

CS4231 Week 1 Assignment

Tan Yee Jian

January 17, 2021

Problem 1

Devise a mutual exclusion algorithm for n processes by using *Peterson's 2-mutual-exclusion algorithm* as a black-box.

Solution

Intuitively, we create a “tournament bracket” for the processes, and for each pair in the “bracket”, the processes are promoted to the next level using *Peterson's Algorithm*.

Formally, we have the processes as leaves in a binary tree, and for each non-leaf node in the tree, its value is the “winning” process among its children, chosen by *Peterson's Algorithm*.

```
class Whatever implements Lock {  
    public Whatever(int N) {  
  
    }  
}
```