# DA 2032 - Database Theory

# Assignment 1

There will be three assignments. You need to pass all of them to be admitted to the oral exam. Not more than two students in each practical assignment group. If there are problems with your solutions, you'll be given the chance to fix them.

This first assignment consists of two parts: A theoretical and a practical part. Both parts require that you write some text and create ER-diagrams. Hand in the text by email (antonina.khairova - at - vxu.se). If you want to draw the ER-diagrams by hand, you can hand them in separately on paper, or you may scan them if you like.

Deadline for the first assignment is **September 21**.

## 1 Theoretical Part

### 1.1 Land Cadastre

*There is a set of plots, each plot is a part of one maximum block and consists of one or more estates. Each block, plot and estate is described by one polygon. Polygon, in its turn, is described by the set of points (min. 3 points). At the same time, each point must be contained in 1 min. polygon. Each plot must have at least one owner and may have one or more tenant persons. But there exist persons which don't own or don't rent any plot. The plot can have one maximum lease contract, at that lease contract is concluded between one of the owners of this plot and one or more tenant persons. The owners or tenant persons can be both natural person and juridical person.*

If there are things that you cannot model, or leave out in order to get a "cleaner" design, argue why.

### 1.2 Database Design

Solve Exercise 2.2.1, page 45, from the database book(2nd edition) mentioned in the first lecture. If you have the 3rd edition, the page is 145 and exercise is 4.2.1. If you don't have the book (2nd edition), no problem, as Chapter 2 is freely available from http://infolab.stanford.edu/~ullman/dscb/ch2.pdf

## 2 Practical Part

### 2.1 Setting up MySQL

1. Download and install MySQL from mysql.org. Make sure you download the **Community Server**, as that's the freely available version.

2. Installation should be straightforward. However, there are several options and different procedures under different operating systems. Follow on-screen instructions and refer to Section 2.4 of the manual. Since the MySQL console (mysql) makes annoying beeps when entering faulty commands, you might want to run it with the `--no-beep` option. If you want to install GUI tools for MySQL, you may follow this link `http://dev.mysql.com/downloads/gui-tools/5.0.html` (installation of the tools is not required)

## 2.2   Movie Database

1. Study the text files contained in `http://cs.msi.vxu.se/isovis/courses/fall09/da2032/assignments/infoFiler.zip` Based on these files, create an ER-Diagram for a database design which can contain the information herein. The ER-Diagram should contain at least one isa-relation. Don't forget attributes, and indicate the keys.

2. Create a set of MySQL commands that creates the database. You don't need to fill in any content yet. Useful information about creating database in MySQL you may find here: `http://dev.mysql.com/doc/refman/5.0/en/database-use.html`

3. Write a short report describing your work from the first two steps.