TDDB29 Compilers & Interpreters
TDDB44 Compiler Construction
2007

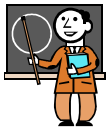
Organizational Issues

Christoph Kessler, IDA

Staff 2007

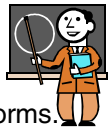
- Christoph Kessler, Examiner, Course leader
- Jonas Wallgren, Course assistant TDDB29
- Mikhail Chalabine, Course assistant TDDB44
- Adrian Pop, Lab assistant TDDB29 + 44
- Gunilla Mellheden, Course secretary
- Erik Larsson / Peter Dalenius, Studierektor

Lecture Plan



- F1: Introduction — Christoph Kessler (CK)
- F2+3: [opt. f. TDDB44] Short introduction to formal languages and automata (CK)
- F4: Lexical analysis; Symbol tables (CK)
- F5: Parsing; Top-Down Parsing (CK)
- F6: Top-Down Parsing cont., Bottom-Up Parsing (intro) (CK)
- F7: Bottom-Up Parsing (CK)

Lecture plan (cont.)



- F8: Semantic analysis and internal forms. Syntax-driven translation. (CK)
- F9: Memory Management; Run-time organization (CK)
- F10: Code optimisation (CK)
- F11: Code generation, general (CK)
- F12: [opt. f. TDDB29] Code generation for RISC and superscalar processors (CK)
- F13: Error management. Interpreters (CK)
- F14: Bootstrapping. Compiler Generators (CK)

Lessons

5 for TDDB29, by Jonas Wallgren
4 for TDDB44, by Mikhail Chalabine

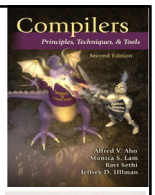
- Exercises on background theory (TDDB29)
- Preparation for the lab assignments
- Exam preparation session

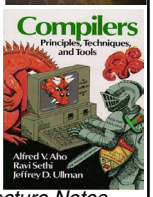
Labs

- Separate for TDDB29 (1.5p) and TDDB44 (2p)
  - TDDB29: 3 lab groups
    - Jonas Wallgren (2), Adrian Pop (1)
  - TDDB44: 3 lab groups
    - Mikhail Chalabine (2), Adrian Pop (1)

- Teams of size 2
- Register via webreg (linked from the course homepages)
  - Deadline for registration: Next friday (2 / 11 / 2007)
- Lab deadline: 14/12/2007

Literature





Mandatory:

- Aho, Lam, Sethi, Ullman: *Compilers Principles, Techniques, and Tools, Second Edition.* Addison-Wesley, 2006. (Also as paperback, 2007)
- Or the old, first edition (still ok) Aho, Sethi, Ullman: ..., 1986.

Mandatory for TDDB44:

- *Compiler Construction Lab Assignments*, Kompendium, 2005, Bokakademin

Optional:

- P. Fritzson: *TDDB44 Compiler Construction Lecture Notes*, 2005, and other lecture notes, are on the course home page.
- *Compiler Construction Exercises*, Kompendium

For more information ...

See the course homepages,

- www.ida.liu.se/~TDDB29
- www.ida.liu.se/~TDDB44

- Schedule
- Reading directions
- References to additional literature
- Lab instructions for TDDB29
  - (but the lab skeletons are in `/home/TDDB29`)

What comes after this course?

- New follow-up course, HT 2008: ***TDDC86 Compiler optimizations and code generation, 4p*** (C. Kessler)
- Join our compiler research team at PELAB and do a ***master thesis project*** in compiler technology!
  - Compiling for OO modeling languages (P. Fritzson)
  - Natural semantics (P. Fritzson)
  - Compiling for parallel / embedded systems (C. Kessler)
  - Code generation (C. Kessler)
  - Debugger technology (P. Bunus)
  - … and more!

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