

UCF

School of computer Science

COP 4600: Operating Systems
Fall 2005

Concurrent Programming Project 1(Due Sept. 23th)

You have to write a concurrent program using the BACI system. BACI provides the mechanisms to support the concurrent execution of programs written in the *C - -* programming language. This tiny programming language, *C - -*, allows you to use a constructs to initiate the concurrent execution of two or more processes. All you have to do is to enclose all the process (threads) to be executed concurrently in a **cobegin { ... }** construct. For instance, we might indicate the concurrent execution of processes P1, P2, and P3 by using:

Cobegin{P1 (...); P2 (...); P3 (...)}

Process synchronization can be carried out in *C - -* using **Semaphores** and **Monitors**.

Write a concurrent program using semaphores to implement the Producer/Consumer algorithm. We will have two cases:

- 1.- One producer, one consumer, and one buffer.(the producer run faster than the consumer)
- 2.- One producer, one consumer, and one buffer.(the consumer run faster than the producer)

You must turn in a floppy or CD with the pseudo code of the above mentioned procedures and clearly indicate the initial values, and a running version of your solution in BACI with results for different data sets(different buffer sizes). The buffer size must be smaller than the number of items produced.