



# Assignment 6

## Modeling in RE

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### I. Task

#### Individual Tasks

- Read the mandatory items in the reading list
- Prepare a critique of each mandatory paper. For each paper, we will select a student to present her or his critique orally in class (3-5 minutes). Particular questions to be addressed are:
  - What is the main message of the paper?
  - What are the expected practical benefits?
  - What are the strengths and weaknesses of the paper?
  - What questions do you have about the paper? (prepare at least two questions)
  - What is your personal opinion about the paper? Do you agree or disagree with its findings?
- Be prepared to answer the questions given in Sect. III below in class

#### Group Tasks

- Prepare a 10-12 minutes presentation (plus 6-8 minutes of discussion) on the theme assigned to your course group (cf. Sect. IV) and choose two students from your group to present it.
  - At the beginning of your presentation, relate your topic to the session's topic (as represented by the mandatory reading).
  - Browse/read additional papers and/or web pages where necessary.
  - Send your presentation to Norbert and Eya after the session to share it with others.

### II. Reading List

#### Mandatory reading

[Ludewig 2003] explains the role of models in Software Engineering, while [Machado et al. 2005] discusses various techniques for modeling requirements. [Wüest et al. 2012] provides an overview on FLEXISKETCH.

#### Theme-specific reading

[Glinz et al. 2002], [Reinhard et al. 2008]: Modeling Systems with ADORA  
[Chung et al. 2000], [Gross and Yu 2001]: Modeling Non-Functional Requirements Using Soft Goals  
[Lindland et al. 1994], [Moody et al. 2003]: Quality of Models. Optionally, [Moody 2005] could be interesting for a broader introduction, more recent conclusions, and future research directions.

### III. Questions

- How are models used in Requirements Engineering?
- What are the differences between modeling and specifying?
- What is a “good” specification process?
- What are the basic principles of ADORA?

- What are the main differences between ADORA and UML?

## IV. Themes for Presentation

Themes will be assigned by the assistant who tutors this course; your group can apply for a theme.

### A. Modeling Systems with ADORA

Present an overview of the key features of the ADORA modeling language. How are these features supported by the tool? What are the challenges related to the implementation of this tool? Why is it a challenge to navigate in graphical models?

### B. Modeling Non-Functional Requirements Using Soft Goals

What are soft goals? How are they related to quality requirements? How can NFRs guide the application of patterns during the design of a system?

### C. Quality of Models

What are the three components of semiotics? How can they be used to evaluate the quality of models? Is such an evaluation effective?

## References

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- Gross, D., E. Yu (2001). From Non-Functional Requirements to Design through Patterns. *Requirements Engineering* **6**, 1 (Feb. 2001). 18-36.
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- Machado, R., I. Ramos, J. Fernandes (2005). Specification of Requirements Models. In Aurum, A., C. Wohlin. *Engineering and Managing Software Requirements*. Springer. 47-68.
- Moody, D., G. Sindre, T. Brasethvik, A. Solvberg (2003). Evaluating the Quality of Information Models: Empirical Testing of a Conceptual Model Quality Framework. *25<sup>th</sup> International Conference on Software Engineering (ICSE'03)*. Portland, Oregon, USA. 295-305.
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