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**UNIVERSITÄT
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A Sample Thesis

A Novel Approach to a New Idea

Bachelor Thesis

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from
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Abstract

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Chapter 1

Introduction

Every thesis should start with an introduction. This thesis is written in \LaTeX [3].

Chapter 2

Background

This chapter sets the stage and introduces already existing material.

Chapter 3

First main chapter

There are no fixed rules for the organization of the main chapters in a thesis. They should describe the project and its results according to the standard scientific approach in the field.

Software projects. For a software project, the report often has just three chapters:

1. Design;
2. Implementation;
3. Validation.

Theoretical projects. A report for a theoretical project should correspond to the organization of the material.

Chapter 4

Second main chapter

Here is an example for how to specify an algorithm in pseudo-code.

Algorithm 1 Byzantine Leader-Based Epoch-Change (process p_i).

```
1: State
2:    $lastts \leftarrow 0$ : most recently started epoch
3:    $nextts \leftarrow 0$ : timestamp of the next epoch
4:    $newepoch \leftarrow [\perp]^n$ : list of NEWEPOCH messages

5: upon event  $complain(p_\ell)$  such that  $p_\ell = leader(lastts)$  do
6:   if  $nextts = lastts$  then
7:      $nextts \leftarrow lastts + 1$ 
8:     send message  $[NEWPOCH, nextts]$  to all  $p_j \in \mathcal{P}$ 

9: upon receiving a message  $[NEWPOCH, ts]$  from  $p_j$  such that  $ts = lastts + 1$  do
10:    $newepoch[j] \leftarrow NEWPOCH$ 

11: upon exists  $ts$  such that  $\{p_j \in \mathcal{P} \mid newepoch[j] = ts\} \in \mathcal{K}_i$  and  $nextts = lastts$  do
12:    $nextts \leftarrow lastts + 1$ 
13:   send message  $[NEWPOCH, nextts]$  to all  $p_j \in \mathcal{P}$ 

14: upon exists  $ts$  such that  $\{p_j \in \mathcal{P} \mid newepoch[j] = ts\} \in \mathcal{Q}_i$  and  $nextts > lastts$  do
15:    $lastts \leftarrow nextts$ 
16:    $newepoch \leftarrow [\perp]^n$ 
17:   output  $startepoch(lastts, leader(lastts))$ 
```

Chapter 5

Conclusion

The conclusion looks back at the entire work, gives a critical look, summarizes, and discusses extensions and future work.

Appendix A

Extra material

Extra material may be placed in an appendix that appears after the conclusion.

Bibliography

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- [2] C. Cachin, R. Guerraoui, and L. E. T. Rodrigues, *Introduction to Reliable and Secure Distributed Programming* (2. ed.). Springer, 2011.
- [3] L. Lamport, *LaTeX - A Document Preparation System: User’s Guide and Reference Manual, Second Edition*. Pearson / Prentice Hall, 1994.

Erklärung

Erklärung gemäss Art. 30 RSL Phil.-nat. 18

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