Hochschule
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University of
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Title of the Thesis

Subtitle of the Thesis

Master's Thesis

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Abstract

A brief summary of the thesis's purpose, methods, key results, and conclusions.

Acknowledgments

An optional section thanking people and organizations who supported or contributed to the work.

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1 Introduction

1.1 Section

This is an example of a section.

1.1.1 Subsection

This is an example of a subsection.

Subsubsection

This is an example of a subsubsection.

1.2 Research Questions

This is an example of how to format research questions.

RQ_1: Is this a research question?

You can refer to research questions like this: RQ_1 is an example of a research question.

1.3 Chapter References

You can refer to other chapters like this: Chapter 6 is the conclusion chapter.

2 Related Work

2.1 Tables

Table 2.1: Inclusion and exclusion criteria for the literature review.

Inclusion Criteria	**Exclusion Criteria**
English language	Non-English
Published 2015–2025	Published before 2015
Peer-reviewed	Not peer-reviewed
Provides method and empirical results	Irrelevant domain or off-topic

You can create tables and refer to them like this: Table 2.1 shows the inclusion and exclusion criteria for the literature review.

2.2 Citations

You can cite sources in parentheses like this: Design patterns make it easier to reuse successful designs and architectures [1].

You can also cite sources in the text like this: Gamma *et al.* [1] provides a comprehensive overview of design patterns.

3 Methodology

3.1 Abbreviations

You can define abbreviations and refer to them like this: The Design Science Research (DSR) methodology is widely used in information systems research. The DSR approach emphasizes the creation and evaluation of artifacts to solve identified problems.

3.2 Figures

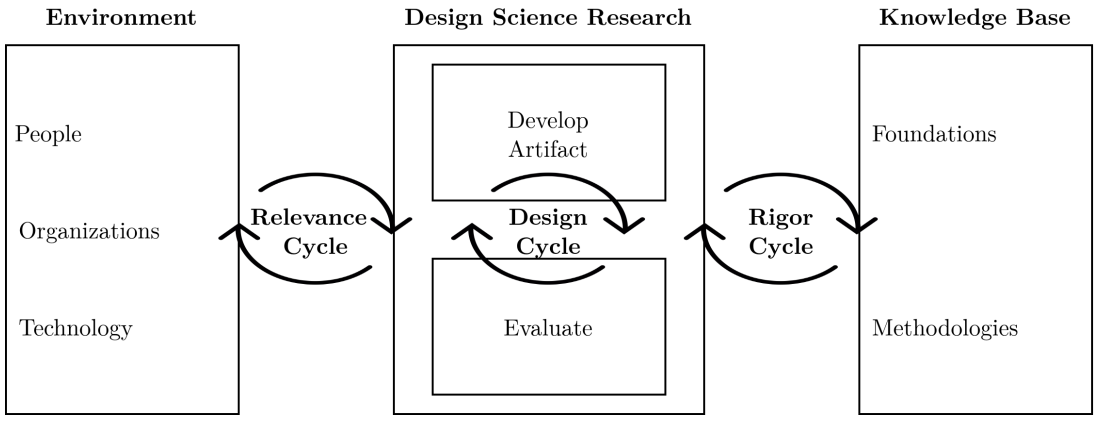

Figure 3.1: DSR approach with relevance, rigor, and design cycle. Adapted from Hevner *et al.* [2].

You can include figures and refer to them like this: Figure 3.1 shows the DSR approach with relevance, rigor, and design cycle.

4 Implementation

4.1 Formulas

You can include formulas like this: The file processing problem can be modeled as follows. A file F of size S bytes split into chunks of size at most c is:

$$F = \langle B_1, B_2, \ldots, B_m \rangle, \qquad m = \left\lceil \frac{S}{c} \right\rceil$$

4.2 Algorithms

You can describe algorithms using pseudocode like this:

Algorithm 4.1: Chunk-based file processing with hashing.

Input: File F, chunk size c
Output: Record $\langle size, chunk\_count, sha256 \rangle$

```
h ← InitSHA256()                          ▷ Initialize digest.
size ← Length(F)
chunk_count ← 0

for all chunk ∈ Read(F, c) do
    Update(h, chunk)
    chunk_count ← chunk_count + 1

sha256 ← Finalize(h)
return ⟨size, chunk_count, sha256⟩
```

You can refer to algorithms like this: Algorithm 4.1 describes a chunk-based file processing algorithm.

4.3 Lists and Enumerations

You can create lists and enumerations like this:

1. Initialize a SHA-256 digest and read the file size.

2. Stream the file in chunks of at most c bytes.
3. For each chunk, update the digest and increment the chunk counter.
4. Finalize the digest to obtain the hash.
5. Return $\langle size,\ chunk\_count,\ sha256 \rangle$.

4.3.1 Code Listings

You can include source code listings, for example Python code, like this:

Listing 4.1: Source code of the file processing algorithm.

```
import hashlib
from pathlib import Path

def process_file(path: str, chunk_size: int = 1 << 20):
    p = Path(path)
    h = hashlib.sha256()
    with p.open("rb") as f:
        while True:
            b = f.read(chunk_size)
            if not b:
                break
            h.update(b)
    return {
        "file": p.name,
        "size_bytes": p.stat().st_size,
        "sha256": h.hexdigest()
    }

if __name__ == "__main__":
    print(process_file("example.dat"))
```

5 Results

5.1 Graphs

This is a graph which was created using Python (Jupyter Notebook) to match the style of the document.

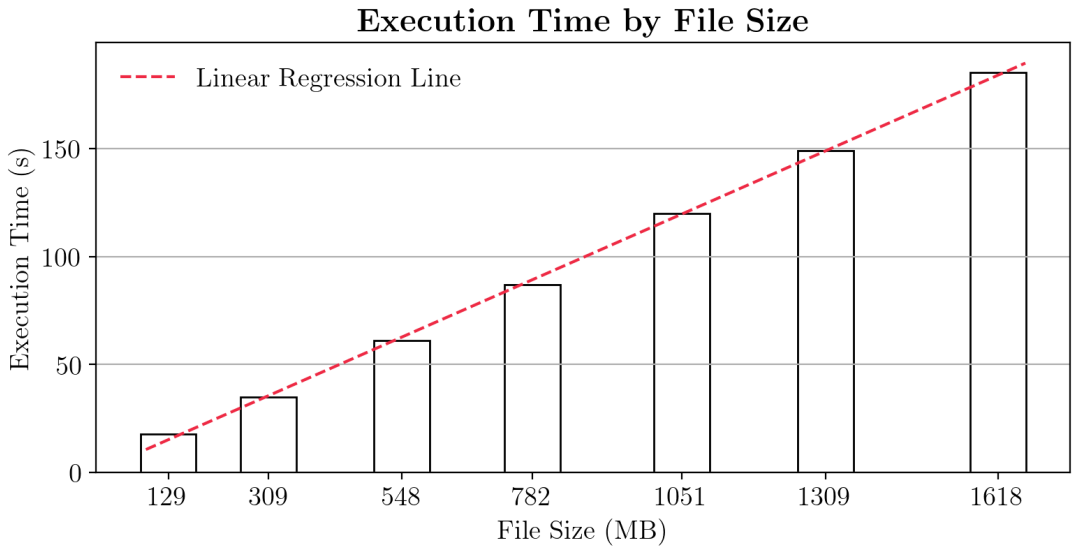

Figure 5.1: Execution time by trace file size of the framework.

6 Conclusion

6.1 Gantt Chart

This is a Gantt chart which was created using draw.io to match the style of the document.

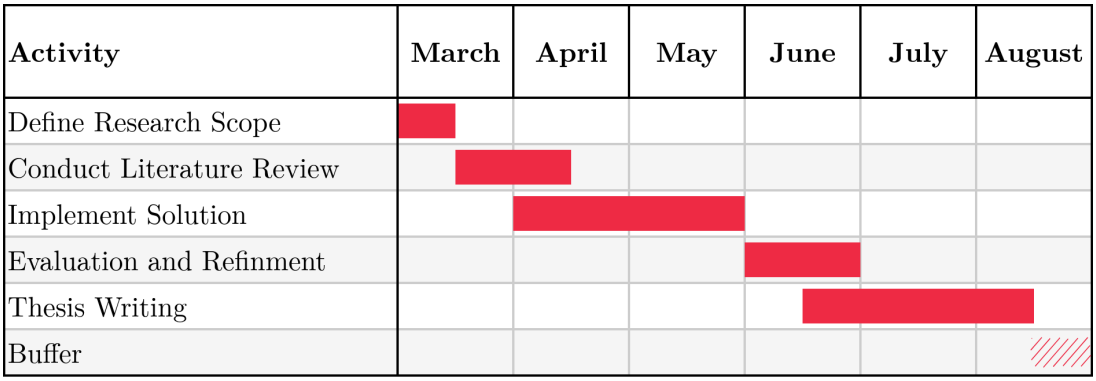

Figure 6.1: Gantt chart of the project timeline.

Bibliography

[1] E. Gamma, R. Helm, R. Johnson, and J. M. Vlissides, *Design Patterns: Elements of Reusable Object-Oriented Software*, 1st ed. Addison-Wesley Professional, 1994, ISBN: 0201633612. [Online]. Available: `http://www.amazon.com/Design-Patterns-Elements-Reusable-Object-Oriented/dp/0201633612/ref=ntt_at_ep_dpi_1`.

[2] A. Hevner, A. R, S. March, *et al.*, "Design science in information systems research," *Management Information Systems Quarterly*, vol. 28, pp. 75–, Mar. 2004.

Declaration of Authorship

I hereby declare that I have written the present Master's thesis independently, that it has not been submitted elsewhere for examination purposes, that I have not used any sources or aids other than those stated, and that I have marked verbatim and paraphrased quotations as such.

Munich, 01.01.2025

Place, Date

Max Mustermann

Signature

A Some Appendix

A.1 Additional Material