Medizinische Informatik: Vorbereitung zur Prüfung

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Chapter 1

Modul I – Angewandte Informatik

Chapter 2

IT-Infrastruktur

2.1 Rechnernetze

Alles beginnt mit einem ***Rechner***, der per Definition (wo?) lediglich nur einen Prozessor besitzt und nur begrenzte Funktionalität innehat. Heutzutage sind die meisten Rechner **Mehrprozessorsysteme** die mit mehreren Prozessoren Komponente des Systems steuern (z.B. die Tastatur oder die Netzwerkkarte). Wenn mehrere Rechner eine gemeinsame Aufgabe haben, spricht man von einem ***Rechenverbund***. Davon zu unterscheiden ist ein ***Rechnernetz***, dort sind die Rechner zusammengeschlossen und kommunizieren untereindander. Es muss jedoch keine gemeinsame Aufgabe ausgeführt werden und die einzelnen Rechner sind logischisch hardware-technisch unabhängig voneinander. Die Hauptsufgabe in einem ***Rechnernetz*** ist der Austausch und Verarbeitung der Information untereinander. What is just happend??? oijalkj ….

2.1.1 Krankenhaus- und Praxisnetzwerke

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2.1.6.2 Linux

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2.1.7 Schnittstellen (Hardware/Software, Intern/Extern)

2.1.8 Aufbau, Funktionsweise und Komponenten der Telematik-Infrastruktur

The **bookdown** package can be installed from CRAN or Github:

```
install.packages("bookdown")
# or the development version
# devtools::install_github("rstudio/bookdown")
```

Remember each Rmd file contains one and only one chapter, and a chapter is defined by the first-level heading `#`.

To compile this example to PDF, you need XeLaTeX. You are recommended to install TinyTeX (which includes XeLaTeX): https://yihui.name/tinytex/.

```
# https://einstein.informatik.uni-oldenburg.de/rechnernetze/seite6.htm#:~:text=Wenn%20
```

Chapter 3

Introduction

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 3. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter 5.

Figures and tables with captions will be placed in `figure` and `table` environments, respectively.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

Reference a figure by its code chunk label with the `fig:` prefix, e.g., see Figure 3.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 3.1.

```
knitr::kable(
  head(iris, 20), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

You can write citations, too. For example, we are using the **bookdown** package (Xie, 2024) in this sample book, which was built on top of R Markdown and **knitr** (Xie, 2015).

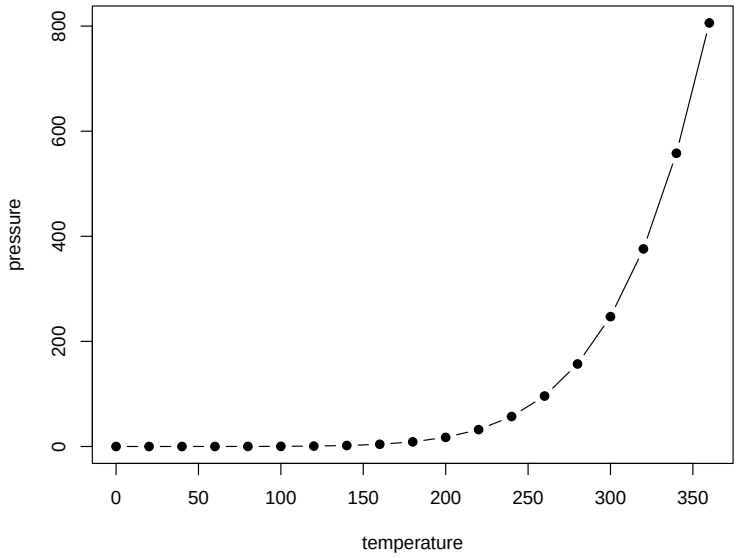

Figure 3.1: Here is a nice figure!

Table 3.1: Here is a nice table!

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa
5.4	3.7	1.5	0.2	setosa
4.8	3.4	1.6	0.2	setosa
4.8	3.0	1.4	0.1	setosa
4.3	3.0	1.1	0.1	setosa
5.8	4.0	1.2	0.2	setosa
5.7	4.4	1.5	0.4	setosa
5.4	3.9	1.3	0.4	setosa
5.1	3.5	1.4	0.3	setosa
5.7	3.8	1.7	0.3	setosa
5.1	3.8	1.5	0.3	setosa

Chapter 4

Literature

Here is a review of existing methods.

Chapter 5

Methods

We describe our methods in this chapter.

Math can be added in body using usual syntax like this

5.1 math example

p is unknown but expected to be around 1/3. Standard error will be approximated

$$SE = \sqrt{\frac{p(1-p)}{n}} \approx \sqrt{\frac{1/3(1-1/3)}{300}} = 0.027$$

You can also use math in footnotes like this[1].

We will approximate standard error to 0.027[2]

[1] where we mention $p = \frac{a}{b}$

[2] p is unknown but expected to be around 1/3. Standard error will be approximated

$$SE = \sqrt{\frac{p(1-p)}{n}} \approx \sqrt{\frac{1/3(1-1/3)}{300}} = 0.027$$

Chapter 6

Applications

Some *significant* applications are demonstrated in this chapter.

6.1 Example one

6.2 Example two

Chapter 7

Final Words

We have finished a nice book.

Bibliography

Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.

Xie, Y. (2024). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.40, https://pkgs.rstudio.com/bookdown/.