article
- Book
- Booklet
- Conference
- Inbook
- Incollection
- Inproceedings
- Manual
- Mastersthesis
- Misc
- PhdThesis
- Proceedings
- Techreport
- Unpublished

When choosing an entry from list on menu a templace with common used fields will be generated and inserted into the document. The template will be inserted on position of cursor which will no be moved during the process. As an example for a book, this will be inserted to the document:

```
@Book{
Author = {},
Editor = {},
Publisher = {},
Title = {},
Year = {},
}
```

6.4 Replacement of special characters

GeanyLATEX is able to replace special characters to their there TEX substitute. This can be done in two different ways:

1. **On input:** If this switch is active all special characters will be replaced during typing of text. You can turn the switch on/off at Replacement of special characters submenu inside.

2. **Bulk replace of selected text:** A selected text will be parsed and all known special characters will be replaced by their TEX substitute. This can be very useful on importing a large amount of text into your document including characters like ö or ≫. This function is available through the Replacement of special characters submenu on plugin's submenu of Geany's Tools menu.

For both functions there are also shortcuts available.

6.5 Inserting of special character

The plugin is offering a number of special characters with their TEX substitutes to be inserted on easy accessing through the plugin menu.

6.6 Inserting of Environment

GeanyLATEX is offering a feature for inserting environments into your documents. It can be chosen from a pulldown menu and will be inserted at current position of cursor. If there is a selection activ, the selection will be included into environment.

```
\begin{your_environment}
    ... selected text ...
\end{your_environment}
```

In case of an empty (= no selection) an empty environment with

```
\begin{your_environment}
...
\end{your_environment}
```
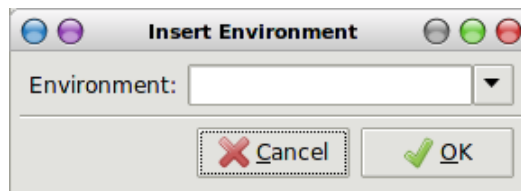
will be inserted to the document.

Figure 5: Insert environment dialog on GeanyLATEX 0.4

6.7 Format

GeanyLATEX is able to help on formation of text. For doing this its offering you to insert often use format patterns to your document. Patterns that are currently supported are:

- Italic
- Boldfont
- Underline
- Slanted
- Typewriter

- Small Caps

- Emphasis

- Centered

- left-aligned

- right-aligned

GeanyLATEX will add the correct format pattern to the document. If there is an selection active, that pattern will be placed around so the selected text will be formatted with this chosen style.

Following items are also accessible using the GeanyLATEX toolbar:

- Italic

- Boldfont

- Underline

- Centered

- left-aligned

- right-aligned

6.8 Autocompletion of \begin and \begingroup

Since version 0.5 GeanyLaTeX is supporting autocompletion for closing \end and \endgroup for begin commands. Before Geany 0.19 this has been part of the Geany core but has been moved out as it is something LATEX specific.

6.8.1 Usage of feature

After the feature has been enabled (Please check 7.1.3, page 11 here for more detailed information), in every case you enter a \begin{} or \begingroup{} the plugin will automatically add the fitting \end{} or \endgroup{} if its not finding a closing tag within the definded context length – by default this means inside following 5 lines. If you like to change this size, please check chapter 7.3.2, page 13.

This feature is by default file type depending, so it will only work on TEX-like file types.

7 Configuration

GeanyLaTeX can be configured in two major ways:

1. GeanyLaTeX's configuration dialog

2. Geany's keybindings interface

7.1 GeanyLaTeX's configuration dialog

With version 0.4 the configuration dialog is offering two options which can be changed:

7.1.1 Use KOMA script by default

KOMA script bei Markus Kohm is a very popular set of document classes mainly used in Europe. With this option the default setting for e.g. LaTeX-Wizard can be configured[2]. Option is turned off by default.

7.1.2 Show extra toolbar

Decides whether toolbar with some format icons should appear in the top of editor widget. Option is turned off by default. Just give it a try.

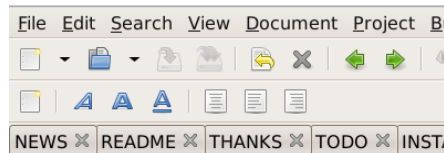
Figure 6: Plugin toolbar of GeanyLaTeX 0.5

7.1.3 Modus of autocompletion

Here you can choose, whether the GeanyLaTeX should do some autocompletion or not. Values are either

1. Don't care about this inside plugin or
2. Always perform autocompletion on LaTeX

7.2 Key bindings

Keybindings which are available:

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[2]Currently only position where this option is being used to be honest

Table 2: List of available keybindings

Shortcut	Description
Run LaTeX-Wizard	Starts the LaTeX-Wizard for creating a new document
Insert \label	Runs the dialog for inserting a new label into your document.
Insert \ref	Starts an dialog for easy inserting `\ref` and `\pageref` into your document. The dialog is supporting easy parsing of aux files so it can suggest a couple of already set labels.
Insert linebreak \\	Inserts a a newline \\ into the document.
Turn input replacement on/off	A shortcut for turning input replacement on or off. When input replacement is activated special characters like ě are replaced by there TEX substitute like `\v{e}`
Replacement of special characters	A selected text will be parsed and all known special characters will be replaced by their TEX substitute. This can be very useful on importing a large amount of text into your document including characters like ö or ».
Run insert environment dialog	Runs a dialog for easy inserting an environment. If there is some text selected, the environment will be placed around.
Insert \item	This shortcut will add an simple \item to the document. This can be very useful during writing of lists with a huge number of items.
Format selection in bold font face	Format a selection with bold font face. This is done be adding `\textbf{...}` around selection.
Format selection in italic font face	Format a selection with italic font face. This is done be adding `\textit{...}` around selection.
Format selection in typewriter font face	Format a selection with typewriter font face. This is done be adding `\texttt{...}` around selection.
Format selection centered	Formats selected text centered on page (uses `\centering`
Format selection left-aligned	Formats selected text left-aligned on page (uses `\raggedleft`
Format selection right-alignedm	Formats selected text right-aligned on page (uses `\raggedright`
Insert description list	Inserts an description environment as well as a 1st \item element.
Insert itemize list	Inserts an itemize environment as well as a 1st \item element.
Insert enumerate list	Inserts an enumerate environment as well as a 1st \item element.

7.3 Hidden preferencess

As not all users need to configure everything on there plugin, Geany LATEX has some hidden preferences which can be set through command line.

7.3.1 Deactivate toolbar items if document is a non TEX-type

By defaul, GeanyLATEX is deactivating buttons inside toolbar, which don't make much sense to be applied on non-TEX file types. As this is not always wished, its possible to turn this feature off via a hidden preferences.

If you want to do so, just add a new section called `toolbar` into your general.conf file of GeanyLATEX plugin which stats `glatex_deactivate_toolbaritems_with_non_latex=false`. As a result, your config file could look similar to this:

```
[general]
glatex_set_koma_active=false
glatex_set_toolbar_active=true

[toolbar]
glatex_deactivate_toolbaritems_with_non_latex=false
```

Setting this option back to true will go back to default behaviour.

Please ensure, you reload the plugin once this option has been changed.

7.3.2 Size of context for autocompletion

Inside configuration file you can add a value to adjust the size of context, which is being searched for autocompletion of `\end` and `\endgroup`. The default value is 5. If you want to reset it, just add a new line to your configuration file with `glatex_set_autocompletion_contextsize` followed by an integer value. An example could look like this:

```
[general]
glatex_set_koma_active=true
glatex_set_toolbar_active=false
glatex_set_autocompletion=true

[autocompletion]
glatex_set_autocompletion_contextsize=2
```

Figure 7: general.conf example for contextsize

7.3.3 Apply autocompletion only to TEX-like files

With this option, you can force GeanyLATEX to apply all autocompletion functions also to non-TEX file types as for example an C-source code file. As this is only in a very low number of cases a really good idea, the option is by default turned on.

```
[general]
glatex_set_koma_active=true
glatex_set_toolbar_active=false
glatex_set_autocompletion=true

[autocompletion]
glatex_autocompletion_only_for_latex=false
```

Figure 8: general.conf example for deactivating file type specific restrictions for autocompletion

7.3.4 Customized reference strings

GeanyLATEX is able to insert references to a label where its using some default value. As this value is not always optimal, it can be changed using a hidden preference by setting glatex_reference_page, glatex_reference_chapter or glatex_reference_all inside configuration file as shown inside the example configuration snippet.

```
[general]
glatex_set_koma_active=true
glatex_set_toolbar_active=true

[reference]
glatex_reference_page=\\textbf{\pageref{{{reference}}}}
glatex_reference_chapter=\\textbf{\\ref{{{reference}}}}
glatex_reference_all=\\textbf{\\ref{{{reference}}}, page \pageref{{{reference}}}}
```

Please take care in this case {{reference}} will be replace by label name.

Also \t, \r, \n will be handled as known from C so you will need to add a second \ in front of in such cases. Even this seems to be annyoing on the first hand, it allows you to insert some more complicated constructs over here which might require a new line inside.

8 Contribution to the plugin

If you like the plugin, there are a number of ways, how to contribute to the development of the plugin.

8.1 Extending plugin

8.1.1 Adding a new translation

Currently the plugin is available in English and German language but we are always looking for other translations to. There are two major topics in translation:

1. **Translation of plugin:** Adding a new translation and improving an existing one is easy to do. After catching the source tarball and extracting you can find all needed files inside the po/ folder.
   Please contact the authors if you plan to update/add a translation to ensure nobody else is currently working on and avoid double work and to get some further information about translation (see chapter 13).

2. **Translation of documentation:** Since this document is currently only available in English it would be helpful for not English speaking people to have a translated version. If you like to do an translation, please also contact one of the authors for details (see chapter 13).

8.1.2 Adding a new feature

New features are always highly welcome. The TODO file inside source code archive gives a good idea of current wished features and which are being worked on. Also you can have a look onto the feature request tracker of geany-plugins project at http://sourceforge.net/tracker/?group_id=222729 whether you find something interesting. Of course we are also open for not in the sources mentioned before listed items. Just contact one of the authors (see chapter 13).

8.2 Testing & bug reporting

GeanyLaTeX is tested mainly on x86 and x86_64 architecture running GNU/Linux. Also it was tested on some Windows 32 versions like XP SP3 very briefly. Since there are also other systems available, testing on other platforms and maybe reporting of issues is highly appreciate.

8.3 Packaging

GeanyLaTeX is part of the geany-plugins project even though there are releases independent of a major release of the project. Therefor there are two things you can do here:

1. Package the plugin for your operating system or distribution. As you might can imagine, the authors unfortunately cannot support all possible platforms.

2. Help to keep releases and packages of geany-plugins project up to date for current version of Geany.

8.4 Improving and extending of documentation

Documentation is never complete. There are spelling mistakes, paragraphs that needs to be extended or rewritten because they are not clear or topics that were missed out at all.

The documentation is written in LaTeX so all you need is to get the tex file from doc folder and add or update the content. After this, just send a diff or complete file to one of the authors.

8.5 Providing additional data for plugin

You can also contribute to the plugin's development by providing additional data as for example customized templates for the LaTeX-Wizard. If you build up one, you might like to send it to one of the authors.

8.6 Propaganda

And of course, tell others of Geany and this plugin. If you like to do a talk about GeanyLaTeX and/or Geany in general, there is some code available on http://git.geany.org/talks/ you might can use as a start point for preparing your own presentation. If your favourite language is not yet available there, please feel free to do your own translation and in best case send your translation to one of Geany's[3] development team so it can be added to archive.

9 Development

9.1 Development version

You can checkout the current source code from the Subversion repository at Sourceforge.net. Get the code from:

svn checkout http://geany-plugins.svn.sourceforge.net/svnroot/geany-plugins/trunk/geanylatex

9.1.1 Sending a patch

If you want to create a patch, please respect the license of GeanyLaTeX as well as intellectual property of third. Patches that should be included to the default distribution must be licensed under the same conditions as GeanyLaTeX by the copyright owner.

10 Known issues

At time of the the documentation was created no issue were known. Since this is only a snapshot, you will find more recent information for all reported issues bug tracking system of SF at
http://sourceforge.net/tracker/?group_id=222729

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[3]Check for addresses http://www.geany.org

11 Recommendations to improve work with LaTeX and Geany

Geany is offering a number of nice features, that can be used to make daily work more easy without need to write a new plugin or extend GeanyLaTeX.

11.1 Geany's template system

If you don't need a dynamic template as described in chapter 6.1.3, page 6 you can also use Geany's buildin template function which allows to also add customised templates, including placeholders for e.g. author's name, but in a more general and nonLaTeX-specific way. Nevertheless you should give it a try as it useful in many cases. For information how to create your own template using Geany's build in feature, please check manual.

11.2 Geany's code snippet function

Geany is allowing you to define code snippets and inserting them easy during writing a document. This gives you some more flexibility than to create new commands.

A possible snippet for snippets.conf could be:

```
[LaTeX]
frame=\\begin{frame}\n%ws%\\frametitle{%cursor%}\n%ws%%cursor%\n\\end{frame}
block=\\begin{block}{%cursor%}\n%ws%%cursor%\n\\end{block}
itemize=\\begin{itemize}\n%ws%\\item %cursor%\n\\end{itemize}
enumerate=\\begin{enumerate}\n%ws%\\item %cursor%\n\\end{enumerate}
description=\\begin{description}\n%ws%\\item %cursor%\n\\end{description}
```

A snapshot of authors' last version for LaTeX can be found on http://www.geany.org/Download/Extras

11.3 Other useful plugins

As mentioned before a number of useful functions were already implemented with other plugins. Below you will find a list with the authors's recommendations. More nice plugins can be found on Geany's plugins page at http://www.geany.org.

11.3.1 GeanyLipsum

This plugin implements an easy way for inserting Lorem Ipsum text into a document. The length of the inserted text if configurable so the plugin can be very helpful on testing layout.
Homepage: http://frank.uvena.de/en/Geany/geanylipsum/

11.3.2 geanyVC

When working on bigger documents a version control system like Subversion could be useful to keep versions. GeanyVC is adding a easy to use frontend for a number of popular version controll systems such as git, Subversion, CVS, Bazaar or Mercural.
Homepage: http://plugins.geany.org/geanyvc/

11.3.3 Spellcheck

Nobody is perfect - in special with typing mistakes on writing a text. Spellcheck is offering a way on Geany to make usage of a common spellchecking sytem as aspell, myspell or hunspell. Wrong spelled words can be marked with an red line and the plugin is offering suggestions for correct the word. Unfortunately right now its not supporting some special things common in TEX and LATEX.
Homepage: http://plugins.geany.org/spellcheck/

11.3.4 tasks out of the addons plugins

A plugin that is recognising `TODO` or `FIXME` tags inside a document and allows to easy jump to these entries. This function is similar to the `todo` package but doesn't require recompiling of the document. Recognised tags will be inserted to another tab in Geany's message widget.
Homepage: http://plugins.geany.org/addons/

12 License

GeanyLATEX and all its parts is distributed under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version. A copy of this license can be found in the file COPYING included with the source code of this program. If not, you will be able to get a copy by contacting the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

13 Bugs, questions, homepage

If you found any bugs or want to provide a patch, please contact Frank Lanitz (frank(at)geany(dot)org). Please also do so, if you got any questions and visiting
http://frank.uvena.de/en/Geany/geanylatex/ didn't help you to figure out the answer. Visiting the website is also a good start if you want to check for any update on this plugin.