



University of Innsbruck – Institute of Computer Science
Semantic Technology Institute
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PS Introduction to Modeling

Assignment 6

Exercise 1 (UML Basics – 6 points)

In the lecture UML has been introduced. The goal of this assignment is to get familiar with the basic concepts of UML. Please use a unique example to explain the concepts.

- The lecture divided UML into the two major categories „structural diagrams“ including *class diagrams* and „behavioral diagrams“ including *use case diagrams*. The second category can be further divided into „interaction diagrams“ which covers *sequence diagrams*. Please provide an explanation **and** an example of (a) class diagrams, (b) use case diagrams and (c) sequence diagrams.
- Class diagrams have been discussed in the lecture which defines components of a software system, their attributes and the relationships between them. Please explain the concept of a (a) class, (b) attribute, (c) operation and (d) association with an example.
- Draw an UML class diagram that consists of two classes and all described concepts (a-d) from above.
- Two further important constructs in object oriented programming are *interfaces* and *abstract classes*. Please explain the differences between them and how are they modeled in UML.

Exercise 2 (UML Modeling – 6 points)

For this exercise take again the example you used in the first assignment.

- Draw a „structural diagram“ of your example and try to use as many UML concepts as possible.
- Draw a „behavioral diagram“ based on your example. For example a *use case diagram* to model how a user could interact with your system.

Enter your anticipated points and send your final solution and explanations (txt and pdf files only!) to anna.fensel@uibk.ac.at until Wednesday the 3rd of February 2016, 16:00.