



SCHOOL OF COMPUTATION,
INFORMATION AND TECHNOLOGY —
INFORMATICS

TECHNISCHE UNIVERSITÄT MÜNCHEN

Master's Thesis in Informatics

Constructing Linear Types in Isabelle/HOL

Felix Kraye





SCHOOL OF COMPUTATION,
INFORMATION AND TECHNOLOGY —
INFORMATICS

TECHNISCHE UNIVERSITÄT MÜNCHEN

Master's Thesis in Informatics

Constructing Linear Types in Isabelle/HOL

**Konstruktion linearer Typen in
Isabelle/HOL**

Author:	Felix Kraye
Examiner:	Florian Bruse
Supervisor:	Dmitriy Traytel, Tobias Nipkow
Submission Date:	13-11-2025



I confirm that this master's thesis is my own work and I have documented all sources and material used.

Munich, 13-11-2025

Felix Kraye

Acknowledgments

Abstract

Contents

Acknowledgments	iv
Abstract	v
1 Introduction	1
1.1 Section	1
1.1.1 Subsection	1
2 Background	3
2.1 MRBNFs	3
3 Methodology (?)	4
3.1 Linearization of MRBNFs	4
3.2 Examples	4
Abbreviations	5
List of Figures	6
List of Tables	7
Bibliography	8

1 Introduction

1.1 Section

Citation test [Lam94].

Acronyms must be added in `main.tex` and are referenced using macros. The first occurrence is automatically replaced with the long version of the acronym, while all subsequent usages use the abbreviation.

E.g. `\ac{TUM}`, `\ac{TUM}` \Rightarrow Technical University of Munich (TUM), TUM

For more details, see the documentation of the acronym package¹.

1.1.1 Subsection

See Table 1.1, Figure 1.1, Figure 1.2, Figure 1.3.

Table 1.1: An example for a simple table.

A	B	C	D
1	2	1	2
2	3	2	3

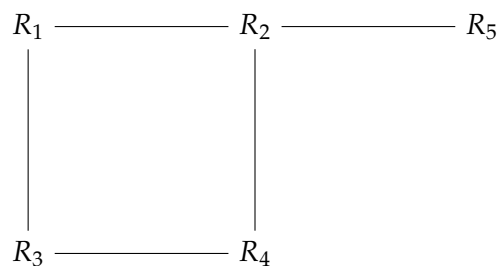


Figure 1.1: An example for a simple drawing.

¹<https://ctan.org/pkg/acronym>



Figure 1.2: An example for a simple plot.

```
SELECT * FROM tbl WHERE tbl.str = "str"
```

Figure 1.3: An example for a source code listing.

2 Background

2.1 MRBNFs

3 Methodology (?)

3.1 Linearization of MRBNFs

3.2 Examples

Abbreviations

TUM Technical University of Munich

List of Figures

1.1	Example drawing	1
1.2	Example plot	2
1.3	Example listing	2

List of Tables

1.1	Example table	1
-----	-------------------------	---

Bibliography

- [Lam94] L. Lamport. *LaTeX : A Documentation Preparation System User's Guide and Reference Manual*. Addison-Wesley Professional, 1994.