

SQL Lab: Assignment I (until 3.12.2009)

General Information

In this lab course, you have to work in teams of two (2) students each (this means: not one, not three, but exactly two).

There are fixed dates for meeting up with your lab tutor for discussion and receiving new assignments, which you have to perform until the next meeting (consult your tutor for details about this). The schedule for the meetings and assignments is:

Date	Topic/Assignment	Due to	
26.11.2009	Modeling	03.12.2009	(1 week)
03.12.2009	SQL queries 1; data transformation	17.12.2009	(2 weeks)
17.12.2009	SQL queries 2	07.01.2010	(3 weeks)
07.01.2010	Application programming with JDBC	21.01.2010	(2 weeks)
21.01.2010	Performance optimization; special SQL	04.02.2010	(2 weeks)
04.02.2010	Persistence management	11.02.2010	(1 week)

Tools

During this first task, you will create a larger data model using suitable software tools. In general, you are free to use any UML modeling tool you like (drawing UML diagrams by hand is not permitted!).

We recommend using the UML plugin of the Sun NetBeans IDE (open source, platform-independent, works well enough). You may download NetBeans Java SE Edition from <http://netbeans.org/downloads> (see Figure 1). After installing and starting NetBeans, install the UML plugin by selecting the Tools/Plugins menu (see Figure 2) and finding the plugin in the list (see Figure 3). Afterwards, create a new platform independent UML project (see Figure 4) and a new class diagram within it (see Figure 5). Happy modeling (Figure 6)!

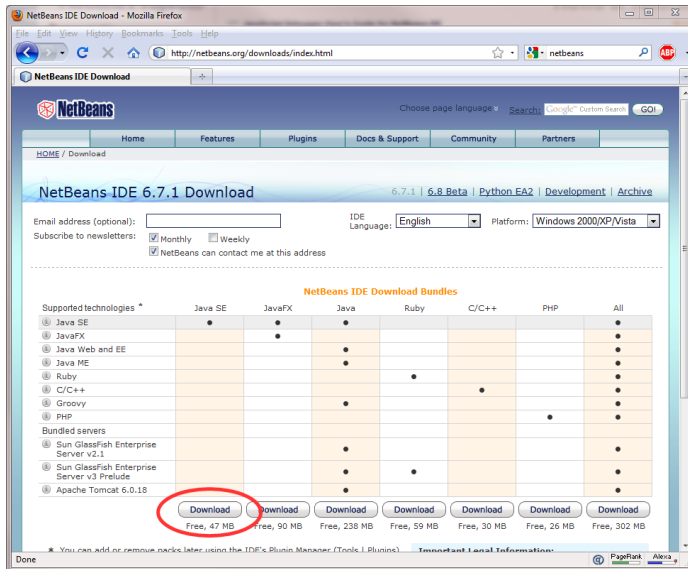


Figure 1: Downloading NetBeans

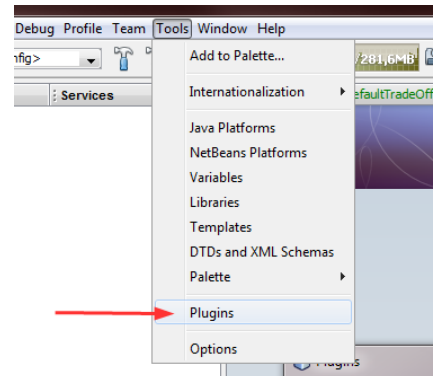


Figure 2: The plugin manager

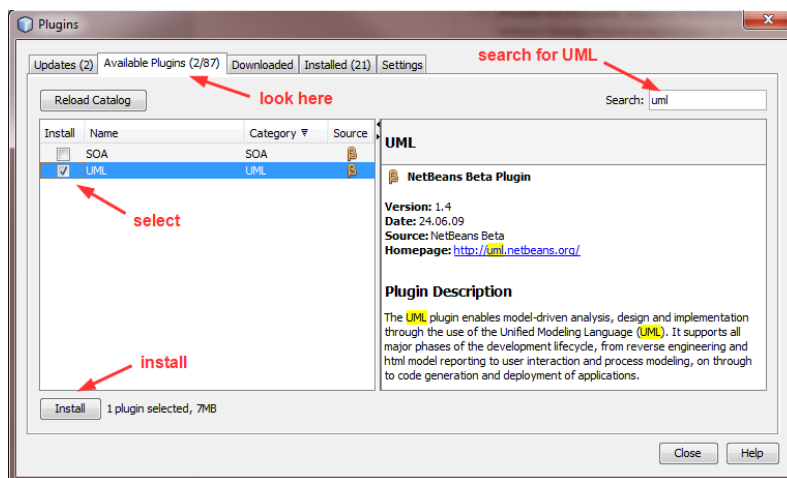


Figure 3: UML plugin installation

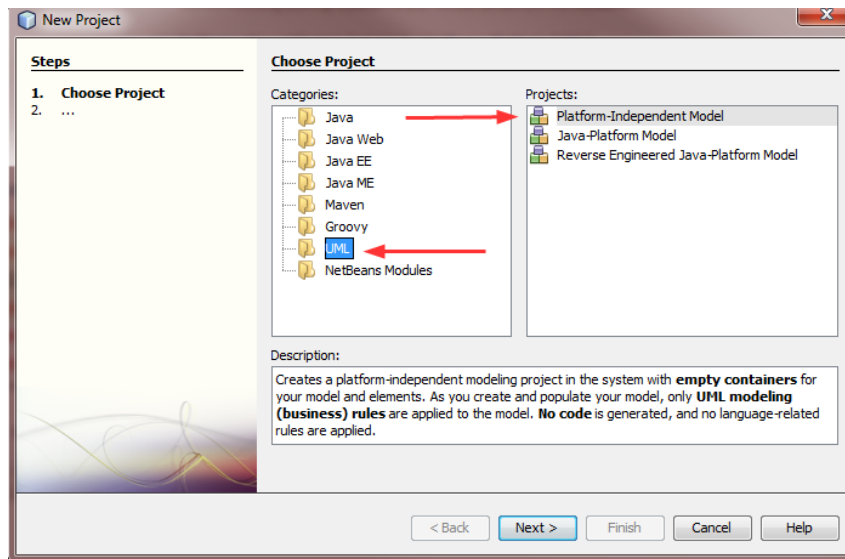


Figure 4: Create new platform-independent UML project

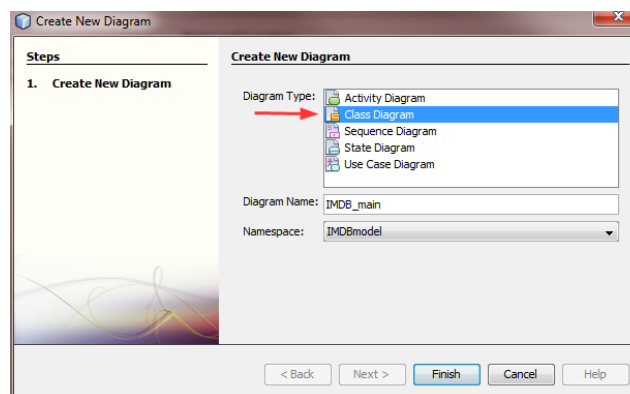


Figure 5: Create new class diagram

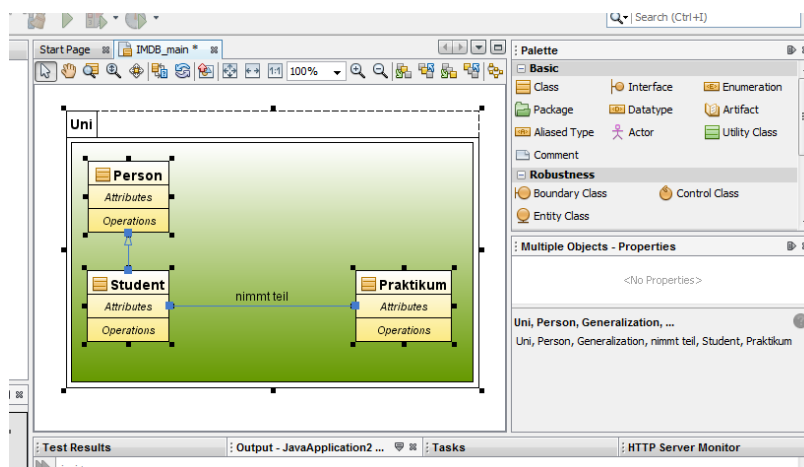


Figure 6: The UML modeling workbench

General Task

Use NetBeans UML (or another UML Tool) to model the mini-world described below. Keep several things in mind:

- You will later hand in your assignment on A4 **paper**. As your data model will be quite large, paper space will probably not suffice. Consider creating several diagrams showing different aspects or detail levels of your model.
- Use the package feature of UML (a package bundles several classes into a group). It may be a good idea having an overview diagram showing how packages relate to each other and then more detailed diagrams per package.
- Your tutor as well as your fellow students should be able to understand your model. Use comments, notes, and additional documentation!
- Keep in mind that most modeling tools use an internal data model containing all classes, associations, etc. Reuse parts of the model instead of creating new ones, if a class/package appears in multiple diagrams.
- Model attributes. Use default data types like string, integer, date, etc. whenever possible.

How to successfully pass the course

During the SQL lab, there will be six assignments to be worked on; the results of each team have to be handed in and will be graded by the team's tutor. There will be three possible grades: "+1" (good), "0" (average), and "-1" (incomplete, insufficient, or missing). To successfully pass the SQL lab, the sum of all six grades must be positive (> 0).

Task for the first week

Your task is to create a data being able to store a subset of the data found on the Internet Movie Database IMDB (<http://www.imdb.com>).

In order to perform this task, review carefully the web pages of IMDB (you may ignore IMDBpro features) and try to figure out which classes are needed and how they are related.

In particular, take care of the issues illustrated by the following examples:

- Movie: <http://www.imdb.com/title/tt0064177/>
 - Shows a summary of a facts of a particular movie. Pay special attention to the people, cast, and roles involved with the movie.
 - You may skip Funstuff, Certifications, FAQ, Newsdesk, Awards, Release Date, Photos, and MovieMeter
- Ratings: <http://www.imdb.com/title/tt0064177/ratings>

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- IMDB has users, users may rate a movie / TV show
- TV Series: <http://www.imdb.com/title/tt0101076/>
 - Skip the same features already skipped for movies
 - Pay attention to seasons
(<http://www.imdb.com/title/tt0101076/episodes#season-1>) and episodes
(<http://www.imdb.com/title/tt0554727>)!
- Persons: <http://www.imdb.com/name/nm0001569>
 - Skip Contact, StarMeter, Awards, Trivia, NewsDesk, Photos
 - Pay special attention to Filmography: A person may be involved in several movies in different roles!
- Companies: <http://www.imdb.com/company/co0071326>
- Movie Connections: <http://www.imdb.com/title/tt0076759/movieconnections>
- Fictional Characters / Roles: <http://www.imdb.com/character/ch0000007>