Logic Model Checking, CS 118
Final Assignment

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

Solutions are due: **Noon, 10 March 2017**
(10 pts are deducted if submitted late, cumulatively each day at noon)

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 You can find a newer version of this book (Version 2.2.1) at: http://www.greenteapress.com/semaphores/
but to make sure you get the correct version for this assignment, download Version 2.1.2 from the course website:
http://spinroot.com/spin/Doc/course/2005_downey_semaphores.pdf

The problem and a proposed solution appear in Section 7.3, pages 205-210.
Model the solution as a Spin verification model, and either prove or disprove the following six properties. Each property should be formalized in LTL. Find the simplest way to prove or disprove each property.

      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.

Make sure you leave enough time to complete this assignment. You'll need to use everything you learned in the course at this point.