TDDD55 Compilers & Interpreters
TDDB44 Compiler Construction

2011

Organizational Issues

Peter Fritzson, IDA

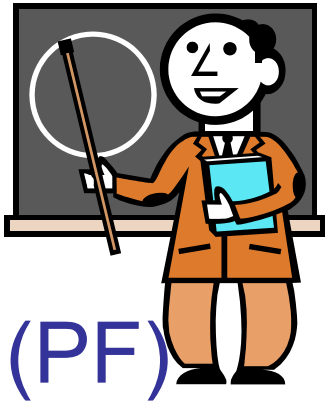
Staff 2011

- Peter Fritzson (PF) , Examiner, Course leader, Lecturer
- Jonas Wallgren (JW), Lecturer

- Kristian Stavåker, Course assistant TDDD55 and TDDB44; Lab/tutorial assistant TDDB44
- Sergio Raffilio, Lab assistant TDDB44
- Kristian Stavåker, Lab/tutorial assistant TDDD55

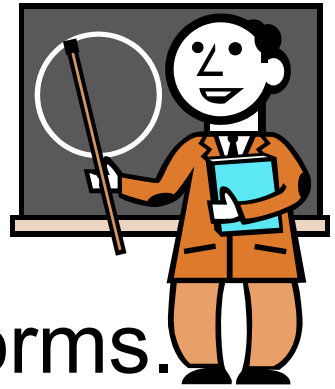
- Gunilla Mellheden, Course secretary
- Patrick Lambrix, Studierektor

Lecture Plan



- F1: Introduction Peter Fritzson (PF)
- F2+3: [opt. f. TDDB44] Short introduction to formal languages and automata (JW)
- F4: Lexical analysis; Symbol tables (JW)
- F5: Parsing; Top-Down Parsing (JW)
- F6: Top-Down Parsing cont., Bottom-Up Parsing (intro) (JW)
- F7: Bottom-Up Parsing [LR(0) items opt. f. TDDD55] (JW)

Lecture plan (cont.)



- F8: Semantic analysis and internal forms. Syntax-driven translation. (JW)
- F9: Memory Management; Run-time organization (JW)
- F10: Code optimization (PF)
- F11: Code generation, general (PF)
- F12: [opt. f. TDDD55] Code generation for RISC and superscalar processors (PF)
- F13: Error management. Interpreters (PF)
- F14: Bootstrapping. Compiler Generators (PF)

Lessons/Tutorials

4 for TDDD55, by Kristian Stavåker

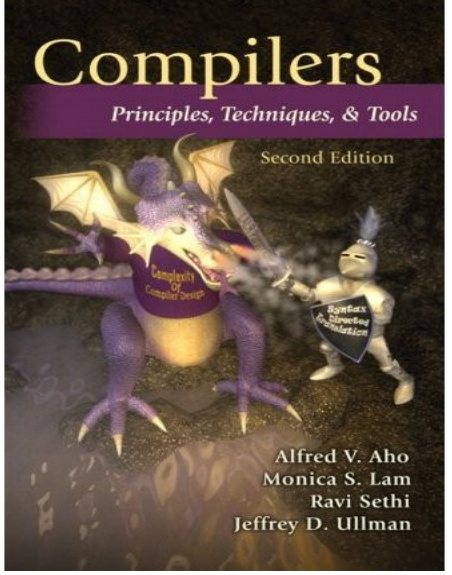
4 for TDDB44, by Kristian Stavåker

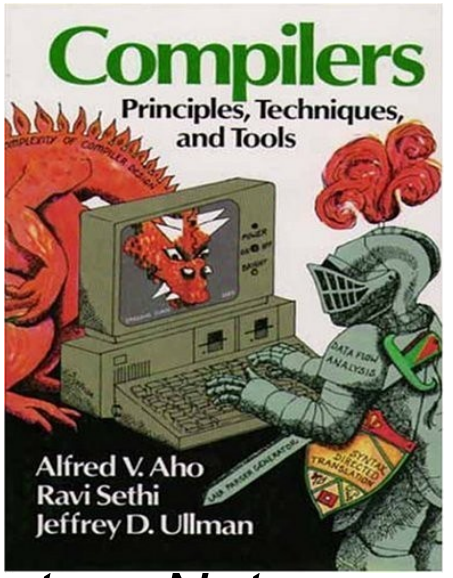
- Exercises on background theory (TDDD55)
- Preparation for the lab assignments
- Exam preparation session

Labs

- Separate for TDDD55 (2hp) and TDDB44 (2hp)
  - TDDD55: 2 lab groups
    - Kristian Stavåker (2)
  - TDDB44: 4 lab groups
    - Kristian Stavåker (2), Sergio Raffilio (2)
- Teams of size 2
- Register via webreg https://www.i
  (Also linked from the course home
  - Deadline for registration:
    Next friday (Oct 30/ 2011)
- Lab deadline: 15/Dec/2011
- **Extra TDDB44 Exam 3 points**: If your TDDB44 labs are completed and approved latest at the deadline you get 3 points at the exam.

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, 2011, Bokakademin

Optional:

- P. Fritzson: *TDDB44 Compiler Construction Lecture Notes*, 2011, 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/~TDDD55
- www.ida.liu.se/~TDDB44

- Schedule
- Reading directions
- References to additional literature
- Lab instructions for TDDD55
  - (but the lab skeletons are in `/home/TDDD55`)

What comes after this course?

- Join our compiler research team at PELAB and do a ***master thesis project*** in compiler technology!
  - Compiling for OO modeling languages (P. Fritzson)
  - Operational semantics based compiler generation (P. Fritzson)
  - Compiler bootstrapping, Java code gen, international open source www.openmodelica.org (P. Fritzson)
  - OO modeling language compilation on parallel machines (P. Fritzson)
  - Compilation & parallel programming on industry clusters (P. Fritzson)
  - Compiling for parallel / embedded systems (P. Fritzson, C. Kessler)
  - Code generation for embedded systems (C. Kessler)
  - Debugger technology (P. Fritzson)
  - … and more!

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compiler technology