CST 334: Operating Systems

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# Lab: lock-based data structures

In this lab we’ll create a thread-safe counter object. The code you'll create will be a restructuring of the thread-safe counter object we saw in lecture, so you'll probably want to refer to that lecture slide.

1. Look in directory /home/CLASSES/brunsglenn/cst334/labs/thread-safe on mlc104. Copy the files counter\_obj\_skeleton.c and mythreads.h to a directory of your own. **Rename** counter\_obj\_skeleton.c to counter\_obj.c.
2. Edit counter\_obj.c by adding code where you see ‘// your code here’. Compile the code with

$ gcc -o counter\_obj counter\_obj.c -Wall -pthread

You need to figure out how to implement the get operation.

1. You modified code should produce this output:

$ ./counter\_obj

main: begin (counter = 0)

main: done with both (counter = 20000000)

1. If you still have time, implement a linked-list with fine-grained locking (see textbook for hints). Or, if you prefer, create some other thread-safe data structure in C.