Software Development

Introduction

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Unit Informatie (GT 03.14.05)

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Who am I?

- Koen Pelsmaekers (oe = [u])
- @Groep T: 1986
- 40% ict/examombuds/study track counselor
  - my.groupt.be: exam schedule, appointments, ...
  - EPOS: big project for Groep T's former Education College
    - 35+ database tables, 500+ src-files, heavily used
- 60% programming courses
  - Long, long ago.... Pascal, C, C++, ... Kotlin
  - Java (first Java course in 1997)
  - Software Development
  - Lab OOP (sometimes)
  - Master EA/ICT: UX-driven Web Development (R&D Experience)/Distributed Applications
- Room GT 03.14.05 or GT 01.4.02/1

Goals of this course

- Advanced object-oriented programming
  - Polymorphism (inheritance, abstract class & interface) and dynamic (or polymorphic or runtime or late) binding
  - Data structures/streams/lambdas
  - Design patterns and refactoring
- Implementation in Java (>= 8)(current v. 15)
  - Good OO programming language (“better” than C, C++)
  - Many, many packages with useful classes
  - Used in many different domains
- UML
  - Use case diagram, class diagram, sequence diagram, state diagram
- Build your own Android app

Prerequisite knowledge

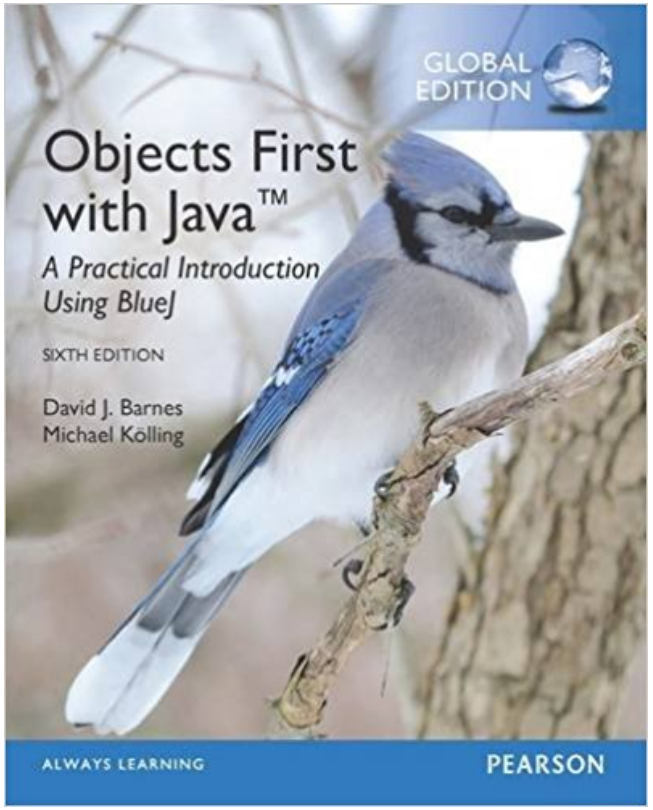
- Courses @ Group T
  - Object-georiënteerd programmeren en databanken (T2OGPD)
    or
  - Object-Oriented Programming and Databases (T2OOPD)
- Self-learning
  - Other OO-language introduction: C#, C++, Objective-C, …
  - Book: Objects First with Java (see: Courses @ Group T)

Content

- Part 1: introduction
- Part 2: inheritance
- Part 3: interface
- Part 4: collections
- Part 5: Java language features
- Part 6: lambdas and streams
- Part 7: design patterns
- Part 8: refactoring and clean code

Documentation

- Lectures
  - Slides (in pdf) on Toledo ("jit")
  - Book: Objects First with Java™
- Lab
  - On-line documentation
  - Assignments on Toledo
  - Software
    - Visual Paradigm (Diagrams)
      - free student license (version 16.0)
    - Java 8 or higher
    - IntelliJ IDEA (JetBrain)
      - free student license (Ultimate)
      - with AndroidStudio plugin or AndroidStudio
    - Android sdk



Course organisation and evaluation

- 4 credits
  => 4 * 25-30 hours = 100-120 hours study time
- Lectures
  - 18 hours (12 * 1.5 hours/week)
    - see schedule
  - Evaluation: exam (written) – cheat sheet of 1 A4 (both sides) hand written (= made by yourself) allowed
- Lab sessions
    - Stijn Langendries, Kymeng Tang, Gil Vranken, Yuri Cauwerts, Jeroen Wauters
  - 30 hours (12 * 2.5 hours/week)
    - see schedule
  - Evaluation: continuous assessment and Android project presentation