Wayne State University

CSC 4421 - Fall 2017
Computer Operating Systems Labs
Lab 6 - Threads

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Points Possible: 100
Due: 3/6/2017 by 11:59pm

Read the man page of the following functions `pthread_create`, `pthread_join`, `pthread_mutex_init`, `pthread_mutex_lock`, `pthread_mutex_trylock`, `pthread_mutex_unlock`, `pthread_mutex_destroy`. 3 partially completed programs have been provided for you to help teach you threads.

For this lab you are to create an output similar to that of the previous lab (x-5, x/5, etc.). This time you are using threads though. Since threads share global variables, you may make x a global variable, thus you don't have to use a file or shared memory to modify it. There are two ways to do this lab, and you may choose either, but you must use multithreading:

1. You can create your threads inside the loop, and use pthread_join() to control the flow. Thus 10 total threads will be created.

2. You can make each thread have its own loop, and use mutexes to control the flow. Thus 2 total threads are created.

Following is a sample of the output that will be printed to the screen/terminal.

```
x = 19530

ITERATION 1
Thread 1: x = 19525
Thread 2: x = 3905

ITERATION 2
Thread 1: x = 3900
Thread 2: x = 780

ITERATION 3
Thread 1: x = 775
Thread 2: x = 155

ITERATION 4
Thread 1: x = 150
Thread 2: x = 30

ITERATION 5
Thread 1: x = 25
Thread 2: x = 5
```

outputSample.txt