



VILNIUS UNIVERSITY  
INSTITUTE OF COMPUTER SCIENCE  
SOFTWARE ENGINEERING DEPARTMENT

**STRUCTURE OF THE FINAL MASTER'S THESIS**

**1. Parts of a thesis**

No.	Part	Notes
1.	Title page.	See appendix 1.
2.	Acknowledgments to individuals and / or organizations.	Optional, non-numbered part, presented in a separate page.
3.	Summary in English.	Non-numbered part, not longer than 0.5 pages, presented in a separate page.
4.	Summary in Lithuanian ( <i>Santrauka</i> ).	Non-numbered optional part, not longer than 0.5 pages, presented in a separate page.
5.	Table of contents.	Non-numbered part, see example in appendix 2.
6.	Introduction.	Non-numbered part.
7.	Main material.	<b>Numbered</b> sections, subsections, and paragraphs.
8.	Results and conclusions.	Non-numbered part. It is recommended to present results and conclusions in separate sub-sections or sections.
9.	References.	Non-numbered part.
10.	Terms and definitions.	Non-numbered, optional part.
11.	Abbreviations.	Non-numbered, optional part.
12.	Appendixes.	Non-numbered, optional part. Individual appendixes are numbered and named.

**In the title page** (see. appendix 1):

- Name of the university, faculty and study program;
- title of the thesis in English and optionally in Lithuanian;

- kind of the document (i.e. Master's thesis);
- author's name and surname (the course or group number is not provided);
- position of the supervisor, his/her scientific degree, name and surname;
- position of the reviewer, his/her scientific degree, name and surname.;
- location where the thesis was prepared and year.

**The summaries** in English (and optionally in Lithuanian) briefly describe the content of the work: the considered problem and drawn conclusions. The keywords of the work are indicated at the end of the summaries. The summaries in English and Lithuanian are written on separate pages. The size for each of them is not more than 0.5 pages.

**The table of contents** contains the titles of the parts of the work, from the introduction to the appendices, and the page numbers on which they begin (see Annex 2 for an example). The table of contents itself nor the parts before it are not included in this list.

**The introduction** describes the aims and objectives of the thesis, the relevance of the topic, discusses the theoretical assumptions and methodology of the investigation, defines the research object, describes the literature or other sources related to the topic, the analysis of the topic, the circumstances of the research, knowledge of tools (programs, etc.). The introduction to the work should not be a summary of the following sections. The length of the introduction is 3-4 pages.

**The main material sections** of the document provide details of the research: initial data, methods of their analysis and processing, implementation of solutions, summary of the obtained results. The layout of this part is highly dependent on the topic of the thesis. In all cases, however, it must have the following sections:

- 1) a review of literature and other sources. More attention should be paid here to more in-depth studies in a certain field, academic articles, comparison of opinions of different authors;
- 2) an analytical part. In this part the selected research problems are solved by applying appropriate methods. The author must carry out a sufficiently detailed analysis revealing the topic of the research;
- 3) design of the solution. This chapter, integrating theoretical and practical knowledge, discusses and evaluates possible alternatives to solutions, reveals the author's proposed solution to the problem, provides an action plan or general guidelines for their implementation;
- 4) implementation of the solution. The implementation of a prototype, definition of its properties, analysis of possibilities for its application in practice are described.

- 5) validation and evaluation. This chapter provides arguments demonstrating the correctness and effectiveness of the proposal decision.

Sections may have subsections, paragraphs and other needed structural parts.

**In the part of results and conclusions**, the main results of the thesis are presented (something is analyzed, created or implemented), conclusions are presented (comparisons of the methods of solving the analyzed problems are made, recommendations are proposed, innovations are emphasized).

**In the list of references** the sources used in the research are provided. Bibliographic descriptions of scientific publications and other documents used in the work (quoted, paraphrased or at least mentioned) are presented in alphabetical order. Descriptions are non-transliterated.

**List of definitions and abbreviations** are used when special terms requiring explanation and less commonly used abbreviations are used in the text of the thesis.

**Appendices** may contain supporting material, especially self-prepared by the author of the work. Standalone accessories can also be found in supplementary files. Appendices are numbered and named. The text of the thesis must contain references to all the appendices.

## **2. General requirements for the text**

**Format, density and font.** The thesis is prepared on a computer (28–32 lines per page) and printed on one side of an A4 white paper. The margins should be 2 cm at the top and 3 cm at the bottom and 1.5 cm at the right. The text should be in 12-point Palemon or Times New Roman font with 1.5 line spacing. Paragraphs start with a 1 cm indent. Fonts of the following size and style should be used for different parts of the document: for titles – bold, 14 pt; for the main text – regular 12 pt; for the list of sources, definitions and abbreviations – regular 12 pt; for appendixes – regular 10 pt.

**Page numbering.** Pages are numbered with Arabic numerals in the lower right corner of the page. The first page (title) is not numbered.

**Numbering of parts and writing style.** The chapters are divided into subsections, subsections into paragraphs, and sub-paragraphs. They are all numbered. Numbers are written in Arabic numerals. Subsection numbers consist of the section number and subsection sequence number in that chapter, etc. There must also be a dot at the end of the whole number. Sections of the main part always start on a new page, and smaller parts are not subject to this requirement.

The material should be presented clearly with arguments. The text is formulated in a third person, i.e. not “I think” but “author's opinion”. Non-informative phrases such as “as already mentioned”, “as is well known”, etc. should be avoided, and fiction or journalistic style, rich metaphors or similar means of artistic expression should be avoided.

**Binding.** Final theses are submitted bound.

**Spelling and punctuation.** Final thesis must comply with the current spelling and punctuation norms.

Foreign nouns are written in the original form.

**Quotations.** Literal quotes are written in quotation marks. Texts must be quoted in a strict accordance with the source cited. Even obvious proofreading errors in the cited source cannot be corrected. Cited sources are indicated in the text itself, in square brackets, using an identifier from the list of sources and a comma-separated page number, e.g., [Cyr84, 109]. The full bibliographic description of the cited source is provided in the reference list.

**Footnotes.** Footnotes are for comments. They are numbered throughout the work. Printed in 10-point font with 1.5 line spacing.

**Tables, pictures** (images, illustrations, diagrams and graphs are called pictures). In the document, tables and figures are numbered consecutively throughout the document in Arabic numerals. Their names are written next to them. The title of the table is written above it in 12-point font size (e.g.: Table 3. Software requirements); the title of the figure is written at the bottom in a 12-point font (e.g., Figure 15. Schedule of work). The titles of the tables and figures are centered with no period at the end.

There should be no more tables and figures than text in the master's thesis; they must be explained and discussed. When the figure or table is mentioned in the text of the work, its number is indicated. If they are taken from other publications, source and authorship must be indicated.

### **3. Rules for bibliographic description of sources**

The sources used in the thesis are indicated according to the uniform rules of bibliographic description (LST ISO 690). The list provides bibliographic descriptions of the sources in alphabetical order. The sources in the list are identified by suitable identifiers in the form [AutMmR]. The rules include:

- if there is one author of the source, the first three letters of the author's surname (first uppercase, the other two lowercase) shall be written instead of Aut;
- if there are two or three authors, Aut is the first capital letters of all the author surnames;
- if there are four or more authors, Aut is the first capital letters of the first three authors followed by the symbol +;
- Mm stands for the last two digits of the year;

- R is a letter “a”, “b”, “c”, and so on. to obtain the uniqueness of the identifier. Used only when the AutMm part is not unique (see example in Appendix 3).

## Appendix 1. Example of a title page

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VILNIUS UNIVERSITY

FACULTY OF MATHEMATICS AND INFORMATICS

SOFTWARE ENGINEERING STUDY PROGRAM

# Investigation Methods of Software Development

## Programų sistemų kūrimo metodų tyrimas

Scientific research work (I/II/III) / A project of master thesis / Master's thesis

(keep single option)

Author: Jonas Jonynas (signature)

Supervisor: prof. (HP). dr. Petras Petrėnas (signature)

Reviewer: assoc. prof. Kazys Kaziūnas (signature)

Vilnius – 2022

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## Appendix 2. Example table of contents

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Note that the chapter, subsection, paragraph, or subparagraph numbers must end with a period and begin with a capital letter. There is no full stop at the end of the title.

### Appendix 3. Example reference list

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#### REFERENCES

- [BDR97] A.Basalykas, V.Diciunas, and S.Raudys. On Expected probability of misclassification of zero empirical error classifier. *Informatica*, 8(2), 1997, pp.310-311.
- [Chu99] M. Church. Microsoft Exchange: Creating Classroom Collaboration in Lemon Grove School District. Microsoft K-12 Connection. [accessed 2007-04-15]. URL: <<http://www.microsoft.com/education/k12/articles/ccapr99.htm>>
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- [Nor96a] S.Norgėla. Teiginių skaičiavimas. Knygoje: R.Lassaigne, M. de Rougemont. *Logika ir informatikos pagrindai*. Žodynas, Vilnius, 1996, p.226-231.
- [Nor96b] S.Norgėla. Logikos algebros funkcijos. Knygoje: R.Lassaigne, M. de Rougemont. *Logika ir informatikos pagrindai*. Žodynas, Vilnius, 1996, p.232-242.
- [STSC00] Software Technology Support Center. *Guidelines for Successful Acquisition and Management of Software Intensive Systems, Version 3.0*, May 2000. [accessed 2007-04-15]. URL: <[http://www.stsc.hill.af.mil/resources/tech\\_docs/gsam3.html](http://www.stsc.hill.af.mil/resources/tech_docs/gsam3.html)>
- [TG97] V.Tumasonis, G. Grigas. Vienakalbės lietuviškos kompiuterio klaviatūros projektas. *Vartiklis*, N 17, [accessed 2007-04-15]. URL: <<http://www.elnet.lt/vartiklis/recenc/proj3.htm>>
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Note that the sources are arranged alphabetically by the identifiers assigned to them, and the identifiers are printed at the beginning of the lines only in the positions assigned to them.