

Arquitectura de Sistemas de Internet

Course Topics

- Large Scale Distributed Systems
- Architectures (client-server, publish-subscribe, P2P, ...)
- WebServices (SOAP/REST)
- Data storage on the internet (noSQL databases)
- Consistency and replication
- Cloud computation (IaaS, PaaS, SaaS)

Objectives

- The main objectives of this course is to give students enough knowledge and competencies to the development and evaluation
 - of Internet based computational systems
 - and distributed applications.

Objectives

- At the end of this course students will be able to:
 - Understand, compare and evaluate the different Internet systems architectures
 - Understand and present solutions to the various problems present in the development on Internet based systems
 - Evaluate and apply different technologies and models in the solution of problems in the context of the Internet
 - Develop Internet based systems, using available technologies, storage, processing, communication and presentation

Detailed planing

- Distributed systems
 - Challenges
 - Architectural models
- Remote invocation
- Naming
- Indirect communication
- Web services
- Mobile code
- Cloud
- P2P / DHT

Instructor

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 - 213100347
- Office at INESC-ID
- Office hours
 - Fridays 10h00 to 17h00
 - With appointment
 - Or at your own risk

Grading

- Exam
 - 50% final grade
 - Minimum grade 9.5
- Project
 - 50% final grade
 - Minimum grade 10.0

Project

- Programming assignment
 - Large scale distributed system
 - Using presented technologies and techniques
- To be developed during the semester
 - In groups of two students
 - To be submitted on last week of classes
- Assigned in the middle of the semester
 - Students can proposed topic
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Classes

- Theoretical
 - Tuesday and Friday
 - 8h00 .. 9h30
 - EA3
- Laboratory
 - Tuesday
 - 9h30..11h00
 - SCDEEC
 - Wednesday
 - 11h00..12h30
 - SCDEEC

Reading material

- Tannenbaum, A., Steen, M., “Distributed Systems: Principles and Paradigms”, Prentice-Hall International, 2007.
- Coulouris, G., Dollimore, J., Kindberg, T., “Distributed Systems, Concepts and Design”, Addison-Wesley
- Further material
 - PDF Documents to be posted on the web page

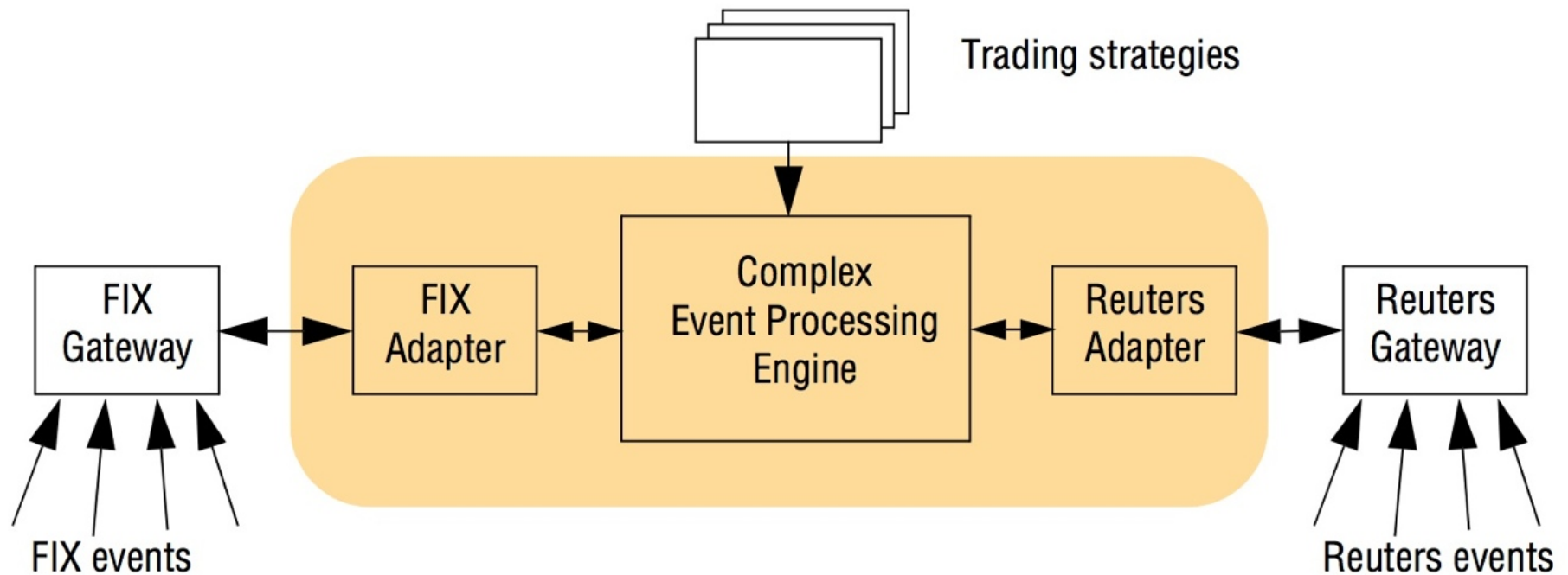
Background

- Modern Distributed Systems rely on networking
 - TCP/IP
- Approval on Psis or RCI
 - Not necessary
 - Recommended

Distributed Systems

Examples

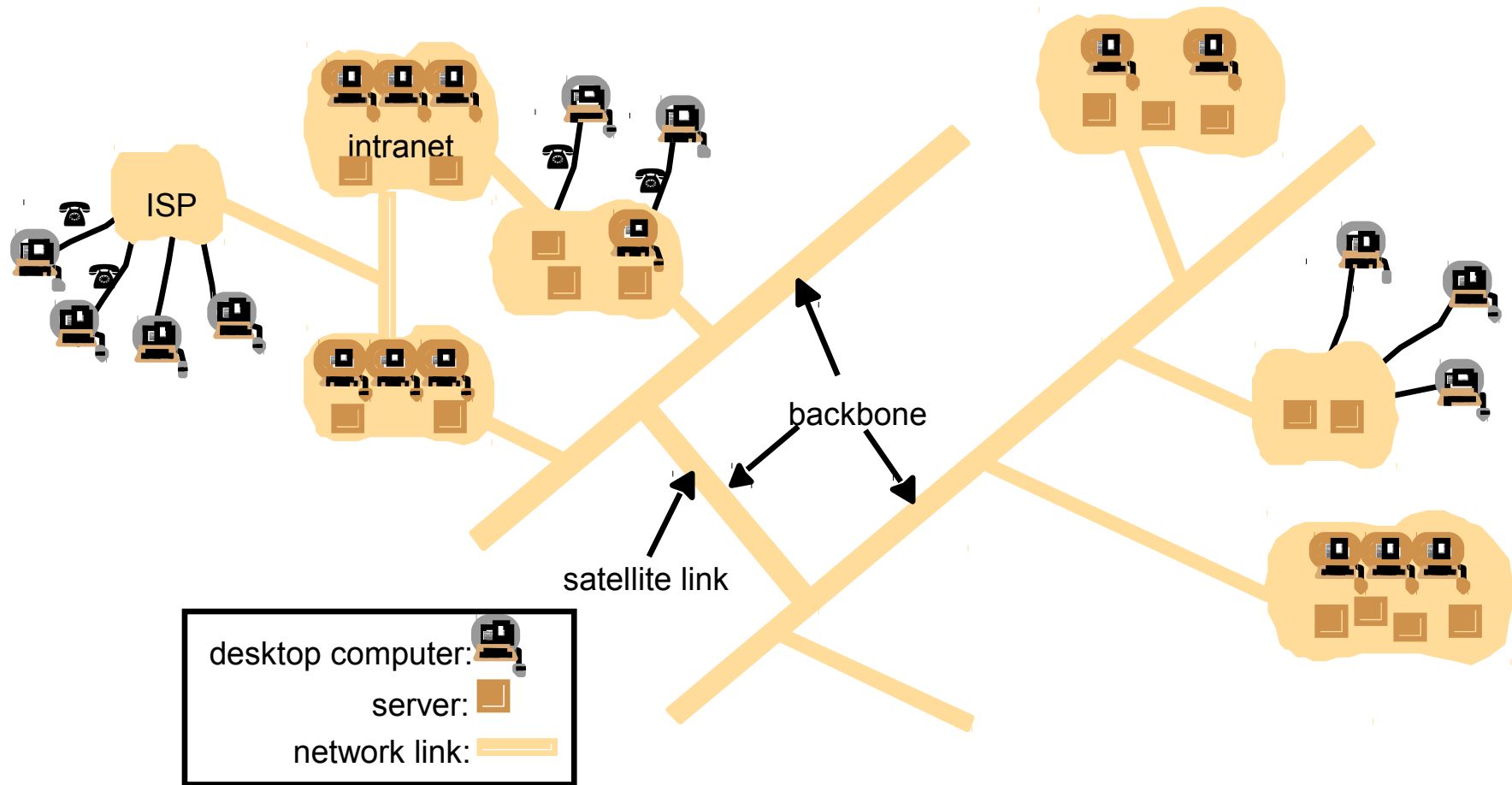
- Financial trading



Distributed Systems

Examples

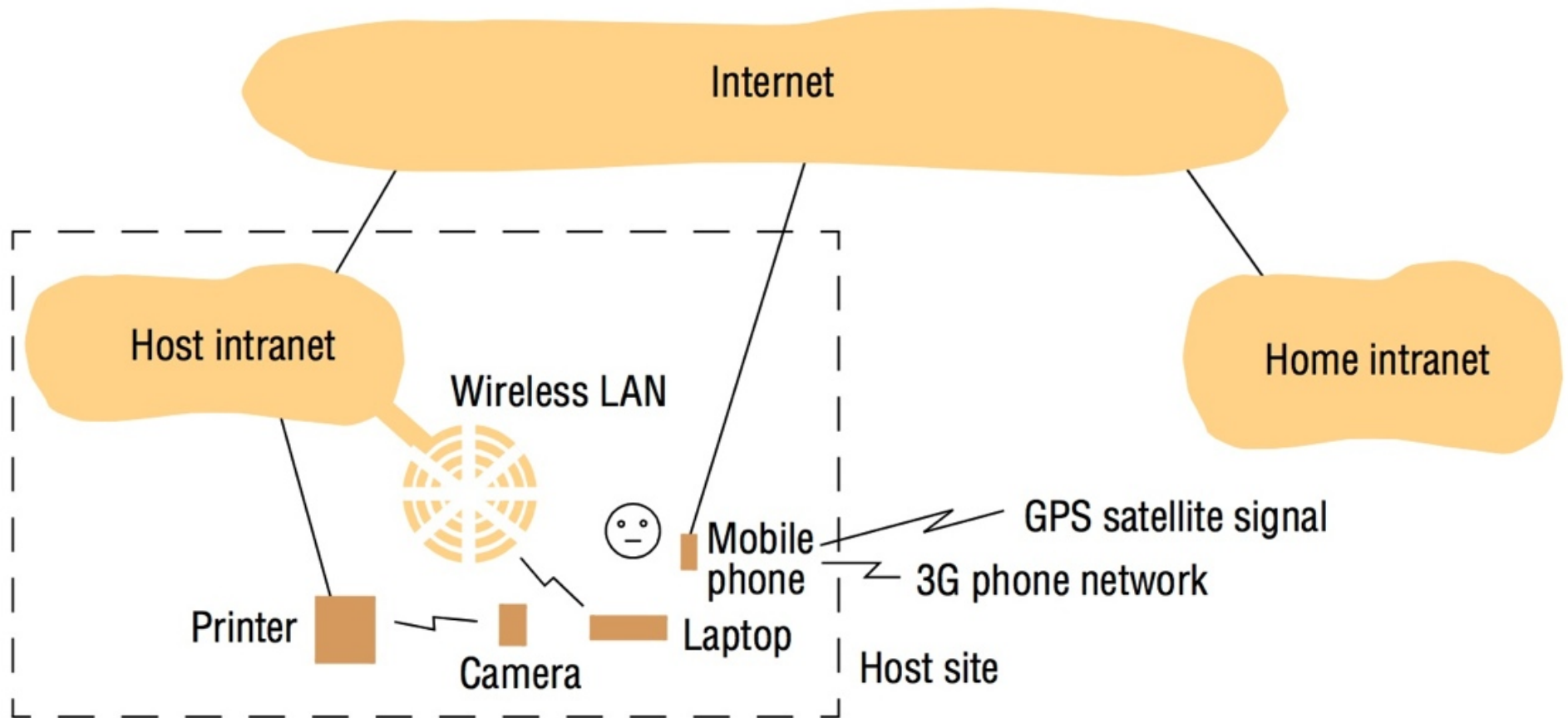
- Internet



Distributed Systems

Examples

- Mobile computing



Distributed Systems

Examples

- Cloud

