Contents

Chapter 1

Title of My Seminar Work

My Name

This is the abstract. It fits pretty much on one page and is definitely not longer.

Contents

1.1 This is My First Section

You only apply changes to the folder with your respective talk number. This means that if your talk has number `X` you place all your files, e.g., pictures, **exclusively** in folder `TalkX`. The (main) text of your seminar work goes in `Seminar-Arbeit.tex` in that folder. Please use file `Example.tex` as a basis. Formatting, page settings, and the file `talk.tex` must not be changed.

Do not – under no circumstances – change the file `talk.tex`. If it is impossible to avoid the use of further packages (or modify the preamble in any other way) you may apply these modifications to `TalkX/MyHeader.tex`. However, in this case it is important to consult your advisor beforehand, as LaTeX does not contain namespaces, which may result in conflicts between different packages.

1.2 Report Structure

Your seminar report is contained in a chapter (`\chapter`), wherefore you may use commands `\section{}`, `\subsection{}`, and `\subsubsection{}` to structure it.

In general, breaks need to be separated by an empty line but not `\\` or `\newline`. Please do not use `\newpage`, `\clearpage` etc.

Enumerations with and without numbers can be generated by use of the following commands:

```
\begin{enumerate}
  \item ...
  \item ...
\end{enumerate}

\begin{itemize}
  \item ...
  \item ...
\end{itemize}
```

For descriptions, the following command is suited:

```
\begin{description}
  \item[Term] Description
  \item[Term] Description
\end{description}
```

1.3 Pictures and Tables

Please embed **all** pictures without suffix and save the respective picture as `.jpg` or `.pdf` in folder `TalkX`. To embed pictures the following command can be used:

```
\begin{figure}[ht]
  \begin{center}
  \includegraphics[scale=0.6]{TalkX/filename}
  \end{center}
  \caption{Caption}
  \label{label}
\end{figure}
```

Figure 1.1: Caption

Do always use relative paths to embed pictures! To scale pictures you can also use `[width=4cm]` or `[width=0.6\textwidth]` instead of `[scale=0.6]`. All pictures to be included in the seminar work need to be generated with a resolution of at least 600dpi.

Table 1.1: Caption

	A	B	C
X	1	2	3
Y	4	5	6
Z	7	8	9

Table 1.1 can be generated by the following command.

```
\begin{table}
  \caption{Caption}
  \label{tab:label}
  \begin{center}
  \begin{tabular}{|c|c|c|c|} \hline
        & A & B & C \\ \hline\hline
      X & 1 & 2 & 3 \\ \hline
      Y & 4 & 5 & 6 \\ \hline
      Z & 7 & 8 & 9 \\ \hline
  \end{tabular}
  \end{center}
\end{table}
```

Pictures and tables need to have a caption (`\caption`) and be referenced from within the running text by use of `\ref{label}`. In general, `caption` has to appear below pictures, but above tables!

1.4 Bibliography

The bibliography is placed at the end of your chapter. **Do not use marks on your bibitems** as the automatically generated marks [1],[2],... are used. For each reference the informations authors, title, publisher, and release date must be stated in the following form:

```
\bibitem {label} N. Author: Title of the document; Type of document
  (technical report, deliverable, Workshop/Conference Name ...),
  (Location, Vol. X, No. Y), Month, Year, pages, URL (if available).

\bibitem {label} Website title; \url{Website URL}, Month, Year of last visit.
```

If the reference uses an URL the latter must be given by `\url{http://...}`.

In running text, bibitems are referenced by the use of `\cite{label}`. For all papers, pictures and other works references need to appear at the according position.

A detailed instruction to the correct use of references can be found in *Guideline to Written Seminar Works* [1].

1.5 Compiling

LaTeX is included in all popular Linux distributions. Under Linux, the document is compiled by executing `pdflatex talk.tex` in the main directory, which generates `talk.pdf`.

For Windows, the TeX implementation MiKTeX (`http://www.miktex.org/`) in combination with the LaTeX tool TeXnicCenter (`http://www.toolscenter.org/`) is recommended. For Mac OS X, the TeX implementation MacTeX (`http://tug.org/mactex/`) in combination with the LaTeX tool TeXShop (`http://pages.uoregon.edu/koch/texshop/`) is recommended.

Problems, proposals, and questions regarding the generation of your document can be sent by email to your supervisor. To submit your seminar talk compress (`zip` oder `tar`) the directory `TalkX` and mail it to your supervisor.

Bibliography

[1] Martin Waldburger, Patrick Poullie, Burkhard Stiller: *Guideline for Seminar Reports*, Communication Systems Group, Department of Infromatics, University of Zurich, January 2013. `http://www.csg.uzh.ch/teaching/guideline-seminar-report-v05.pdf`.

Chapter 2

Investigating the Blockchain Technology in the Context of Cybersecurity

Lenz, Roland, Pascal, Silas

This is the abstract. It fits pretty much on one page and is definitely not longer.

Contents

2.1 Introduction

- Length: around 2 pages
- Describe current issues in cybersecurity
  - Motivate the topic in general
  - TODO:
- Provide some reasoning on the evolution of bitcoin
  - Money transfer security
  - Intermediaries
  - TODO:
- Provide an outline of the paper
  - Content structure
  - Covered topics

2.2 Background

- provide an overview of the section structure and contents (filler)

2.2.1 Cybersecurity

- Length: 2-3 pages
- TODO:

2.2.2 Blockchain

- Length: around 2 pages
- TODO:

2.2.3 Smart Contracts

- Length: around 2 pages
- TODO:

- shortly summarize the section
- introduce the upcoming content (filler)

2.3 Related Work

- provide an overview of the section structure and contents (filler)

2.3.1 Distributed Denial of Service (DDoS)

- Length: 3-4 pages
- TODO:

2.3.2 Public Key Infrastructure (PKI)

Length: around 3 pages

- Introduce PKI and provide an intuition for existing PKI systems and their challenges
- Motivate the role of PKI for cybersecurity (foundational principle)
- Present threats and vulnerabilities that are common and specific to PKI

2.3.2.1 Decentralized PKI

- Provide an intuition on why centralization could lead to cybersecurity problems
- Present different approaches to the decentralization of PKI based on blockchain technologies and describe how trust and security can be achieved in such a decentralized system
- Discuss improvements to verification by the application of rich credentials on a blockchain PKI as a concrete application example

2.3.2.2 Blockchain approaches to web certification

- Discuss the potential of web certification using Ethereum smart contracts
- Shortly elaborate on certificate and revocation transparency in general, as well as an approach based on blockchain

2.3.2.3 Keyless Signature Infrastructure (KSI) with blockchain

- Shortly introduce KSI and its significance in a PKI context
- Show how KSI could be enhanced by the application of blockchain technologies

2.3.3 Internet Infrastructure (DNS / BGP)

Length: around 2 pages

- Provide a short overview of the internet infrastructure with DNS/BGP, corresponding threats, and security mechanisms

2.3.3.1 Decentralized DNS

- Describe how blockchain-based DNS systems implement and enhance traditional DNS protocols
- Describe how domain management could work in such a distributed setting (i.e., if there are no central parties)
- Discuss security benefits of decentralizing DNS with blockchain when compared to traditional approaches

2.3.3.2 BGP

- Short excursion on how BGP could be implemented on a blockchain basis
- Discuss the benefits and big challenges of applying the blockchain to low-level internet infrastructure like BGP (scalability, performance, etc.)

2.3.4 Internet of Things (IoT)

- Length: 2-3 pages
- TODO:

2.3.5 Specific Applications

- Length: 3-4 pages
- TODO:

- shortly summarize the section
- introduce the upcoming content (filler)

2.4 Final Considerations

- provide an overview of the section structure and contents (filler)

2.4.1 Summary

- Length: around 1 page
- shortly summarize the overall work
- show the main thesis

2.4.2 Discussion

- Length: around 1 page
- discuss any open questions about the contents

2.4.3 Outlook

- Length: around 1 page
- describe possible topics of further research

2.5 Bibliography