

Czech Technical University  
Faculty of Nuclear Sciences and Physical  
Engineering

Department of Mathematics  
Branch of Studies: Applied Information Technology



Design of an Information System for  
Support of Forensic Audit

Bachelor's Degree Project

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Před svázáním místo téhle stránky 



 s podpisem děkana (bude to jediný oboustranný list ve Vaší práci) !!!!

## **Declaration**

I declare that this Bachelor Project is all my own work and I have cited all sources I have used in the bibliography.

In Prague .....

.....  
Edita Pešková

## **Acknowledgements**

I wish to thank to my supervisor for his inspiring feedback, my family for their patience and support in my studies and anyone who encouraged me in this project.

Edita Pešková

*Název práce:*

**Návrh informačního systému pro podporu forenzního auditu**

*Autor:* Edita Pešková

*Obor:* Applied Information Technology

*Druh práce:* Bakalářská práce

*Vedoucí práce:* Mgr. Karel Macek, Ph.D.

Oddělení ekonometrie, Ústav teorie informace a automatizace

*Konzultant:* —

*Abstrakt:* Tato bakalářská práce předkládá návrh systému a naznačuje požadavky, které jsou potřebné aby byl popsán smysl a cíle technik digitálního forenzního vyšetřování, vykonávaných forenzními auditory, účetními a inpektory firem. Pomocí různorodých postupů, nástrojů a technik rozpoznáváme v jakých případech mohou nástroje forenzního auditu poskytnout auditorům potřebné informace k provedení forenzního auditu. Bakalářská práce představuje požadavky, které musí splňovat vlastní informační systém použitelný pro podporu vyšetřování a také poskytuje detailní návrh tohoto systému.

*Klíčová slova:* Forenzní audit, Vyšetřování, Návrh systému, Databáze, Sběr dat

*Title:*

**Design of an Information System for Support of Forensic Audit**

*Author:* Edita Pešková

*Abstract:* This bachelor project proposes a system design and suggests requirements that are needed in order to describe the purpose and goals of the digital forensic investigation techniques carried out by the forensic auditors, accountants and examiners of companies. Using various procedures, tools and techniques we identify where the forensic audit tools and the system can provide the auditors necessary information to carry out forensic audit. This bachelor thesis provides requirements that our own information system usable to support forensic audit must follow and also provides a detailed design of this system.

*Key words:* Forensic audit, Investigation, System design, Database, Data collection

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# Introduction

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. klicova slova: forenzni audit, unik penez, prosetreni spolecnosti, vyhledavani dukazu, pocitacova podpora, aplikace podporujici forenzni audit, vizualizace procesu vysetrovani, report o vysetrovanem pripadu, metodika forenzniho auditu, navrh informacniho systemu, ...

# Chapter 1

## Forensic audit and its computer support

na začatek shrnout co vsechno obsahuje tato kapitola. asi tak takhle:

This chapter strives to define and explain the meaning of the term "forensic audit" as well as other terms related to this field. We demonstrate typical roles and outline the process.

### 1.1 Matters of forensic audit

Forensic audit is a specialization within a field of accounting that examines and evaluates evidence concerning unproven statements for possible use as evidence in court. Forensic audit is usually used in case there is a suspicion in certain company there is a crime being committed. The background of the investigated case is rather diverse. A customer can be, for example, a CEO who wants to examine the functioning of one of the sub-divisions of a controlling company. There can be a suspicion of some fraudulent activity or the need of forensic audit can be closely unspecified.

### 1.2 What is forensic audit

The term "forensic" can be defined in multiple ways. According to merriam-webster dictionary [citace http://www.merriam-webster.com/dictionary/forensic](http://www.merriam-webster.com/dictionary/forensic) the definition is "relating to the use of scientific knowledge or methods in solving crimes". The term "audit" is explained in the same dictionary as "a complete and careful examination of the financial records of a business or person". [citace http://www.merriam-webster.com/dictionary/audit](http://www.merriam-webster.com/dictionary/audit)

The essence of forensic audit is to discover and investigate fraudulent intentions and fraudulent behaviour.

A common mistake in the definition of forensic audit is its confusion with finan-



cial audit. The aim of financial audit is to verify whether financial statements are fairly stated in accordance with accounting standards. Financial auditors search for material errors or other misstatements in the accountancy.

**AJ** The ultimate goal of forensic audit is to examine existing or gained suspicion and procure evidence concerning possible fraudulent behaviour. In the process of forensic audit deceptive scenarios are discovered and evidence together with the documentation that is usable for subsequent course of action is gathered. As a matter of principle forensic auditors are not expected to express their opinion on the guilt or innocence of the suspect.

In providing an opinion whether financial statements are fairly stated in accordance with accounting standards, the auditor gathers evidence to determine whether the statements contain material errors or other misstatements.

According to the character of ordered case a team of specialists is set together and follows specific steps to discover if any crime has been committed. Whenever a crime has been discovered forensic auditors seek for the perpetrator together with clear and valid evidence verifying the prediction

to investigate the particular crime that has happened. When the exact sequence of events that has led to the crime is investigated and found, it serves as a clear and valid evidence for the hypothesis. The person responsible for the crime is also being searched for, although there is another case when forensic audit is used. This situation occurs when it is not known whether any crime has been committed. Then forensic audit will be conducted to detect, whether in a certain vast company or project any crime has been committed. These case hypotheses are created and then confirmed or disproved according to well examined facts.

**co je to forenzní audit** 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.

**v hrubých rysech jak to probíhá (to co už mám sem patri), na základě toho, co jsem zjistila FA funguje takto:...**

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.

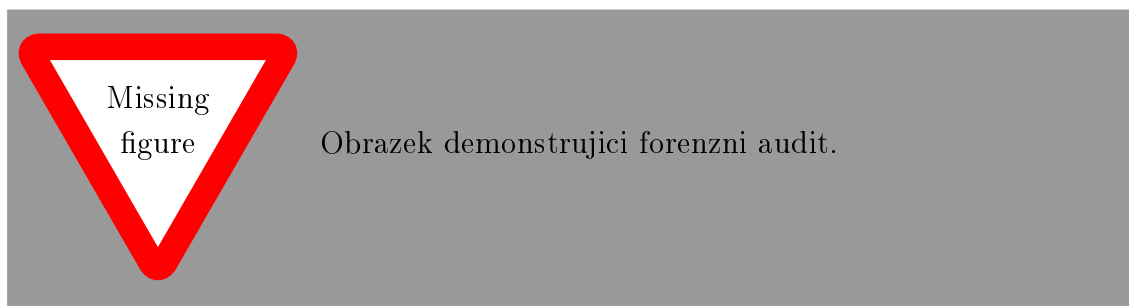


Figure 1.1: popis obrazku

## use case diagram

### komentář k diagramu

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.

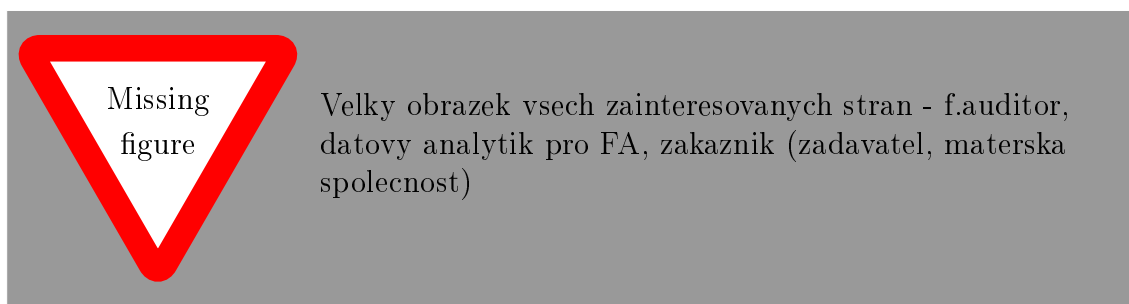


Figure 1.2: popis obrazku

## Chapter 2

# Original methodology for the (computer aided) forensic audit

Jsem si vedoma, ze jsem clovek, který to nikdy nedělal (= omezená znalost). Toto je jak to chápu. Toto není jak by to někdo měl dělat. Toto je seriózní pokus popsat proces forenzního auditu. PROCESNÍ DIAGRAMY!!!

vystupem = okomentovaný obrázek, který dává hlavu a patu

a Use case diagrammem pak kontaktovat praxi

# Chapter 3

tato kapitola by asi mela obsahovat oduvodnene pozadavky na vlastni metodiku, pouzitelnou ve FA s ohledem na ostatni pristupy a metodiky

DOTAZ:co jsou osatni pristupy a metodiky?

DOTAZ:jaky je rozdil mezi metodikou, kterou uz mam vytvorenou v arisu a touto vlastni metodikou?

## Chapter 4

# Design of an information system for support of forensic audit

vsechno o tom systemu jako takovem, ale tak, aby to navazovalo na predchozi...?

prostredi webu + silne zabezpeceni, reporty, export, pdf

maly informativni obrazek, který poskytne uzivateli informaci o tom, co se stalo

! pripojit pripady uziti vcetne zavislosti

jedna se o aplikaci, která provazi celým projektem (zadáním) forenzního auditu. sice existují i jiné nástroje pro podporu takovýchto projektů, ale projekt má úseky a nám jde o integraci porízených výsledků

# Chapter 5

## Discussion

### 5.1 Further improvements

- pokryt dalsi administrativni casti (zacatek, konec)
- detailnejsi navrh a implementace
- detailnejsi osetreni rizik
- zamysleni nad sdilenim zkusenosti (duvernost vs. rust expertyzy auditorske spolecnosti)
- vyuziti mimo FA - jina administrativa + moduly pro vyuziti policii / soudy

pouzitelne technologie!

# Attachment A

## Contents of the CD

### The text of this bachelor project in pdf

The text of this bachelor project is saved as `BP_Peskova.pdf` in root folder.