

INF5750

Course content



University of Oslo
Department of Informatics

Background

- Course is run by *Information Systems* research group
- Technology and organisations, information infrastructures, software platforms etc
- Large part of the research in the research group evolves around DHIS2 (dhis2.org) - will be used in course

Course content

- Software development:
 - Develop software for Web
 - Client and server-side
- Theory:
 - Web development principles, e.g. REST
 - Open Source methodologies, principles etc
 - Platform ecosystems

Software development

- Experience building both client and server
- Use modern, open-source technologies and tools
- Follow RESTful Web service principles



Server and Client

- Mandatory assignments - server side
 - build a RESTful Web service (API) from scratch
 - use node.js - server-side javascript
- Group projects - client side
 - build Web application based on an existing API (DHIS2)
 - use HTML and javascript, including modern libraries

Assignment 1

- Objectives:
 - Get started with javascript (and node.js)
 - Get started with Git version control
 - Write a simple Web API
- Task:
 - Make a Web API that returns N cars with random license plate numbers
 - Do *not* use any libraries and frameworks for creating the API

Assignment 1

- Assignment with detailed text and instructions will be published by the end of Monday 28 Aug
- Deadline September 10

Theory

- Principles for Web development
- Open Source
- Platform ecosystems and boundary resources

REpresentational State Transfer

- RESTful principles for Web services:
 - resources have unique and stable identifiers
 - uniform interface for interacting with resources (GET, POST, PUT, DELETE etc methods)
 - stateless interaction - each request is independent
 - self-describing request and response messages (data and metadata)
 - resource referral - embedding references to related resources (hypermedia)

Open Source

- «New» thing when course was established 12 years ago
- Practical work will use open source tools and frameworks
- Topics:
 - Philosophy, methodologies, how open source software is developed and used
 - Licensing - copyright vs copyleft, free vs open

Platforms

A software platform is a software-based product or service that serves as a foundation on which outside parties can build complementary products or services.

Tiwana (2014)

- Examples: iOS, Android, Facebook, Chrome, **DHIS2**
- Topics:
 - Concepts, principles, architecture of software platforms
 - *Boundary resources* (e.g. SDKs, APIs) that allows 3rd parties to build on the platform

Curriculum

- Published on the course page
- 6 papers, 3 book chapters, some news/opinions pieces

Other learning resources

- A list with examples of resources to core technologies will be published on the course page
- Lots of tutorials and how-tos online on node.js, html, javascript, various frameworks
- stackoverflow.com answers many typical questions