

FH JOANNEUM - University of Applied Sciences

**Implementation of a Data Management Process in context of Smart City
Applications**

Master thesis

**submitted at the Master Degree Programme Information Management
for the degree „Diplomingenieur für technisch-wissenschaftliche Berufe“**

Author:

Stefan Leitner, BSc.

Supervisor:

FH-Prof. Dipl.-Ing. Dr.techn. Peter Salhofer

Graz, 2019

Declaration

I hereby declare that the present master's thesis was composed by myself and that the work contained herein is my own. I also confirm that I have only used the specified resources. All formulations and concepts taken verbatim or in substance from printed or unprinted material or from the Internet have been cited according to the rules of good scientific practice and indicated by footnotes or other exact references to the original source.

The present thesis has not been submitted to another university for the award of an academic degree in this form. This thesis has been submitted in printed and electronic form. I hereby confirm that the content of the digital version is the same as in the printed version.

I understand that the provision of incorrect information may have legal consequences.

Graz,

Stefan Leitner, BSc.

Contents

List of Figures	iii
Abbreviations	iv
1 Introduction	1
1.1 Section	1
1.2 Another section	1
1.3 Yet another section	2
1.3.1 A subsection	2
1.3.2 Another subsection	3
2 Ausgewählte Formatierungsbeispiele	4
2.1 Ein nummerierter Abschnitt	4
2.1.1 Ein nummerierter Unterabschnitt	4
2.2 Mathematik	4
2.3 Code	4
2.4 Literaturverweise	4
2.5 Querverweise	5
Bibliography	6

List of Figures

1.1 It's Rick 2

Abbreviations

k8s	Kubernetes
lol	laughing out loud

Abstract

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Kurzfassung

Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext“ oder „Huardest gefburn“? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein Blindtext sollte möglichst viele verschiedene Buchstaben enthalten und in der Originalsprache gesetzt sein. Er muss keinen Sinn ergeben, sollte aber lesbar sein. Fremdsprachige Texte wie „Lorem ipsum“ dienen nicht dem eigentlichen Zweck, da sie eine falsche Anmutung vermitteln.

1 Introduction

1.1 Section

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Here is a text example with a footnote to my github account ”loete (Stefan Leitner)“¹. It is also possible to link within the text *github.com* (<http://www.github.com>)

1.2 Another section

These sections covers some formatting examples like:

- *emphasized item*
- another item
- a reference to Image [1.1](#)
 - one more
 - item

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is

¹<https://github.com/loete>



Figure 1.1: It's Rick

there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

It is also possible to create **Tables** and reference to them like Table 1.1.

1.3 Yet another section

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

1.3.1 A subsection

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Table 1.1: Table title

Header col 1	col2	col3
row1	x	
row2	x	
row3		x
row4	x	
row5		x
row6		x
row7	x	
row8		x
row9		x
row10	x	
row11	x	
row12		x

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

1.3.2 Another subsection

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2 Ausgewählte Formatierungsbeispiele

2.1 Ein nummerierter Abschnitt

2.1.1 Ein nummerierter Unterabschnitt

Ein nummerierter Unterunterabschnitt

Welche Überschriftenebenen nummeriert werden wird mittels `secnumdepth` festgelegt.

Ein nummerierter Unterunterabschnitt

Jede Gliederungsebene muss zumindest zweimal vorkommen. Dies ist **fett**, *kursiv*, unterstrichen oder Schreibmaschine.

2.2 Mathematik

Im Ortsraum ergibt sich der eindimensionale Hertzvektor $\Phi_A(\vec{r})$ für das gesamte Teilchengitter zu

$$\Phi_A(\vec{r}) = \sum_m \sum_n \exp(i[k_x^i m d + k_y^i n d]) \Phi(\vec{r} - \vec{r}_{mn}) \quad (2.1)$$

2.3 Code

Es gibt mehrere Möglichkeiten Code professionell darzustellen; hier mittels des L^AT_EX-Paketes `Listings`. Die Gestaltungsmöglichkeiten sind umfangreich.

Listing 2.1: Das übliche 'Hello World' Spektakel – diesmal in Erlang.

```
-module(hello).  
-export([start/0]).  
  
start() ->  
    io:format("Hello world~n").
```

2.4 Literaturverweise

Keine Masterarbeit ohne Quellenangaben

Die Referenzen werden in eine BIB_TE_XDatei ausgelagert. Diese kann mit einem beliebigen Texteditor, oder mit spezifischen Editoren erstellt werden (Literaturverwaltung).

Eine Referenz auf einen Artikel in einem Journal [1], auf ein Buch [4], auf ein Buchkapitel in einem Herausgeberband [3], sowie auf einen Beitrag in einem Konferenzband [2] (Proceedings).

2.5 Querverweise

Ein Verweis auf eine Abbildung ist im Abschnitt 1.2 und ein Verweis auf eine Tabelle ist im Abschnitt 1.2 zu finden.

Bibliography

- [1] D Brand and P Zafiropulo. On Communicating Finite-state Machines. *Journal of the Association for Computer Machinery*, 30(2):323–342, 1983.
- [2] Robert Singer. Agent-Based Business Process Modeling and Execution: Steps Towards a Compiler-Virtual Machine Architecture. In *Proceedings of the 8th International Conference on Subject-Oriented Business Process Management, S-BPM ONE '16*. ACM, 2015.
- [3] Robert Singer and Stefan Raß. Embodying Business Rules in S-BPM. In *S-BPM in the Wild*, pages 187–199. Springer, 2015.
- [4] Mathias Weske. *Business Process Management: Concepts, Languages, Architectures*. Springer, 2 edition, 2012.