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Enterprise and System Modelling

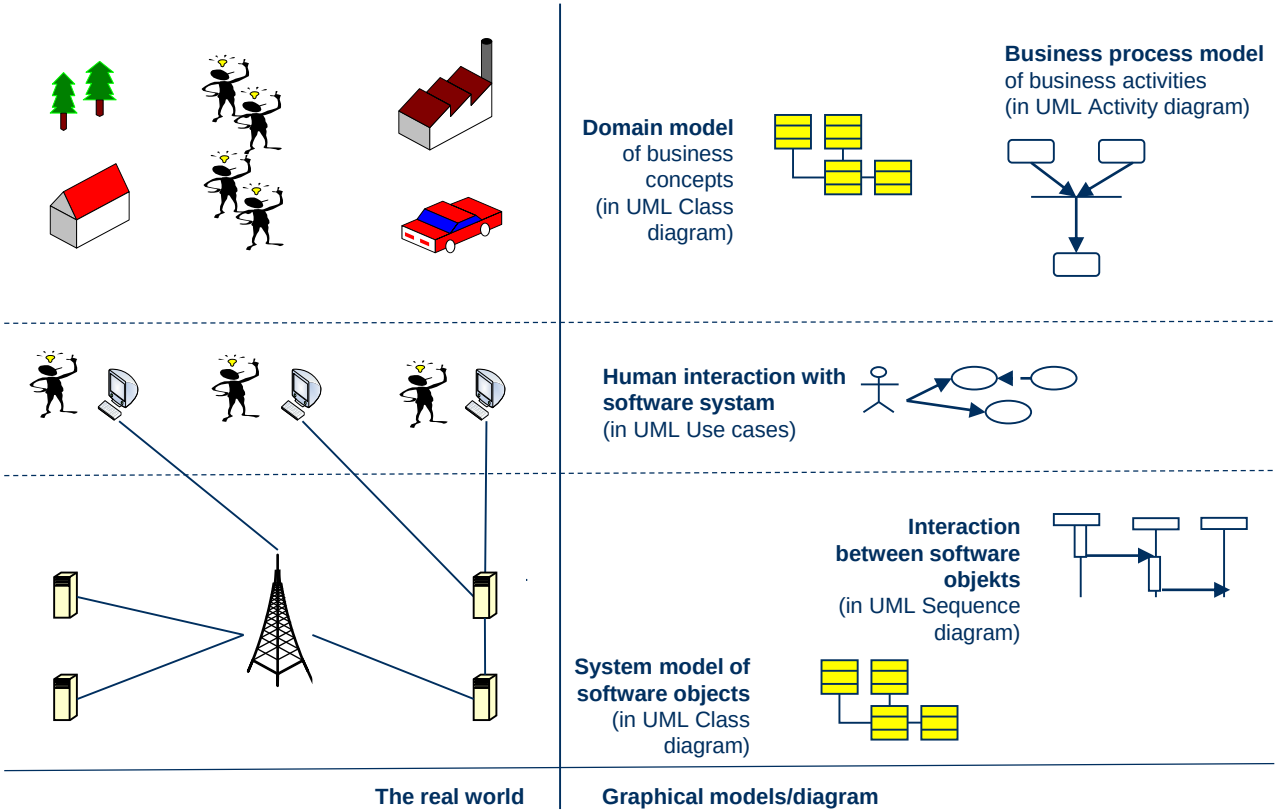
Erik Perjons

Questions to answer

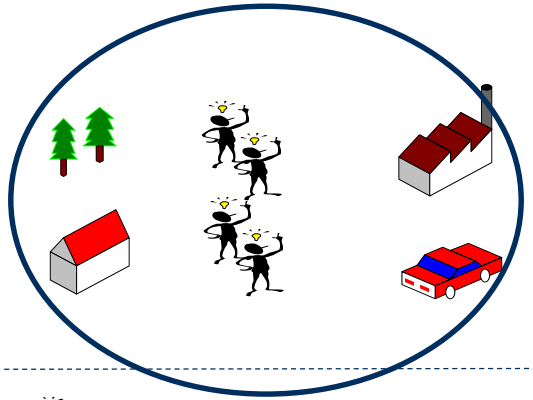
- What is an enterprise model?
- Why do you need an enterprise model?
- What is a system model?
- Why do you need a system model?

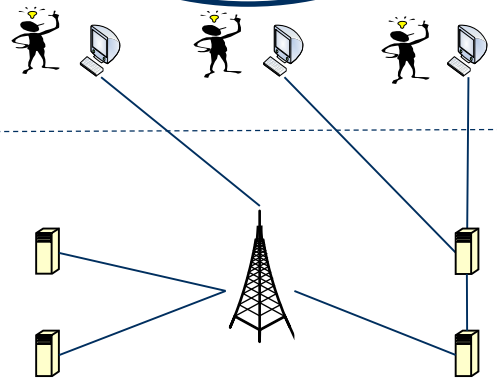
Enterprise and System Models

Real World and Models

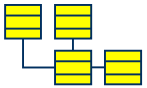


Real World and Models

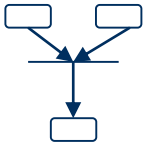




Domain model
of business concepts
(in UML Class diagram)



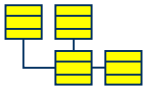
Business process model
of business activities
(in UML Activity diagram)



Human interaction with software systam
(in UML Use cases)

Interaction between software objekts
(in UML Sequence diagram)

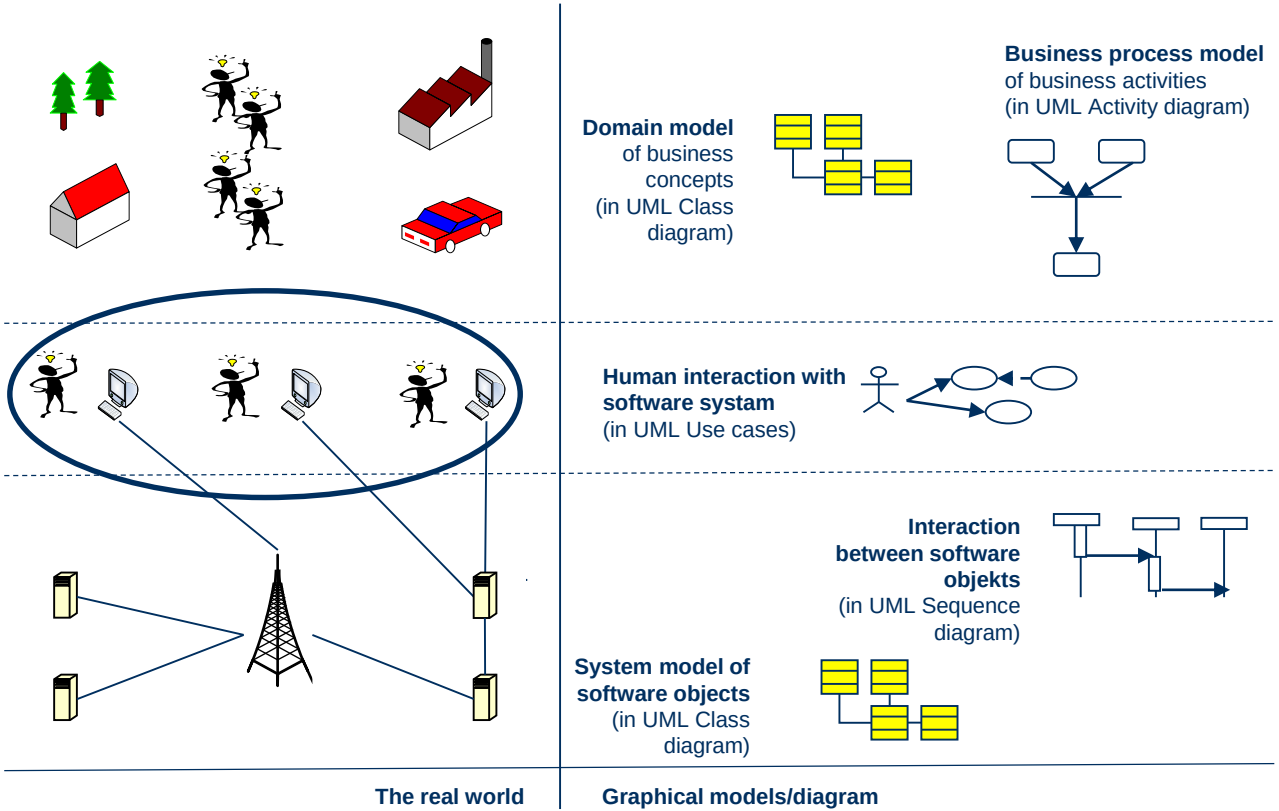
System model of software objects
(in UML Class diagram)



The real world

Graphical models/diagram

Real World and Models



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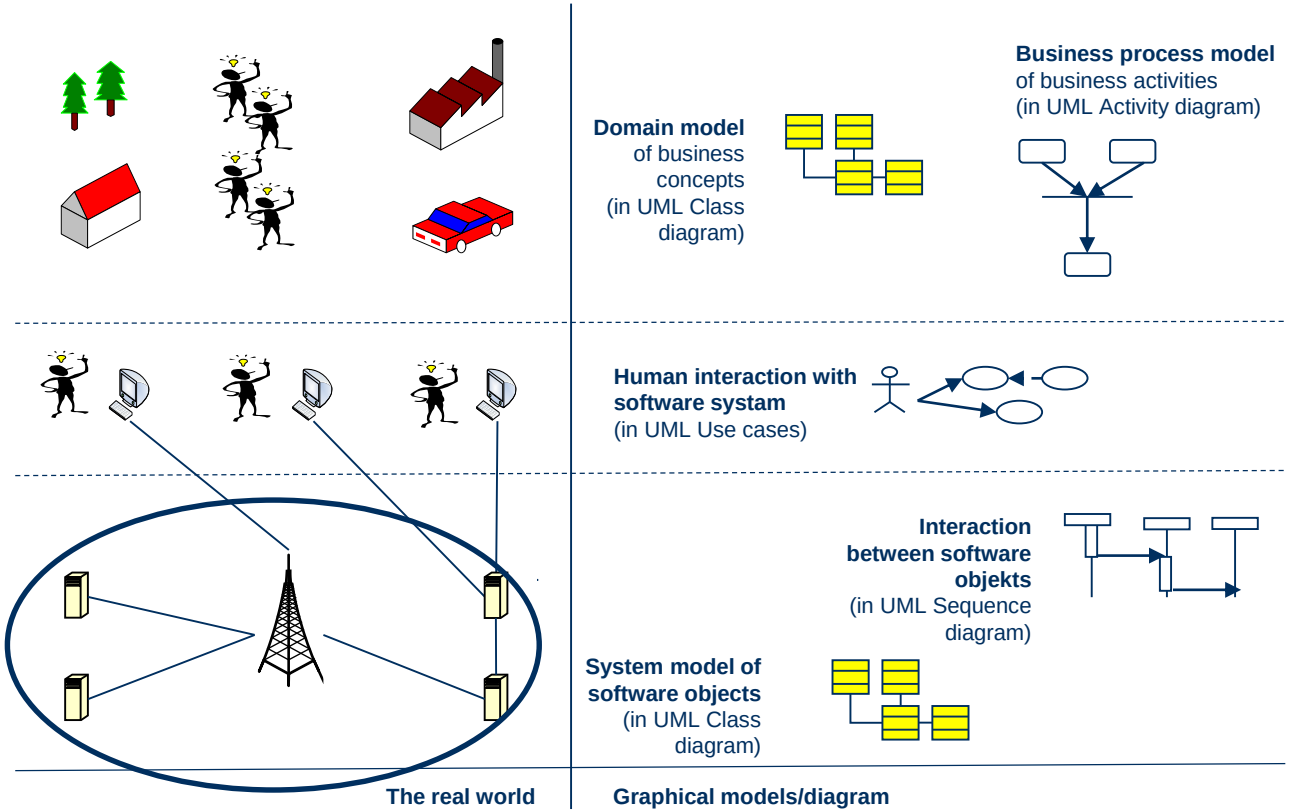

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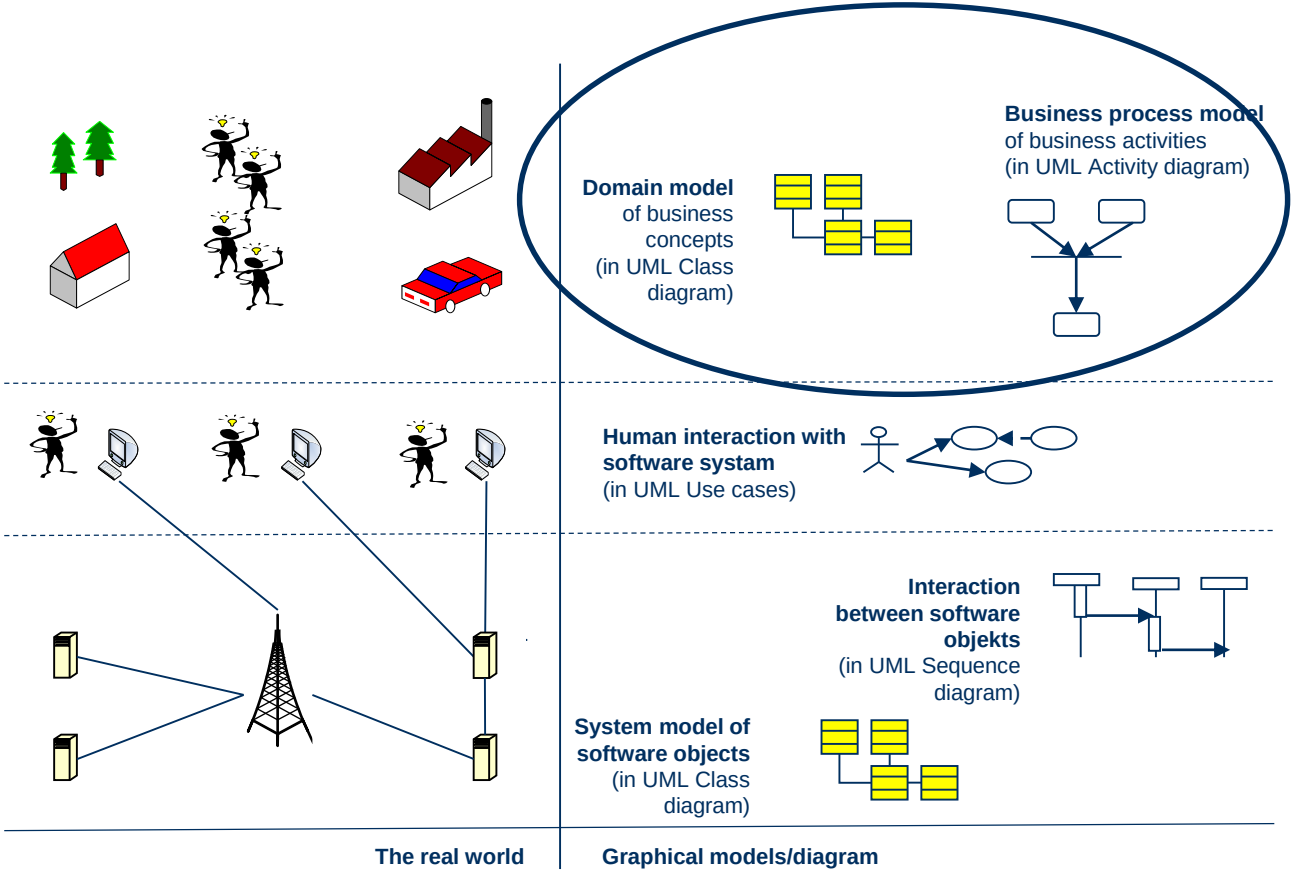

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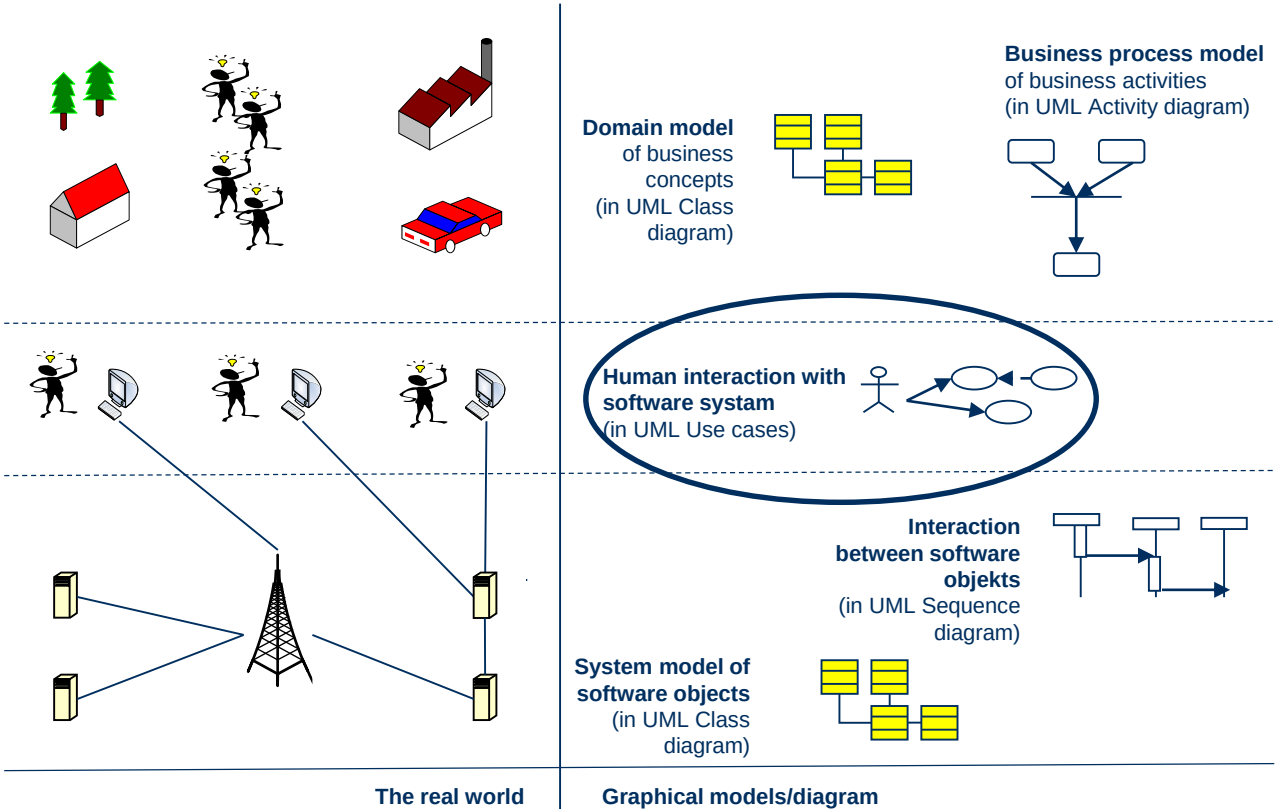

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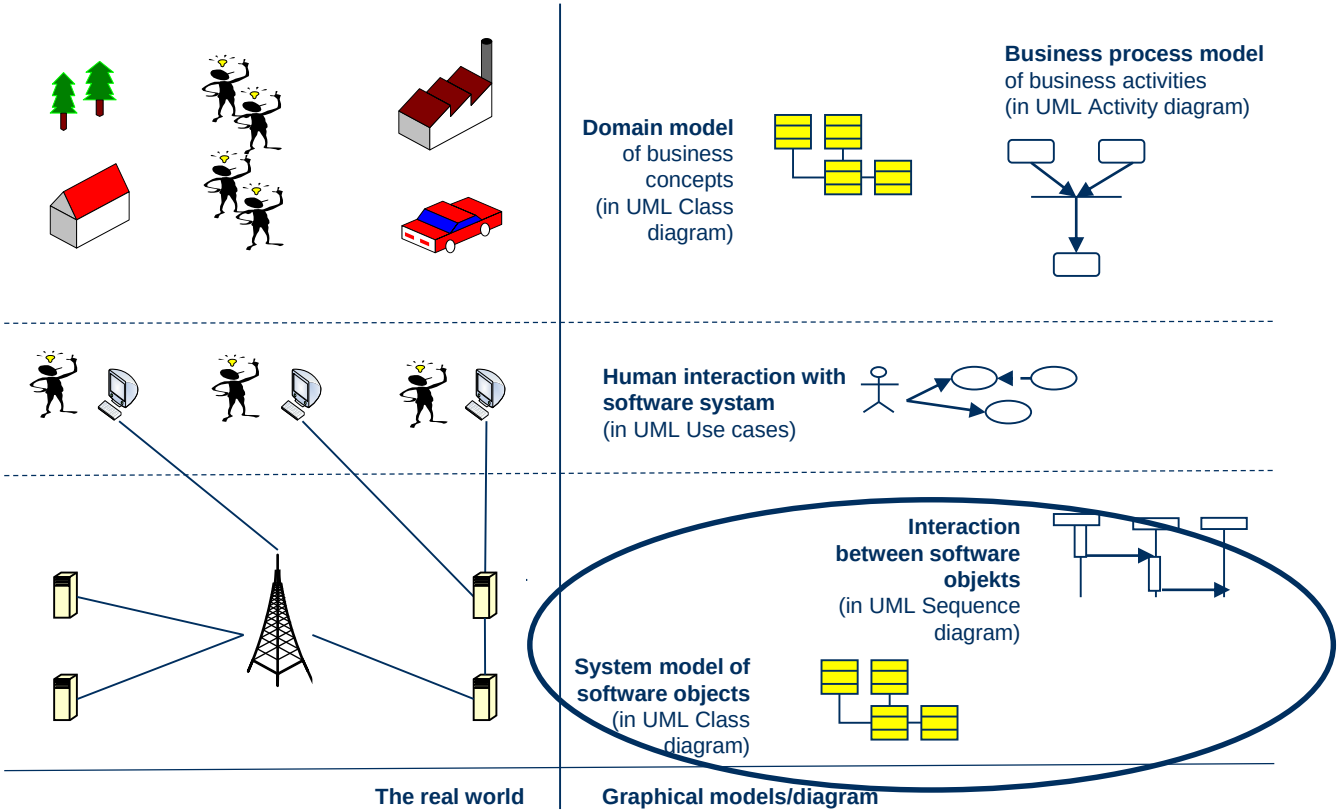
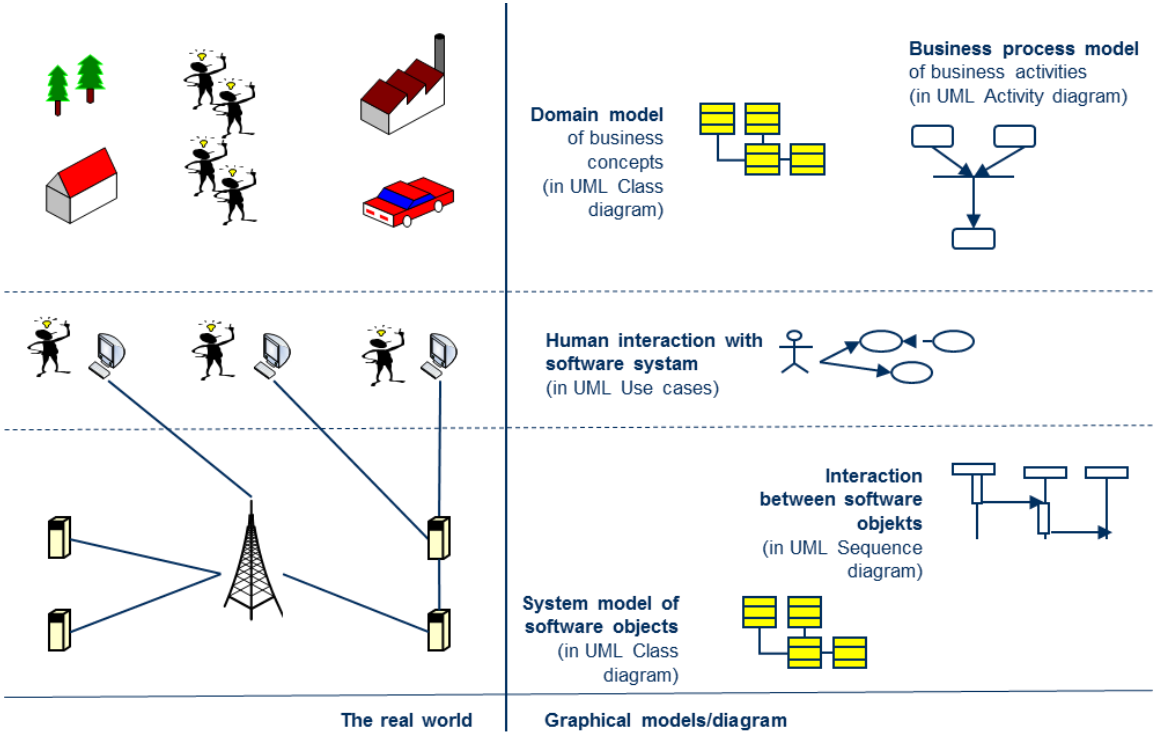


Enterprise and System Models



Enterprise models/ Business models

System models

Enterprise model

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- An enterprise model (or business model) “is a representation of the structure, activities, processes, information, resources, people, behavior, goals, and constraints of a business, government, or other enterprises” (Definition from Fox&Gruninger, 1998)
- Enterprise models are useful for:
  - analysing organisations and their context, and, thereby,
  - designing better solutions in form of organizational change and in form of software system/IT systems/information systems

System model

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- A system model is a representation of the construction/architecture (parts, modules, relationships), functions, activities, goals, etc of a software system/IT systems/information systems
- Enterprise models are useful tools for:
  - analysing software system/IT systems/information systems
  - designing software system/IT systems/information systems (often used in phases of the system development process)

What is a model?

- A model is a structure that represents/depict/describe a system or certain aspects of a part of the real world
- A model can, for example, be textual or graphical.
- We focus on graphical models in this course, that is, models that visualizing objects, relationships, processes, actions, etc, using graphical elements, such as named boxes, arrows, etc

Static and Dynamic Models

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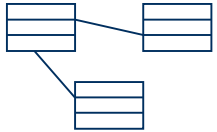
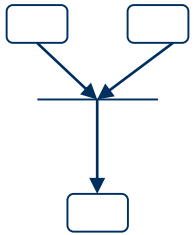
Static/Structural models



- specify static aspects of the real world/system
- more precisely: which objects exists and their relationships
- answer the question: “What things exist?

Dynamic/Behavioural models



- specify dynamic aspects of the real world/system
- more precisely: how does objects and their relationships change
- answer the questions: “How does the things change”

As-Is and To-Be Models

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- **An as-is model** is a model that describes a certain aspect of the real world/system as it is just now
- **A to-be model** is a model that describes a future state of a certain aspect of the real world/system

Why Models?

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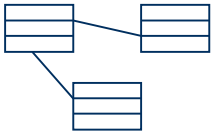
- A means for analyzing part of the real world to identify problems
- A means for gathering requirement on a system
- A means for designing a system - for example, using models for design of to-be business process or a new software system
- A means for communication (for example, between several stakeholders)

Why Modelling Language?

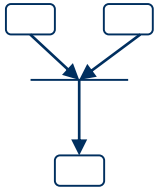
represented by

Static/Structure model



using

Dynamic/Behavioural model



using

consists of

Abstract Syntax – define the language's central concept, usually in form of a **metamodel**

Concrete Syntax – describe which symbols the language consists of and how they look like

Modelling elements (Notation)

UML

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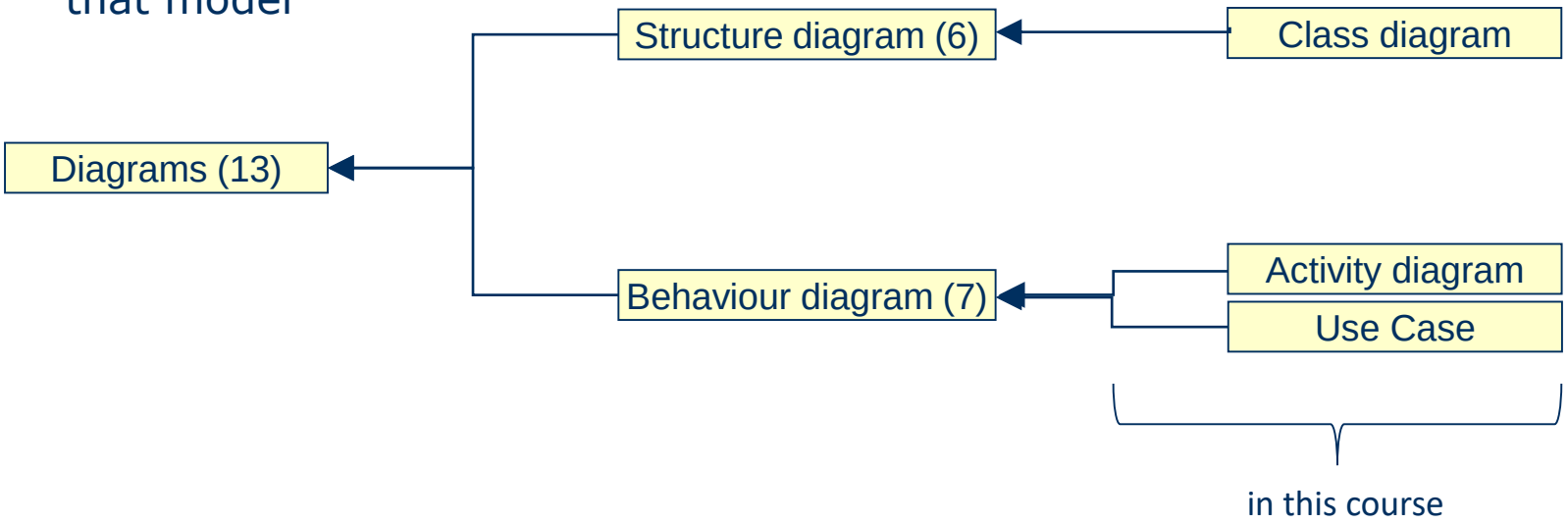
- **Unified Modelling Language (UML)** is a general-purpose modelling language/technique which is designed to provide a standard way to visualize the design of a software system - but the language can also be used for enterprise modelling.
- It consists of a number of diagrams that aims to be used for modelling the real world or a system from different perspectives
- Today, UML is maintained by Object Management Group (OMG), which is a non-profit consortium that produces and maintains computer industry specifications for interoperable enterprise applications

UML diagrams

- UML 2.0 has 13 diagram types, which each provide a certain focus/perspective on a model. According to UML there is one model of a system, and the different diagrams provide different perspectives of that model



Medverkande

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