
Laboratory 1

Conceptual modeling with Rational Rose

This laboratory consists of 2 tasks.

Task 1 Conceptual modeling

The objective of this task is to construct a conceptual schema of a simple database domain described below. To create a conceptual schema use a notation of simplified UML class diagrams presented and explained to you during the lecture classes in CSCI235/MCS9235. To draw a conceptual schema use one of line drawing tools available on your system in a lab, for example, Microsoft Visio or Powerpoint (see drawing patterns in a file `drawing-patterns.ppt`) or any other line drawing tool. Save your solution in a file `task1...` with an extension appropriate for an application used.

A database should contain information about the sports cars and their owners.

The first name, last name, phone number, and address describe an owner of a car. An address consists of a suburb name, street name, building number, and optional flat number. A pair of attributes: first name and last name uniquely identifies an owner. A phone number can also be used to identify an owner.

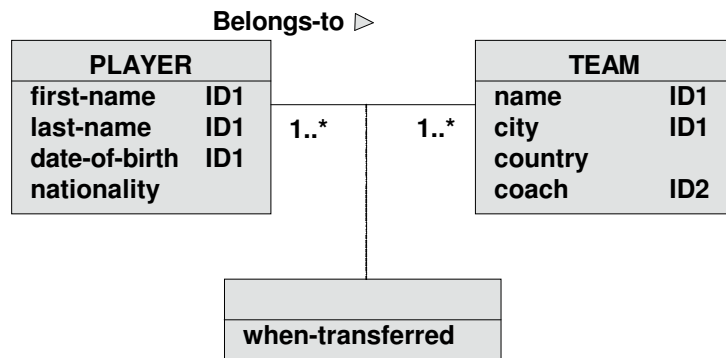
An owner owns one or more sports cars. Each car has only one owner. The database should contain information about the present owner of a car and date when an owner purchased a car.

We consider only two sorts of sports cars: spartan or luxurious. A spartan sports car is additionally described by an engine capacity.

It is not allowed to add any artificial identification attributes also know as "id" attributes to the specification given above.

Task 2 Modelling many-to-many associations and link attributes

Consider a conceptual schema given below. It represents a domain of players and teams. A player belongs to one team and team consists of many players. We would like to represent all teams a player belonged to in the past together with the transfer dates. This is why an association `Belongs-to` is *many-to-many*



and it is described by a link attribute `when-transferred`. Implement a conceptual schema given above with Rational Rose CASE Tools. Note, that notation of class diagrams provided by Rational Rose CASE Tools does not allow for *many-to-many* associations and link attributes. You have to transform a conceptual schema given above into a form that can be directly implemented with Rational Rose CASE Tools. All consistency constraints determined in a conceptual schema above must be implemented in Rational Rose CASE Tools implementation. The types of all attributes are up to you. Save your solution in a file `task2.mdl`.

Submission

Zip the files obtained as the solutions of tasks 1, and 2 into a file `solutions1.zip` and submit the file through eLearning. A submission procedure is the following.

- (1) Connect to Moodle.
- (2) Navigate to a folder `SUBMISSIONS`
- (3) Click at `LABORATORY 1, Submit your solutions here` link.
- (4) Click at `Add Attachments` button.
- (5) Navigate to a location where a file `solutions1.zip` has been saved.
- (6) Select the file and click at `Open` button.
- (7) Click at `Submit` button.
- (8) Click at `OK` button to return to `Home Page`.

Only one submission of this lab is allowed.

End of laboratory 1
