



**GRAND VALLEY  
STATE UNIVERSITY®**

SEYMOUR AND ESTHER PADNOS  
COLLEGE OF ENGINEERING  
AND COMPUTING

Latex and Mendeley

Dimitri Häring

June 18, 2019

# Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Software</b>	<b>4</b>
2.1	Software Tools . . . . .	4
2.2	Git, GitHub . . . . .	4
2.3	Install L <sup>A</sup> T <sub>E</sub> X . . . . .	5
2.3.1	Install MiKTeX . . . . .	5
2.3.2	Install TexStudio . . . . .	5
2.4	TexStudio Hints . . . . .	5
2.4.1	Edit Default Language and Dictionary . . . . .	5
2.4.2	Convert a *.md file into a *.tex file . . . . .	5
2.5	biblatex, make citations with L <sup>A</sup> T <sub>E</sub> X . . . . .	6
<b>3</b>	<b>File Used and Structure</b>	<b>7</b>

# 1 Introduction

This document shall provide insight into the use of latex and surroundings help full software. Like Mendeley which handles citations and provides a chrome plug in.

Draft V0.1.0

## 2 Software

Describes the used software for the project as well as contains installation guide and version numbers.

### 2.1 Software Tools

Used for documentation is

- (a) Git, GitHub is used to make backups and commit histories. used to make back ups and commit stages of your work.
- (b)  $\text{\LaTeX}$  is the format used to describe the document.
- (c)  $\text{\MiKTeX}$  [1] Consol is a package management system.
- (d)  $\text{\TeX}$ Studio [2] is an  $\text{\LaTeX}$  text editor.
- (e) Mendeley [3] reference management software with chrome plug in.
- (f) Pandoc is used for Markdown to Latex conversion.

### 2.2 Git, GitHub

Git is a fast-version-control tool that allows the engineer to jump back to any commit that he made. It is available on the three major operating systems Windows, Mac OS X, and Linux/Unix. For Windows there is an additional benefit git comes with a built in Linux/Unix bash terminal so that Linux/Unix commands can be used on Windows and is called Git Bash.

Initializing a git repository in an existing folder locale:

Listing 1: Initializing a git repository

```
$ git init
$ git add README.md
$ git commit -m "first commit"
$ git remote add origin https://github.com/username/repositoryName.git
$ git push -u origin master
```

...or cloning an existing repository from GitHub a git repository in an existing folder locale:

Listing 2: Clone git repository

```
$ git clone https://github.com/username/repositoryName.git
```

...or push an existing repository from the command line

Listing 3: Remote git repository on GitHub

```
$ git remote add origin https://github.com/haringd/Geocalculatori0SHW7.git
$ git push -u origin master
```

...or most common git commands used in the command line

Listing 4: git common commands

```
$ git pull
$ git status
```

```
$ git add .
$ git commit -m "Your commit text"
$ git push

$ git log
$ git checkout <commit>
```

In case there was a careless day and a too big file was committed.

Listing 5: git bash find files larger then 99MB

```
$ find . -size +99M -exec ls -lh {} \+
```

Listing 6: git delete files from history which are larger then 99MB

```
$ git filter-branch --prune-empty -f --index-filter "git rm --cached -f --ignore-unmatch"
```

## 2.3 Install L<sup>A</sup>T<sub>E</sub>X

### 2.3.1 Install MiKTeX

MiKTeX provides package management for L<sup>A</sup>T<sub>E</sub>X that handles most packages used for documentation.

### 2.3.2 Install TexStudio

TexStudio is a convenient front end to edit and write L<sup>A</sup>T<sub>E</sub>X syntax. Like most IDEs it provides auto-completion (ctrl + space). It also provides compiler and build system to convert L<sup>A</sup>T<sub>E</sub>X into a PDF format. Furthermore it integrates easy into git which makes it easier to collaborate in a team.

## 2.4 TexStudio Hints

### 2.4.1 Edit Default Language and Dictionary

As shown in Figure 1, this can be done under Preferences -> Language Checking.

### 2.4.2 Convert a \*.md file into a \*.tex file

Pandoc can be used to convert, with a simple terminal command, a \*.md file into a \*.tex file. Easiest is to convert the file as pre compiler option which can be added shown in Figure 2. The terminal command is shown in Listing 7

Listing 7: Terminal command that converts .md to .tex files

```
pandoc -f markdown -t latex -o onepage.tex ONEPAGE.md.
```

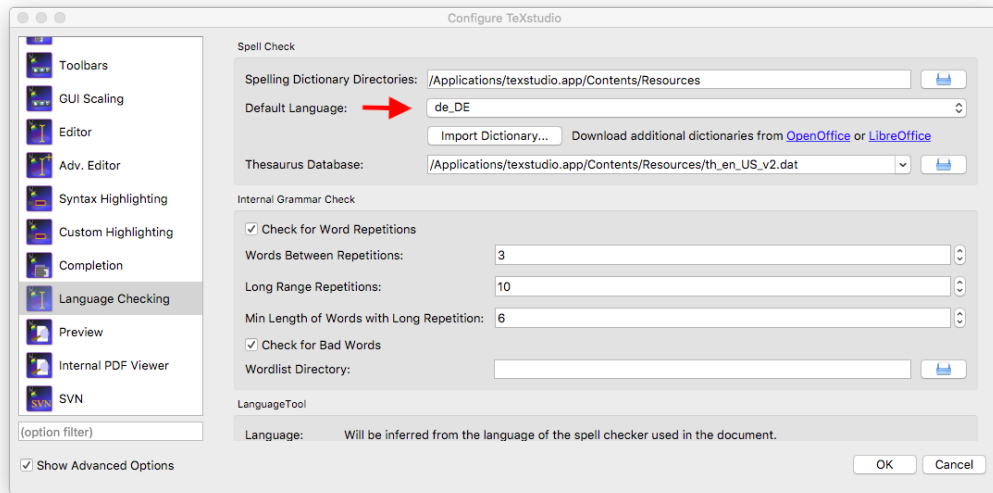


Figure 1: Language Settings in TeXStudio.

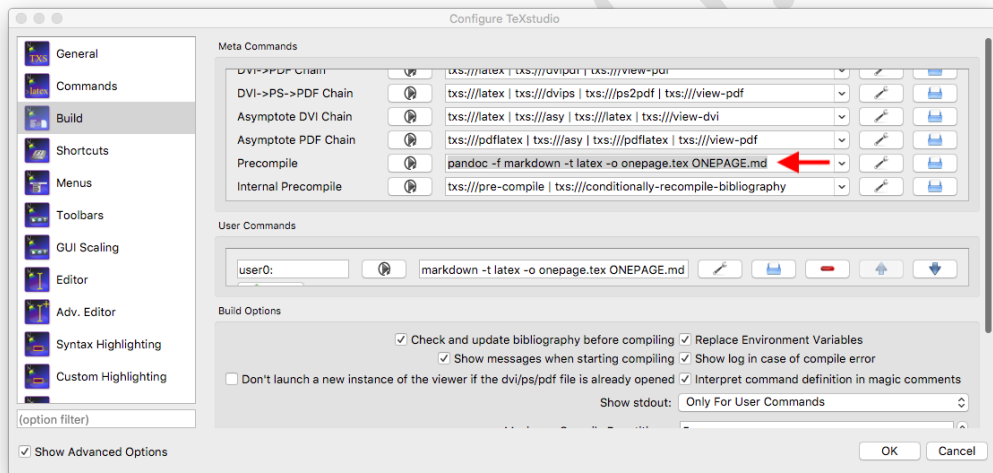


Figure 2: Language Settings in TeXStudio.

## 2.5 biblatex, make citations with $\text{\LaTeX}$

In order to run the citation properly use the following commands in bash or windows terminal on the file.

```
$ pdflatex reportRFTuner
$ biber reportRFTuner
$ pdflatex reportRFTuner
```

That solves the problem of not showing the citations after editing the \*.bib file correctly.

An easy way to handle citations is to use Mendeley which allows to copy a citation in bibtex format and simply append it to the \*.bib file. Just in case you wonder where you got bibtex from

it was installed with miktex or textstudio.

A bibtex file \*.bib has the following syntax and is used with the citeVizmuller1995 [4] command:

```
@book{Vizmuller1995,
address = {Boston, London},
author = {Vizmuller, Peter},
isbn = {0-89006-754-6},
mendeley-groups = {RF{\_}TUNER RAMI{\_}2018},
pages = {281},
publisher = {Artech House, Inc.},
title = {{RF Design Guide}},
year = {1995}
}
```

And an example of a citation with page number [5, pp. 1, 2]

### 3 File Used and Structure

Fig. 3 shows the file structure used in this document. The Latex\_Mendeley\_top.tex file is the file that holds the definitions and packages used including the text body. The sections where the actual text is written are placed in folder 01\_sections and loaded into the top file with include01\_sections/Introduction.

Name	Änderungsdatum	Typ	Größe
01_sections	18.06.2019 17:49	Dateiordner	
02_images	18.06.2019 17:49	Dateiordner	
Latex_Mendeley_top	15.06.2019 02:02	tex File	3 KB
Latex_Mendeley_top_BibTex	05.06.2019 15:15	BibTeX Database	7 KB

Figure 3: Latex file structure used in this document.

## References

- [1] *Home - MiKTeX.org*. [Online]. Available: <https://miktex.org/> (visited on 06/18/2019).
- [2] *TeXstudio*. [Online]. Available: <https://www.texstudio.org/> (visited on 06/18/2019).
- [3] *Mendeley - Reference Management Software & Researcher Network*. [Online]. Available: [https://www.mendeley.com/?interaction%7B%5C\\_%7Drequired=true](https://www.mendeley.com/?interaction%7B%5C_%7Drequired=true) (visited on 06/18/2019).
- [4] P. Vizmuller, *RF Design Guide*. Boston, London: Artech House, Inc., 1995, p. 281, ISBN: 0-89006-754-6.
- [5] N. Litwinczuk, “Computer-aided design of automatic antenna matching devices”, in *IEEE 6th International Symposium on Electromagnetic Compatibility and Electromagnetic Ecology, 2005.*, Jun. 2005, pp. 166–170. DOI: 10.1109/EMCECO.2005.1513092.