



Introduction to TIG058

Programming and Databases
Spring 2018



Description (Swedish)

I kursen ingår grundläggande programmeringsmetodik och ett modernt objektorienterat programspråk (Java) behandlas inklusive grafiska gränssnitt.

I databasdelen ges grundläggande kunskaper i relationsdatabaser och SQL.

(From the course syllabus)

Welcome!

- Programming and Databases
- 15 credits
- Rikard Fröberg, Henrik Sandklef
- Student supervisors
- 50% Databases (written exam)
- 50% Programming (Java - three-part assignment)

Database part of the course

- Lectures
- Exercises - We strongly recommend that you do **all exercises**
- Video lectures available - We strongly recommend that you see those
- Exam will include JDBC (using databases from Java)
- Some workshops
- Course literature
 - http://wiki.juneday.se/mediawiki/index.php/Introduction_to_Databases
 - http://wiki.juneday.se/mediawiki/index.php/More_programming_with_Java#Database_and_JDBC_related (JavaDataBaseConnectivity)
- Recommended reading (**not mandatory**)
 - [Databasteknik \(Studentlitteratur\)](#) and [its online companion](#)

Database part of the course - goals (Swedish)

Goals, from the course syllabus, which apply to the database part:

- beskriva hur utsökningar i SQL kan göras från i(sic!) ett Javaprogram
- använda en relationsdatabas
- tillämpa *enklare* utsökningar med SQL i ett Javaprogram

(Our emphasis)

Software used in the course

- SQLite3
- Bash - command line interpreter (shell)
 - Windows: cygwin or "bash for windows"
 - Mac OS X: Terminal (is already running bash)
- Various bash commands and programs
 - wget, curl, lwp-request (web access utils)
 - some editor (notepad++, sublime, atom, ...)
 - zip, unzip, tree, ... and more

Stuff added by the teachers (in the database part)

- [Bash introduction](#)
- Accessing and interacting with SQLite3 via command line interface
- Scraping data from the web (not mandatory, workshop)

Programming part of the course

This part of the course is a hands-on practical part, which will be examined via a three-part assignment.

The assignments will form a slightly bigger system with a client-server architecture, using a web API and a graphical client (both written in Java).

We will use workshops to help you succeed in writing the code for the system.

These workshops must be attended, if you aim to succeed in doing the three assignments!

The three assignments are connected - each assignment forms a part of the system. You cannot complete "lab 3" if you haven't completed labs 1 and 2.

Programming part of the course (in Swedish)

Goals from the course syllabus:

- förklara programmeringens grunder och Javas syntax
- redogöra för hur färdiga metoder i programbibliotek kan användas
- konstruera objektorienterade program
- använda färdiga metoder i programbibliotek
- tillämpa enkla grafiska gränssnitt
- tillämpa enklare utsökningar med SQL i ett Javaprogram

Programming part of the course - Teaching style

- We will **require** that you see some video lectures prior to the workshops
 - Failing to view the videos means less chance to get help during supervision
- We will **require** that you attend the workshops
 - Failing to attend the workshops means less chance to be able to finish the assignments
 - There will be videos for the workshops but of course those are not interactive and not meant as an alternative to attending the workshops
- You will not write tons of code - you will be handed lots of finished code

This means that the assignments are

- more about code comprehension
- more about integrating systems
- more about understanding architecture and design of a larger system

The Java assignments

- Lab 1 is about exposing data over the web in JSON format
 - Servlet technology
 - JSON format
 - HTTP protocol (used on the web)
- Lab 2 is about a graphical client (Java Swing)
 - This is not a course in interaction design - [such a course will follow in year 2](#)
 - The client will produce “queries” to the web API in Lab 1
- Lab 3 is about connecting the dots
 - The web API will use a database
 - The graphical client will actually talk to the web API, get JSON and parse it

The Java assignments

- We will not give classroom lectures in Java - those will be available as video lectures - which we encourage you to view
 - Some of which we will require you to view
- We will, on the other hand, give classroom workshops, where we solve together with the students a problem similar to that of the assignments
 - We will require you to have seen some video lectures ahead of the workshops, so that you have enough preparation to understand and follow the workshop
- You will work in groups of four
- You will be required to hand in a personal diary and report explaining the system in general, and in particular the code you wrote