

## Election

**Theme:** Practical Assignment N.3

**Deadline:** 12/2/2019

## 1 Objective

The objective of this work is to implement the bully algorithm for election.

## 2 Details

The dependency on a single, centralized, server can raise some issues to the continuous operation of modern systems. With the constant demand for larger scale systems, the capacity of the central server can become rapidly insufficient, compromising the services that depend on it.

One of the common procedures in current applications is the necessity to have a process as coordinator, initiator or, otherwise, perform a special role. As it is well known, the coexistence of more than one of these processes can lead to inconsistencies and data loss.

In this context, there may be a need for coordination between several processes so that a single process will assume the specific role. In distributed systems it is necessary to implement specific algorithms with these functions.

One of the most simple algorithms is the bully algorithm. With this work you have to implement in Java, using JGroups for communication, this election algorithm. You should develop a single node (or peer) that will coordinate with others according to the algorithm implemented.

Extra points will be awarded according to the functionality implemented. Rich user interfaces will also be valued.

## 3 Minimum requirements

1. The practical assignment can be implemented in groups up to 2 students
2. The programming language has to be Java
3. The application has to be implemented in JGroups
4. As proof, the systems should be demonstrated with at least five peers running on the local PC

## 4 Extra points

Conceptually, it will be valued the use of software engineering methodologies.

## 5 Deliverables

1. All the material should be submitted through the Virtual.IPB platform, in the “Practical Assignments” section
2. Report in PDF
3. Compressed archive with source code directory
4. Deadline on the 12<sup>th</sup> february of 2019, 23h59