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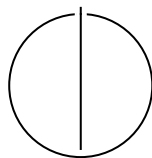
SCHOOL OF COMPUTATION,
INFORMATION AND TECHNOLOGY —
INFORMATICS

TECHNISCHE UNIVERSITÄT MÜNCHEN

Master's Thesis in Informatics

A Taxonomy of Test Case Breakages in the Web Application Domain

Başak Balcı





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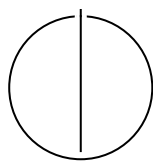
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**A Taxonomy of Test Case Breakages in the
Web Application Domain**

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Submission Date:	30.09.2025



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

Munich, 30.09.2025

Başak Balcı

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Abstract

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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 6.1, Figure 6.1, Figure 6.2, Figure 6.3.

Table 1.1: An example for a simple table.

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

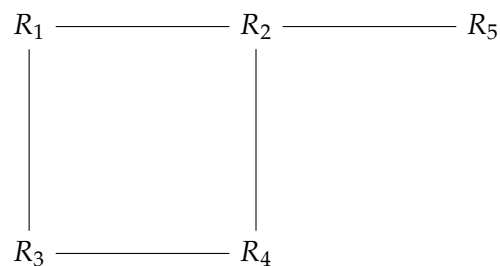


Figure 1.1: An example for a simple drawing.

¹<https://ctan.org/pkg/acronym>

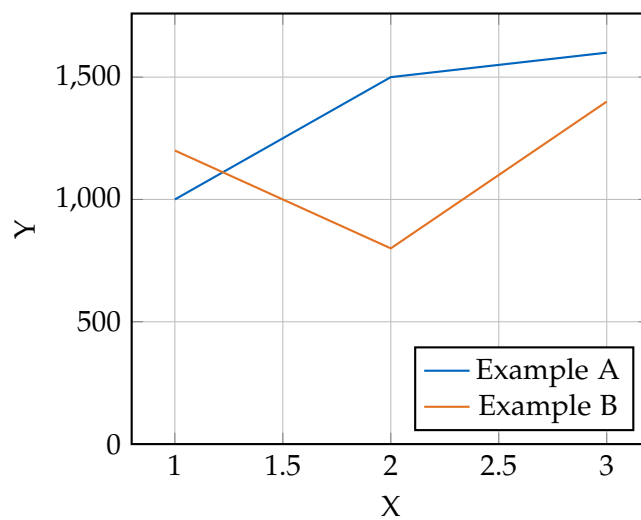


Figure 1.2: An example for a simple plot.

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

Figure 1.3: An example for a source code listing.

2 Background

2.1 Section

Citation test [Lam94].

3 Related Work

3.1 Section

Citation test [Lam94].

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

3.1.1 Subsection

See Table 6.1, Figure 6.1, Figure 6.2, Figure 6.3.

Table 3.1: An example for a simple table.

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

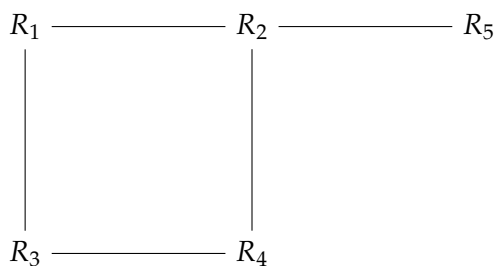


Figure 3.1: An example for a simple drawing.

¹<https://ctan.org/pkg/acronym>

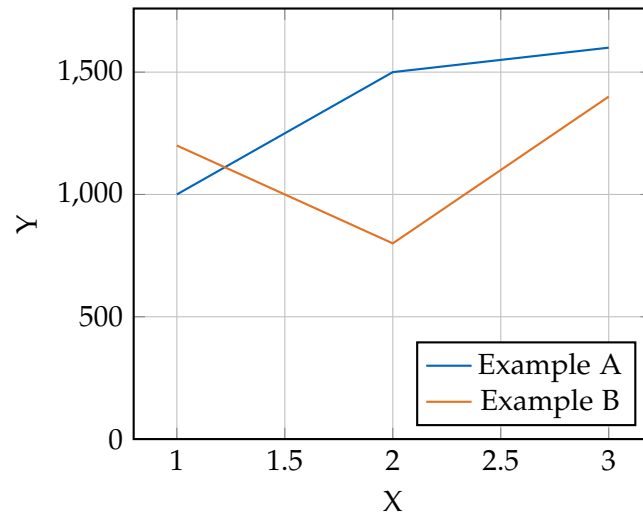


Figure 3.2: An example for a simple plot.

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

Figure 3.3: An example for a source code listing.

4 Empirical Process

4.1 Section

Citation test [Lam94].

5 Taxonomy of Test Case Breakage Causes and Repairs

5.1 Section

Citation test [Lam94].

6 Results

6.1 Section

Citation test [Lam94].

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6.1.1 Subsection

See Table 6.1, Figure 6.1, Figure 6.2, Figure 6.3.

Table 6.1: An example for a simple table.

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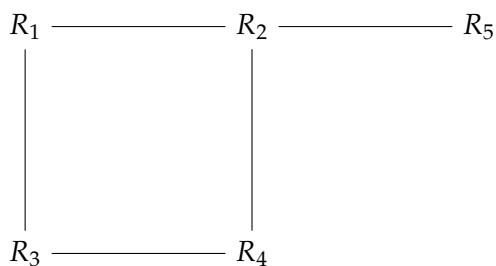


Figure 6.1: An example for a simple drawing.

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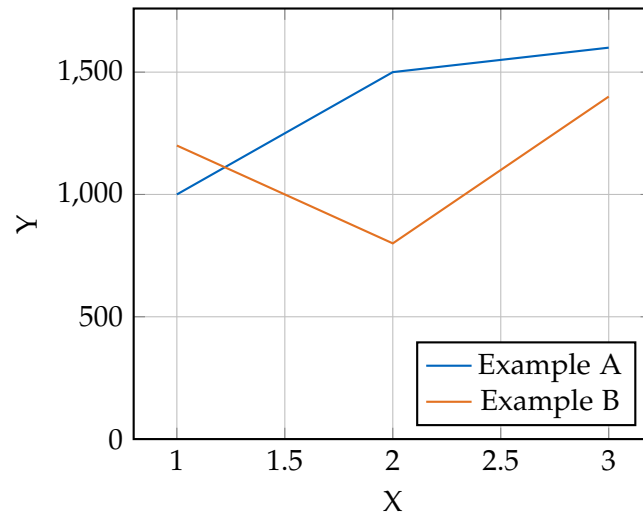


Figure 6.2: An example for a simple plot.

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

Figure 6.3: An example for a source code listing.

7 Conclusion

7.1 Section

Citation test [Lam94].

Abbreviations

TUM Technical University of Munich

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Bibliography

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