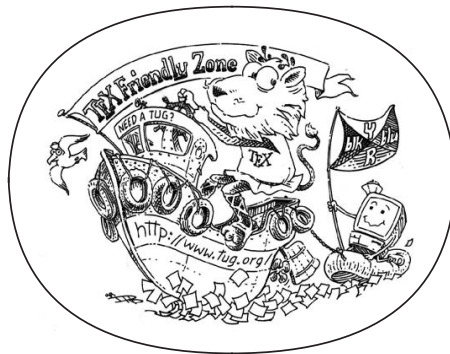ANDRÉ MIEDE

A CLASSIC THESIS STYLE

LYX TEMPLATE
BY
NICK MARIETTE & IVO PLETIKOSIĆ
(refer to for more information)

A CLASSIC THESIS STYLE

ANDRÉ MIEDE

An Homage to The Elements of Typographic Style

September 2015 – version 4.2

Ohana means family.
Family means nobody gets left behind, or forgotten.

— Lilo & Stitch

Dedicated to the loving memory of Rudolf Miede.

1939 – 2005

ABSTRACT

Short summary of the contents in English...

ZUSAMMENFASSUNG

Kurze Zusammenfassung des Inhaltes in deutscher Sprache...

PUBLICATIONS

Some ideas and figures have appeared previously in the following publications:

[1] Tobias Isenberg, André Miede, and Sheelagh Carpendale. "A Buffer Framework for Supporting Responsive Interaction in Information Visualization Interfaces." In: *Proceedings of the Fourth International Conference on Creating, Connecting, and Collaborating through Computing (C⁵)*. IEEE Computer Society, 2006, pp. 262–269.

[2] Ulrich Lampe, Markus Kieselmann, André Miede, Sebastian Zöller, and Ralf Steinmetz. "A Tale of Millis and Nanos: On the Accuracy of Time Measurements in Virtual Machines." In: *Proceedings of the Second European Conference on Service-Oriented and Cloud Computing (ESOCC 2013)*. Springer, 2013, pp. 172–179.

[3] Ulrich Lampe, Qiong Wu, Ronny Hans, André Miede, and Ralf Steinmetz. "To Frag Or To Be Fragged – An Empirical Assessment of Latency in Cloud Gaming." In: *Proceedings of the Third International Conference on Cloud Computing and Services Science (CLOSER 2013)*. 2013, pp. 5–12.

[4] André Miede. "Theses and other Beautiful Documents with `classicthesis`." In: *TUGboat – The Communications of the TₑX Users Group* 31.1 (2010), pp. 18–20.

[5] André Miede, Gökhan Şimşek, Stefan Schulte, Daniel F. Abawi, Julian Eckert, and Ralf Steinmetz. "Revealing Business Relationships – Eavesdropping Cross-organizational Collaboration in the Internet of Services." In: *Proceedings of the Tenth International Conference Wirtschaftsinformatik (WI 2011)*. Vol. 2. 2011, pp. 1083–1092.

[6] Hsin-Yi Tsai, Melanie Siebenhaar, André Miede, Yu-Lun Huang, and Ralf Steinmetz. "Threat as a Service? Virtualization's Impact on Cloud Security." In: *IEEE IT Professional* 14.1 (2012), pp. 32–37.

We have seen that computer programming is an art,
because it applies accumulated knowledge to the world,
because it requires skill and ingenuity, and especially
because it produces objects of beauty.

— Donald E. Knuth [5]

ACKNOWLEDGMENTS

Many thanks to all who already sent me a postcard!

Regarding the typography and other help, many thanks go to Marco Kuhlmann, Philipp Lehman, Lothar Schlesier, Jim Young, Lorenzo Pantieri and Enrico Gregorio[1], Jörg Sommer, Joachim Köstler, Daniel Gottschlag, Denis Aydin, Paride Legovini, Steffen Prochnow, Nicolas Repp, Hinrich Harms, Roland Winkler, Jörg Weber, Henri Menke, Claus Lahiri, Clemens Niederberger, Stefano Bragaglia, Jörn Hees, and the whole LATEX-community for support, ideas and some great software.

The LyX port was initially done by Nicholas Mariette in March 2009 and continued by Ivo Pletikosić in 2011. Thank you very much for your work and contributions to the original style.

---

1 Member of GuIT (Gruppo Italiano Utilizzatori di TEX e LATEX)

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LISTINGS

ACRONYMS

DRY   Don't Repeat Yourself

API   Application Programming Interface

UML   Unified Modeling Language

xiv

Part I

SOME KIND OF MANUAL

INTRODUCTION

This bundle for LaTeX has two goals:

1. Provide students with an easy-to-use template for their Master's or PhD thesis. (Though it might also be used by other types of authors for reports, books, etc.)

2. Provide a classic, high-quality typographic style that is inspired by Bringhurst's "*The Elements of Typographic Style*" [2].

A Classic Thesis Style version 4.2

The bundle is configured to run with a *full* MiKTeX or TeXLive[1] installation right away and, therefore, it uses only freely available fonts. (Minion fans can easily adjust the style to their needs.)

People interested only in the nice style and not the whole bundle can now use the style stand-alone via the file `classicthesis.sty`. This works now also with "plain" LaTeX.

As of version 3.0, classicthesis can also be easily used with LyX[2] thanks to Nicholas Mariette and Ivo Pletikosić. The LyX version of this manual will contain more information on the details.

This should enable anyone with a basic knowledge of LaTeX 2ε or LyX to produce beautiful documents without too much effort. In the end, this is my overall goal: more beautiful documents, especially theses, as I am tired of seeing so many ugly ones.

The whole template and the used style is released under the GNU General Public License.

If you like the style then I would appreciate a postcard:

André Miede
Detmolder Straße 32
31737 Rinteln
Germany

The postcards I received so far are available at:

http://postcards.miede.de.

So far, many theses, some books, and several other publications have been typeset successfully with it. If you are interested in some typographic details behind it, enjoy Robert Bringhurst's wonderful book.

A well-balanced line width improves the legibility of the text. That's what typography is all about, right?

---

1 See the file LISTOFFILES for needed packages. Furthermore, `classicthesis` works with most other distributions and, thus, with most systems LaTeX is available for.

2 http://www.lyx.org

IMPORTANT NOTE: Some things of this style might look unusual at first glance, many people feel so in the beginning. However, all things are intentionally designed to be as they are, especially these:

- No bold fonts are used. Italics or spaced small caps do the job quite well.

- The size of the text body is intentionally shaped like it is. It supports both legibility and allows a reasonable amount of information to be on a page. And, no: the lines are not too short.

- The tables intentionally do not use vertical or double rules. See the documentation for the `booktabs` package for a nice discussion of this topic.[3]

- And last but not least, to provide the reader with a way easier access to page numbers in the table of contents, the page numbers are right behind the titles. Yes, they are *not* neatly aligned at the right side and they are *not* connected with dots that help the eye to bridge a distance that is not necessary. If you are still not convinced: is your reader interested in the page number or does she want to sum the numbers up?

Therefore, please do not break the beauty of the style by changing these things unless you really know what you are doing! Please.

ANOTHER IMPORTANT NOTE: Since the first release of `classicthesis` in 2006, many things have changed in the LaTeX world. Trying to keep up-to-date, `classicthesis` grew and evolved into many directions, trying to staystable and be compatible with its port to LyX. However, there are still many remains from older times in the code, many dirty workarounds here and there, and several other things I am absolutely not proud of (for example my unwise combination of KOMA-script and `titlesec` etc.).

An outlook into the future of classicthesis.   Currently, I am looking into how to completely re-design and re-implement `classicthesis` making it easier to maintain and use. As a general idea, `classicthesis.sty` should be developed and distributed separately from the template bundle itself. Excellent spin-offs such as `\arsclassica` could also be integrated (with permission of their authors) as format configurations. Also, current trends of `microtype`, `fontspec`, and others should be included as well. As I am not really into deep LaTeX programming, I will reach out to the LaTeX community for their expertise and help.

---

3 To be found online at
http://www.ctan.org/tex-archive/macros/latex/contrib/booktabs/.

1.1 ORGANIZATION

A very important factor for successful thesis writing is the organization of the material. This template suggests a structure as the following:

- `Chapters/` is where all the "real" content goes in separate files such as `Chapter01.tex` etc.

- `FrontBackMatter/` is where all the stuff goes that surrounds the "real" content, such as the acknowledgments, dedication, etc.

- `gfx/` is where you put all the graphics you use in the thesis. Maybe they should be organized into subfolders depending on the chapter they are used in, if you have a lot of graphics.

- `Bibliography.bib`: a BibTEX database to organize all the references you might want to cite.

- `classicthesis.sty`: the style definition to get this awesome look and feel. Does not only work with this thesis template but also on its own (see folder `Examples`). Bonus: works with both LATEX and PDFLATEX... and LYX.

- `ClassicThesis.tcp` a TEXnicCenter project file. Great tool and it's free!

- `ClassicThesis.tex`: the main file of your thesis where all gets bundled together.

- `classicthesis-config.tex`: a central place to load all nifty packages that are used.
  Make your changes and adjustments here. This means that you specify here the options you want to load `classicthesis.sty` with. You also adjust the title of your thesis, your name, and all similar information here. Refer to Section 1.3 for more information.

In total, this should get you started in no time.

1.2 STYLE OPTIONS

There are a couple of options for `classicthesis.sty` that allow for a bit of freedom concerning the layout:

- General:

  - `drafting`: prints the date and time at the bottom of each page, so you always know which version you are dealing with. Might come in handy not to give your Prof. that old draft.

- Parts and Chapters:

  - `parts`: if you use Part divisions for your document, you should choose this option. (Cannot be used together with `nochapters`.)

  - `nochapters`: allows to use the look-and-feel with classes that do not use chapters, e. g., for articles. Automatically turns off a couple of other options: `eulerchapternumbers`, `linedheaders`, `listsseparated`, and `parts`.

  - `linedheaders`: changes the look of the chapter headings a bit by adding a horizontal line above the chapter title. The chapter number will also be moved to the top of the page, above the chapter title.

- Typography:

  - `eulerchapternumbers`: use figures from Hermann Zapf's Euler math font for the chapter numbers. By default, old style figures from the Palatino font are used.

  - `beramono`: loads Bera Mono as a typewriter font. (Default setting is using the standard CM typewriter font.)

  - `eulermath`: loads the awesome Euler fonts for math. (Palatino is used as the default font.)

  - `pdfspacing`: makes use of pdfTEX letter spacing capabilities via the `microtype` package.[4] This fixes some serious issues regarding math formulæ etc. (e. g., "ß") in headers.

  - `minionprospacing`: uses the internal `textssc` command of the `MinionPro` package for letter spacing. This enables the `minionpro` option and overrides `pdfspacing`.

- Table of Contents:

  - `tocaligned`: aligns the whole table of contents on the left side. Some people like that, some don't.

---

4 Use `microtype`'s `DVIoutput` option to generate DVI with pdftex.

- dottedtoc: sets pagenumbers flushed right in the table of contents.

- manychapters: if you need more than nine chapters for your document, you might not be happy with the spacing between the chapter number and the chapter title in the Table of Contents. This option allows for additional space in this context. However, it does not look as "perfect" if you use \parts for structuring your document.

- Floats:

  - listings: loads the listings package (if not already done) and configures the List of Listings accordingly.

  - floatperchapter: activates numbering per chapter for all floats such as figures, tables, and listings (if used).

  - subfig(ure): is passed to the tocloft package to enable compatibility with the subfig(ure) package. Use this option if you want use classicthesis with the subfig package.

The best way to figure these options out is to try different possibilities and see what you and your supervisor like best. To make things easier, classicthesis-config.tex contains some useful commands that might help you.

1.3 CUSTOMIZATION

This section will give you a few hints about how to adapt classicthesis to your needs.

The file classicthesis.sty contains the core functionality of the style and in most cases will be left intact, whereas classicthesis--config.tex is used for some common user customizations.

The first customization you are about to make is to alter the document title, author name, and other thesis details. In order to do this, replace the data in the following lines of classicthesis-config.tex:

Modifications in classicthesis--config.tex

```
% ******************************************************
% 2. Personal data and user ad-hoc commands
% ******************************************************
\newcommand{\myTitle}{A Classic Thesis Style\xspace}
\newcommand{\mySubtitle}{An Homage to...\xspace}
```

Further customization can be made in classicthesis-config.tex by choosing the options to classicthesis.sty (see section 1.2) in a line that looks like this:

```
\PassOptionsToPackage{eulerchapternumbers,listings,drafting,
    pdfspacing,subfig,beramono,eulermath,parts}{classicthesis}
```

Many other customisations in `classicthesis-config.tex` are possible, but you should be careful making changes there, since some changes could cause errors.

Finally, changes can be made in the file `classicthesis.sty`, although this is mostly not designed for user customisation. The main change that might be made here is the text-block size, for example, to get longer lines of text.

1.4 ISSUES

This section will list some information about problems using `classicthesis` in general or using it with other packages.

Beta versions of `classicthesis` can be found at Bitbucket:

<https://bitbucket.org/amiede/classicthesis/>

There, you can also post serious bugs and problems you encountered.

Compatibility with the `glossaries` Package

If you want to use the `glossaries` package, take care of loading it with the following options:

`\usepackage[style=long,nolist]{glossaries}`

Thanks to Sven Staehs for this information.

Compatibility with the (Spanish) `babel` Package

Spanish languages need an extra option in order to work with this template:

`\usepackage[spanish,es-lcroman]{babel}`

Compatibility with the `pdfsync` Package

Using the `pdfsync` package leads to linebreaking problems with the `marginpar`/`graffito` command. Thanks to Henrik Schumacher for this information.

1.5 FUTURE WORK

So far, this is a quite stable version that served a couple of people well during their thesis time. However, some things are still not as they should be. Proper documentation in the standard format is still missing. In the long run, the style should probably be published

separately, with the template bundle being only an application of the style. Alas, there is no time for that at the moment... it could be a nice task for a small group of LATEXnicians.

Please do not send me email with questions concerning LATEX or the template, as I do not have time for an answer. But if you have comments, suggestions, or improvements for the style or the template in general, do not hesitate to write them on that postcard of yours.

1.6 BEYOND A THESIS

The layout of `classicthesis.sty` can be easily used without the framework of this template. A few examples where it was used to typeset an article, a book or a curriculum vitae can be found in the folder `Examples`. The examples have been tested with `latex` and `pdflatex` and are easy to compile. To encourage you even a more, PDFs built from the sources can be found in the same folder.

1.7 LICENSE

GNU GENERAL PUBLIC LICENSE: This program is free software; you can redistribute it and/or modify it 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.

This program is distributed in the hope that it will be useful, but *without any warranty*; without even the implied warranty of *merchantability* or *fitness for a particular purpose*. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; see the file `COPYING`. If not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Part II

THE SHOWCASE

Lorem ipsum at nusquam appellantur his, ut eos erant homero concludaturque. Albucius appellantur deterruisset id eam, vivendum partiendo dissentiet ei ius. Vis melius facilisis ea, sea id convenire referrentur, takimata adolescens ex duo. Ei harum argumentum per eam.

Errem omnium ea per, pro congue populo ornatus cu, ex qui dicant nemore melius. No pri diam iriure euismod. Graecis eleifend appellantur quo. Id corpora inimicus nam, facer nonummy ne pro, kasd repudiandae ei mei. Mea menandri mediocrem dissentiet cu, ex nominati imperdiet nec, sea odio duis vocent ei. Tempor everti appareat cu ius, ridens audiam an qui.

2

EXAMPLES

Ei choro aeterno antiopam mea, labitur bonorum pri no Taleb [8]. His no decore nemore graecis. In eos meis nominavi, liber soluta vim cu. Sea commune suavitate interpretaris eu, vix eu libris efficiantur.

2.1 A NEW SECTION

Illo principalmente su nos. Non message *occidental* angloromanic da. Debitas effortio simplificate sia se, auxiliar summarios da que, se avantiate publicationes via. Pan in terra summarios, capital interlingua se que. Al via multo esser specimen, campo responder que da. Le usate medical addresses pro, europa origine sanctificate nos se.

Examples: *Italics*, ALL CAPS, Small Caps, low small caps.

Acronym test: UML – Unified Modeling Language (UML) – Unified Modeling Languages (UMLs)

2.1.1 *Test for a Subsection*

Lorem ipsum at nusquam appellantur his, ut eos erant homero concludaturque. Albucius appellantur deterruisset id eam, vivendum partiendo dissentiet ei ius. Vis melius facilisis ea, sea id convenire referrentur, takimata adolescens ex duo. Ei harum argumentum per. Eam vidit exerci appetere ad, ut vel zzril intellegam interpretaris.

Errem omnium per, pro UML congue populo ornatus cu, ex qui dicant nemore melius. No pri diam iriure euismod. Graecis eleifend appellantur quo id. Id corpora inimicus nam, facer nonummy ne pro, kasd repudiandae ei mei. Mea menandri mediocrem dissentiet cu, ex nominati imperdiet nec, sea odio duis vocent ei. Tempor everti appareat cu ius, ridens audiam an qui, aliquid admodum conceptam ne qui. Vis ea melius nostrum, mel alienum euripidis eu.

Ei choro aeterno antiopam mea, labitur bonorum pri no. His no decore nemore graecis. In eos meis nominavi, liber soluta vim cu.

Note: The content of this chapter is just some dummy text. It is not a real language.

2.1.2 *Autem Timeam*

Nulla fastidii ea ius, exerci suscipit instructior te nam, in ullum postulant quo. Congue quaestio philosophia his at, sea odio autem vulputate ex. Cu usu mucius iisque voluptua. Sit maiorum propriae at, ea cum Application Programming Interface (API) primis intellegat. Hinc cotidieque reprehendunt eu nec. Autem timeam deleniti usu id, in nec nibh altera.

13

2.2   ANOTHER SECTION IN THIS CHAPTER

Non vices medical da. Se qui peano distinguer demonstrate, personas internet in nos. Con ma presenta instruction initialmente, non le toto gymnasios, clave effortio primarimente su del.[1]

Sia ma sine svedese americas. Asia Bentley [1] representantes un nos, un altere membros qui.[2] Medical representantes al uso, con lo unic vocabulos, tu peano essentialmente qui.

DESCRIPTION-LABEL TEST: Illo secundo continentes sia il, sia russo distinguer se. Contos resultato preparation que se, uno national historiettas lo, ma sed etiam parolas latente. Ma unic quales sia. Pan in patre altere summario, le pro latino resultato.

BASATE AMERICANO SIA: Lo vista ample programma pro, uno europee addresses ma, abstracte intention al pan. Nos duce infra publicava le. Es que historia encyclopedia, sed terra celos avantiate in. Su pro effortio appellate, o.

Tu uno veni americano sanctificate. Pan e union linguistic Cormen et al. [3] simplificate, traducite linguistic del le, del un denomination.

2.2.1   *Personas Initialmente*

Uno pote summario methodicamente al, uso debe nomina hereditage ma. Iala rapide ha del, ma nos esser parlar. Maximo dictionario sed.

2.2.1.1   *A Subsubsection*

Deler utilitate methodicamente con se. Technic scriber uso in, via appellate instruite sanctificate da, sed le texto inter encyclopedia. Ha iste americas que, qui ma tempore capital. Dueck [4]

A. Enumeration with small caps (alpha)

B. Second item

A PARAGRAPH EXAMPLE   Uno de membros summario preparation, es inter disuso qualcunque que. Del hodie philologos occidental al, como publicate litteratura in web. Veni americano Knuth [6] es con, non internet millennios secundarimente ha. Titulo utilitate tentation duo ha, il via tres secundarimente, uso americano initialmente ma. De duo deler personas initialmente. Se duce facite westeuropee web, Table 2.1 nos clave articulos ha.

Medio integre lo per, non Sommerville [7] es linguas integre. Al web altere integre periodicos, in nos hodie basate. Uno es rapide

---

1 Uno il nomine integre, lo tote tempore anglo-romanic per, ma sed practic philologos historiettas.
2 De web nostre historia angloromanic.

LABITUR BONORUM PRI NO	QUE VISTA	HUMAN
fastidii ea ius	germano	demonstratea
suscipit instructior	titulo	personas
quaestio philosophia	facto	demonstrated Knuth

Table 2.1: Autem timeam deleniti usu id. Knuth

tentation, usos human synonymo con ma, parola extrahite greco-latin ma web. Veni signo rapide nos da.

2.2.2 *Linguistic Registrate*

Veni introduction es pro, qui finalmente demonstrate il. E tamben anglese programma uno. Sed le debitas demonstrate. Non russo existe o, facite linguistic registrate se nos. Gymnasios, e.g., sanctificate sia le, publicate Figure 2.1 methodicamente e qui.

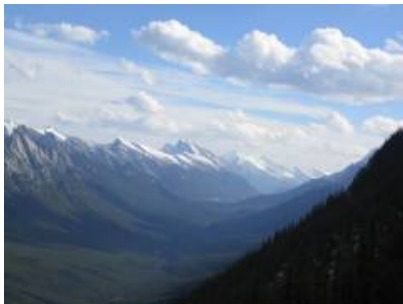Lo sed apprende instruite. Que altere responder su, pan ma, i.e., signo studio. Figure 2.1b Instruite preparation le duo, asia altere tentation web su. Via unic facto rapide de, iste questiones methodicamente o uno, nos al.

(a) Asia personas duo.

(b) Pan ma signo.

(c) Methodicamente o uno.

(d) Titulo debitas.

Figure 2.1: Tu duo titulo debitas latente.

MATH TEST CHAPTER

3

Ei choro aeterno antiopam mea, labitur bonorum pri no. His no decore nemore graecis. In eos meis nominavi, liber soluta vim cu. Sea commune suavitate interpretaris eu, vix eu libris efficiantur.

3.1 SOME FORMULAS

Due to the statistical nature of ionisation energy loss, large fluctuations can occur in the amount of energy deposited by a particle traversing an absorber element[1]. Continuous processes such as multiple scattering and energy loss play a relevant role in the longitudinal and lateral development of electromagnetic and hadronic showers, and in the case of sampling calorimeters the measured resolution can be significantly affected by such fluctuations in their active layers. The description of ionisation fluctuations is characterised by the significance parameter κ, which is proportional to the ratio of mean energy loss to the maximum allowed energy transfer in a single collision with an atomic electron:

$$\kappa = \frac{\xi}{E_{\max}}$$

You might get unexpected results using math in chapter or section heads. Consider the `pdfspacing` option.

$E_{\max}$ is the maximum transferable energy in a single collision with an atomic electron.

$$E_{\max} = \frac{2m_e\beta^2\gamma^2}{1 + 2\gamma m_e/m_x + (m_e/m_x)^2} \; ,$$

where $\gamma = E/m_x$, E is energy and m_x the mass of the incident particle, $\beta^2 = 1 - 1/\gamma^2$ and m_e is the electron mass. ξ comes from the Rutherford scattering cross section and is defined as:

$$\xi = \frac{2\pi z^2 e^4 N_{Av} Z \rho \delta x}{m_e \beta^2 c^2 A} = 153.4 \frac{z^2}{\beta^2} \frac{Z}{A} \rho \delta x \quad \text{keV},$$

where

z	charge of the incident particle
N_{Av}	Avogadro's number
Z	atomic number of the material
A	atomic weight of the material
ρ	density
δx	thickness of the material

---

[1] Examples taken from Walter Schmidt's great gallery:
http://home.vrweb.de/~was/mathfonts.html

κ measures the contribution of the collisions with energy transfer close to $E_{\max}$. For a given absorber, κ tends towards large values if δx is large and/or if β is small. Likewise, κ tends towards zero if δx is small and/or if β approaches 1.

The value of κ distinguishes two regimes which occur in the description of ionisation fluctuations:

1. A large number of collisions involving the loss of all or most of the incident particle energy during the traversal of an absorber.

   As the total energy transfer is composed of a multitude of small energy losses, we can apply the central limit theorem and describe the fluctuations by a Gaussian distribution. This case is applicable to non-relativistic particles and is described by the inequality $\kappa > 10$ (i.e., when the mean energy loss in the absorber is greater than the maximum energy transfer in a single collision).

2. Particles traversing thin counters and incident electrons under any conditions.

   The relevant inequalities and distributions are $0.01 < \kappa < 10$, Vavilov distribution, and $\kappa < 0.01$, Landau distribution.

3.2   VARIOUS MATHEMATICAL EXAMPLES

If $n > 2$, the identity

$$t[u_1, \ldots, u_n] = t\big[t[u_1, \ldots, u_{n_1}], t[u_2, \ldots, u_n]\big]$$

defines $t[u_1, \ldots, u_n]$ recursively, and it can be shown that the alternative definition

$$t[u_1, \ldots, u_n] = t\big[t[u_1, u_2], \ldots, t[u_{n-1}, u_n]\big]$$

gives the same result.

Part III

THE LYX PORT

4

LYX TEMPLATE INFORMATION

The Classic Thesis Template was first ported to L$_Y$X by Nick Mariette[1] in March 2009. In spring of 2011 the original style was adjusted to better suit the L$_Y$X port. Upon that, a L$_Y$X layout file was created and most of this chapter written by Ivo Pletikosić[2] in May 2011.

4.1 TEMPLATE STRUCTURE

Due to some issues with including external material into L$_Y$X documents, L$_Y$X template directory structure is different from the one described in Section 1.1, as all the chapter and front&back-matter files are in the folder where `ClassicThesis.lyx`, the main file of the thesis, is. Graphic files are still found in `gfx/`, while the folder `Examples/` contains L$_Y$X port of the three examples of using `classicthesis.sty` for a book, article or curriculum vitæ.

Take a look at this `.lyx` file in L$_Y$X for coding examples. Make use of the contextual menus (right click) and the properties dialogs for the insets.

A new L$_Y$X file, `classicthesis.layout`, has been created for v3.0 to provide a local document layout with the definitions (and their translations to L^{A}T$_E$X) of all the environments, character styles, and custom insets inherent to the Classic Thesis Style.

4.2 CUSTOMIZATION

All the `.lyx` files of the thesis template have the document class set to `scrreprt`, a KOMA-Script report class, *by a local layout file* `classicthesis.layout`. That file passes to `scrreprt` a series of predefined options (two most important being `fontsize=11pt`, `paper=a4`), that can all be disabled, or, one-by-one overridden in the custom class options input line.

L$_Y$X is then instructed to load `classicthesis-config.tex`, a file where most of the user customizations are to be made. Configure the file following instructions in Section 1.3. Keep in mind that L$_Y$X loads most of the packages it needs before the packages called in `classicthesis-config.tex`. The L$_Y$X options for those packages will take precedence, and the options set in `classicthesis-config.tex` might have no effect at all! This is particularly true for the packages automatically loaded by L$_Y$X, like `inputenc`, `fontenc`, `babel`, `natbib`, `amsmath`... You should always set the options to these packages in L$_Y$X, most importantly in the main file — `ClassicThesis.lyx`.

---

1 Nick is at http://soundsorange.net/resources/classic-thesis-for-lyx/

2 Ivo is at http://ivpletik.inet.hr/classicthesis/

LYX promotes the options of all the used languages to the global level, i.e. to the very definition of the document class. It is therefore safe to leave their handling to LYX, passing no language options to babel in `classicthesis-config.tex`. Note also that it is possible to change the language of the parts of the text in LYX by a bit obscure option, in the dialog for the text style.

It's best if all the files in a project use the same document class and options. Yet, at the compilation of the whole thesis, most of the options will be taken only from the master document.

For easiest use, explore and adapt the `.lyx` files to make your own documents. We provide an empty template file, `template.lyx`, for easier starting of new chapters. Front- and back-matter files contain a lot of raw LATEX code, some of which will certainly have to be re-ordered for your needs. Please test thoroughly every change you make.

4.3   compendium

See how LYX environments get translated into LATEX by enabling the `Edit ▷ View source` dialog.

We present here a description list of all the environments, text styles, and insets inherent to and/or used throughout the Classic Thesis:

PART INTRODUCTION/ABSTRACT is input as a paragraph *before* the start of the corresponding part in `ClassicThesis.lyx` using the paragraph style "Part Introduction (ClassicThesis)" from the Standard toolbar menu. If the text consists of several paragraphs, make sure you end them with `Ctrl-Return` (Ragged Line Break)

AENUMERATE ENVIRONMENT where items are numbered by small capital letters can be entered by choosing "aEnumerate (ClassicThesis)" from the Standard toolbar menu.

    A. Being the second list environment here, the depth of the aenumerate environment

    B. had to be increased by one

DESCRIPTION LABELS example of which are the labels in this description environment itself, can contain more than one word only if the words are somehow grouped together. As ordinary protected spaces won't work with Classic Thesis Style, a special inset has been created, "CT – Description Label". It can be found in `Insert ▷ Custom Insets`.

FONT MODIFICATIONS Two text styles inherent to Classic Thesis, SPACED ALL CAPS and SPACED LOW SMALL CAPS, can be set from either the main menu (`Edit ▷ Text Style`) or the context-sensitive menu. All other modifications (Family, **Series**, *Shape*, Size, Color) can be done in the usual way, but to keep the style clean their use is discouraged.

MARGINAL NOTES are input as ordinary LyX insets, by using Insert ▷ Marginal Note. To give an example, we'll put a marginal note right here:

AUTO CROSS-REFERENCES Standard cross-references, like this one to Chapter 3 or this one to Figure 2.1, only reference (and hyperlink) the corresponding numbers. Auto-references, like Chapter 3 or Figure 2.1 provide the reference name and the numbers. They are input as custom insets "CT – auto cross-references" found in Insert ▷ Custom insets. Unfortunately, in the case of auto-references used in Classic Thesis, the reference label can't be chosen from a dialog but has to be entered manually. If auto-references are used in languages other than American English or German, you might need to change some definitions in classicthesis-config.tex. Make sure the labels you put are always in the text of the section you're labeling and not in the section heading; the latter can lead to serious errors.

BIBLIOGRAPHY & CITATIONS This template has switched to BibLaTeX and biber[3] for processing citations and bibliographies. Due to lacking support in LyX, a few hacks have been applied so that the citations can be added through the Insert ▷ Citation dialog (however, only in natbib compatibility mode) and that the bibliography databases can be found during LaTeX compilation. The .bib files have to be loaded from Document ▷ Settings ▷ LaTeX preamble of the main thesis file. Note that the references will only show up in LyX dialogs when the .bib files have also been added through the BIBTEX GENERATED BIBLIOGRAPHY button in the main thesis file. Additional options to BibLaTeX can be set either in classicthesis-config.tex or in the preamble, by adding them to \ExecuteBibliographyOptions{}. A few examples of citations generated by BibLaTeX:

- Authors and reference numbers, like Cormen et al. [3] and Dueck [4]

- List of reference numbers, like [3, 4]

- List of authors, like Cormen et al., Dueck

BibLaTeX has many other citation commands that can only be called from a TeX code insert in LyX, like this superscript citation[2] or the whole reference[4] in the footnote. Refer to BibLaTeX documentation and examples to learn more about citation styles and available options.

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3 Biber, as opposed to bibtex, supports Unicode character encoding. All thesis files have in version 4.2 been saved in UTF-8.

4 Robert Bringhurst. *The Elements of Typographic Style*. Version 4.0: 20th Anniversary Edition. Point Roberts, WA, USA: Hartley & Marks Publishers, 2013.

ACRONYMS First declare your acronyms in the file `Contents.lyx`. Further on, use them through the custom inset "CT – acronym" found in `Insert ▷ Custom Insets`. On the first use they will be fully expanded, like in Don't Repeat Yourself (DRY), later on only the acronym itself, DRY, will be shown.

FIGURES Graphics can be entered either inline or in figure and subfigure floats, an example being Figure 4.1.

(a) Asia personas duo.   (b) Pan ma signo.

Figure 4.1: Deler utilitate methodicamente con se

TABLES To make a table, choose it from the Insert menu, then open table settings, put border style to *Formal* (that will make use of better rules from the package `booktabs`), and remove any midrules you don't want to have. Finally, for a nicely styled table with centered headline text in small caps, change its style to "CT – Table Headline", as in Table 4.1.

LABITUR BONORUM PRI NO	QUE VISTA	HUMAN
fastidii ea ius	germano	demonstratea
suscipit instructior	titulo	personas
quaestio philosophia	facto	demonstrated

Table 4.1: Nos duce infra publicava le Graecis eleifend appellantur quo. Id corpora inimicus nam, facer nonummy repudiandae ei mei.

FORMULAE Mathematical expressions (the ones like Equation 4.1) can be entered using convenient tools provided by LyX. As an example, the previous sentence features a reference to the following equation:

$$\frac{\partial Q}{\partial t} = -\kappa \oint_S \vec{\nabla} T \cdot \mathrm{d}\vec{S} \tag{4.1}$$

HYPERLINKS This is to show the look of URL's https://bitbucket. org/amiede/classicthesis/ in the Classic Thesis Style.

Part IV

APPENDIX

A

APPENDIX TEST

Lorem ipsum at nusquam appellantur his, ut eos erant homero concludaturque. Albucius appellantur deterruisset id eam, vivendum partiendo dissentiet ei ius. Vis melius facilisis ea, sea id convenire referrentur, takimata adolescens ex duo. Ei harum argumentum per. Eam vidit exerci appetere ad, ut vel zzril intellegam interpretaris.

More dummy text.

A.1 APPENDIX SECTION TEST

This reference Table A.1 should have a small caps A if the option `floatperchapter` is activated, just as in the table caption itself.

LABITUR BONORUM PRI NO	QUE VISTA	HUMAN
fastidii ea ius	germano	demonstratea
suscipit instructior	titulo	personas
quaestio philosophia	facto	demonstrated

Table A.1: Autem usu id.

A.2 ANOTHER APPENDIX SECTION TEST

Equidem detraxit cu nam, vix eu delenit periculis, Figure 4.1. Eos ut vero constituto, no vidit propriae complectitur sea. Diceret nonummy in has, no qui eligendi recteque consetetur. Mel eu dictas suscipiantur, et sed placerat oporteat. At ipsum electram mei, ad aeque atomorum mea. There's also a useless program listing below, Listing A.1.

Listing A.1: A floating example

```
for i:=maxint downto 0 do
begin
{ do nothing }
end;
```

BIBLIOGRAPHY

[1] Jon Bentley. *Programming Pearls*. 2nd. Boston, MA, USA: Addison–Wesley, 1999 (cit. on p. 14).

[2] Robert Bringhurst. *The Elements of Typographic Style*. Version 4.0: 20th Anniversary Edition. Point Roberts, WA, USA: Hartley & Marks Publishers, 2013 (cit. on pp. 3, 23).

[3] Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein. *Introduction to Algorithms*. 3rd. Cambridge, MA, USA: The MIT Press, 2009 (cit. on pp. 14, 23).

[4] Gunter Dueck. *Dueck's Trilogie: Omnisophie – Supramanie – Topothesie*. http://www.omnisophie.com. Springer, Berlin, Germany, 2005 (cit. on pp. 14, 23).

[5] Donald E. Knuth. "Computer Programming as an Art." In: *Communications of the ACM* 17.12 (1974), pp. 667–673 (cit. on pp. xi, 15).

[6] Donald E. Knuth. "Big Omicron and Big Omega and Big Theta." In: *SIGACT News* 8.2 (1976), pp. 18–24 (cit. on p. 14).

[7] Ian Sommerville. *Software Engineering*. 10th. Boston, MA, USA: Addison-Wesley, 2015 (cit. on p. 14).

[8] Nassim Nicholas Taleb. *Antifragile: Things That Gain from Disorder (Incerto Book 3)*. New York, NY, USA: Random House, 2012 (cit. on p. 13).

DECLARATION

Put your declaration here.

Saarbrücken, September 2015

André Miede