FH Aachen

Medical Engineering and Technomathematics

Campus Jülich

Scientific Programming

Bachelor Thesis

This is my super fancy title of my thesis I hope it catches your attention

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Written at Company AG

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August 12, 2020

Declaration of Originality

I confirm that this assignment is my own work and that I have not sought or used inadmissible help of third parties to produce this work and that I have clearly referenced all sources used in the work.

This work has not yet been submitted to another examination institution – neither in Germany nor outside Germany – neither in the same nor in a similar way and has not yet been published.

August 12, 2020

Signature	Date

Contents

Janik Schumacher

1   Latex

This section contains stuff about LaTeX.

1.1   DISCLAMER

This document looks ugly af. I know, I know. BUT if you spend more than 5 minutes building the content, it will look fabulous, trust me. The template itself is very clean, minimalistic, functional and easy to use and build beautiful documents, if used with care. I just don't have enough time to build some super duper fancy example doc, but I am sure you will be able to figure it out ;).

1.2   Prerequisites

1.2.1   Installation

1. Install Strawberry Pearl

   http://strawberryperl.com/

2. Install MikTex

   https://miktex.org/

3. Install Python 3

   https://www.python.org/

4. Install VSCode

   https://code.visualstudio.com/

5. Install the recommended extensions within VSCode

   (a) LaTeX Workshop

      https://marketplace.visualstudio.com/items?itemName=James-Yu.latex-workshop

   (b) LaTeX Utilities

      https://marketplace.visualstudio.com/items?itemName=tecosaur.latex-utilities

   (c) bibtexLanguage

      https://marketplace.visualstudio.com/items?itemName=phr0s.bib

1.2.2   VSCode Settings

To make everything work, you have to change some stuff in the VSCode settings.

To make those changes, edit the `settings.json` file in VSCode by pressing `[CTRL]+[SHIFT]+[P]` and entering "settings json". Select "Preferences: Open Settings (JSON)". Make sure your file looks similar to the one shown in figure 1.1. make sure to have **ALL** `args` configured correctly, otherwise the compilation will fail! Restart all instances of VSCode when done. The code in figure 1.1 is too long for one page, but I am too lazy to fix this. If you read the code of this template you will have nooooo problems finding the file containing that source ;).

```json
{
  "latex-workshop.view.pdf.viewer": "tab",
  "latex-workshop.chktex.args.active": [
    "-wall",
    "-n22",
    "-n30",
    "-e16",
    "-q",
    "-shell-escape"
  ],
  "latex-workshop.chktex.args.root": [
    "-wall",
    "-n22",
    "-n30",
    "-e16",
    "-q",
    "-shell-escape"
  ],
  "latex-workshop.latex.tools": [
    {
      "name": "latexmk",
      "command": "latexmk",
      "args": [
        "-shell-escape",
        "-synctex=1",
        "-interaction=nonstopmode",
        "-file-line-error",
        "-pdf",
        "-outdir=%OUTDIR%",
        "%DOC%"
      ],
      "env": {}
    },
    {
      "name": "lualatexmk",
      "command": "latexmk",
      "args": [
        "-shell-escape",
        "-synctex=1",
        "-interaction=nonstopmode",
        "-file-line-error",
        "-lualatex",
        "-outdir=%OUTDIR%",
        "%DOC%"
      ],
      "env": {}
    },
    {
      "name": "latexmk_rconly",
      "command": "latexmk",
      "args": [
        "-shell-escape",
        "%DOC%"
      ],
      "env": {}
    },
    {
      "name": "pdflatex",
      "command": "pdflatex",
      "args": [
        "-shell-escape",
        "-synctex=1",
```

1.3 Getting started

bachelor.sty

> This file contains all package imports, variable definitions, command definitions and the base configuration of the whole document. Everything is commented, please just read through this file it should be self explanatory.

master.tex

> This file contains the structure of the document. It includes all pages including the pages before and after the actual content. To add more `tex` files to the document, add them to the section in this file.

Content

> Due to personal preference I number my content files and also the other files to have them sorted nicely in VSCode. This is not necessary, but helps to navigate around quicker.

2 Chapter

This section shows some basic paragraph and section stuff.

2.1 Subsection heading

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2.2 Stuff

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placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

2.2.1   stuff details

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2.2.2   More stuff details

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

3 More complex and long title

This section contains stuff.

3.1 Paragraph

stuff.

3.2 Commands

This section contains some of the available commands.

3.2.1 Cites

This sentence is a cite [1]. This next sentence is also a cite from another kind of source [2].

3.2.2 Glossary and acronyms

This *word* is in the glossary. It gets printed italic to make clear it is explained in the glossary. Acronyms can also be declared with a *super fancy command (SFC)*. If you use the same *SFC* for an acronym again, it will just print the short version. You can also have a glossary entry for a acronym with an *even fancier command (EFC)*. The definition of those glossary entries and acronyms is done in the `glossary-def.tex` file shown in figure 3.1.

3.2.3 Code

Code can be styled with the `minted` package that uses the python library `pygments` internally. The programming language, file path and a description have to be provided for the `code` command.

```
1  \makeglossaries
2
3  \newglossaryentry{latex}
4  {
5       name=\LaTeX,
6       description={Latex is a document preparation system.}
7  }
8  \newglossaryentry{word}
9  {
10      name=word,
11      description={Some letters next to each other.}
12 }
13
14
15 \newacronym{SFC}{SFC}{super fancy command}
16
17
18 \acronymglossary{EFC}
19 {even fancier command}
20 {A command that is even fancier than a \gls{SFC}.}
```

Figure 3.1: Code of the glossary definition

A   Acronyms

EFC even fancier command (pages 7, *Glossary: even fancier command*)

SFC super fancy command (pages 7, 11)

B Glossary

LATEX Latex is a document preparation system. (page 1)

even fancier command A command that is even fancier than a *SFC*.

word Some letters next to each other. (page 7)

C List of Figures

D References

[1] Google. *Mobile-first indexing best practices*. Mar. 4, 2020. URL: https:
//developers.google.com/search/mobile-sites/mobile-first-
indexing (visited on 08/12/2020) (cit. on p. 7).

[2] M. Duić, B. Konjevod, and L. Grzunov. "Web sources of literature for
teachers and researchers: Practices and attitudes of Croatian faculty
toward legal digital libraries and shadow libraries such as Sci-Hub". In:
*2017 40th International Convention on Information and Communication
Technology, Electronics and Microelectronics (MIPRO)*. 2017, pp. 824–829
(cit. on p. 7).