Introduction

Mobile Web Services

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du Canton de Vaud

Objectives of the Course (1)

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- Learn how to design and implement an **end-to-end system**, where a mobile application interacts with services deployed "in the cloud".

- Get an overview of the **Java EE platform**. Be able to describe the role of the platform and of its main **APIs**.

  - Learn how to create an object-oriented **domain model** with the **Java Persistence API**.

  - Learn how to create **business and data access services** with **Enterprise Java Beans** (EJBs).

- Be able to describe the differences between the "**Big Web Services**" approach and the "**RESTful Services**" approach.

- Learn how to **design and specify a RESTful API**. Learn how to implement it with the standard **JAX-RS** API.

Objectives of the Course (2)

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- Get an introduction to the **android platform.** Understand the programming model and key abstractions (activities, intents, services, etc.).

- Learn how to **implement a mobile application** with the android platform:

  - How to create and manage the **user interface**

  - How to **interact with the REST API** previously created

  - How to use **various features** (local storage, sensors, etc.)

Objectives of the Course (3)

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- Get familiar with the notion of **gamification**. Be able to describe this concept and to illustrate it with examples. Understand the role of **gamification engines** and **gamification platforms**.

- **Design and implement a simple gamification engine**, exposing a RESTful API.

- Design and implement a **simple gamified mobile application**, which uses the RESTful API exposed by your gamification engine.

- This will be done in **teams of 4 students**.

Tools

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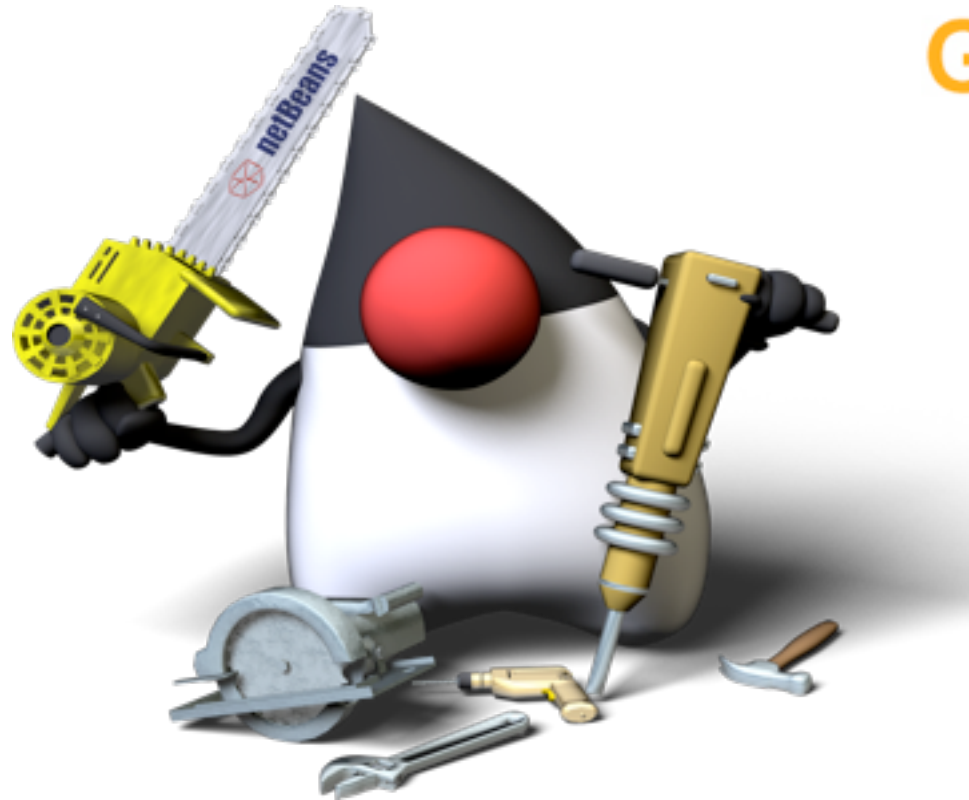
Schedule (back-end)

Thu — **Introduction / Analysis**
Intro to Java EE, environment setup, gamification workshop

Fri — **Domain Model, Data Access layer**
Intro to JPA

Mon — **Implementation (AM) + REST APIs (PM)**
Tools (server, browser) + import procedure

Tue — **Implementation (AM) + REST APIs (PM)**
Using and creating REST APIs

Wed — **Implementation**
Goal: have two fully functional back-end systems

Schedule (front-end)

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Thu

Mon

Tue

Wed

Thu

Today (14.03)

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- **Morning**

  - **08:30 - 08:45** : General introduction

  - **08:45 - 09:15** : High-level architecture, introduction to Java EE (motivations, history, overview)

  - **09:15 - 10:00** : Create groups, install tools, create repository on Github, start the tutorial ((http://netbeans.org/kb/docs/javaee/javaee-entapp-ejb.html))

  - **10:30 - 11:00** : Implementing services with EJBs

  - **11:00 - 11:45** : Continue with the tutorial

  - **11:45 - 12:00** : Introduction to gamification, gamification engine vs gamified application

- **Afternoon**

  - **13:00 - 13:45** : Creating a domain model (exercise)

  - **13:45 - 14:30** : Individual research & reading about gamification

  - **15:00 - 16:30** : Design of the gamification engine and of the gamified application (in parallel)

Let's Dive In!

Target Architecture