

ADVANCED JAVA

COURSE INTRODUCTION

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DIKU, University of Copenhagen

Formalities

Software and Documentation

Questions

FORMALITIES

Who we are:

- Vivek Shah (bonii@di.ku.dk)
- Yiwen Wang (y.wang@di.ku.dk)
- **Course responsible:** Marcos Vaz Salles (vmarcos@diku.dk)

Course web page:

<https://absalon.instructure.com/courses/27655>

Contact one of us ASAP if you do not have access.

COURSE OBJECTIVES

- Focus on productive concurrent and distributed programming using Java.
- Introduction to multiple Java libraries and programming language features.
- Topical discussions on programming safety in Java.
- Topical discussions on new functional (declarative) programming features in Java.

- Divided into lecture and lab sessions.
 - Lectures in the morning (9:15 - 12:00). Breaks on demand.
 - Lab sessions in the afternoon (13:30 - 17:00).
 - Both in 4-0-24 (Biocenter) on Aug 20, 21, 23 and 24.
 - No lecture on Aug 22. Self-study exercise session instead.
 - Short workshop style course → Informal setting, geared towards hands on self learning.
 - Remember “Ask and it shall be given”.

- Daily assignments on first three lecture days, 3 in total.
 - Assignments available at 11:30, solved during lab session.
 - **Deadline for hand-in 23:59.**
 - Only 1 re-submission of assignments 1 and 2. Re-submission deadline **23:59 on Aug 23.**
 - All assignments are pass/fail.
 - Points per passed assignment:
 - Assignment 1 1 point
 - Assignment 2 2 points
 - Assignment 3 2 points
 - **At least 3 points to qualify for exam.** Previous year's qualification counts too.
 - We expect you to hand in all assignments.
- Work in groups of 2-3.

- Individual take-home exam at the end.
- Pass/fail.
- Approx. 14 hours of work.
- Exam released Monday Aug 27 at 9:00. Hand-in Friday Aug 31 at 23:59.

TENTATIVE SCHEDULE

Day	Morning	Afternoon
Aug 20	Introduction ; Java(Misc) ; JUnit Threads ; Data Parallelism	Lab (Assgn 1)
Aug 21	Concurrency	Lab (Assgn 2)
Aug 22	No lecture	Lab exercise (JDBC, Generics, Reflection)
Aug 23	Communication ; Safety	Lab (Assgn 3)
Aug 24	Lambdas and Streams Feedback session	Lab exercise Exam Preparation
Aug 27	<i>Exam (at home) release at (9:00)</i>	
Aug 31	<i>Exam (at home)</i>	<i>deadline at (23:59)</i>

SOFTWARE AND DOCUMENTATION

- We will be using Eclipse and Java 10.



<http://www.eclipse.org/>

```
$ sudo apt-get install eclipse
```

- You are free to use something else, but then you are on your own.
- **Time is of the essence.** Spend a minimum of time on setting things up.
- We will be using lots of Java libraries ([JUnit 4.12](#), [Jetty 9.4](#), [Apache Derby 10.14.2.0](#), [XStream 1.4.10](#), [Kryo 4.0.2](#)). We will provide jars with assignment handouts.

- General Java Reading - [Thinking in Java](#), Bruce Eckel, 4th ed.
- General Java Reading - [Java Language Specification \(Java 10\)](#).
- Java Concurrency - [Java Concurrency in Practice](#), Brian Goetz.
- Java Safe Programming Practices - [Effective Java](#), Joshua Bloch.
- Java 8 In Action - Raoul-Gabriel Urma, Mario Fusco, and Alan Mycroft ([Modern Java in Action](#))
- JUnit - [JUnit 4 Documentation](#).
- Jetty - [Jetty 9.4 Documentation](#).
- Derby - [Derby 10.14.2.0 Documentation](#).
- XStream - [XStream 1.4.10 Documentation](#).
- Kryo - [Kryo 4.0.2 Documentation](#).

COLLABORATING

- Solve assignment in collaboration or;
 - Solve individually, discuss, hand in best solution.
 - Groups remain same throughout the assignments.
 - Inform us of group members before 14:00 on Aug 20 otherwise we will automatically form groups of 2.
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- Distributed version control (e.g. git, svn, DropBox, ...) is probably overkill.



Course content prepared in collaboration with
Ulrik Terp Rasmussen, Frederik Meisner
Madsen, Danil Annenkov.

QUESTIONS

Questions?

