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CSC 415

Project 4 – Processes, Threads, and Race Conditions

Command to build and run the project:

make -f Makefile

./threadracer

What my code does:

My code creates 10 different threads that increment a global counter. Technically, each thread is suppose to increment the counter by a total of 10, so that at the end the counter equals 100.

Since the assignment called for me to specifically induce as many race conditions as possible, I placed a nanosleep function inside of my for-loop-incrementer within each thread to achieve the desired outcome.

Instead of each thread incrementing the global counter by 10, they now each only increment it by 1 so that the final outcome is 10 instead of 100.

Example Execution

> make -f Makefile

gcc -I -Wall pthread\_race.c -o threadracer -lpthread

> ./threadracer

ThreadID: 140071363852032 inc: 1 <--- the first thread is called

ThreadID: 140071355459328 inc: 2 <--- note all the ThreadIDs are different

ThreadID: 140071347066624 inc: 3

ThreadID: 140071338673920 inc: 4

ThreadID: 140071330281216 inc: 5

ThreadID: 140071321888512 inc: 6

ThreadID: 140071313495808 inc: 7

ThreadID: 140071305103104 inc: 8

ThreadID: 140071296710400 inc: 9

ThreadID: 140071288317696 inc: 10 <--- the final increment