Thesis and Project Report Template for Reykjavík University

Joseph T. Foley and Marcel Kyas

Thesis of 30 ECTS credits submitted to the Department of Engineering at Reykjavík University in partial fulfillment of the requirements for the degree of Master of Science

May 31, 2024

Thesis Committee:

Superior A. Teacher, Supervisor
Professor, Reykjavik University, Iceland

Helpful A. Teacher, Co-advisor
Assistant Professor, University of Iceland, Iceland

Tough E. Questions, Examiner
Associate Professor, Massachusetts Institute of Technology, USA

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Symbol	Description	Value/Units
E	Energy	J
m	Mass	g
c	Speed of Light	$2.99 \times 10^9 \, \mathrm{m\,s^{-2}}$

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2022-05-23

Abstract

The goal of this template is to produce electronic output to be uploaded to Skemman that can be later printed out and bound into a professional looking textbook that fits on standard library shelves. It is important to note that A4 paper when bound requires taller shelf spacing, so the B5 paper format was chosen instead. When binding a book, the edges that face outward need to be very smooth to reduce contamination and dust from entering the book when it sits on a shelf; this is why traditionally a larger paper size is cut down to the book size. If your print house expects the stock to be A4, then make sure the rubook has the "a4paper" option. If they prefer to deal with preparation themselves from a B5 pdf, then the default "b5paper" option is correct. The template is designed to work with lualatex.

The abstract goes here in English or Icelandic. It should be a fairly short summary of the entire document. If you switch to Icelandic mode then abstract will become Útdráttur

Keywords / Efnisord: Keywords, separated, by, commas

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Acknowledgments

So long, and thanks for all the fish.

Douglas Adams[1]

Acknowledgements are optional; comment this chapter out if they are absent Note that it is important to acknowledge any funding that helped in the work

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Part I

Getting Started

Chapter 1

Instructions

Is this the right template for you? If you are not a Reykjavik University student, this is probably not for you. For everyone else, please read the instructions before getting started. It is likely to save you a lot of frustration and errors.

1.1 Introduction

These instructions detail how to prepare a final project report, master's thesis, or PhD dissertation for Reykjavík University. These instructions (unless otherwise stated) assume you are in the Reykjavík University School of Technology. If you are in another school, you should make sure that the template meets your specific requirements.

Critical information: The current version of the template uses LuaLaTeX for enhanced font, code, and language support. *It will not work on PDFLaTeX nor classic LaTeX.* On debian based systems, you will need to install the `texlive-luatex` package.

Overleaf Template: `https://www.overleaf.com/latex/templates/reykjavik-university-project-report-and-thesis-template/fcwvcgnstrjs`

Actively developed code: `https://github.com/foleyj2/ru-thesis`

- Current maintainers: Joseph Timothy Foley and Marcel Kyas. Questions, comments, complaints should be submitted at `https://github.com/foleyj2/ru-thesis/issues`

1.1.1   Frequently Asked Questions

- *How do I use APA citations?* The template is setup to use IEEE citations by default. For those who want to use APA, you will need to use the `apacite` package. In the `main.tex`, uncomment the package line near the top: `\use package{apacite}`, then go to the bottom of the file and comment out the: `\bibliographystyle{IEEEtran/bibtex/ieeetran}`

1.2   Files and Directories/Folders

- `graphics/`: contains the graphics to generate this document.

- `IEEEtran/`: contains the IEEE citation style files

1.3   Signatures

If you are making a print copy, you may need a signature page. This is no longer required for most electronic submissions except perhaps PhD.

1.4   Printing

If you decide to print, make sure you are doing it on archival acid-free paper. Otherwise, your document will yellow and fall apart in the library over time. Traditionally, the student prints out and binds a copy for each advisor and examiner. This may also be required if the research was funded or in certain circumstances. If you are using a printing house to take care of the binding, they may be able to take the completed PDFs (cover and inside text) and print them for you. Check with the printing house if they want it as A4 (to be trimmed) or as B5 (which they will take care of resizing).

1.5   Submission

When your document is finished and approved by your advisor, it needs to be uploaded to Skemman `https://skemman.is`. An important thing to remember is that the uploaded document will follow you for the rest of your career: employers are likely to find it and skim it. Make sure the document is something you would be proud to have associated with you.

The general submission sequence is:

1. Defense complete, minor corrections complete after 3 days of work.

2. Save the completed thesis text as `main.pdf`

3. Use a PDF binding tool such as PDFsam `https://pdfsam.org` to putthe cover before the first page and save as `thesis.pdf`

4. Upload the finished `thesis.pdf` to Skemman.

5. An autogenerated email is sent from Skemman. This email should be forwarded to your admin such at Sigrún Þorgeirsdóttir `<sigrunth>`.

6. Grade for the thesis is published.

7. Graduation!

8. Sometime after graduation, the published thesis is released by RU on Skemman for others to read and enjoy.

1.6 LaTeX Template Instructions

Some information is at the top of `main.tex` file, this file is for a general overview and common problems.

1.6.1 Getting started:

1. Find a safe place to work on your thesis document. The author recommends Git on Overleaf, but anywhere data is backed up is a appropriate. If you are working with sensitive information, you should avoid bitbucket, google drive, dropbox, and any other free cloud service. If you think this is unnecessary, just consider how much time you will lose if your computer crashes. Due to Murphy's law, this is likely to happen just before your thesis is due[1].

2. Get a LaTeX installation. We recommend TeXlive `https://www.tug.org/texlive/` For this template on windows, MiKTeX will also work, but will run very slowly the first time you render the template. You will need to enable the "miktex" option in the template to substitute packages. It is very very important that you run the "MikTeX Update Wizard" before you start. Otherwise you may get errors when you try to build the document.

   Under linux this is the "texlive" package. Under Mac/OSX this is the "MacTeX" distribution.

   Alternatively, if nothing you are doing is particularly private or proprietary, you can do development online using Overleaf. In this case, you won't need to setup the rest of the tools mentioned below except perhaps the Reference Manager mentioned in step 4.

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[1]This has happened many times.

a) RedHat: sudo yum -y install texlive-collection-fontsrecommended texlive-biblatex-apa,apa-doc,ieee,ieee-doc texlive-xargs,lipsum,lastpage,luatex,pseudocode,url,examplep,listings,xspace,pgf,tikz,amsfonts,amsmath,amssymb,siunitx,svn-multi,subfig,fixme,textpos,biblatex,makeglos,nomencl,xwatermark,ltxkeys,framed,boondox,printlen Getting biber installed on older RedHat systems is a bit tricky for unclear reasons. The metapackage you need is at https://copr.fedoraproject.org/coprs/cbm/Biber/

b) Debian/Ubuntu: sudo apt-get -y install texlive-full pgf latex-xcolor If you don't want to install everything, this list of packages is known to work: sudo apt-get -y install texlive texlive-luatex texlive-latex-extra texlive-science texlive-generic-extra texlive-lang-european texlive-lang-german latex-xcolor texlive-pictures pgf texlive-bibtex-extra texlive-publishers chktex evince fonts-lmodern lmodern biber

3. Get a LaTeX Integrated Development Environment (recommended, but not required) `http://texstudio.sourceforge.net/` or `http://www.xm1math.net/texmaker/` Some editors may include LaTeX support. If you want to learn a very powerful (but old-fashioned) editor `http://www.gnu.org/software/emacs/` Install the auctex package by: M-x list-packages, click on AUCTeX

4. Get a references manager (recommended, but not required) `http://jabref.sourceforge.net/` (You may have to install a Java JRE first.) The reference library is in `references.bib` by default. It is just a text file that can be edited, but be careful with the formatting. A common mistake is to forget "," at the end of each piece of an entry/line.

   If you are going to make glossaries or acronym lists, you will need a perl interpreter. Only windows usually needs this installed: `http://www.activestate.com/activeperl`

5. Get supporting programs for some tools. For glossaries under windows, you will need to install Perl `http://strawberryperl.com/` (it is already installed on the other platforms.)

6. Try building the `main.tex` file. If you get errors, there is something wrong with your LaTeX installation. Fix those first.

7. Rename the `main.tex` file with your information (optional). DEGREE-NAME-YEAR is the recommended scheme e.g. `msc-foley-2015.tex`. This is referred to as the "Main" file.

8. Set your UI to use `lualatex` as the processor. If you are typing commands in manually, this is by typing in `lualatex main.tex`

9. Open and read the options at the top of the previous file and set it up for your document. You will need to fill in the title and author at least.

10. Start editing all of the `.tex` files with your content.

11. Compile the document by running lualatex on the Main file, run the bibliography tool, then view the result.

12. When you print, make sure that the scale is 100%. If you allow it to resize when printing, the margins won't be right. If the margins aren't right, then the RU logo will not look right on the cover.

1.6.2 Important Details

- Make absolutely sure that your `references.bib` is in UTF-8. If it is another format (CP1251,etc) you may get weird problems with any accented characters. *Students have run into encoding issues in the past and it has taken a surprisingly long time to debug.*

- Make sure the rest of the files, particularly the `.tex` file are in UTF8 or are at least in the same encoding. If the files are in different encoding, you will discover errors with accented characters when you try to include them together. Watch out for line endings. Linux, Windows, and OSX all use different line endings in text files.

- You may wish biber/biblatex instead of bibtex. (The template may already do this.) Otherwise Icelandic characters may not work properly in your `references.bib` file. TexMaker and TeXStudio require a configuration change to do this.

- Be consistent about UPPER and lower case in naming files. Windows doesn't care (but some programs in Windows do). OSX sometimes cares. Linux always cares.

- When using this template with SVN, you will want to tell it to ignore the extensions listed in Appendix 1.7.1

1.6.3 Limited Access

In general, access to the MSc thesis shall be open. If restricting access to a thesis is sought, e.g. for the purpose of protecting intellectual property or protecting commercial interests of an industrial partner participating in the MSc project, permission needs to be acquired, see *Reglur um skil á lokaritgerðum og lokaverkefnum við Háskólann í Reykjavík* (`http://www.ru.is/bokasafn/skemman`). If restriction of access to a thesis is granted it should be clearly stated in the thesis right

after the keywords following the abstract with specification of the date at which the restriction of access should be lifted.

1.6.4 Thesis Defense (Oral Examination Procedure)

The examiner is selected by the Department Head in consultation with the supervisor(s). The choice of examiner needs to be approved by the Director of Graduate Studies. The examiner shall have the qualifications necessary to supervise the thesis, but must not have collaborated in the project on which the thesis is based and must fulfil the rules of Reykjavík University on impartiality of examiners. The oral examination shall be open to the public and shall be announced through appropriate channels with at least 3 days notice. The examination should take the form of an approximately 30 minute presentation by the student, followed by questions from the examiner, School representative (most often the Department Head), supervisor(s) and the audience. The audience then leaves the room and the examiner(s), supervisor and School representative have the opportunity to put further questions to the candidate and, as appropriate, request modifications to the thesis. Subsequently, the candidate leaves the room and the examiner, School representative and supervisor(s) deliberate and decide upon the grade. Normally, the student will be informed of the grade the next day. If the thesis is subject to confidentiality, or for other valid reasons approved by the Director of Graduate Studies, the oral examination may be closed to the public.

1.6.5 Grading

The appointed examiner shall evaluate the thesis and the oral defense of the thesis, together with the supervisor(s) and the department's representative. One grade shall be awarded for the thesis and defence. The minimum passing grade is 6.0, see Guidelines for grading MSc theses in the appendix. The following factors shall be taken into account:

- Significance and originality of work
- Scientific and technological challenge and results
- Methodological quality
- Presentation

The number of ECTS credits awarded for the Master's project shall be taken into account. Thus, significantly more demands in terms of originality, quantity and scientific quality of the work should be placed on the student for a 60 ECTS thesis than a 30 ECTS thesis.

1.6.6 Guidelines for grading MSc thesis (English)

The guidelines below describe typical projects in different grading brackets. This is meant for examiners and instructors in grading master's theses. The projects need not fulfil every aspect of these desciptions in order to be awarded the corresponding grade.

Superior (9,0-10,0) The project is excellent. The handling of the material shows considerable originality and independant thought. Considerable skill in the definition and organized solving of the problem. Very good understanding of concepts. Academic approach and handling of material. Exemplary methods in collection and processing of data. Use of references is very precise and supports the projects well. The thesis may well lead to a publishable article. Exceptionally well polished thesis with very good grammar, spelling and language use. The thesis is in English. The student's performance in the defense is excellent.

First grade (7,5-8,5) The project is very good and handling of material is good and somewhat original. Clear understanding of the material and the definition of the problem is good and the solving well organized. Data gathering and processing without major weaknesses and intelligent use of references. The thesis is well arranged and grammar, spelling and language is good. The student's performance in the defense is either good or very good.

Second grade (6,0-7,0) The project is acceptable. Handling of material is fair and some independant thinking. Definition and analysis of project reflects some understanding. Data collection and processing is without major flaws. Deficiencies in the literature review. Flaws have not been addressed despite the instructor's suggestions. Language, grammar and spelling is fair. The student's performance in the defense is fair.

Fail (1,0-5,5) The project is unacceptable. The project has major flaws that have not been addressed despite the instructor's suggestions. Limited understanding of the material. Definitions and analysis do not show understanding of what is relevant in solving the problem at hand. Major errors or misunderstanding. Data collection and analysis has deficiencies and literature review is weak. The subject is not adhered to or major inconsistencies. Language, grammar and spelling is fair or poor. The student's performance in the defense is fair or poor.

1.6.7 Viðmið fyrir einkunnagjöf

Eftirfarandi er lýsing á dæmigerðum verkefnum í mismunandi einkunnabilum sem er ætluð til stuðnings fyrir frófdómara og leiðbeinendur við mat á MSc verkefnum.

Lýsinging þarf ekki að eiga við verkefnið í öllum atriðum til að verkefnið geti hlotið vipkomandi einkunn.

Ágætiseinkunn (9,0 – 10,0) Verkefni er afburðagott. Efnistök engdurspegla umtalsverðan frumleika og sjálfstæði í hugsun. Umtalsverð færni í skilgeiningu og skipulegri úrlausn viðfangsefnisins. Mjög góður skilningur á hugtökum. Visindaleg nálgun við efnistök. Fyrirmyndar vinnubrögð við öflun og úrvinnslu gagna. Heimildanotkun mjög nákvæm og styður vel við verkefnið. Ætla má að ritgerðin geti leitt til birtingarhæfrar greinar. Frágangur sérlega góður og stafsetning og málfar mjög gott. Ritgerðin er skrifuð á ensku. Frammistaða nemanda í vörninni afburðagóð.

1. einkunn (7,5 – 8,5) Verkefni er mjög gott, efnistök góð og nokkuð frumleg. Skýr skilningur á viðfangsefninu og góð færni í skilgreiningu þess og skipulegri úrlausn. Vinnubrögð við öflun og úrvinnslu gagna án verulegra veikleika og heimildanotkun skynsamleg. Frágangur góður og stafsetning og málfar gott. Frammistaða nemanda í vörninni góð eða mjög góð.

2. einkunn (6,0 – 7,0) Verkefnið er þokkalegt. Allgóð efnistök og sjálfstæð hugsun á köflum. Skilgreining og úrvinnsla viðfangsefnis endurspegla nokkurn skilning á viðfangsefninu. Öflun og úrvinnsla gagna án verulegra galla. Heimildanotkun nokkuð áfátt. Finna má galla sem ekki hafa verið lagfærðir þrátt fyrir ábendingar leiðbeinanda. Málfar og stafsetning þokkaleg. Frammistaða nemanda í vörninni þokkaleg.

Falleinkunn 0,0 – 5,5 Verkefni fullnægir ekki lágmarkskröfum. Verkefnið hefur áberandi galla sem ekki hafa verið lagfærðir þrátt fyrir ábendingar leiðbeinanda. Takmarkaður skilningur á viðfangsefninu. Skilgreining og úrlausn viðfangsefnis sýnir ekki næganlega góða tilfinningu fyrir því hvað skiptir máli við lausn þess. Verulegar villur eða misskilningur. Öflun og úrvinnsla gagna er töluvert áfátt sem og heimildanotkun. Farið út fyrir efnið eða umtalsverð ósamkvæmni. Málfar og stafsetning sæmileg eða slök. Frammistaða nemanda í vörninni sæmileg eða slök.

1.7   PhD Special Instructions

Final Preparation for PhD Dissertations:[2]

1. Send PDF to Administrative person Sigrún Þorgeirsdóttir `<sigrunth>`

2. Talk to one of the printing companies in Iceland and ask if they can do a B4 booklet with a printed cover.

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[2]Always refer to the website in case details have changed

3. Make clear which elements are the outside cover and which are the inside contents. **You want to make sure they don't print a copy of the cover inside the book.**

4. They will insert your signature pages into the PDF and start the printing process; The paper you want is archival-quality acid-free 240×170 mm (aka B5, Programme, or Book Economy).

5. If you can, get a proof of the print to check that the layout is correct and the quality is acceptable, particularly any figures.

6. If is acceptable, then get them to print out the required number of copies.

7. Finally bring the copies to head of graduate studies(Slawomir Koziel `<slawomir>` or TD Person), who should forward them as appropriate.

1.7.1 LaTeX Generated file extensions

These are the files that LaTeX generates when you run it. If you are using SVN or another version control system, you want to tell that system to ignore these files:

```
*-blx.bib
*.acr
*.acn
*.alg
*.aux
*.bak
*.bbl
*.bcf
*.blg
*.bst
*.dvi
*.glo
*.gl*
*.idx
*.ind
*.ilg
*.ist
*.lo?
*.mw
*.nlo
*.ntn
*.out
*.pdf
```

```
*.ps
*.rel
*.run.xml
*.sbl
*.slg
*.snm
*.sym
*.synctex.gz
*.tcp
*.thm
*.tdo
*.to?
*.tmp
*.tmproj
*.xwm
._*
._.DS_Store
.~lock*
auto
Thumbs.db
```

Part II

Demonstration

Chapter 2

Introduction

State the objectives of the exercise. Ask yourself: Why did I design/create the item? What did I aim to achieve? What is the problem I am trying to solve? How is my solution interesting or novel?

2.1 Background

Provide background about the subject matter (e.g. How was morse code developed? How is it used today?.

This is a place where there are usually many citations. It is suspicious when there is not. Include the purpose of the different equipment and your design intent. Include references to relevant scientific/technical work and books. What other examples of similar designs exist? How is your approach distinctive?

If you have specifications or related standards, these must be described and cited also. As an example, you might cite the specific RoboSub competition website (and documents) if working on the lighting system for an AUV[2]

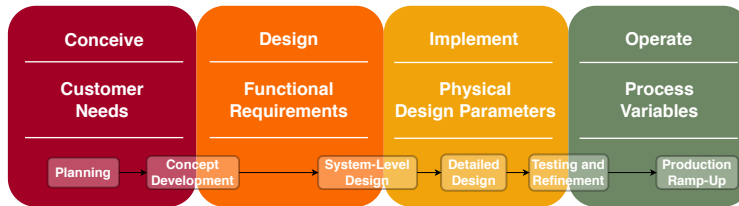| x	x^2
1	1
2	4
3	9

Table 2.1: Table of squared numbers

Figure 2.1: Design Commonalities[3]

2.2 Example Section

There is an example of how to map design methods in CDIO, Axiomatic Design, and Product Design in Figure 2.1. This image will scale according to the width of the text on the page. There is a helpful list of squared numbers in Table 2.1. This table is formatted in the style of a book, which is very differerent than the style one is used to in Excel.

The test text "Lorem Ipsum" is from an ancient text from 45 B.C. [4], [5] Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi

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inar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque
felis eu massa.

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habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc
elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida
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quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis port-
titor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis.
Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula
libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue.
Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi
eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

2.2.1 Subsection

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vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, mo-
lestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu,
sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auc-
tor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur
et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit.
Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed
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sent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla

lorem. Sed neque lectus, consectetuer at, consectetuer sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui.

Morbi luctus, wisi viverra faucibus pretium, nibh est placerat odio, nec commodo wisi enim eget quam. Quisque libero justo, consectetuer a, feugiat vitae, porttitor eu, libero. Suspendisse sed mauris vitae elit sollicitudin malesuada. Maecenas ultricies eros sit amet ante. Ut venenatis velit. Maecenas sed mi eget dui varius euismod. Phasellus aliquet volutpat odio. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Pellentesque sit amet pede ac sem eleifend consectetuer. Nullam elementum, urna vel imperdiet sodales, elit ipsum pharetra ligula, ac pretium ante justo a nulla. Curabitur tristique arcu eu metus. Vestibulum lectus. Proin mauris. Proin eu nunc eu urna hendrerit faucibus. Aliquam auctor, pede consequat laoreet varius, eros tellus scelerisque quam, pellentesque hendrerit ipsum dolor sed augue. Nulla nec lacus.

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2.2.1.1   SubSubsection

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leo. Nullam elementum, magna in cursus sodales, augue est scelerisque sapien, venenatis congue nulla arcu et pede. Ut suscipit enim vel sapien. Donec congue. Maecenas urna mi, suscipit in, placerat ut, vestibulum ut, massa. Fusce ultrices nulla et nisl.

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2.3 Section with a very very very very very very very very very very very very very very very very very very very long name

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Aliquam lectus. Vivamus leo. Quisque ornare tellus ullamcorper nulla. Mauris porttitor pharetra tortor. Sed fringilla justo sed mauris. Mauris tellus. Sed non leo. Nullam elementum, magna in cursus sodales, augue est scelerisque sapien, venenatis congue nulla arcu et pede. Ut suscipit enim vel sapien. Donec congue. Maecenas urna mi, suscipit in, placerat ut, vestibulum ut, massa. Fusce ultrices nulla et nisl.

Etiam ac leo a risus tristique nonummy. Donec dignissim tincidunt nulla. Vestibulum rhoncus molestie odio. Sed lobortis, justo et pretium lobortis, mauris turpis condimentum augue, nec ultricies nibh arcu pretium enim. Nunc purus neque, placerat id, imperdiet sed, pellentesque nec, nisl. Vestibulum imperdiet neque non sem accumsan laoreet. In hac habitasse platea dictumst. Etiam condimentum facilisis libero. Suspendisse in elit quis nisl aliquam dapibus. Pellentesque auctor sapien. Sed egestas sapien nec lectus. Pellentesque vel dui vel neque bibendum viverra. Aliquam porttitor nisl nec pede. Proin mattis libero vel turpis. Donec rutrum mauris et libero. Proin euismod porta felis. Nam lobortis, metus quis elementum commodo, nunc lectus elementum mauris, eget vulputate ligula tellus eu neque. Vivamus eu dolor.

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tor eleifend fermentum. Etiam id tortor ac mauris porta vulputate. Integer porta neque vitae massa. Maecenas tempus libero a libero posuere dictum. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Aenean quis mauris sed elit commodo placerat. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Vivamus rhoncus tincidunt libero. Etiam elementum pretium justo. Vivamus est. Morbi a tellus eget pede tristique commodo. Nulla nisl. Vestibulum sed nisl eu sapien cursus rutrum.

2.4 Another Section

Part III

The Second Part

Bibliography

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[3] J. T. Foley, "Choosing the right D for design," in *CDIO Annual International Conference*, June 21–23, Advances in CDIO, Bangkok, Thailand, 2021, p. 12.

[4] Cicero, *De finibus bonorum et malorum (the extremes of good and evil)*, Section 1.10.32, 45.

[5] Unknown, *Lorem ipsum website*. [Online]. Available: `www.lipsum.com`.

Appendix A

Code

You can put code in your document using the `listings` package, which is loaded. Be aware that the `listings` package does not put code in your document if you are in draft mode unless you give it the `final` option.

There is an example java (Listing A.1) and XML file (Listing A.2). Thanks to the `url` package, you can typeset OSX and unix paths like this: `/afs/rnd.ru.is` `/project/thesis-template`. Windows paths: `C:\windows\temp\` . Note: The `menukey` package has similar functionality but may cause problems.

If you are trying to include multiple different languages, you should go read the documentation and set these up as below. You will save yourself a lot of effort, especially if you have to fix anything.

Listing A.1: Data_Bus.java: Setting up the class.

```java
1  package com.example.mycoolapp;

3  import android.app.Activity;
   import android.content.Intent;
5  import android.os.Bundle;
   import android.view.View;
7  import android.widget.Button;
   import android.widget.TextView;
9
   // I am creating a comment that is very very long to demonstrate how the line ↩
        ↪wrapping system works. You should see a symbol to annotate that it has ↩
        ↪been wrapped to the next line.
11 public class Data_Bus extends Activity {
       Button Next;
13     TextView textdisplay1, textdisplay2;
```

```
15      @Override
        protected void onCreate(Bundle savedInstanceState) {
17          // TODO Auto−generated method stub
            super.onCreate(savedInstanceState);
19          setContentView(R.layout.adc_databustest);
            Next = (Button) findViewById (R.id.checkButton);
21          textdisplay1 = (TextView) findViewById (R.id.tvTop);
            textdisplay2 = (TextView) findViewById (R.id.tvBottom);

23

        }
25  }
```

Listing A.2: AndroidManifest.xml: Configuration for the Android UI.

```
1  <?xml version="1.0" encoding="utf−8"?>
   <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3      package="com.example.mycoolapp"
       android:versionCode="1"
5      android:versionName="1.0" >

7      <uses−sdk
           android:minSdkVersion="13"
9          android:targetSdkVersion="13" />

11     <application
           android:allowBackup="true"
13         android:icon="@drawable/ic_launcher"
           android:label="@string/app_name"
15         android:theme="@style/AppTheme" >

17         <activity
               android:name=".MainActivity"
19             android:label="@string/app_name" >
               <intent−filter>
```