Distributed and mobile programming

Teachers

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Training Goals

- To introduce the issue in the development of distributed and mobile systems
- To present the technologies for the development of distributes applications
- To present the platforms for mobile devices
- To present the technologies for the development of mobile applications

Program

Distributed programming

- From computer networks to distributed systems
- Network operating systems and distributed operating systems
- Distributed communication and synchronization
- Objects technologies for distributed applications, issues
- Example: Java RMI
- Multi-Agent Systems: definitions, challenges, decisional models and real world applications
- Autonomic Computing: definitions, challenges and applications.

Mobile programming

- Software Engineering in Android: from design challenges to memory and power management.
- Architectures for multi-platform development.
- The Linux kernel as a reference and working environment
- Theory and practice of kernel hacking
- Analysis and modification of selected components of a kernel
- Profiling and debugging within a kernel

Exam

- 9 CFU
  - Oral exam concerning all the contents
  - Project

Projects

- Some choices

1. Development of a distributed application
2. Development of a mobile application
3. Working with the Android kernel

- See the course web site for more details

Material

- Course site:
- http://didattica.agentgroup.unimore.it/wiki/index.php/Programmazione_distribuita_e_mobile

- Slides of the book "Distributed Systems – Principles and Paradigms", can be found at:
  - http://www.prenhall.com/tanenbaum

Reference texts

- Teachers' slides

- Books:
  - A. Tanenbaum, M. van Steen, Distributed Systems - Principles and Paradigms, Prentice Hall
  - An Introduction to Multiagent Systems by Michael Wooldridge. Published in February 2002 by John Wiley & Sons (Chichester, England). ISBN 0 47149691X