Program

In this course we will focus on a fundamental aspect of Distributed Computing: distributed algorithms. In general, distributed algorithms are more difficult to design, analyze, implement and debug than sequential algorithms. Today, they are used in a multitude of real systems, in a wide range of applications.

There exists a rich theory in distributed algorithms, comprising modelling the computing environment, types of problems, methods for analyzing correctness and complexity, and impossibility results (important because they prove that some problems cannot be solved in some models of distributed computing).

During the course we will study several classical problems, which involve communication, synchronization, resource management and consensus -- all important in solving the practical problems that arise when trying to solve some of the common jobs of today, be it indexing pages in the internet or writing collaborative tools for mobile devices.

Grading

Grades will be determined by a combination of four exams (one and half hours) and class participation. The weight of these will be

- Exams (average of four exams): 95%
- Class Participation: 5%

Exams:

- E1: 30/3 (Wednesday)
- E2: 27/4 (Wednesday)
- E3: 23/5 (Monday)
- E4: 27/6 (Monday)

Exams Results

Doubts

After classes, or any other time, if agreed by email (ranido at ic dot unicamp dot br)

Bibliography

We will use (mainly) material from:
Introduction: characterization of Distributed Computing
A model of distributed computations
A simple synchronous model of distributed computations
Example of a distributed algorithm in the synchronous model

Modified 2016-02-29