

# CMSI 387/587

## OPERATING SYSTEMS

Spring 2010

### Assignment 0325

This assignment seeks to reinforce some of the activities we've done in class so far. It also gives you a chance to try your hand at working out a general critical section solution on your own before we look at some established ones in class.

### Not for Submission

Read SGG Chapter 5.

### For Submission

#### Kernel Project and Research Paper Ideas

It's time to get a handle on your kernel project or research paper. Write up three ideas that interest you and commit these in a *README* text file under *projects/cmsi387* or *projects/cmsi587*.

General types of kernel projects include:

- Adding an interesting, non-trivial system call to the kernel and demonstrating its functionality
- Making Linux communicate with an unconventional device (the Keck lab has a selection of USB and Bluetooth peripherals — ask a lab assistant to show you what's available)
- Implementing a file system driver for an alternative data source, such as an archive file, a network service, or a legacy storage format

Research paper ideas run the gamut of operating system topics. Do a preliminary literature search on some area that interests you (process management, memory management, I/O, file systems, security, etc.) and scan the papers that come up. Use those papers to formulate an area that you would like to investigate further.

#### Exercises

Do the following exercises from SGG: 5.1, 5.2, 5.3, 5.5, 5.11, 5.12, 5.13, 5.14, 5.15, 5.18.

Note how some of these exercises involve metrics, such as turnaround time and CPU utilization, that were not discussed in class. These metrics are straightforward and are described in the book.

Submit your answers on hardcopy.