Advanced Algorithms and Data Structures

General information

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Overview

- master level course
- 6 ECTS credit points
- given by Dr. Wolfgang Jeltsch
- builds on the bachelor course “Algorithms and Data Structures” (ITI0050)
- topics:
  - more in-depth treatment of selected topics from the bachelor course
  - further algorithms and data structures
- based on the book “Introduction to Algorithms” (3rd edition) by Corman, Leiserson, Rivest, and Stein (MIT Press)

Structure

- weekly classes:

  lecture time to be announced
  exercise/lab time to be announced

- preferrable to use your own laptop in the lab
- homework:
  - roughly every two weeks
  - no deadline extensions
- exam (some time after the classes)

Ada

- focus:
  - reliability
  - efficiency
  - reusability
- paradigms:
  - procedural programming
  - object-oriented programming
- resonably close to pseudo code in text books:
  - imperative
  - more high-level than C and C++
  - no mandatory “object-oriented clutter” in contrast to Java and C#
- latest standard from 2012
- portable open-source software:

  compiler GNAT (GNU Ada Translator)

  IDE GPS (GNAT Programming Studio)
- several online tutorials, in particular the Ada 95 Lovelace Tutorial

Communication

- course web page:

  `http://ioc.ee/~wolfgang/teaching/iti8590/2017/`

- mailing list, containing students and lecturer:

  `iti8590@lists.softbase.org`