Kernel-Level Assignment

#1: The Disco

Make a small program that imitates a disco.

Use a semaphore so that the disco has room for 15 guests (Yes, this is a V.I.P. party). A guest should stay at the party for some time, and at some point leave the disco, so another guest outside can join the fun.

Add-on Challenge: Find some sort of use for a "Mutex" in the disco.

#2: The Santa Claus Problem

YouTube Link: http://www.youtube.com/watch?v=pqO6tKN2lc4

In this video, you'll see The Santa Claus problem in pseudo-code.

Make this as a C# program.