CSI 3336 Systems Programming
Project 9

Thread Sums

You're going to write a C program called **tSum.c**. This program will use multiple threads to sum numbers found in a file.

When communicating between the parent and the child instances, there will be a few differences in how the work will need to be done. For example, you will need to provide a mutual exclusion zone for writing the results of each thread. This will need to be accomplished using semaphores. This mutual exclusion zone is only necessary when the values are updated. Just a read of the information does not require it to be locked.

Your program should retrieve a filename and a number from the command line. The filename represents a file that stores a list of integer values. The number represents the number of threads that must be used in the calculation of the sum of all the numbers located in the file. You will need to evenly divide the number of values found in the file between all the threads.

The file will store integers using as a binary representation as defined on our Linux servers using gcc not as a text representation. You are required to use system calls for all I/O in your program. (You are restricted from using formatted I/O, but you can use perror).

The parent should report the completed sum to the screen when you are done.

When you are done, submit an electronic copy of your program (via a submission script) and turn in a printout on the day it is due.