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• Lecture 19: Inheritance II, Meta-Modelling I

• Lecture 18: Live Sequence Charts III, Inheritance I

• Lecture 17: Live Sequence Charts II

• Lecture 16: Methods, Live Sequence Charts II

• Lecture 15: Hierarchical State Machines III

• Lecture 14: Hierarchical State Machines II

• Lecture 13: Hierarchical State Machines I

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Wrapup: Examining Motivation

• what is a model? for example?

• a model is an image or a pre-image — or what? please explain!

• is a model a good model?

• what is model-based software engineering?

• MDA, MDSE?

• what do people hope to gain from MBSE? Why? Justified?

• what are the fundamental pre-requisites for that?

• what are purposes of modeling guidelines?

• could you illustrate this with examples?

• how can we establish/enforce them? can tools or procedures help?

• what’s the qualitative difference between the modeling guideline “all association links have a multiplicity” and “all state-machines are deterministic”?...
What is a stereotype? What does it mean? For what can it be useful?

Could you please map this signature to a class diagram?

In what sense is OCL a three-valued logic? For what purpose?

Could you please map this class diagram to a signature?

What is the difference between well-formedness rules and modelling guidelines?

What is meta-modelling?

Could you explain it on the example of UML?

What is the class diagram in the context of meta-modelling?

What benefits do people see in meta-modelling?

The standard is split into the two documents "Infrastructure" and "Superstructure". What is the rationale behind that?

Is what modelling language is UML modeled?

When is a set of OCL constraints said to be consistent?

What constraints hold in this (completely) specified system state?

What kind of diagrams does UML offer?

What is the purpose of the X diagram?

What do the diagrams X and Y have in common?

What is a UML model (our definition)? What does it mean?

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Wrapup: Modelling Structure

Lecture 9
- Educational Objectives: Capabilities for following tasks/questions.
  - What are purposes of modelling guidelines? (Example?)
  - When is a class diagram a good class diagram?
  - Discuss the style of this class diagram.

Lecture 20 & 21
- Educational Objectives: Capabilities for following tasks/questions.
  - What is the effect of inheritance on System States?
  - What does the Liskov Substitution Principle mean regarding structure?
  - What is the subset, what the uplink semantics of inheritance?
  - What is the idea of Meta-Modelling?

Wrapup: Modelling Behaviour, Constructive

Lecture 10
- Educational Objectives: Capabilities for following tasks/questions.
  - What’s the difference between reflective and constructive descriptions of behaviour?
  - What is the Basic Causality Model?
  - What does the standard say about the dispatching method?
  - What is (intuitively) a run-to-completion step?

Lecture 11
- Educational Objectives: Capabilities for following tasks/questions.
  - Can you please model the following behaviour.
  - What is trigger, guard, action?
  - Please abbreviate this abbreviated transition annotation.
  - What is an ether? Example? Why did we introduce it?
  - What is the difference: signal, signal event, event, trigger, reception, consumption?
  - What is a system configuration?
  - When is an object stable (intuitively, formally)?

Lecture 12 & 13
- Educational Objectives: Capabilities for following tasks/questions.
  - What is a transformer? Example? Why did we introduce it?
  - What is re-use semantics? What if the framework would we change to go to a non-re-use semantics?
  - What labelled transition system is induced by a UML model?
  - What is: discard, dispatch, confluence?
  - What’s the meaning of stereotype “signal,edu”?
  - Does environment interaction necessarily occur?
  - What happens on “Action by F”?

Lecture 14
- Educational Objectives: Capabilities for following tasks/questions.
  - What is a step (definition)? Run-to-completion step (definition)? Microstep (relation)?
  - Do objects always finally become stable?
  - In what sense is our UNT semantics not compositional?

Lecture 15
- Educational Objectives: Capabilities for following tasks/questions.
  - What’s a kind of a state? What’s a pseudo-state?
  - What is a region? What’s good for?
  - What is: entry, exit, do, internal transition?
  - What’s a completion event? What has it to do with the other?

Lecture 16
- Educational Objectives: Capabilities for following tasks/questions.
  - What’s a state configuration?
  - Are two states orthogonal? When consistent?
  - What’s the depth of a state? Why can?
  - What is the set of enabled transitions in this system configuration and this state machine?
Wrapup: Modelling Behaviour, Constructive

Lecture 17:

- Educational Objectives: Capabilities for following tasks/questions.
  - What’s a history state? Deep vs. shallow?
  - What is a decision, choice, terminate?
  - What is the idea of “deferred events”? What are passive objects? Why are passive reactive objects special? What did we do in that case?
  - What is a behavioural notion? How can it be implemented?

Wrapup: Modelling Behaviour, Reflective

Lecture 18 & 19:

- Educational Objectives: Capabilities for following tasks/questions.
  - Iseach LSC description of behaviour necessarily reflective?
  - There exists another distinction between “inter-object” and “intra-object” behavior. Discuss in the context of UML.
  - What does this LSC mean?
  - Are these UML model’s state machines consistent with the interactions?
  - Please provide a UML model which is consistent with this LSC.
  - What is: activation (mode, condition), hot/cold condition, pre-chart, cut, hot/cold location, local invariant, legal exit, hot/cold chart etc.?
Hmm...

- Open book or closed book...?

What happens if we add models...?