

Logic Model Checking, CS 118
Final **Assignment**

This assignment counts for the final **25%** of the course grade.

Solutions are due: **Noon, 10 March 2011**
(10 pts are deducted if submitted late, cumulatively each day at noon)
via email to gerard@spinroot.com
(plain ascii text only, tar-files okay)

The following problem is taken from “The Little Book of Semaphores,” by Allen B. Downey, Version 2.1.2, Section 7.3, pgs 205-210. You can find the book (2nd edition) at: <http://www.greenteapress.com/semaphores/> but to make sure you get the correct version, download it from the course website at: http://spinroot.com/spin/Doc/course/2005_downey_semaphores.pdf

The problem and a proposed solution appear in Section 7.3, page 205-210. Model the solution in a Spin model, and try to prove (or disprove) the following six properties. Each property should be formalized in LTL.

0. Either the dean searches the room, or students can party.
1. Any numbers of students can be in the room at the same time.
2. The dean cannot search the room with people around.
3. The dean can break up a party (no starvation of dean).
4. The dean will always eventually enter the room.
5. While the dean is in the room, no students can enter.

This is the final assignment and it is a little harder than the others. *Make sure you leave enough time to complete it.*