

CS 3305: Operating Systems
Department of Computer Science
The University of Western Ontario
Programming Assignment 3
Winter 2010

Purpose:

The goals of this assignment are the following:

- Gain an understanding of semaphores through the use of Pthreads
- Understand how a semaphores are used in operating systems and applications

You are to write a C program that uses Pthreads to synchronize a politician and reporters during a press conference so that the following holds:

- Only one person is speaking at a time
- Each question from a reporter is answered by the politician
- No reporter asks another question before the politician is done answering the previous one.
- A reporter can only ask one question when they get a chance to ask a question
- The press conference allows each reporter to ask 5 questions

You will need to write one C program: *pressConference.c*. There is only one politician thread but there can be multiple reporter threads. The number of reporters should be a command line argument. You should start the politician thread first. Whenever it is the turn of a reporter to ask a question, the reporter should print something like this: "reporter x: ask question". The politician should respond by printing something like this "politician: answer is to create jobs and prorogue parliament". Once a question is answered, another question can be asked. The reporters and politician must be synchronized so that when a reporter asks their question the next thing that is printed on the console is the politician's answer. This would then be followed by another question from a reporter. Note that it is the console that is being shared. You do not know the order that the questions will be asked in.