Programming in the large

Bertrand Meyer

ETH Zurich, 29 March – 2 July 2004
Folien für diese und alle weiteren Vorlesungseinheiten werden auch in Deutsch verfügbar sein.

Sie können die deutschen Folien auf der Webseite der Vorlesung finden.
- Exercise sessions (Übungsgruppen) are available in German and English (or if we get enough requests, French)

- Languages spoken by assistants: German (several varieties), English, French, some Italian
Goals of the course

- Provide you with solid understanding of:
  - The difference between “programming” and software engineering
  - Principles of software engineering and in particular software quality
  - Object technology principles and methods
  - The practice of object-oriented analysis, design and implementation
  - Some recent developments
Topics

- Quality issues
- The software lifecycle
- Project management
- Validation and verification techniques
- Software metrics
- Software architecture
- Abstract Data Types
- Classes and objects
- Inheritance techniques
- Other O-O techniques: genericity, persistence, ...
- Design patterns
- O-O language mechanisms
- ...

Chair of Software Engineering
Teaching staff
E-mail: Bertrand.Meyer@inf.ethz.ch
Office: RZ J6
Secretary: Ruth Bürkli, (01) 632-5277
The assistants

- Karine Arnout
- Benno Baumgartner
- Till Bay
- Marcel Beer and Florian Negele
- Werner Dietl
- Marcel Kessler
- Bernd Schoeller
- Tobias Widmer
Exercise sessions

- All groups have **one session a week**:
  - Friday, 10:00 – 12:00, two rooms
  - Friday, 13:00 – 15:00, various rooms

- Registration in a few moments
Mailing list: paris@se.inf.ethz.ch

- E-mail: Karine.Arnout@inf.ethz.ch
- Office: RZ J4
- Phone: 01/ 632 47 23
- Language: French (English)
- Room:
  - Friday: ML J37.1 (13:00 – 15:00)
Mailing list: zion@se.inf.ethz.ch

- E-mail: benno@student.ethz.ch
- Language: German (English)
- Room:
  - Friday: ML H34.3 (13:00 – 15:00)
Mailing list: kualalumpur@se.inf.ethz.ch

- E-mail: till.bay@inf.ethz.ch
- Office: RZ J22
- Phone: 01/ 632 76 33
- Language: German (English, French)
- Room:
  - Friday: ML F38 (13:00 – 15:00)
Mailing list: helsinki@se.inf.ethz.ch

- E-mails: marcel.beer@student.ethz.ch
  negelef@student.ethz.ch
- Language: German (English)
- Room:
  - Friday: HG E33.3 (13:00 – 15:00)
Mailing list: salzburg@se.inf.ethz.ch

- E-mail: Werner.Dietl@inf.ethz.ch
- Office: RZ J8
- Phone: 01/ 632 79 42
- Language: German (English)
- Room:
  - Friday: IFW D42 (10:00 – 12:00)
Mailing list: aberdeen@se.inf.ethz.ch

- E-mail: kesslema@student.ethz.ch
- Language: German (English)
- Room:
  - Friday: HG F5 (13:00 – 15:00)
Mailing list: berlin@se.inf.ethz.ch

- E-mail: Bernd.Schoeller@inf.ethz.ch
- Office: RZ J5
- Phone: 01/ 632 47 55
- Language: German (English)
- Room:
  - Friday: RZ F21 (13:00 – 15:00)
Mailing list: lima@se.inf.ethz.ch

- E-mail: Bernd.Schoeller@inf.ethz.ch
- Office: RZ J5
- Phone: 01/ 632 47 55
- Language: German (English)
- Room:
  - Friday: NO G33 (10:00 – 12:00)
Mailing list: venezia@se.inf.ethz.ch

- E-mail: widmer@id.ethz.ch
- Language: German (English)
- Room:
  - Friday: HG D3.1 (13:00 – 15:00)
Exercise sessions

- Registration:
  - Students with family names starting with A until F (included) should see Werner and Bernd (Friday morning sessions)
  - Other students should see Karine, Benno, Till, Marcel, Marcel and Florian, Bernd, Tobias (Friday afternoon sessions)
  - Choose your session according to preferred language, schedule constraints, and availability
About me

- At ETH for two years
- In industry for most of my career
- Published a number of books, in particular Object-Oriented Software Construction (2nd edition: 1997)
- Plan: help the industry build the best software possible
Practical information
Schedule

Lectures:
- Monday, 13:00 – 14:00, ML D28
- Wednesday, 8:00 – 10:00, ML D28

Exercise sessions:
- Friday, 10:00 – 12:00, two rooms
  or
- Friday, 13:00 – 15:00, various rooms
Course material

- Course page:
  http://se.inf.ethz.ch/teaching/ss2004/0004/index.html
  → Check it at least twice a week

- Lecture material:
  - Lecture slides
  - Textbook:

- Exercise material:
  - Exercise sheets
  - Master solutions
Electronic forums

Discussion forums:
- Help forum for the whole course: [http://se.inf.ethz.ch/teaching/ss2004/0004/forum/](http://se.inf.ethz.ch/teaching/ss2004/0004/forum/)
  Registration opened during the first two weeks of the semester
- Mailing list for each group

Advice and rules:
- Use the forums and mailing lists! Learning to program is hard: take advantage of every help you can get.
- Don’t be shy. There are no stupid questions.
- Criticism welcome, but always be polite to every participant and observe the etiquette.

To email the whole teaching team (professor and assistants):

  info4-assi@se.inf.ethz.ch
Decide on office hours and include them (for girls only, and for all students?)

Michela Pedroni; 16.09.2003
Exercise sessions

- Make sure to attend all sessions

- Exercise sheets will be distributed by your assistant during the exercise session

- Do all exercises (you’ll need them, see “Testat”)
Exercises, “Testat” regulations

- "Testat": Needed for admittance to the exam.
- Exercises:
  - 5 weekly exercises
  - 2 classroom exercises
  - 1 project exercise
- To get the “Testat” you need to have done at least:
  - 4 weekly exercises
  - 1 classroom exercise
  - 1 project exercise
  - Must show serious effort to address the questions
  - Must have filled out questionnaire
- Military services or illness ⇒ contact your assistant.
Programming environment

- EiffelStudio download:  
  http://www.eiffel.com/downloads/

- Free version available for Windows, Linux and MacOS
Demo of the TRAFFIC software
Michela Pedroni; 16.09.2003

Change this URL...
pedronim; 12.10.2003
Exam

- Between September, 10th and October, 14th
- 3h exam (including 15 minutes break) for both Info3 and Info4
- No material allowed
End lecture 1