Further learning

Object-Oriented Programming with Java

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What you learned in this course

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- Key Concepts of Object-Orientation
  - Classes and objects, Attributes and Methods, Encapsulation and Information Hiding
- Building simple OO applications with Java
  - Coding with Java, Eclipse as an IDE
  - Swing (GUI)
  - JDBC (Database)
  - Event handling
  - Github for code hosting
- Design of OO applications
  - Structure of an OO application
  - Classes, attributes and methods
  - Data persistence (database)

This is enough to implement simple, stand-alone (single-user) desktop applications

Not enough for multi-user, enterprise level or web applications

Next steps to become a Java developer

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- Keep practicing coding with Java. Explore different data structures and programming techniques
  - Lists and arrays, Regular expressions, File handling and I/O, more complex programming logic, accessing databases, data persistence solutions
- **Start using a Java framework** (warning: steep learning curve, you must be comfortable with Java and OO key concepts)
  - Proven architectural model (ex: Model-View-Controller pattern)
  - Ready infrastructure and libraries to build complex applications
  - There are frameworks for Enterprise Level applications and Web Applications
    - https://www.romexsoft.com/blog/7-best-java-frameworks-for-2016/
  - Teacher's suggestions
    - Spring and Spring Boot (Enterprise level applications, https://spring.io/, https://projects.spring.io/spring-boot/)
    - Spring MVC (Spring module for developing Web applications, https://www.tutorialspoint.com/spring/spring_web_mvc_framework.htm)
    - Vaadin (Developing web apps with rich GUI's, vaadin.com/home)

If you want to get more study credits while learning Java

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- You can do an own project (5 ECTS)
  - Independent and self-directed learning (no teacher's support)
  - Choose a Java framework you would like to learn
  - Complete an online course or tutorial (proof of completion required)
  - Implement your own project (ex: Web application) using the framework
  - Deploy the app
  - Demonstrate the application to the teacher
- Total workload = 137 hours (5 ECTS)
- Interested?
  - Grade 4-5 required in Basic Java course and OO Programing with Java
  - Send an email to antonius.camara@laurea.fi to start planning the process