LaTeX Boilerplate

(Choose Layout in '2ProjectSetup'; perhaps check what this means regarding "Document-Genre")

Book supports big Documents with lots of pages. Additional structuring level "Chapter" available.
Article for more condensed documents, without \chapter.

Template

by

Dennis Krummacker, M.Sc.

[Placeholder | Some additional Text]

2021-10-11

Dennis Krummacker
2021-10-11
– 2024-10-12

LaTeX Boilerplate

(Choose Layout in '2ProjectSetup'; perhaps check what this means regarding "Document-Genre")

Book eher für große Dokumente mit vielen Seiten. Zusätzlich ist das Strukturierungs-Level "Kapitel"verfügbar.
Article für prägnantere Dokumente, ohne \chapter.

Template

von

Dennis Krummacker, M.Sc.

Vom Fachbereich Elektrotechnik und Informationstechnik der Rheinland-Pfälzischen Technischen Universität Kaiserslautern-Landau (RPTU) zur Verleihung des akademischen Grades Doktor der Ingenieurswissenschaften (Dr.-Ing.) genehmigte Dissertation

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Dennis Krummacker
2021-10-11

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» Only those, who believe in such, will encounter their limits. «

»An seine Grenzen stößt nur, wer an solche glaubt.«

Abstract

Look into “9chapter/0segmentation/100_abstract.tex”

Kurzfassung

Look into “9chapter/0segmentation/101_abstract_Ger.tex”

Prologue

1 Usage Manual

This document is optimized for both, being printed as well as digital reading. It follows typographic guidelines and is appropriately typeset for being printed. Nonetheless is it equipped with feature, beneficial in digital form:

- The *Page-Number* on the Bottom is a clickable Hyperlink jumping back to the Table-of-Contents.
- The *Headmark*, showing the current Chapter on even (left) pages, respectively the current Section of odd (right) pages is a clickable Hyperlink to the beginning of this Chapter/Section.
- »Glossary«
  - *Abbreviations*/*Acronyms* in the text are clickable Hyperlinks to the corresponding entry in the »Acronyms« register in the Appendix.
  - Defined *Terms* are clickable Hyperlinks to the corresponding entry in the »Glossaries« register in the Appendix.
  - Used mathematical/scientific *Symbols* (greek letters, …) are clickable Hyperlinks to the corresponding explaining entry in the »Symbols« register in the Appendix.
  - They may contain cross-referencing Hyperlinks.
- Register of »Bibliography / Literature«: »Literature«
  - *Literature* References are clickable Hyperlinks leading to the corresponding entry in the »Bibliography« in the Appendix.
  - *Literature* References are on *first* citation marked with an Asterisk (→ [x]*) and printed as a footnote on this page as “Title | Authors [max 3] | Year”. (If typeset with the correct command of mine.)
    - ♦ This of course additionally to the reference being added an entry to a proper *Literature* Register in the Document’s back matter.
  - There may be multiple Literature Registers, like *primary*, *secondary*, a distinct *Technical Specifications* section, etc. To be decided per Document.
- *References* of Elements from within the document (Section, Figure, etc.) are clickable Hyperlinks to this Element.
- On some occasions may be *explicit Hyperlinks* inserted for assisting navigation through the document:
  - Temporarily in the Footer of a page.
  - Ancillary content registers or single reference links throughout the document.

Sidenote:

- With most modern pdf-readers, one can smoothly follow a Hyperlink – e.g. to the Glossary for looking up an acronym – and use the “`Back` feature” (e.g. Mouse Button 4) to comfortably jump back to where the document was scrolled prior to clicking the link – even across multiple steps.

Part I

Thesis

1 Introduction

2 Background

3 Sample File

This is the sample File for ‘elaborate’ Documents (i.e. books, elaborate articles, etc.)

4 Some Chap: An absurd Title, way too long to be a reasonable choice, but to see the effect on multi-line

Example-Citation: [1]
A custom citation command that puts information about the reference to the footnote on first occurrence: [1, 2]*

Some special characters: »«.
Some Example Macro: »My Enquote«.
Example Acronym, Glossary-Entry & Symbol:
FSA (Finite-State Automaton), API
M_w, σ
EventFD

$$y = \int_0^x \cos(x)\,dx = \frac{e^{ix}-e^{-ix}}{2i} |0123456789 \geq i \leqslant l$$

$$y = \int_0^x \cos(x)\,dx = \frac{e^{ix}-e^{-ix}}{2i} |0123456789 \geq i \leqslant l \tag{4.1}$$

4.1 Font Settings

Ordinary | Serif | Sans-Serif | `Monospaced-Teletype` | **Bold** | *Italic/Kursiv* | ***BoldItalic*** | *Slanted/Schräggestelt* | SmallCaps (SC)

shape \ family	Ordinary (Serif)	Sans-Serif	Mono-spaced
Plain	Xyz Qu Text | ø l “enq”	Xyz Qu Text | ø l “enq”	`Xyz Qu Text | 0 l "enq"`
Bold	**Xyz Qu Text | ø l “enq”**	**Xyz Qu Text | ø l “enq”**	`Xyz Qu Text | 0 l "enq"`
Italic	*Xyz Qu Text | ø l “enq”*	*Xyz Qu Text | ø l “enq”*	*`Xyz Qu Text | 0 l "enq"`*
Bold-Italic	***Xyz Qu Text | ø l “enq”***	***Xyz Qu Text | ø l “enq”***	`Xyz Qu Text | 0 l "enq"`
Slanted	*Xyz Qu Text | ø l “enq”*	*Xyz Qu Text | ø l “enq”*	*`Xyz Qu Text | 0 l "enq"`*
SmallCaps	Xyz Qu Text | ø l “enq”	Xyz Qu Text | ø l “enq”	`Xyz Qu Text | 0 l "enq"`
SC-Italic	*Xyz Qu Text | ø l “enq”*	*Xyz Qu Text | ø l “enq”*	*`Xyz Qu Text | 0 l "enq"`*
SC-Bold	**Xyz Qu Text | ø l “enq”**	**Xyz Qu Text | ø l “enq”**	`Xyz Qu Text | 0 l "enq"`

Listing in separate File:

```c
#include<stdlib.h>
// Some comment
void* some_function(void* args, int argc){// Another comment
  if(var->entry){
    char* some_point = NULL;
```

[2]*Status-preserving, Seamless Relocation of Processes in Orchestrated Networks such as Organic 6G | Dennis Krummacker and Hans Dieter Schotten | 2022

```
    char[] str = "String";
    int len = make_something($some_point);
    struct timespec tim;
    tim->tv_nsec=200;
    struct some_struct struc;
    struc->member=2;
    while(current != var->iterator){
      //Some Comment
    }
    free(some_point);
  }else{
    switch(get_type(some_point)){
    case val1:{
      another_func(input);
      break;
    }
    case val2:{
      //Do something else
      break;
    }
    default:{
      break;
    }
    }//end switch (type)
  }
  return;
}
```

Listing 4.1: Example-Listing (for Programming-Language *C*)

Listing in Environment, directly in Code:

```
if(1){
  strlen("Str");
}
```

An Inline-Listing: `struct msghandle`

4.2 Testing Stuff

Document-within References to check whether hyperref & nameref work properly:
1 (Introduction). 4 (Some Chap: An absurd Title, way too long to be a reasonable choice, but to see the effect on multi-line). 4.2 (Testing Stuff)
Consider using my **Referencing-Macros**:
Figure 4.2
or Figure 4.2 ⟨A nice simple diagram⟩
or Figures 4.2 & 4.1

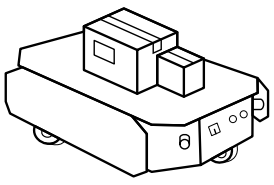

Figure 4.1: A Caption with long enough text to cause a line wrap, for the goal of testing whether the setting puts a hanging indent, which separates the text from the Figure Label.

4.2.1 Enumeration

- Example Itemization

1. Example Enumeration

Description Item Label: An Example Description List, with a longer Parapgraph. Just some random Text without any sense, but with sufficient length to cause a line-break, so that the indentation is properly showing influence.

(i) Example Inline Roman Enumeration *(ii)* Item 2.

— A-SubSubSection

With some arbitrary Text.

A-Paragraph ∗ With some arbitrary Text.

A-SubParagraph - With some arbitrary Text.

4.3 \gls{} in Heading: DLL, Dynamic Link Library, DLLs, Dynamic Link Libraries. And some more words, to make it multi-line to check the configured section-format

Just some text.

4.3.1 Alternative Solution: DLL, Dynamic Link Library

Hem, in TexLive 2023, something with the Macro Expansion changed, so that is not properly working anymore. Well, haven't investigated on it yet. My apologies.

These macros allow to use glossaries entries in Section-Heading, without the Warning "Token not allowed".

4.3.2 My Recommendation: DLL, DLLs, Dynamic Link Library, Dynamic Link Libraries

Using "glossaries-extra", one has access to these Commands above.
So, basically, when using "glossaries-extra" (as opposed to plain glossaries, without -extra), don't employ my macros from above, but use these \glsfmt[...], like in the heading here.

— Some useful Glossaries-Cmds as Reference

DLLs (Dynamic Link Libraries)
DLL, Dynamic Link Library, DLLs,
→ Just saying, the \glsdescpl{} cmd, used here, is not from the Glossaries package, but defined by DenKr: Dynamic Link Libraries

(Because the \glsdescplural{} seems to be always buggy as hell...)

DLLs, Dynamic Link Libraries, DLL, Dynamic Link Library;
DLL, DLLs, Dynamic Link Library, Dynamic Link Library.
, , , ;
EventFD, EventFDs, (Careful with the "descs" on glossary-entries 😉. Outcommented here:)

The "**\glsfmt[...]**" Cmds. Use these in **Headings**, **Captions** and such.

- Acronym:
  - DLL, Dynamic Link Library | DLLs, Dynamic Link Libraries,
  - DLL, DLL | DLLs.
  - DLL (Dynamic Link Library) | DLLs (Dynamic Link Libraries)
- Glossary-Entry:
  - , | , ,

- EventFD, EventFD | EventFDs.
- EventFD | EventFDs

→ (As you see above, the fmtshort/long are not available for Glossary-Entries, but for Acronyms. So, in essence, just use \glsfmttext{} for basically everything, except when you need the long-form of an Acronym.)

4.4 Japanese Font

Not activated per default, but Boilerplate is ready for it. You can activate \DenKrJPFont in “./2ProjectSetup.tex” to enable them.

Imported Standalone Snippet: –> Example-Citation: [2]
Some special characters: »«.
Some Example Macro: »My Enquote«.
Example Acronym: FSA
Some float is below here

a

Figure 4.2: A nice simple diagram

some red text <–

4.5 Text with Outline / Contour

Two different Packages and by that Methods are supplied here:
- contour: Prints the actual text as normal and surrounds it with the Contour.
- pdfrender: Prints the outline as the actual text and fills this inside with a different Color.

→ contour grows bigger to the outside and makes the Outline sleeked (when growing too big)
→ pdfrender keeps the outline sharp and well defined, but may let the inside look wonky
⇒ Methods to be ideally employed depends on the use-case

4.5.1 Package “pdfrender”

Text with Outline/Contour
Text with Outline/Contour

4.5.2 Package “contour”

Text with Outline/Contour
Text with Outline/Contour
Text with Outline/Contour
Text with Outline/Contour

node

Figure 4.3: Tikz-Picture Caption. Some Example Standalone-Tikz-Pic (Another Example is below outcommented). Examples for Standalone-TikZ Picture Files can be found in “0organization/1main/8templates/tikz/7Tikz”.

1Ø A Chapter with two-digit number

ABYZ

1Ø.1 And more Sections

ABYZ

1Ø.1.1 to make the ToC two pages

ABYZ

1Ø.2 More Sec

ABYZ

1Ø.3 Yet more Sec

ABYZ

1Ø.3.1 And a Subsec

ABYZ

Paragraph * ABYZ

SubParagraph - ABYZ

11 Chapter opened Left

Temporary set to open Chapters on any side, which makes this on the left side.

12 Conclusion & Outlook

This is a sample File for ‘elaborate’ Documents (i.e. books, elaborate articles, etc.)

13 Acknowledgment

Appreciation to »Dennis Krummacker« for providing his LaTeX template, on which this document was compiled.

Part II

Appendix

A | Appendix Nr. 1

Glossary

Acronyms

API: Application Programming Interface 21
DLL: Dynamic Link Library 23
FSA: Finite-State Automaton 21, 24

Glossaries

EventFD: Short for Event-File-Descriptor. Essentially just an identifier for sending and receiving events. Usually used for triggering events between entities or any kind of synchronization. 21

Symbols

M_w: Molar mass
σ: Surface tension

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Literature

[1] Dennis Krummacker and Hans Dieter Schotten. “InDeCo – Detach Communication from the Interconnection via an automatic zero-configuration, service-oriented Network Handling”. English. In: *Mobile Communication-Technologies and Applications; 25th ITG-Symposium*. 25. ITG-Fachtagung Mobilkommunikation (Osnabrück, 3rd Nov.–4th2021). Vol. 299. ITG. VDE. IEEE, Nov. 2021, p. 12.

[2] Dennis Krummacker and Hans Dieter Schotten. “Status-preserving, Seamless Relocation of Processes in Orchestrated Networks such as Organic 6G”. English. In: *2022 IEEE 5th International Conference on Industrial Cyber-Physical Systems (ICPS)* (Warwick, Coventry, United Kingdom, 24th May–26th2020). IEEE, 2022, p. 8. DOI: 10.1109/ICPS51978.2022.9816860.

Draft-State

1 Draft-State: Comment Color Code

ToDo: Comments: ToDos: ⇒ \todo{ }
Notice: Comment: A general Notice: ⇒ \notice{ }
#DenKr: Comments »Dennis Krummacker«: ⇒ \dekr{}
#ChFi: Comments »Christoph Fischer«: ⇒ \chfi{}
#BeVe: Comments »Benedikt Veith«: ⇒ \beve{}
#FrPo: Comments »Franc Pouhela«: ⇒ \frpo{}
#DaLi: Comments »Daniel Lindenschmitt«: ⇒ \dali{}
#DeSa: Comments »Dennis Salzmann«: ⇒ \desa{}
#Hedi: Comments »Mohamed Romdhane«: ⇒ \hedi{}
#DummyA: Comments »Just-some-Dummy«: ⇒ \dummyA{}
#DummyB: Comments »Just-some-Dummy«: ⇒ \dummyB{}
#DummyC: Comments »Just-some-Dummy«: ⇒ \dummyC{}
#DummyD: Comments »Just-some-Dummy«: ⇒ \dummyD{}
→ Also provided (simple highlighting): \[...]hl{}
⇒ **You may add such a Comment-Macro for yourself in ”1supply/DenKr_comments.tex” if you wish** ⇐
→ `Disable` Cmds (not rendering): Set »\DenKrCommentsUsage« to `'0'` (in “./2ProjectSetup.tex”).