Lecture: Concurrency Theory and Practise
Just for Fun

http://proglang.informatik.uni-freiburg.de/teaching/concurrency/2014ws/

Exercise Sheet 0

24.10.2014

Congratulations!

You are one of P students of the highly ambitious lecture "Concurrency Theory and Practise", congratulations! Next week in the exercise session, we test how well you work together while being isolated from each other. Until then, you may meet and plan a strategy together.

Test setup

You will be put isolated cells for the duration of the test. Further, we will prepare a "switch room" which contains a light switch that is either *on* or *off*.

Every now and then, the TA will select one student at random to enter the "switch room". This student may turn the switch on or off, or may leave the switch unchanged. Nobody else will ever enter this room.

Each student will visit the switch room arbitrarily often. (More precisely, for any N, eventually each of you will visit the switch room at least N times.

At any time, any of you may declare "We have all visited the switch room at least once." This will put an end to the test. If your claim is correct, you all pass the test and will enjoy the lecture a lot. If the claim is incorrect, however, you will have to work extra hard on the exercise sheets, and enjoy the lecture nevertheless!

- Devise a winning stratey when you know that the initial state of the switch is *off*.
- Devise a winning strategy when you do not know what the initial state of the switch is.

Hint: Not all students need to do the same thing.