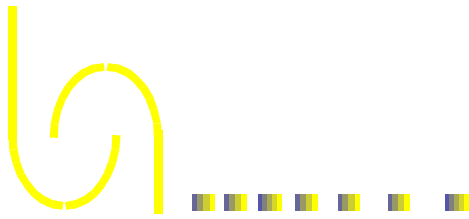


Distributed Systems

Administrative Issues and Overview

Winter 2003





Overview of Contents

● Introduction

- What is a distributed application/system?
- What is it good for?
- What are difficulties?

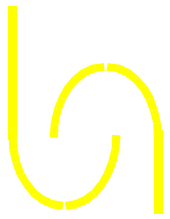
● How to build distributed applications

- OS basics/important communication protocols
- TCP sockets
- Distributed Objects with RMI and CORBA
- web applications

● Important issues in distributed applications

- name service
- distributed file systems
- security
- replication





Contents Chapterwise

- Part 1: Characterization of DS
- Part 2: System Models
- Part 3: Interprocess Communication with Sockets
- Part 4: Distributed Object Systems with CORBA and RMI
- Part 5: Creating Applications for the Web
- Part 6: Name Services
- Part 7: File Services
- Part 8: Security
- Part 9: Replication

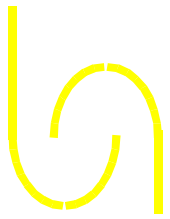




What we will not cover

- Distributed systems/applications are basic technology in many other fields, for instance distributed databases. Therefore, we will not cover topics which are rather covered there
 - transaction processing
 - distributed multimedia systems
 - multiprocessors and shared memory

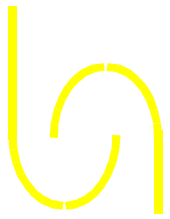




Requirements

- Good knowledge of basic Java programming!!
 - Editing, compiling, and executing programs
 - writing simple Java programs consisting of more than one class
 - know how to use Java IO
- good knowledge of **networking** (lower layers up to TCP) - distributed systems rely on an existing network infrastructure
- It would be very helpful to have some experience with the Linux operating system, or even better, have it installed on your Laptop next to Windows





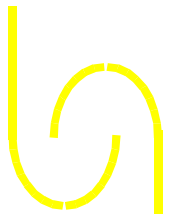
Literature

- Coulouris et al.: „Distributed Systems“, 3rd ed., Addison-Wesley, 2000.
- Steflik and Sridharan: „Advanced Java Networking“, 2nd ed., Prentice Hall, 2000.



Optional:

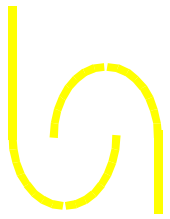
- Eberhart, Fischer: „Java-Bausteine für E-Commerce-Anwendungen“, Hanser-Verlag, 2000.



Course Format

- 4 hours per week
 - 2 hours lecture (Schuba)
 - 2 hours tutorial (Walther)
- Lectures will present the material in a rather theoretic way, while you have the opportunity to practice everything in the tutorials
- Tutorials will mainly be Java programming and discussion of practical issues

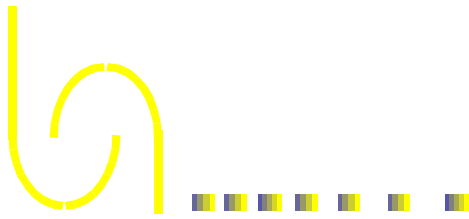




Exams and Grading

- Mid-term exam (written, closed book)
- Final exam (computer, open-book)
- several programming projects
- written homework assignments





Your Lecturers



Christoph Schuba
Lectures



Ulrich Walther
Tutorials

