

CCM – Centre for Conceptual Modelling

Short Introduction

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- 1 What is CCM
- 2 Our Approach
- 3 CCM as a Research Centre
- 4 CCM for Industry
- 5 Our Partners
- 6 Our Members
- 7 Our Achievements

The Status of CCM

- *Centre for Conceptual Modelling* is an interest group founded at FIT.
- Supported by Department of Software Engineering and FIT's management.
- Formed gradually in the recent two years, formalised in Autumn 2012.

Our Vision

To be a top partner for research and industry in the field of **conceptual modelling.**

What is Conceptual Modelling

Concept from Latin word conceptum = “something conceived”

⇒ Common reality is our focus.

Modelling is a natural tool how to deal with complexity.

What is Conceptual Modelling

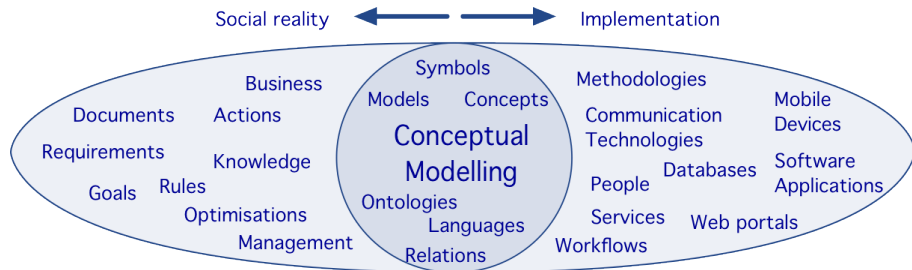
Concept from Latin word conceptum = “something conceived”

⇒ Common reality is our focus.

Modelling is a natural tool how to deal with complexity.

We are dealing with ways how to handle a complexity of our reality.

Conceptual Modelling in Context

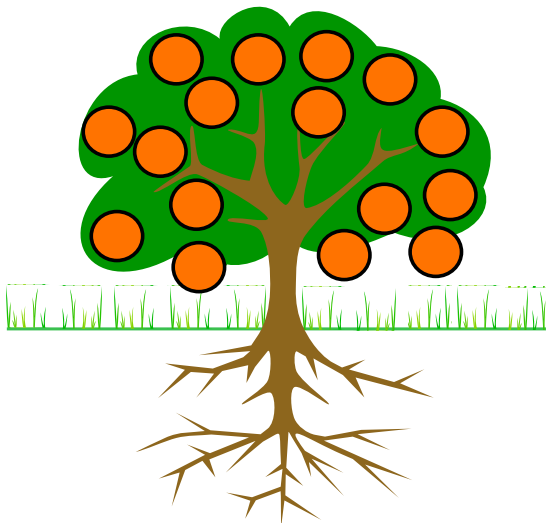


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Our Approach

Strong formalisms provide firm roots for a tree laden with juicy fruits.

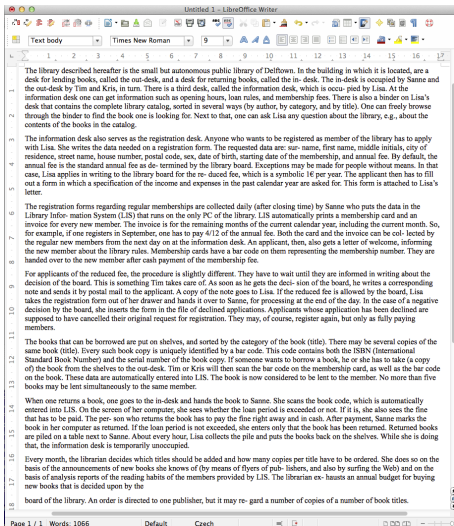


Our Approach

Getting to the **essence** . . .

Our Approach

Getting to the **essence** ... in enterprise engineering:



Our Approach

Getting to the **essence** ... in enterprise engineering:

T01	membership registration
T02	membership fee payment
T03	reduced fee approval
T04	loan starting
T05	book return
T06	loan ending
T07	return fine payment
T08	book shipment
T09	periodic stock control
T10	annual fee control

(Taken from J. L. G. Dietz, Enterprise ontology: theory and methodology. Springer, 2006.)

Our Approach

Getting to the **essence** ...in programming:

```
public class StringUtils {  
    public static boolean isBlank(String str) {  
        int strLen;  
        if (str == null || (strLen = str.length()) == 0) {  
            return true;  
        }  
        for (int i = 0; i < strLen; i++) {  
            if ((Character.isWhitespace(str.charAt(i)) == false)) {  
                return false;  
            }  
        }  
        return true;  
    }  
}
```

(Apache Commons isBlank function)

Our Approach

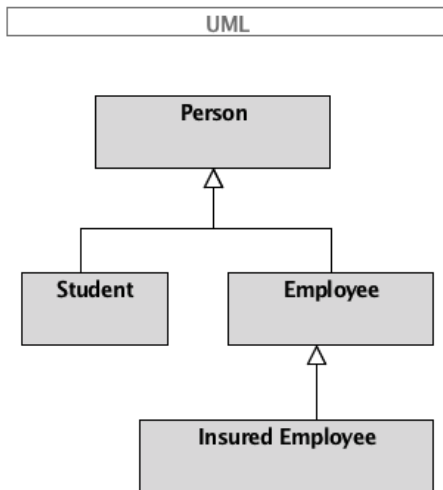
Getting to the **essence** ... in programming:

```
(defn blank? [s]
  (every? #(Character/isWhitespace %) s))
```

(Taken from <https://github.com/stuarthalloway/clojure-presentations/downloads>)

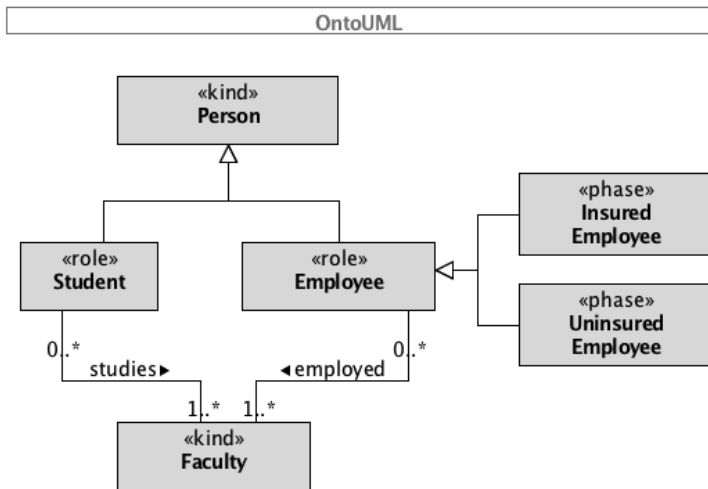
Our Approach

Getting to the **essence** ... in modelling:



Our Approach

Getting to the **essence** ... in modelling:



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Targeting

- **Primary research** in the field of conceptual modelling.
- **Applied research** in domains that need conceptual modelling.

Primary Research

- Methodologies, methods, notations and their combinations
 - ▶ Data, processes, architectures, rules, ...
 - ▶ OntoUML, DEMO, UML, BPMN, ...
- Models visualisations, simulations.
- Validations.
- Models transformations.
- Knowledge management: capturing, sharing, verification, inference.
- Supportive tools development — CASE tools, CUBE tools and other software.

Applied Research

- For domains that need to handle complexity:
 - ▶ Complex data structures,
 - ▶ Complex processes,
 - ▶ Complex rules,
 - ▶ Complex workflows,
 - ▶ Needs for automations,
- Example: Logistics

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Our Offer

- Solutions,
- Consultancy,
- Trainings.

Areas

- Business process (re)engineering.
- Ontological engineering – terms of your business, their accurate meaning and relations.
- Workflow management.
- Knowledge management.
- Knowledge transfer.
- Information systems analysis and design.
- Business-IT alignment.

What are NOT Our Topics

- Quick-and-dirty solutions
- Cheating the solutions

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Our Partners



[Delft University of Technology](#)



[Ontology & Conceptual Modeling Research Group \(NEMO\)](#)

Universidade Federal do Espírito Santo, Brazil



[GS1 Czech Republic](#)



[Enterprise Engineering Institute](#)

... and growing.

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The Core Team (FIT)

Ing. Josef Moravec

- External member of FIT.
- Process modelling expert.

The Core Team (FIT)

Ing. Robert Pergl, Ph.D.

- Assistant professor at KSI
- Group Coordinator
- Research networking
- Industry networking
- Methodologies expert

The Core Team (FIT)

Mgr. Martin Podloucký

- Ph.D. student at KSI
- Modelling and languages researcher
- Tools chief programmer

The Core Team (FIT)

Ing. Zdeněk Rybala

- Ph.D. student at KSI
- OntoUML expert

Other Members

- FIT Students: Bc. Jan Turoň
- FEL: Ing. Martin Molhanec, CSc.
- FJFI: Doc. Ing. Vojtěch Merunka, Ph.D.
- MFF UK: Oskar Maxa

Opportunities for Members

- We are grounded in a field with *high potential* for research and industry.
- Learning.
- Doing.
- Inventing.
- Teaching.
- Networking.
- Travelling.

Who We Seek

- CCM is a very open and friendly group.
- There are no formal requirements on the members.
- However, a center of excellence needs to be built on people that are enthusiastic, committed and responsible.
- A lot is about English in CCM.

Specialisations in CCM

- Researchers
 - ▶ Learning
 - ▶ Inventing
- Analysts
 - ▶ Doing
- Designers (architects)
 - ▶ Inventing
 - ▶ Doing
- Developers
 - ▶ Doing
- Tutors
 - ▶ Teaching

Forms of Participation for Students

- Semester projects
- Bachelor theses
- Master theses
- Ph.D. study
- Research projects participation
- Projects for industry participation

Our Infrastructure

Based on technologies for collaboration:

[Group's Wiki](#) – shared knowledge

[Zotero](#) – shared resources

[Teambox](#) – discussion groups

[Google Drive](#) – shared storage

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Our Achievements

- The Centre is very young, however we already achieved:
- Specifying interesting student team projects (BI-SP1).
- Several successful bachelor and diploma theses.
- Initiated cooperation with research institutes (TU Delft, NEMO, Universiteit Antwerpen).
- Initiated cooperation with industry (ČSOB, GS1).
- Joined FIT TAČR projects.
- Already published 3 scientific papers in 2013.
- Robert Pergl was accredited as DEMO Master by Enterprise Engineering Institute.

More information

<http://ccm.fit.cvut.cz>

Thank you for your attention!

Questions?