Exercise for the lecture Modeling Methods in Computer Science, 
Winter Semester 2007/08
Ingo Frommholz (LF 138)
Consultation-hour: Thursday, 15:00-16:00
mod07@is.inf.uni-due.de

Exercise Sheet 4 Due date: 14.11.2007, 14:00

Exercise 7: Inheritance

The following terms are given: lorry, articulated lorry, cargo plane, taxi-cab, airplane, passenger plane, car

(a) Identify the classes and arrange the terms within an inheritance hierarchy.

(b) Think of generalizations for these classes and try to complete the inheritance hierarchy (there should be only one class at the top of the inheritance hierarchy).

5 Points

Exercise 8: UML Class Diagrams

Let’s assume your task is to design an interactive menu for the university cafeterias. Please include the option of a retrieval of the daily menu of each cafeteria as well as the option of rating every dish.\footnote{For such a system the following objects, their relations, attributes and operations are given:}

A cafeteria is situated on a campus which is part of a university. The name and the opening hours are given for each cafeteria (in form of a string for each). A dish can either be a starter or a main dish. Please include the option of labeling a dish as either vegetarian or as not vegetarian (by an attribute of the type Boolean which defaults to false). Moreover, each dish has a name (as String). An order consists of one or more dishes and exactly one cafeteria. A date (attribute type: Date) is given for each order. For each dish there can be an overall rating; each overall rating consists of one or more separate ratings; each separate rating necessarily belongs to an overall rating. Each rating contains the points attributed (as Integer) as well as a commentary (as String). The operations “insertComment” (the commentary as String parameter) and “givePoints” (the points as Integer) can be applied to each separate rating.

Please model the above mentioned description as a UML Class Diagram. Please give all classes, their relations and the cardinality, if possible (the description contains examples of all types of relation i.e. generalization/specialization, association and aggregation). Please also name the attributes and operations of the classes if possible.

Hints:
\footnote{compare to Mensafuchs http://www.mensafuchs.de/}
Read the assignment *carefully*. Underline all classes - usually, nouns are a good choice for a class but possibly for an attribute as well.

Watch out for hints concerning the relations and their type given in the text. Also look out for expressions like “belongs to”, “consists of” and the like.

Watch out for numeric declarations referring to cardinality (e.g., “one or more”, “exactly one”). What do these pieces of information mean?

15 Points