



# INF5750/9750

# Introduction

INF5750/9750 - Lecture 1 (Part I)

Lecturers:

- Lars Kristian Roland: [roland@ifi.uio.no](mailto:roland@ifi.uio.no)

# Lecture 1 - overview

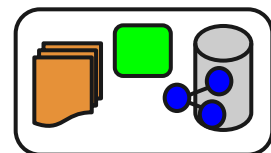
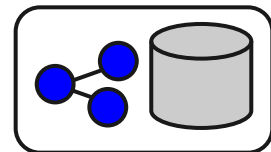
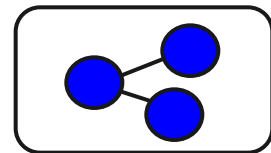
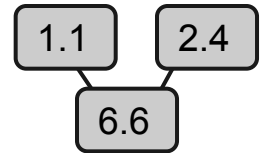
- Course content
- Assignments and group work
- Maven build system
- Revision control system
- Introduction to doing a master in DHIS
  
- Prerequisites
  - Thorough general programming
  - Java programming

# INF5750 Open source course

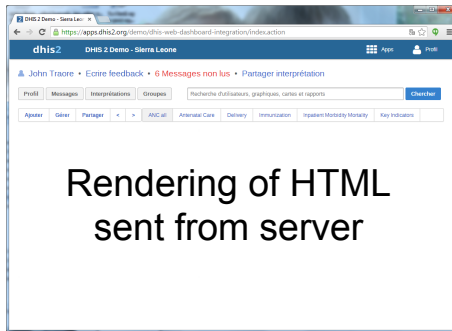
- ... develop a software system in a team ...
- ... web-enabled software using common server components such as Spring and Hibernate.
- introduction to HTML5 and Javascript ...
- introduction to mobile app development ...
- introduction to single-page web app dev (SPA)
- ... open source licensing and the consequences...
- be able to participate in developing DHIS2, one of the largest health information systems in the world.

# The course in 1 minute

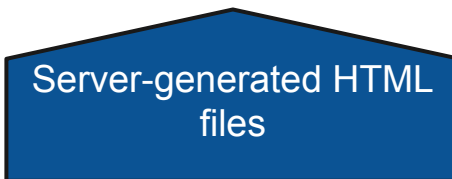
- Version control system. Keeps versions/backups and helps you share.
- Maven is a build tool. It helps you organize modules and build them.
- Spring: object framework. Configure objects & how they connect at runtime.
- Hibernate maps your relational database into Java objects, and back.
- Model View Controller separates user interface, controllers and data model.
- Javascript-enabled HTML-apps using REST-APIs on the server (“SPA”)



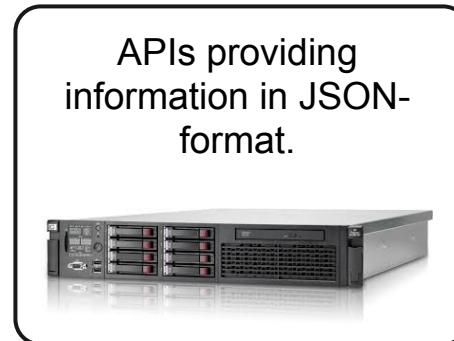
# Two architectures



Rendering of HTML  
sent from server

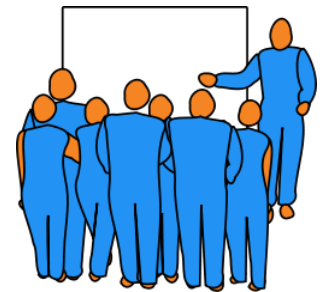


Javascript parses  
data from server and  
creates HTML



# Approach

- Lectures
  - Lars Kristian Roland: roland@ifi.uio.no
- Lab sessions
  - 3 obligatory assignments (individual)
- Group project in teams of 3 developers
- Considerable amount of self-study
- First part of course and assignments focus on **traditional server-side web** development.
- Group projects focus on Javascripts-enabled Apps accessing **APIs** on the server, which is becoming a more common architecture.



# Evaluation

- Individual assignment 1 (Deadline: 14th Sept)
- Individual assignment 2 (Deadline: 5th Oct)
- Individual assignment 3 (Deadline: 26th Oct)
  
- Group project work
  - 3 milestones and final delivery Dec 3rd
- Group presentation
  - Early December
- Individual essay
- Pass/fail - all deliverables must be passed

# Lab sessions

Check the lab session schedule on

<http://www.uio.no/studier/emner/matnat/ifi/INF5750/h14/timeplan/index.html>

Gruppe 1 - mon 14:15-16:00 Mustafa

Gruppe 2 - mon 12:15-14:00 Kennet

Gruppe 3 - mon 10:15-12:00 Thuc

Gruppe 4 - wed 10:15-12:00 Kennet/Thuc

Attend lab sessions.

Bring your laptop!





# Assignment 1

- Get development environment installed
  - Eclipse, Maven, Launchpad etc.
- Create a simple Eclipse project
- Include Spring components
- Include Hibernate components
- Run it to make sure it works
- Check into revision control
- Tips
  - Use own laptop may be simpler.
  - You need extra space on computer account.
  - The assignment is ahead of the course content!

# Assignment 2

- You will get a web based user interface and API model for a student system
- You must implement the database model using Hibernate and implement test classes
- Prerequisites:
  - Eclipse, Maven etc set up (assignment 1)
  - Need extra space on your university account

# Assignment 3

- HTML5 and Single-Page-App development
- Adding a Spring-MVC Rest-based API
- Doing Javascript call to fetch data from server and rendering this as HTML
- Some other HTML5 features
- Mobile client using Cordova

# Group project

- Develop functionality for DHIS2
  - A real-life open source project
- Objective
  - Learn the most common open source components within the open source community and industry
  - Learn to collaborate in teams
  - Learn to develop in teams, sharing code
  - Learn to document
- Several groups will be working on the same project assignment.
- **Contest - Best Group Project [presentation + app + teamwork]**

# Essay

The last deliverable will be an individual essay, outlining your efforts during the course, what you have learnt and feedback on improvements etc.

# Learning resources

- Online documentation and examples for Spring, Hibernate and Maven are good
- Note that some examples are old and do not use all capabilities that are now possible
- Book: Manning. “Spring in action” (you should read the whole book) <http://www.manning.com/walls5/>
- other ‘... in action’ books.

