Object-Oriented Programming with Java

Introduction to the course

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Why learning Object-Orientation?

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Together we are stronger

- Extending your basic programming skills
- Object-Oriented programming techniques are a necessary pre-requisite to build proper applications
- Many commonly used development frameworks are based on objects
  - Android SDK (Java), Java Vaadin, PHP Symfony, PHP Laravel
- Object-Orientation is the most popular programming paradigm currently in use

Java learning path (one example)

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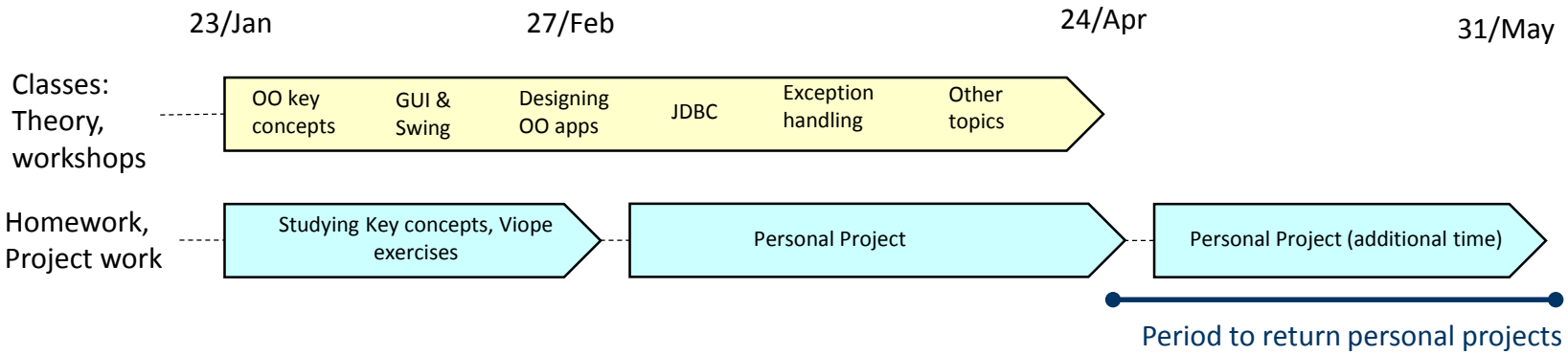
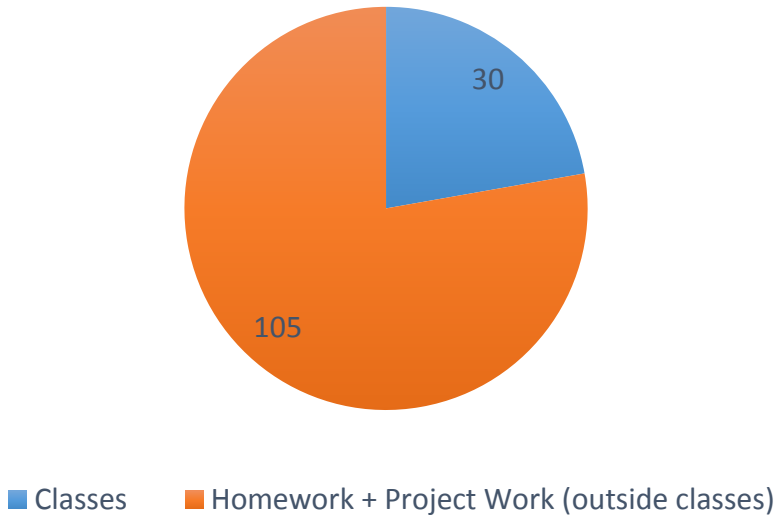
Together we are stronger

- Level 1
  - Basic programming constructs learned in the 1st year course – Fundamentals of Programming
  - Using a IDE (Eclipse)
- Level 2 (This course)
  - Object-Oriented principles
  - Designing and building simple OO applications
  - GUI design and programming (Swing and Eclipse's WindowBuilder)
  - Access to relational databases (JDBC)
  - Exception handling, debugging
  - Basics of version control (Github)
- Level 3
  - Applying Design Patterns (ex: MVC)
  - Implementing complex user interfaces
  - Implementing complex programming logic using complex data structures and Classes
  - More complex version control workflows (contributing in geographically dispersed teams)

Course agenda, workload and evaluation



Workload – 5 credits (135 hours)



Evaluation

- Individual project
- Application meeting a given criteria
- Points are given for different items
- Self-evaluation form

0-50 points: 0, Not passing the course
51-60 points: 1
61-70 points: 2
71-80 points: 3
81-90 points: 4
91-100 points: 5

Resources to support your studies

- Classes
  - Key concepts explained by the teacher
  - Guided exercises
- Optima (Agenda, course material)
- Asio (Date, time, classroom of contact sessions)
- Material provided by the teacher
  - Slides explaining key concepts
  - Student's Workbook
    - General guidance about different activities related to the course
  - Project's evaluation criteria
    - Evaluation targets and corresponding points
    - Self-evaluation form
- Books, Electronic books, Viope
  - Details available in the student's Workbook
  - Some programming exercises on Viope
- Github
  - Source code for exercises done at the Classroom

Teacher's and students' roles

- Teacher
  - "Paving the way" (key concepts, roadmap, targets, goals)
  - Contact sessions to help students getting quickly up-to-speed with key concepts and tools
  - Facilitating the learning process
  - Evaluation
  - No step-by-step instructions
- Student
  - "Walk the way" – Explore and learn
  - Reserve enough time for homework and to work on own project outside contact sessions (about 7 hours/week)
  - Ability and willingness to learn independently: study relevant resources, information search, hands-on work with own computer
  - Troubleshooting of issues
  - Comply with the evaluation targets and criteria. Self-evaluation